Business Incubation and Economic Development.

A Study in Saudi Arabia

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Acknowledgment

I would like to thank "God" first of all for helping me in completing this work because these past several years have not been an easy ride, both academically and personally. I also would like to express my gratitude to my parents, my wife who gave me the great support during my study. I will forever be thankful to HRH, Sultan bin Abdulaziz the crown prince of Saudi Arabia who this work would not have seen the light without his encouragement.

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ABSTRACT

Business incubators have proved to be effective tools for tackling unemployment, diversifying economies and creating wealth in numerous developed countries. By providing timely help and support to new ventures, business incubators hold the potential to create and develop entrepreneurial talent at the micro level and foster an environment for entrepreneurship at the macro level. Business incubation programmes represent a popular approach that many countries have used to assist new business start-ups. Saudi Arabia has struggled with unfavourable demographic tendencies with a dynamic population growth and registers a high level of unemployment, notably among students (33% of graduates) and low-skilled manpower. Also, the local economy, that has long been dependent upon the traditional “transformation industries” needs to be diversified and modernised in order to face the ever-growing fierce international and regional competition. Small and Medium Enterprises (SMEs) constitute the majority of the Saudi business (in terms of the number of firms), yet a minority in terms of revenue. SMEs and enterprising university graduates are believed to be the motors of developing economies. A business incubation programme in theory is fit in dealing with obstacles facing SMEs and young entrepreneurs.

The research attempts to determine whether the economic conditions for business incubation in the Kingdom of Saudi Arabia are favourable to a programme of business incubation, and to suggest directions on the best ways to implement business incubation in the Kingdom. To meet this objective the study undertook a three-stage approach whereby each stage contributes to the next. The first stage was two focus groups interviews with Saudi experts, the second a series of three questionnaire surveys and the third was a case study of the first Saudi business incubator.

The findings of the research indicate a relatively low level of practical business skills and business experience exhibited by Saudi graduates and the weak relationship between academia and the private sector. The links between education and business were also shown to be lacking. From the results it would seem that, any Saudi incubator programme would need to take into account these deficiencies. Poor links between academia and business
deprives business of the expertise and research knowledge. Furthermore, the findings showed the lack of primary tools that could enable small and medium enterprises (SMEs) to grow and develop. These include lack of funds and credit options, and poor networking. Thus, incubators could have the potential to provide an improvement to the Saudi SMEs. The research shows that numerous business incubation criteria are met in Saudi Arabia and that the Jeddah Business Incubator has been a success. However, important shortfalls are identified, e.g. the unsatisfactory university-business cooperation, deficiencies in the curriculum and the lack of knowledge of the support for SMEs that could be obtained in Saudi Arabia. Most of the findings of this study are consistent with the previous body of research in this subject. Based on the study results, it is proposed that; more effort should be exerted on softer services such as networking; academics business links (closer interactions between academic research and industry) relative to the provision of physical space and hard infrastructure. In addition, there should be a clear focus on economic and business development goals, continuing relationships with external funding agencies will also be required. Incubators will need to be a source of direct funding for tenants firms. Furthermore, the business incubator has to market itself, and has to use the media in order to create an attractive images of it self.
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CHAPTER 1: INTRODUCTION

A business incubator is a place where business professionals are offered an organized resource rich environment and support services dedicated to start-ups, to strengthen their development. These structures, which emerged during the 1970s in the US and Europe, have propagated amoebically throughout the whole world, to the extent that they can now be counted in thousands. In its most literal sense, a business incubator is a building that houses tenant companies that are in their initial phases. However, a business incubator is more than just a building. Their goal is to assist in the development of new entrepreneurial organisations. By doing this, business incubators are able to help these new companies survive and grow during a period in which they are most at risk for failure. The overall goal of any business incubator is to produce companies that are “successful.” More specifically, the goal is for these companies to be able to “graduate” or leave the incubator in a financially stable state and be able to operate on their own upon graduation. Incubators are seen as a policy mechanism that enhances business development (Hannon and Chplin, 2001a, b) particularly for start-up businesses, including those linked to universities (Jones-Evans and Klofsten, 1997). As a broad approach to enterprise development, incubators are generally considered as a positive and effective means of public intervention. Businesses generally report satisfaction from services and increases in turnover higher than non-incubated businesses (Nahavandi and Chesteen, 1988).

Business incubators are viewed by many governments as dynamic tools for fostering new ventures with the macro objective of economic development and job creation. The major role of Business Incubators is to help entrepreneurs start or expand their business by providing various functions in a supportive environment. Such functions are composed of hard and soft services that provide physical space, utilities, facilities, equipment, shared services, business and legal advice, and financial inputs – to facilitate their creation and assist them until “graduation”, when they have the capacity to “survive” in a competitive
environment. These functions can remedy the disadvantages that the Small and Medium Enterprises (SMEs) encounter by providing numerous business support services and fostering technological innovation and industrial renewal (Similor and Gill, 1986; Mian, 1994a, 1994b, 1997). Incubators are also important for universities to set links with the commercial world that enables commercialization of research and transfer of technology (Phillips, 2002). They can be viewed as a mechanism for new venture creation and technological entrepreneurship (Mian, 1994a, 1996, 1997); an initiative to deal with market failures relating to knowledge and other inputs of innovative process (Colombo and Delmastro, 2002); and a mechanism to support Regional development (Allen and Levine, 1986; Mian, 1997). For such goals and reasons, many countries have increasingly been engaged in establishing incubators.

Business incubation programmes represent a popular approach many communities have used to assist new business start-ups. The objectives of the incubators must be considered fully in evaluating their “success.” If the objective is to create and graduate new companies with a higher probability of success than a non-incubator start-up, then graduation and long-term survival rates are the criteria to use. On the other hand, if the objective of an incubator is to earn a return as an entity in its own right, then graduation of successful firms would not be a suitable criterion of success. Ellen and McCluskey, (1990) found that the majority of incubators surveyed reported some degree of success in achieving their objectives. Doescher, (1988) claims that about 80 percent of incubator graduates survive, while in the general economy only about 20 percent of new firms do; the 1991 United State’s national business incubation association (NBIA)\(^1\) survey found a failure rate of 16 percent (Lichtenstein, 1992). Finally, there is a growing quantity of “hard” data supporting incubator successes.

Success of incubators depends on several factors, and many lessons have been learned so far. Many of them can be applied to developing countries. Some aspects, however, require specific attention, depending on the status of the private sector development in each country.

\(^{1}\) The National Business Incubator Association (NBIA) is the leading organization promoting and supporting business incubation in the United States – “it provides thousands of professionals with the information, education, advocacy and networking resources to bring excellence to the process of assisting early-state companies” (NBIA, 2000)
There is no single formula for creating a successful business incubator, but several elements are keys to success, namely: dynamic incubator management. Good incubators require an effective administrator who organizes support services well, and who in many cases plays a key role in the selection of tenants. Another element that is key to a successful incubator is access to business services and business assistance at the incubator site. A true business incubator provides shared office support and management consulting services. Shared office support typically involves access to a copier, secretarial services, FAX machine, telephones and receptionist services with costs either included in rent or on a fee-for-service basis. Tenants are able to minimize initial investment and overhead costs by utilizing these support services. Availability of management consulting services may be the most critical contribution the incubator makes to put a fledgling firm on a successful track. The incubator provides tenants with business counseling ranging from assistance to develop a business plan to locating sources of capital. In general, it should be noted that recent surveys and empirical investigations have begun to support the arguments that incubators are effective both in development of new-business and survival of existing ones. At the same time, these surveys have exposed some of the shortcomings of incubators.

In the fast growing population around the world today, SMEs play an important role as one of the powerful forces in economic development and an accelerator of economic growth. Their role in growth and development is demonstrated by the volume of literature dedicated to the subject. Like many other countries, Saudi Arabia considers SMEs as one of the principal driving forces of economic development. While SMEs play a significant role in the acceleration of economic growth, however, their growth and success is confronted by many obstacles. Incubators can be considered as a remedy for the disadvantages encountered by SMEs by providing numerous business support services and fostering technological innovation and industrial renewal (Smilor and Gill, 1984; Mian, 1994a, 1994b, 1997). It is an innovative methodology that creates new entrepreneurial skills and new businesses. Also, it is considered
as one of the popular tools in assisting SMEs to cope with challenges. Consequently, many
countries have increasingly been engaged in establishing incubators.

Background

The Kingdom of Saudi Arabia (KSA) has made considerable achievements in economic
reform and liberalisation measures over the last decades which led to strong economic
growth, increased exports. The Saudi economy is based on the strong backbone of the world's
largest oil reserve (more than 25%). The private sector is playing an increasing role in the
Saudi economy, accounting for 48% of gross domestic product. However, since the beginning
of the 21st century per capita income had declined to around 40% of its peak at the height of
the oil boom of the eighties, this was also coupled with a massive population boom that the
labor market was struggling to absorb. The combination of these two factors meant that a
massive restructuring of the Saudi economy would be necessary.

Nonetheless, in the last few years (2003 -2008), an unexpected surge in oil prices has
had a profound effect on the Saudi economy which is now maintaining its achievements in
scoring high growth ratios in all sectors for the period from 2003 and continuing throughout
2007 and 2008. The Supreme Economic Council had already undertaken the privatisation of
many vital economic sectors that augmented the role of the private sector in the local
economy. The advanced banking services actively support economic growth by financing
development projects. The Saudi economy benefits from strong support from the government
and free market policy, both of which have contributed to the growth of the economy.
Utilisation of oil revenues to expand and diversify economic activities in order to reduce
dependence on oil has resulted in an increase in local economic capacity. It has also
encouraged foreign investment, particularly after Saudi Arabia joined the World Trade
Organisation (WTO). The efforts in this direction also resulted in raising the Saudi credit
classification and raised the economy's standing in all international reports. The International
Financial Corporation reported that Saudi Arabia attained 38th position in worldwide
rankings and first place amongst all Arab countries.
In spite of all these recent positive developments, the economy still needs to operate more efficiently and offer more jobs to the growing population. Furthermore, in the present era of borderless and market-oriented economy, and the emergence of WTO, a new and more competitive trade environment is emerging, putting additional challenges to the Saudi economy. In this regard, it is extremely important to direct special attention to SMEs. With most of the world's businesses being conducted by SMEs, it makes good economic sense for governments to implement policies that encourage SMEs growth.

One instrument to promote SMEs growth and counter the high start-up failure rate is the business incubator which is currently adopted by many countries worldwide. Saudi Arabia also followed this trend in 2005 with a particular interest in general purpose mixed incubator. In this research, an attempt will be made to investigate the conditions necessary for the introduction of wide scale business incubation projects in the kingdom. To achieve this task, there appear a need to collect information on Saudi SME environment and investigate particular SME problems or needs in terms of planning, financing, networking and provision – in order to detect areas in which an incubator may be able to redress structural problems within the business environment.

Research Goals and Methodology

The goal of this research is two fold:

First, it seeks, to establish a set of conditions under which business incubators are likely to be successful; namely the macro economic and micro economic conditions, the political environment, the level of government and non-governmental support, the relationship between business, science and academia and the cultural context. These “general properties” are to be obtained through the inductive interpretation and analysis of secondary data, especially case studies on the introduction of failed and successful incubator programmes in a range of national economies.

Second, the theoretical background will be deductively applied to the Saudi environment. Since, incubators are increasingly seen at a political and academic level as a
viable approach to the Kingdom’s drive towards greater economic diversification and private sector expansion with the aim of addressing the interacting problems of population expansion and high unemployment. However, are the politico-economic conditions actually in place to support incubators? What are the conditions which may affect the success of incubators? In addition, the basic characteristic of the early phase of Saudi experience in business incubation was investigated. To achieve this task, information on Jeddah business incubator is collected through face to face interviews and questionnaires.

The research methodology used is a combination of qualitative and quantitative techniques encompassing both data and methodological triangulation enabling the convergence of results. The researcher collected (primary) data in order to address these questions - and has put forward a hypothesis as to the likely course and level of success of incubation development in Saudi Arabia. The Qualitative methods used included focus groups. The advantage of this first step is that it efficiently extracts the salient themes and paths of investigation – including those overlooked by the researcher or not covered in the literature that currently persist in thinking around incubators in Saudi Arabia. The quantitative methods used, included a survey that targets three different samples considered to be more affected by introduction of incubation programme. These groups were: SMEs, University Business Science staff and University Business Science Students at King Saud and King Fahad University for Petroleum and Mineral (KFUPM). The final stage of the research took place in the Jeddah Business Incubator (case study).

Structure of the Thesis

The thesis is organised in seven chapters as follows:

Chapter 1 provides the background and introduces the topic (introduction of incubation programme in Saudi Arabia).

Chapter 2 provides a literature review on business incubation programmes, strategies and functions. Research on business incubators is given under three main headings; descriptive, prescriptive and evaluative research. Business incubation programmes in different countries are reviewed to set the Saudi experience in context.
Chapter 3 focuses on the approach and research methodology used in this thesis including details of how the study was approached and the processes involved in data collection. A detailed account of methodological techniques is given.

Chapter 4 provides an analysis of the business and economic environment in Saudi Arabia based on the past, present and future direction of economic programmes. The prevailing social, political and economic conditions of the Kingdom are explored, and the structure of the Saudi economy, the role of SMEs within it, the problems it currently faces, the government policy towards SMEs and the support available to SMEs from private and public is examined. The answers to these questions are hoped to give indications to the applicability, suitability, and prospects of incubator programmes within the Kingdom.

Chapter 5 summarizes the results of two focus group session and uses empirical methods to analyse education and its relationship with business in Saudi Arabia. The chapter also provides analysis of the Saudi SME environment and practice as well as the attitudes towards business incubation amongst Saudi Business academics, business students and currently-existing SMEs.

Chapter 6 is devoted to the case study in order to provide an in-depth analysis of the first business incubator experiment in Saudi Arabia and to testing the approach taken by the first Saudi incubator and its merits and demerits.

Chapter 7 summarises the aims and key findings and presents the conclusions of the study, draws together the findings and offers suggestions on the way towards initiation a viable business incubation in the Kingdom. Implication of the findings, contribution, limitations and future research are also included in the chapter.
CHAPTER 2 – LITERATURE REVIEW

2.1 Introduction

It is widely believed that the primary forces of new growth within the global economy are technological innovation and business entrepreneurship. It is also widely accepted that the private sector is, ordinarily, the most effective arena in which to deploy these forces in order to generate wealth, employment and general material well-being. Consequently, entrepreneurship and fast-growing small and medium enterprises (SMEs) are instrumental to private sector growth as they assist economic diversification and provide a wide range of goods and services to national and international markets. Thus, governments of both developed and developing economies have often undertaken policies for supporting SMEs, promoting entrepreneurship, and fostering technological innovation.

Amongst the enormous range of public and private initiatives designed to support SMEs development, business incubation has gained increasing worldwide prominence as an effective method for the direct promotion of ‘decentralized economic growth from the bottom’ (Lalkaka and Abetti, 1999: 197). The United State’s National Business Incubator Association (NBIA) indicated that business incubation provides entrepreneurs with the expertise, networks and tools that they need to make their ventures successful. Incubation programmes diversify economies, commercialize technologies, create jobs and build wealth (NBIA, 2004).

Business incubation is considered as a dynamic process of business enterprise development (NBIA, 2002). Whether created by private or public bodies, incubators, in their widest definition, are support-mechanisms for enterprise creation (Albert and Gaynor, 2001: 158). Dinah Adkins, the president and CEO of NBIA added that business incubators help entrepreneurs translate their ideas into sustainable businesses by guiding them through the maze of starting and growing a thriving business (Knopp, 2001). At a practical level Gibbons (2002) described incubators as something like a mixture of an office park and a business school for entrepreneurs. Critically, incubators help small businesses to survive - and develop – by
providing resources that are otherwise hard to access because of reduced capital or ‘network’ opportunities.

Whilst SME survival and development constitute the “meta” objectives of business incubation, the roles of specific incubator programmes are highly diverse and are usually contingent upon prevailing local, regional or national socio-economic priorities. Common objectives cited for incubator projects have included any, or all, of: combating national or regional unemployment (by means of enterprise creation and improved rates of survival); facilitating national or regional economic diversification (typically away from heavy-industry towards technology-orientated business); more specifically, encouraging the development of particular technologies and industries (e.g. the development of information technology industries in developing countries); “redressing” local or regional economic decline and assisting urban or regional regeneration; expanding the supply of inputs to national infrastructure (this is especially relevant to rapidly developing economies like Saudi Arabia); national and regional technology transfer (e.g. upgrading the technology capabilities of firms in a given location); providing a “nursery” for the commercialisation of university research (in particular through technology incubators); assisting in the social and economic development of minority or (previously) marginalized groups (for instance women or ethnic minorities); and even offering a “safe haven” for “legitimate entrepreneurship” in areas where crime or corruption can constrain business activity (the OECD cites the Russian Federation of the 1990s as an example) (OECD, 1999: 8). In sum, though all business incubators fall under the general umbrella of “economic development tools” their specific objectives are usually unique to the prevailing concerns of their individual sponsors (OECD 1999 in Ibid)

This diversity of incubator roles and objectives has made it difficult for academics, incubator managers and their sponsors alike to develop a generalised set of evaluation tools for measuring incubator performance (OECD 1999: 10). However, a very broad way of measuring incubator success is an analysis of firm survival rates. For instance, in Australia the SME failure rate within the first year is an estimated 8 per cent among incubator tenants, compared with a national average of around 32 per cent (OECD, 1999). Survival rates for
incubated firms in the United States are around 80 per cent, 'considerably above the norm for new businesses', furthermore, an NBIA statistic from the 1996 report Business Incubation Works, which reported that 87 percent of firms that graduated from responding incubators since inception were still in business. (NBIA, 1996)

According to OECD in 1996, the British government established an Entrepreneurial Panel to examine business incubation within the UK (OECD, 1999: 10). The panel concluded that "business incubators do improve survival rates, as well as facilitating technology transfer, innovation and generating jobs and local economic development" (in Ibid)².

Currently, one or more medium- to large-size business incubator programmes have been present in both the United States and all the European Union countries for at least a decade. The popularity of incubators, both in developed and developing economies is growing. Yet despite its popularity amongst thousands of entrepreneurs around the world and its logical appeal as an SME development tool, the concept of business incubation is not widely known and even less widely understood. However, an ever-growing volume of "descriptive" literature is addressing this problem and has succeeded in raising awareness amongst academics, entrepreneurs and those with various professional interests in incubator programmes (e.g. potential public and private sponsors). (Bhabra-Remedios and Cornelius, 2003)

Despite the clear merits of incubation as a business development tool, it ought to be recognised that its effectiveness has varied historically and geographically. In other words, incubators do not constitute a universal formula for business/entrepreneurial growth and are not always the best "answer" to various social and economic problems. In several instances, incubators have proved both expensive and ineffective devices for enabling economic growth or facilitating intended social change. For an incubator to be successful as both a small business development tool and as a means of fulfilling wider socio-economic objectives, certain conditions need to be in place.

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² Evidence from France likewise indicates significantly higher survival rates among incubator tenants. (OECD 1999: 10).
Several studies have provided an overview of incubation literature, most notably Albert and Gaynor (2002), and Hackett and Dilts (2004). Hackett and Dilts organised their review around (1) the area and community in which the incubator operates, (2) the incubator as an enterprise, (3) the incubator manager, (4) incubatee firms, (5) incubatee management teams, and (6) the innovations being incubated (Hacket and Dilts, 2004). However, Albert and Gaynor (2002: 160) offer a comparatively simpler template for organising a review of the research literature which better allows for the numerous topical overlaps that appear in most accounts. Thus, the Incubator literature may be divided into three broad (and overlapping) categories which are:

**Descriptive Literature**

These studies are concerned with defining the incubation process and distinguishing various incubator “types” from other support programmes. Generic and type-specific features of incubators are identified. Analyses that account for the (historical) development of incubators and incubator “landscape” are mapped to distinguish the relative importance of different incubator types and to set out the “life-cycle” of an incubator.

**Prescriptive Literature**

The target audience of “prescriptive” works is identified as ‘key stakeholders, primarily sponsors and incubator management’ (Albert and Gaynor, 2002: 160). These studies are keen to highlight the role incubators play in economic development, and are often addressed to the specific public bodies that sponsor incubation projects (an example would be the various reports by the NBIA and United Kingdom Business Incubators (UKBI). The likely features of successful incubators are also identified in prescriptive studies, as well as best practice guidelines for informing managers on the best way of running incubators.

**Evaluative Literature**

Evaluative research attempt to establish the ‘benchmarks’metrics by which incubation programmes can be evaluated. The quantifiable impact on incubatees, and local and national economies is measured. The effectiveness of different types of incubation programmes and processes is compared (Albert and Gaynor, 2002: 161).
Naturally, there is a significant overlap between these areas, but this seems the most logical template to follow in summarising incubator research to date. In practice many studies touch on a range of these issues in order to set the context for their particular contribution.

2.2 Descriptive Research

2.2.1 Historical Development

Business incubation remains a “young industry” (OECD, 1999). In the US, business incubators have grown rapidly in numbers from less than 100 in 1980, to around 1000 in 2002 (Lalkaka, 2002). According to the NBIA, incubators in North America have added in excess of 19,000 companies and more than 245,000 jobs to the economy (NBIA, 2002). By that same year (2002), Europe had around 900 incubators (EC Report, 2002), and worldwide numbers were estimated at around 3000. In 1999, over 100-business incubator schemes of ‘different sorts’ were operating throughout the United Kingdom (OECD, 1999).

Business incubation is not a new phenomenon. It has been around since 1942 in schools and universities where students and professors were given the opportunity to test and employ their knowledge and research to start up new companies. In 1942, Student Agencies Inc., located in Ithaca, New York, was created to incubate student companies. In 1946, Massachusetts Institute of Technology (MIT) president Karl Compton and other alumni founded the American Research Development (ARD) incubator (Chinsomboon, 2000).

The world’s first known incubator outside of the academic environment was the Batavia Industrial Centre (BIC) located in Batavia, New York in 1959 (Brown et al., 2000) and the formal concept of business incubation had been developed ever since. One of its tenants was a poultry producer and it is believed that this is where the name “incubator” was conceived (McKee, 1992, 41). It was started by a real estate developer (Charles Mancuso and Son) who was unable to secure a tenant able to lease the vast 850,000 square feet Batavia facility and innovated a strategy of subletting subdivided partitions of the building to a variety of tenants. Each tenant occupied as much space as he or she needed (the first ever tenant, a New York sign painter took only 2000 sq ft). As tenancy gradually
rose it became expedient for the various businesses to share the expense of various office services and supplies. Then, as the idea of multiple business occupancy and service pooling at Batavia caught on, new tenants started to request business advice and assistance with capital raising as part of the lease (Adkins, 2001). Thus, the first business incubator was born and the idea soon spread. Incubators in the UK and Europe started to develop later during the 1980s through various related forms such as innovation centres, technopoles centre, science parks, etc.

Business incubators have been growing very fast. The mapping survey in 2005 of UK Business Incubators identified around 270 incubation environments across the country (lalkaka, 2007). As from the survey of the (NBIA) in October 2006, there were about 5,000 business incubators worldwide, there were over 1,400 incubators in North America, up from only 12 in 1980. Of the 1,400 incubators, 1,115 were in the United States, 191 were in Mexico and 120 were in Canada (EC, 2002). The United Nations Industrial Development Organisation (UNIDO) has also played a significant role in monitoring and promoting the development of business incubators worldwide and estimated the annual growth rate of new incubators at about 20 percent. (See appendix A for additional information)

2.2.2 Definitions

There is no one standard definition of business incubation. Nearly three dozen definitions are available in the academic literature and just as many have been adopted by industry associations and policymakers in different countries, reflecting local cultures and national policies. Germany for example, targeted innovative start-ups, while France and Netherlands promote the university -incubator model (Aernoudt, 2000). (For more details see appendix B)

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3 John Mancuso who first ran Batavia is also credited with coining the term “incubator” (Burger 1999).
2.2.3 Incubator Services

Incubators are commonly evaluated on the basis of meeting their goals and objectives (Bearse, 1993). Business incubators seek to add value by offering clients a combination of facilities and services that cannot be so easily obtained from other sources. The nature of these services and the way in which they are delivered will usually have an important influence on the success of incubator tenants and hence the performance of the incubator (European Commission Enterprise Directorate-General [ECEDG] 2002: 48). The type and the range of support services provided by an incubator is believed to vary depending on the type of incubator and the objectives of the investors financing it (ECEDG, 2002:49). Thus the management literature has contributed to the theoretical constructs used to examine incubators. Five dimensions constitute the package of services offered by a business incubator. It is worth considering these provisions in more details:

A) Enterprise Development

Incubators provide an instructive and supportive environment to entrepreneurs at start-up during the early stages of business (UKBI, 2004). Similarly, the (NBIA) describes an incubator as providing “hands on management assistance, access to financing and orchestrated exposure to critical business or technical support services. They also offer entrepreneurial firms shared office services, access to equipment, flexible leases and expandable space – all under one roof” (NBIA, 2004). Gulotta and Mac Daniel (1995:71) describe an incubator as ‘a flexible facility in which a number of new and growing businesses operate under one roof with affordable rents, shared support services, business development services and office equipment, and having equal access to a wide range of professional, technical and financial programmes.’

The incubator manager and other members of the incubator management team can play an important role in assisting their clients to launch and grow their business ventures. It is typical for the incubator manager to know a great deal more than an incubator client about the entrepreneurial process. The incubator manager will have experienced the entrepreneurial
process at close quarters on many occasions with a variety of business ventures. This experience is valuable, particularly early in the life of a client firm. In addition to this, it is typical for the incubator manager to bring expertise in strategic planning for small enterprises, and to be well connected to small business resources and contacts in the business community, as links to information and advice. Further, the incubator manager may have established a business development network and he is most often the access point to that network.

B) Consultancy Network

Until the early 1990s, the main emphasis for incubators was on the provision of a physical space for fledgling businesses which provided affordable rents and vital economies of scale on services and facilities. However, more recently, modern incubators place increasing emphasis on the actual ‘process of incubation’ (Kirby, 2004). In other words, the incubation process is seen as more important than the incubator facility (Adkins, 2001)\textsuperscript{4}. Thus the focus has shifted from the “hard” facilities (office space and facilities) to the more “human” provisions of managerial and technical advice/assistance. Unfortunately, most literature has tended to overlook this human dimension, thus the research conducted so far – is ‘limited almost exclusively to the incubator facility’ (Hackett and Dilts, 2004:55-82).

A common problem amongst small and new business practitioners is that a significant level of technical proficiency in the production of their product or service is undermined by an equally high level of naivety when it comes to the practical tasks of running and planning business. In an incubator this problem is, at least in part, remedied by the provision of “business counseling” services.

Business counseling can take many forms which are likely to vary according to incubator type, however, managerial and financial consulting are likely to be available in most incubators as part of an overall ‘mentoring’ programme. The practical delivery of these

\textsuperscript{4} This also allows for the emergence of ‘virtual’ incubators and also places a higher value on training mentoring and the creation of a ‘learning environment.’ These developments complicate definitions, not only because virtual incubators fail to meet with the traditional, primary, criteria of an incubator (providing “space”) but also because it is increasingly difficult to locate where and with whom the incubation process takes place.
services is likely to vary across incubators. However, consultancy services in most incubators are likely to include both scheduled ‘sit down’ sessions providing long-term strategic advice, and ‘on-the-spot’ consultations whenever problems need solving quickly. Thus, incubator staff are likely to operate an informal “open door” consultancy service for their tenants. As Garrity (2002) suggests, this effectively makes each and every member of the incubator staff a small business consultant. It is this ethos of always-available assistance and continued mentoring by staff that constitutes, according to Garrity, the ‘core of what an incubator provides’ as it goes about “filling in the gaps” of knowledge and skills for its tenants (Garrity, 2002). At a more intangible level incubator staff also provide invaluable encouragement and “moral support” to new business owners who are more likely to lack professional confidence than their more established contemporaries.

Clearly, it is unrealistic to expect that incubator staff will be equipped to fully address each and every question/request by their tenants – especially in more technically advanced or specialised fields. Instead, they provide another invaluable service working as a point of reference, or as a “connector”, to a much wider network of specialised assistance. The competent incubator will have cultivated an extensive network of contacts within the local community which is likely to include local professionals, educational institutions, Non Governmental Orginasation (NGOs) charities, community organisations, and private businesses - both large and small (the full role and value of networks will be discussed in more detail later). Of particular importance in the mentoring process is the cultivation of professional contacts. Thus, lawyers, accountants, bankers and marketing experts should be available to tenants at reduced (or no) cost, to give presentations, involve themselves in individual mentoring and/or directly provide professional services. Evidently, an incubator that is adept at cultivating a wide and willing array of professional contacts is best able to meet the needs of its incubatees. (Smilor and Gill, 1986)

Thus, when discussing and researching the role of incubators it is vital to keep in mind what Hackett and Dilts (2004) describe as the ‘totality of the incubator’ which spreads out
from the physical reality of the incubator building itself to the ‘core’ formal and informal services provided by its staff to the wider network of associated interests it has cultivated:

Much as a firm is not just an office building, infrastructure and articles of incorporation, the incubator is not simply a shared space office facility, infrastructure and mission statement. Rather the incubator is also a network of individuals and organisations including the incubator management and staff, incubator advisory board, incubatee companies and employees, local universities and university community members, industry contacts, and professional services providers such as lawyers, accountants, consultants, marketing specialists, venture capitalists, angel investors and volunteers (Hackett and Dilts, 2004)

Table 2.1: Incubator Resources and Services.

<table>
<thead>
<tr>
<th>SHARED OFFICE SPACE</th>
<th>SHARED SERVICES/FACILITIES</th>
<th>MANAGEMENT/TECHNICAL ADVICE AND ASSISTANCE</th>
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</thead>
<tbody>
<tr>
<td>Below market office space</td>
<td>Conference room</td>
<td>Mentoring (Managerial and Financial advice)</td>
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<tr>
<td>Flexible leases</td>
<td>Receptionist coverage</td>
<td>Business plans</td>
</tr>
<tr>
<td>Business waiting areas/reception areas</td>
<td>Telecommunications and Internet (e.g. fixed line telephone, dial-up or ADSL internet and fax)</td>
<td>Marketing plans</td>
</tr>
<tr>
<td>Common lounge areas</td>
<td>Office equipment/supplies</td>
<td>Accounting</td>
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<tr>
<td>Secretarial services and typing</td>
<td>Government grants and loan (advice on application)</td>
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<tr>
<td>Computer hardware/software</td>
<td>Research and development</td>
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<tr>
<td>Business resource library</td>
<td>Legal services</td>
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<tr>
<td>Audio/visual equipment</td>
<td>Patent assistance</td>
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</tr>
<tr>
<td>Bookkeeping</td>
<td>Computer training</td>
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<tr>
<td>Group health insurance</td>
<td>Government procurement/tendering (advice)</td>
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<tr>
<td>Manufacturing equipment</td>
<td>Equity and debt financing</td>
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<tr>
<td>Access to advanced technology</td>
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<td>Access to Chambers of Commerce</td>
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<tr>
<td>Access to other resources outside of the incubator</td>
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<tr>
<td>Business taxes (advice)</td>
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<tr>
<td>Notary services</td>
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<td>Desktop publishing and design</td>
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<tr>
<td>Website design/publishing</td>
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<td>Access to interns</td>
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</table>
An incubator consultancy network or business development network consists of individuals drawn from the ranks of professional business service providers, experienced business people and educators who are willing to provide advice and assistance to entrepreneurial enterprises. An incubator adds value by assembling a comprehensive array of skills and through experience, screening the participants in the network down to select individuals who can most successfully tailor their services to the needs of small growing firms. This process assembles a rich business development resource base for the region. Something that otherwise would exist only as a dispersed set of individuals that would be very difficult to replicate by a small business. Participants in the network gain from devoting their time by having what could be a rich source of growing clients made aware of their skills and expertise. Network participants commonly regard this, and the associated word of mouth information dissemination, as an effective marketing tool.

C) Entrepreneurial Synergy

Co-locating entrepreneurial firms provides the prospect of generating a symbiotic environment where entrepreneurs share resources and experiences, learn from one another, exchange business contacts and establish collaborative business relationships. One other important contribution that co-location of entrepreneurs can make, is to overcome the loneliness of the entrepreneurial work environment (Rice, 1992).

D) Flexible Space

Commercial real estate developers normally find the balance of risk and return unattractive for spaces smaller than about 150 square metres (1500 square feet). From the
developer's perspective, prospective tenants for smaller spaces tend not to appear substantial. in commercial terms. Small firms find the expectation of covenants, guarantees and bank references required to secure a lease, typically for a minimum of three years, difficult to meet. In addition, given the relatively large scale of the space against a firm's early needs, moving into available spaces means that new firms must carry a significant cost overhead, particularly if the space requires fitting out.

The flexibility in space provided by incubators results from the incubator offering to lease small spaces (down to as little as ten square metres), commonly on short-term leases with as little as one month's notice required by either party to vacate. In addition, incubator buildings usually contain spaces in a variety of sizes so that as a firm grows, there is the potential to relocate to a larger incubator unit. It is less common for incubators to vary the dimensions of individual units.

A key advantage to incubatees is the ability to sign short-term leases which are (ordinarily) designed to facilitate affordable growth by permitting movement to larger spaces as and when the business expands. Thus, at any one time, the business occupies – and pays for – only the amount of space necessary to meet its needs. Moreover, no huge deposits are required and the rents are often below market prices (Barrow, 2001). Furtermore, flexibility in rearranging tenant spaces as the companies grow in number and size, is important.

Cost is seen by many entrepreneurs and some incubator programmes as a big factor. For most businesses, however, the rent they pay for space is not a large proportion of their cost structure. What is important is that they have the right sized space in the right location. It is much cheaper to pay a high price per square metre for exactly the space you need, than to pay a normal price for a bigger unit and only use a small proportion of the available space. Consequently, incubator developers tend to talk about price per week or month rather than the rate per square metre. The significant additional flexibility afforded by incubator space can justify a price premium.

5 The current research (see Chapter 6) demonstrated that in the Jeddah Business Incubator the Jeddah Chamber Chamber of Commerce subsidized rents according to the duration of tenancy, where they only take 600SR (£100) for the first 6 months and 700SR (£116) for 6-12 months and 1000 SR (£166) for 12-24 months.
E) Shared Services

Both the type of services and the level of ‘sharing’ are likely to differ according to the incubator. For instance a technology incubator is likely to have a higher level of provision for high-speed communications than a ‘general’ incubator. Moreover, the incubator’s setting is likely to have an effect on the facilities provided. It is, for instance, highly unlikely that a US-based technology incubator would provide Personal Computers for its incubatees as these are considered “everyday” items, are relatively cheap to purchase (vis-à-vis cost of living) and it is likely that the incubatees would require highly specialist (i.e. non-standardised) equipment. In contrast, the provision of a standard desktop computer and internet access to a ‘general’ incubator in a developing country where these facilities are rare may well become the most “valuable” service provided (Temaali and Campbell, 1984).

Likewise, the extent to which services are ‘shared’ may also depend on the specifics of the incubator. As already stated, many technology-based firms are likely to possess highly specialist hardware/software that will not be made available to other incubatees whereas in low-technology and/or more ‘general’ incubators more facilities can be expected to be shared.

However, almost all incubators should be able to provide: (1) shared receptionist facilities (e.g. telephone answering and a dedicated reception area for visitors), (2) conferencing (e.g. provision of meeting rooms and potentially phone/video conferencing); and (3) communication facilities (phone, internet and fax). (Petree et al., 1997)

The shared services dimension refers to incubator-provided pooled equipment, services and facilities such as photocopier, fax, receptionist, mail handling, board room, loading dock and the like. Start-up firms have a need for such services but are often too small to justify the cost of providing these services in-house. Access to those services through the incubator means that entrepreneurs can focus their attention and capital on the critical task of getting

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6 Indeed, the findings of the current research (see Chapter 6) how that JBI provided each incubatee with phone, high-speed internet connection and printing and fax facilities. This enabled about 71.4% of them to create company websites which is a significant improvement on the Riyadh-based SMEs (see Chapter 5) (of whom only 18.5% had websites)
their product or service to market, while still presenting a professional image to their business contacts and customers.

It is important to note that the first two dimensions of a business incubator, shared services and small spaces, have been available in the marketplace for many years via serviced offices and so called nursery factories, to name two of the more common options. A business incubator must include a number of additional dimensions to distinguish itself from such real estate ventures. These additional dimensions relate to how incubators facilitate management development and growth in their clients. "Emphasis in incubator programmes on site development is misplaced in light of the management assistance needs of entrepreneurs" (Allen and Weinberg, 1988: 214)

"Providing shared office services...may help reduce tenants' operating expenses but does little to address management problems that plague new firms." (Allen and McCluskey, 1990:70)

The NBJA has chosen to emphasise the non-real estate parameters of incubator management in its definition. To be classed as an incubator in the eyes of the NBJA a programme: "must offer at least one of the following services:

1. Networking opportunities encouraged by incubator management
2. Management or technical assistance through in-house expertise and/or a network of community support
3. Assistance in obtaining financing
4. Service to business clients outside the incubator as well as to in-house tenants. (Rice, 1992:43)

Across the incubator movement, the management problems of incubator clients are met with the delivery of a variety of value-added management services. The driving force (in incubator programmes) is the supply of expertise, capital and support that comes from assistance activities directed towards filling the voids in entrepreneurs' abilities (Allen and Weinberg, 1988:214).
However, several authors (e.g. Tornatsky et al., 1996, Smilor and Gill, 1986) do not specifically indicate what assistance an incubator should provide. Others vary enormously in the range of assistance they believe should be available, for instance Hanson et al., (2000) lists; Physical space, Capital Coaching, Common services, and Networking connections. However, from the above descriptions it can be identified that the core provisions of an incubator as providing: Shared office space, Shared services, and business advice/assistance. On the other hand, the five dimensions (Duff, 1994) work together to provide the unique defining character of a business incubation programme. Experience in assembling and managing these elements has developed rapidly over the past years.

2.2.4 Types of Incubator

Having identified how incubation differed from other types of support to business, the research focus changed to the identification of different classes of business incubators. This research has continued to the present day showing up-surges during periods of particularly high social and economic change.

To aid in the analysis of business incubators, particularly in identifying issues related to incubator evaluation and recommended practices, a classification system needs to be adopted (Albert and Gaynor, 2001). Various researchers have provided different means for categorizing business incubators. Some researchers propose to classify them according to a) their primary financial sponsors (Kuratko and LaFollette, 1987; Temali and Campbell, 1984), b) the business focus of the incubator (i.e. property development or business assistance) (Brooks, 1986), c) the business focus of the incubatees (Plosila and Allen, 1985) whether the incubatee is a spin-off or a start-up (Plosila and Allen, 1985). However, because the configuration of an incubator is highly dependent on the social, cultural, and economic environments that they are in (Albert and Gaynor, 2001), using existing classification systems as a predictor of a particular incubator's success is not advisable. Nevertheless, they remain helpful in understanding the motivations and key issues behind certain incubators.
The vast majority of business incubators fall into two general categories: technology incubators, focusing on commercialisation of new technology and technology transfer; and, mixed use, servicing a wide range of clients. For example, in the USA and Australia mixed use is still the largest proportion of business incubators, 43% in USA and 80.2% in Australia (NBIA, 2002). Either type can be specialised in a particular industry, although possibilities need to be strongly qualified with regard to the critical mass that can be achieved. With a specialised business incubator the pool of possible clients is limited.

In large economies such as the USA and Europe there are many variants of business incubator, but in smaller countries it may be hard to achieve critical mass at a very general business incubation level, let alone for a more specialised variant. Indeed, rather than specialisation, aggregation and convergence of different types of business incubation along with related services may be more applicable.

In developed countries incubation first emerged in the 1980s, operating alongside many other generic business development services, and evolved into narrow and deep services for a small selected group of companies. Subsequently, developing countries adopted the concept, so that currently there are more incubators in developing than developed countries. The traditional business incubation found in developed countries is often not relevant; however, hybrid models, combining outreach, virtual\(^7\) and broader services with more traditional incubation, for both new and existing businesses, have emerged in many developing countries, particularly those with smaller economies and limited generic business support.

Preliminary studies (Ellen, 1985; Latona, 1988) limited their classification to public, private and university incubators. This classification has gradually been broadened as the global incubator landscape has become more complex. An effective way to summarise the different sponsorship programmes behind incubators is to divide them into 1) non-profit, 2) for-profit and 3) university-based (Peters, 2004). Less easy to distinguish are the social and economic objectives of an incubator. Whilst each and every incubator has the development of

\(^7\) The virtual model allows a company to garner the advice of an incubator without actually being located at the incubator site. This new model suits those entrepreneurs who need the advice an incubator offers but still want to maintain their own offices, warehouses, etc.
small businesses as its primary, practical objective (with job-creation as a logical associate of that aim), an abundance of ancillary objectives may also exist. For instance, “urban regeneration”, “technology transfer”, “minority group empowerment”, “community integration”, “economic diversification” “commercialise research” etc. may be cited. These objectives are ordinarily determined by the incubator sponsor. However, there is no clear way of predicting objectives from the type of sponsor – although it is more likely University-based incubators will seek to commercialise research and for-profit incubators will seek a more general “business development” mission plan. However, many incubators have several different and overlapping objectives – a University incubator may seek to commercialise research, but it may also be concerned with the advancement of national technology transfer and economic diversification; similarly a for-profit incubator may predominantly seek to develop small businesses for profit but it may also be concerned to assist in urban redevelopment, minority group empowerment etc.

Classification schemes have been based on location (rural, urban), objectives (empowerment, for profit), configuration (residential, virtual), business model (property, venture capital) lead sponsors (university, corporate, public), type of company within it (mixed, industrial, technology, internet) and indeed combinations of location, objectives, configuration, lead sponsor and type of tenant.

Ellen and McCluskey (1990) used a value-added continuum with property development and business development at the two extremes to describe various kinds of incubators and their operations. This idea of a continuum is relatively unique with most other researchers preferring classifications based on discreet groupings.

Lalkaka and Bishop (1996), highlight the fact that in different countries, different types of incubation structures have become important depending on the existing resources and the social agenda. In China, for example, Overseas Chinese Scholars Parks are an important feature on the incubation landscape.

The final method by which to classify incubator type is more straightforward. Helpfully, the NBIA has classified the 1,000 or so North American incubators into 7
categories: Mixed Use (43%), Technology (25%), Manufacturing (10%), Targeted (9%), Service (6%), Empowerment (5%) and other (2%) (NBIA, 2002). With the typical exception of restaurant-based and retail firms, mixed-use incubators place no restrictions on the commercial type of firm tenanted and is suitable for all businesses. Their objectives are also likely to be ‘general’ and focused around employment generation and local economic growth. In North America they are typically sponsored by local governments or their affiliated bodies (Burger, 1999).

Technology-based incubators are focused upon ‘enhancing community research and development in high-tech, rapid-growth industries’ (Tornatzky, et al., 1996). Manufacturing incubators (10% of North American business incubators) provide large production spaces. Manufacturing incubators also provide technical assistance and tend to focus on lighter manufacturing.

A specific type of incubator is a ‘targeted incubator’, which ‘focuses on assisting start-up ventures in a specific industry. The specialisation within an incubator of that type is hypothesised to affect the characteristics of new ventures within that incubator and their subsequent performance. Linking industry contacts and capital sources familiar with that industry with new ventures may provide an explanation for these effects. (Duhaime and Matherne, 2000)

Targeted incubators have the advantage of being able to concentrate on specific types of resources, products, equipment and services. As Meredith Erlewin of NBIA put it: “If you have a focus -- either on a certain type of company or a certain population, like women or minorities -- then you're working with people who have the same challenges, who are undergoing the same shared experiences,” (Gibbons, 2002)

‘Service incubators’ (6% of North American incubators) are specific to those businesses involved in the service industries, including professional services (Barrow, 2001). ‘Empowerment’ incubators (also known as “community” incubators) make up 5% of the

8 Coleman’s Micro Business Incubator, for instance, wants to help minority contractors, leading the center to offer courses in things such as blueprint reading and bidding on government contracts (Gibbons, 2002)
North American incubator industry and tend to focus upon a particular local community or targeted demographic (for instance, women or ethnic minorities). The incubator is designed to assist and “empower” these groups by facilitating economic growth through business development. In other words they target particular populations and not particular industries. However, often, the type of business incubated will be associated with the particular group being “empowered” – for instance, in the US such incubators have been established to help Native Americans living in traditional communities set up businesses to market their traditional craft products.

In addition to sponsorship, objective and sector, location (rural, urban) could have an impact on the performance of the incubator; therefore it is worth considering whether or not an incubator is located in an urban or rural setting. It therefore seems useful to describe the “type” incubator projects according to some or all of the following vital dimensions:

- Sponsorship (i.e. not-for-profit, for-profit, university)
- Socio-economic objectives (e.g. employment, local empowerment, technology transfer etc.)
- Sector (i.e. mixed, technology, manufacturing, targeted, services, empowerment, other)
- Location (rural, urban)

The point of classification is to allow some sort of framework for comparison between and within programmes, (however the list above has not exhausted the many ways in which incubators can differ – especially at an international/global level).

Inevitably, within each ‘genre’ or ‘type’ significant variations between incubators are observable in terms of facility size⁹, staff size, space available to incubatees, training programmes offered, types and levels of service, types and level of equipment sharing, entry requirements, graduation criteria and rent. In sum it is still possible to compare different “forms” of incubators according to how they provide (1) space (2) services and (3) assistance. Ideally – for the researcher – such comparisons are made between incubators who have the same or similar sponsors, objectives and are of the same or similar sector.

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⁹ Incubator facilities vary widely in size as measured by the square footage or total startup costs and the number of tenants resident in the facilities. One recent survey indicated total startup costs ranging from $175,000 to over four million dollars with the median being $412,500. (JNV, 2002)
Hansen et al. (2000) depicted incubators as a new organisational model that has evolved from mass production firms and multidivisional companies of the 1900s. They suggest that incubators should be seen as a means of addressing corporate rigidity caused by deep bureaucracy. What is critical, according to Hansen et al. (2000), is for incubators to own “significant but minority equity stakes [that] will ensure that the incubator and the associated investors have influence—but not authority—over companies.” Viewing the incubator as an evolved multidivisional firm also allows its management to achieve a certain focus in the types of tenants that it accepts. Just as a multidivisional firm must adopt a certain focus on the types of businesses it enters, so must an incubator. By maintaining a related set of companies, the incubator is able to optimise benefits to the incubatees and thus to itself. Hansen et al. (2000) also warn that incubators that assemble a highly diversified portfolio of companies are likely to suffer from the same problems that traditional conglomerates do. The whole will not be greater than the sum of the parts. However, while the proposal of Hansen et al. is compelling, much work needs to be done on their agency-based theory (For more information on agency theory, see Eisenhardt 1989) since “rather than working for the success of the principal’s firm and shareholders, the incubatees work to attain their own firm’s success” (Hackett and Dilts, 2004b). That is, the principal-agent dyad that is commonplace in multidivisional firms may not be present in incubators making agency-based theory difficult to implement. Furthermore, their proposal to adopt a portfolio strategy in selecting incubatees may only be applicable to certain types of incubators.

Given that incubation structures are so culturally dependent, it is not surprising that variations on classifications have been proposed for Canada (Kumar and Kumar, 1997), France (Schmuck, 2000), Italy (Cariola, 1999) and the UK (Enterprise Panel of the UK, 2000).

In most cases, creating a classification is not an end in itself. The classification is used to create a culturally relevant framework to discuss other issues such as evaluation (Lalkaka, 1997), best practice (Kumar and Kumar, 1997) or the role of public sector (Enterprise Panel of the UK, 2000).
2.2.4.1 Identifying Key Features of Different Types of Incubators

With the high growth and increasing diversity in the range of incubators, some researchers have chosen to focus on understanding the format, structure, environment and operations of a singular type of incubator. These include university technology incubators (Mian, 1994a -1996b; Cariola, 1999; Bruton, 1998), corporate incubators (Chesbrough and Scolof, 2000), internet incubators (Hansen et al., 2000), for-profit incubators (Nash-Hoff, 1998), non-profit incubators (Vinokur-Kaplan et al., 1997, 1998), rural incubators (Weinberg, 1987) and virtual incubators (Camp and Peier, 1986; Nowak and Grantham, 2000).

Focus on a specific incubator type, has lead inevitably to a greater understanding of the differences in incubators within the same class. These differences relate principally to different business models or incubator sponsors. Rice and Matthews (1995), for example, identified three models for self financing incubators. Nash-Hoff (1998) classified four for-profit incubator models. Hansen, et al., (2000), distinguished four different sponsors of internet based incubators.

It is assumed by most researchers that incubators are, by universal definition, economic development tools for business development and job creation whose ‘basic value proposition is embodied in the shared belief that operating incubators will result in more start-ups’ (Hackett and Dilts, 2004). However, despite the possession of certain “key properties” significant variations do exist across different incubator programmes. When it comes to any sort of evaluative or prescriptive research, which often involves the comparative study of different incubator programmes – it is essential that key differences between incubator “types” are understood by the researcher, so that “apples are compared with apples.” Thus, it is possible to (broadly) differentiate between incubator types according to (A) their sponsorship origin (B) their social and economic objectives and (C) their sector.

Though most incubators have been established as publicly funded vehicles for job creation, urban economic revitalisation, and the commercialisation of university innovations (Campbell and Allen, 1987) more recently the amount of privately funded organisations for
the incubation of high-potential new ventures has grown rapidly, as has the proliferation of ‘specialist’ incubators in niche sectors.

2.2.4.2 University Incubators

Although the main goal of universities is education, they can still make substantial contributions to local economies through research leading to patentable inventions and discoveries, faculty spin-off ventures and technology transfers (Schutte, 1999). University business incubators (UBI) are set up by universities willing to adopt a directly entrepreneurial role in generating and spreading scientific and technological knowledge (Radosevich, 1995). UBI s are institutions that provide support and services to new knowledge-based ventures.

The most prominent, and successful, incubators have been those associated with substantial local economic growth and/or the development of new technology industries. For example, the Austin Technology Incubator, associated with the University of Texas, Austin, has nurtured more than 38 companies, created more than 500 jobs, and brought approximately US $60 million to the local community in the first four years of operation.10

Existing evidence suggests that universities have a seedbed effect on their local economies. (Felsenstein, 1994) Indeed, a relationship has been established between firm innovation rates (measured by patents) and the level of local university research. This suggests the existence of technological spillover that benefits firms located within the general vicinity of a university. (Jaffe, 1986) Capitalizing on this spillover effect, the university incubator (like the Austin or San Jose incubators) is employed by some entrepreneurial universities to provide support for nurturing new technology firms.

In addition, other incubators, such as the Environmental Business Cluster, the Software Business Cluster, and the International Business Incubator in San Jose, are designed, in part, to provide more opportunities for students and professors at San Jose State University, enabling them to make downtown San Jose more of a technology centre (Mitchel, 1996).

According to Mitchell (1996), San Jose State President Robert Caret is promoting formal internship programmes with the downtown incubators, and is looking at the possibility of commercializing research conducted on campus. San Jose State will also be encouraging professors to look into consulting opportunities with the incubator start-ups. The incubation concept seeks to link talent, technology, capital and know-how to leverage entrepreneurial talent, accelerate the development of new companies, and thus speed the commercialisation of new technologies. (Smilor and Gill, 1986) Most universities are generally motivated to implement incubator programme because of a desire to stimulate regional economics and/or to encourage the commercialisation of the university’s own research. (Matkin, 1990) Links between the university and the incubator usually include labs and workshops, student employees, faculty consultants, library resources and technology transfer. Table 2.2 below presents the contributions of university-related services, and assesses their value to incubator clients (Mian, 1996a)

Table 2.2: Contributions of University Related Services

<table>
<thead>
<tr>
<th>Service</th>
<th>No Value</th>
<th>Minor Value</th>
<th>Moderate Value</th>
<th>Major Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>University image</td>
<td>19%</td>
<td>12%</td>
<td>28%</td>
<td>40%</td>
</tr>
<tr>
<td>Labs/workshops/equipment</td>
<td>33%</td>
<td>16%</td>
<td>18%</td>
<td>33%</td>
</tr>
<tr>
<td>Student employees</td>
<td>13%</td>
<td>20%</td>
<td>35%</td>
<td>32%</td>
</tr>
<tr>
<td>Faculty consultants</td>
<td>20%</td>
<td>28%</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>Library resources</td>
<td>19%</td>
<td>26%</td>
<td>29%</td>
<td>26%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service</th>
<th>No Value</th>
<th>Minor Value</th>
<th>Moderate Value</th>
<th>Major Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and training</td>
<td>69%</td>
<td>9%</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>Tech transfer programmes</td>
<td>59%</td>
<td>23%</td>
<td>12%</td>
<td>6%</td>
</tr>
<tr>
<td>Sports and social activities</td>
<td>56%</td>
<td>29%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Mainframe computer</td>
<td>73%</td>
<td>15%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>Related R&amp;D</td>
<td>49%</td>
<td>9%</td>
<td>20%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Source: Mian, S.A., 1996

As of 1996 there were 550 incubators in the United States with a new facility opening every week. About 20 percent, or approximately 100, are technology incubators, and most of
these are sponsored by universities. Roughly half of all technology incubators are located in urban areas and focus on general technology, while 20 percent focus on software and another 20 percent are involved in the medical or biotech industries. The average square footage is 31,000 and most university sponsored technology incubators offer a range of services including management advice, business plan preparation, financing and marketing.

2.2.5 The Incubator Life-Cycle

According to Allen (1988) the incubator is an enterprise with its own developmental life-cycle. The incubator start-up stage commences when the local community begins to consider establishing an incubator and ends once the incubator has reached full occupancy (Ibid). The “business development stage” is marked by an increase in the frequency of interaction between incubator manager and incubatees, stable demand for space within the incubator, and greater support for the incubator within the local community (Ibid).

In Figure 2.1, Smilor (1987) visualises the incubator as a mechanism for re-shaping the way industry, government and academia interrelate.

Fig 2.1: Smilors incubator framework
He describes four distinct benefits to incubatees: (1) development of credibility (2) shortening of the entrepreneurial learning curve, (3) quicker solution of problems, and (4) access to an entrepreneurial network. However, as Hackett and Dilts (2004) point out, this is very much an external account and fails to consider the incubation processes occurring internally.

Allen (1988), examined the development process of business incubators in a study that involved nearly 60 stakeholders working with 12 incubators using a three-stage life cycle model. The first stage, the start-up stage, is characterized as real estate driven and emphasis is placed on preparing the space and locating initial tenants. The second stage, business development, occurs when the facility is on sound financial footings and attention shifts to managing up tenant firms. The third stage, Incubator maturation, is characterized by a sophisticated enterprise support network and demand for additional user space.

A key feature of business incubation is that the tenancy of incubated firms must be limited. For the incubator itself to be sustainable and create space for new firms to join, businesses eventually need to leave. The actual criteria for ‘graduation’ (also known as
“spinning out”) differ across incubators. However, most incubators use one (or both) or two types of criteria according to time or size (Garrity, 2002). Either businesses will be permitted to stay for a set amount of time (typically three years) after which the business is expected to be profitable and self-sustaining, or else, businesses remain in the incubator until they achieve a certain "turnover or number of employees" (Garrity, 2002). Ordinarily the two criteria are used in combination (especially in for-profit incubators), so that businesses are permitted to stay for a maximum three years but move out if they reach a pre-determined size.

Most start-ups graduate within two years from public incubators and within one year from private incubators (Rosenwein, 2000 in Rothaermel and Thursby, 2005: 3) The current research revealed that the maximum tenancy in Jeddah business incubator (JBI) is two years, yet the majority stayed only 6 months (58.3%) and 35.7% stayed for one year.

2.3 Prescriptive Research

The target audience of “prescriptive” literature is identified by Albert and Gaynor as ‘key stakeholders, primarily sponsors and incubator management’ (Albert and Gaynor, 2002). Prescriptive works have focused on highlighting the role incubators play in economic development. The likely features of successful incubators are also explicitly identified in prescriptive studies, as well as management practice and best practice guidelines for informing managers on the best way of running an incubator.

2.3.1 Role of Incubators in Economic Development

Until the recent wave of private sector incubators, the public sector was by far the most active sponsor in the development of incubators. This support for incubators was driven by the belief that they contribute significantly in a cost-effective way to local economic development. Several researchers have published works that illustrate how this economic development can occur (Campbell, 1989; Lyons, 1990).

Campbell and Allen (1987), reviewed literature on incubator development and examined how and why incubators continue as aids for new development and redevelopment
in declining areas, as well as serve as an enhancement to innovation and entrepreneurship through university-related incubators or innovation centres.

Business incubators contribute to the economic development of a country through creation of new companies, increased employment, improvement of industry structure, and transfer of technology owned by universities and research institutions. BI helps to utilise idle space, facilities and manpower, improving profitability and promoting entrepreneurship (OECD, 1997a).

As more business incubators have been established in the U.S., a number of studies evaluating their impact have been completed. In general, these studies examined factors like jobs created by incubators tenants and graduates, product innovation, number of new business starts, success rates of incubator firms, or impact on local development. One difficulty involved in these evaluations is that incubators have been established by both public and private entities, with different objectives. In some cases, the incubator may be linked with a job training programme and designed to provide job opportunities for unemployed individuals. In other cases, the incubator may be linked with a university, providing an opportunity for product development, commercialisation, and employment of highly skilled graduates. Other incubators may have restrictions on the type of firm that may enter. The success of any incubator must be evaluated in relation to its objectives and recognizing mandated operating restrictions.

Incubators have been evaluated in terms of their impact on economic development, more specifically on job creation, firm success, increase in employment and sales, and whether or not the firm locates within the local area after leaving the incubator. Ellen and Weinberg (1988), describe several studies of incubators created in the mid-1980s. A national study of 45 business incubators found an average success rate of almost 2:1, two successful firms for every one failure. And, 84 percent of incubator graduates remained in the local area after leaving the incubator. In a more limited study of 12 Pennsylvania incubators and 56 firms, the average two-year job creation rate was seven employees per incubator. These results suggest that incubators are successful in helping firms start up, but that the overall
impact on the local economy in terms of direct job creation may be small, at least in the short run. Campbell and Allen (1987), discuss the results of several studies that evaluated incubator facilities. These studies provide a descriptive analysis of the incubator, including its sponsorship, the services provided to firms and any subsidies that accompany those services, e.g., below-market rentals, and management features including criteria for screening firms, entry/exit requirements, and guidelines for tenant mix. In most cases, tenant surveys were used to determine the background of the business owner, benefits from tenancy, and local economic impact measured through direct employment and employment growth. Frequently, these economic impacts are limited to number of firms graduated, jobs/incubator, jobs/firm, and job growth from entry to the present. From this review of past research, Campbell and Allen conclude that incubators are long-term strategies for economic development and any evaluation must consider both short- and long-run impacts from a facility. Campbell's study of 13 incubators and 587 firms provides a more detailed evaluation of the impact of incubator firms. The current study found that incubators served primarily start-up enterprises, with about 65 percent of firms entering the incubator with no sales history. The firms were relatively small, averaging 6.8 employees/firm in the incubator and 20 employees/firm for those firms that had graduated from an incubator.

Three-quarters of graduate firms had less than 20 employees. While firm size was relatively small, incubator firms experienced rapid increases in employment, both during and after their stay in the incubator. Employment increased an average of 39 percent for firms from the time of entering the incubator until graduation. Employment increased by 153 percent from entry into the incubator until 1986, including time outside the incubator. As other studies suggest, Campbell found that most firms locate in the local area after graduating from the incubator. About 86 percent of firms located within the same city as the incubator and only one percent of firms chose to locate in another state. These results suggest that the benefits of the incubator tend to remain within the state in which the initial investment is made. An important concern addressed in Campbell's study related to the quality of jobs created by an incubator, not only the quantity of jobs. Quality of jobs, measured by wage rates
and benefits, varies depending upon the objective of the incubator. Average wage rates are likely to be quite different for an incubator focusing on creating jobs for unemployed individuals vs. an incubator associated with a university research facility. Overall, the Campbell study found an average hourly wage of $8.63/hour, in line with national averages. However, wages ranged from $3.71/hour up to $36/hour.

One weakness of the studies conducted to date on incubators has been the lack of consideration of linkages created by incubator firms to the rest of the local and/or state economy and the failure to measure the fiscal impacts of incubator firms. Past studies address direct employment and sales impacts, but do not attempt to quantify the relationship between incubator firms, other local industries, and local/state governments. In recognizing this weakness in a study of Michigan incubators, Lyons (1990) suggests that a detailed evaluation of the impacts of business incubators requires a benefit/cost analysis. The author defines benefits to include facility revenues, jobs created by tenants and graduates, sales, taxes paid, contributions to local charities, the increased survival rate for small businesses, and the multiplier effect of jobs and sales created. The start up, operation, and maintenance costs of the incubator facility along with any public subsidies or services provided would be included in the cost side of the analysis.

Studies dealing with the economic importance of incubators to a local economy have been scarce. However, there are two previously published studies in which the characteristics of incubators were analyzed. The first is a study of the role incubator industries played in the local economy of Westfield, Massachusetts (Armstrong and Mullin, 1984). The study is a result of a survey of the owners of 25 small firms that have been in business for fewer than ten years, manufacture a product, and are doing business in Westfield. The results of this study indicated that these firms are not really typical of what is now being defined as incubators. None of these firms received financial assistance from government sources, most had a customer waiting when they started, and most operate under poor physical conditions. Their employees are primarily recent technical school graduates and family members. It was found that this incubator increased employment in the city, but it did not have a very significant impact on
employment. An important recommendation of this study was that the Chamber of Commerce develops marketing and management training programmes for the incubator.

Another important study of incubators was done by Allen and Rahman (1985). They surveyed 12 Pennsylvania incubator facilities. Of these, eight had unique financing arrangements and eight incubators were provided rental space at below market rates. All incubators did not receive tax, advertising, marketing, computing, and information services. Carroll (1986) concluded that the beneficial economic impact of continuing the incubator project can be categorized as primary and secondary. The primary impact is the initial creation of new jobs and the diversification of the regional economy. Accompanying these new jobs is a higher level of local income and expenditure. From this primary effect on the region flows the secondary result, which is the economic multiplier effect. This impact is in terms of both employment and income expenditure (Carroll, 1986). Brooks (1986) noted that as firms outgrow the economic incubator and its hand-on assistance, they also contribute to the local economy by feeding into the real estate model (Brooks, 1986). Campbell et al. (1985) state that economic development strategists should view the conversion of entrepreneurs' ideas into new businesses as a productive force for local job creation and economic growth. Demuth (1984) points out that private companies often build small business incubators to receive such economic benefits as: (1) the opportunity for profits by investing in new companies, (2) profits from real estate appreciation, and (3) management or franchise fees. Merrifield (1987), concludes that over 200 business incubators have been formed and have contributed to the generation of jobs, new wealth, and tax revenue.

2.3.2 Identifying Features of Successful Incubation Programmes

A business incubator's main goal is to produce successful firms that will leave the programme financially viable and freestanding (Adkins et al., 2002). A large number of studies have tried to identify the features of successful incubation programmes (Smilor, 1987; Lichtmstein, 1992; Mian, 1994a; OECD, 1997). Researchers also offer lists of success factors that contribute to the narrative model of the ideal business incubator. Success factors for
business incubator may differ according to economic, social and cultural differences. There is no single formula for creating a successful business incubator, but several elements are keys to success.

Factors that have an impact on an individual business incubator success can be classified into, internal and external factors. Internal factors are those factors that a particular business incubator has control over. External factors are factors that are outside of the realm of specific individual business incubators' control.

2.3.2.1 Internal Features:

Although it is difficult to provide universal answer to the question "What is successful business incubation," some key components can be identified. These include: Selection of a competent manager and team, establishment of entry and exit criteria of incubator clients, flexible premises with favorable conditions and flexible rental arrangements, Supportive learning environment for both technical and business skills training, dedicated business advice with ready access to specialists, business advisers, mentors and investors, ability to coordinate and access to venture capital and investors, encouragement in networking opportunities (Adkins et al., 2002). Some of the important features for successful incubators will be discussed below:

A) An Experienced and Good Management Team

A successful business incubator depends on the incubator management having the skills, experience and contacts required to help to grow start-up companies. The incubator management team needs to be appropriately compensated (money is not the only aspect, challenge is often important), and to have access to training for upgrading their skills and to "best practice" and "best technology" standards and expertise.

A vital role played by incubator staff is that of "connector" to a wider network of contacts. Therefore a critical requirement of an incubator manager is that he or she is a competent networker adept at liaising with external businesses, organisations and communities and hard-working in this role. The manager is the first "link" between the
incubator and the outside world. He is required to link together research universities, large technology companies, small technology companies, state government, federal government, community leaders, “people to know,” and support groups. ‘The role of incubator management is crucial in ensuring continuing local support and sponsorship, attracting and evaluating prospective tenants, assisting in the development of existing tenants and facilitating the smooth transition of leaving tenants’ (Barrow, 2001)

Greene and Butler (1996), note that “this role, like every other aspect of incubators, varies widely between incubators, but includes a selection of responsibilities such as networking, counseling, providing emotional support, and providing expertise in diverse areas as marketing, business operations, finance, and accounting” (Rice and Abetti, 1993; Smilor and Gill, 1986). Despite the highly “intangible” nature of these qualities it is recommended that incubator managers should possess a high level of educational qualification ‘’Eighty-five (85) percent of all senior incubator managers have a college degree or post-graduate education. (NBIA, 2000)

However, such is the pivotal importance of the incubator management role that if it is badly performed, the negative consequences for the incubated businesses will be significant. It is speculated that government sponsored incubators are more prone to poor management than their private-sector counterparts (Lerner and Haber, 2000). Based on a study of government incubators specialising in the tourism industry, Lerner and Haber, argue that ‘regardless of the size and age of ventures, those obtaining advisory type of assistance from the governmental tourism incubator performed less well than those ventures that did not obtain such support.’ Put simply, Lerner and Haber attributed the poor management and low quality of advice given within government sponsored incubators for this outcome.

B) Entrance and Exit Policies

A good incubator has explicit entrance and exit criteria for clients. The incubator selects high-quality clients, implements proactive and customized programmes to serve them and graduates them into the community. With the exception that they must be (relatively) new,
small to medium sized, and not involved in the retail or restaurant trades, all firms have the
talent to benefit from business incubation. However, some businesses are clearly better
suited than others.

Several scholars pointed out that tenant screening is an important component in the incubation
process (Hackett and Dilts, 2004; Kuratko and LaFollette, 1987; Merrifield, 1987; Mian, 1994a).
Kuratko and LaFollette (1987) concluded that variability in the tenant screening and selection
process may lead to the selection of tenants that are too strong or too weak to be hatched in an
incubator, which in turn may lead to tenant or even incubator failure. Mian (1994a) observes that
most incubators in his dataset screen their tenants on a formal or informal basis and that this tenant
evaluation process provides the necessary expert feedback for improved performance.

Mian (1994a) investigated the screening process more in detail and postulate important
screening factors. Merrifield (1987) described the tenant selection process in a three-step
decision tree. In the first phase, the incubator evaluates the potential tenant on six criteria:
sales profit potential, political and social constraints, growth potential, competitor analysis,
risk distribution and industry restructure. In the second phase the fit between the potential
tenant and the host is evaluated, again on six criteria: capital availability, manufacturing
competence, marketing and distribution, technical support, component and materials
availability and finally management. The combination of the business attractiveness and fit
factors determines the probability of commercial success and thus the potential added value
the tenant has to offer to the incubator. Merrifield (1987) admits that no analytical scheme can
guarantee 100% success, but careful tenant selection can definitely increase the probability of
tenant—and thus incubator—success.

Mian (1994a) analyses the tenant entry policy of six university-sponsored technology
incubators and finds the following elements: technology-based start-up, firms with high
growth potential, strategic business plan developed, qualified management team,
commercializable product/ process/service, existing cash flow stream, manufacturing firm
preference, ability to pay the rent, fit with the university resources/mission, investor’s
commitment. (see appendix G for more information )
C) Linkage and Networking

A good incubation programme is an integral part of a community-wide network aimed at providing financing, services and cultural support for entrepreneurial companies. The incubator should pull stakeholders together and endeavor to build linkages to appropriate knowledge-bases, finance providers, and market channels. Good incubator management values networking and promotes a dynamic community of entrepreneurs, both within and outside its building.

The role of the business incubator is to create a safe place, a microcosm of the best possible entrepreneurial community that can provide a synergy among business, academic, government, and community entities. Institutional alliances facilitate the development of business. All types of alliances are essential to small business success, and incubators pull them together to work as a cohesive unit. (Allen and McCluskey, 1990)

It is possible that an incubator can “fill in” for an entrepreneur’s “impoverished network.” It is worth considering that a network of very similar individuals and companies may be of limited use to an entrepreneur in search of buyers and backers – although it may be useful for the business to be surrounded by similar firms (particularly in the technology sector). However, as Kirby (2004) points out, networking may also take the form of relationships with private and public sector organisations that constitute the “regional support infrastructure.”

Therefore it is essential that incubator units are not “isolated” – ‘when units are not integrated into the local innovation strategy or lack support of the key local enterprise organisations, they become no more than Managed Workspaces, and integration is at the heart of the concept’ (Bennett and Mc Coshan, 1993, cited in Kirby, 2003).

In the development of technology, ‘sharing’ and the development of ‘alliances’ takes on massive importance. This may go as far as joint research and development but certainly most small high technology companies benefit from information sharing (Carayannis et al., 2000). Moreover, these alliances are increasingly likely to bring about seed capital than an
'isolationist' approach (Ibid.) Thus; the role of good management is to facilitate rich networking opportunities both with national and community organisations as well amongst the actual businesses inside the incubator. Indeed, "learning from your peers while you all grow your businesses is a key incubator selling point". (Barrow, 2001) .The atmosphere and awareness of mutual support both from the incubator staff and tenants contributes to better efficiency and success rate (Ibid).

This reported experience of "community" amongst incubated firms is one of the most important, and unique benefits of the incubation process. By placing several new entrepreneurs in the same, supportive, environment several 'intangible' benefits accrue. First, entrepreneurs are able to learn from each other’s successes and mistakes. Second, they are in an 'innovation rich' environment where new ideas are likely to emerge and be encouraged. Third, there should be an atmosphere of mutual support created by the commonality of purpose and circumstance amongst incubatees and are likely to exchange advice and information. Andrew Parkinson, president and chief executive of Peapod says the chief benefit of the incubator was "office space at very cheap rent" and the moral support from other startups. (Quittner, 1999)

Thus, at the "social level" an incubator can be described as a "true entrepreneurial community," shared circumstances, similar attitudes and a determination to "triumph in adversity" added to the professional mentoring by incubator staff leads, hopefully, to a dynamic and supportive environment for new business (Garrity, 2002). There are clear tangible benefits too to the incubator community. According to Sherman and Chappell (1998) some studies show that incubator participants collaborate with one another (one study revealed that 1 out of every 6 incubated firms had partnerships with the other incubatees).

D) Access to Funding

As part of their 'networking' role, incubators are often able to bring together a diverse range of funding resources to provide financial assistance for entrepreneurs. Funding may be public or private and often comes in the form of grants. One of the main benefits of business incubation is
the access to funding it provides. This funding may be direct (i.e. from the incubator itself) or indirect (from the incubator helping incubated businesses seek grants and loans).

In the case of direct funding, the incubator may well have a “revolving loan pool” which is able to give micro-loans (e.g. between £20,000 - £50,000) to incubator tenants. Because the incubated firms have already met the necessary entrance criteria, additional credit assessments (of the type typically required by lending institutions) are not ordinarily required. It is also likely that any loans will be at relatively low (sometimes zero) interest rates. Moreover, funding is often also available to provide small emergency loans for tenants suffering temporary cash-flow difficulties.

In the instance of indirect funding, incubators are often able to provide ‘capital referrals’. This involves incubator management leveraging their network of contacts amongst local banks, investors and venture capitalists and putting together a proper loan/capital package presentation with the tenant. According to the NBIA, 58% of incubators help connect their client companies to investors and strategic partners.

Despite the high value of the funding-access role performed by incubators, this does not prohibit capital-rich SMEs from joining an incubator. The numerous other benefits provided by the incubator make it an attractive tool for business development even amongst firms with ample financing in place. (See appendix C for additional information on funding)

E) Commercialisation and Marketing

A number of stages are necessary for developing innovative products into a commercially successful business: idea; concept testing; feasibility assessment; property rights protection (eg patent); prototyping and production practice; product testing; start up. An important function of incubators is to help firms to go through the whole process of commercialisation in a systematic and fast-track way. Generally, the process can be divided into the first part of technology or product development, and the second part of marketing.

To accomplish the first part, incubators should have strengths in the provision of technological facilities and specialist professional consultation.
On the second part, incubators need marketing professions to assist companies at an early stage. In this era, it is important to understand the global market, not just the local market. Incubators need to be able to provide international marketing and business training programmes and advice.

In addition to training programmes, the services considered the most important when it comes to sales and marketing are: marketing position statement, consumer feedback test, corporate identity package, advertising and placement, access to market information, public relations, and so on. In addition, incubators can hold promotional events for incubated enterprises, such as open house, entrepreneur week, enterprise picnic, cocktail nights etc (Adkins, 1995).

F) Location and Goals

According to the OECD, the areas chosen as incubator sites should ideally provide access to markets for goods and services (as small firms within an incubator stand to benefit from trade and networking with larger companies outside) as well as a degree of business expertise in the surrounding community, diverse financial resources (such as venture capital funds, business angels, banks etc.) and local commitment to the incubator programme. However such ideal conditions will often be lacking, especially as incubators are often established in response to local economic distress. Consequently, prior to setting up a business incubator it may be necessary to improve the local climate for entrepreneurship so as to encourage demand for the services an incubator would provide (OECD, 1999, 9).

In many countries local governments, industry representative bodies and local financial institutions play a role in the financing of business incubators, heightening the significance of the nexus and the local economy (OECD, 1999). For instance, a number of incubators in Italy have become focal points for alliances between leaders from politics, business and trades unions. And in Australia incubators have developed through partnerships involving local, state and commonwealth governments (OECD, 1999, 9).
Incubators will vary between economies and regions depending on the local conditions. The prevailing local circumstances often dictate incubator 'objectives.' They may also dictate success rates and the effectiveness of particular incubators. The economic characteristics of the location in which an incubator is established will greatly affect its operation and usefulness. According to the OECD report (1999: 98) For instance, as Colombo and Delmastro (2002) note, Italian incubators have a higher 'success rate' than many of their UK equivalents because they specialise in providing for New Technology Based Firms (NBTFs) for which there is very little 'infrastructural support' within the local economy but which are able to link with, and sell to, larger local businesses who lack local technology suppliers. In comparison, UK technology incubators are often "clustered" around technology "hubs" (e.g. the Silicon Fen in Cambridgeshire) and do not cater to specific local industries. Although the UK model has significant networking and knowledge-transfer advantages it often lacks an obvious, local, route to market for SME products.

G) Intellectual Property Rights

Intellectual property right protection provides incentives to individuals and firms to undertake innovative research. Governments could work to provide an adequate and functional intellectual property infrastructure to help incubators to commercialize intellectual property.

2.3.2.2 External Features

External conditions for a successful business incubator might include several interlinked key components and can be expressed as, public policy that stimulates business environment conducive to entrepreneurship (entrepreneurial culture) and enterprise creation; Government policy favorable to business development, Linkages to knowledge base, of learning and research, networks of business professionals, Private sector growth, financial
sector, such as equity and debt finance, and public incubator investment. It is believed that all these influence an incubator and make the task more or less difficult.

A) Entrepreneurship, a Culture of Enterprise and Firm Creation

Entrepreneurship (entrepreneurial culture) and enterprise creation refers to creating a business environment conducive to entrepreneurship and enterprise creation in which innovative young firms have scope to expand rapidly. Entrepreneurship refers to an individual’s ability to turn ideas into action. It includes creativity, innovation and risk acceptance, as well as the ability to plan and manage projects in order to achieve objectives. This supports everyone in day-to-day life at home and in society, makes employees more aware of the context of their work and better able to seize opportunities, and provides a foundation for entrepreneurs establishing a social or commercial activity. (Commission Communication, 2006)

Entrepreneurs are agents of change and growth in a market economy and they can act to accelerate the generation, dissemination and application of innovative ideas. Entrepreneurs not only seek out and identify potentially profitable economic opportunities but are also willing to take risks to see if their plans are right. While not all entrepreneurs succeed, a country with a lot of entrepreneurial activity is likely to be constantly generating new or improved products and services, which in turn generate new employment opportunities.

A study carried out by the (OECD, 1998), makes it clear that the subject of entrepreneurship is a complex one and the framing of policy to address it is a complex task. Nurturing entrepreneurship has been increasingly accepted and acknowledged as an instrumental factor driving the emergence and growth of new business (McMullan and Graham, 1986). In a world increasingly characterized by global markets and rapid economic and technological change a strong entrepreneurial culture is essential. Therefore, the creation and expansion of small enterprises is accepted as the most important mechanism for employment growth (Baumol, 1990).
By taking risks and translating ideas into business results, the entrepreneur contributes positively to economic development of the country. Entrepreneurial activity and new firm creation are viewed as engines of economic growth and innovation (Murphy, et al., 1991). The importance of new firm formation for growth has been emphasized since Schumpeter (1934).

According to Petrin (1994) entrepreneurial orientation is based on stimulating local entrepreneurial talent and subsequent growth of indigenous companies. This in turn would create jobs and add economic value to a region, and at the same time it will keep scarce resources within the community.

Furthermore, studies in various parts of the world have indicated that rural enterprises can be an important modernizing agent for small agriculture. Governments have supported this process by creating incentives for agro-industry to invest in such regions. This has not only been in developing countries, but it has also been a clear policy of the European Union (EU) which channels a large part of the total common budget to develop the backward and less developed regions of Europe.

Lyson (1995) identifies the prospects of small-enterprise framework as a possible rural development strategy for economically disadvantaged communities and provides this description of the nature of small-scale flexibly specialized firms: “First, these businesses would provide products for local consumption that are not readily available in the mass market. Second, small-scale technically sophisticated enterprises would be able to fill the niche markets in the national economy that are too small for mass producers. Third, small, craft-based, flexibly specialized enterprises can alter production quickly to exploit changing market conditions.”

B) Education for Entrepreneurship

As a result of the growing interest in entrepreneurship as a driving force to economic development and job creation, policy makers at the macro level have generated and implemented a comprehensive system for venture support. This integrated system consists of
entities such as innovation centres, incubators science parks (McMullan and Long, 1987). Beside these entities, academic institutions such as universities have been singled out to contribute by offering appropriate entrepreneurship education courses and training (Laukkanen, 2000).

The Spring European Council of March 2006 underlined the need for an overall positive entrepreneurial climate and for framework conditions that facilitate and encourage entrepreneurship, and invited Member States to introduce stronger measures, including entrepreneurship education. Following the European Conference in Oslo in October 2006, which presented a wealth of good practice examples, the Commission published the “Oslo Agenda for Entrepreneurship Education in Europe”

Entrepreneurship education should not be confused with general business and economic studies; its goal is to promote creativity, innovation and self-employment, via developing personal attributes and skills that form the basis of an entrepreneurial mindset and behavior (creativity, sense of initiative, risk-taking, autonomy, self-confidence, leadership, team spirit, etc.), raising the awareness of students about self-employment and entrepreneurship as possible career options; and providing specific business skills and knowledge of how to start a company and run it successfully.

Entrepreneurial programmes and modules offer students the tools to think creatively, be an effective problem solver, analyse a business idea objectively, and communicate, network, lead, and evaluate any given project. Students feel more confident about setting up their own business as they can now test their own business ideas in an educational, supportive environment. However, the benefits of entrepreneurship education are not limited to boosting start-ups, innovative ventures and new jobs. Entrepreneurship is a competence for all, helping young people to be more creative and self-confident in whatever they undertake.

The Recommendation of the European Parliament and the Council of 18 December 2006 on Key Competences for Lifelong Learning identifies the “sense of initiative and

11 http://ec.europa.eu/enterprise/entrepreneurship/support_measures/training_education/index.htm)
entrepreneurship" as one of eight key competences that should be put across at all stages of education and training\textsuperscript{12}. Higher education is not isolated from previous levels of education. It should reflect what is done at school. Entrepreneurship is a combination of mindsets, knowledge and skills. As mindsets take shape at an early age, entrepreneurship is something that should be fostered already at school.

Higher education is normally highly decentralized, but there are examples of public policy that drive entrepreneurship, for instance based on cooperation between public administrations and universities. Universities and technical institutions (e.g. polytechnics) should integrate entrepreneurship as an important part of the curriculum, spread across different subjects, and require or encourage students to take entrepreneurship courses.

Special attention should be paid to systematically integrating entrepreneurship training into scientific and technical studies and within technical institutions, to facilitate spin-offs and innovative start-ups, and to help researchers acquire entrepreneurial skills. There needs to be more focus on developing the skills necessary for fully exploiting innovation and knowledge transfer activities in combination with the commercialisation of new technologies.

Academic spin-offs are increasingly seen as important means of enhancing local economic development. However, in their new roles, scientists and universities must build business and managerial competencies.

More generally, students in all fields, including Humanities, Arts and Creative studies, can greatly benefit from learning about gaining experience of entrepreneurship. In fact, entrepreneurial mindsets, knowledge and abilities would be of benefit to young people in all walks of life and in a variety of jobs. At higher education level, the primary purpose of entrepreneurship education should be to develop entrepreneurial capacities and mindsets.

Developing Entrepreneurship Skills in Higher Education\textsuperscript{13} refers primarily to the development of entrepreneurship skills\textsuperscript{13} in students through teaching and learning of and

\textsuperscript{12} Best Procedure** Projects. Final Reports are available at: http://ec.europa.eu/enterprise/entrepreneurship/support_measures/training_education/index.htm

\textsuperscript{13} Entrepreneurship skills include leadership, creativity, marketing/sales, negotiation, administration, time management, self-motivation, financial management and a range of interpersonal skills.
about entrepreneurship¹⁴; and secondarily to the development of entrepreneurial faculties, staff and universities¹⁵. While different the two activities are linked as the teaching of entrepreneurship and requisite entrepreneurial skills requires both knowledgeable staff and innovative pedagogy such as internships or business plan competitions not usually part of the standard university teaching programme.

The current urge to foster entrepreneurship skills teaching and learning in Higher Education curricula and develop ‘Entrepreneurial Universities’ is an expression of more fundamental changes in the tertiary education sector and society at large. On one hand, we need to recognise that employment prospects for university graduates are changing. Long-term public sector employment is decreasing and with an increase in outsourcing many employees are expected to move to self-employment or small to medium size businesses. Moreover, the creation of new knowledge-based or social enterprises is seen as vital to maintaining competitiveness in a globalising world and to address social and environmental issues effectively (Small Business Service, 2005). Miclea (2004) noted that graduates are expected to be job-creators rather than being job-seekers.

On the other hand, universities are recognising their responsibility to provide a useful and relevant educational experience. Responding to external pressures, universities around the world have started to change the way they operate (Clark, 2004: 1). Entrepreneurialism is not (anymore) a concept foreign to academia. There is an increasing interest in co-operating with businesses and industry often leading to the input of private funding to public universities. Like corporations, universities diversify. Many universities have broadened their mission (beyond education and research) to include outreach activities such as community service and knowledge transfer in the form of spin-offs, incubators or enterprises. Although the stimulation of intellectual activity in students through transmission of theoretical knowledge and the advancement of knowledge through research are still important, other aspects are

¹⁴ Entrepreneurship in the broadest sense is defined as “an activity which leads to the creation and management of a new organisation design to pursue a unique, innovative opportunity” (see Higher Education Academy Circular 6, 2004)
¹⁵ The term entrepreneurial university is often used in juxtaposition with traditional university meaning innovative or proactive (see Clark 1998, 2004).
gaining importance such as provision for practical skills and applied knowledge and the direct and indirect contribution of universities to knowledge economies. Providing employability and entrepreneurship skills is a logical progression from this development. A 2003 European University Association survey of heads of European universities reveals that 90% regard the future employability of their graduates as important and 56% as very important aspect impacting on the design of university curricula. As entrepreneurship creates employment, it is not only intrinsically linked but may also be seen as a special form of employability (Moreland, 2004).

C) Academia and Entrepreneurship Education

Formal entrepreneurship education at the university level is relatively young. One of the first courses specifically addressing entrepreneurship was established at the Harvard Business School in 1947 (Volkmann 2004: 178). In the UK the first courses were launched in the 1980s together with the UKs first initiative for Enterprise in Higher Education (Elton 1991, Kirby 1989, Kirby, 2005). Since then entrepreneurship programmes have experienced a global proliferation and it has been suggested that entrepreneurship will become "the major academic discipline for business education in the 21st century" (Volkmann, 2004).

Entrepreneurship programmes differ significantly. Some emphasise theoretical issues, i.e., research into the characteristics of entrepreneurship success, management models and so forth. Other programmes focus on entrepreneurship practice, i.e. the necessary skills such as interpersonal skills, business planning, idea creation, negotiation etc. Accordingly, entrepreneurship is being either taught by academics specializing in entrepreneurship research and/or actual entrepreneurs (often on a part-time basis).

Moreover, while entrepreneurship programmes typically are offered in the business schools, recently different models of entrepreneurship education and training have been emerging. At the University of Limerick (Ireland), for example, entrepreneurship courses are integrated not only in the curriculum of the business school but also in engineering, the humanities, science and educational faculty programmes. At the University of Ulster (NIR)
two introductory e-learning modules on entrepreneurship are integrated in the UG curriculum of nearly all its courses, including engineering and construction/surveying. Other Universities have developed independent entrepreneurial units responsible for training and support of entrepreneurial activities of all students (Anderseck 2004).

Despite the proliferation of entrepreneurship programmes, however, there is (still) considerable debate about the goals of entrepreneurship education – is it to study entrepreneurship? to increase the number of start-ups after graduation? or is it to equip students with the skills, attitude and behavior enabling them to function effectively in the competitive atmosphere of the 21st century and become potentially entrepreneurs?

The latter element of developing students’ skills, self-confidence, and way of thinking and behaving in a confident, independent and pro-active manner has the most value and promise for Higher Education and Built Environment Education in particular. With the challenges facing us in terms of creating high quality, sustainable living environments we need young people who are innovative and enterprising.

Further research has shown that by modifying their curriculum to meet the needs of the labor market, universities are able to cultivate human and social capital with greater skill-sets and they create value-added networks for current students and alumni as well as faculty members (Sager et al., 2006). Universities should move away from their traditional approach and utilize a more constructivist approach which would build their core curriculum around entrepreneurship education (Binks, et al., 2006). Graduates of an entrepreneurship based education would have the relevant skill sets (human and social capital) that would allow them to support and leverage economic development in their local communities and build a sustainable competitive advantage for their region. Schumpeter offered the insight that economic development is a result of entrepreneurship (Schumpeter, 1934); hence, in order to promote economic development universities must provide a service to their region by promoting and sustaining entrepreneurial education.
D) Culture of Enterprise

Policy makers have sought to increase the entrepreneurial capacity of young people. Initially, this was a response to the endemic youth unemployment of the early 1980s (Greene, 2002), but more latterly there has been a concern to bridge the gap between the world of work and education (Straw and Blair, 1991). In this regard, the UK, have initiated a variety of schemes (e.g. School ‘Compacts’, the Technical and Vocational Educational Initiative and Education Business Partnerships) that sought in the 1980s and 1990s to prepare students for work. There have also been schemes, run by voluntary providers such as Young Enterprise, or by the UK government (e.g. Mini Enterprise in Schools Project, Enterprise Awareness in Teacher Education, Education and Enterprise Initiative) that were designed to improve the entrepreneurial awareness of teenagers. The latest iteration of this process is the Davies report (2002) which advocated the compulsory introduction of five days of entrepreneurial learning for secondary level students at a cost of £60 million by 2005/06 (HM Treasury, 2002).

At the post secondary level, there has been a long term concern about the supply of young graduate entrepreneurs (Gibb et al., 1984; Scott and Twomey, 1988). Since the 1980s, then, there have been a number of university based schemes (e.g. Graduate Enterprise Programme, Enterprise in Higher Education and the Science Enterprise Challenge).

There is also an abundance of enterprise schemes designed to specifically help young people to start and run their own businesses. Perhaps the best known examples of such schemes are the Prince’s Trust, Shell Livewire, the New Deal for Young People (UK), Law 44 (Italy), Youth Business Initiative (Australia) and Atlantic Canada. In fact, it is estimated that there are at least 68 major initiatives specifically targeted at young people in Europe (European Commission, 2002). What all of these schemes are designed to do is to increase the entrepreneurial capacity of young people and increase their take up of such options.

There is a general agreement that attitudes towards the entrepreneur, entrepreneurial activity, and its social function are determinant factors for university students to decide an entrepreneurial career. Veciana, et al. (2005) studied the attitudes of university students towards entrepreneurship and enterprise formation amongst students in two places. Results
revealed a positive entrepreneur's image in both samples. Both samples have a favorable perception of desirability of new venture creation, although the perception of feasibility was not very positive and only small and only a small percentage had the firm intention to create new company.

When it comes to the promotion of enterprise, it is important to consider the many influences on young men and women in their decision to start their own business. Collectively these influences make up an "enterprise culture". An enterprise culture has been defined (Gibb, 1988) as "a set of attitudes, values and beliefs operating within a particular community or environment that lead to both "enterprising" behavior and aspiration towards self-employment".

Gibb (1988) has identified three of the most common cultural influences affecting a person's decision to go into business. These are, firstly, parents or relatives - those who have parents or relatives working in a small business are more likely themselves to start their own business. Secondly, previous experience in small business employment - those who have worked in small enterprises as employees are more likely themselves to start their own business. Thirdly, enterprising environments - those young people who work in organisations that allow them a great deal of independence and freedom of operation under conditions of uncertainty are more likely themselves to start their own business.

E) Enterprise-Focused Curriculum and Educational Experiences

The school environment can have a significant influence on the life and career aspirations of young people. Enterprise education and enterprise-focused curriculum and educational experiences that allow young men and women to explore and consider the self-employment option, has become an important part of many education and training institutions around the world. Understanding self-employment as a career option is an important ingredient in them for their movement from school, college or university to the workplace.

There are two general types of enterprise education. The first is learning about business development, administration and management. The second is developing the skills of
enterprise through teaching methods that encourage responsibility, initiative and problem solving. The purpose of enterprise education can vary according to the type and level of education institution involved. In schools, for example, its main objectives are to teach and encourage enterprise to students and to foster their personal development; in higher education institutions, such as colleges and universities, students may be exposed to learning situations, which develop their skills for action planning and implementation to encourage creativity and to develop their skills in time and personal management. (Bailey, 1995)

White and Kenyon (2007) described the different types of enterprise education activities that can be used by schools, colleges and universities. These include:

1) Whole-of-curriculum approach - where enterprise forms a part of every subject affecting all levels of the teaching curriculum.

2) Cross-curriculum approach - also known as "education through enterprise", this approach helps students develop enterprising skills such as risk-taking, initiative, problem solving and possibly encouraging students to start their own business.

3) Enterprise programmes - usually business courses that enable students to plan and manage their own business.

4) An exposure programme, to help teachers better understand the dynamics of small business and appreciate the value of self-employment as a career option;

5) Career information to introduce young men and women as early as possible to the concepts of enterprising behavior and self-employment as a realistic post-school career option.

6) Exposure of successful young entrepreneurs as role models.

7) Development of school and industry links ("industry in the class room"). And

8) Campaigns designed to highlight the success and growth of youth enterprise.

In this regard, technical education has always been the fast track to independence. It involves training in the kind of real skills that the market demands, and is always focused on the desired goal: jobs. But technical education also instills the kind of confidence and self-worth that often inspires an even greater ambition: start your own business.
For many years, technical college graduates have found that their technical training was an excellent foundation for starting their own businesses. Students in fields ranging from healthcare and information technology to welding and graphic design graduate from their programmes and discover that there are customers out there willing to pay for their services. The only obstacle between these technical college graduates and the independent life of a small businessperson is the knowledge needed to develop market and manage a new venture.

That's why, in recent years, Georgia's Technical College System has begun implementing new programmes specifically designed to give ambitious entrepreneurs the knowledge and training they need to launch a new business. These programmes have been designed to quickly give an aspiring entrepreneur training in developing business plans, mapping out marketing strategies, untangling the process of incorporating and understanding tax laws.

For five years, North Georgia Technical College16 has been helping entrepreneurs through its innovative Small Business Resource Centre. North Georgia Tech is one of many technical colleges focusing on entrepreneurship, by teaching students step-by-step how to launch a business, including instruction in determining a market niche for a product or service, exploring financial options and understanding the legal aspects of business. "We help students do all their research, write a business plan and prepare to open their doors," says Fran Chastain, director of the Entrepreneurial Education programme at North Georgia Tech. he adds because of the nature of study at technical colleges, graduates are more likely to open their own businesses. "About 75 percent of my students are straight out of other degree or diploma programmes. About 25 percent come to the entrepreneurial programme because they already know what they want to do, but they need help to develop their plan."

For those students who qualify, the Small Business Resource Centre can also help pinpoint funding through the Mountain Partnership Loan Fund, a federal grant administered by Appalachian Community Enterprises, a non-profit, community-based organisation in Cleveland that awards small loans to entrepreneurs. Many of the programme's graduates have already

16 Georgia Department of Adult and Technical Education(www.dtae.org)
launched businesses, Chastain says, including a dollar store, restaurants, pet store, landscape businesses and computer businesses. The college is also developing a new certificate of credit programme called Small Business Owner/Operator." This second certificate will teach small-business owners more accounting and management skills."

F) Business and Education Linkages

Linkages between educational institutions and industry allows students to explore the opportunities of self-employment through the practical and direct involvement of local businesses. The Graduate Enterprise Programme of the United Kingdom is a national programme targeting final-year undergraduate students of any discipline for a range of training workshops and placement opportunities within local businesses. This programme allows students to learn more about the realities of small business and to explore their own potential for self-employment.

Young Achievement Australia is a non-profit organisation which attempts to bridge the gap between business and education by teaching young people hands-on business skills while they are still in school. Supported by some 600 companies, Young Achievement Australia provides business education programmes to over 14,000 students each year. Between 1977 and 1995, over 70,000 secondary school students had participated in Young Achievement Australia.

Young Achievement Australia runs Business Alive, a curriculum-based enrichment programme teaching senior secondary students about business through the experiences of a "consultant" from a sponsor organisation. Teamed with a teacher, the consultant spends approximately one hour per week with the students over a ten-week period.

Host companies involved in the programme gain an opportunity to forge links with local schools and their students. In addition, these companies benefit by gaining a positive corporate image recognized by the business community, young people and the public in general; and their staff benefit through improved verbal presentation and public speaking skills from their interaction with a group of interested young people.
G) Undergraduate Internships

The notion that business and management education is incomplete until the student has had a chance to experience real life business challenges and acquire practical know-how is well recognized. Such ideas have led to the proliferation of a wide assortment of business internship programmes at universities and colleges. In a recent survey of the College of Business’ internship practices Zigli (1982), found that sixty-eight percent of the respondents acknowledged the existence of internship programmes for business students. The concept of internship as an educational tool is significant in its own right.

However, the effective utilisation of such a tool is a function of the realistic comprehension of the tool’s nature, process, and potential.

Student employment in the university typically falls into one of two categories: working as teaching or research assistants, and working within service units such as libraries or IT departments. Such employment may be considered from perspectives related to economics or to student involvement and success in academic programmes.

With regard to economics, relevant issues have already been pointed out. Student employment in support units, for example, provides benefits to students through employment on campus with minimal overhead in terms of commuting, and employment possibly related to each student's field of study and professional development, which helps students apply theoretical knowledge to practical problems and might also open up opportunities for employment after degree attainment.

Economics are increasingly important to universities, but so is student success. Low drop-out rates and high academic achievement are important factors for student recruitment and for the university's position in the market. Astin (1999) pointed out that part-time student employment on campus is an important factor in involving and retaining students. Students

relying on the institution not only as a source of education but also as a source of income are likely to develop a greater sense of attachment.

Thomas and Busby (2003) discussed the experiences of three stakeholders involved in live projects (live projects are part of an industry and education partnership to provide level 2 students with an opportunity to work with "real life" business problem situations). In particular they examined the expectations and perceptions of industry partners, tutors and students involved in a live project experience at Birmingham College of Food, Tourism and Creative Studies (BCFTCS). From a comparison of these stakeholder perspectives it can be suggested that although a more self-managed approach to student learning is desirable, it is not always achievable with large student groups and time-constrained activities. Despite this, the students appeared to have further developed the desired skills of communication, teamwork, problem solving and research, as well as the personal attributes of greater self-confidence and leadership.

Work-study or internship (WS/I) programmes are designed to give college students an opportunity to complement their formal education with career-related experience. Historically these programmes have been initiated by universities as a formal part of their curriculum, however more and more students and businesses are taking an active role in organizing these beneficial programmes.

In order to compete in today's professional environment, students often need more than just a college degree. The lengthening periods of formal education for growing numbers of young people have changed the work/education pattern. In addition, businesses are putting pressure on schools to better prepare students for the actual requirements of their first position. These factors have created an increasing demand from students and universities for more and better internship experiences.

The Society for Human Resource Management (SHRM) supports work-study and internship programmes because they help prepare students to work effectively in the business world after graduation. Gaining real world experience also helps participants to make more informed career choices which will result in higher job satisfaction and higher productivity.
SHRM developed a guidebook to assist its professional and student chapters to create new internship opportunities and to improve upon existing programmes for the mutual benefit of all participants. The Society's student membership programme is to increase the number of work-study and internship experiences available in human resource management (HRM). A greater number of internship opportunities will result in better placement of HRM graduates, and a higher level of experience and professionalism among these entry-level workers.

H) Conducive Policy Environment for Employment Creation

Policies, institutions and regulations that provide an enabling environment for small enterprise can make a substantial contribution to employment creation. Paula et al. (2003) assessed the policy environment for small enterprises in Tanzania. They concluded that despite small enterprises dominating the enterprise landscape in Tanzania the sector can be characterized as survivalist and providing poor quality employment. This situation is aggravated by the policy and legal framework in which SMEs operate. Similarly, Jennifer (2002) assessed the policy environment in South Africa and noted that inadequate access to finance, lack of skills and poor business conditions remain the primary factors constraining SMEs performance.

The ILO (1999) estimated that, out of a world labor force of 3 billion people, 25 to 30 per cent were underemployed and about 140 million workers were fully unemployed. The ILO further estimated that 60 million young people between the ages of 15 and 25 were in search of work but could not find it then.

The employment situation since then has not changed much: of special social concern still is the severity of youth unemployment worldwide. Youth unemployment still seems to be directly related to the overall unemployment rate which depends on the prevailing economic situation of the country.

Statistics show that the youth unemployment rate in most countries (as well in industrialized, in transition and developing countries) is two or three times higher than the general unemployment, with some notable exceptions in Europe such as in Austria,
Germany, Iceland, Luxembourg, and Switzerland and most recently in Denmark, Ireland and the Netherlands.

In all of the countries having low youth unemployment rates, vocational education and training (VET) is based on vocational schools having close enterprise relations. Some programmes in countries successfully combating youth unemployment are based on enterprise-based apprenticeship training provided by private companies, combined with school based learning and sometime also by technical training provided in schools.

Many developing countries have experienced a significant rise in unemployment among educated workers, principally among holders of university degrees. This worsening unemployment problem appears to be linked to the slowdown of recruitment in the public sector, the principal employer for educated workers in developing countries. A typical example of these countries is Morocco where the unemployment rate among educated workers in 2000 was 27.5%, as opposed to 7.1% among non-educated workers. This deterioration in employment rates is particularly important for workers with Bachelor's degrees, for whom the unemployment rate is currently above 40%.

In their study on the unemployment of educated workers in Morocco, Bougroum and Trachen (1999) argue that the first concern of those workers is to reach a permanent and stable job in the public sector, and that in this desire, they might consider risking long periods of unemployment. Also, Orivel (1995) notices an extreme preference for employment in the public sector in African countries, a fact which results in assigning highly educated workers to non-productive employment in the public sector and then in negligible contributions of education to the economic growth. In addition to job stability, the public sector generally offers higher wages as compared to the private sector, which suggests that the unemployment of educated workers could be equilibrium since some workers rationally, prefer to remain unemployed while waiting for employment in the public sector. A similar argument was advanced by Harris and Todaro (1970) to explain high urban unemployment in developing countries. Because of a substantial wage differential between urban and rural areas, some rural workers choose to migrate to urban areas in search of high-wage employment, which in
turn results in a positive urban unemployment rate. The continuation of such migration in spite of high risk of unemployment constitutes a rational choice on the part of migrants looking to improve their economic situation.

In Egypt, Psacharopoulos and Sanyal (1982) compared student expectations and actual labor market performance. The results indicated that the relative structure of economic rewards is consistent with the operation of the forces of supply and demand. In particular, students' expectations of the labor market are in tune with the actual market conditions. The social demand for different fields of specialisation is closely linked to the expected economic rewards. A strong element of self-selection is in operation. Many students follow highly undesirable subjects (such as agronomy) because of the availability of places. As already documented in other studies, expected or actual unemployment following graduation is of extremely short duration.

Salma M. Al-Lamki (1998) studied the determine barriers to Omanisation (employment of Omani nationals) in the private sector as perceived by the senior graduating students at the Sultan Qaboos University (SQU). Results from the data analysis have shown that over 65 per cent of respondents indicated a work preference in the government (public sector). A significant majority of the students confirmed that obstacles to Omanisation in the private sector exist. All of the 20 items on the questionnaire recorded mean values ranging between moderate (3) and High Degree (4) on a 5-point scale, reflecting a relatively high level of obstruction to Omanisation in the private sector. The most deterring items to Omanisation in the private sector as perceived by the students were related to the compensation and benefits package offered in the private sector. The private sector employees' compensation and benefits package was perceived to be less attractive than that offered in the government (public sector). The lack of information (awareness) about the private sector employment opportunities was also overwhelmingly perceived as a major obstacle to Omanisation in the private sector.
I) Business Academic Links

University, industry and Government have been trying various methods to create an environment for interchange of knowledge and thereby increase productivity and economic growth. Education and research must be geared to relevance, competence, excellence, entrepreneurship and development. Educational institutions must accept extension and public service as a third dimension, in addition to training and research. It is increasingly being advocated that higher educational and research institutions should be involved not only in generating but also in transferring such knowledge to industry and to the society at large. They should act as seedbeds for technological innovation and new industrial ideas.

Traditionally, several mechanisms have been employed to develop closer interactions between academic research and industry, such as, use of university faculty as consultants in industry; research projects in university funded by industry; students hired by industry; visiting professorship filled by industry scientists; advisory committee membership to university faculty; and universities providing special courses to industrial personnel. University spin-off is another form of university-industry interaction; mostly prevalent in the USA. In this case the academic starts his own venture, either taking temporary leave from the university or leaving the job altogether. The spin-off phenomena are relatively frequent in the field of biotechnology and information technology.

The growing intensity of university-industry ties has been one of the most profound organisational changes that shape the work experiences of academic scientists over the past two decades. The ‘triple helix’ thesis (Etzkowitz, 1998; Etzkowitz and Leydesdorff, 2000) argues that the development of closer ties among academia, industry and government represents a new mode of knowledge production that will bring about greater autonomy and flexibility for researchers. It highlights the emergence of a ‘dual cognitive mode’ among academic researchers and the development of a new class of entrepreneurial scientists who focus both on fundamental advances in knowledge and its commercial capitalisation. In contrast, the academic capitalism theory (Slaughter and Leslie, 1997; Croissant et al., 2001) sees the increased emphasis on the economic role of universities as a form of ‘academic
capitalism’ signifying the encroachment of a profit motive into academia. It postulates those closer ties between the two sectors may result in the erosion of academic autonomy. Work role conflicts and the emergence of a precariously integrated knowledge structure dependent on a growing army of non-permanent researchers designed to support flexible industrial projects.

Despite the on-going debate, there have been few detailed empirical studies, on the impact of closer business ties on the work experiences and professional orientations of academic scientists. In general, there is a growing body of research that stresses the importance of careers and human resource linkages to collaboration and knowledge sharing between the scientific and business communities (Lam, 2007; Zucker et al., 2002).

University-industry links and the collaboration of scientists across the two sectors have long been shown to be problematic. This is particularly because of the difficulty of reconciling the divergent work norms and career interests of scientists with the needs of the two different kinds of institutions (David et al., 1999). The sociology of science literature argues that scientists are motivated primarily by recognition awarded by the scientific community for establishing priority in discovery (Merton, 1957; Hagstrom, 1965). The academic career system provides a basis for promotion tournament whereby competition with one’s peers for prestige and promotion acts as a powerful incentive for scientists to do good science (Lazear, 1995; Freeman et al., 2001).

What, then, motivates academic scientists to build links with firms and engage in dual work roles? What are the tensions and career risks inherent in hybrid roles and how might these be reconciled?

Colleges and universities have long been important components to regional economic and workforce growth and development. Academic programme offerings, faculty engagement and consultation, and professional development and support for small business have characterized much of this support. Lately, there has been a growing body of academic research on the role of universities in regional development. Much of which has been primarily concerned with two issues: economic analyses of the direct employment effects associated with staff and student spending in the local economy and technology transfer,
particularly through the creation of spin off companies and the establishment of "industrial" and "science parks" (Goddard, et al., 1994). However, recent research has shown that universities have not as been successful in creating sustainable environments that enhance technology transfer and the commercialisation of intellectual property from the university (Wright et al., 2004). In contrast, research universities have been able to capitalize on generating revenue from their research projects resulting in patents and other methods of technology transfer (Slaughter and Leslie, 1997). Furthermore, as a result of bias that exists in academia, regional universities may be viewed as institutions that repress the growth of human and social capital and they have not been able to capitalize on the large funding models (Wright, et al., 2004).

More recently, the role of universities in regional development has been seen as transcending this narrow technical and economic approach to embrace the role of universities in enhancing human capital within a region. Examples include certificate and degree programmes in entrepreneurship, workshops and seminars, technical and administrative assistance, and resource referral. It also includes recruiting students from outside the region and placing them with local companies through internships, co-ops, and part-time employment; programmes of continuing and professional development to enhance the skills and knowledge base of local managers; embedding international businesses by targeted training programmes and research links. This could provides a gateway to the broader and international knowledge base for small and medium enterprises (SMEs) and provide strategic analysis and leadership within local civic society. The fact that expectations of and opportunities for colleges and universities is rising can be traced to fundamental shifts in the organisation of production and the related regulation of the economy reflected in the processes of globalisation and localisation.

Recently, there has been an increasing emphasis on the generation of commercial outcomes from university-based research. At the policy level, the commercialisation of university research has been viewed as a key driver of national competitiveness, and been consequently supported by a range of initiatives seeking to promote the links between
universities and industry (Henderson et al., 1998; Mowery et al., 2002). Many universities have taken great strides in pushing commercial agendas to generate more financial value from their research, by creating new structures and encouraging entrepreneurial activities (Hackett, 2001a; Phan and Siegel, 2006). Some scholars have suggested that these changes are bringing about an ‘academic revolution’ towards more entrepreneurial universities, in which commercial outputs become the norm rather than an optional side activity (Etzkowitz et al., 2000; Owen-Smith, 2003). However, such a transition is likely to be both painful and difficult to achieve, and at the moment the evidence of universities developing commercial capabilities is mixed (Markman et al., 2005b; Owen-Smith, 2003; Slaughter and Leslie, 1997; Stern, 2004). At its heart, the challenge essentially involves taking an organisation that is equipped for and accustomed to doing one thing (academic research) and at the same time asking it to build a capacity for doing something entirely different (commercialisation of technologies and ideas). The extraordinary challenge here is that universities and their faculty are not simply required to switch from one (single-handed) activity to another, but to develop the simultaneous capacity for two activities (academic rigor and commercialisation). Thus, tensions arise at the level of the organisation as a whole as it strives to manage these two sets of activities at the same time, and also at the level of the individual who has to work out how to balance his or her time between competing demands. As we know from the significant literature on ambidexterity in the wider domain of organisation theory, this dual focus is very hard to manage (Gibson and Birkinshaw, 2004). Much of the research as well as the rhetoric around the ‘entrepreneurial university’ (Etzkowitz, 1998) anticipates research institutions learning to manage these conflicting demands, but reality shows mixed results in terms of adequate university structures and policies as well as career tracks and trainings for individuals. While a considerable stream of research has dealt with the specific results of such a dual focus, such as technology transfer mechanisms and commercialisation practices and the subsequent success and failure of commercial projects (Argyres and Liebeskind, 1998; Markman et al., 2005a; Phan and Siegel, 2006), few researchers have addressed the very roots of this new paradigm.
The tension between academic and commercial demands is more salient at the level of the individual researcher than at the level of the organisation. Universities show evidence of being able to manage the tensions between academic and commercial demands through the creation of dual structures. At the individual level, on the other hand, the tensions are more acute, and people who are accustomed to a traditional academic career are typically less able to deliver commercial outcomes.

J) Commercialisation of University-Driven Research

Universities research commercialisation is the process of converting research into successfully marketed products and industrial processes is improving. The trend for firms to allocate a growing proportion of their R&D investment to university based projects is indicative of the growing linkages between the two sectors. In recent years, there has been increasing public interest in promoting the commercialisation of university-driven research. This has occurred across almost all countries, and also among the various institutional players associated with research and innovation (Goldfarb and Henrekson, 2003). Most universities now have corporate plans that define their missions, identify target markets and specify financial and other performance targets (Gulbrandsen and Smeby, 2005). The trend has been driven by a recognition that research conducted in collaboration with industry can be a potent source of innovation (Chiesa and Piccaluga, 2000; Cohen et al., 2002; Lam, 2005), and by changes in governmental policies and legislation such as the 1980 Bayh-Dole Act in the United States (Henderson et al., 1998; Mowery et al., 2002). Consequently, there is a growing amount of governmental and institutional funding available for public-private R&D projects, and an increasing number of universities are founding structures focused on the commercialisation of scientific discoveries (Phan and Siegel, 2006).

The institutional changes have created tensions between facilitating the diffusion of new knowledge as a public good and controlling its private ownership and value (Argyres and Liebeskind, 1998; Etzkowitz et al., 2000). Indeed, as Etzkowitz (1998, p. 824) argues, "the incorporation of "extension of knowledge" into a compatible relationship with "capitalisation
of knowledge" is a profound normative change in science'. Taken together, the developments have led to several pressure points between academia and the commercial sector (Lockett et al., 2003), at both the organisational and individual level.

It is widely recognized that commercializing academic research is difficult, and the heart of the problem is the inherent tension between academic and commercial demands (West, 2008).

This barrier takes several forms. First, universities and industry are likely to prioritize different research goals. Industry usually focuses on less risky research with direct commercial applicability, while government-funded academic research institutions typically undertake projects with longer time horizons and less predictability (Di Gregorio and Shane, 2003). Second, academia traditionally encourages knowledge dissemination and full disclosure of methods and results, whereas the commercial sector actively seeks ownership and tight control of intellectual property (Arrow, 1962; Kremer, 1998). This may be slowly changing through the emergence of open innovation platforms (Chesbrough, 2003), but many of the underlying tensions remain as West’s (2008) study on the commercialisation of the Shannon Theory demonstrates. Third, and related to the second point, the academic research community is incentivized to publish its breakthrough ideas as quickly and widely as possible, while commercial interests often seek to delay the publication process and keep some findings hidden (Dasgupta and David, 1994; Stern, 2004).

The tensions are no less profound for individual researchers, and it is known from previous research that academic scientists vary significantly in their entrepreneurial involvement (Louis et al., 1989). First, there is a strong intrinsic sense amongst scholars that academic and commercial activities represent fundamentally different and potentially contradictory endeavours (Bercovitz and Feldman, 2003; Owen-Smith, 2003). As Dasgupta and David (1994) recognized, communities of scientific peers shape the definition of what constitutes a valuable avenue for research, and this makes it risky for a scholar to deviate from the social norm of conducting academically rigorous research in order to seek commercial accomplishments (Bercovitz and Feldman, 2003). Second, The dominant reward
system in universities can act as a major cultural barrier to commercialisation of university research. Researchers are more likely to be rewarded on the basis of their publication rate and success in achieving external research grants. Whilst traditional academic publications and conference presentations continue to be important channels for technology transfer and generating awareness of new technology, universities and funding bodies need to have the flexibility to offer options to researchers pursuing commercial lines of work (Markman et al., 2005a). A successful academic career requires significant investment in a specific style of research, paper-writing and network-building, which essentially means little time for pursuing other commercial activities (Stephan and Levin, 1992). Third, most university researchers are not entrepreneurs and they do not want to learn how to become entrepreneurs. They may lack the competence to undertake commercial activities as they require different skills and abilities than purely academic ones (Lockett et al., 2003; Shane, 2002).

However, there are also some researchers who may have the aptitude and taste for entrepreneurship and who might be the best people to commercialise their own inventions. In addition, there may be some reluctance on the part of senior faculty to alter a system that has provided the basis for their own success and recognition (Markides, 2007). The formidable challenge in addressing these tensions, at the organisational or the individual level, lies in the path-dependence of academic and commercial activities. Organisations are products of their administrative heritage (Bartlett and Ghoshal, 1989), and core competences can easily evolve into ‘core rigidities’ (Leonard-Barton, 1992). Similarly, individuals are bound by their experiences and socialized into specific work environments (Adkins, 1995; Floyd and Wooldridge, 1999). This path-dependency tends to reinforce existing patterns of behaviour and make universities, and their staff, resistant to change.

K) Government Policy Favourable to Business Development

Creating a business environment conducive to entrepreneurship and enterprise creation in which innovative young firms have scope to expand rapidly once they have established themselves requires a broad range of mutually reinforcing and supportive policies. Many of
these affect the economy as a whole but impinge importantly on potential entrepreneurs and SMEs. These include sound fiscal and monetary policies, which are essential to provide a basis for a stable macroeconomic environment. They also include structural policies that determine the overall economic framework in which the business sector operates, such as those affecting labor markets, tax design, competition, financial markets and bankruptcy laws (OECD, 2004).

There is considerable evidence that regulatory and administrative burdens can impinge adversely on entrepreneurial activity. Legal entry barriers should obviously be avoided unless their benefits are very clear, since they appear to be associated with less private investment, higher consumer prices and greater corruption. Employment regulation, which the World Bank finds is generally more flexible in advanced countries than in developing economies, limits management flexibility and leads to smaller firm size and less research and development as well as less investment in technology (World Bank study, 2000).

Culture is increasingly acknowledged as a factor which can contribute to building an entrepreneurial society as it is an important determinant of career preferences and helps shape attitudes to risk-taking and reward. Developing an entrepreneurial culture and fostering entrepreneurial attitudes and values has moved high on government agendas. Education and training (including lifelong training) in entrepreneurship and creativity are the preferred instruments for encouraging entrepreneurial behaviour in societies, and evidence suggests that such programmes can have an impact on entrepreneurial activity and enterprise performance. However, in spite of the numerous initiatives launched and implemented in recent years, a number of shortcomings and problems characterise this domain: entrepreneurship is not sufficiently integrated into educational curricula or integrated into national long-term economic strategy and planning; a lack of public resources has resulted in limited teaching and research capability in this field; there is a need to improve co-ordination among government agencies when designing and implementing initiatives; there is a need for a broader acceptance of the concept of
education and training for entrepreneurship; and both more data and more evaluation and assessment of initiatives taken are needed (OECD, 2004).

Entrepreneurship and SME policies also have an important local dimension. Indeed, facilitating increasing rates of enterprise creation is an almost universal concern for local authorities who seek to accelerate development or reverse decline in localities, whether disadvantaged or prosperous. Programmes aimed at reducing social distress and unemployment, including chronic unemployment, have been implemented in many countries (Looney, 2004). New enterprises can procure a range of benefits that contribute to local development, including: rises in employment and incomes; enhanced provision of services for consumers and businesses; and possibly, demonstration and motivational effects. Determinants of rates of enterprise creation at the local level include demographics, unemployment, wealth, the educational and occupational profile of the workforce, the prevalence of other small firms and infrastructure endowment.

Governments often need to go beyond provision of the framework conditions that influence the business environment to address policy and market failures that dampen entrepreneurial activity and limit the scope for innovative small firms to grow. In practice, this requires programmes and support policies for small enterprises which may be complex and involve scarce resources. Many of these programmes and policies are designed and implemented at the local level. To ensure that these programmes are cost effective and well targeted, it is important that they are systematically reviewed, assessed and evaluated.

2.4 Evaluative Literature

2.4.1 Metrics and ‘Benchmarking’

According to ECEDG in Europe (2002), a European Commission initiative, benchmarking is “a practical tool for improving performance by learning from best practices
and the processes by which they are achieved”. In the context of business incubation, this involves the identification of successful incubation environments, an analysis of their practices and characteristics and the development of indicators and measures to describe those practices and characteristics to enhance the quality of provision. There is consequently an increasing demand from stakeholders and policy makers to identify and establish good practice as well as develop ‘benchmarks’ to measure performance and impact. For incubation management teams, benchmarking is also a very important means of identifying strengths and weaknesses, monitoring and comparing their performance against others, and progressively upgrading their performance. Benchmarking is an invaluable tool to help incubation environments make the transition from start-up and early development phases through to achieving a full-service, mature, sustainable business model (Lalkaka, 2001a).

2.4.2 Establishing the Metrics for Incubation Programmes.

There is no clear cut standard to measure incubator performance (Phan et al., 2005). Allen and McCluskey (1990) extract different measures from their literature review: tenant employment, incubator period, tenant success rate, local retention of graduates and added value of incubator services. They evaluate incubator size and occupancy rate, jobs created and firms graduated. Mian’s research (1994a, 1996b, 1997) focuses on university technology business incubators in the US. His 1994 article describes their management, policies and performance, and in 1996 he assesses them by exploring their value added contributions to technology-based start-ups. Mian, (1997) groups incubator assessment research around four approaches in the management literature: (1) goal approach, (2) system resource approach, (3) stakeholder approach, (4) internal process approach. He introduces four dimensions in his assessment framework on the performance of university technology business incubators: (1) programme growth and sustainability, (2) tenant survival and growth, (3) contributions to sponsoring university’s mission and (4) community-related impacts. Also the scope and effectiveness of the facility management policies and the provision of services are assessed. The European Commission (2002) emphasises that survival rates are one indicator of the
performance of incubators but that the extent to which incubators can contribute to the accelerated development of innovative, high-growth firms and their capacity to create new jobs are more important. Lofsten and Lindelof (2002) examine the added value of science parks to tenant performance by employment growth, sales growth and profitability. Bhabra-Remedios and Cornelius (2003) urge for the incorporation of organisational theory concepts in the evaluation of incubators and propose a framework that incorporates both the actors (incubator sponsors, managers and tenants) and the earliest stages of new firm development from idea to start-up. Abetti (2004) bases his performance evaluation research on the elements that Molnar published and evaluates new venture creation, job creation, cost effectiveness, growth and regional unemployment. Ferguson and Olofsson (2004) analyze science park performance based on survival and growth of the tenants compared to non tenant new technology-based firms. Survival is measured as continued legal existence of the firm; growth is based on changes in employment and gross sales. Once the decision is made on which variable(s) will be used to measure incubator performance, the next step is to decide on the unit of comparison that enables the researcher to validate the outcome of the performance measure. Sherman and Chappell (1998) warn that direct comparisons with non-tenants' survival rates may not be meaningful as the use of selection criteria in admitting tenants to the incubator results in a selection bias. Also Phan et al. (2005) argue that the rate of firm survival (or failure) has little construct validity because of endogeneity, since incubators are specifically designed to maintain and increase life span. They suggest comparing survival rates among different incubators: the tenant survival rate.

While considerable progress was made in delineating and categorizing incubators, study of the characteristics of a successful incubator lagged. The earliest attempts to evaluate the performance of incubators had three features. They typically related to inputs; diverging from the evaluation criteria proposed by the earlier writers such as Campbell and Allen (1987), they analysed incubators from the perspective of the incubatees; and they were economic and financial in nature.
There continued to be no model for benchmarking an incubator's effectiveness (Mian, 1997; NBIA, 1993; Bhabra-Rhemedios and Cornelius, 2003). However, Campbell and Allen (1987) proposed the criteria by which to analyse the performance of an incubator. These included the following:

Creation of a responsive business consulting network; participation of financial intermediaries in incubatee capitalisation; the point at which a majority of the residents of an incubator are start-up firms; and synergies, e.g. incubatees doing business with one another such as subcontracting and joint purchasing.

Mian (1996) studied incubatees' perception of the usefulness of specific inputs, including the incubator's image, laboratories and equipment, and technology transfer programmes. As the choice of inputs included in his study suggest, the focus of his attention was on university-sponsored incubators. In other studies, Mian added growth-related measures pertaining to the incubator (rentable space, employment, number of incubatees and graduates), and the performance of incubatees (survival rates, sales, etc.)

Earlier studies (Cambell and Allen, 1987; Allen and Weinburg, 1988 and Cambell et al., 1988) were constrained by the lack of relevant data. They had to rely on incomplete data or make use of proxies. Consequently, their findings were either inconclusive or questioned. These studies tended to look upon incubators as either an economic development tool or a means of commercializing new ideas, and they had the underlying assumption that provision of appropriate amounts of inputs would satisfy the demand. But researchers studying incubators from a management and organisational point of view argued that while the variety and quantities were necessary metrics for benchmark analysis, the efficiency and effectiveness with which they were delivered would also matter in the performance of the incubator and the success of incubatees (Yasin, 2002). Therefore, it was necessary to understand why and how an incubator is successful (Bhabra-Remedios and Cornelius, 2003).

Consequently, performance measures derived from organisation and management were added. It meant that the contribution of an incubator to entrepreneurship and the economy in the form of graduates and jobs was important, goals-related metrics were needed to compare
inter-firm efficiency and get a better sense of factors responsible for success. However, such comparisons would be restricted to incubators pursuing similar goals or, in other words, generally confined to a particular business model. Further, there can be variations in objectives among incubators pursuing the same business model. The system approach is advanced to compensate for problems in the goal-based approach by considering the simultaneous achievement of multiple generic performance aspects. But, this fails to provide an effective performance framework for analysing organisations (Murphy et al., 1996).

There are very few frameworks available in the academic literature for measuring incubator success. In fact, several writers claim it is simply impossible – Bearse (1998), Shearman and Chappel (1998) and Tornatsky et al. (1996) ‘concur that there are no satisfactory benchmarking comparators for evaluating incubators’. There are however several criteria that can be used to evaluate business incubation. These include: (i) survival rates, (ii) the numbers of jobs/firms created, (iii) the public investment required for each job created, (iv) the profitability of the incubator, and (v) the sales and profits performance of tenant firms (OECD, 1999: 11). The NBIA conducts surveys, discussed above, in which feedback from incubator managers identifies the most important measures as: number of (1) jobs created, (2) clients served and (3) companies graduated (Albert and Gaynor, 2001).

Nonetheless, caution must be applied in using “evaluative” tools/data. For instance, as the OECD Report makes clear, ‘it is difficult to gauge the significance of improved survival rates among incubator-resident firms if those firms enter the incubator after a process of selection, ‘in other words, such firms may be unrepresentative: their success may be attributable more to inherent characteristic than to the effect of the incubator’ (OECD, 1999: 11-12).

Moreover, information on non-tenant firms is usually found in sources which exclude early enterprise failures, which complicates the identification of a truly comparable set of firms, while the dynamic effects of incubation on firms might be missed in short-run data sets (OECD, 1999: 90).
Another measure of incubator performance which is often cited is the cost of "public subsidy per job created", however, such estimates are of little use to policy-makers, and may even mislead, if the job would have been created anyway outside the incubator" (Ibid).

Therefore, there exists a strong argument in favour of qualitative and "micro" case studies of incubation programmes. Such studies should be better equipped to assess levels of actual job creation, the performance of firms within incubators against that of similar firms outside of incubators, and the costs of incubation as compared with other measures which might be employed to achieve similar outcomes’ (Ibid). Unfortunately, the lack of systematic evaluation of business incubators is a problem shared all too often with small enterprise support programmes generally. In this regard, a noteworthy and potentially fruitful initiative is the preparation of toolkits by the National Business Incubation Association of the US aimed at facilitating and standardising data collection by incubators so as to provide meaningful statistics for evaluation. Such a measure could be emulated by institutions in other countries representing and/or working closely with the incubation industry (OECD, 1999: 12).

In fairness, trying to measure incubators' success is very difficult. Campbell and Allen (1987), Campbell et al., (1988) made a serious attempt to do so. They studied companies from 60 incubators to determine sales growth and job creation after "graduation," when the companies leave the incubator.

Incubator proponents have tried to quantify their benefits with limited success. In 1997, the NBIA produced a much-publicised study claiming that for every $1 in subsidy, incubators generate nearly $5 in tax revenues and a host of other public benefits. The study, which looked at 50 incubators, was produced with the University of Michigan, Ohio University, the Southern Technology Council, and the economic development administration. Yet the study sheds little light on how the researchers reached their conclusions, mainly because the data presented are incomplete. Besides the $5-for-$1

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18 Sherman and Chappell (1998) note that incubator managers might collect data on control companies by gathering information on "near miss" firms, i.e. firms which for reasons other than eligibility did not enter the incubation programme. (OECD 1999: 12).
return on public investment, the study claimed that the vast majorities (87%) of all incubated companies surveyed were still operating, and 85% were in the same communities in 1996. However, the report does not say how long the companies had been out of the incubators on average, making it difficult to evaluate survival rates or companies' commitment to their towns. Moreover, the researchers mixed graduates with companies that were still in incubators.

The study's claim that incubators produce $5 in taxes for every dollar of public subsidy is also puzzling. The ratio is based on estimated tax revenues generated by 23 companies, not actual taxes paid by companies in the 50 incubators. Even so, few small businesses are profitable in their first few years, so they do not pay much tax. Nor do incubators, because they are mostly non profit entities.

2.4.3 Benchmarking University Incubators

Mian (1997:281) has developed an ‘integrative framework’ for assessing the success or failure of US university incubators. His evaluation criteria can be summarized as:

- **Performance Outcomes:**
  
  Programme growth and sustainability, tenant firm’s survival and growth, new firms created (graduation rate) contributions to sponsoring University’s mission, community-related impacts

- **Effectiveness of Management Policies and Practices**

  Goals, structure, Governance Financing and Capitalisation, Operational Policies, Target Markets,

- **Services and their Value Added**

  Shared incubator services, University related services
2.4.4 Benchmarking non-Profit Incubators

The 2002, European Commission report on publicly funded non-for-profit incubators attempts to develop a methodology for measuring incubator success. The report looked at all the areas which it believed had the potential to be assessed, and in some of these areas established ‘benchmarks’

- Capital Investment and operating costs: The commission decided it was ‘inappropriate’ to assess incubators based on levels of capital investment and operating costs as these are so dependent upon the type of incubator. (e.g. an internet incubator is going to have significantly less capital and operating costs than a bio-tech firm requiring specialist labs and materials.)

- Proportion of revenue dependent on public subsidies: Although the report recognises that funding requirements are affected by conditions in the local economy, a clear objective should be to ‘increase the proportion of operating costs derived from their own activities’ (e.g. rent, advisory services)

- Incubator space/number of tenants: The commission recommends a range of between 2000 square metres and 4000 square metres to achieve economies of scale.

- Length of tenancy: a benchmark of three years is recommended. However, this applies to the ‘average’ incubator, on the other hand ‘specialist’ facilities with longer product development lead times will require more time (e.g. bio-tech, high tech R&D and manufacturing).

- Number of managerial staff Ratio to Staff Tenants: The EC benchmark of 2 managers assumes an average of 20-30 tenants: ‘given that the real added value of incubation lies not in real estate but in the quality, relevance and utility of business advise, the ratio of incubator managers to incubator tenants should not exceed 1:20’ (OECD .2002)
• Proportion of Management Time Advising Clients: According to the survey, the current proportion of management time engaged in advising incubatees is 39%, however, the commission recommends this be increased (over administrative matters).

• Survival Rate of Tenant Firms: The survey revealed that the survival rate of firms reared in an incubator was significantly higher than the business success rate amongst the wider SME community, estimated at 30-50% over a five year period (OECD, 2002). In the survey, there was a ‘notable clustering’ of incubators amongst tenant firms of around 80-90%, where the EC sets its benchmark. However, the report makes clear that survival rates in more high-risk areas (e.g. high tech industry) will be lower. Moreover, survival rate is not the most important indicator of incubator success: ‘of more importance is the extent to which incubators can contribute to the accelerated development of innovative, high-growth firms and their capacity to create new jobs.’ (Ibid)

• Job creation – average jobs per tenant company/new jobs per incubator: Although the EC recognizes job creation as a ‘key objective’ of incubators, setting a benchmark for jobs per firm per incubator would be ‘inappropriate’ because job creation will vary greatly with the type of company/industry (and how labor intensive it is), the amount of tenants an incubator can accommodate and the amount of available space.

• Costs per job: According to the survey, average gross costs per job in incubators are 4,400 Euros (with set up costs and capital amortisation: 6,700 Euros). Rather than set a universal benchmark the EC has established a ‘range’ dependent upon ‘location-specific’ factors.
2.4.5 Conditions for Success: Case Studies

So far the arguments for incubation – that is, the problems that often face SMEs and the "solutions" provided by incubators - have been reviewed. However, in certain instances incubators may not provide the most effective solution to SME needs or else their effectiveness is undermined by internal or external discord and lack of co-ordination. Especially in cases where 'incubator programmes' are being introduced at a national level (especially in developing economies) to tackle specific macro-economic problems or aspirations several, generic, 'conditions' can be separated out that are likely to affect the level of success or 'usefulness' of incubators in their intended context. As the OECD (1999:9) notes, 'notwithstanding the paucity of rigorous impact assessment,' one of the most useful ways of evaluating incubator performance is to assess the 'apparent considerable variation in incubator performance from one country to another'

Description and comparison of key elements of the business incubation landscape in some different countries (U.S.A, China, Brazil, Argentina and Korea) may provide an understanding of the similarities and differences in incubation systems across these countries, as well as the opportunities and challenges inherent in the macro-environmental and institutional environments for new business creation. Hence incubator models in these countries will be reviewed along key dimensions, which include strategic objectives, incubator financing/incubator sponsorship and its impact on strategy, and the incubator's service mix with an emphasis on financial services provided by incubators to client firms. Incubation and the innovation ecosystem in these incubation markets could have relevance not just in cross cultural comparative settings, but also to global incubation in both developed and developing countries, in terms of policy and practice.

2.4.5.1 National Case Study: United States

Background

The institutional structure and maturity of its institution in a country shapes the environment for incubation. At the macro level, new business creation in a market environment,
such as the United States, is facilitated by the presence of well-established institutions of
capitalism, such as an independent and solvent banking system to guarantee such rights, etc.
These institutions serve to reduce friction by lowering transaction costs of doing business. Weak
institutional structures could result in market failures, or gaps in the system that hinder new
business creation. In addition, the availability of capital as well as the structure of financial
markets is a key determinant of growth of fledgling ventures (Guerrera, 2005).

The United States is considered as the “pioneer” in the field of incubation. Hence, it
may be useful to look in detail at the world’s largest and most successful incubation
programme. As stated earlier, the movement of business incubators in U.S.A. started in
1959 in New York City, when a tractor factory of Massey Ferguson closed and the
facilities of the factory were divided in small boxes and rented for start-up companies.
Besides the low price, the companies also could share some types of equipment and
administrative services (REDE INCUBAR, 1994). One decade later, the U.S government
decided to stimulate the creation of new companies in the Silicon Valley using a similar
system to that used by Joseph Mancuso. On that occasion, the government offered legal,
administrative and technical support to new entrepreneurs to start their enterprises.
Making reference to the system used by Mancuso, the U.S government called these
system business incubators (REDE INCUBAR, 1994).

The United States has the oldest and largest incubation system with approximately 1000
incubators, which has evolved into an incubation ecosystem with a plethora of incubator
models, ranging from public to private incubators. Interestingly, a majority of U.S. incubators
operate as non-profit entities and many are university-affiliated.

According to the NBIA (1998) in (NBIA, 2002) the main features of the US programme
showed that 87% of firms graduated are still in business, predominantly in their local
communities, publicly supported incubators create jobs at a cost of approximately $1,100
each, - other public mechanisms often costing much more, for every 50 jobs created by an
incubator client, a further 25 are generated in the community, and finally incubator clients and
graduates have created approximately half a million jobs between 1980 and 1998.
Support Structure and Government Involvement

Support from state economic development agencies as well as capital funds from the state’s legislative allocation, and competitive and matching grants from the state were primary sources of incubator support in the United States (Knopp, 2001). Since a majority of incubators in the United States are run as non-profit entities, they operate under a business model that generates additional revenue from rental income and consulting services. Following the initial preparations, federal such as the US department of Commerce and Economic Development Administration, Department of Housing/Urban development and Regional development authorities are approached. Federal funding is mostly limited to preparation and construction costs and research grants for client companies (Lalkaka, 2002). Thereafter, incubator managers have to look elsewhere for supplementary operational financing which takes considerable time and effort.

According to (NBIA, 2000), 24% were sponsored by the government whereas only 8% is sponsored by venture capital (table 2.4)

Table 2.4: The pattern of US incubator sponsorship

<table>
<thead>
<tr>
<th>SPONSOR</th>
<th>PERCENT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State/Local/Provincial govern</td>
<td>24</td>
</tr>
<tr>
<td>No sponsor (independent)</td>
<td>18</td>
</tr>
<tr>
<td>Economic development group</td>
<td>18</td>
</tr>
<tr>
<td>Educational institution</td>
<td>20</td>
</tr>
<tr>
<td>Venture Capital</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
</tr>
</tbody>
</table>

Source: NBIA (2000)
Type and Location

In terms of location the majority of incubators are in urban (45%), then rural (36%) and suburban (15%). The main focus areas of US incubators are presented in Table 2.5.

Table 2.5: Incubation main focus areas.

<table>
<thead>
<tr>
<th>INCUBATOR FOCUS</th>
<th>PERCENT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed use</td>
<td>43</td>
</tr>
<tr>
<td>Technology and Targeted</td>
<td>34</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>10</td>
</tr>
<tr>
<td>Services</td>
<td>6</td>
</tr>
<tr>
<td>Empowerment and others</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: NBIA (2000)

The average operating costs for a US incubator are $350,000, however that cost is reduced by almost 50% to around $125,000 for a service-based or mixed-use facility (NBIA, 2002).

Services

The service most often in demand in US technology-based incubators is access to external experts (Table 2.6)

Table 2.6: Services available at US incubators. Technologies services (Valid percent responses)

<table>
<thead>
<tr>
<th>Technologies services at US incubators (Valid percent responses)</th>
<th>Yes, direct</th>
<th>Yes, referral</th>
<th>Both</th>
<th>Rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consulting faculty, students</td>
<td>51.9</td>
<td>30.8</td>
<td>13.5</td>
<td>3.8</td>
</tr>
<tr>
<td>Organize access to external facilities</td>
<td>62.7</td>
<td>15.7</td>
<td>17.6</td>
<td>3.9</td>
</tr>
<tr>
<td>Locate key technical staff</td>
<td>27.5</td>
<td>45.1</td>
<td>21.6</td>
<td>5.9</td>
</tr>
<tr>
<td>Use data bases of researchers</td>
<td>46.0</td>
<td>34.0</td>
<td>12.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Finance research and development</td>
<td>27.8</td>
<td>45.1</td>
<td>3.9</td>
<td>23.5</td>
</tr>
</tbody>
</table>

Source: Tornatsky, et al., 1996
In the US (and elsewhere) the operation of many business incubators is overseen by an advisory board comprising representatives of the local business community. Most incubators in the US also have an affiliation with the nearest Small Business Development Centre (established in every State by the federal government’s Small Business Administration) (OECD, 1999: 8-9)

Problems

According to Lalkaka (2002) many US regional (and international) incubators which have attempted variations upon the “Silicon Valley” model of technology-focused US Business Incubation (which is closely associated with universities and business parks) have failed because of:

- Lack of university affiliations
- Lack of entrepreneurial/enterprise culture
- Lack of risk-taking and innovation culture
- Poor business infrastructure
- Insufficiently varied ethnic mix
- Lack of venture capital, legal, accounting and management services.

2.4.5.2 National Case Study: China

Background

Since its beginnings in 1987, the Chinese business incubation programme has become “the largest of its type” in the developing world (Lalkaka, 2001b: 15). Although China has only promoted the creation of small business through the incubation model since the late 1980s, it is the world’s largest emerging market and has had an annual average growth rate of over 10 percent for the last decade (Konana, et al., 2005); it is second only to the United States in terms of number of incubators. There are now more than 500 incubators in China with over 600,000 employed by those incubators (Ma, 2004). China has a well-developed incubation market space,
with the government playing a predominant role in the business of incubation by channelling resources to accord with the government mandate of high technology led economic growth. In China, incubators and incubatees alike depend to a large extent on government funds in an environment marked by a paucity of risk capital.

Support Structure and Government Involvement

The expansion of the Chinese incubator programme has been encouraged by significant subsidies – usually through land and buildings, low-cost or no-cost loans by local state agencies and some on-going operating support (Ma, 2004). The overall investment by the state of China in the incubator programme at the central, provincial and city levels is reportedly over one and a half billion US dollar.

For the first decade of their existence, incubators were ‘initiated, funded and managed by the government based on its strategic priorities, either locally/city S and T commissions or high-technology industrial development zones’ (Ibid). Both sponsors had enormous financial resources.

Currently, the incubators are generally non-profit, state owned entities, sponsored by local affiliations of the ministry of Science and Technology (MoST), and in recent years the Ministry of Education. However, a small number of for-profit corporations have recently made an appearance.

Given the structural barriers in the environment to the creation of private enterprise, coupled with the need to transition effectively to a market system, the Chinese government uses business incubators as policy tools of market creation by offering financial support for them both for construction and operations. The Torch Programme, a part of the Ministry of Science and Technology (MoST), was set up by the Chinese government to support the creation and growth of incubators in China in 1990s, has invested heavily in incubators through its line of “construction funds.”

The Torch Programme Office of MoST is responsible for organising and guiding China’s official technology incubator programme. Provincial, county, municipal and district
Science and Technology Commissions implement the programme in their local jurisdictions, providing land for buildings, low/no cost funding and a variety of tax breaks. Within technology incubators, these tax breaks extend to both incubator and its clients. Moreover, national-level "High Technology Development Zones" also promote technology-based business incubators.

However, according to (Lalkaka, 2003) "exclusive" state sponsorship is now "giving way" to the entry of private corporations into the area.

The visible hand of government has been ubiquitous in the country's economic and political life over the past half century. Business incubators are no exception. Business incubators in China currently have varying levels of government particularly in the southern regions of China, such as Shenzhen and Guangdong (Chandra, and Fealey, 2007). The government has several lines of dedicated funds to support incubation in the form of "construction" funds for incubators, "seed capital" funds for start-ups and "innovation" funds for small and mid-sized ventures that are in the growth phase of their life cycle. In their nascent stages, business incubators in China were mostly supported by the government with a clear mandate for technological advancement and economic development. The government viewed business incubators as a strategic tool for China's transition to a high technology-driven market economy and hence was willing to invest large amounts of resources into these crucibles of entrepreneurship (Harwitt, 2002). The Ministry of Science and Technology made incubator construction a core part of its 10th Five Year Plan (2001-2005), setting aside 50 million Yuan ($6 million) in annual funding for incubator construction. As a result, incubators in China tend to be larger in terms of size and incubating capacity (Scaramuzzi, 2002).

Types and Services

Technology commercialisation has been the objective of most incubators to date (Ibid). According to the Chinese government's Torch programme regulations, priority technologies are:

- New materials
- Environmental and electro-mechanical technologies
Chinese incubators are generally large, with an average size of 10,000 square metres and provide large-scale physical facilities like conference rooms and exhibition rooms. They generally tend to give priority to physical facilities at the expense of business services (Lalkaka, 2003).

Universities have always had strong links to Chinese incubators. The majority of incubates are "spin offs" from University projects, research institutes and state-owned enterprises. In terms of ownership (of patents and collection of royalties) this usually stays with the parent institution (e.g. University) which also provides the finance for the incubatee. However, once again, in recent years there has been a marked increase in the number of privately-owned tenants/incubatees, which must raise their financial backing from their own sources.

With massive state support behind it, the Chinese programme continues to evolve. There is also a slow but steady movement towards profit-orientation and private sector funding. However, as Lalkaka (2003) also comments, there are no credible evaluation procedures of incubator effectiveness in China. This not only makes research difficult for the academic, but may fundamentally undermine incubator performance through a failure to evaluate consistently and benchmark operations.

An incubation variant pioneered in China is the International Business Incubator (IBI). Opening in 1986, the IBI programme was designed by the Business and Technology Development Strategies, New York and the TORCH project. Eight existing incubators were converted into IBIs, (Beijing-Fengtai, Tianjin, Shanghai, Suzhou, Wuhan and Xi-an, Chengdu and Chongqing). The IBIs provide high levels of support and modern facilities to international technology based companies and Chinese scholars now overseas. Moreover, they provide support to local companies in their efforts to export their products, services and
technology as well as to enhance their competitiveness abroad. (See appendix D for other national case studies)

Conclusions

An incubator is a business process and not just mere facilities and office space provided to entrepreneurs. Although definitions vary it has been agreed that the major quality that distinguishes a business incubator from other types of business facilities designed to help young business in their survival is the responsibility an incubator assumes for the future of the business as well as a high degree of integration of the incubated firm with the incubator. This is reflected in an entry policy that characterises incubators.

It is important to bear in mind the fact that there exist many different incubator models, from general incubators to highly specific ones, from privately sponsored to publicly sponsored, from property development ones to university affiliated ones.

The role of incubators is, generally speaking, three fold:

- To create jobs.
- To diversify economies.
- To commercialise and disperse innovation.

In order to achieve these goals certain measurable conditions must be met:

- Surplus of qualified manpower.
- Demand for incubator services and a certain competitive edge of the incubation programme (e.g. Italian technology incubators),
- Availability of side services (such as access to professional services, i.e. law, accounting, etc.),
- Availability of funding – i.e. banks, private equity, business angels, state-sponsored funding,
- Availability of businesses that can offer services to the incubated firms or become their clients or collaborators.
There are several external and internal factors that have an impact on an individual business incubator. External factors are those outside the realm of individual business incubators’ control. It includes; the level of policy co-ordination, support and stability, the prevailing environmental and business conditions and physical demand all interact to significantly affect the likelihood of an incubator programme’s success. Several external salient conditions affecting the successful introduction of incubators emerged from the literature:

- The overall level of support (financial, technical) provided by outside organisations
- Level of co-ordination between support organisations, especially between public and private sectors.
- Suitability to local needs, skill levels and resources
- Prevailing entrepreneurial/business culture and conditions
- General availability of finance/credit

Internal factors are those factors that a particular business incubator has control over, some of these would be the followings:

1) Management that develops and orchestrates business, marketing and management resources and relationship tailored by the needs of business clients.

Three qualities are required from incubator staff:

- High level of expertise and business acumen.
- A large network of relevant business contacts, especially in the local community.
- Readiness and ability to coach and mentor the incubated firms both at regular intervals as well as on demand.

2) Shared services, training, technology support and equipment.

3) Selection of clients..

4) Assistance in obtaining the financing necessary for business growth,

5) Office and / or workshop/laboratory rooms for lease on flexible terms
6) Access to internal and external networks.

The literature stresses the ambiguity of the process benchmarking and measuring the performance of business incubators. Generally speaking, the following are some criteria to assess the performance of incubators are:

- Level of actual job creation.
- Performance of incubated firms against unincubated ones.
- Cost of incubation in comparison to other available measures.

As Hoeser points out a difficult business environment hinders the growth of incubators and is a double edged sword: ‘while it may lead to a lower number of new companies and higher mortality rates, the very reason for the incubators’ existence is to help entrepreneurs get started in difficult contexts’ (Hoeser 2003: 20).

The success of incubators depends on all of the aforementioned factors, and many lessons have been learned worldwide so far. Many of them can be applied to incubators in Saudi Arabia. Some aspects, however, require specific attention, such as, knowledge of the basic socioeconomic factors that contribute to successful creation of business incubators under Saudi environment. There are certainly some specific constraints that hinder success of incubator projects for each specific country. In each country there is one key constraint that dominates the attention and concern of project managers. In most of the developing countries, this constraint is funding. Since they lack a large and liquid venture capital industry, incubator projects find it exceedingly difficult to find outside funding so that they can leave the incubator and launch their businesses. It is expected that this problem is of minor importance in Saudi Arabia because of the relatively strong economy. The Saudi economy benefits from strong support from the government and free market policy, both of which have contributed to the growth of the economy. Nonetheless this remains to be tested in reality.

Interviews with some of the SMES policy makers and experts in the country (Focus groups) could shed light on these and on other issues of concern. Also surveys targeting Saudi SMEs, business science students and University academics could also furnish
additional information on this subject. It is hoped that conclusive indicators could be drawn from the case study.

Generally, incubator processes seem to follow, consciously or unconsciously, those prevalent in the USA, where the incubation idea was born. Yet, American culture is in many ways a special case, with, for instance, individualism far more pronounced than in most other countries, especially developing economies. Due to these differences it is thought necessary to investigate the specific local socioeconomic conditions prevailing in the Kingdom and to test their suitability for introduction if a wide-scale business incubation projects.

Furthermore, a future task for researchers is to devise instruments to separate out and measure these factors that can then be applied – deductively – to the Saudi economy in the hope of gaining some measure for the overall “conditions” that will affect incubator success.

There is evidence that incubator initiatives help promising entrepreneurs launch their business and succeed. However, incubators still do not exist in most developing countries, especially where they could make the most dramatic difference in the development equation. Therefore, an overview of the status and development perspectives of the incubator industry, with a special focus on the needs and challenges observed in other developing countries, would be very useful for setting the stage for launching incubation programme in the Kingdom. To achieve this task, the various sectors mostly affected by introduction of incubation programmes were targeted in this study. Chief among these sectors are the SMEs who usually represents the major focus of incubation programmes, next comes the university business students and finally comes the university academics, both are expected to contribute to business incubation programmes, especially university business incubation.
CHAPTER 3 – RESEARCH GOALS AND METHODOLOGY

3.1 Introduction

Recently, several countries in different parts of the world have increasingly been engaged in establishing business incubators, which are considered as an attractive framework for dealing with the various difficulties hindering the achievement of economic growth. Knowledge about the basic socioeconomic factors that contribute to successful creation of business incubator is lacking in Saudi Arabia. There is only limited information and previous research is scant on this subject. This research aims to find out two things:

First, it seeks, through review of business incubator’s experiences worldwide to establish a set of politico-economic conditions under which business incubators are likely to be successful, i.e. to explore the necessary conditions for successful business incubation. For instance, the macro economic conditions, micro economic conditions, the political environment, the levels of government and non-governmental support, the levels of coordination between interested agencies, the relationship between business, science and academia, and the salient cultural context. These “general properties” were obtained through analysis of secondary data and comparing success and failure series in different settings.

Second, the factors and conditions necessary for business incubation success has been examined in the Saudi context.

As shown in (Chapter 2, Chapter 4), incubators are increasingly seen at a political and academic level as a viable approach to the Kingdom’s drive towards greater economic diversification and private sector expansion, with the aim of addressing the interacting problems of population expansion and high unemployment rate. But are the politico-economic conditions actually in place to support incubators? What are the conditions which may affect the success of incubators? In addition, the basic characteristic of the early phase of Saudi experience in business incubation was investigated. To achieve this task, information on Jeddah business incubator was collected through face to face interviews and questionnaires.
The researcher collected (primary) data in order to address these questions - and has put forward some policy recommendations as to the likely course and level of success of incubation development in Saudi Arabia.

The purpose of this chapter is to set out how the research was undertaken.

3.2 Justification

The situation in Saudi Arabia is of particular importance for Business Incubator research. First, the country launched its first incubator in 2005, allowing a unique opportunity to study its initial impact. Secondly, the purpose behind the introduction of Saudi Business Incubators is explicitly concerned with promoting the survival of SMEs, which makes it easier to measure subsequent levels of incubator success. Thirdly, the connection between incubators and SMEs is directly related to the promotion of specific Saudi socio-economic objectives, namely: job creation, economic diversification, and technological innovation. Finally, as the economically and politically dominant member of the Gulf Co-Operation Council (GCC)\(^{19}\), it is likely that the success or failure of incubators in Saudi Arabia will impact other GCC states which have similar socio-economic structures (and problems)\(^{20}\).

As stated, the primary objective of this research is to investigate whether the necessary conditions for the successful introduction of wide-scale business incubation projects exist in Saudi Arabia. It was the researcher’s intention to arrive at some form of objective knowledge about the optimal conditions for business incubation which takes into account the general conditions necessary for successful incubator development and apply them to Saudi Arabia.

Once the general conditions were identified (Chapter 2), they were applied to the prevailing socio-economic situation in Saudi Arabia.

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\(^{19}\) The GCC is made up of the gulf states: United Arab Emirates, The State of Qatar, The State of Oman, Kuwait, Bahrain and Saudi Arabia. A Customs Union has been in place since 2003 allowing freedom of trade, capital and labour. Currency union is scheduled for 2010.

\(^{20}\) Although it is not the intention of this research to influence policy, a research study does not have to be deliberately policy-focused for the findings to have relevance for policy. Indeed, as Finch argues, it is almost impossible to engage in social or economic research that is not in some way policy-orientated (cited in Clarke, 2001: 28). Certainly, incubators are a politically salient issue within the Saudi Ministries of Planning and Finance, as well as being promoted heavily by several key academics (e.g. Nabil Shalaby) and the Saudi Chambers of Commerce. Therefore, the researcher acknowledges, and welcomes, the opportunity for this thesis to add to the body of knowledge currently shaping the "incubator debate" in Saudi Arabia.
3.3 Strategy of Inquiry and Analysis

Inductive analysis involves ‘discovering patterns, themes, and categories in one’s data’ (Patton 2002: 453); findings emerge out of the data – through the researcher/analysis interaction with the data. By contrast, in inductive analysis data is analysed according to an existing framework. It is often the case that quantitative data is analysed to examine deductively established hypotheses, whereas qualitative data is useful in the induction process at the early stages of inquiry.

“Grounded theory” emphasises immersion in the data, being ‘grounded’, so that deeper meanings and relationships may emerge (Patton 2002). This strategy involves establishing patterns, themes and categories inductively before a final stage of deductive inquiry that tests the inductive analysis, with particular attention paid to data that does not fit the categories or themes in the inductively generated hypotheses. Grounded theory then involves both inductive and deductive processes, ‘at the heart of theorizing lies the interplay of making inductions (deriving concepts, their properties, and dimensions from data) and deductions (hypothesizing about the relationships between concepts)’ (Strauss and Corbin 1988:22 in Patton 2002: 454).

In contrast to grounded theory, Analytic Induction begins with an analyst’s “deduced propositions” or “theory driven hypotheses”; it provides a way of verifying theories and propositions using data. With analytic induction, data is first deductive, or quasi-deductive (Patton 2002) and becomes inductive when the analyst begins by examining the data in terms of theory-derived concepts. As Hoyle et al (2001: 416) have stated, ‘in practice, no one works either purely inductively or purely deductively.’

In this investigation, inquiry moved between the two approaches. In the first part, research was centred around secondary data, in order to establish a set of general conditions/measures that can be applied to national incubator programmes to assess their likelihood of success. This deductive part was taken because at present there are no general hypotheses within the literature on the socio-politico conditions necessary for incubator success. Moreover given that Saudi
Arabia has only one incubator, some form of international comparative analysis is the most appropriate way of measuring its effectiveness.

Once these theoretical conditions/measures were established, the second part of the investigation involved the collection of primary data which was deductively analysed to test these conditions. The primary data collection process was divided into three steps using (1) focus groups, (2) questionnaire surveys and (3) a case study. Using these qualitative and quantitative techniques, the findings in each data set were checked, i.e. triangulated, against the other. Therefore, an important purpose of the focus groups was not only to collect data on deductive theoretical categories and themes, but also to highlight anything that the theory may have elided, or data that 'doesn't fit' before the design of the questionnaire surveys. The third step, the case study, is the final stage in the "deductive-inductive-deductive" process. Through ongoing data analysis of the focus groups and survey responses it should then be possible to know whether the necessary conditions are, or are not, present in Saudi Arabia. When conducting the case study phase the researcher will once again be looking for data that 'does not fit' and should it emerge, will inductively pursue new avenues of enquiry that might account for variations in the incubator's performance.

3.4 Sources of Data

3.4.1 Primary Data

Primary data is collected and used by the researcher for a particular purpose; Ghauri and Gronhaug (2002, 76) define primary data as 'original data collected by us for the research problem at hand'. The means of collecting primary data are experiments, observations and communications and the latter includes questionnaire surveys and interviews. Advantages of primary data include consistency with respect to research objectives and questions (Ghauri and Gronhaug, 2002) as well as seeking information from persons involved in a particular issue or event. The disadvantages of primary data are requirement of time, money and resources, difficulty in finding the right respondents and complete dependence on them, need for right procedures, tools and methods for data
collection and lack of researcher's "full control" over data collection (Ghauri and Gronhaug, 2002).

3.4.2 Secondary Data

Ghauri and Gronhaug (2002, 76) have defined secondary data as 'information collected by others for purposes which can be different from ours'. There are several sources and types of secondary data, and the researcher has to locate and identify data that suits his/her research requirements. According to Ghauri and Gronhaug (2002), secondary data can be obtained from multiple sources which include central and local governments and their allied agencies, universities, research institutes, corporations, consulting organisations, academic and organisational journals and newsletters, books, commercial companies, internet and websites as well as reports written by students. The advantages of using secondary data include saving of time and money; help in answering, solving and formulating research questions and problems; making decisions regarding fitness of particular research methods for particular research problems; and providing benchmarking measures and findings for comparisons (Ghauri and Gronhaug, 2002).

According to Churchill (1999), one should start with secondary data and when it exhausts and provides reduced returns, one may proceed with primary data. The disadvantages of secondary data include different purpose and definitions, under which secondary data is collected, therefore, the researcher has to be careful in using secondary data particularly the source of secondary data may be explored; definitions, accuracy and consistency should be checked (Ghauri and Gronhaug, 2002). It has therefore been suggested that 'some research questions can be better answered by combining secondary and primary data' (Ghauri and Gronhaug, 2002: 78).

3.4.3 The application of primary and secondary data in the research

In this research, secondary data was used in three ways. First, to establish the theoretical conditions necessary to support an incubator programme. In this instance, case
studies of previous incubator projects were subjected to comparative analysis (see Chapter 2). Then, once the researcher knew "what to test for", secondary data was acquired to ascertain the current macro economic and political conditions prevailing in Saudi Arabia (see Chapter 4); data was collected from the following sources in order to ascertain the prevalent macro socio-economic indicators within the Kingdom:

- SAMA – Saudi Arabian Monetary Agency
- SAGIA – Saudi Arabian General Investment Authority
- Saudi Ministry of Planning
- Saudi Ministry of Finance
- Saudi Ministry of Labor
- Saudi Chambers of Commerce
- Ministry of Municipal and Rural Affairs

Levels of employment, skills, education and training were quantified, by the previous sources, as were broader economic indicators like GDP and per capita income. The comparative positions of various productive sectors were analysed. However, of most importance was data relating to the breakdown of SME types of activity, (e.g. rates of 'turbulence’ and growth.) This data was exclusively collected from the Ministry of Municipal and Rural Affairs.

Data from the Ministry of Municipal and Rural Affairs helped the researcher "target" cases for questionnaire survey, by providing the researcher with a sampling frame of Riyadh-based SMEs. The data analysed from the comparative case studies led the researcher to seek out the salient individuals when it comes to key decision makers and opinion leaders in the incubation debate (e.g. academics, government departments etc.) As Simmons (2001: 87) put it, the ‘researcher generally needs information about the target population’ in advance of the study in order to obtain his/her sample and develop survey questions that are appropriate for the recipients. Therefore secondary data also led to the sampling of primary sources²¹.

²¹ For instance, the number and types of SMEs interviewed will be determined by data supplied by the Saudi Chamber of Commerce.
Although the sample for the focus groups (see Appendix E) was “targeted” according to the patterns suggested by the secondary data, the researcher also had access to senior representatives from the following institutions:

- Riyadh Chamber of Commerce: SME Support Unit
- Council of Saudi Chamber of Commerce
- Kingdom of Saudi Arabia Centenary Fund
- Abdulatif Jameel Community Service Fund
- SAGIA – Saudi Arabian General Investment Authority
- Ministry of Municipal and Rural Affairs
- Ministry of Labor - Human Resource Development Fund
- Ministry of Commerce and Industry
- General Institution of Technical Education and Training
- Saudi Ministry of Planning
- Saudi Credit Bank
- Directors of the King Farad University for Petroleum and Minerals (KFUPM) Research Centre, Students and academics

Primary data was used in two ways. Firstly, it was used, where possible, to check against the secondary data gathered on Saudi economic and political conditions (i.e. did the experiences of respondents tally with the official statistics?). Secondly, and most importantly, data gathered “on the ground” (from incubatees, policy-makers, SMEs, academics, students etc) in Saudi Arabia was used to establish what the current set of politico-economic conditions actually are in Saudi Arabia. These conditions, as identified in the literature review, included:

- Macro economic conditions: Gross Domestic product, Industrial infrastructure, Export markets, Employment levels, Education and Skill levels, Economic Diversification, Research and Development spending.
• Microeconomic conditions: Business and legislative environment, number of businesses, urbanisation and level of regional integration, regional specialisms in knowledge and skills.
• Levels of Government support and political situation.
• Non-governmental support organizations.
• Level of co-ordination amongst policy makers and support organizations.
• Relationship between business, science and academic research.
• Specific cultural factors.

3.5 Research Methods

In collecting primary data for deductive business research, there are several methods of inquiry. Indeed, when testing for the broad range of indicators involved in this research, it was prudent to consider the full array of methodological approaches available to the researcher, together with their advantages and disadvantages. These methods can be divided broadly into two categories: qualitative methods and quantitative methods. (For more details see appendix E)

3.6 The Research Design: A Step-Wise Approach

When it comes to researching small firms (and, by extension, the incubators that nurture them) 'it would seem' as Sue and Kirby put it, 'that a combination of research methods' is most appropriate (Siu and Kirby, 1999). The decision to be made was not necessarily a straight one between "quantitative" and "qualitative" but about developing a research design which is appropriate for the issue under investigation' (Kirby, 1995 in Siu and Kirby, 1999: 136). In order to enhance the internal validity of this research, the methodological approach of the researcher was to 'use multiple measures of the same phenomenon' (Neuman, 2003: 138). This involved a combination of qualitative and quantitative data gathering. The advantages, disadvantages and distinct features of both can be illustrated as follows:
Table 3.4: Quantitative vs. Qualitative Methods

<table>
<thead>
<tr>
<th>QUANTITATIVE RESEARCH</th>
<th>QUALITATIVE RESEARCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test hypothesis that the research begins with.</td>
<td>Capture and discover meaning once the researcher becomes immersed in the data.</td>
</tr>
<tr>
<td>Concepts are in the form of distinct variables</td>
<td>Concepts are in the form of themes, motifs, generalisations, and taxonomies</td>
</tr>
<tr>
<td>Measures are systematically created before data collection and are standardized.</td>
<td>Measures are created in an ad hoc manner and are often specific to the individual setting or researcher.</td>
</tr>
<tr>
<td>Data are in the form of numbers from precise measurement.</td>
<td>Data are in the form of words and images from documents, observations, and transcripts.</td>
</tr>
<tr>
<td>Theory is largely causal and is deductive.</td>
<td>Theory can be causal or non-causal and is often inductive.</td>
</tr>
<tr>
<td>Procedures are standard, and replication is assumed.</td>
<td>Research procedures are particular, and replication is very rare.</td>
</tr>
<tr>
<td>Analysis proceeds by using statistics, tables, or charts and discussing how what they show relates to hypothesis.</td>
<td>Analysis proceeds by extracting themes or generalisations from evidence and organizing data to present a coherent, consistent picture.</td>
</tr>
</tbody>
</table>

Source: Neuman, 2003: 145

The popularity of qualitative research is generally high, and this has led to a growth of interest in the combination of qualitative and quantitative techniques (Bryman, 1988 in Hammersely and Atkinson, 1995: 2). Davis et al (1985) (cited in Siu and Kirby, 1999) argue that conducting small firm research is a difficult and demanding task, 'as small firms are notorious for their lack of attention to keeping complete and accurate records and for their reluctance to divulge information about their business.' To get around these problems, they suggest the use of "co-ordinated research programmes" (otherwise known as a "stream of research" approach) whereby each study is designed to build upon what has been learned in previous studies 'in order to make an incremental contribution to the established knowledge base' (Ibid.). The specific model advanced by Davis et al is the initial use of small scale case studies, followed by small scale 'exploratory' studies, followed by large scale exploratory studies, and finally controlled field studies (Ibid.).
Siu and Kirby (1999) advocate the adoption of a 'stepwise' approach that follows a co-ordinated research programme adjusted in accordance with the situational factors (that is a contingency approach). This approach is incremental and builds upon what has been learned at a previous stage – to make an incremental contribution to the 'established knowledge base', but is also contingent upon 'environmental variables'.

Following Siu and Kirby’s model, an 'incremental' strategy was used in the collection of primary data. This comprised: (1) a focus group, (2) a questionnaire survey and (3) in-depth, unstructured interviews based around a case-study (fig 3.1). The triangulation of these approaches has several advantages. The use of an interview alongside the questionnaire gives additional information and aids the analysis of the major issues involved in the development of incubator projects in the organisations selected. These multiple measures enhance the internal validity of the research: makes it easier to see the correlations and disjunctures between the three. Should there be low correlation then the researcher knows that the internal validity of his/her research has been potentially compromised. This incremental approach also allows data to be analysed as the study progresses, it becomes possible to alter deductively the questions and objects of inquiry if new areas of interest emerge.

\[\text{Certainly, the chief 'environmental variable' in the current research design is the status of the Eastern Province incubator, scheduled for completion in 2006.}\]
Step One: Qualitative Data: Focus Groups

The advantage of this first step is that it efficiently extracts the salient themes and paths of investigation – including those overlooked by the researcher or not covered in the literature that tackled incubators in Saudi Arabia. Once the researcher refined the specific research areas (and 'measures'), it became possible to proceed to the next steps, in this case surveys and interviews.

As the first stage in the primary research, focus groups were used to canvas and explore the opinions of various "experts." Many of these experts also occupy key decision-making
roles when it comes to the implementation and funding of Saudi incubator programmes. As for future prospects, and economic 'needs' for incubators (and therefore the conditions for their success), the study focused upon 'experts' and policy-makers within organisations that are likely to play a decisive role in introducing and supporting their implementation at a national level. Moreover, many Saudi academic experts interact with policy-makers (via direct consulting, conferences and journal publications) to 'set the agenda' for the introduction of incubators in the kingdom.

In these focus groups the objective was to elicit information around these themes:

- The perceived problems currently facing Saudi SMEs
- The specific macro-economic 'development' role envisaged for incubators
- The current level of support for incubators
- The degree of co-ordination among SME support organisations
- The nature of the relationship between science, business, technology, education and government and future prospects of such relationship

The initial sampling procedure was non-probability purposive sampling. Respondents were selected according to their association with agencies and organisations, that directly impact the development of SMEs and incubators in Saudi Arabia. These respondents were also asked to recommend other useful individuals or organisations that might be willing to participate; (i.e. snowball sampling) the researcher had access to senior representatives from the following organisations:

- Riyadh Chamber of Commerce: SME Support Unit.
  The SME support units of the Riyadh Chambers of Commerce are the main instruments of support for SMEs in Saudi Arabia. Their primary role is to co-ordinate with all, government and non-governmental, institutions to implement the 'best strategies to develop SMEs' (SME Support Unit Website)
- Council of Saudi Chamber of Commerce.
The council was established to represent interests of all chambers of commerce within Saudi Arabia at national and international levels. As a coordinating and representative body, the council assumes the role of forwarding the needs of the private sector to government organisations as well as organising private sector support projects throughout the country. The council is ‘considered as the channel where drives towards the private sector are being united, an instrument which oversees its ambitions and an institution which pursues realisation of those ambitions within the national economy’ (Council of Saudi Chamber of Commerce website, 2005)

- **Kingdom of Saudi Arabia Centenary Fund.**

  The Fund works in partnership with SAGIA (below) to translate the entrepreneurial ideas of young Saudis into ‘profitable businesses’. The Centenary Fund provides financing and business counseling.

- **SAGIA – Saudi Arabian General Investment Authority.**

  SAGIA's role is to provide young business men and women with information about the Kingdom’s laws and regulations, as well as to obtain permits and finalise government procedures on their behalf. SAGIA advertises itself as the “one stop shop” for investors in the kingdom. Created in 2000, it functions as a ‘facilitator’ for potential investors, acting as Saudi Arabia’s ‘inward investment promotion agency’. Crucially, SAGIA recommends policies designed to promote and enhance local and foreign investments and proposes executive plans to improve the investment climate in Saudi Arabia’ (SAGIA website, 2005). SAGIA also acts as an ‘intermediary’ between international investment organizations and Saudi Government ministries and agencies. Conducting surveys and workshops on the ‘investment climate’ in Saudi Arabia is also an important contribution of SAGIA.

- **Ministry of Municipal and Rural Affairs.**
Responsible for the “development of municipal incomes”, which, “in light of development objectives”, includes “seek[ing] new sources of municipal incomes such as investment, commercial and entertainment projects” (Saudi Ministry of Municipal and Rural Affairs Website, 2005). The Ministry also collects an enormous amount of statistical data and has registers of all commercial premises.

- **Abdulatif Jameel Community Service Fund.**

The fund is intended to support the ‘projects and skills’ of Saudi youth. Its main goals are to: (1) integrate young entrepreneurs into the Saudi economy (2) support small “downstream” industrial projects and (3) to develop new employment opportunities in the labor market. The fund extends loans 100,000 SR (approximately 17,000 BP) to each project, helps with organising, supervising and training the appropriate labor for the project. The loan is expected to be repaid within three years (AJCSF website, 2005).

- **Ministry of Labor - Human Resource Development Fund.**

The Ministry of Labor is ‘concerned with the development and use of the Kingdom's human resources. It is responsible for manpower planning, labor relations and the general monitoring of all matters relating to employment affairs’ (Saudi Arabia Information Resource Website, 2005). The Ministry also deals with labor disputes, employment in the private sector and labor visas (Ibid).

- **Ministry of Commerce and Industry.**

The Ministry of Commerce and Industry is responsible for all aspects of commercial and industrial activity in the Kingdom (Saudi Arabia Information Resource Website, 2005).

- **General Institution of Technical Education and Training.**

This is a government-sponsored institution responsible for teaching technical business skills. It enrolls university and high school graduates as well as company employees. The institution also offers career advice to graduates and attempts to
match them with employment opportunities in public and private sectors. Graduates are also eligible for small loans. Currently, the institution has 33,298 graduates and provides training for 118 companies (General Institution of Technical Education and Training website, 2005).

- Saudi Ministry of Planning.

The Ministry of Planning is responsible for the formulation of the kingdom’s five year development plans (discussed extensively in the Saudi Context chapter, Appendix I). The Ministry has extensive resources for the gathering and analysis of economic, social and demographic data. The Ministry is also responsible for furnishing other departments with statistical information. The Ministry ‘identifies the issues and obstacles, proposes adequate policies and resolution measures, survey the achievements and provides for future requirements within a framework of national priorities and objectives. In so doing, the Ministry relies on a socio-economic database that has developed in the course of work in the field of economic and social research’ (Saudi Ministry of Planning website, 2005).

- Saudi Credit Bank and Saudi Industrial Development Fund (SIDF)

The Bank allocates money from the Saudi Industrial Development Fund (SIDF) to provide interest-free loans to Saudi businesses. Such loans can be used to finance up to 50% of the total capital required for establishing the business. Established in 1974, by 2001 the SIDF has distributed total loans for industrial projects of SR 40.3 billion (Saudi Arabian Information Resource Website, 2005) ‘The SIDF has played a key role in creating local Saudi industrial enterprises and the employment opportunities which they present. The wide range of locally manufactured goods now available in the Kingdom attests to the success of the SIDF’ (Ibid).

Two focus groups, each containing eight members, were conducted. Snowball sampling was successfully used to find additional members from within the organisations.
Step Two: Quantitative Data: Questionnaire Surveys.

To find an answer to the research question related to socioeconomic conditions prevailing in the Kingdom and to test their suitability for introducing wide-scale business incubation projects, a survey was conducted targeting three different groups considered to be more affected by introduction of incubation programme. These groups are:

- SMEs

SMEs possess an important place in the Saudi economy. Therefore, the government authority has employed various policy tools to assist them through: direct financial support, R&D subsidies and tax allowance.

- University Business Science Academics (King Saud, KFUPM)

Universities play an important role in the creation of incubators; they usually lend resources, faculty time, and talent to economic development efforts. Academics were specifically targeted in this survey because of the role they play within incubators, in commercialisation of research and transfer of technology, as well as their potential contribution to the business mentoring in the incubator.

- University Business Students (King Saud, KFUPM)

This group was targeted because they are the potential (SMEs, incubatees) that could benefit from establishing the incubation programme in the kingdom.

These three groups were also targeted in order to establish the level of awareness of incubation among these sectors and their readiness to take advantage of the services provided by incubation programme.
SMEs: Telephone Surveys

The first survey was among technology based firms, the most likely to benefit from business incubators (Grimaldi and Grandi, 2001)\textsuperscript{23}. In order to ascertain whether they would be "candidates", the researcher used secondary data provided by specialised governmental agencies in Saudi Arabia (e.g. Ministry of Municipal and Rural Affairs) which show size, type, and location etc of firms. A telephone-based questionnaire survey was used because it is expected that the response rates are likely to be higher (Despite the advantages of cost and convenience, a mail out survey was rejected on the basis that the postal service is inefficient).

To obtain the sample, the researcher utilized the database of the Saudi Ministry of Municipal and Rural Affairs, which holds a database registry of every commercial enterprise operating within Saudi Arabia. The database, to which the researcher was given access, is also able to differentiate between size and type of business. The population and sampling frame was technology and manufacturing based SMEs in Riyadh. From this frame of approximately 2600 firms, the researcher picked a simple random sample using a random number generator. The sample size was 500 cases with response rate of 52% i.e. 260, higher than the predicted response rate of 50%. This relatively high response rate is expected to minimise the effect of non-response bias.

The aim of this approach was to extract as much information as possible about the specific areas where incubators could contribute to SME development in the Saudi context. Areas of investigation – informed by the findings of the focus groups - included:

- Skill levels and management organisation within the enterprise
- Marketing strategies used
- Experiences of financing and funding
- Experiences of the business and legislative environment

\textsuperscript{23} It is worth considering that aside from Jeddah incubator, there are no other incubators operating inside the Kingdom. Not only does this preclude sampling cases directly involved in incubation it also creates a dilemma in reaching Saudi SMEs that would, speculatively, benefit from incubator support. To put it another way, if the incubators do not currently exist there is a strong chance that neither do the businesses that would have benefited from their support (for instance many high-technology firms).
Levels and types of support received from governmental and non-governmental organisations

Relationships with other businesses and universities

Universities: Face-To-Face Surveys

The second area of investigation was within universities which were considered likely, or at least most equipped, (following 'Western' models,) to develop incubator schemes themselves or else, introduce similar alternatives such as science parks and commercial research centres. Academics directly involved in teaching technical skills, were surveyed; all teaching staff attached to the Business Science faculties. Given the large size of technology-based syllabuses and the ease of access, the sample was confined to King Saud University (Riyadh), and KFUPM (Dahran).

Areas of investigation included:

- Exploration of the relationship between academia, science and business – including areas of co-operation (or disharmony), support or sponsorship.
- Relationships with industry, government and the region or municipality.
- The level of industrial or technical research currently undertaken.
- Perceived opportunities for incubation.

Given the economic imperative to generate employment and 'normalise' technical skills, final semester Science and Business students were also surveyed to discover their future plans, and the nature of any business or research ambitions and their expected obstacles.

Areas of investigation included:

- Research specialties.
- Knowledge of business and marketing.
- Future plans and expected obstacles.
• Perception of employment opportunities.
• The potential of incubators.

The researcher has personal connection with faculties members of both universities; therefore, within these two universities all available on the day of survey Business and Science students (153 students out of 544) and teaching staff (19 out of 53 teaching staff) were surveyed. Questionnaires were administered face-to-face to ensure high response rates. It should be noted here that the total number of the staff interviewed was relatively small (19) and the data obtained should be taken with cautious.

Upon completion of this part of the research, the researcher analysed the data collected to present the “conditional properties” for Saudi Arabian business incubation. The researcher did so deductively, with the intention of hypothesising the likely levels of success of Saudi incubation projects.

Step Three: Case study: The Jeddah Incubator. Survey and Extended Interviews.

The final stage of the research took place in the Jeddah Business Incubator, launched in 2005. This case study will allow the researcher to test the proposed hypothesis.

An updated version of the SMEs questionnaire was presented to the tenants. Areas of investigation included: Skill levels and management organization within the enterprise, Marketing strategies used, Experiences of financing and funding, Experiences of the business and legislative environment, Levels and types of support received from governmental and non-governmental organizations, Relationships with other firms and larger businesses.

This allowed assessment of conditions within the incubator and a comparison with the non-incubated SMEs, regarding for instance, levels of skills, management, marketing conditions, financing, and networking.

In depth Qualitative interviews were also conducted with the incubator management and staff; these interviews intended to build upon the questions posed in the surveys to better explore the experiences of the first incubatees. The interviewer devised a universal topic list (interview guide) for the respondents to discuss – but with the freedom to ask the question
any way the researcher wished, in any order that seemed appropriate at the time, and even
discussing what they think of the topic themselves.

Upon completion of this part of the research, the researcher could get some indication
as to whether or not the first Saudi incubator correlates with or is an “exception” to the
hypothesis generated after step 2.

3.7 Data Analysis

Transcriptions from the focus group and in-depth interviews were coded into sections –
or ‘chunks’ - so that salient themes can be established. Ten responses of each survey were
piloted to identify the errors and to rewrite unclear questions. The questionnaire surveys were
statistically analysed using SPSS software. Case study observations were analysed as a
‘narrative’ (following Hytti, 2002).

3.7.1 Ethics and Transcription

Confidentiality and integrity of information provided by the respondents are extremely
important (Scheuren, 2004). The respondents had the option to be anonymous or reveal their
identity.

Interviews and focus groups were tape-recorded – then transcribed into Arabic, before
their subsequent translation into English. Then, to ensure validity this transcript was re-
translated into Arabic, to check against the original. Authentized translation/transcription
service was used.

After both focus groups and case study interviews, the respondent(s) were given the
opportunity to check and approve both transcripts (English and Arabic) before they were
analysed. Participants also had the option to remain anonymous. In the questionnaire some
participants have remained anonymous. All respondents were also able to withdraw their
participation at any time, including 'post-hoc' withdrawal.
3.7.2 Justification of the Research Design

The researcher had extensive access to a rich variety of data sources, including the major Saudi SME policy makers and experts, Riyadh-based SMEs, the two largest Saudi universities and the first Saudi incubator in Jeddah. The researcher felt that it was best to exploit these available resources through a variety of measures to increase the internal validity of the data.

By adopting both qualitative and quantitative research methodologies it is possible to capture the fullest range of dimensions associated with the problem being studied. Moreover, the use of different data collection methods and sources enables the researcher to ensure high internal validity by triangulating data via multiple measures.

The synthesis of qualitative and quantitative research methods prove to be useful in obtaining valid data and providing comprehensive and deep understanding of the research problem.

CHAPTER 4 - THE SAUDI CONTEXT

4.1 Introduction

This chapter seeks to provide a background to the business and economic environment in Saudi Arabia as it is informed by the specific economic, social and political imperatives of an economy reacting to a series of local and global pressures. The argument throughout
this chapter is that the past economic trends followed by the country, the past economic policies, and the local entrepreneurial cultures are vital elements for the formulation of effective policies. The chapter provides a survey of the prevailing social, political and economic conditions within the Kingdom and will review: (i) the structure of the Saudi economy; (ii) the role of SMEs within it; (iii) the problems SMEs currently face; (iv) the support available to SMEs from private and public bodies; and (v) government policy towards SMEs. The answers to these questions are intended to give an indication as to the applicability, suitability, and prospects of incubator programes within the kingdom.

Incubators are widely regarded as one of several mechanisms to support the growth and survival of SMEs (Chapter 2) especially those enterprises involved in technology. As an opportunity to absorb more young Saudis into the job market and diversify the "economic base", a great deal of focus has been placed by Saudi policy-makers upon fostering SME growth and survival, with particular emphasis on high-technology projects. In the previous (Seventh, 2000-2005) and current (Eighth, 2005-2010) National Development Plans, the introduction of business incubation centres has been strongly advocated by the Ministry of Finance, the Ministry of Planning and the Saudi Chambers of Commerce and Industry. The first Saudi business incubator, based in Jeddah and operated by the Saudi Chambers of Commerce and Industry, opened for business in June 2005. A second incubator is currently under-construction in the Eastern Province and is scheduled to open in late 2009.

4.2 The Structure of the Saudi Economy

4.2.1 Economic Priorities

It is widely accepted amongst many of the Kingdom's policy makers that Saudi Arabia must transform and diversify its economy over the next decade to cope with rapid population growth. The need for rapid economic growth is also required to support the large numbers of young people entering the job market each year. As a result, the government has placed a strong emphasis on encouraging entrepreneurship and the development of small and medium-sized enterprises (SMEs) as a means of diversifying the economy and creating employment opportunities.

24 (i) Why are incubators needed in Saudi? (ii) What specific role, if any, are they expected to play? (iii) Is the current social, political and economic environment conducive to their introduction? (iv) How would their success be measured in the Saudi context? and (v) who would be responsible for them?
growth and continuing social change. The macro economic imperatives facing policy makers can be surmised as follows:

1. A massive population boom which the labor market is struggling to absorb.

2. Oil wealth continues to be the main support for the Saudi economy. Despite the massive boom in oil revenues over the past half-decade, the oil sector alone cannot sustain Saudi Arabia's ever growing, long-term, labor market needs.

3. The economy needs to operate more efficiently and offer sustainable high quality jobs centred around an internationally competitive, knowledge-based economy.

In other words, the great social and economic problem facing Saudi policy makers is how to reconcile the great uncertainty of oil prices, with the 'absolute certainty' of massive population growth (Cordesman, 2003: 31) – new, private, sources of income and employment must be developed.

Since the mid-1980s and the inception of the Kingdom's fourth national development plan (1985-1990) the Saudi government has been consistent in its belief that the best, and only real, solution to these problems is significant economic diversification through private enterprise. Since the turn of the 21st Century (as marked, so far, by the seventh and eighth development plans of 2000-2005, 2005-2010) the Saudi government has become increasingly pro-active in developing policies intended to stimulate private enterprise. Moreover, the recent increases in national income – driven by a surge in oil prices (2003 – 2008) have given the government the means to increase spending on such projects. As will be discussed in more detail below, the government response has been focused upon: (i) economic diversification; (ii) training; and (iii) investing in education. Within all three of these areas, policies have been targeted towards the growth and survival of SMEs.

4.2.2 Economic Growth
At the beginning of the 21st century Saudi Arabia's per capita income had declined to around 40% of its peak at the height of the oil boom (from the mid 1970s to late 1980s). This decline continued for most of the previous decade (Cordesman, 2003: 21). A combination of explosive population growth and slow real growth meant that re-structuring of the Saudi economy would be necessary to accommodate the flood of young Saudis entering the labor market. Sustained economic development generally requires economic growth rates that are at least 2% above the population growth rate, and the Saudi population growth rate is well over 3%. The Seventh Development Plan projected average annual real growth of 3.16% during 2001-2005, including 5.04% in the non-oil sector (Mann, 2000). At the same time the World Bank (2000) forecasted that economic growth for oil nations would, in the long run, average 2.7%, in comparison with growth for nations with a more 'diversified slate of exports'.

However, since those forecasts in 2000, the unexpected surge in oil prices has had a profound effect on the Saudi economy. Between 2001 and 2006 the Saudi economy nearly doubled in size. Oil averaged a record $60.53 per barrel and nominal GDP hit $347.91bn, a 12.4% improvement on the 2005 level; real GDP grew by approximately 4% and among the population (estimated in 2006 at 22.7m people) per capita GDP stood at $14,451, a 15% increase over 2006 (Oxford Business Group, 2007: 15). By the spring of 2008, the oil price was almost double 2006 level. Progress has also been made in the non-oil private sector which grew by 6.3% in 2006 and was forecast to grow by 7.1% in 2007 (Ibid). However, it is notable that the private sector remains largely dependent on the continuation of major, public-sponsored, projects which are, of course, financed by the surge in oil revenues.

### 4.2.3 Globalisation

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25 According to Halliday, in the 1990s, per capita income fell by up to two thirds, to around $6000 per year (Halliday, 2002: 161).

26 Data indicate that the Saudi economy grew by 14.5% in real terms between 1969 and 1974, and by 8.0% between 1974 and 1979, but then dropped to -1.8% between 1979 and 1984. There was no real growth between 1985 and 1989. The sudden rise in oil revenues after the first Gulf war created a 9.5% rise in 1990 and a 10.3% rise in 1991 — 'although the economic impact of the rise in oil revenues was largely offset by Saudi expenditures on the war' (Cordesman 2003: 242). Growth then dropped to 2.0% in 1992 and averaged less than 1% annually between 1993 and 1995 (Ibid). It rose to 1.3% in 1996, 1.6% in 1997 and 1.8% in 1998; it then dropped to 0.9% in 1999 because of low oil prices, rising by 4.7% in 2000 as a result of the sudden peak in oil revenues (Ibid). GNP fell well below population growth for the decade between 1992 and 2001.
After the massive infrastructure building projects of the 1970s and 1980s, the Saudi economy has gone through radical change. It is generally recognised that economic globalisation has meant the scale of international competition is expanding in terms of quality and quantity. Therefore, Saudi companies increasingly find themselves competing with more efficient international rivals who are able to compete better on both cost and quality (Boubshait, 1999). The intensification of global competition has been further exacerbated by Saudi Arabia's accession to the World Trade Organisation in December, 2005. Although the commercial effects of membership have yet to be fully felt at "ground level" (Oxford Business Group, 2007), several commentators (e.g. Sanjini, 2004, Al-Dosari 2003) expect a negative influence on both local industrial activities with large production capacities and smaller enterprises. In the latter sector, as Radwan puts it, the fear is that Saudi SMEs 'will be swamped by the entry of cheaper and higher quality imports, with technology transfer through foreign-owned companies adding more pressure' (Radwan, 2005: 198).

It is widely acknowledged that economic globalisation has generated a unique and urgent revolution in technology. Combined with increased competition, trade liberalization, and the consequent opening up of national markets to international competition, this could seriously endanger national enterprises that lag technologically behind their new global competitors. The challenge from foreign products to national products is deemed to be 'intense' (Al-Dosary, 2003); moreover, Saudi Arabia does not just have to compete with "the world" Increasingly, as Jamal Khashoggi (cited in Slackman, 2007), editor of the Al-Watan newspaper puts, it 'has to compete with the region'. Regional competition has become extremely intense, especially given the emergence of the United Arab Emirates' and Qatar's as the Gulf's cutting-edge global financial and technological hubs. Thus, the development of new high-technology enterprises is seen as an urgently required support to the competitiveness of national enterprise (Al-Dosary, 2003).

However, there have been several upsides to Saudi Arabia's growing integration into the global economy and, in particular, its 2005 accession to the WTO. A myriad of reforms has been undertaken which have improved the kingdom's business environment. Since 2005
new rules have streamlined the investment process, reduced the maximum income tax rate, loosened the requirements for obtaining business visas, changed ownership rules so that foreign companies can obtain a majority stake, and established the Saudi Arabian General Investment Authority (SAGIA) to attract foreign and private investors (Oxford Business Group, 2007: 18). As a consequence, foreign direct investment (FDI) has increased dramatically, rising from $3.58bn in 2005 to $16.49bn in 2006. Counter to expectations, the Saudi information and communication technology sector has attracted much FDI – from a total of 75 new Saudi FDI projects in 2006, 37 FDI projects operated in this sector. Some researchers (e.g. Radwan et al., 2002, Radwan, 2005) have argued the liberal-market doctrine that global competition will force inefficient businesses out of the market and, in the long-run, the business environment – and especially the SME sector – will be better off as it responds with quality and productivity gains. However, as Radwan warns that a lot needs to be done to ensure that the SME sector flourishes following WTO entry (Radwan, 2005: 198). In the course of this chapter, precisely 'what needs to be done' to ensure an efficient globally competitive SME sector will be considered.

4.2.3 Saudi Indicators

Boubshait (1999) listed several socio-economic indicators as unique to the Kingdom that remain salient to the present: (i) there are large numbers of native, technical, workers available, however, many of these workers lack opportunities commensurate to their skill levels – it is therefore an economic and political imperative that appropriate work opportunities are created; (ii) there is an underutilised surplus supply of 'basic products' generated by many of the 'transformation industries'; (iii) the transformation sector still lags behind global and regional competitors in terms of quality and quantity; (iv) marketing activities remain 'substandard' and fail to maximise the benefits of massive industrial production; (v) private commercial enterprises are still unable to compete in the international arena due to the social structure of these enterprises which are either sole owner or family corporations, mainly dependent on personal relations in their management functions.
4.2.4 Population and Employment Pressures

Saudi Arabia is currently in the midst of profound socio-economic change – the Kingdom is experiencing a population boom which ranks as one of the largest in the world, combined with rapid urbanisation and a massive shift in labor organisation. It is these changes, considered in the context of the current oil boom that is driving government policy. Bourland, (2002), summarises the Kingdom’s demographic challenges as follows:

- 45.6% of the population is fourteen years of age or younger.
- 73.9% of the population is twenty nine years of age or younger.
- 38% if the 16.75 million Saudi nationals alive in 2001 were born after Iraq’s invasion of Kuwait in 1990
- The fertility rate of native Saudi women was 5.5 infants per woman in 2000, compared to a world average fertility rate of 2.7 and a Middle East average of 3.5.
- While 210,000 Saudis graduated in secondary school in 2001, 402,000 entered elementary school the same year.
- The population of Saudi nationals is projected to almost double by 2020, expanding the Saudi Labor force from 3.3 million in 2000 to 8.3 million in 2020.

Given the absence of a reliable national census, there are no certain means to be sure of the exact scale of the demographic challenge. However, the US State Department estimates that Saudi Arabia had a total population of only 4.8 million people at the time of the June 1967 Arab-Israeli conflict (Cordesman, 2003: 231). By 1980, this population had – according to independent estimates by the US State Department and the World Bank - reached 9.4 million people. The Saudi Ministry of Planning issued (conservative) estimates in the Seventh Development Plan (2000) that put the total population of the Kingdom at 21.4 million in 1999 – with 15.7 million native Saudis and 5.7 million non-Saudis. It estimated that the total population of the Kingdom would grow to 29.7 million in 2020, a rise of 89.2% over two

27 However, in the last decade the Kingdom has implemented advanced sampling techniques to accrue population data.
decades, and that the annual growth of the Saudi population of working age would remain high, ranging between 3.5% and 4.1% during 2000-2020 (Saudi Ministry of Planning, 2001: 77-78). The Saudi Department of Statistics calculated slightly higher total population figures in 2001 (22.01 million in 2000) with a population growth of 3.2% in 2000. As of 2000, some 73% of the population was twenty-nine years of age or younger (SAMA, 2001: 265). Given that Saudi Arabia has one of the highest populations ‘momentum ratios’ in the world (1:6), the population can be expected to continue its “boom” into the foreseeable future.

The inevitable consequence of such rapid population growth is a labor force that will grow faster than the total population because the Saudi population is so young. Indeed, the World Bank estimated that the Saudi labor force grew from 3 million in 1980 to 7 million in 2000, and projects 10 million in 2010, with an average growth of 4.5% from 1980 to 2000, and 3.4% during the time period 2000-2010. Social change has also absorbed women into the labor force, their proportion growing from 7.6% in 1980 to 16.1% in 2000 (Cordesman, 2003: 236). The massive increase in population has been accompanied by profound changes in labor force structure. In the last three decades, the Saudi labor force has shifted from one dominated by manual labor in agriculture (64% in 1973) to one where by the year 2000, 40% worked in government office jobs whilst the rest of the labor force, some 25%, worked in industry and oil and 30% work in services (Cordesman, 2003: 7). However, the above figures show, Saudi Arabia faces a “youth explosion” that generates enormous pressure to create massive numbers of new jobs for national Saudis and reduce the numbers of foreigners employed in the Kingdom. However, in the first decade of the 21st Century, government employment, with the exception of the education and health sectors, is expected to remain the same; consequently, the private (pre-dominantly non-oil) sector is expected to absorb the majority of new entrants into the labor market (Prokop, 2003: 87).

28 According to Saudi Department for Statistics, the Makkah region was home to 25.2% of the population, Riyadh had 22.5% and the Eastern province had 14.5%.
29 These population counts differ from alternative government ministries which often estimate higher population growth rates. Moreover, these estimates may undercount illegal foreign residents (Cordesman 2003: 230).
4.2.4 Regional Development and Urbanisation

It is a stated aim of the Ministry of Finance to address ‘the development of remote areas which are isolated from traditional industrial centres’ as well as regions that have been adversely affected by technological advances that have made traditional modes of employment obsolete (Boubshait, 1999).\(^{30}\) It is clear that alongside rapid population growth there has been a massive change in Saudi society and labor structure, with a shift from the agrarian and rural to the industrial/technological and urban. As Cordesman puts it: “What was once a rural and isolated Saudi society, divided into regional and tribal groups, has become a society that is largely urbanised, although tribal links remain powerful.” (Cordesman, 2003: 232). According to the World Bank (2000), urbanisation reached 86% by 2000, with 25% in cities over 1 million.

A significant advantage cited in favour of supporting SMEs is that their development would most likely provide a more even regional balance of incomes. Currently, high incomes are relatively concentrated in the industrial cities of Jubail and Yanbu, the capital Riyadh and the financial and diplomatic centre of Jeddah, however, the development of: ‘SME’s would bring jobs and higher incomes to many of the towns and villages bypassed by the Kingdom’s petroleum-based growth’ (Looney, 2004a).

4.2.5 Economic Policy Priorities

Demographics interact with wealth to determine relative wealth and per capita income. It is unlikely that any analysis, whether from inside or outside the Kingdom, could deny that population growth has had a significant effect on the relative wealth of the Saudi people and that economic growth has, until the recent and likely unsustainable boom in oil prices, failed to match the rate of population increase\(^{31}\).

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\(^{30}\) For instance, the number of Saudi males employed in agriculture dropped from roughly 45% in 1980 to under 7% in 1998 (World Bank 2000).

\(^{31}\) However, ‘the total PPP, GNP, and GDP, and per capita income figures almost certainly sharply underestimate the Kingdom’s true economic and demographic problems’ (Cordesman 2003: 239)
The Saudi population boom – and the related rise in unemployment and, until recently, the decline in per capita income – is regarded as the most ‘severe’ structural challenge facing the Kingdom. In the Seventh Development Plan, the government argues that to address the problem, the Kingdom must urgently ‘privatise and diversify its economy far more rapidly than in the past, expand oil export capacity as quickly as possible, develop a far more comprehensive infrastructure... and take more aggressive steps to eliminate most of its foreign labor (Cordesman, 2003: 260).

To re-iterate, government planning and economic policy is explicitly – and primarily - driven by the need to manage the demographic pressures created by the surge in population. Despite the recent improvements in per capita income driven by the surge in oil prices, the need to address the ramifications of the population boom continues to dominate government concerns. As the Oxford Business Group's survey of the Saudi Economy puts it: 'It may seem ironic that in the midst of an oil boom, the government has embarked upon a policy of economic liberalisation and diversification. But having witnessed the boom-and-bust cycle in the 1970s and 1980s, attention has been focused on insulating the economy from fluctuations in the oil market...the 2007 budget has conservative oil and revenue forecasts, while making significant investments in education, health-care and infrastructure development. Capital expenditure is aimed at projects that promote economic diversification and private sector development.' (Oxford Business Group, 2007: 15). Thus, in the wake of the oil boom of the past six years, the challenge remains to translate economic growth into sustainable jobs.

4.3 Education and Business in Saudi Arabia

4.3.1 Public Policy

Saudi human resource development, via education and vocational training, is chiefly concerned with the two-fold objective of (i) the generic build-up of knowledge and skills and (ii) the specific provision of employment opportunities for unutilised/under-utilised manpower (Al-Dosary et al., 2006). The Saudi government clearly recognizes the need to
expand employment of the native labor force (especially via the policy of Saudisation\textsuperscript{32}) and to ensure that young Saudis have the necessary education and motivation to contribute to a knowledge-based economy. This is seen as the key to providing young Saudis with job opportunities, and with jobs that are globally competitive and relatively well-salaried. As stated earlier (chapter 2), threats and opportunities within developing economies associated with competing in a global marketplace have created a pressing need to commercialise new technologies. This is especially true for Saudi Arabia, as its major concern in the present is to introduce an edge in global competition to its SME market as the current non-oil trade account balance is in debt. Currently, the Kingdom has seventy-five training institutes for various professions and vocations, which are expected to train some 300,000 young Saudis within three years.

However, in order to achieve these education/employment goals, (i) the technical knowledge and skills of Saudi students needs to be raised to international standards, which are currently not being met (Cordesman, 2003, Looney, 2004b) and (ii) the amount of private sector employment opportunities for Saudi graduates needs to increase.

Chapter 2 suggests that successful incubation is a mechanism for re-shaping the way industry, government and academia interrelate. In terms of government policy (as evidenced in the national Development Plans), universities are now expected to perform two roles: (i) to build upon their ‘traditional’ role of building student skills relevant to the contemporary workplace (through the provision of traditional and vocational education) and (ii) to adopt a newer role of ‘bridge-builder’ with local and national businesses. It is intended that this second role will enhance the vocational experiences and employability of students (through work experience placements, internships etc) and assist the private sector through knowledge transfer. On a broader level, it is hoped that the education sector will develop a better understanding of private sector ‘needs’, and likewise the private sector will develop an understanding of what the education sector has to offer in terms of knowledge and human resources.

\textsuperscript{32} The long-term national employment strategy is to achieve 100 per cent Saudisation which is intended to bring about the employment of 120,000 Saudis in the private sector every year.
With the current level of regional competition (especially from Qatar and United Arab Emirates) the situation in Saudi Arabia calls for an immediate response through the development of enterprises — especially new technology (see Chapter 2).

4.3.2 Universities and Business Incubation: Conditions.

In terms of its direct relevance to business incubation, the educational field interacts with the business incubation phenomenon in four ways:

1) Graduate Skills and Training. The business incubation literature (see Chapter 2) suggests that technical skills of incubatees (measured by learning experiences and academic qualifications) have a strong effect upon the success of incubated businesses. Put simply, incubated businesses run by well-educated and technically proficient graduates are much more likely to succeed. Thus, an optimal condition for business incubation is a high level of graduate skills and training. Business incubators require candidates who have been educated to a high academic level, have a good technical proficiency and, preferably, some degree of commercial experience. At present, a high proportion of university graduates were graduated from faculties of arts and Islamic law therefore, it is expected that with this kind of education they would not fit for business incubation.

2) Entrepreneurial attitudes. The entrepreneurial attitudes amongst graduates are an important, albeit less tangible, factor in incubator success. Specifically, they are likely to affect application levels to incubation programmes. Chapter 2 proposed that, incubation is a continual process and the typical tenure period in an incubator is 1-3 years. Therefore a steady demand for incubator admission ought to be present in order to utilize the full capacity. This would also imply that the incubator has entered its business development life cycle characterised by the highest productivity. In developing countries, which are often prone to a weak entrepreneurial culture, it is important that new graduates are willing to consider private enterprise and business involvement instead of the large public sectors that have typically dominated developing economies. Thus, as well as possessing the requisite technical and commercial skills and experiences, it is important that graduates are ‘commercially-orientated’ and enthusiastic about entrepreneurship and business
involvement. Universities are able to play a role in imparting ‘entrepreneurship’ both in their syllabus and in their teaching styles.

3) Graduate employment. SMEs that are incubated require high-quality graduates to run them - the well-known, ‘generic’ purpose of incubation is small business development, which leads to job creation (Greene and Butler, 1996). The small businesses nurtured by incubators are an effective means of absorbing unemployment in an over-supplied labor market and are particularly useful in absorbing graduate unemployment (particularly if they are successful). Thus, a surplus of skilled graduates entering the labor market represents an optimal condition for business incubation.

4) University and business links. As demonstrated in the international case studies (see Chapter 2) the type and strength of the relationship between higher education institutions, local businesses and, business incubators have a significant effect on the likelihood of incubator success. Extensive collaboration and communication between universities and businesses (and any organisations that promote business) makes an incubation project more likely to succeed. Thus a positive relationship between universities and local businesses represents an optimal condition for business incubation. Ideally, both academics, through research commercialisation or collaboration, and students, through internships and placements, will be involved in commercial activity at some level.

4.4 Student Skills and Competencies

4.4.1 Graduate Skills

As in many developing economies, higher education in Saudi Arabia is expected to support centrally planned national development strategies (as made clear in the Seventh, 2000-2005 and Eighth, 2005-2010 Development Plans) aimed at raising the skill and knowledge levels of the Kingdom’s labor force. It is intended that the development of national ‘human capital’ will, ‘make products and services competitive; [provide] researchers to generate, adapt and apply new knowledge and technologies; and [produce] manpower for
high and medium skill industries and services (Tayag, 2005 in Al-Dosary, 2006 et al: 397). These intentions are confirmed in the subject literature (Campbell, 1987; Campbell et al., 1988), for example, in the US for 50 jobs created through incubation, further 25 are created in the local communities and as incubated firms grow, they employ both highly qualified and less qualified staff. However, the total number of males enrolled at the (seventy five) institutions for technical education and vocational education totaled only 46,058 in 1999, and less than half of these received training related to non-white-collar jobs in the private sector (Cordesman, 2003). According to the private sector employers are not enthusiastic regarding the output of those universities because of poor skills in terms of real-world jobs (Ibid). Placke (1999) contends that large numbers of young Saudis are unemployed because they lack the skills needed in modern economies. Al-Dosary disagreed with this view (that Saudis are unemployable) but suggested that there could be a mismatch of skills with employers’ requirement. However, there is a general agreement amongst the Saudi literature that the skills of the Saudi graduates have generally failed to meet the needs of the job market (Al-Dosary, 2006: 409).

4.4.2 Education and Employment

As stated, a consequence of the Saudi population boom has been the surge in unemployment. The Saudi Central Department of Statistics estimated in 2001 that the native

33 However, to date, the problem Saudi Arabia has encountered in the development of its human capital is directly linked to those difficulties it has experienced in the development of small, private enterprise. In the industrial sector, extraordinarily rapid infrastructural development – predominantly in the 1970s and 1980s – left behind a “missing middle”: in order to realise ambitious development plans the giant nationalised industries imported products and services from abroad, creating no incentive for local business creation thus depriving Saudi Arabia of the small and medium sized enterprises that would ordinarily have “grown up” around major industry (this is discussed in more detail in Chapter 4). Similarly, in human resources, this enormous modernization and industrialization process created an urgent demand for a large, often highly skilled and technologically adept, labour force. The general absence of such skills amongst the indigenous population led to skilled labour being imported from abroad (like industrial products and services) and both the public and private sector became saturated with expatriate labour. The native population were given little opportunity (or incentive) to acquire technological or vocational expertise. The capital-rich government did not place a priority on raising skill levels amongst the native population. Neither were private employers incentivised to employ Saudis – native employees were generally more expensive and less skilled than foreign labour. The situation was further worsened by government regulations which exacerbated the ‘local’ and ‘foreign’ split in the labour force. For instance, until the mid 1980s, Saudi graduates were prohibited by employment regulation to work in the private sector – on the basis that the government had funded their studies and should be repaid through public service (Maimani 1989). The public sector (which was dominated by the oil sector) came to dominate the Saudi economy. This massively distorted employment and wage policies and created “considerable segmentation along public/private lines” (World Bank 1996). Thus, in the last three decades, the Saudi labour force has shifted from one dominated by manual labour in agriculture (64% in 1973) to one where by 2000, 40% worked in government office jobs whilst the rest of the labour force, some 25% worked in industry and oil and 30% work in services (Cordesman, 2003: 7).
Saudi labor force was 3.3 million in 2000, and would rise to 8.3 million in 2020 (SAMA, 2001). Frustratingly for planners, the average annual rate of job creation is 0.9% versus a population growth rate that averages over 3.0% and over 3.5% in recent years. In response to these pressures, the Seventh Development Plan made both creating new jobs and increasing education levels its highest priorities (Cordesman, 2003: 259). The government clearly recognizes the need to expand the native labor force (relative to the foreign labor force) and to ensure that younger Saudis have the education and motivation about a knowledge-based economy as the key to giving young Saudis not only employment, but jobs that are globally competitive enough to ensure that they receive relatively high salaries (Ibid).

The Seventh Development Plan (2000-2005) called for the creation of 328,000 jobs to raise total employment from 7,176,300 in 1999 to 7,504,900 by 2004 (SAMA, 2001). As stated, government employment, with the exception of the education and health sectors is expected to remain at the same, absolute, level; consequently, the private sector is ‘expected to absorb the majority of the new entrants entering the labor market’ (Prokop, 2003: 87). The private sector is projected to create 311,000 out of the 328,000 jobs - with only 16,100 new jobs in the government sector. This cut government employment from 12.8% of all jobs in 1999 to 12.4% in 2004. In the current study (see Chapter 5), the survey results, showed that only 4.6% of students interviewed expected to be employed in the public sector and the vast majority (74%) expected to work in large private sector companies. Student’s expectations are in line with the projections of the seventh and eighth development plans. Furthermore, the results also demonstrated clearly that the preferred employment sector is the private sector.

The seventh and eighth development plans allocate virtually no growth in the ‘traditional’ sectors, for instance, only 700 jobs are projected in petrochemicals in the Seventh Development Plan. Private manufacturing, finance and real estate are the areas that will dominate job growth. All these areas are largely outside the control of government and

34 The Saudi Central Department of Statistics ‘seems to be a reliable source’ (Cordesman 2003: 251) of information on employment and Saudi perceptions of the Kingdom’s labour problems and its estimates track in very rough terms with those of the World Bank (Ibid).
35 Statistics are yet to be published on whether this has been achieved.
involve limited direct government investment in the plan.' (Cordesman, 2003: 257). Moreover, a significant number of the projected new jobs are in areas in which Saudis have been reluctant to take jobs in the past.' (Cordesman, 2003: 256)\(^36\). However, the growth of Saudi held jobs in the private sector has been very slow relative to the number of Saudis entering the labor force, and the number of foreigners in the private sector actually increased through the late 1990s (Cordesman, 2003: 257). At the same time, traditional rural and agricultural jobs are vanishing from the economy as a percentage of the workforce, and although agricultural jobs are now subsidized, they will continue to shrink steadily as a percentage of the labor force even if subsidies continue (Ibid: 259).

4.5 Non-native Labor, 'Saudisation' and 'Insourcing'

The increasingly urgent employment pressures explain why the Saudi government puts so much emphasis on the policy of "Saudisation" which has been pursued since the Fourth Development Plan (1985 – 1990) to the present. Saudisation is a 'dual policy' of replacing foreign nationals with native workers in the labor market and reducing the reliance upon foreign-based enterprises for the provision of materials and technologies for the giant utilities industries. To date the policy has been followed largely by using various employment quota targets. The policy can be summarized as focusing on four primary goals:

1. Increase employment for Saudi nationals across all sectors of the national economy.
2. Reduce the over-reliance and dependence on foreign workers.
3. Repatriate and reinvest income which would have left the Kingdom in remittances to foreign worker home countries.
4. Stimulate economic growth by encouraging native businesses to provide raw materials to the industrial sector.

\(^{36}\) These include 81,400 new jobs in construction, 72,000 in manufacturing and 24,400 in agriculture. Only 9,000 jobs are estimated to arise in "attractive" service sector jobs like management and administration, and an additional 15,500 jobs in professional and technical positions (Cordesman, 2003) However, another 93,000 are expected to come from 'less desirable' service sectors like sales, services, and clerical positions.
The Seventh Development Plan set a goal of 25% Saudisation in the private sector, with an annual, targeted, increase of 5%\textsuperscript{37}. The Saudi Ministry of Labor issued an announcement in May 2001 that it intended to cut foreign jobs by 85% over the next thirty years, from 7.2 million to 1 million; at the same time it is still projected that foreigners would make up 10 million of a projected 39 million population in 2030 (Cordesman, 2003: 261). In June 2003, the government announced its decision to reduce the number of workers to 20 percent of the total population within the decade, in order to open up jobs for its nationals (Looney, 2004b). The policies seem to be having some effect, a press release by the Ministry of Labor (Ministry of Labor website, 2004) stated a fifty six per cent reduction in visa applications for foreign workers between 2003-2004.

However, the real problem around Saudisation is that many non-natives are working in jobs that have low social status; moreover, productivity is also extremely low. Therefore, these jobs may simply cease to exist, rather than providing an opportunity for young Saudis to enter the labor force. As Cordesman puts it: ‘turning Saudisation theory into practice means restructuring much of the present labor market to create the new types of knowledge-based jobs that young Saudis want and expelling and replacing roughly 2 million foreign workers over the next decade’ (Cordesman, 2003: 271).

Data from the Ministry of Planning (2002 cited in AI-Dosary et al., 2006: 409) shows that on average native Saudis earn approximately two to three times as much as non-Saudis, even in low-quality jobs\textsuperscript{38}. As Cordesman again warns the Saudi economy cannot simply afford to replace current non-Saudi jobs at twice or three times the current cost (Cordesman 2002, in Ibid: 410) and it is simply not realistic to envision Saudisation policies as capable of replacing foreign workers one-for-one with Saudi equivalents (Bourland, 2002).

\textsuperscript{37} The Sixth Development Plan (1995-2000) saw the introduction of laws that required that: (i) Businesses employing more than 20 people increase the number of Saudi workers by 5% per year; (ii) No less than 30% of workers in any business be Saudi; (iii) The employment of foreigners in 22 key administrative professions was prohibited. Fees were made payable by businesses employing foreign workers, - the revenue going towards a government fund to help ‘nationalize’ jobs.

\textsuperscript{38} In 2000 in Saudi Riyals, the average Saudi and non-Saudi primary school graduate earned 4,600 versus 1,378; secondary school graduates earned 7,200 versus 2,580; intermediate college graduates earned 6,810 versus 2,880; and university graduates earned 10,993 versus 5,581 (Saudi Ministry of Planning, 2002 cited in AI Dosary et al 2006: 409).
However, a significant part of the foreign workforce is highly skilled, and it is these jobs that provide some opportunity for an increasingly skilled Saudi labor force. Saudi statistics show that there are nearly as many foreign university graduates in the Kingdom as native Saudi university graduates (although the ratio is turning in favor of the Saudi nationals). This ‘top half’ of the foreign workforce is the true target of Saudisation - the "bottom half" (low social status and low salaries jobs) will face difficulties in Saudisation.

The other, indirect, dynamic of ‘Saudisation’ is the need for Saudi business to replace foreign firms in supplying the major ‘transformation industries.’ The primary form of government intervention in this instance comes from of grants and soft loans from the Saudi Credit Bank (6th Development Plan) and the Industrial Development Fund (7th Development Plan) that privilege small, ‘fledgling’ enterprises competing against international competition to supply the specialist products to the major national industries. This process of ‘insourcing’ or ‘downstream industry’ has been advocated by the Ministry of Planning (Al-Kurdi, 2002), however, at present there are no direct incentives on offer to the industrial giants to prefer national over foreign firms. Indeed, the recent oil boom, despite its positive knock-on effects for private enterprise and the non-oil sector has also generated a net doubling of industrial imports between 2001 – 2007 (Oxford Business Group, 2007: 16).

The Labor Market

The increase in urbanisation has been matched by a major increase in the level of education, although much still needs to be done if Saudi Arabia is to compete in skill and knowledge levels on a global basis. However, the structure and composition of the Saudi workforce has changed – 'qualified cadres', albeit in small numbers, are now available for work in high tech, specialised industries (Boubshait, 1999).

Saudi labor statistics show that the labor force already has substantial skills; figures from 1999 show that 2,217 million out of the total labor force work in finance or real estate, 1,037 million work in trade; and 1.1 million work in scientific and technical jobs. The rest of
the labor force consisted of 534,000 clerical (7.4%), 134,000 in administrative and business jobs (1.9%), 507,000 salesmen (7.1%), 551,000 in agriculture and fishing (7.8%), and 2.2 million in constructions and production works (30.5%). Government services accounted for 916,000 workers, oil and gas industries, with a further 21.500 in oil refining and 9,400 in petrochemicals (SAMA, 2001).

However, SAMA (2001) data (this is the most recent data that can be obtained) shows that the Saudi Government is making significant progress in raising the educational standards of new entrants into the labor force. Table 4.1 first shows the Development Plan projections for the amount of manpower and the amount of native population participating in the workforce. More significantly, table 4.2 shows the number of Saudis participating within the education system. As of 1999 enrolment in secondary education has increased at an annual rate of 10%, outstripping population growth for this age group (Cordesman, 2002 in Al-Dosary et al., 2006). As of 1999, a record 232,000 Saudis were also engaged in tertiary education. However, these improvements must be measured against a striking an unemployment rate among new graduates (in the age group of 20-24), these first time job-seekers have an unemployment rate of 27 percent for men and 33 percent for women (Looney, 2004b).

Table 4.1: The Labor Force Numbers Used in the Seventh Development Plan (Manpower in 000s)

<table>
<thead>
<tr>
<th>Category</th>
<th>Number in 1999</th>
<th>Number in 2004</th>
<th>Change 1999-2000</th>
<th>Average Annual Growth Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population below working age</td>
<td>5999.2</td>
<td>6814.8</td>
<td>818.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Working age population</td>
<td>9662.2</td>
<td>11705.5</td>
<td>2043.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Total population</td>
<td>15658.4</td>
<td>18520.3</td>
<td>2861.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Population in work force</td>
<td>3172.9</td>
<td>3990.2</td>
<td>817.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Dependency Ratio (%)</td>
<td>62.1</td>
<td>58.2</td>
<td>--</td>
<td>3.8</td>
</tr>
<tr>
<td>Aggregate Labor Force Participation Rate</td>
<td>32.8</td>
<td>34.1</td>
<td>--</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Source: SAMA, 2001: 77-78

39 A problem with these statistics is that it is not sure of the distribution of 'native' Saudi and non-native (i.e. foreign) workers. Moreover, categories such as "trade" and "real estate" often include extended family enterprises which are prone to practices of unnecessary job-creation (i.e. irrespective of actual employment/economic need).

40 According to the Ministry of Planning, only 452,000 students enrolled in secondary education programs in 1995 (Ministry of Planning, 2002 in Al Dosary et al 2006). There were 704,566 students in secondary school in 1999, and the ratio of students to teachers was also relatively low 12.1 (SAMA, 2001).
Table 4.2: Qualifications Estimates Used in the Seventh Development Plan (Manpower in 000s)

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tertiary level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Universities</td>
<td>178.6</td>
<td>21.9</td>
</tr>
<tr>
<td>Teacher Training Institutes</td>
<td>36.7</td>
<td>4.5</td>
</tr>
<tr>
<td>Intermediate Technical Colleges</td>
<td>16.7</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>232.0</td>
<td>28.4</td>
</tr>
<tr>
<td><strong>Secondary Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secretary (General)</td>
<td>213.9</td>
<td>26.2</td>
</tr>
<tr>
<td>Technical and Vocational</td>
<td>78.7</td>
<td>9.6</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>292.6</td>
<td>35.8</td>
</tr>
<tr>
<td><strong>Primary Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>143.1</td>
<td>17.5</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>235.4</td>
<td>28.8</td>
</tr>
<tr>
<td>Total Educational Entrants</td>
<td>760.0</td>
<td>93.0</td>
</tr>
<tr>
<td>Other Entrants</td>
<td>57.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Elementary</td>
<td>92.3</td>
<td>11.3</td>
</tr>
<tr>
<td><strong>Total New Entrants</strong></td>
<td>817.3</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: SAMA, 2001: 77-78

Access to all levels of education in Saudi Arabia is free. Moreover, the government also provides grants to every student in higher education. The Kingdom currently 21 universities, the latest constructed in 2009. (Table 4.3)

The Imam University, opened in 1953, - specialising exclusively in Islamic law - however, a University building process got under way in the 1960s and 1970s, and gradually a wide range of faculties were incepted. Institutions like the King Fahad University of Petroleum and Minerals (KFUPM) were created specifically to engender 'scientific, economic and industrial development' (King Fahd cited in Saudi Information Resource, 2005) The KFUPM now has a dedicated Research Centre and a patents section for any technologies it innovates.

Across all Higher Education (including eight universities, seventy colleges and seventy eight institutes of Higher Education) the annual number of graduates jumped from 87,000 in
1994 to 167,000 in 1999 (Ministry of Planning in Al-Dosary et al., 2006). Within universities, the total number of males graduating annually from university rose from 795 in 1970 to 21,229 in 1999, while the number of female graduates rose from 13 to 21,721.\(^\text{41}\) (Ministry of planning, 2002). However, as Cordesman warns, between 1995-1999 some 42.2% of post-secondary graduates received degrees in social sciences and Islamic studies - areas that are not likely to equip graduates adequately for work in the private sector (Cordesman, 2002 in Al-Dosary et al., 2006).

In the wake of the recent oil boom, the Saudi government is spending significantly in education; some $26bn was allocated for education and manpower development in 2007 alone, - 'one of the world's largest budgets per capita for education ever' (Oxford Business Group, 2007: 19). A significant portion of this investment will be used to improve the scale and scope of higher education. The problem remains, however, whether the ever-increasing pool of Saudi graduates possess the necessary technical skills to enter an increasingly competitive, globally oriented, and knowledge-based private sector. Moreover, the private, non-oil, sector, despite its recent impressive growth (7.1% in 2007) is still unable to absorb the increasing numbers of the Saudi graduates.

\(^{41}\) The number of Saudi women graduating from university has grown at an average rate 2.5 times that of male graduates during the last decade (Cordesman 2003: 234)
<table>
<thead>
<tr>
<th>University name</th>
<th>Location</th>
<th>Year launched</th>
<th>Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>King Saud</td>
<td>Riyadh</td>
<td>1957</td>
<td>Administrative Sciences, Agriculture, Veterinary Sciences, Architecture and Planning, Arts, Computer Sciences, Dentistry, economics and Administration, Education, Engineering, Languages &amp; Translation, Medicine, Applied Medicinal Sciences, Pharmacy and Science</td>
</tr>
<tr>
<td>King Abdulaziz</td>
<td>Jeddah</td>
<td>1967</td>
<td>Arts and Humanities, Dentistry, Economics and Administration, Education, Engineering, Geology, Marine Sciences, Medicine, Meteorology and Science</td>
</tr>
<tr>
<td>Imam Mohammed</td>
<td>Riyadh</td>
<td>1953</td>
<td>Judiciary (Shari'ah Judges), Theology, Arabic Language and Social Science, Library Science</td>
</tr>
<tr>
<td>Um Alqura</td>
<td>Mekkah</td>
<td>1949</td>
<td>Applied Science and Engineering, Islamic Education, Scientific Research, Islamic heritage, Psychological Research Centre, Education, Arabic Language</td>
</tr>
<tr>
<td>Islamic University</td>
<td>Madinah</td>
<td>1961</td>
<td>Islamic Theology, Quran and Islamic studies, Arabic language, Judiciary (Shari'ah Judges)</td>
</tr>
<tr>
<td>King Faisal</td>
<td>Alhassa</td>
<td>1974</td>
<td>Agriculture, Veterinary Medicine and Animal resources, Medicine and Medical Sciences, Engineering</td>
</tr>
<tr>
<td>King Khalid</td>
<td>AlQaseem</td>
<td>1996</td>
<td>Education, Medicine, Islamic Law, Religion</td>
</tr>
<tr>
<td>King Abdullah</td>
<td>Jeddah</td>
<td>2007</td>
<td>Earth science, environment engineering, vital science and engineering, math, Physical Engineering</td>
</tr>
<tr>
<td>Taibah</td>
<td>Madinah</td>
<td>2004</td>
<td>Humanitarian science, finance, management, medicine, computer science, engineering</td>
</tr>
<tr>
<td>AlQaseem</td>
<td>AlQaseem</td>
<td>2004</td>
<td>Finance, Judiciary (Shari'ah Judges), medicine, computer sciences, medical science, Arabic language, Dentistry, Agriculture</td>
</tr>
<tr>
<td>AlJouf</td>
<td>AlJouf</td>
<td>2006</td>
<td>Social sciences, society support, medical sciences, engineering</td>
</tr>
<tr>
<td>Tabouk</td>
<td>Tabouk</td>
<td>2006</td>
<td>Social sciences, society, computer sciences, engineering</td>
</tr>
<tr>
<td>Jazan</td>
<td>Jazan</td>
<td>2006</td>
<td>Medicine, engineering, computer sciences, society support</td>
</tr>
<tr>
<td>Najran</td>
<td>Najran</td>
<td>2006</td>
<td>Social sciences, society, management and financial sciences, computer sciences</td>
</tr>
<tr>
<td>Northern Boarders</td>
<td>Arar</td>
<td>2006</td>
<td>Arts and Humanities, engineering, society support, Arabic language</td>
</tr>
<tr>
<td>King Abdullah</td>
<td>Jeddah</td>
<td>2009</td>
<td>Chemical and Life Sciences and Engineering, Mathematical and Computer Sciences and Engineering, Physical Sciences and Engineering</td>
</tr>
<tr>
<td>King Saud for Health Science</td>
<td>Jeddah Al Hassa</td>
<td>2005</td>
<td>Medical science, Nursery, Applied medical science, Dentistry, Pharmacy</td>
</tr>
<tr>
<td>Princes Nora</td>
<td>Riyadh</td>
<td>2008</td>
<td>Art, Social work, Kindergarten, Physiotherapy, Computer science, Business management</td>
</tr>
</tbody>
</table>

Source: Ministry of Higher Education (2009)
given a ‘new sense of urgency to the development of the SMEs which are generally labor-intensive and, therefore, capable of absorbing a share of the local unemployed youth’ (Al-Kurdi, 2002: 5). The history of the Saudi industrialisation drive has been relatively short, having been limited to a 30-year span beginning with the oil boom in the mid-1970s (Al-Kurdi, 2002: 2) Over the past two decades, the Kingdom experienced an active development process involving several economic sectors; however, large-scale industry, commerce, agriculture and service sectors enjoyed the ‘lion’s share’ of the interest officials and businessmen took in the development process (Buobeshait, 1999),- leaving small, “organic” business infrastructure significantly underdeveloped. As Al-Kibbi and Radwan (of the Saudi Ministry of Planning) note:

Due to its historical development, industrial development in the KSA [Kingdom of Saudi Arabia] exhibits the “missing middle”. While there are simultaneously large well-established companies such as Aramco and SABIC and plenty of micro-enterprises and family run businesses in the retail sector, the SME sector remains relatively under-developed. (Radwan and Al-Kibbi, 2002: 18)

Indeed, only with the completion of the major “infrastructure projects”42, did the role of the private sector start receiving attention – but until recently financial and other incentives were made available only to large and medium-scale manufacturing sector (Al-Kurdi, 2002:2). Prior to the sixth development plan, the extensive range of Government subsidies granted to ‘home-grown’ industry were not available to smaller start-ups.

Two structural problems emerged from Saudi Arabia’s rapid industrialisation programme. First, the relatively recent arrival of modern (liberal-market) capitalism and its associated technologies resulted in the state limiting its definition of the private sector to exclude small-scale business establishments whose economic activities did not directly contribute to the state's urgent modernisation projects. Thus, until the ninties, small-scale

42 Major utilities such as transportation, communication, power.
private enterprise was neglected by policy makers who preferred to promote large scale private business through subsidies. As Radwan (2005: 196) puts it:

'In the rush to industrialise, the SMEs were neglected because they were not "glamorous enough" or organised managerially, and state bureaucrats preferred to handle the needs of larger corporations.'

Second, the state's commitment to rapid modernisation meant overly-generous financial assistance to those larger-scale areas of the private sector deemed important for infrastructure development. This meant that private sector growth became heavily dependent on state sponsorship which distorted incentives and reduced efficiency and competitiveness:

During the third development plan (1980 to 1985) this dilemma was particularly intense as the government emphasised economic diversification through the agency of the private sector. To support rapid economic growth, the government nearly doubled the capital available to the private sector to approximately $3 billion in the form of generous loans from the Saudi Industrial Development Fund. It is estimated that before the third five-year plan the Fund had already provided approximately 50 percent of the capital invested in private-sector development since its establishment in 1974. (Hess, 1995)

Thus, while the government's attempts to stimulate the private sector were laudable, they also meant the absence of a competitive, "indigenous" smaller-scale private sector, free from public subsidy. This does not ordinarily bode well for the expansion of entrepreneurial activity which requires a private sector responding to market forces, not government subsidies.

Since the emergence of the "SME agenda" in the mid 1990s, enthusiasm for the socio-economic role of smaller private enterprise has gathered pace among Saudi policy-makers, especially since the onset of the Seventh Development plan. However, despite the recent

43 As Hess claims, generous government sponsorship has meant that "the private sector, like the rest of Gulf society, is based on kinship relations," instead of "modern" human resource and management regimes designed to maximize efficiency (Hess, 1995: 22).

44 According to Shalaby, SME development "may lead to employment opportunities, stimulate a strong free enterprise sector, assist the poorest of the poor, develop local skills for economic and social leadership, support woman and their household spending, stimulate regional growth through the use of local suppliers and sub contractors, and encourage long-term economic growth and expansion." (Shalaby, 2003)
optimism and enthusiasm about SMEs development as a panacea for the Kingdom's manifold demographic problems, the challenge for the government is to avoid the mistakes made in the previous oil-boom when the blunt instrument of subsidies undermined private sector competitiveness and efficiency. The key now for the government is to find new and effective ways to target SME growth and survival.

4.6.2 The Expected Role of SMEs in National Economic Development

As discussed in (chapter one), in many developing nations, small-and-medium-sized enterprises (SMEs) have played a crucial role in creating jobs and providing economic stability (Looney, 2004a)\textsuperscript{45}. In 2002 Otsuki\textsuperscript{46} addressed the Saudi Ministry of Planning on the topic of 'SME Support Systems in Saudi Arabia'. He identified the following 'vital roles' SMEs could play within the Saudi economy:

1. Diversification of Economy: SMEs play a significant role in diversifying national economy and expanding industrial production into various sectors in Saudi economy.

2. Contribution to National Economic Growth: SMEs can contribute to significant ('say more than 50%') of future industrial production.

3. Generating Employment and Vitalizing Saudisation: SMEs are able to play a 'decisive role' in generating employment opportunities for Saudi nationals, thereby 'greatly contribute[ing] to the Saudisation by offering various jobs to Saudis.'

4. Regional Development: SMEs also contribute to the regional development and combat some of the difficulties created by rapid centralisation and urbanisation: 'the geographic dispersion of SMEs helps to achieve a more balanced growth of local economy and creates employment opportunities for local people in the national economy.'

\textsuperscript{45} In Thailand, for example, a whole new development model has centered on SMEs playing a leading role in advancing the economy (Looney 2004a).

\textsuperscript{46} Seconded as an SMEs expert from JICA (Japan International Cooperation Agency) to SAGIA (Saudi Arabian General Investment Authority).
5. Technological Innovation: SMEs are the sources of new products and are very innovative in creating and adopting new technology.’ However, Saudi Arabia has a specific difficulty in that rapid industrialisation meant that virtually all industrial technology was imported at the expense of ‘homegrown’ development.

6. Export Market Expansion: Without oil exports, Saudi Arabia would suffer from a trade deficit as the industrial sector is over-reliant on imports. SMEs are a useful mechanism to correct this because of their flexibility in adapting to market changes. In addition, Radwan and Al-Kibbi (2002), recognised that SMEs can play a key role in: Industrial insourcing, as suppliers of materials, inputs or specialized goods and services to the larger, national, industries. Currently, many of the inputs of the Saudi petrochemical and oil industries are supplied by overseas companies; this is clearly an area where local SMEs can enter the market and have a clear competitive advantage. Radwan and Al-Kibbi (2002), believe that there is ‘enormous advantage’ and ‘tremendous potential’ for large companies to support SME development through the creation of ‘business linkages or ‘co-operative arrangements.’

4.6.3 The Scope and Scale of Saudi SMEs

The Saudi Chamber of Commerce, 2002 estimates that “Small” (1-19 employees) enterprises comprise 240,853 of the total business population: 84.1 per cent from the total working enterprise in the Saudi Arabia. “Medium” (20-59 employees) enterprises number 17,520 – comprise 5.9 per cent of the total enterprise. Following these definitions, 90% of total enterprises in the Kingdom can be described as SMEs. However, Saudi SMEs contribute only around 14% of total industrial production, utilise about 35% of the energy consumption of industry and contribute only around 8% to the total value of industrial exported goods according to the 7th Development Plan (SAMA, 2001). However, as Radwan points out (2005: 196) a problem with all figures related to Saudi SME numbers is that they do not reveal how many enterprises survive and how many close. At the moment, Saudi authorities do not collect such data – a serious flaw in government planning. The only clues available as to SME failure rates are provided by Ministry of Commerce figures which show
that in 1988, 44,893 SME permits were non-renewed or cancelled and in 1999 the figure jumped to 88,808 (Ministry of Commerce, 2001 in Radwan, 2005: 197). Based on these figures, Radwan laments, 'this represents a serious waste of productive capacity in the economy, with unused resources, especially employment' (Radawn, 2005: 197).

In terms of registrations, the Saudi SMEs sector is slowly growing. According to Al-Kurdi, in 2002 the SME sector in Saudi was depended upon by around 5 million people for their livelihood. By the late 1980s and 1990s the SMEs sector in manufacturing and services did, he claims, start 'making its presence felt' (Ibid: 4). As of 2002, SMEs were estimated to represent the largest sector among 'other products sectors' (i.e. non-oil) in the Kingdom according to Saudi Chamber of Commerce and Industry (Otsuki, 2002). A total of 93,000 new companies, with a total capital of SR 2.6 billion were registered by the Ministry of Commerce and Industry during the year 2002 (SAGIA, 2005) – making the numbers of licenses granted to SMEs represent about 95% of new total commercial registrations.

In terms of geographic distribution, Riyadh, Jeddah and the Eastern Province account for nearly 75% of all SMEs registered in Saudi Arabia (Radwan, 2005: 195). As shown in table 4.4 47% of SMEs are engaged in commercial and hotel businesses, 27% in construction, 12% in industrial manufacturing sector, 6% in social services, and 8% in 'other businesses' (Saudi Chamber of Commerce, 2002).

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial and Hotel</td>
<td>47</td>
</tr>
<tr>
<td>Construction</td>
<td>27</td>
</tr>
<tr>
<td>Industrial Manufacturing</td>
<td>12</td>
</tr>
<tr>
<td>Social Services</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: Saudi Chamber of Commerce, 2002

47 The numbers of licenses granted to commercial establishments by the Ministry of Commerce by the end of 2001 were 675,425. The individual establishments represent about 95% of the total commercial registrations. The numbers of licenses issued for shops through Municipalities Ministry has reached to 161,855 by the year 2001. 71% out of total numbers of industrial sector are SMEs. Small factories are 1,105 with capital 1 to 5 million SR and medium factories are 1,360 with capital 5 to 20 million SR (Otsuki, 2002).
Published research on Saudi SMEs – and the Saudi business environment in general – is somehow limited. Only four studies currently exist, each of which were produced for a non-academic audience: Al-Kurdi’s (2002) New Approach to Small and Medium Sized Development, produced for the Ministry of Planning; Otsuki’s (2002) SME Support Systems in Saudi Arabia, produced for the Ministry of Planning; Radwan and Al-Kibbi’s (2002) Small and Medium Sized Enterprise Development: A Vision for Action in Saudi Arabia, also produced for the Ministry of Planning; and Shablaq’s (2003) Small and Medium Sized Enterprises in Riyadh City, Precarious or Continuous? which was presented to the Saudi Chambers of Commerce. All four studies point to similar problems.

Shablaq (2003) found that at least 50 SMEs in Riyadh were for sale every week. More than 80 percent of the SMEs in Riyadh were sold within one to three years of them being established. Some of the results in the current study (see Chapter 5) indirectly support the previous findings - the results also showed that 84.2% of the companies surveyed were cumulatively, less than five years old.

Shablaq found that more than 80 per cent of SMEs owners did not have a business plan and more than 70% of their owners did not know how to ‘use’ information technology, putting them at a likely disadvantage in an increasingly knowledge-based, globalised and competitive marketplace. The problems currently faced by Saudi SMEs are summarised by Shablaq as: (i) lack of planning; (ii) general mismanagement; (iii) a lack of marketing; and (iv) a lack of finance.

Similarly, Al-Kurdi (2002) described Saudi SMEs as beset by problems on various fronts: poor finance, poor marketing, poor technology, poor management and the threat of increasing global competition. He summarises the ‘multifarious’ problems faced by SMEs as follows: (i) shortage of credit for investment and working capital; (ii) managerial inadequacies; (iii) insufficient marketing effort and paucity of commercial intelligence, and; (iv) inadequate attention to technology and research and development.
In this regard, results of the current study (see Chapter 5) showed the reluctance of SMEs to construct business and marketing plans before starting their business (82.3% did not consider to write business plan and 98.5% did not consider writing a marketing plan).

Otsuki, (2002) goes into more detail, blaming SMEs underperformance in Saudi Arabia on:

1. **Lack of Funds.** A shortage of capital and credit ‘makes SMEs vulnerable to fluctuations in the supply and demand market economy.’ They often ‘face the refusal of financing institutions to provide necessary funds without credit guarantees for the establishment and operation of their enterprises.’

The current work confirmed the important role of bank loans on start-up financing of the SME. The majority of the interviewed SMEs agreed that these loans have high impact on their financing. However, in spite of this results showed that the majority of SMEs did not receive any government grants in the last three years (70.4%).

2. **Lack of Skilled Human Resources.** Otsuki (2002) cites the poor skills of Saudi workers as a consequence of Saudi’s rapid industrialisation in the 1970s and 1980s – ‘because of direct proceedings toward modern industries through importation of production technology from developed countries, Saudi industries became dependent on foreign manpower.’ Therefore, ‘there are shortages of skilled workers and qualified human resources in the factories and companies’. Indeed, in 2002 the rate of Saudisation in small enterprises (1-9 workers) in the kingdom has reached only 2% (Otsuki, 2002 :48).

3. **Lack of Management Skill.** Saudi SMEs ‘typically’ have low management standards due to the administrative and managerial inexperience of their proprietors. Moreover, this situation is compounded because ‘most Saudi

48 However, in my own survey of Saudi based in Riyadh SMEs (that is companies between 1-19 employees, discussed in Chapter 5), non-native workers made up only 25.77% of the mean total employees, meeting, or very nearly meeting, the government target. Thus government policy, at least when measured in terms of percentages, does seem to be having some effect.
SMEs owners are not involved in the daily management of the companies and leave the management to the non-Saudi expatriates’.

4. Lack of Market Penetration and Marketing Skills. There are restrictions in the size and area of markets to which they have ready access (predominantly domestic and Gulf Co-operation Council area) due to ‘low quality products, high and uncompetitive prices and inadequate marketing skills’. In a domestic market place dominated by large industry ‘they are often unable to satisfy the large market requirements which need large production quantities, homogeneous outputs and consistent international quality standards’ (Ibid).

5. Lack of Modern Technology. According to Otsuki (2002), Saudi SMEs use ‘rather old fashioned technology’. This structural weakness, a ‘weak industrial and scientific approach’ - is a direct consequence of the major limited funds and human resources’ (Ibid).

6. Cost Problems and Raw Material Purchase. SMEs experience their “generic” difficulty of lowering cost by achieving economy of scale in manufacturing. They ‘also have the problem of higher purchase prices of equipment and raw materials because of small quantities which causes the increase of production costs’.

7. Lack of Information. A ‘limited availability of information and data on the production technology and know-how’ is caused by ‘the weak human resources and fund shortages’. There is also a difficulty in attracting foreign investment, emanating from ‘the lack of appropriate information and public relation needed by the investors’ (Ibid).

Otsuki maintains that SME problems are not being adequately addressed by public and private support programmes, this could be attributed to (i) current support programmes are not properly targeted and (ii) the implementation and co-ordination of support is not properly administered due to the lack of a central authority responsible for SME support.

Radwan and Al-Kibbi (2002) identified the wider aspects of the Saudi ‘business environment’ that potentially impede SME growth and development; they list problems
relating to: (i) the legislative environment, (ii) the regulatory environment, (iii) Saudi tax and trade structure and, (iv) state infrastructure. The first problem relates to the costly and time-consuming procedures relating to licensing and registration of companies. In addition they cite a 'lack of legal framework for commercial dispute resolution and its enforcement', and the difficulties surrounding bankruptcy procedures and the use of property as collateral for financing. The second difficulty surrounds the regulatory environment and the current employment laws (which make both the hiring and firing of workers an arduous process), and government procurement procedures which, they allege, disadvantage and discourage SMEs from bidding from public contracts. Third, it is alleged that the tax structure and trade climate discriminate against SMEs. Finally, an inadequate, albeit rapidly developing, infrastructure places limits on access to information, transportation, and communication.

The final appraisal of Saudi SMEs comes from the Saudi government's own 7th National Development Plan (2000-2005) which identified five key problems: (i) lack of preparatory studies, (ii) difficulties in transferring business ownership, (iii) difficulties in obtaining finance, (iv) low productivity (v) inadequate and management skills. First, echoing the findings of Shablaq (2003) and Al-Kurdi (2002), the government cited the poor quality of the business planning ('preparatory studies') and 'market intelligence' of many Saudi SMEs, especially when considered in the context of markets that are increasingly competitive (due to globalisation) and changeable (due to technology) (Saudi Ministry of Planning, 2001). It went on to state that 'within the new paradigm, government has a role to play in facilitating the provision of such services on a commercial basis' (Ibid). The second problem is unique to the government's study, the difficulty of 'transferring business ownership to the new generation.' Many family-owned SMEs emerged during the oil boom (i.e. the mid-1970s to late-1980s) which are now in the midst of a 'generation shift' as their originators retire. The government therefore resolved to 'clarify the legal status of mergers and dissolutions' in order to facilitate the expansion of those firms that are successful and the rationalisation of those that are no longer functional in any meaningful sense. Third, the government repeats the findings of all four studies: there is a lack of easily available finance for SMEs. Fourth, the government alleges that poor research and development and low use of
advanced technology has led to declining productivity (mirroring the findings of Al-Kurdi, 2002). Finally, the government cites poor quality management skills – repeating the findings of Shablaq (2003), Al-Kurdi (2002) and Otsuki (2002).

4.8 SMEs Support

4.8.1 Government and Public Support

The government began taking serious notice of the problems within the SME sector from the mid-1990s with the emergence of the Sixth Development plan. This was the first time that SMEs (as opposed to the private sector in general) became recognised as integral to the project of economic diversification and employment generation. Government support for SMEs has progressed incrementally with the implementation of Saudi Arabia’s five-year development plans. The historical progress of government support can be traced as follows:


During the sixth plan (1995-2000) specific measures were introduced for the first time to support SMEs. This support took the form of: (i) increased access to finance/credit by expanding the mandate of the Saudi Credit Bank (a division of the Saudi Arabian Monetary Agency – the Saudi central bank) to include credit provisions for SMEs; (ii) an expansion of the government’s incentive/subsidy system (administered by the Industrial Development Fund) to include small enterprises; (iii) the implementation of ‘specialist training programmes’ for small businesses provided by the Saudi Chambers of Commerce and sponsored by the Ministry of Commerce and Industry; (iv) a commitment to develop new organisational structures intended to promote co-operation between small-scale enterprises.

The Seventh Development Plan (2000 – 2005)

By the introduction of the seventh five-year plan (2000 - 2005) a ‘key role’ had been designated to the role of SMEs in Saudi’s economic development. As discussed above, the government had identified several problem areas affecting the SME sector (i.e. planning,
ownership-transfer, financing, productivity, management skills). In response the plan initiated: (i) the establishment of a specific SME unit within the Industrial Development Fund, its main role is to provide grants, loans and free advice to SMEs as well as to research potential ways of promoting SME growth; (ii) a further expansion of the Saudi Credit Bank's provision of loans to SMEs (as initiated in the sixth development plan); (iii) the promotion of academic research (through the allocation of generous research grants) within Saudi universities to better support SMEs.

The Eighth Development Plan (2005 – 2010)

The Eighth Development plan saw a continuation, and relative acceleration, of the SMEs policies introduced by the Seventh plan. Notably, the role of the Saudi Industrial Development Fund (SIDF) was expanded to finance more loans to the SME sector. The Fund now operates a special loans programme alongside private banks to provide an equal distribution of SR100 million each (£16 million), which will be disbursed by the SIDF (Radwan, 2005: 199). At the same time, the Saudi Credit Bank is to expand the scope of its SME lending, raising the current lending ceiling to SR 200,000 (£32,000) per firm (Radwan, 2005: 199).

Although many of the government initiatives are laudable and the government has recognised the key problems affecting the SME sector, support is still hampered by inadequate targeting and delivery. As Otsuki recognises, the government development plans 'seem better suited to identifying problems than presenting real solutions.' Otsuki (2002) describes the 7th Development Plan's proposals as 'too general' and advocates that 'the Saudi Government should take more active steps towards SME development by providing specific support programmes' (Ibid). A key task of the government is to create a centralised body responsible for SME support. Technically, such a body already exists - the 'Mobilizing National Committee on SMEs' was inaugurated on 17 April 2001, with the mandate to 'prepare comprehensive programmes to support and develop SMEs by co-ordination among the Supreme Economic Council, Ministry of Finance and National Economy, Ministry of Industry and Electricity, Ministry of Commerce, The Council of Saudi Chamber of
Commerce and Industry, SIDF, Saudi Credit Bank and SAGIA' (Otsuki, 2002). However, to date none of the committee's recommendations have been implemented – Otsuki claims that 'the progress of this committee is rather slow because of the challenging task of its nature'.

The committee has increasingly taken a back seat to the work of the Saudi Small Business Agency (SSBA) sponsored by the Chambers of Commerce and Industry. Both the SSBA and the National Mobilizing Committee suffer from the same design flaw: in reporting to so many different government agencies but having executive or coordinating powers over none, they are not in a position to "deliver" coherent and wide-ranging SME support. All they can really do is lobby on behalf of the sector.

4.8.2 Chambers of Commerce and SME Support Units

An important, and potentially more focused, source of public SME support is the Council of Saudi Chambers of Commerce and Industry (CSCCI). Within the last five years, the Chambers in the major urban centres – Riyadh, Jeddah and the Eastern Province, have each established SME 'support units.' These units provide some technical and financial consultation services to existing and prospective SMEs. All three units run free-of-charge workshops, seminars, lecture-programmes and courses focusing on management, marketing and finance. The CSCCI claims that the most important – and popular - programme they provide is the "How to Start Up a Small Enterprise" course which includes a series of lectures and workshops over several weeks and is available to any Saudi national interested in starting a new business (Saudi Chambers of Commerce, 2002). The course places especial focus upon business planning and accessing available public and private sources of finance. In addition, one-on-one consultancy services are also available to both current and prospective SME owners; in these sessions, business plans can be further developed and basic financial questions answered. Reference materials are also made available within the Support Units, listing potential SME finance and investment opportunities.

The CSCCI is also involved in SME related research and policy-making. The Chamber has commissioned and funded several studies aimed at understanding and supporting SME
needs (Saudi Chambers of Commerce, 2002). Recently, the Chamber has also become involved in the research of international SME development programmes; collaborative agreements have been signed with their equivalents in Italy, South Korea and Japan in order to utilize outside expertise and adapt it to the Saudi context. The UK's HSBC has also been brought in by the CSCCI to consult on appropriate SME policy measures (Radwan, 2005: 198). However, the results depicted in the current research (see Chapter 5) showed that use of the facilities offered by the CSCCI reported to be low (51.2% never had any physical connection to the CSCCI and 87.7% not attended any of the events held by the CSCCI).

Significantly, the CSCCI has created precisely the sort of organisation that Otsuki (2002) claims the government should have – a single umbrella organisation, the Saudi Small Business Agency (SSBA), responsible for SME development. The SSBA is funded by the government but retains autonomous private management. The agency plays a 'co-ordination' role between SMEs and the government – submitting its findings to the Ministry of Commerce and Industry. The Director of the SSBA sits on all government and ministerial committees that are involved in the development, and implementation, of SME policy (e.g. the Saudi Industrial Development Fund, Saudi Credit Bank, Saudi Arabian Monetary Agency, Saudi Ministry of Commerce and Industry, Saudi Ministry of Planning).

Finally, Jeddah's Chamber of Commerce has introduced Saudi Arabia's first business incubator, which opened in the summer of 2005 – a project which will be discussed at length in Chapter 5. The Eastern Province Chamber of Commerce, in collaboration with King Fahd University for Petroleum and Minerals (KFUPM), also has an incubator and science park project underway. However its opening has been delayed, without public explanation, to 2009 (from the originally planned date of 2006).

Using Chambers of Commerce as a vehicle of Saudi SME support has some practical merits – the Chambers are the 'closest' public institution (in terms of accessibility and contact) to the small business community; they also have large and centrally located offices in each of Saudi's urban centres and are generously subsidised by the Ministry of Commerce and Industry, allowing them to provide professional services. However, two problems attach
themselves to the CSCCI as a means of support-delivery. First, the Chambers are unable to provide a full 'one-stop-shop' for SME support – they can offer basic training and consultation services but they are not able to unify SME services. For instance, the Support Units are able to provide information on funding support (as provided, ordinarily, through the loans and grants of the Industrial Development Fund) but they are only able to give limited advice. They do not (currently) possess the resources to guide SMEs through the lengthy application process and (with the exception of the Jeddah Business Incubator) cannot support such applications – although in 2004, the Saudi small business agency (SSBA) has recommended the establishment of a loan guarantee fund for SMEs (Radwan, 2005: 198). Indeed, as shown in the research (Chapter 5), of 260 SMEs surveyed in the Saudi Arabia, only 72 SMEs (27.7%) received SIDF loans. Of those 72 SMEs – 51 respondents (70.8%) rated the speed with which the loan was approved after application as “very slow.”

Although the CSCCI SME support units are a laudable innovation and are certainly attempting to address managerial and business-planning inadequacies as well as pointing SMEs towards start-up finance, they are, inevitably, unable to remedy some of the more profound difficulties, e.g. a difficult legislative environment, an underdeveloped information and technology infrastructure and poor availability of market information (Al-Kurdi, 2002).

The establishment of the SSBA is a useful step that proved effective in co-ordinating the efforts of the Chambers' SME support units, but within the wider context of public support for SMEs, it suffers from the same flaws as the National Mobilizing Committee for Small Businesses because its executive and co-ordinating roles are clearly limited – although the Director is able to sit on governmental and ministerial committees, the SSBA does not co-ordinate the government response to SME support, nor does it deliver it.

A second, perhaps more fundamental flaw in delivering SME support through the CSCCI is that very few SMEs – potential and actual – actually contact their local Chambers of Commerce, even though membership is mandatory upon registration of a new business, the process equates to filling out and posting forms. The new services the CSCCI provides for SMEs are not well-known and a minority of new businesses actually visit the Chambers' premises. Indeed, as shown
in this research (see Chapter 5) only 46 (17.7%) of 260 SMEs surveyed in Riyadh had actually visited their Chambers of Commerce in person. Thus, an absolute priority for the Chambers of Commerce must be to enhance knowledge of the services they provide.

4.8.3 Private Support

At the moment, private support for SMEs remains highly limited. As Radwan and Al-Kibbi (2002) point out, SME growth is dependent upon a wide range of public and private actors working in unison – the government requires the active participation of the private sector including ‘commercial banks, large enterprises, business service providers and other relevant stakeholders’ (Radwan and Al-Kibbi 2002: 32). However, a fruitful public-private partnership to develop the SME sector has not yet emerged. The government has yet to persuade the private sector, especially Saudi commercial banks, that the SME sector today represents a commercially viable sector in its own right and a lucrative future market.

4.9 The Development of Business Incubators in Saudi Arabia

4.9.1 The Usefulness of Business Incubators in Saudi Arabia

The review of the Saudi SME environment revealed that Saudi SMEs suffer from six broad structural and institutional flaws: (i) lack of finance; (ii) poor management; (iii) poor business planning; (iv) poor market intelligence; (v) under-utilisation of technology and (vi) a difficult business and legislative environment. As discussed extensively in Chapter 2, it is widely acknowledged that business incubators are well placed to address such problems.

Within Saudi Arabia, much of the available literature focuses upon the role incubators might play in technology-transfer. Shalaby (2001: 39), claims that SMEs are under-pressure to utilise information technology, ‘everyone is constantly telling them that they must embrace the internet and the digital economy, they must go into e-commerce and become global...but whereas everybody tells them to do so, not many people tell them how to do it. A business incubator would be able to show them’ (Shalaby, 2001: 39). Likewise, Al-Kurdi advocates the use of business incubators as a means of ‘strengthening the technology standards of SMEs
in the context of global trends in trade liberalisation... therefore promotion of incubators and technology parks have a key role to play in Saudi Arabia' (Al-kurdi, 2002: 12).

However, several studies point to the wider advantages of business incubators in addressing the institutional problems facing Saudi SMEs. Radwan and Al-Kibbi (2002: 18) and Radwan (2005: 194) highlight the general advantages of business incubation; they believe that incubated Saudi SMEs would 'gain a lot through inter-firm linkages. Such linkages can serve to enhance the individual competences and capabilities of the SMEs, through collective effort in vital areas along the manufacturing value chain (e.g. RD), bulk sourcing of raw materials, sharing of key facilities (e.g. testing calibration, warehousing) meeting of industry and market standards, enhancing IT capabilities or collective training of human resources (Radwan and Al-Kibbi, 2002: 18).

Similarly, a report by Boubshait (1999) argued that the introduction of business incubators is likely to help: (i) support commercial, industrial and service environment; (ii) expand the business base and enhance Saudi entrepreneurs' participation in the development of the national economy and economic diversification; (iii) provide market and financial intelligence to assist in the update of industrial, commercial and service activities; (iv) develop new technological concepts into tangible projects; and (v) reduce the risks of business failure.

The answer to the question of who would – or should - be responsible for business incubation in Saudi Arabia very much depends upon the proposed scale of its introduction. A large scale, national, programme of business incubators would, of course, require government support.

The Saudi Ministry of Planning (2002) identified three potential mechanisms of sponsorship. First, they suggest a ‘Partnership Financing Mechanism’ whereby the incubator would become a partner with the owner of the incubated project. The incubator itself would be a private business, funded by loans from commercial banks and the incubatee would be obliged to pay a portion of profits to the incubator. This, essentially private, model, could only maintain small-scale incubator projects – at least initially - as it would not require any
sort of national co-ordinating mechanism. Generally, commercial banks prefer to lend money to low-risk projects with short-term returns; thus, a common problem faced by high-technology projects is the reluctance of commercial banks to lend money to such "high-risk" enterprises. Ironically these are precisely the type of enterprise that would be of most use to the Saudi economic development process. Thus, a privately funded incubator runs the risk of experiencing the funding problems faced by SMEs, especially in the technology sector.

The second mechanism identified by the Ministry is a 'Joint Financing Mechanism' - the incubator would be jointly funded by the Saudi Chambers of Commerce and Industry (SCCI) and the government, represented by the Ministry of Finance and the Ministry of Industry and Commerce. Funding and support would be provided for incubatees in return for a proportion of profit generated. It is not clear which body would have 'executive control' of the incubators, a significant flaw in such model. Indeed, as Boubshait (1999) points out, there are 'inherent problems' in establishing financing partnerships in Saudi Arabia, especially between the public and private sectors; to date there is no track record of success for this type of collaboration.

Finally, the Ministry identifies what it regards as 'the most suitable mechanism' - incubators are sponsored by the Saudi Industrial Development Fund (SIDF), a government agency. In this model, the SIDF would provide funding, technical support and administrative direction to incubators. Several reasons are advocated for this sponsorship model. Boubshait (1999) argued that direct government sponsorship and administration, via the SIDF, would circumvent the problems of co-ordination exhibited by the joint financing mechanism, and the problems of financing experienced by the partnership financing mechanism. It would lead to the most effective introduction of projects that were better suited to the national interest, generating 'positive economical, social and technological returns to the Kingdom. (Boubshait, 1999)

There is a good deal of logic to the Ministry's recommendations. However it should be noted that a critical problem in the design and delivery of SME support in Saudi Arabia has been a lack of proper co-ordination, and clear direction within those government bodies responsible for promoting the SME sector. Indeed, it is not possible to identify a single
department responsible for SME support; the Ministries of Commerce and Industry, Finance, Planning, and the Saudi Industrial Development Fund are all 'stakeholders' in SME development, but none has claimed – nor is able to claim - a clear leadership role. Bodies that have been created specifically to address SME needs, such as the Saudi Small Business Agency (SSBA) and the National Mobilising Committee on SMEs suffer from this ambiguity and are not able to take a clear lead. Thus, when it comes to the organisation and sponsorship of any incubation programme it is imperative to avoid confusion amongst disparate government agencies.

Currently the organisation most involved in SME-support is the Saudi Chambers of Commerce and Industry (SCCI), co-ordinated through its (SSBA) and SME Support Units. It would seem likely that the SCCI is best placed to deliver a business incubation programme on a national scale in the near- to medium- future. The SCCI already have a 'physical' presence, have developed SME training programmes and are, at least relative to other public organisations, the most "in touch" with the SME community. However, the inevitable problem is one of finance; the SCCI would require additional funding for such large-scale programme. The obvious candidate to provide such funding is (as identified by the Ministry) the (SIDF). The problem is that this leads back to the problems detailed earlier in the 'Joint Financing Mechanism' situation – "collaborative" projects in Saudi Arabia are notoriously difficult to implement. A solution could be found if the SIDF would not only fund the SCCI, but also place full decision-making and administrative co-ordination in its hands.

The alternative route is for the SIDF to co-ordinate the entire project, and takes full responsibility for its implementation. As to the likelihood of securing SIDF funding, the Saudi Ministry of Planning (2002) points out that the cost of establishing a business incubator does not involve more financial costs than the establishment of small scale industrial ventures in which the SIDF traditionally specialises. However, although the SIDF has the funds, and may be willing to spend them, the question remains as to whether it has the organisational capacity to implement such a large-scale project.
4.9.2 Known conditions for and against incubator success in Saudi Arabia

A) Known reasons for success

Saudi Arabia is in the process of restructuring its economy with the aim of diversifying its economic base and incorporating advanced technology and eventually realise the objective of reducing the labor market pressures caused by the population boom.

In many countries moving away from ‘command-and-control’ economies (e.g. China, Czech Republic and Poland) – and towards a diversified, knowledge-based market economy, it is alleged (e.g. Shalaby, 2001: 33) that incubators have made a "prime contribution" to economic restructuring. Technological incubators in particular are seen as the most ‘reactive mechanism’ (Boubshait, 1999) to achieve this goal. Thus, the Saudi Ministry of Finance (2002) identifies technological incubators as a candidate to achieve the ‘normalisation of advanced technology’ within the Kingdom, as well as prompting economic diversification.

Moreover, the structural problems afflicting Saudi Arabia’s SME sector appear to be so entrenched that SMEs require extensive assistance to survive. Certainly business incubators provide the most extensive and intensive assistance to SMEs. It is contended by Boubeshait (1999) and the Saudi Ministry of Planning (2002), that incubators can provide such a role in Saudi Arabia. Boubeshait believes that incubators can help to: (i) achieve "convergence" between large industry and ‘applied scientific research’; (ii) offer support to existing high-tech SMEs whilst encouraging the creation of new ones (iii) transfer the expertise of universities, which will increasingly function as ‘centres for production of knowledge, technological inventions and modern innovations,’ (iv) act as “guides” and economic indicators for new SMEs; (v) enhance the efficiency of SMEs thus generating increased productivity.

B) Known reasons against success

As stated, the key aim of Saudi economic policy and planning is to address the employment difficulties generated by the Kingdom's demographic pressures. Although SME development projects, such as incubators, are often seen by policy-makers and governments
as a "panacea" to unemployment (Kirby, 2003: 62), pre-existing levels of employment are shown to have a significant effect upon their applicability in a given environment. As Kirby (Ibid) notes, employment may affect the predisposition towards new enterprise in opposing ways. On the one hand, evidence exists to suggest that high levels of unemployment correlate with low levels of new firm creation. On the other, it is logical that more individuals will seek self-employment as a means of "remedy" if there is large-scale unemployment in a given society/region. Indeed, Storey and Jones (1987) and Hamilton (1989) cited in (Ucbasaran, 2008: 30) have suggested that individuals may be "pushed" into starting a venture due to threats of business closures, layoffs, mergers, relocation, rejection of the individual's ideas, and reduced job satisfaction. However, as the OECD report on entrepreneurship has pointed out, 'entrepreneurs tend to gather business ideas from previous work history' (OECD 2003, 49) – indeed, Fielden et al (2000, in Ibid) found that over 80 per cent of entrepreneurs had created businesses based on previous work experience, thus: 'populations comprised of individuals who have never worked, or whose work history is limited are likely to produce low numbers of viable business proposals.' As the OECD concludes: 'entrepreneurial inertia is likely in communities in which unemployment has been common and protracted and average levels of human capital are low' (OECD, 2003: 50). These are, however, supply side conditions.

By contrast, as Kirby (2003) notes, if demand-side environmental factors become dominant then the lack of economic buoyancy ordinarily implied by high levels of unemployment would suggest that overall, high unemployment levels are indicative of sub-optimal economic conditions for new enterprise creation. Hamilton (1989 cited in Ucbasaran 2004: 30, 31) argued that there is a critical level of unemployment based upon supply vis-à-vis economic demand, estimated to be around 20%, beyond which, falling levels of venture formation may be expected. Although unemployment statistics in Saudi Arabia are notoriously unreliable, they have been estimated to be as high as 31.7% (according to a 2003 survey by SAMA "Unemployment: Causes and Remedies" cited in Radwan, 2005: 365) and even the "official" figures, provided by the Manpower Council, estimate a rate of between 8%
and 14% (Ibid). Moreover, unemployment levels amongst new graduates are estimated at 27% for men and 33% for women (Looney, 2004b) figures that clearly surpass Hamilton's (1989) benchmark of 20%.

A final consideration in the relationship between employment and SME creation is the role of networking. An important source of 'business networks' is past employment, which introduces potential entrepreneurs to potential suppliers and potential customers. Birley (1985), in (Ucbasaran 2008: 32) found that 66% of the founders of new firms had some relation to their previous employer - either as customer, competitor or supplier; similarly, Turok and Richardson (1991 in Ibid) suggested that for 50% of the founders in their sample the main source of their ideas was derived from their previous employment or experience gained at work. In this context, the previous employer of an entrepreneur has been referred to by Cooper (1985) as his or her "incubator organisation" (in Ibid). This would seem to reinforce findings that employment levels are a significant variable on the macro level. Again, this would indicate a negative condition for business incubation in Saudi Arabia.

The question that emerges is whether the problems generated by unemployment (e.g. poor business networks, poor skill levels, poor experience, poor economic conditions), provide an opportunity or a hindrance for business incubation in Saudi Arabia. On the one hand, the low levels of "skills" of Saudi entrepreneurs may make the promotion of SME support programmes, including incubation, an imprudent course of action for the government. On the other hand, if the Saudi government is committed to the support of SMEs, which all the evidence would imply, then business incubators may be the only means with which to "fill in" the skills and network gaps of Saudi entrepreneurs.

The other major problem affecting incubator success in Saudi Arabia is related to its management. As Shalaby (2001) puts it, 'the correlation between the success of an incubator and its degree of independence is a direct one.' Shalaby believes that incubators must be independently managed and independent from any bureaucratic entity or organisation whereby the Director and his assistants assume full responsibility for managerial functions. Therefore, only two realistic options exist for the wide-scale introduction of business
incubators in Saudi Arabia: (i) delivery through the Saudi Chambers of Commerce and Industry backed by government funding (e.g. from the Saudi Industrial Development Fund); and (ii) delivery and funding from a single government source (e.g. the Saudi Industrial Development Fund). Under both scenarios, the "independence" of the incubator's management is at risk of interference by government financiers.

4.10 Alternative Options: (University Incubators)

Shalaby (2001) believes that Universities such as King Fahad University for Petroleum and Minerals (KFUPM), King Saud and King Abdullazeez are institution established to foster 'scientific, economic and industrial development and they have the potential to build future incubators around their research centers. In particular, he believes that universities can contribute to the 'system of innovation' by:

- Fostering entrepreneurship to support local high-tech enterprises
- Develop generic technologies for locally based industries
- Engage in the commercial transfer of technology
- Undertake the training of high-skilled industrial personnel
- Collaborate with local/regional commercial initiatives

Shalaby also believes that universities can help fledgling SMEs, in the form of a "quasi-incubator" capacity, by:

- Investing in patents and other intellectual property protections and developing the technology to the start-up enterprises and determining the role of inventor
- Incorporating the enterprise, issuing stock, completing licence agreements and executing other enterprise formation processes
- Developing the business plans of SMEs
- Providing technical and business support in the form of human resources, contacts, flexible rental space and access to laborities and equipment
• Raising the substantial venture capital required to get beyond initial stages of business (Shalaby, 2001: 39).^49

4.11 Discussion

The link between the ‘macro economic’ problems facing the Saudi economy and the SMEs now seems quite clear. Certainly, the government now recognises that the relationship between private sector development, economic diversification and SME development is a strong one. It is now expected by policy-makers that rapid SME development will, almost exclusively, fulfil the dual role of generating employment and diversifying the economy. In addition, SME growth is seen as an effective way to contribute to economic growth, vitalise Saudisation, encourage regional development, innovate new technologies and expand export markets. Clearly, Saudi Arabia’s economic planning focuses heavily on the blossoming of small-scale, private enterprise as “vehicles of change”. They are seen as the enterprises best equipped to cushion the large scale demographic and economic pressures discussed in part one of this chapter.

Despite the government’s enthusiasm, the Saudi SME sector appears, at present, under-equipped to assume the expected role. The SME sector is under-performing, and the problems of inadequate funding, human resources, management skills, marketing, technology and information are underpinned by inadequate government support as well as poor co-ordination of this support. In order for any SME support – and in particular business incubation – to be successfully delivered, it must be properly organized by the supporting bodies. It is not yet clear whether adequately organized support bodies currently exist in Saudi Arabia.

As discussed in the literature review, incubators have historically developed as specific ‘solutions’ to the common structural difficulties experienced by start-up businesses. The logic behind the Saudi incubation initiative is clear and can be traced directly to the macro socio-

^49 In agreement with these finding, the current research demonstrated that a high percentage (84.2%) of the interviewed academics confirmed that they had undertaken commercial research and 47.4% of their research was in the information technology; this research collaboration is important in creating successful environment for incubators.
economic difficulties currently facing the Kingdom. In the last three years, Saudi policy makers, particularly the Ministry of Planning, have taken up the theme of incubation as a way of improving the survival rates of Saudi SMEs. The Jeddah incubator is the first example of this enthusiasm for incubation as well as an evidence of the increasing levels of government interest in supporting SMEs.

CHAPTER 5: EMPIRICAL RESULTS
In this chapter results of empirical analysis will be presented. These include: (i) Focus group (ii) Survey data.

5.1 Focus Group

This section summarises the results of two focus group sessions conducted in August 2006 at Riyadh chamber of commerce. One group was composed of eight members and the other composed of seven. Both groups were mainly composed of experts who hold key decision-making positions within organisations that are likely to play a decisive role in introducing, supporting, and funding of Saudi incubator programmes. One participant was unable to attend the second focus group; he was supposed to represent Abdulatif Jameel Community Service Fund. Five participants requested anonymity; therefore, to maintain the consistency of this research they will be referred to as (participant A-O). Details of the participants and their organisation are as follows:

1. Participant (A). King Saud University. Member of the teaching staff. Engineering college.
6. Participant (F). Riyadh chamber of commerce and industry. SMEs development centre director.
7. Participant (G). Council of Saudi chambers of commerce and industry. SMEs development centre director.


13. Participant (M). Manager SMEs support unit (SAGIA)


15. Participant (O). King Abdulaziz city for science and technology.

Focus group responses were audio taped and were captured by note taking for the purpose of assuring the audio tape was complete. The observations, comments, key themes, conclusions, and recommendations drawn from the two focus groups are given below:

Focus Group Results

A) Role of Ministry of Commerce and Industry in Supporting and Encouraging SMEs and the Degree of Co-Ordination between SMEs Support Organisations

In discussing the current situation with regard to policies to promote the development of small and medium enterprises in Saudi Arabia, Participant N indicated that he absolutely believed that government support strategy to entrepreneurship and SMEs is an absolute priority; he cited some example of this support such as the provision of financial support, research and counseling. He further added that this belief is widespread amongst many government organisations in the gulf region and the rest of the Arab world. Examples of these organisations are the Ministry of Commerce in Saudi Arabia, Saudi Arabia General Investment Authority (SAGIA), and the Arab Organisation for Industrial Development. In addition some of the banks such as the Saudi British bank also show an interest in supporting SMEs in the Kingdom. He also added that some researchers (Dr. Al-malki) are currently doing joint research with Riyadh Chamber of commerce (SME support unit) to explore more in this field of SMEs support. Another study is also underway in collaboration with the United Nation International Labor Organisation (ILO).
Participant N added that, apart from a comprehensive entrepreneurship and SMEs strategy, the development of national SME support institutions and networks is one key condition for success. There is no doubt that governments should create different types of support institutions that could provide information on regulations, standards, taxation, customs duties, marketing issues, business planning, marketing and accountancy, quality control and assurance; and help in creating incubator units to provide the space and infrastructure for business beginners and innovative companies; helping them to solve technological problems, and to search for know-how and promote innovation.

All these support activities reflect the strategic importance of SMEs in market economies and their role as an engine of economic development, as well as their potential to react to challenges and changing environments, and their contribution to sustainable growth and job creation.

Participant D draw the attention to the seventh national development plan (2000-2004) which adopts several measures to support small and medium scale enterprises while complying with the Kingdom's commitments under WTO, the most important of these measures and initiatives are:

- Simplify the procedure for establishing small and medium scale enterprises, eliminating associated routine constraints and enhancing technical and administrative support for these firms.

- Study the possibility of establishing special fund with Government and Private sectors participation to facilitate access to loans by small and medium scale enterprises to develop Islamic financing instruments such as Musharakah, Murabaha, and to broaden future Mudarabah finance opportunities available to these enterprises.

- Expand the lending activities of the Saudi Credit bank.
• Develop the regulation and rules necessary for encouraging small industries.

(The priority mentioned in the seventh development plan, is to enhance job creation and increasing the role of the private sector in the economic activity).

Participant H commented that the Council of Ministers decision on privatisation objectives and policies, was to ensure a continued increase in the share of the private sector and expand its participation in the national economy, by adopting the best available modality including: transferring certain types of economic activity to the private sector, enhancing the participation of the private sector in economic development and enabling it to carry out its investment and financing role in accordance with the national development plans. He went further, to mention that the Government has listed 20 activities and services to be privatized. Among the listed activities considered relevant for the development of small and medium enterprises are: Industrial cities services, banks, Municipality’s services, educational services, and social services.

Participants indicated that the Saudi Industrial Development Fund (SIDF) has established a special fund for SMEs (Credit Guarantee scheme) with an initial capital of SR 200 Million (US$ 53 million), 50% of which is funded by the Government and the other 50% funded by the Saudi local banks. The main activity of the Saudi Credit Bank (SCB), is to give social loans to Saudis who have low income. A part of the social loans, SCB gives loans to some specific sectors up to SR 200,000 (US$ 53,000). A new loan programme was recently created targeting taxicabs to encourage Saudis to this profession.

These measures could enhance the business environment for domestic and foreign investment, supporting and promoting entrepreneurship, and leading to more rapid private sector development. However, without appropriate operationalisation and without clear description of the role and position of government and governmental institutions, achieving these goals will be difficult. Therefore, designing a comprehensive, coherent and consistent approach by the Council of Ministers and respective governments entities is an absolute priority. A comprehensive government approach to entrepreneurship and SMEs would
provide for a full coordination of activities of numerous governmental institutions and NGOs dealing with entrepreneurship and SMEs.

Participant H further added that SMEs have strategic importance for national economics due to a wide range of reasons. Logically, the government shows such an interest in supporting entrepreneurship and SMEs since there is no easier way to create new jobs, increase GDP, and raise standards of living than supporting entrepreneurship. Every surviving and successful business means new jobs and growth of GDP.

Unfortunately, in Saudi Arabia the contribution of SMEs to the economy is meagre. Undoubtedly, an unfavorable business environment is one of the reasons whos SMEs are undeveloped and there is no real reason to deprive SMEs of governmental support and assistance.

Success of the micro credit sector in the Kingdom in the form of provision of financial support through micro-credits is the best evidence that people in Saudi have entrepreneurship potential and that with small support they can successfully manage small businesses. Accordingly, establishment of an appropriate governmental support to entrepreneurship and small business should be one of the key priorities.

B) The perceived problems currently facing Saudi SMEs

Participant C admitted that a set of complicated regulations are currently in force under which an SME has to pass to establish a new firm. These complicated regulations, Participant C said, should be simplified so that SMEs could get a license to start up a new business without facing too much difficulty.

The majority of participants indicated that In Saudi Arabia, small (less than 9 employees) and medium sized (10-21 employees) businesses to date have not achieved what was expected for a number of reasons. Major obstacles mentioned by participants could be summarized in the following:

- Lack of a clear definition, form and productive orientation for SMEs
- Lack of a central body to coordinate support provided to SMEs
• Difficulty in securing land (industrial cities) on which to establish businesses.
• Lack of coordinated and easily accessible information on SMEs support programmes.
• Bureaucratic barriers. While some progress has been made in cutting bureaucratic red tape. Participants noted that Approvals can still take a long time in Saudi Arabia.
• Lack of credit/finance/capital. The effective cost of capital is often quite high. As a result, lending institutions often require guarantees beyond the means of the borrower. Participants mentioned that most SMEs in the kingdom are not satisfied with the existing banks/financial institutions. They (SMEs) find loan procedures very complicated. Most of them are unable to meet the requirements for personal guarantee and securities. Compared with the terms given to the country's larger, more established firms, banks are generally too rigid and cumbersome, and there is considerable difficulty in obtaining loans.
• Dependence on foreign resources. Ironically, given the ability of SMEs in many developing countries to create local jobs, many Saudi SMEs create very few. As part of the country's Saudisation programme, whereby the percentage of the jobs held by Saudi nationals was to reach 30 percent by the end of 2003, many of these companies have managed only marginal progress of two percent on average in the case of very small enterprises.
• Limited management skills. Lower management standards to run their businesses due to lack of managerial experiences. Owners are usually not involved in the daily management activities and leave the management to the non-Saudi expatriates.
• Limited marketing skills. Many SME managers in Saudi Arabia have little formal training in marketing and product distribution. As a result, their
operations often cannot take advantage of economies of scale and are high cost. They are limited to local rather than export, or even national markets.

- The cost of complying with national and international standards can also be very expensive for SMEs. This will be especially the case when Saudi Arabia joins the World Trade Organisation (WTO).

- Limited information on possible markets and clients. Many Saudi SME owner/operators have little experience in exporting to foreign markets.

- Vulnerability during recession. Because of their lack of access to credit, Saudi SMEs are usually vulnerable in times of economic recession. The resulting business failures often add to the severity of the recession. This problem will only be compounded as the economy moves to a freer price system with the country's ascension to the WTO.

It should be added here that extensive surveys carried out by the Council of Saudi Chambers of Commerce and Industry (CSCCI) and the United Nations Industrial Development Organisation (Richard, 2003) documented almost the same concerns raised by the focus group.

C) Suggested Initiatives and remedy measures

The main strategic elements and areas for special emphasis identified by the participants are:

- Developing a general policy framework within which SME development policies and initiatives are to be implemented. In addition, clear government policy on SMEs and special incentives for SMEs in order to promote SMEs development would be vital. The government assistance and support are indispensable for SMEs. The purpose of the proposed policy framework is to establish a reference to guide all services, programmes, incentives and policy initiatives addressing SMEs.
• Creation of government authority to be responsible for and support SMEs. Participants confirmed that solutions to problems facing SMEs essentially, needs government involvement and support plus an active contribution of the private sector including commercial banks, large enterprises, business service providers and other relevant stakeholders.

• A much needed public-private partnership must take shape if SME's are to be empowered. An example of such an intervention is for the government setting up a systematic policy on how to support and develop SME's in the Kingdom. This policy must contain a practical working structure that is simple and achievable, and that indicates the roles and tasks of key players. It should provide a checklist of how regulatory procedures must be dealt with.

Participants suggested that the second issue to be addressed in the policy is the creation of an official authority to oversee SMEs development. Something like the Saudi Arabian General Investment Authority (SAGIA) to be called the Saudi Arabian SME Development Authority (SASMEDA). Such an authority would be the major body that caters to all the administrative and regulatory issues facing SME’s. By simplifying regulation and facilitating licensing as well as other procedures like property registration and labor issues, SME’s will have more time for their actual business instead of spending it on routine administrative work that requires them to commute from one ministry to another in order to get a simple job done. The critical factor here is to decentralise existing systems while providing absolute executive power to this authority to resolve all regulatory administrative issues.

Finally, the policy should include the establishment of a national association for SME’s with the purpose of providing its members with state-of-the-art technical, managerial and marketing support. Other services should include legal counseling, accounting services, financial consultations, assistance in conducting economic feasibility studies, research and information gathering services, training workshops as well as general awareness in all of the above. There is no national association for SMEs in the Kingdom. The association must
be established for the successful growth of SMEs separate from chambers of commerce and industry. This association will provide member SMEs with know-how and expertise of management skills and marketing skills, technical supports, legal, accounting and financial consultations, assistance of economic feasibility studies, provision of information and research activities, human resource training and various seminars and workshops on theses subjects.

- Establishing district industry centre and industrial zones
- Marketing and export promotion
- Training and human resource development. This covers both on-the-job training and the broader education system. There is a strong need to improve skill bases in a range of areas.
- The encouragement and creation of alternative financial sources. Islamic financial institutions could play an important role in providing financial capital on equitable terms in accordance with Islamic codes. In addition, guarantees for SMEs through either, exiting SIDF and Saudi Credit Bank, or by newly establishing the banking institution for specialized financing and credit guarantee for SMEs. The commercial banks are also requested to provide as high-level of commercial loans as possible to SMEs. Participants collectively agreed that the first issue the proposed policy must address is the creation of a general fund and credit facility. Finance plays a major role in the development of SMEs. They added, the role of government would be to either convince banks to increase their lending power to this sector, or it can establish special funds to facilitate loans and credit guarantees, or both. True, certain funds already exist, but the regulations governing the credit processes are lengthy and beneficiaries from these funds are few.
- Funding for research and development. SMEs lack assistance both for developing new ideas and turning these ideas into commercial products.
• Improving awareness of the legal environment for SMEs. The government has established a series of legal regulations and provides a number of instruments to support domestic industry. However, because they are not aware of their options, many Saudi SMEs work under restrictive licensing agreements with foreign partners. This often bans SMEs from exporting, and forces them to rely on foreign managerial and technical skills. Consequently these firms, rarely undertake product and process innovation. By subsidizing e-commerce legal services and related online information the government could enable more advantageous contracts for local firms. Legal framework of SMEs supports is essential to support SMEs and is still in a preparatory stage. SMEs must be supported through the special SMEs law and regulations on corporate taxes, labors, minimum wages, accounting standard on depreciation, etc.

• Business incubators. Incubators could provide an attractive framework for addressing most of the obstacles facing SMEs. They can be considered as a remedy for the disadvantages that SMEs encounter by providing numerous business support services and fostering technological innovation. They can work as a mechanism for new venture creation.

Participants concluded that, true empowerment can only be achieved when SMEs have the right policies, systems, tools and framework in place. Once these elements are set, then comes the role of the SME’s to take responsibility for growing their businesses and expanding national employment.

D) Role of BI (The specific macro economic /development role envisaged for incubators)

Participant H mentioned that there are many young people with talent and ideas for new businesses or services. Despite their desires, and their talents, many of these youth will fail in their quest to build a successful surviving small business. He added that business incubator would play a significant role in improving the survival rates of business start-ups, as they do in other countries. The business incubator could promote enterprise success in several ways.
First, the incubator will provide access to a pool of centralised services. Cost of these services will be part of a fee. Second, entrepreneurs with similar needs and frustrations will work in a close proximity that will enable them to share their experiences.

He added that the presence of other firms and service providers will create a strong opportunity for trade relations to develop. The incubator will also help aid business' start-ups search for capital. An incubator run by a local government will predicate on creating employment opportunities for that local region. University-related incubators, while sharing that goal, will also look to transfer academic research into new products and technologies as well as to create opportunities for students.

Other advantages will be attained if the incubator is located near or on a University site including: library facilities, exposure to certain state-of-the-art technology and thinking utilisation of undergraduate students in science and engineering that form a very useful source of technical labor/assistance etc.

Participant M indicated that absence of venture and seed capital, low levels of business networking, lack of marketing and inadequate business support mechanisms appear to be major problem areas that drive down the positive impact of incubators in the Kingdom. He added that venture capital markets are not developed and there should be some attempts for finding and developing one.

To accelerate activities for the cause of SMEs, in the last few years the Kingdom started to consider introduction of business incubators. This movement started in early 2004 with eastern province chamber of commerce and industry (EPCCI) signed a Memorandum of Understanding (MOU) with the Human Resources Development Fund (HRDF) to establish an incubator which will provide technical support to SMEs. This incubator, the first of its kind in the Kingdom is expected to come up later that year (failure to secure funding delayed operation of this incubator).

In terms of prospects for incubators in the Kingdom, Participant F proposed that incubators and their graduates could play a key role in fostering economic development on a
local level, especially in these four ways: 1) providing employment, 2) retooling workforces, 3) increasing local tax bases, and 4) creating economic specialisations.

Participant G generally accepted that small and medium size enterprises (SMEs), particularly micro and small enterprises, in Saudi Arabia lack the necessary resources to effectively scale up, and grow their businesses. Yet these firms offer some of the greatest opportunities for innovation, employment, and value creation. Business incubators can be an effective tool for supporting local innovation and new business creation and can reduce SME failure rates substantially.

E) The current level of support for incubators

Participants indicated the need for government and non-government organisation and funding to contribute in the establishment of incubators. Coalition of partners from the public and private sector should join together and take initiatives and get involved in assisting incubators efforts.

F) Success factors for business incubators

Participant A and D indicated that solid planning for establishing a new incubator should first assess the private sector environment where the incubator would be established and that a survey of SMEs needs should be conducted. They added that incubators effectiveness in similar environment in other countries should be emulated. Finally, the model should be clearly identified and should be consistent with the objectives of the incubator.

Participant K emphasised that the important success factors that lead incubators to perform better in the Kingdom include qualified technical, managerial, and administrative support. However, Participant J also argued that better networked incubators perform better. Better networked incubators can provide incubatees (start-ups) with effective internal networking and sufficient external networking as well (e.g., technical support from outside experts, professional assistance from outside consultants, support from the central and local
Participant L suggests that external networking and outsourcing are significant components in the case of the Kingdom.

Participants indicated the need to establish incubators in small cities and rural areas in Saudi Arabia. They added that small cities and rural areas are vulnerable to characteristics of rural economic environment such as the low population density which makes it difficult to build markets and workforces, remoteness from transportation centres, raw materials, market activity, and financial institutions. All these factors represent barriers to entry and cost disadvantages. Also, poor physical infrastructures, in addition low education levels, skilled worker shortages, and lack of experienced managers increase entrepreneurial challenges.

5.2 Survey Data

As discussed at length in the methodology, three surveys have been conducted to gather data: (1) a survey of 153 Business students, (2) a survey of 19 Business academics and (3) a survey of 260 Saudi SMEs. This section presents the empirical results of these surveys and is organised into three sections:

- Education and its relationship with business in Saudi Arabia
- Saudi SME environment and practice
- Attitudes towards business incubation amongst Saudi Business academics, business students and existing SMEs.

Instead of being presented as separate surveys, the findings are themed around these topics. Where questions have been identical across surveys, the data is presented together.

5.2.1 Education and its Relationship with Business in Saudi Arabia

A) Attitudes towards Business

According to (SAMA, 2001), in recent years Saudi Arabia has had to come to terms with an enormous population boom (the world’s most rapid – according to the World Bank the labor force in Saudi Arabia should exceed 10 million in 2010 – compared to over 8 million in 2008 – an average growth of 4.5%), uncertainty over oil prices, and an increasingly competitive global
business environment, which was intensified by WTO membership in 2005. Public sector expansion is no longer viable as the sector is now at saturation point, unable to absorb the ever-growing volume of new entrants into the labor market. Consequently, as well as being a desirable indicator for entrepreneurship and innovation, it is a national economic priority that students should aim towards private sector employment.

According to Table 5.1, only 7 students (4.6%) expected to be employed in the public sector in 12 months time – on this basis, student expectations are almost perfectly in line with the projections of the Seventh and Eighth Development Plans. The vast majority (74%) of respondents expected to work in a large private sector company. Significantly, only 7.1% and 8.4% expected to be employed in a ‘small or medium sized firm’ and self-employed respectively. Thus, cumulatively, a maximum of 15.5% of graduates expect themselves to be involved with SMEs. These expectations should also be analysed with regards to high graduate unemployment rates in Saudi Arabia (Cordesman 2003: 251).

<table>
<thead>
<tr>
<th>Expected Employment</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed in Public Sector</td>
<td>7</td>
<td>4.6</td>
<td>4.6</td>
</tr>
<tr>
<td>Employed in Large Private sector company</td>
<td>114</td>
<td>74.5</td>
<td>79.1</td>
</tr>
<tr>
<td>Employed in small or medium sized firm</td>
<td>11</td>
<td>7.2</td>
<td>86.3</td>
</tr>
<tr>
<td>Self Employed</td>
<td>13</td>
<td>8.5</td>
<td>94.8</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>8</td>
<td>5.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

But do these ‘expectations’ correspond with the student’s preferences for public or private sector employment? Attitudes towards private sector employment in Saudi Arabia have traditionally been mixed. Although certain private sector jobs are regarded as highly prestigious (e.g. professional services and business management) the vast majority of “new”

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50 Indeed, public sector employment was scheduled to decline sharply in the Seventh (2000-2005) and Eighth (2005 – 2010) Development Plans. The latest national plans expect 95% of new jobs to come from the private sector and only 5% from the public (Calvert & Al-Shetawi 2002: 113, Prokop 2003: 87). The private sector is projected to absorb only about 16,100 jobs compared with 311,000 created in the private sector in the Seventh Development Plan (see Chapter 4).
jobs emerging in the private sector are in the less attractive service sectors like sales, administration and clerical work (Cordesman 2003: 256). Respondents were asked whether they would 'prefer' to work in either the public or private sectors. As table 5.2 shows, 89.5% expressed a preference for private sector employment against only 5.9% who preferred the public sector. The private (pre-dominantly non-oil) sector is expected to absorb the majority of new entrants into the labor market (Prokop, 2003: 87). Thus, the results showed that there is a good correspondence between expectations and preferences. This may be linked to the slowdown of recruitment in the public sector, the principal employer for educated workers in developing countries. However these results are contradictory to similar studies in most of the developing countries. For example, in Morocco Bougroum, et al., (1999) studied the unemployment of educated workers, they argue that the first concern of those workers is to reach a permanent and stable job in the public sector, and that in this desire, they might consider risking long periods of unemployment. Also, Orivel (1995) notices an extreme preference for employment in the public sector in African countries, a fact which results in assigning highly educated workers to non-productive employment in the public sector and then in negligible contributions of education to the economic growth.

In addition to job stability, the public sector generally offers higher wages as compared to some jobs in the private sector, which suggests that the unemployment of educated workers could be in equilibrium since some workers rationally prefer to remain unemployed while waiting for employment in the public sector. In Egypt, Psacharopoulos and Sanyal (1982) compared student expectations and actual labor market performance. The results indicated that the relative structure of economic rewards is consistent with the operation of the forces of supply and demand. In particular, students' expectations of the labor market are in tune with the actual market conditions. The Sultanate of Oman is a gulf country that has similar work and economy environment as the Kingdom of Saudi Arabia, Salma Al-Lamki (1998) studied the barriers to Omanisation (employment of Omani nationals) in the private sector as perceived by the senior graduating students at the Sultan Qaboos University (SQU). Results from the data analysis have shown that over 65 per cent of respondents indicated a work
preference in the government (public sector). A significant majority of the students confirmed that obstacles to Omanisation in the private sector exist.

The results (Table 5.2), generally reflected the higher preference for work in the private sector or self-employment in the Kingdom, this could be explained on one hand by the narrowing of chances for employment in the public sector in recent years and the other hand by expansion and diversification of private sector. In addition, private sector employees' compensation and benefits package was perceived to be more attractive than that offered in the government (public sector). This might represent a positive condition for incubators, insofar as newly starting private enterprise is the preferred focus for business incubation.

Table 5.2: Future Employment Sector by Preference

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>9</td>
<td>5.88</td>
<td>5.88</td>
</tr>
<tr>
<td>Private</td>
<td>137</td>
<td>89.54</td>
<td>95.42</td>
</tr>
<tr>
<td>No response</td>
<td>7</td>
<td>4.57</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When students were asked about their future business plans, specifically 'How likely is it that you will start your own business in the next five years?' cumulative responses of 'very likely' or 'likely' were at 80% (Table 5.3). This may reflect a reasonable level of entrepreneurship qualities amongst young Saudis on the one hand and the prevalence of a business environment conducive to entrepreneurship on the other hand. However, given the high volumes of small family based service and retail based businesses amongst more wealthy Saudi nationals, the picture may not be as encouraging as this data suggests. Nonetheless, attitudes towards entrepreneurship were enthusiastic, clearly a positive condition for business incubation.

In this regard, Gibb (1988) found that the most common cultural influences affecting a person's decision to go into businesses are: firstly, parents or relatives - those who have parents or relatives working in a small business- are more likely themselves to start their own
business. Secondly, previous experience in small business employment - those who have worked in small enterprises as employees are more likely themselves to start their own business. Thirdly, enterprising environments; those young people who work in organisations that allows a great deal of independence and freedom under conditions of uncertainty are more likely themselves to start their own business.

It seems that Gibb's first factor "Parents working in small business" is the major driving force for young Saudis to start their own business (Table 5.3). It is important to recognize the wide range of influences that can lead a young person to consider starting an enterprise and use these factors to promote private enterprise. It shuld be noted here that family firms are characterised by a major deficiency in the way they run their business "in many firms the family bonds and ‘networks’ of family friends are often prioritised to true business qualifications. It might be the case that it is not the best candidates that secure the job, but the ‘elite’ few with huge connections" (Hess, 1995: 22). Again here introducing a business incubation programme could help alleviating this constrain, furthermore, incubation programme may also upgrade the quality of work by co-locating entrepreneurial firms in one place, which could foster environment where entrepreneurs share resources and experiences, learn from one another, exchange business contacts and establish collaborative business relationships. One other important contribution that co-location of entrepreneurs can make, is to overcome the loneliness of the entrepreneurial work environment. (Rice ,1992)

Table 5.3: Likelihood of graduates starting their own business.

<table>
<thead>
<tr>
<th>Likelihood of starting own business</th>
<th>Frequency</th>
<th>Percent</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Likely</td>
<td>39</td>
<td>24.7</td>
<td>25.5</td>
<td>25.5</td>
</tr>
<tr>
<td>Likely</td>
<td>83</td>
<td>52.5</td>
<td>54.2</td>
<td>79.7</td>
</tr>
<tr>
<td>Neither Likely nor Unlikely</td>
<td>19</td>
<td>12.0</td>
<td>12.4</td>
<td>92.2</td>
</tr>
<tr>
<td>Unlikely</td>
<td>10</td>
<td>6.3</td>
<td>6.5</td>
<td>98.7</td>
</tr>
<tr>
<td>Very Unlikely</td>
<td>2</td>
<td>1.3</td>
<td>1.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>96.8</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
When asked to rate problems in setting up a new business in order of importance obstacles of start-up costs and securing financing were regarded as significantly more important than those associated with housing and facilities (see Table 5.4). This correlates with the finding of Al-kurdi (2002) which highlighted the difficulties in securing finance for new businesses in the Kingdom able to cover start-up costs, whereas basic facilities are less difficult to acquire. In terms of business incubation this clearly places an emphasis on the (direct or indirect) financial assistance they are able to provide, notwithstanding the fact that the provision of low/no cost shared and serviced workspace has the effect of significantly reducing start up costs. It is one of the most important qualities of an incubator to offer flexible space for rent (including short-term leases and the possibility to rearrange the setting as the company grows) below market prices (Albert, 1986).

Table 5.4: Perceived problems of starting a new business in Saudi Arabia.

<table>
<thead>
<tr>
<th>Students rating of problems</th>
<th>high Start-up Costs</th>
<th>Securing Finance</th>
<th>Finding suitable premises</th>
<th>Office facilities are too expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very important</td>
<td>69</td>
<td>55</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>Quite important</td>
<td>54</td>
<td>53</td>
<td>69</td>
<td>43</td>
</tr>
<tr>
<td>Neither important Nor unimportant</td>
<td>15</td>
<td>31</td>
<td>38</td>
<td>45</td>
</tr>
<tr>
<td>Quite unimportant</td>
<td>11</td>
<td>10</td>
<td>21</td>
<td>39</td>
</tr>
<tr>
<td>Very unimportant</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>153</td>
<td>153</td>
<td>153</td>
</tr>
</tbody>
</table>

B) Graduate Unemployment

Table 5.5 revealed that, about half of the students surveyed are liable enter the labor market still seeking employment. Consequently, a significant number may face unemployment upon graduation.\(^5\)

\(^5\) As discussed in Chapter 4, one of the main problems hindering the government’s efforts to solve the problem of unemployment is a lack of adequate data on the ‘nature and magnitude of the problem' (Al Dosary 2006: 408). The unemployment figures in Saudi Arabia are unofficial and speculative given the absence of an objective set of data accounting for graduate employment (Ibid). Thus, a survey of job offers amongst current students is one of the few (albeit speculative) indicators of the actual level of graduate unemployment.
Table 5.5: Offers of Employment.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>76</td>
<td>49.7</td>
</tr>
<tr>
<td>No</td>
<td>77</td>
<td>50.3</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
</tr>
</tbody>
</table>

One implication of table 5.5 is that a significant number of graduates from the two major universities in Saudi Arabia will be entering the labor market and, theoretically, available for employment in the SME sector. As discussed above, graduate unemployment, provides a surplus of skilled graduates, and thus represents an optimal condition for business incubation.

Despite the priority given to education as a means to fill high-skilled jobs currently populated by foreign nationals, a more pressing problem facing the Saudi government is unemployment generated by ‘under-utilised manpower’ i.e. a basic lack of jobs, even for the highly qualified. Indeed, the massive expansion of education has led to an increase in the number of university graduates seeking work. General unemployment in Saudi Arabia has risen to more than 30 per cent from about 12 per cent over the past five years (Al-Dosary, 2006). The unemployment rate among new graduates (in the age group of 20-24) is ‘striking’. These first time job-seekers have an unemployment rate of 27 percent for men and 33 percent for women (Looney, 2004b; Al-Dosary 2006). As discussed earlier, successful incubation creates jobs directly in the incubators, and indirectly in local communities and might thus alleviate this problem. Business incubators contribute to the economic development of a country through creation of new companies, increased employment, improvement of industry structure, and transfer of technology owned by universities and research institutions. They also help to utilise idle space, facilities and manpower, improving profitability. Also business incubators help to promote entrepreneurship (OECD, 1997).

Incubators have been evaluated in terms of their impact on economic development, more specifically on job creation, firm success, increase in employment and sales, and whether or not the firm locates within the local area after leaving the incubator. Allen and
Weinberg (1988) describe several studies of incubators created in the mid-1980s. Their results suggest that incubators are successful in helping firms start up, but that the overall impact on the local economy in terms of direct job creation may be small, at least in the short run. Campbell's study of 13 incubators and 587 firms provides a more detailed evaluation of the impact of incubator firms. While firm size was relatively small, incubator firms experienced rapid increases in employment, both during and after their stay in the incubator. Employment increased an average of 39 percent for firms from the time of entering the incubator until graduation. The results of this study demonstrate clearly the vital role that incubators could play in addressing the growing problems of unemployment.

C) Student Skills and Competencies

Graduate Skills

There are a number of factors that determine success in establishing and operating incubators. This section examines the role of student's skills and competencies, and Business and university links on initiation and operation of business incubation in Saudi Arabia.

Analysis of student involvement in previous paid employment is provided in table 5.6. The data showed that only 14 students (9.2%) had been engaged in paid employment at any point during the time of their university studies.

<table>
<thead>
<tr>
<th>Incidence of previous employment</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>14</td>
<td>9.2</td>
<td>9.2</td>
</tr>
<tr>
<td>No</td>
<td>139</td>
<td>90.8</td>
<td>90.8</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The low level of work experience reflected in this study might imply a low-level of skill acquisition amongst Saudi business students, as well as a reduced exposure to actual business environment. Therefore, this result could be interpreted as a negative condition for business incubation. However, given the fact that fostering positive entrepreneurial climate and framework conditions that facilitate and encourage entrepreneurship could act as a driving force to economic development and job creation; thus, generating and implementing a
comprehensive system for venture support such as innovation centres, incubators and science parks could make the case for establishing incubation programme more desirable (McMullan and Long, 1987).

The OECD report on entrepreneurship has pointed out, ‘entrepreneurs tend to gather business ideas from previous work history’ (OECD 2003, 49) – indeed, Fielden et al (2000, in Ibid) found that over 80 per cent of entrepreneurs had created businesses based on previous work experience, thus: ‘populations comprised of individuals who have never worked, or whose work history is limited are likely to produce low numbers of viable business proposals.’ As the OECD concludes: ‘entrepreneurial inertia is likely in communities in which unemployment has been common and protracted and average levels of human capital are low’ (OECD, 2003: 50).

It is widely acknowledged that work experience is a useful means of gaining commercial experience and enhances employability and entrepreneurial skills and competences (Bates, 1996). Moreover, it is a ‘likely factor’ of the application criteria for incubator entry that the applicant entrepreneur has professional qualifications and past work experience on his or her CV (Merrifield, 1987, Lumpkin and Ireland, 1988 and Mian, 1994b).

Business planning

A frequent problem cited by Al-Kurdi (2002), Shablaq (2002) and Osaki (2003) in reviewing Saudi SME performance is the poor level of prior planning many business owners undertake before setting up a small firm. The right planning can increase awareness of market, help to understand financial needs and make sure they stay competitive while building their skills and resources. Writing a business and marketing plan will help in understanding the factors that can affect the success or failure of the business. Being able to identify and exploit opportunities will improve the chances for expansion into new areas and give an advantage over other competitors.
The school environment can have an important impact upon young students and is a significant influence on their life and career aspirations. "Enterprise education", i.e., enterprise-focused curriculum and educational experiences that allow graduates to explore and consider the self-employment option, has become an important part of many education and training institutions around the world (White and Kenyon, 2007). Understanding self-employment as a career option is an important ingredient in preparing graduates for their movement from school, college or university to the workplace.

Students were asked about their attitudes towards five aspects of business planning: (i) prior business training (ii) the importance of mentoring, (iii) the importance of having marketing and (iv) business plans in place before starting business and (v) the importance of contacts with other businesses.

As table 5.7 shows all statements were answered predominantly in the affirmative. Thus, cumulatively, 133 students (87%) 'strongly agreed' or 'agreed' that those involved in business should receive prior training in business practice. Perhaps this is not surprising given the sample was made up of business science students. A similar number, 131 (86%) students 'strongly agreed' or 'agreed' that 'new businesses need mentoring'. The highest cumulative positive response was for the importance of marketing plans where 144 respondents (94%) 'strongly agreed' or 'agreed' that prior production of a marketing plan was important. A slightly lower number of respondents, 136 (89%) believed that a business plan was an important prior requirement. The lowest, cumulative, positive responses came with the statement 'it is important for a new business to make contacts with other businesses', 116 students (76%) either strongly agreed or agreed with this statement.

Overall, student attitudes towards business planning implied a level of prudence and foresight that is, according to the literature (Al-Kurdi ,2002; Shablaq ,2002 and Osaki ,2003) absent amongst many Saudi SMEs. Moreover, the statements reflect those facets that an incubator would ordinarily provide: training, mentoring, market planning, business planning, networking contacts. That the majority of students agreed that these
issues were important is a positive indicator for business incubation, insofar as the need for their provisions is recognized.

Table 5.7: Student attitudes towards some aspects of business planning

<table>
<thead>
<tr>
<th>Attitude</th>
<th>(i) 'It is important that people involved in the business receive prior training in business practice'</th>
<th>(ii) 'It is important that new businesses receive mentoring'</th>
<th>(iii) 'It is important to have a marketing plan before starting the business'</th>
<th>(iv) 'It is important to have a business plan before starting the business'</th>
<th>(v) 'It is important for a new business to make contacts with other businesses'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>(54 (35.29%)</td>
<td>(42 (27.5%)</td>
<td>(65 (42.48%)</td>
<td>(65 (42.48%)</td>
<td>(29 (18.95%)</td>
</tr>
<tr>
<td>Agree</td>
<td>(79 (51.63%)</td>
<td>(89 (58.2%)</td>
<td>(79 (51.63%)</td>
<td>(71 (46.40%)</td>
<td>(87 (56.86%)</td>
</tr>
<tr>
<td>Neither agree nor Disagree</td>
<td>(10 (6.53%)</td>
<td>(1 (0.65%)</td>
<td>(1 (0.65%)</td>
<td>(6 (3.92%)</td>
<td>(14 (9.15%)</td>
</tr>
<tr>
<td>Disagree</td>
<td>(7 (4.57%)</td>
<td>(20 (13.1%)</td>
<td>(6 (3.92%)</td>
<td>(8 (5.23%)</td>
<td>(18 (11.76%)</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>(3 (1.96%)</td>
<td>(1 (0.65%)</td>
<td>(2 (1.31%)</td>
<td>(3 (1.96%)</td>
<td>(5 (3.27%)</td>
</tr>
<tr>
<td>Total</td>
<td>(153 (100%)</td>
<td>(153 (100%)</td>
<td>(153 (100%)</td>
<td>(153 (100%)</td>
<td>(153 (100%)</td>
</tr>
</tbody>
</table>

According to Radwan and Al-Kibbi (2002), a fundamental problem amongst Saudi entrepreneurs is a tendency to launch businesses without having a business plan in place, despite launching in highly competitive, and changing, markets. Clearly, the ability to construct adequate business and marketing plans is vital to business success. As discussed in Chapter 2, most business failures are caused by poor marketing and business management (Vesper, 1983). Moreover, an incubator’s application process involves, most importantly, the valuation of a candidate’s business plan. Some form of business plan encompassing both the technical, financial and marketing activity of the prospective company is to be provided in order to initiate the process. However, if the business appears especially promising, a candidate may expect assistance in the form of mentoring from the incubator staff in refining and completing the business plan.
Academics were asked if they had required their students to create a Business Plan as part of their studies. As table 5.8 shows only 10 (52.6%) of respondents had. Although this result may be mitigated by varying exposure to, and/or teaching responsibilities with, students, and not a reflection of the curriculum, the figure is clearly low for business science students.

Table 5.8: Academic's asked students to create a Business Plan

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asked to create business plan</td>
<td>10</td>
<td>52.6</td>
</tr>
<tr>
<td>Not asked to create business plan</td>
<td>6</td>
<td>31.6</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As stated above, the results may not be a fair reflection of student learning experiences – teaching is specialised and perhaps certain academics not included in the sample are responsible for teaching business plans. Therefore, to further investigate this result, students were asked whether they had, in the course of their studies, (i) learned about writing a business plan, (ii) written a business plan (iii) learned about writing a marketing plan and (iv) written a marketing plan.

A high percentage of students (84.3%) had learned about putting together a business plan. However, 24 students (15.7%) had not. Given that the students were studying Business Sciences, which 24 had not learned about creating business plans seems relatively high (table 5.9)

Table 5.9: Students previous experience in writing a business plan

<table>
<thead>
<tr>
<th>response</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>129</td>
<td>84.3</td>
<td>84.3</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>15.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>
Only 100 (65%) had actually written a business plan as part of their studies, whereas 53 (35%) had not. That one in three students had no experience of actually writing a plan is, again, a significant deficiency for a Business Science programme. This is in line with the findings of Otsuki (2002) which suggest, tertiary education ought to focus more on viable, vocational training and the practical aspects of the studies.

Amongst academics, only 3 (15.8%) had asked students to produce a marketing plan in the course of their studies. However, 105 students (68.6%) replied that they had learned about marketing plans (table 5.10), with 81 (52.9%) having actually written one (table 5.11). According to Otsuki (2002) one of the problems suffered by Saudi SMEs is the ‘restriction in the size and area of markets to which they have ready access’. He blames three factors (i) low quality products (ii) uncompetitive pricing and (iii) inadequate marketing skills. Clearly one way of addressing inadequate marketing skills is through formal education, especially business-based education. That only just over half of business students had experienced writing a marketing plan represents a major deficiency in a business programme and does not help bridging marketing skills gap. Business incubation could play an important role in this respect, as the mentoring and networking opportunities often found in incubators as well as access to professional services (including marketing) connected with a common purpose of the incubated firms within one incubator and increased level of professionalism ought to facilitate remedying the problem of lacking marketing knowledge (Rice, 1992; Smilor and Gill, 1986).

Table 5.10: Students who had learned about writing a marketing plan

<table>
<thead>
<tr>
<th>response</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>105</td>
<td>68.6</td>
<td>68.6</td>
</tr>
<tr>
<td>No</td>
<td>48</td>
<td>31.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

52 T-test shows that the average difference for responses between two different sets of data is 6.9%, demonstrating the accuracy of the data.
Table 5.11: Students who had written a marketing plan

<table>
<thead>
<tr>
<th>response</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>81</td>
<td>52.9</td>
<td>52.9</td>
</tr>
<tr>
<td>No</td>
<td>72</td>
<td>47.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As Table 5.12 and Table 5.13 show there is a very strong positive correlation (0.77) between those students who had written a business plan and those who had written a marketing plan. Indeed, every student who had written a marketing plan had also written a business plan. Of the 100 students who had written a business plan, only 19 did not write a marketing plan. Conversely, this means that a total of 72 students (47.06%) had no experience of writing either business or marketing plans. This might imply that emphasis ought to be placed upon improving the Saudi academic curriculum so that all business students are required to produce a set of business documents (business plan, marketing plan, perhaps a financial plan) as a criterion for graduation.

These results generally agree with those of Cordesman (2003); and Looney (2004b) who suggested that the technical knowledge and skill sets of Saudi students needs to be raised to international standards, which are currently not being met.

Table 5.12: Cross tabulation of student's who had written business plan and students who had written a marketing plan.

<table>
<thead>
<tr>
<th>Written business plan</th>
<th>Written marketing plan</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>81</td>
<td>19</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>Total</td>
<td>81</td>
<td>72</td>
</tr>
</tbody>
</table>

53 T-test shows that the average difference for responses between two different sets of data is 2.70%, demonstrating the accuracy of this data.
Table 5.13: Correlation coefficient for the writing of a business plan and writing of a marketing plan.

<table>
<thead>
<tr>
<th>Interval by Interval</th>
<th>Value</th>
<th>Asymp. Std. Error(a)</th>
<th>Approx. T(b)</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson's R</td>
<td>.772</td>
<td>.043</td>
<td>14.933</td>
<td>.000(c)</td>
</tr>
<tr>
<td>Ordinal by Ordinal</td>
<td>.772</td>
<td>.043</td>
<td>14.933</td>
<td>.000(c)</td>
</tr>
<tr>
<td>Spearman Correlation</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Not assuming the null hypothesis.

b Using the asymptotic standard error assuming the null hypothesis.

c Based on normal approximation.

Although the main emphasis (Until the early 1990s at least) for incubators was on the provision of a physical space for fledgling businesses which provided affordable rents and a vital economy of scale on services and facilities. However, more recently, the modern incubator places increasing emphasis on the actual ‘process of incubation’ (Kirby, 2004). Similarly (Adkins, 2001; NBIA, 2001) stressed the importance of the incubation process. Thus the focus has shifted from the “hard” facilities (office space and facilities) to the more “human” provisions of managerial and technical advice/assistance. Therefore, a business incubator would be able to provide the necessary guidance and assistance in creating marketing and business plans for entrepreneurs. However, those students who had never written either would be at a considerable disadvantage to those who had. Given that the role of the incubator is to improve upon and develop business ideas and not to generate them in the first instance. The likelihood that the initial idea is flawed at the outset is more likely. Those who do not possess a business plan might, on the other hand, take part in a ‘virtual incubator’. However, majority of writers (Bullard, 1992; Feitus, 1993) argue against the usefulness of virtual incubator. They noted that the physical facility provided makes it easier to maintain a relationship that is critical for the success of business. A possible solution would also be promoting the business planning seminars by the chambers of commerce already in place (Chapter 4). Thus, the (relatively) low level of business and market planning experience of students represents a negative condition for incubator success.

Academics were asked to consider whether ‘students, under [their] supervision have enough knowledge to launch their own businesses upon graduation (table 5.14). No academics
'disagree[d]' or 'strongly disagree[d],' whereas 15 academics (78.9%) cumulatively stated that they 'strongly agree[d]' or 'agree[d].' Thus, the majority of academics believe their students have what it takes (at least in terms of their knowledge of business) to start their own SMEs. This would seem to constitute a positive condition for business incubation, albeit one based upon attitudes and, potentially, vested professional interest.

Table 5.14: Academics opinion of students (under their supervision) having enough knowledge of business to launch their own businesses upon graduation

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>6</td>
<td>31.6</td>
<td>31.6</td>
</tr>
<tr>
<td>Agree</td>
<td>9</td>
<td>47.4</td>
<td>78.9</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>3</td>
<td>15.8</td>
<td>94.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0.00</td>
<td>94.7</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>0.00</td>
<td>94.7</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>5.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.15: Student Internships.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D) Business and University Links

Student Links

Student internship programmes form a useful linkage between businesses and universities. First, they imply a useful relationship between the university and the commercial organisation that participates in any organised internship programmes (Bates, 1996). Second, students gain important contacts through their placement. Third, students gain vital skills and experience which will enhance both their employability and commercial abilities.

Table 5.15 showed that, approximately half of all respondents, 54%, had undertaken an internship with a commercial organisation during their course of study.

Table 5.15: Student Internships.

T-test shows that the average difference for responses between two different sets of data is 9.45%, demonstrating the accuracy of the data.
Student internship experiences did not appear to correlate with other factors. The research investigated whether internship experiences had any correlation with future business plans of respondents. Of the 82 respondents who had undertaken an internship, 67 (82%) were ‘very likely’ or ‘likely’ to start a business in the next five years – this is compared to the 71 respondents who had not undertaken an internship, 55 (77%) regarded themselves as ‘very likely’ or ‘likely’ to start a business in the next five years. This compares to 80% of all students, irrespective of undertaking an internship, who regard themselves as likely or very likely to start a business. Clearly, the relationship is a weak one (table 5.16).

Table 5.16: Cross-tabulation of students who have written a marketing plan and likelihood of setting up a business in the next 5 years

<table>
<thead>
<tr>
<th>Likelihood of setting up a business in the next five years</th>
<th>Very Likely</th>
<th>Likely</th>
<th>Neither Likely nor Unlikely</th>
<th>Unlikely</th>
<th>Very Unlikely</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undertaken an internship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>20</td>
<td>47</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>82</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>36</td>
<td>10</td>
<td>5</td>
<td>1</td>
<td>71</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>83</td>
<td>19</td>
<td>10</td>
<td>2</td>
<td>153</td>
</tr>
</tbody>
</table>

The research also sought to establish whether undertaking a commercial internship increased the likelihood of an employment offer upon graduation (table 5.17). Of the 82 respondents who had undertaken an internship, 45 had received an offer of employment (55%). Of the 71 respondents who had not undertaken an internship, 35 had received an offer of employment (44%). There was a low to moderate positive correlation (0.112) between student internships and future employment offers. Thus, surprisingly, there is only marginally increased chance of receiving a job offer if the respondent has undertaken an internship. Employers generally point to internship experience as the most important factor they consider in hiring new college graduates.
for full-time positions, and they have a variety of self-serving reasons for feeling that way. However, employers indicate that although internships and co-ops are not guarantees of permanent employment with a company, hiring former interns is quite common. It’s difficult to quantify the value of an internship on a graduate’s job prospects, but for many university students, these real-world learning experiences in international settings provide life turning points, confidence boosters and resume builders (Trimble, 2004).

Table 5.17: Student internships cross-tabulated with Future Employment Offers

<table>
<thead>
<tr>
<th>Future Employment Offers</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship Yes</td>
<td>45</td>
<td>37</td>
<td>82</td>
</tr>
<tr>
<td>Internship No</td>
<td>31</td>
<td>40</td>
<td>71</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>77</td>
<td>153</td>
</tr>
</tbody>
</table>

Table 5.18: Correlation co-efficient of student internship and future employment offers.

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Asymp. Std. Error(a)</th>
<th>Approx. T(b)</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval by Interval</td>
<td>Pearson's R</td>
<td>.112</td>
<td>.080</td>
<td>1.383</td>
</tr>
<tr>
<td>Ordinal by Ordinal</td>
<td>Spearman Correlation</td>
<td>.112</td>
<td>.080</td>
<td>1.383</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>153</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When asked how helpful they would find commercial experience (e.g. internships) as part of their study programme (table 5.19), the results were quite surprising. In total only 89 respondents (58%) cumulatively regarded commercial experience as either very helpful or quite helpful for their future plans. However, 49 students (32%) regarded the idea as ‘very unhelpful’.
Table 5.19: Perceived helpfulness of commercial experience (internships) to future plans.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Helpful</td>
<td>42</td>
<td>27.5</td>
<td>27.5</td>
</tr>
<tr>
<td>Quite Helpful</td>
<td>47</td>
<td>30.7</td>
<td>58.2</td>
</tr>
<tr>
<td>Neither helpful nor unhelpful</td>
<td>10</td>
<td>6.5</td>
<td>64.7</td>
</tr>
<tr>
<td>Quite unhelpful</td>
<td>5</td>
<td>3.3</td>
<td>68.0</td>
</tr>
<tr>
<td>Very unhelpful</td>
<td>49</td>
<td>32.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.20 presents a cross tabulation of internships and future plans, of the 82 students who had undertaken an internship, 53 regarded commercial experience as either 'very helpful' or 'quite helpful' (64%), whereas 17 of these respondents regarded commercial experience as 'very unhelpful' (21%). Of the 71 students who had not previously undertaken an internship 36 regarded commercial research as either 'very helpful' or 'quite helpful' (51%) whilst 32 of those not undertaking internships regarded commercial experience as 'very unhelpful' (45%). Cumulatively, 33 respondents who had not undertaken internships regarded commercial experiences as either 'quite unhelpful' or 'very unhelpful' (46%) (table. 5.20). Internships, as a learning tool, are being increasingly utilized as integral parts of reality-based educational programmes. However, analyses of actual designs and processes (as practiced by the different academic disciplines in a university) do indicate that lack of clear understanding of the nature of the process precludes an effective utilisation of the tool. In many instances, ill designed internships perpetuate learning style abuse (Trimble, 2004). It is notable that a key problem experienced in the study of Argentinian business incubation is the poor relationships and communication between universities and commercial organisations. In a survey of the Colleges of Business’ internship practices (Zigli, 1982), found that sixty-eight percent of the respondents acknowledged the existence of internship programmes for business students. The concept of internship as an educational tool is significant in its own right. However, the effective utilisation of such a tool is a function of the realistic comprehension of the tool’s nature, process, and potential.
Table 5.20: Helpfulness of commercial experience (internships) to future plans cross-tabulated with prior commercial experience.

<table>
<thead>
<tr>
<th>Prior commercial experience (S9)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>82</td>
</tr>
<tr>
<td>No</td>
<td>71</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
</tr>
</tbody>
</table>

Helpfulness of commercial experience (internships) to future plans (S10)

<table>
<thead>
<tr>
<th>Helpfulness of commercial experience (internships) to future plans (S10)</th>
<th>Very Helpful</th>
<th>Quite Helpful</th>
<th>Neither helpful nor unhelpful</th>
<th>Quite unhelpful</th>
<th>Very unhelpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25</td>
<td>28</td>
<td>8</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>No</td>
<td>17</td>
<td>19</td>
<td>2</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>47</td>
<td>10</td>
<td>5</td>
<td>49</td>
</tr>
</tbody>
</table>

**Academic Links and Research**

Business incubators often involve links between research universities, large technology companies, small technology companies, state government, federal government (or local government), community leaders, “people to know”, and support groups (Mian, 1995). A more tangible relationship between businesses and universities is formed through relationships formed by faculty members and commercial organisations. Academics may interact with business in a number of ways. First, they may directly collaborate with businesses on research projects. Second, they may actually create business through the commercialisation of research. Third, they may undertake research about business. Fourth, they may actively promote business links both with university and with government. The ‘triple helix’ thesis (Etzkowitz 1998; Etzkowitz and Leydesdorff 2000) argues that the development of closer ties among academia, industry and government represents a new mode of knowledge production that will bring about greater autonomy and flexibility for researchers.

Universities research commercialisation is the process of converting research into successfully marketed products and industrial processes is improving. The trend for firms to allocate a growing proportion of their R&D investment to university based projects is indicative of the growing linkages between the two sectors. In recent years, there has been increasing public interest in promoting the commercialisation of university-driven research. This has occurred across almost all countries, and also among the various institutional players associated with research and innovation (Goldfarb and Henrekson, 2003).
Table 5.21 shows the frequency of academics undertaking commercial research within the last five years. A high percentage (84.2%) confirmed they had undertaken commercial research.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>84.2</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
</tr>
</tbody>
</table>

When they were asked about the main area of their research, the majority of answers involved IT and oil sectors (see Table 5.22). Although involvement in the oil sector is somewhat predictable, it is an encouraging sign for business incubation that in an economy so dominated by oil and in need of developing its technology that almost half of the respondents were specialising in information technology sector thus the goal of economy diversification is easier to be met.

<table>
<thead>
<tr>
<th>Area</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td>9</td>
<td>47.4</td>
<td>47.4</td>
</tr>
<tr>
<td>Oil sector</td>
<td>3</td>
<td>15.8</td>
<td>63.2</td>
</tr>
<tr>
<td>Others</td>
<td>4</td>
<td>21.1</td>
<td>84.2</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>15.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As Cambell and Allen (1987) have noted, the more research undertaken by a University, the greater the opportunity for the commercialisation of university innovations and, by extension, the more positive the environment is for incubator introduction. A high level of commercial research undertaken by staff and students makes for a much better ‘business environment’ in which an (university-based) incubator could operate. Moreover, a high level of involvement between commercial and university sectors is a strong indicator that

---

55 T-test shows that the average difference for responses between two different sets of data is 12.1%, demonstrating the accuracy of the data.
students will be better prepared for entrepreneurial activities upon graduation, and therefore more able to establish their own businesses.

Research collaborations and funding sources give some indication of the interaction between business, government and academia. As discussed at length by Hoeser (2003) this relationship is important in creating successful (or unsuccessful) environments for incubators. Table 5.23 shows that. Ten (52.6%) academics received funding from the public (government or municipal) sector, five (26.3%) received research funding from the private sector and one (5.2%) received research funding from both. However, it is possible that these results may be more of a reflection of the plentiful supply of government/university funding than a dearth of links with the commercial sector.

Table 5.23: Academics' Source of Research Funding

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>10</td>
<td>52.6</td>
<td>52.6</td>
</tr>
<tr>
<td>Private Sector</td>
<td>5</td>
<td>26.3</td>
<td>78.9</td>
</tr>
<tr>
<td>Both</td>
<td>1</td>
<td>5.2</td>
<td>84.1</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>15.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Indeed, despite the relatively low commercial funding involvement, 84.2 per cent of academic's research has been made in collaboration with a commercial organization (table 5.24). This is not surprising when it is considered that Saudi Aramco (the national petroleum enterprise) has "contributed significantly" to the development of both King Saud and KFUPM's research programmes and facilities (Al-Dosary, 2006). There is in fact something of a grey area in terms of the distinction of the public/private status of Saudi Aramco. There is an Aramco-sponsored applied research centre, "market dependent programmes" and regular short courses on current advancement "in different areas of engineering and management" which has contributed to the observed success of the
KFUPM graduates in the labor market but this is not the general scenario for all educational institutes (Al-Dosary, 2006).56

Table 5.24: Research in Collaboration with a Commercial Organisation

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>84.2</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In general, at the policy level, the commercialisation of university research has been viewed as a key driver of national competitiveness, and consequently supported by a range of initiatives seeking to promote the links between universities and industry (Henderson et al., 1998; Mowery et al., 2002). Many universities have taken great strides in pushing commercial agendas to generate more financial value from their research, by creating new structures and encouraging entrepreneurial activities (Hackett, 2001; Phan and Siegel, 2006).

In the course of their research, six academics claimed to have developed new technologies. Given that the academics are based in the business (administrative science) and not the science (physical science) department of the university, this figure seems impressive. (table 5.25).

Table 5.25: Academics' Development of New Technologies

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>31.6</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>68.4</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
</tr>
</tbody>
</table>

When academics were asked (via open ended questioning) to describe the technologies they had developed, all the six academics who had developed new technologies had

56 Indeed, institutions like the King Fahd University of Petroleum and Minerals were created specifically to engender ‘scientific, economic and industrial development’ (King Fahd cited in Saudi Information Resource, 2005)
developed new computer software. For instance one of the academics wrote that he had
developed a new programme to integrate Human Resource Management processes within
small enterprises. Another had developed an online 'marketing kit' for SMEs (although this
could similarly be described as a business process, as discussed below.

Surprisingly, the development of new technologies by academics had a substantial
negative correlation (-0.637) with their involvement with a commercial organisation (See
Table 5.27). Whereas only 3 of the 16 academics who collaborated with a commercial
organisation developed new technologies, all 3 academics who were not involved with
commercial organisations claimed to have developed new technologies (table 5.26).

Table 5.26: Cross tabulation of Development of new technologies and Research Collaboration with a
Commercial Organisation

<table>
<thead>
<tr>
<th>Developed New Technologies</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Research in Collaboration with a commercial organisation</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
</tr>
</tbody>
</table>

Table 5.27: Correlation coefficient for the Development of New Technology and Research Collaboration with a Commercial Organisation

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Asymp. Std. Error(a)</th>
<th>Approx. T(b)</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval by Interval</td>
<td>Pearson's R</td>
<td>-.637</td>
<td>.157</td>
<td>-3.411</td>
</tr>
<tr>
<td>Ordinal by Ordinal</td>
<td>Spearman Correlation</td>
<td>-.637</td>
<td>.157</td>
<td>-3.411</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td></td>
<td>19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Not assuming the null hypothesis.

b Using the asymptotic standard error assuming the null hypothesis.

c Based on normal approximation.

Only one respondent (as above) had patented his new (IT) technology (which he said
was patented by the university (KFUPM) and had been sold to both Saudi and US companies.

No respondents claimed to have licensed their technologies.
Six academics (table 5.28) claimed to have developed a new business process. Of these three had also developed a new technology, with a low to moderate positive correlation (0.250) between these variables.

Table 5.28: Cross-tabulation of academics who had developed new technology and developed new business process

<table>
<thead>
<tr>
<th>Developed new technology</th>
<th>Developed new business process</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>6</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 5.29: Correlation co-efficient for development of new technology and development of new business processes

<table>
<thead>
<tr>
<th>Interval by Interval</th>
<th>Value</th>
<th>Asymp. Std. Error(a)</th>
<th>Approx. T(b)</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinal by Ordinal</td>
<td>.250</td>
<td>.238</td>
<td>1.033</td>
<td>.317(c)</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>18</td>
<td>.238</td>
<td>1.033</td>
<td>.317(c)</td>
</tr>
</tbody>
</table>

a Not assuming the null hypothesis.
b Using the asymptotic standard error assuming the null hypothesis.
c Based on normal approximation.

As asked to expand further, only one respondent provided details on what he had developed which was related to the oil sector – an “advanced supply and demand model to forecast the supply of the world crude oil market.” The same respondent had undertaken research with Saudi Aramco Oil Company. Of the six academics that had developed new processes, all had done so in collaboration with a commercial organisation (see Table 5.30). Thus the innovation of business processes had a much higher correlation with commercial collaboration. This is a positive condition for business incubation, as potential incubator sponsors emerge.
Table 5.30: Development of New Business Process cross-tabulated with Undertaking of research with a commercial organisation

<table>
<thead>
<tr>
<th>Developed New Business Process</th>
<th>Undertaken research in collaboration with a commercial organisation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Developed New Business Process</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>3</td>
</tr>
</tbody>
</table>

No respondents had patented any business processes nor licensed them. Neither had any respondents created a new venture to commercialise their research. As discussed in Chapter 2, a well devised incubation programme would be able to properly commercialize the fruits of academic research.

E) Attitudes towards SMEs

In many developing nations, SMEs have played a crucial role in creating jobs and providing economic stability (Looney, 2004b). Academics were asked which roles, performed by SMEs, they considered the most important. The roles were based on those listed by Otsuki (2002) at the Saudi Ministry of Planning are in line with the priorities of Saudi government’s Eighth Development Plans: (i) ‘economic diversification’ (ii) ‘reducing unemployment’ (iii) ‘developing new technologies and (iv) ‘helping regional development.’ This is also in line with an incubator mission as presented by NBIA (2000) in Chapter 2.

As table 5.31 shows, academics’ rating of importance of the roles performed by SMEs was broadly in line with those of the government’s development plan.

57 In Thailand, for example, a whole new development model has centered on SMEs playing a leading role in advancing the economy (Looney 2004).
Table 5.31: Academic’s opinions on the importance of the roles performed by SMEs

<table>
<thead>
<tr>
<th>Rates of importance</th>
<th>Diversifying the Economy</th>
<th>Reducing unemployment</th>
<th>Developing new technologies</th>
<th>Helping regional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>High importance</td>
<td>13 (68.4%)</td>
<td>10 (52.6%)</td>
<td>6 (31.6%)</td>
<td>9 (47.4%)</td>
</tr>
<tr>
<td>Medium importance</td>
<td>6 (31.6%)</td>
<td>9 (47.4%)</td>
<td>10 (52.6%)</td>
<td>6 (31.6%)</td>
</tr>
<tr>
<td>Low importance</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>3 (15.8%)</td>
<td>3 (15.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>19 (100.0%)</td>
<td>19 (100.0%)</td>
<td>19 (100.0%)</td>
<td>19 (100.0%)</td>
</tr>
</tbody>
</table>

When asked to rate the university’s relationship with local businesses, the response of academics is of some concern. Although 12 academics (63.2%) cumulatively rated the relationship as ‘extremely good’ or ‘quite good’; however, a further 7 academics (36.8%) described the relationship as ‘quite poor’ (table 5.32).

Table 5.32: Academics opinions on the University’s relationship with local businesses

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely Good</td>
<td>6</td>
<td>31.6</td>
<td>31.6</td>
</tr>
<tr>
<td>Quite Good</td>
<td>6</td>
<td>31.6</td>
<td>63.2</td>
</tr>
<tr>
<td>Neither Good nor Poor</td>
<td>0</td>
<td>0.0</td>
<td>63.2</td>
</tr>
<tr>
<td>Quite Poor</td>
<td>7</td>
<td>36.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Very Poor</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Relationships with national businesses are even weaker, only 9 academics (47.4%) cumulatively regard them as either quite good or very good, whereas 10 (52.6%) regard them as ‘quite poor’ (table 5.33).

Table 5.33: Academics opinions on the University’s relationship with national businesses

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>3</td>
<td>15.8</td>
<td>15.8</td>
</tr>
<tr>
<td>Quite Good</td>
<td>6</td>
<td>31.6</td>
<td>47.4</td>
</tr>
<tr>
<td>Neither Good nor Bad</td>
<td>0</td>
<td>0.0</td>
<td>47.4</td>
</tr>
<tr>
<td>Quite Poor</td>
<td>10</td>
<td>52.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Very Poor</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Attitudes towards international business are less certain (table 5.34). The majority of academics (52.6%) stated that they ‘didn’t know’ the condition of university’s relationship with international business.

<table>
<thead>
<tr>
<th>Attitudes</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>0</td>
<td>0.0</td>
<td>0.00</td>
</tr>
<tr>
<td>Quite Good</td>
<td>6</td>
<td>31.6</td>
<td>31.6</td>
</tr>
<tr>
<td>Neither Good nor Bad</td>
<td>0</td>
<td>0.0</td>
<td>31.6</td>
</tr>
<tr>
<td>Quite Bad</td>
<td>3</td>
<td>15.8</td>
<td>47.4</td>
</tr>
<tr>
<td>Very Bad</td>
<td>0</td>
<td>0.0</td>
<td>47.4</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>10</td>
<td>52.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The overall relationship between their university and business, 13 (68.4 %) did not regard the relationship as satisfactory (table 5.35).

<table>
<thead>
<tr>
<th>Overall</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>31.6</td>
<td>31.6</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>68.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Results of table 5.35 represent a negative condition for business incubation in Saudi Arabia. A weak relationship, (or “disconnection”) between university and business is particularly detrimental for the introduction of university-based incubators, insofar as the incubators are less likely to respond to market’s needs. Indirectly, for non-university based incubators, the incubators’ network will be severely weakened by a poor relationship with educational institutions. It is widely recognized that relationship between university and business is difficult, and the heart of the problem is the inherent tension between academic and commercial demands (Hackett, 2001; West, 2008). This barrier takes several forms. First, universities and industry are likely to prioritize different research goals. Industry usually
focuses on less risky research with direct commercial applicability, while government-funded academic research institutions typically undertake projects with longer time horizons and less predictability (DiGregorio and Shane, 2003). Second, academia traditionally encourages knowledge dissemination and full disclosure of methods and results, whereas the commercial sector actively seeks ownership and tight control of intellectual property (Arrow, 1962; Kremer, 1998).

F) Attitudes towards business development

Table 5.37 shows that 14 academics (73.7%) agreed that it was the responsibility of the university to help and encourage staff to launch commercial ventures. The willingness of staff to involve themselves in commercial activities is an essential pre-requisite of successful university incubation projects. This enthusiasm for university-supported commercial enterprise should be taken as a positive condition for business incubation. It also implies that the weak relationship alleged between university and business is not the effect of a lack of enthusiasm on the part of academics. Contrary to this finding Louis et al., (1989) concluded that the tension between academic and commercial demands is more salient at the level of the individual researcher than at the level of the organisation. Universities show evidence of being able to manage the tensions between academic and commercial demands through the creation of dual structures. At the individual level, on the other hand, the tensions are more acute, and people who are accustomed to a traditional academic career are typically less able to deliver commercial outcomes. There are, however, certain exceptions to this general statement.

Table 5.37: Academic opinion on university responsibility to encourage launch of new commercial ventures

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>1</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Agree</td>
<td>14</td>
<td>73.7</td>
<td>78.9</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>0</td>
<td>0.00</td>
<td>78.9</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0.00</td>
<td>78.9</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0.00</td>
<td>78.9</td>
</tr>
<tr>
<td>Don't Know</td>
<td>4</td>
<td>21.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Academics were also asked if the university had a responsibility to help and encourage students to launch their own commercial ventures (table 5.38). This is a key indicator in terms of any future university-related business incubation. Although 2 academics (10.5%) disagreed with the statement, 11 academics (57.9%) 'strongly agree[d]' that students should receive university support in the launch of commercial ventures. Again this would imply those academics' attitudes towards university-business relations, and in particular student-business relations, are positive. University-industry links and the collaboration of scientists across the two sectors have long been shown to be problematic. This is particularly because of the difficulty of reconciling the divergent work norms and career interests of scientists with the needs of the two different kinds of institutions (David et al 1999). However, recent research has shown that universities have not been successful in creating sustainable environments that enhance technology transfer and the commercialisation of intellectual property from the university (Slaughter and Leslie, 2001; Wright, M., Birley, S., and Mosey, S., 2004)

Table 5.38: Academic opinion on the responsibility of the university to help and encourage its students to launch commercial ventures

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>11</td>
<td>57.9</td>
<td>57.9</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>15.8</td>
<td>73.7</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>0</td>
<td>0.00</td>
<td>73.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>10.5</td>
<td>84.2</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0</td>
<td>0.00</td>
<td>84.2</td>
</tr>
<tr>
<td>Don't Know</td>
<td>3</td>
<td>15.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

G) Policy contributions

A final way in which the links between universities and business can be tested is a survey of academic involvement in, and research for, government business and enterprise policy. Saudi academics are often consulted by government ministries during policy planning. Government departments are also likely to initiate conference and discussion events, in which academics are invited to take part. It is an extremely positive factor, as clear and effective
communication and collaboration between all parties involved is a prerequisite for business incubation’s success (Chandra, 2007). Most importantly, business research and the development of systems for collecting and analysing information about business needs (e.g. manpower) are vital for both government policy-makers and, eventually, businesses themselves.

Six academics (31.6%) had undertaken research on Small and Medium Sized Enterprises (table 5.39). Notably, and perhaps predictably, five of these six were involved in IT-based research.

Table 5.39: Undertaken research on Small and Medium Sized Enterprises

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6</td>
<td>31.6</td>
<td>31.6</td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>68.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.40 revealed that nine academics (47.4%) had taken part in government discussions on SME policy. Academic participation in government discussions on SME policy is an important means by which both academics and policy makers acquire knowledge about the challenges facing SMEs. It would also be expected to raise awareness of business incubation (as discussed further, below) and the issues surrounding it.

Table 5.40: Academics participation in Government discussions on SME policy

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>47.4</td>
<td>47.4</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>31.6</td>
<td>78.9</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>21.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

There are various forms in which academics are involved in policy making and these are shown in table 5.41 and 5.42. Cumulatively, 11 (57.9%) academics had participated as a guest or a speaker in government forums on SMEs (table 5.41), 10 (52.6%) had participated
in workshops (table 5.42). As well as contributing to the knowledge about small businesses and entrepreneurship, physical events like forums and workshops are a useful way for academics to meet the business community, develop contacts and build networks that will enhance the relationship between the university and businesses.

Table 5.41: Academic Involvement in government forums about SMEs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>As Speaker</td>
<td>4</td>
<td>21.1</td>
<td>21.1</td>
</tr>
<tr>
<td>As Guest</td>
<td>7</td>
<td>36.8</td>
<td>57.9</td>
</tr>
<tr>
<td>No involvement</td>
<td>4</td>
<td>21.1</td>
<td>78.9</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>21.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.42: Academic Involvement in government workshops about SMEs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>As Speaker</td>
<td>7</td>
<td>36.8</td>
<td>36.8</td>
</tr>
<tr>
<td>As Guest</td>
<td>3</td>
<td>15.8</td>
<td>52.6</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>31.6</td>
<td>84.2</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>15.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Education and Business: Discussion**

As mentioned earlier, one of the key conditions for a successful business incubator is related to the presence of a robust business and management education curricula, vocational training and a positive entrepreneurial climate. The results revealed that business and technology students lack much needed skills. The students’ vocational skills are of particular importance yet in Saudi Arabia this is one of the weakest links of business-education cooperation, with less than 10% students taking up part-time paid jobs and just over 50% taking part in commercial internships. There is, of course, no objective way of measuring skill and competence levels from self-completed surveys without resorting to actual testing. However, several indicators suggested that graduate skills and competences are not optimal.
Although business academics rated student business skills highly, the surveys revealed actual graduate skills and experience to be far from optimal. Just over half of students had experience of writing business plans and very few had ever undertaken paid work experience. This would corroborate the findings of Looney (2004b) and Cordesman (2003) who argued that Saudi graduates were under-prepared for employment or enterprise in the private sector because their courses lacked the necessary ‘practical’ and ‘vocational’ elements that would prepare them for employment in the commercial sector. Wary of these shortfalls, the Kingdom invests heavily in education, with as much as $26 billion investment in 2007 alone. There are 21 operating Universities at the moment. Among the most promising universities that might contribute to business incubation are: King Saud University, with faculties such as engineering, economics and computer sciences, King Abdul Aziz University with Engineering and Science as well as economics, King Fahad University of Petroleum and Minerals, specialising in technologies, computer science, engineering, industrial management.

One of the important conditions for business incubation was that graduates possessed high levels of technical skills. As evidenced in the literature review, the quality of workforce available for business incubations is of particular importance. Evidence of work experience and some business acumen is a preferred criterion for incubator candidates (Merrifield, 1987). In the Saudi context the problem of undertaking paid jobs is both culturally and economically based. The state offers free education and grants to each student, this policy is expected to discourage students from seeking paid jobs. Few students had, to date, undertaken any form of paid employment. This may, of course, be more a reflection of economic conditions than student attitudes.

Since work experience is considered as an advantage for incubator admission, a CV lacking paid work experience would put incubatees at a disadvantage in most incubator application processes (Paid experience is considered as a perquisite for admission). Although over half of the respondents had been involved in an internship placement, given that the students were studying business sciences this figure seems to be too low, although it part compensates for the absence of paid work experience. Knowledge and practice of marketing
and business plans were also low. That one in three students had no experience of producing these represents a deficiency in Saudi business teaching. Furthermore, nearly all business incubators require evidence of a credible business plan before admitting tenants. It would seem that the ‘practical’/‘vocational’ elements of student studies may lag behind the theoretical parts. Student attitudes towards business planning were more encouraging insofar as the vast majority acknowledged the high importance of adequate business planning. Finally academics rated student’s highly in terms of their suitability to start a new venture. Overall, the findings on graduate skills are indeterminate insofar as they demonstrate a mixture of positive and negative conditions for business incubation.

Student attitudes were more positive in terms of entrepreneurship (i.e. the readiness to start their own businesses) – the vast majority had plans to begin their own business in the next five years. Furthermore, students demonstrated low expectations of public sector employment– something previously seen as an ‘automatic’ employment destination of Saudi university graduates (Cordesman, 2003). Instead, private sector employment and private enterprise were overwhelmingly preferred by Saudi business students.

It is believed that in most developing countries jobs in the public sector are looked to as more secure). This ultimately led to a deeply rooted belief and preference for public job amongst graduates. However, contrary to this belief, the research shows that few students expect to work in public sector. This shift may be explained by the tremendous expansion and diversification of private sector in recent years.

The survey revealed positive attitudes towards private enterprise matched with a surplus of graduates without employment offers, suggesting that business incubation would find a potential “market” amongst newly graduated students keen to start their own businesses. However, given the paucity of business planning skills, a priority for any potential Saudi incubation programme would be to fill in the business ‘skills gap’ of young Saudi entrepreneurs – the labor-intensive ‘soft’ provisions of an incubator (i.e. training, mentoring, business-planning) would take on an important role in the Saudi context; incubators that
limited their provision 'hard' resources (i.e. accommodation, facilities, funding) would likely struggle to meet the needs of young Saudi graduates.

A further condition for business incubation is a surplus of skilled graduates available in the labor market. Based upon the current job offers made to respondents, it seems likely that a significant proportion will be seeking work upon graduation. The concern, however, is that this amounts to a pool of unemployed graduates who lack the adequate skills to start up and run a successful SME (and therefore make a success of incubation). This condition may relate to the findings on skills discussed above and is also indeterminate.

In light of substantial effort on the part of the government to increase the level of successful entrepreneurship in the Kingdom, it is surprising only about half the students had academic experience in writing a business/marketing plan, which is a key element of an incubator's application process and a prerequisite to successful business. This ought to be a cause for concern and call for changes in the academic curriculum. There certainly is scope for action in this aspect. The above-mentioned state of affairs shows that the government initiatives are laudable, but not necessarily well executed and delivered

However, student attitudes towards business and the business environment were much more positive and implied a strong desire to participate in new enterprises. Students expressed both a desire and an expectation to work in private enterprise – this represents a significant attitudinal shift amongst young Saudis in contrast to previous generations of Saudi graduates who were dis-incentivised and disinclined to work in the private sector (sometimes directly by legislation). More significantly, four fifths of students wanted to start their own business within the next five years represents a positive condition for business incubation. The promotion of graduate's enterprise should involve two basic steps. First, it should create awareness of what enterprise is and what it takes to own and manage a business. This awareness should allow graduates to consider realistically self-employment as a career option. The second step, the provision of practical support services (e.g. training, advice, access to finance), can be provided via business incubation programme (White and Kenyon, 2007).
In this regard introduction of enterprise education could be viewed as a prerequisite for introducing a successful incubation programme. Enterprise education can vary according to the type and level of education institution involved. In schools, for example, its main objectives are to teach and encourage enterprise to students and to foster their personal development; in higher education institutions, such as colleges and universities, students may be exposed to learning situations which develop their skills for action planning and implementation to encourage creativity and to develop their skills in time and personal management. (Bailey 1995).

The investigation of the links between university and business produced more mixed results. Academics revealed a high degree of support for university involvement in business development, predominantly agreeing that it was a responsibility of the university to support both students and staff in commercial ventures. However, they deemed the overall relationship between business and university to be unsatisfactory. This would imply a negative condition for business incubation. In terms of actual links, the vast majority of academics had undertaken research with a commercial organisation and a significant proportion had produced new technologies and/or processes, which constitutes a positive indicator for incubation. Over half of the students sampled had undertaken a commercial internship, which implies that formal links with business clearly exist. The high degree of academic involvement in governmental SME discussion, policy and research is also taken as a positive indicator that the links "and specifically the flow of knowledge" between business, educational institutions and policy-makers is growing. Previous research demonstrated the importance of the linkage between intellectual resources of a university and the problem-solving needs of a firm (Dean et al, 2005). An incubator has been recognized as a crucial mechanism and engine that provide entrepreneurs with appropriate advice, counsel and serves as a switching centre to other people and resources as needed (Rice and Matthews, 1995).

Universities worldwide have contributed significantly to their respective national economies as public institutions by providing human resources to those economies. At the same time, universities "particularly those in developing countries" depend almost entirely
on government subventions for their sustenance. However, the nature, form, and operations of universities have to change in response to changes in the global economy if they are to be sustained and continue to be relevant to the development of their respective national economies. Thus, the need to form partnerships with business, industry, and civil society has become more crucial now than at any other time. However, University-industry links and the collaboration of scientists across the two sectors have long been shown to be problematic. This is particularly because of the difficulty of reconciling the divergent work norms and career interests of scientists with the needs of the two different kinds of institutions (David et al, 1999).

The strength of the relationships within this ‘triumvirate’ of government-education-business is cited as critical to incubator success in terms of making sure incubators are properly targeted (where they are based, who they incubate), properly designed (adequately funded) and able to build-upon knowledge resources.

5.2.2 The SME Environment

As a business development tool, incubators are able to redress many of the problems SMEs often encounter when entering the marketplace (Smiler, 1987). These problems generally centre around a lack of financing, weak management skills and business planning/training, a difficulty in obtaining finance, incomplete networks and the prohibitive cost of essential business facilities. According to Otuski, 2002, in Saudi Arabia, the difficulty of financing as well as the unsatisfactory management skills poses a huge problem. Moreover, many SMEs fail to function to their fullest potential as, small as they are, it is impossible for them to use economies of scale. Thus, as broadly discussed in Chapter 2, incubation is best suited as a remedy to those problems that tend to be endemic to a particular business environment. Importantly, incubation programmes are best suited (and most common) to environments in which policy-makers are focused upon improving the SME sector. This is clearly the case in Saudi Arabia where it is intended that SMEs, and in particularly technology-based SMEs will be able to help in absorbing the problem of unemployment, assist in technology transfer, and economic diversification.
The survey of the SME environment looks for evidence of particular SME needs or problems in planning, financing, networking and facilities. It is hypothesised that evidence of deficiencies in these areas would demonstrate a positive condition for business incubation insofar as incubators are specifically designed to improve provision for SMEs in these areas.

A) Industry Type and Structure

First, it is thought important to distinguish the types of companies surveyed. As discussed in the methodology, Saudi SMEs (that are not involved in catering services or retail) are categorised by the Ministry of Rural and Municipal Affairs, (the source of the sample) as ‘industrial’. Beneath the ‘industrial’ rubric, SMEs are categorized as belonging to either ‘manufacturing’ or ‘technological’ sectors. As Table 5.43 shows, 89.2% of respondents were involved in the manufacturing sector whereas only 10.8% were technology-based enterprises. A business incubation programme suitable to the type of the companies surveyed would be of industrial nature. However, because the configuration of an incubator is highly dependent on the social, cultural, and economic environments that they are in (Albert and Gaynor 2001), using existing classification systems as a predictor of a particular incubator’s success is not advisable. Nevertheless, these systems remain helpful in understanding the motivations and key issues behind certain incubators.

<table>
<thead>
<tr>
<th>Table 5.43: Company Type (main area of activity) 58</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td>Technology</td>
</tr>
<tr>
<td>Manufacturing</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Table 5.44 shows, the vast majority (84.2%) of companies surveyed were, cumulatively, less than five years old. This would reflect the finding by Otsaki (2002) that there is a high

58 T-test shows that the average difference for responses between two different sets of data is 0.8%, demonstrating the accuracy of this result.
turnover in business start-ups and failures in Saudi Arabia. Therefore, there is scope for business incubation: as NBIA (2000) states that, up to 90% of incubated firms remain in business after graduation, whereas only 20-30% on non-incubated firms manage to survive. So business incubation could fill an important gap by providing SMEs help in navigating these pitfalls, while providing a safe environment for new venture survival and growth (Lewis, 2001).

Table 5.44: distribution of companies by age

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than One Year</td>
<td>65</td>
<td>25.0</td>
</tr>
<tr>
<td>Less than 2 Years</td>
<td>12</td>
<td>4.6</td>
</tr>
<tr>
<td>Less than 5 Years</td>
<td>142</td>
<td>54.6</td>
</tr>
<tr>
<td>Less than 10 Years</td>
<td>28</td>
<td>10.8</td>
</tr>
<tr>
<td>More than 10 Years</td>
<td>13</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In terms of the ownership structure of the SMEs sampled (table, 5.45), 147 (56.5%) described themselves as owner-managed (which does not confirm the proposition in Chapter 2 stating that many of the SMEs are managed by hired managers, often foreign). Cumulatively, 88.5% of SMEs were either owner- or family-owned. This agrees with the findings of Boubshait (1999) who noted that these were the two most common forms of SME ownership in Saudi Arabia.

Table 5.45: SME ownership structure

<table>
<thead>
<tr>
<th>Ownership type</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner Managed</td>
<td>147</td>
<td>56.5</td>
<td>56.5</td>
</tr>
<tr>
<td>Family Owned</td>
<td>83</td>
<td>31.9</td>
<td>88.5</td>
</tr>
<tr>
<td>Independent Limited company</td>
<td>24</td>
<td>9.2</td>
<td>97.7</td>
</tr>
<tr>
<td>Group Subsidiary</td>
<td>2</td>
<td>.8</td>
<td>98.5</td>
</tr>
<tr>
<td>PLC</td>
<td>4</td>
<td>1.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

59 T-test shows that the average difference for responses between two different sets of data is 2.78%, demonstrating the accuracy of this result.
According to Boubshait, a problematic side-effect of this form of ownership is that it makes such companies 'dependent upon personal relations as far as management functions are concerned' (Ibid). This has the potential to undermine commercial effectiveness in that owner-managed and, in particular, family-owned companies are often prone to practice traditional management practices, such as, recruiting and promoting staff according to personal connections rather than competence or experience. Thus, there is the implication that ownership structure is impairing Saudi companies' ability to compete at the international level (Boubshait 1999; Otsuki 2002). However, this is not necessarily a negative condition for business incubation. Business incubators are ideally suited to address the issues of management training. Also, a carefully planned application process and benchmarking helps eliminate these pathologies.

B) Employees

The Seventh and Eighth Development Plans set a goal of 25 % Saudisation in the private sector with an annual, targeted increase of Saudi employees of 5%. Saudi statistics show that there are nearly as many foreign university graduates in the Kingdom as native Saudi university graduates (although the ratio is turning in favour of the Saudi nationals) who should be, theoretically, competing for the same jobs (Looney 2004). The effectiveness of Saudisation is a key indicator of the government's success in combating unemployment. It is also an (indirect) indicator of the fitness and willingness of Saudi graduates for employment in business. As Table 5.46 shows, the mean number of total employees is 9.7 with the mean for Saudis at 2.5. Consequently Saudis make up 25.77% of the mean total employees meeting, or very nearly meeting, the government target. This represents a positive condition for business incubation insofar as a lowered reliance on foreign-workers implies an increased ability amongst Saudis to undertake employment in SMEs.
Table 5.46: Mean of total, Saudi and non-Saudi employees in SMEs

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total employees</td>
<td>9.6615</td>
<td>4.82201</td>
</tr>
<tr>
<td>Non-Saudi employees</td>
<td>7.0962</td>
<td>3.64898</td>
</tr>
<tr>
<td>Saudi employees</td>
<td>2.5346</td>
<td>2.60582</td>
</tr>
</tbody>
</table>

C) Markets

Knowing the geographic distribution of SME sales is important for two reasons. First, in order to assist economic growth and diversification, Saudi policy-makers aim to expand the amount of current available exports (Looney, 2004). A high level of international sales is a positive indicator of this process taking place. Moreover, international sales are an indicator of the ability of Saudi SMEs to compete effectively in the global marketplace – something they have traditionally struggled to achieve (Boubshait, 1999). Second, in terms of local, regional, national and international marketing, Saudi SMEs are traditionally poor at planning for, or identifying, new markets (Otsuki, 2002). A wider distribution across these markets would imply a competence in this area and a positive condition for business incubation.

Table 5.47 shows that the mean estimated distribution of local sales is 50.9% of the total, regional sales are 25.7%, national are 18.1% and international at 4.9%. Clearly Saudi SMEs are struggling to expand beyond domestic markets. Although this does not, directly, constitute a negative condition for incubation it does imply a lack of competitiveness amongst SMEs when considered by global standards.

Table 5.47: Mean of SME’s estimated percentage distribution of sales by geography

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Sales</td>
<td>50.8885</td>
<td>30.33989</td>
</tr>
<tr>
<td>Regional Sales</td>
<td>25.8615</td>
<td>22.96876</td>
</tr>
<tr>
<td>National Sales</td>
<td>18.0811</td>
<td>25.51845</td>
</tr>
<tr>
<td>International Sales</td>
<td>4.89</td>
<td>14.104</td>
</tr>
</tbody>
</table>
D) Business facilities

Although Saudi Arabia has one of the most advanced communications infrastructures among developing economies, yet Saudi SMEs have failed to invest properly in Information Technology. Table 5.48 shows that whereas telephone and fax facilities are virtually standard, only 29 companies (11.2%) have access to high-speed internet. However, access to dial-up internet is available to 228 companies (87.7%); only 3 companies (1.2%) claimed to have no internet access at all. Given that incubators would be expected to provide high-speed internet access this represents a valuable material offering from incubators.

Table 5.48: SME’s communication facilities

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>260</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Fax facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>234</td>
<td>90.0</td>
<td>90.0</td>
</tr>
<tr>
<td>No</td>
<td>26</td>
<td>10.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Dial-up Internet Access</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>228</td>
<td>87.7</td>
<td>87.7</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td>12.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>ADSL/High-speed Internet Access</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>29</td>
<td>11.2</td>
<td>11.2</td>
</tr>
<tr>
<td>No</td>
<td>231</td>
<td>88.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Only 48 (18.5%) of SMEs have their own websites (table 5.49). Clearly, what is now a standard marketing/sales tool for British and American companies has yet to establish itself in Saudi Arabia. It seems likely that the low level of ADSL penetration (both amongst SMEs and the wider population) is a factor in this. However, as Shablaq (2003) notes, a major factor in this failure may well be a basic lack of knowledge on how to establish an internet presence:
‘everyone is constantly telling [SMEs] that they must embrace the internet and the digital economy, they must go into e-commerce and become global…but whereas everybody tells them to do so, not many people tell them how to do it’ (Shalaby, 2001: 39). Clearly, incubators would be adept at redressing any such lack of skill or knowledge. It is proposed in Chapter 2, that the vast majority of incubatees has their web page up and running and that the rate of use of internet and e-commerce implementation has rapidly grown once the company locates in the incubator.

Table 5.49: SMEs with websites

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>48</td>
<td>18.5</td>
<td>18.5</td>
</tr>
<tr>
<td>No</td>
<td>212</td>
<td>81.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Due to considerations of cost (as well advances in desktop publishing/printing facilities) it is unusual to find high levels of secretarial support amongst SMEs. Saudi Arabia seems no different where only 70 (26.9%) of the companies surveyed had secretarial support. Again secretarial support is a standard provision of incubators (table 5.50).

Table 5.50: SMEs with Secretarial Support

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>70</td>
<td>26.9</td>
<td>26.9</td>
</tr>
<tr>
<td>No</td>
<td>190</td>
<td>73.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

E) Business Planning

Another obvious area in which incubators can assist Saudi SMEs is business planning. Inadequate business planning and a lack of market understanding are repeatedly identified (Otsuki, 2002; Shablaq, 2003; Looney, 2004ab) as a crucial reason for Saudi SME failure. As the 7th Development Plan notes: “because SMEs are prone to launch themselves in highly
competitive and changing markets, improving the quality of their business planning and market intelligence is vital.”

However, this reluctance to construct proper business and marketing plans is reflected in Table 5.51 and 5.52, which shows that only 46 (17.7%) of respondents had a business plan and a mere 4 (1.5%) had a marketing plan before starting business. As discussed earlier, an entrepreneur without a comprehensive business plan would be refused entry to an incubator. The incubator would, however, provide facilities and guidance for the production/improvement of both plan.

Table 5.51: SME’s business planning before start-up

<table>
<thead>
<tr>
<th>Wrote Business Plan</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>46</td>
<td>17.7</td>
<td>17.7</td>
</tr>
<tr>
<td>No</td>
<td>214</td>
<td>82.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.52: SME’s with Marketing Plan before start-up

<table>
<thead>
<tr>
<th>Wrote marketing plan</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>No</td>
<td>256</td>
<td>98.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

F) Start-up funding

The influence of ‘self-financing’ among Saudi SMEs is relatively high – 37.3% of SMEs stated that their own funds had had a ‘high impact’ upon their start-up financing. This figure is understandable when considering the limited availability of other forms of finance in Saudi Arabia (table 5.53).

Table 5.53: SME impact of Own Funds on Start-up financing

<table>
<thead>
<tr>
<th>Impact</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impact</td>
<td>97</td>
<td>37.3</td>
<td>37.3</td>
</tr>
<tr>
<td>Medium impact</td>
<td>31</td>
<td>11.9</td>
<td>49.2</td>
</tr>
<tr>
<td>Low impact</td>
<td>132</td>
<td>50.7</td>
<td>100.0</td>
</tr>
<tr>
<td>No impact</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Raising capital is often cited as the single greatest problem facing new SMEs (e.g. Brooks, 1986; Colombo and Delmastro, 2002: 1104; Storey, 1994; Ellen and Weinberg, 1988). Similarly, ‘under-capitalisation’ is cited by Shablaq (2003), Al-Kurdi (2002), Shalaby (2001) and Otsuki (2002) as a major hindrance in Saudi SME survival and development. The problem is made worse if the SMEs are specialising in technology-based projects that are often perceived as “high risk” by banks. Funding is an area in which incubators can play a vital role – both in reducing start-up costs and providing access, or exposure, to funding sources.

Funds from a parent company had little or no effect on Start-up financing – this is predictable given the ownership-structure of most SMEs did not take this form (table 5.54).

<table>
<thead>
<tr>
<th>Impact of Parent Company on Start-up financing</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Impact</td>
<td>1</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Medium impact</td>
<td>4</td>
<td>1.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Low Impact</td>
<td>0</td>
<td>0</td>
<td>1.9</td>
</tr>
<tr>
<td>No impact</td>
<td>255</td>
<td>98.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

More surprising is the zero incidence of investment from a private investor (‘who was not previously known to [the SME]’) and/or venture capitalists. Business incubators through their network of potentially interested parties link their tenants with a number of private investors, including business angels (see Chapter 2). Further investigation is required to establish whether such individuals/institutions simply fail to exist or whether entrepreneurs are simply unaware of them.

By contrast the impact of private bank loans is significant. In total, 178 SMEs (68.5%) rated private bank loans as having a ‘high impact’ upon their start-up financing (table 5.55).
Table 5.55: Impact of Private Bank Loan on Start-up financing of SME

<table>
<thead>
<tr>
<th>Impact of Private Bank Loan</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impact</td>
<td>178</td>
<td>68.5</td>
<td>68.5</td>
</tr>
<tr>
<td>Medium impact</td>
<td>53</td>
<td>20.4</td>
<td>88.8</td>
</tr>
<tr>
<td>Low impact</td>
<td>29</td>
<td>11.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

A cross-tabulation with company type (table 5.56) shows that private bank loans had a disproportionately ‘high impact’ upon technology-based firms vis-à-vis manufacturing firms. This would at least suggest that Saudi banks are less risk-adverse to technology-based enterprises than some of the literature would suggest. Participants of (Focus group) collectively mentioned the importance of creating a general fund and credit facility. They added that, the role of government would be to either convince banks to increase lending to this sector, or establish special funds to facilitate loans and credit guarantees. True, certain funds already exist, but the regulations governing the credit processes are lengthy and the beneficiaries to these funds are few.

Table 5.56: Cross Tabulation of Private Bank Loan impact on Start-up Financing and Company Type

<table>
<thead>
<tr>
<th>Impact of Private Bank Loan</th>
<th>High impact</th>
<th>Medium impact</th>
<th>Low impact</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Type</td>
<td>Technology</td>
<td>Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High impact</td>
<td>23</td>
<td>155</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>Medium impact</td>
<td>0</td>
<td>53</td>
<td>24</td>
<td>232</td>
</tr>
<tr>
<td>Low impact</td>
<td>5</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>178</td>
<td>53</td>
<td>29</td>
<td>260</td>
</tr>
</tbody>
</table>

Historically, government development loans and grants have been available to all SMEs since 1995 through the Saudi Centenary Fund and the Human Resource Development Fund. The Saudi government has increased both the size and accessibility of these grants over successive development plans. Therefore, it is unsurprising that a sizeable proportion of SMEs (49.23%) cite government grants as having a ‘high-impact’ on their start-up finances. (table 5.57).
### Table 5.57: Impact of Government development grant on SME Start-up financing

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impact</td>
<td>128</td>
<td>49.23</td>
<td>49.23</td>
</tr>
<tr>
<td>Medium impact</td>
<td>52</td>
<td>20.0</td>
<td>69.23</td>
</tr>
<tr>
<td>Low impact</td>
<td>80</td>
<td>30.76</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>260</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

The impact of government development loans was rated, overall, as lower than that of grants. Only 91 (35%) rated government loans as having a high impact. This is likely because the loans, which are generally more sizeable than grants were only introduced in 2000 (table 5.58).

### Table 5.58: Impact of Government development loan on SME Start-up financing

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impact</td>
<td>91</td>
<td>35.0</td>
<td>35.0</td>
</tr>
<tr>
<td>Medium impact</td>
<td>9</td>
<td>3.5</td>
<td>38.5</td>
</tr>
<tr>
<td>Low impact</td>
<td>160</td>
<td>61.5</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>260</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

The impact of family-provided funds was lower than private bank loans and governments. However, the impact of family-provided funds (table 5.59) remains significant, 98 SMEs (37.7%) regarded such funds as having a 'high impact' upon their start-up financing and only 71 (27.3%) claimed it had 'no impact' at all.60

### Table 5.59: Impact of Family-provided funds on SME Start-up financing

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High impact</td>
<td>98</td>
<td>37.7</td>
<td>37.7</td>
</tr>
<tr>
<td>Medium impact</td>
<td>57</td>
<td>21.9</td>
<td>61.6</td>
</tr>
<tr>
<td>Low impact</td>
<td>28</td>
<td>10.8</td>
<td>72.4</td>
</tr>
<tr>
<td>No impact</td>
<td>71</td>
<td>27.3</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>260</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

60 Family-provided funds had a slightly higher impact on start-up financing for manufacturing than it did to technology-based SMEs. Of all technology-based firms, 9 (32.9%) rated family-provided funds as 'high impact' compared to 89 manufacturing based firms (38.4%).

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It can be concluded that the most significant sources of financing for Saudi SMEs are, in order of impact: private bank loans, government grants, family-provided funds, government loans and owner-funds. Would incubation change these sources? Incubators would likely appeal to the same sources – namely government grants and loans and private banks. An incubator might attempt to make the application process easier for the candidate and in some cases act as guarantor. Development of credibility is in fact first on Smilor’s (1987) incubatee benefit list. Incubators might also be able to source funding from other public bodies and charitable organisations.

G) Public funding

As discussed in the focus groups, Ahmed Al-Sadhan mentioned that one of the major problems in Saudi Arabia is not so much the lack of government support but the lack of knowledge (and media/publicity) about it amongst the SMEs who “need it the most”. The Saudi Sixth, and Seventh, and Eighth Development Plans introduced a variety of support programmes for SMEs, but as Otsuki (2002) commented, these programmes are not adequately co-ordinated between the various bodies responsible for their administration. Which makes the application process rather complicated.

Within the last three years, 80 SMEs applied for a government grant, see Table 5.60. Of these 80 SMEs who applied, 77 received grants, see Table 5.61. However, 25 of the 80 claimed to have applied more than once.

<table>
<thead>
<tr>
<th>Table 5.60: SME’s application for a government grant (in last 3 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Applied Once</td>
</tr>
<tr>
<td>Applied More than Once</td>
</tr>
<tr>
<td>Not Applied</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

61 National Office for Industrial Strategy/Ministry of Commerce and Industry
Table 5.61: SME’s receipt of a government grant in the last 3 years

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received</td>
<td>77</td>
<td>29.6</td>
<td>29.6</td>
</tr>
<tr>
<td>Not Received</td>
<td>183</td>
<td>70.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

A higher proportion of technology-based companies (46.4%) received government grants than manufacturing companies (27.6%). This may however, be due to the younger age of technology-based companies than manufacturing companies (table 5.62).

Table 5.62: Cross tabulation of SME’s receipt of a government grant with company type

<table>
<thead>
<tr>
<th></th>
<th>Technology</th>
<th>Manufacturing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government grant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received</td>
<td>13</td>
<td>64</td>
<td>77</td>
</tr>
<tr>
<td>Not Received</td>
<td>15</td>
<td>168</td>
<td>183</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>232</td>
<td>260</td>
</tr>
</tbody>
</table>

SMEs were asked to assess government grants according to a range of criteria: speed, simplicity and publicity. SMEs did not rate the speed of government grants highly. Only 15 respondents (19.5%) rated their receipt as ‘quite fast’ or ‘very fast’; a higher proportion of respondents, 23, (29.9%) rated them cumulatively as ‘quite slow’ and ‘very slow.’ The highest proportion of respondents, 39 (50.6%), rated them as ‘neither fast nor slow.’ (table 5.63)

Table 5.63: Speed of government grant (of SMEs receiving grants in the last 3 years)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very fast</td>
<td>4</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Quite Fast</td>
<td>11</td>
<td>14.3</td>
<td>19.5</td>
</tr>
<tr>
<td>Neither fast nor slow</td>
<td>39</td>
<td>50.6</td>
<td>70.1</td>
</tr>
<tr>
<td>Quite slow</td>
<td>9</td>
<td>11.7</td>
<td>81.8</td>
</tr>
<tr>
<td>Very Slow</td>
<td>14</td>
<td>18.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Grants looked even worse in terms of their simplicity. Whereas 11 (14.3%) respondents cumulatively rated the application process as ‘very simple’ or ‘quite simple’, the highest proportion of respondents, 43 (55.8%), rated them as ‘quite difficult.’(table 5.64)

Table 5.64: Simplicity of government grant application process (of SMEs in receipt of a government grant in the last 3 years)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very simple</td>
<td>2</td>
<td>2.6</td>
</tr>
<tr>
<td>Quite simple</td>
<td>9</td>
<td>11.7</td>
</tr>
<tr>
<td>Neither simple nor difficult</td>
<td>7</td>
<td>9.1</td>
</tr>
<tr>
<td>Quite difficult</td>
<td>43</td>
<td>55.8</td>
</tr>
<tr>
<td>Very difficult</td>
<td>15</td>
<td>19.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Grants were better in terms of their publicity. Cumulatively, 41 respondents (53.3%) regarded the publicity surrounding government grants as ‘quite good’ or ‘very good.’(table 5.65)

Table 5.65: Publicity of government grant schemes

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>9</td>
<td>11.7</td>
</tr>
<tr>
<td>Quite good</td>
<td>32</td>
<td>41.6</td>
</tr>
<tr>
<td>Neither good nor poor</td>
<td>26</td>
<td>33.8</td>
</tr>
<tr>
<td>Quite poor</td>
<td>10</td>
<td>12.9</td>
</tr>
<tr>
<td>Very poor</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>100.0</td>
</tr>
</tbody>
</table>

H) Loans

A higher proportion of SMEs have applied for a government loan in the previous three years than they have for a government grant. Out of 146 SMEs applied for a government loan, 118 applied once and 28 (10.8%) applied more than once (table 5.66).
Table 5.66: SME’s application for a government loan (in last 3 years)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied once</td>
<td>118</td>
<td>45.4</td>
<td>45.4</td>
</tr>
<tr>
<td>Applied more than once</td>
<td>28</td>
<td>10.8</td>
<td>56.2</td>
</tr>
<tr>
<td>Not applied</td>
<td>114</td>
<td>43.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

However, of the 146 SMEs who applied, only 72 (49.3%) received a loan – lower than that for government grants (table 5.67).

Table 5.67: Receipt of one or more government loans in the last 3 years

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received</td>
<td>72</td>
<td>27.7</td>
<td>27.7</td>
</tr>
<tr>
<td>Not received</td>
<td>188</td>
<td>72.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The speed with which a government loan was received was significantly slower than that of a grant. With the exception of three respondents (4.2%) who rated receipt as ‘quite fast’, all other respondents rated the loan as either quite slow or very slow. Some fifty-one respondents (70.8%) regarded loan receipt as ‘very slow.’ Clearly a problem exists at some point in the loan processing procedures which needs to be remedied. This problem is made more significant by the fact that loans are now replacing grants as the mainstay of government assistance for SMEs (table 5.68).

Table 5.68: Speed of government loan receipt

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very fast</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Quite Fast</td>
<td>3</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Neither fast nor slow</td>
<td>0</td>
<td>0.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Quite slow</td>
<td>18</td>
<td>6.9</td>
<td>6.9</td>
</tr>
<tr>
<td>Very Slow</td>
<td>51</td>
<td>19.6</td>
<td>27.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>188</td>
<td>72.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Government loans also fared badly in terms of simplicity of the application process. Cumulatively 56 SMEs (21.6% of applicants) regarded the process as ‘quite difficult’ or ‘very difficult.’ (table 5.69)

Table 5.69: Simplicity of government loan application process (of SMEs in receipt of a government loan in the last 3 years)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very simple</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Quite simple</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>Neither simple nor difficult</td>
<td>13</td>
<td>5.0</td>
</tr>
<tr>
<td>Quite difficult</td>
<td>34</td>
<td>13.1</td>
</tr>
<tr>
<td>Very difficult</td>
<td>22</td>
<td>8.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>188</td>
<td>72.3</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Opinions on the publicity of government loans were marginally more positive than opinions on their speed and simplicity. Nonetheless, only 12 respondents (4.6%) regarded publicity surrounding the schemes as ‘good’ or ‘very good’ (table 5.70).

Table 5.70: Publicity of government loans (of SMEs in receipt of a government loan in the last 3 years)

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very good</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Quite good</td>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>Neither good nor poor</td>
<td>13</td>
<td>5.0</td>
</tr>
<tr>
<td>Quite poor</td>
<td>36</td>
<td>13.8</td>
</tr>
<tr>
<td>Very poor</td>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>Don’t know</td>
<td>189</td>
<td>72.7</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
</tr>
</tbody>
</table>

All SMEs were asked to rate government responsiveness to their financial needs. Given the largely negative accounts of the grants and loans procedures, the results were
unexpectedly positive. The majority of respondents, 132 (50.8%) claimed that the government demonstrated a ‘high responsiveness’ to their needs (table 5.71).

Table 5.71: Government’s overall responsiveness to SME financial needs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high responsiveness</td>
<td>43</td>
<td>16.5</td>
<td>16.5</td>
</tr>
<tr>
<td>High responsiveness</td>
<td>132</td>
<td>50.8</td>
<td>67.3</td>
</tr>
<tr>
<td>Neither responsive nor unresponsive</td>
<td>31</td>
<td>11.9</td>
<td>79.2</td>
</tr>
<tr>
<td>Low responsiveness</td>
<td>7</td>
<td>2.7</td>
<td>81.9</td>
</tr>
<tr>
<td>Very low responsiveness</td>
<td>7</td>
<td>2.7</td>
<td>84.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>40</td>
<td>15.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Clearly, the government grants and loans programme needs to improve its speed, simplicity and publicity. However, that the process is currently so arduous for SMEs demonstrates the usefulness of incubator mentoring, whereby candidates would be informed about, and helped with, any application process. For example, most incubators in China offer grant-servicing in one place and micro or short term ‘loan pools’ that do not require a complicated and demanding eligibility verification employed by banks (Ma, 2004).

I) Chambers of Commerce

As shown earlier from Focus group analysis, the Saudi Chambers of Commerce now have a wide range of programmes to assist in the training of members of SMEs. However, although all Saudi SMEs are (automatically) members of their Chambers of Commerce, use of Chambers of Commerce is reported to be low. This is of particular concern as the Chambers are currently the only dedicated “portals” for small business advice and assistance available to SMEs and have incrementally received additional funding through the Sixth, Seventh and Eighth Development Plans. Chambers of commerce do not offer services most crucial in increasing the survival rate of SMEs, such
as mentoring, financing, or networking. They offer lectures on how to set up a small business, as well as seminars and lectures on management, marketing, etc. though, which make them a good starting point for marketing an incubation programme. The chambers also have international programmes designed to utilize outside expertise and adapt it to the Saudi context.

As Table 5.72 shows, only 46 (17.7%) of SMEs have physically visited their Chambers of Commerce; an additional 81 (31.2%) have visited the website. Consequently, less than half of the SMEs have ever had any contact with their Chambers of Commerce.

Table 5.72: SME Visits to Chambers of Commerce

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes physically</td>
<td>46</td>
<td>17.7</td>
</tr>
<tr>
<td>Yes on the Internet, but not physically</td>
<td>81</td>
<td>31.2</td>
</tr>
<tr>
<td>No</td>
<td>133</td>
<td>51.2</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
</tr>
</tbody>
</table>

A cross tabulation with company type shows that technology-based firms are less likely than manufacturing firms to (physically) visit the Chambers of Commerce (table 5.73). This is particularly unfortunate given as these are the firms the government wishes to encourage through funding of SME-support systems (i.e. Chambers of Commerce).

Table 5.73: Cross-tabulation of Company Type and Visits to Chambers of Commerce

<table>
<thead>
<tr>
<th>Chamber of Commerce Visit</th>
<th>Technology</th>
<th>Manufacturing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes Physically</td>
<td>1</td>
<td>45</td>
<td>46</td>
</tr>
<tr>
<td>Yes on Internet</td>
<td>16</td>
<td>65</td>
<td>81</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>122</td>
<td>133</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>232</td>
<td>260</td>
</tr>
</tbody>
</table>
In terms of attending events (e.g. workshops, seminars, training sessions) held by the Chambers of Commerce, only 32 SMEs (12.3%) had actually attended (table 5.74).

Table 5.74: SME’s attendance of Chambers of Commerce SME-themed events (e.g. workshops, seminars, training sessions)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended</td>
<td>32</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>Not attended</td>
<td>228</td>
<td>87.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As the Chambers of Commerce are currently the only nationwide, government-funded source of advice and assistance for SMEs it is possible to conclude that Saudi SMEs are not receiving adequate levels of external non-financial support.

When asked whether they are informed about the range of non-financial support provided by Chambers of Commerce, 62.7% of SMEs said they were informed. However, it is not clear why this figure is higher than that for the (physical and virtual) attendance of the Chambers of Commerce (table 5.75).

Table 5.75: SMEs’ Awareness about Chambers of Commerce support programmes currently available for SMEs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informed</td>
<td>163</td>
<td>62.7</td>
<td>62.7</td>
</tr>
<tr>
<td>Uninformed</td>
<td>97</td>
<td>37.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The low rate of attendance at Chambers of Commerce represents a negative condition for business incubation. Chambers of Commerce are one of the most likely delivery routes for business incubators, in terms of housing, funding and operating them. Even if the Chambers of Commerce were not directly involved in the incubator they would be the obvious point of contact and information for any incubator.
J) Collaborations and partnerships

One of the key assets of an incubator is its ability to "fill in" for an entrepreneur's "impoverished network" (Smilors, 1987). As Carayannis states, networking may go as far as joint research and development but certainly most small high technology companies benefit from information sharing (Carayannis et al., 2000). Therefore it is important to see whether Saudi SMEs are currently engaged in joint ventures with other companies and whether they would be willing to engage with other companies. For instance Hoeser (2003: 18) regards the difference between the willingness to network in Argentina and Brazil as a critical factor in determining the relative success of the two incubator programmes. Thus, an SME's willingness to collaborate with other businesses has an effect upon its success within an incubation programme. This collaboration, according to the government's policy ought to facilitate the Saudisation as SMEs are believed to be excellent vehicles for replacing foreign nationals with native workers and reducing the reliance upon foreign-based enterprises for the provision of materials and technologies for the giant utilities industries (Otsuki, 2002).

No SMEs had undertaken research and development in collaboration with a University or Research Institute. However, 27 SMEs (10.4%) had collaborated with another business (table 5.76).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>233</td>
<td>89.6</td>
</tr>
<tr>
<td>Yes</td>
<td>27</td>
<td>10.4</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In order to test their attitudes towards collaboration, SME's were given a series of hypothetical statements about working with universities and other businesses and were asked to rate their agreement or disagreement with these statements (table 5.76).
Responses to the statement that R&D collaboration with a university would ‘bring in a fresh point of view’ demonstrated a high level of uncertainty. Some 111 respondents (42.6%) claimed to ‘neither agree nor disagree’ and 44 (17%) ‘didn’t know’ (table 5.77).

Table 5.77: SME attitudes towards R&D collaboration with Universities: “would bring in a fresh point of view”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>13</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Agree</td>
<td>84</td>
<td>32.3</td>
<td>37.3</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>111</td>
<td>42.7</td>
<td>80.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>5</td>
<td>1.9</td>
<td>81.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3</td>
<td>1.1</td>
<td>83.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>44</td>
<td>17.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Responses to the statement that R&D collaboration with a university would ‘bring in expertise’ were more affirmative. Cumulatively, 182 (70.0%) of respondents either ‘agreed’ or ‘strongly agreed’ with this statement (table 5.78).

Table 5.78: SME attitudes towards R&D collaboration with Universities: “would bring in expertise”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>70</td>
<td>26.9</td>
<td>26.9</td>
</tr>
<tr>
<td>Agree</td>
<td>112</td>
<td>43.1</td>
<td>70.0</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>40</td>
<td>15.3</td>
<td>85.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>12</td>
<td>4.6</td>
<td>89.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>1.5</td>
<td>91.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>22</td>
<td>8.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Respondents were also uncertain about the statement that R&D collaboration with a university ‘would reduce development time.’ (table 5.79)

Table 5.79: SME attitudes towards R&D collaboration with universities: “would reduce development time”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>28</td>
<td>9.6</td>
<td>9.6</td>
</tr>
<tr>
<td>Agree</td>
<td>81</td>
<td>33.5</td>
<td>43.1</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>70</td>
<td>28.5</td>
<td>71.6</td>
</tr>
<tr>
<td>Disagree</td>
<td>24</td>
<td>9.2</td>
<td>80.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5</td>
<td>1.9</td>
<td>82.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>52</td>
<td>20</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
A greater degree of uncertainty was produced by the statement collaboration with a university "would reduce costs". Cumulatively, only 79 SMEs (30.3%) agreed, or strongly agreed, with this statement (table 5.80).

Table 5.80: SME attitudes towards R&D collaboration with Universities: would reduce costs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>23</td>
<td>8.8</td>
<td>8.8</td>
</tr>
<tr>
<td>Agree</td>
<td>56</td>
<td>21.5</td>
<td>30.3</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>110</td>
<td>42.3</td>
<td>72.6</td>
</tr>
<tr>
<td>Disagree</td>
<td>20</td>
<td>7.7</td>
<td>80.3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5</td>
<td>1.9</td>
<td>82.3</td>
</tr>
<tr>
<td>Don't know</td>
<td>46</td>
<td>17.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

When the statement was presented in the negative – collaboration with a university "would create more cost" - results were broadly consistent with the previous statement. Cumulatively, 93 respondents (35.8%) ‘disagreed’ or ‘strongly disagreed’ with the statement (table 5.81).

Table 5.81: SME attitudes towards R&D collaboration with a university: “would create more cost”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>15</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Agree</td>
<td>29</td>
<td>11.2</td>
<td>17.0</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>93</td>
<td>35.8</td>
<td>52.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>47</td>
<td>18.1</td>
<td>70.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>46</td>
<td>17.7</td>
<td>88.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>30</td>
<td>11.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
There was a high degree of uncertainty over the statement "concern over loss of secrets". Again, 110 respondents (42.3%) claimed to 'neither agree nor disagree.' (table 5.82)

Table 5.82: SME attitudes towards R&D collaboration with universities: "concern over loss of secrets"

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>15</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Agree</td>
<td>45</td>
<td>17.3</td>
<td>23.1</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>110</td>
<td>42.3</td>
<td>65.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>29</td>
<td>11.2</td>
<td>76.6</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>20</td>
<td>7.7</td>
<td>84.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>41</td>
<td>15.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Similarly, "problems with determining intellectual property" yielded 115 respondents (44.2%) who would 'neither agree nor disagree' with the statement (table 5.83). On the other hand, table 5.84 showed that (39.2%) of SMEs neither agree nor disagree with the statement that "other universities are not receptive.

Table 5.83: SME attitudes towards R&D collaboration with universities: "problems with determining intellectual property"

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>12</td>
<td>4.6</td>
<td>4.6</td>
</tr>
<tr>
<td>Agree</td>
<td>37</td>
<td>14.2</td>
<td>18.8</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>115</td>
<td>44.2</td>
<td>63.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>25</td>
<td>9.6</td>
<td>72.6</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>11</td>
<td>4.2</td>
<td>76.9</td>
</tr>
<tr>
<td>Don’t know</td>
<td>60</td>
<td>23.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 5.84: SME attitudes towards R&D collaboration with universities: other universities are not receptive

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>22</td>
<td>8.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Agree</td>
<td>26</td>
<td>10.0</td>
<td>18.5</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>102</td>
<td>39.2</td>
<td>57.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>12</td>
<td>4.6</td>
<td>62.3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>8</td>
<td>3.1</td>
<td>65.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>90</td>
<td>34.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In table 5.85, only five SMEs thought that collaboration with universities was “made difficult because of previous bad experiences of collaboration.” These results were to be expected given that no SMEs had collaborated with a university previously, yet previous experiences of collaboration with another business or organisation could be considered.

Table 5.85: SME attitudes towards R&D collaboration with universities: “made difficult because of previous bad experiences of collaboration”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>2</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Agree</td>
<td>3</td>
<td>1.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>84</td>
<td>32.3</td>
<td>34.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>32</td>
<td>12.3</td>
<td>46.6</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>40</td>
<td>15.4</td>
<td>62.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>99</td>
<td>38.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Cumulatively, 114 respondents (43.9%) ‘agreed’ or ‘strongly agreed’ with the statement that Research and Development with a university was ‘made difficult because there is no advice on how to do it’(table 5.86). The provision of such advice is clearly a service ordinarily facilitated by incubators.
Table 5.86: SME attitudes towards R&D collaboration with universities: “made difficult because no advice on how to do it”

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>53</td>
<td>20.4</td>
<td>20.4</td>
</tr>
<tr>
<td>Agree</td>
<td>61</td>
<td>23.5</td>
<td>43.9</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>80</td>
<td>30.8</td>
<td>74.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>4.2</td>
<td>78.9</td>
</tr>
<tr>
<td>Very unproblematic</td>
<td>9</td>
<td>3.5</td>
<td>82.3</td>
</tr>
<tr>
<td>Don’t know</td>
<td>46</td>
<td>17.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

SMEs were asked to rate their overall enthusiasm for future R&D collaboration with universities and/or research institutions (table 5.87). Cumulatively, 93 respondents (35.7%) were very enthusiastic or enthusiastic about collaboration. However, the highest proportion, 101 (38.8%) were neither enthusiastic nor unenthusiastic. This relative lack of enthusiasm is both an obstacle and an opportunity for business incubation. It represents an obstacle because of the importance of strong links between university and business for incubator success. It represents an opportunity because incubators have a viable role to play in facilitating the “convergence” of industry and ‘applied scientific research’ that is advocated so prominently by the government (Boubshait, 1999).

Table 5.87: SME overall enthusiasm for future research and development collaboration with universities

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very enthusiastic</td>
<td>23</td>
<td>8.8</td>
<td>8.8</td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>70</td>
<td>26.9</td>
<td>35.7</td>
</tr>
<tr>
<td>Neither enthusiastic nor unenthusiastic</td>
<td>101</td>
<td>38.8</td>
<td>74.5</td>
</tr>
<tr>
<td>Unenthusiastic</td>
<td>35</td>
<td>13.5</td>
<td>88.0</td>
</tr>
<tr>
<td>Very unenthusiastic</td>
<td>7</td>
<td>2.7</td>
<td>90.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>24</td>
<td>9.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
When the same set of questions were asked about collaborating with business, 43.1% of SMEs cumulatively ‘strongly agreed’ and ‘agreed’ with the statement that R&D collaboration with another business “would bring in a fresh point of view”. However, there was a significant in difference to this question, as 132 SMEs (50.8%) either ‘neither agreed nor disagreed’ or ‘didn’t know’ (table 5.88).

Table 5.88: SME attitudes towards R&D collaboration with another business: “would bring in a fresh point of view”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>9</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Agree</td>
<td>103</td>
<td>39.6</td>
<td>43.1</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>92</td>
<td>35.4</td>
<td>78.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>5</td>
<td>1.9</td>
<td>80.4</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>11</td>
<td>4.2</td>
<td>84.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>40</td>
<td>15.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

A very similar set of results were produced by the statement: “collaboration with another business would bring in expertise.” (table 5.89)

Table 5.89: SME attitudes towards R&D collaboration with another business: “would bring in expertise”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>29</td>
<td>11.2</td>
<td>11.2</td>
</tr>
<tr>
<td>Agree</td>
<td>100</td>
<td>38.5</td>
<td>49.7</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>83</td>
<td>31.9</td>
<td>81.6</td>
</tr>
<tr>
<td>Disagree</td>
<td>6</td>
<td>2.3</td>
<td>83.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3</td>
<td>1.2</td>
<td>85.1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>39</td>
<td>15.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
The statement that collaboration with another business "would reduce development time" produced more ambiguity. Whereas 112 SMEs (43.1%) strongly agreed or agreed with the statement a total of 119 respondents (45.8%) either didn’t know or ‘neither agreed nor disagreed’. (table 5.90)

Table 5.90: SME attitudes towards R&D collaboration with another business: “would reduce development time”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>25</td>
<td>9.6</td>
<td>9.6</td>
</tr>
<tr>
<td>Agree</td>
<td>87</td>
<td>33.5</td>
<td>43.1</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>74</td>
<td>28.5</td>
<td>71.6</td>
</tr>
<tr>
<td>Disagree</td>
<td>24</td>
<td>9.2</td>
<td>80.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5</td>
<td>1.9</td>
<td>82.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>45</td>
<td>17.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

An even greater degree of uncertainty was produced by the statement collaboration with another business "would reduce costs." In total 130 SMEs – precisely half of all respondents – either didn’t know or ‘neither agreed nor disagreed’ with the statement (table 5.91).

Table 5.91: SME attitudes towards R&D collaboration with another business: would reduce costs

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>26</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Agree</td>
<td>73</td>
<td>28.1</td>
<td>38.1</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>95</td>
<td>36.5</td>
<td>74.6</td>
</tr>
<tr>
<td>Disagree</td>
<td>20</td>
<td>7.7</td>
<td>82.3</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>11</td>
<td>4.2</td>
<td>86.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>35</td>
<td>13.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
A series of negative statements about business collaboration were then presented. The statement “collaboration with another business would create more cost” approximately reverse replicated the results of the statement given above. (table 5.92)

Table 5.92: SME attitudes towards R&D collaboration with another business: “would create more cost”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>45</td>
<td>17.3</td>
<td>17.3</td>
</tr>
<tr>
<td>Agree</td>
<td>22</td>
<td>8.5</td>
<td>25.8</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>81</td>
<td>31.2</td>
<td>57</td>
</tr>
<tr>
<td>Disagree</td>
<td>53</td>
<td>20.4</td>
<td>77.4</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>30</td>
<td>11.5</td>
<td>88.9</td>
</tr>
<tr>
<td>Don’t know</td>
<td>29</td>
<td>11.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Reactions to the statement that “other businesses are not receptive” were much stronger. In total 48.4% of respondents ‘strongly agreed’ or ‘agreed’ with the statement (table 5.93).

Table 5.93: SME attitudes towards R&D collaboration with another business: other businesses are not receptive

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>18</td>
<td>6.9</td>
<td>6.9</td>
</tr>
<tr>
<td>Agree</td>
<td>108</td>
<td>41.5</td>
<td>48.4</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>52</td>
<td>20.0</td>
<td>68.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>60</td>
<td>23.1</td>
<td>91.5</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>12</td>
<td>4.6</td>
<td>96.1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>10</td>
<td>3.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Responses to the statement that collaboration with another business “was made difficult because of bad previous experiences” (table 5.94) was less compelling. Cumulatively, only 6.5% of respondents ‘agreed’ or ‘strongly agreed’ with the statement - which is likely more a reflection of the low frequency of previous collaboration as much as attitudes towards it.
Table 5.94: SME attitudes towards R&D collaboration with another business: “made difficult because of bad previous experiences”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>7</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Agree</td>
<td>10</td>
<td>3.8</td>
<td>6.5</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>81</td>
<td>31.2</td>
<td>37.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>95</td>
<td>36.5</td>
<td>74.2</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>18</td>
<td>6.9</td>
<td>81.1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>49</td>
<td>18.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Responses to the statement ‘no advice on how to do it’ were revealing. Cumulatively, 55.8% of SMEs agreed or strongly agreed with the statement. This seems part of a wider problem of poor networking amongst Saudi SMEs and a general lack of co-ordination in terms of their weak relationships with Chambers of Commerce (Table 5.95).

Table 5.95: SME attitudes towards R&D collaboration with another business: “no advice on how to do it”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>51</td>
<td>19.6</td>
<td>19.6</td>
</tr>
<tr>
<td>Agree</td>
<td>94</td>
<td>36.2</td>
<td>55.8</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>52</td>
<td>20.0</td>
<td>75.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>33</td>
<td>12.7</td>
<td>88.5</td>
</tr>
<tr>
<td>Very unproblematic</td>
<td>12</td>
<td>4.6</td>
<td>93.1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>18</td>
<td>6.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Concern over a “loss of secrets” seems limited. Only 25% of SMEs agreed or strongly agreed with the statement. Again, there was a great deal of uncertainty – 37.7% of respondents neither agreed nor disagreed, and 19.3% ‘didn’t know.’ (Table 5.96)
Table 5.96: SME attitudes towards R&D collaboration with another business: “concern over loss of secrets”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>18</td>
<td>6.9</td>
<td>6.9</td>
</tr>
<tr>
<td>Agree</td>
<td>47</td>
<td>18.1</td>
<td>25.0</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>98</td>
<td>37.7</td>
<td>62.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>17</td>
<td>6.5</td>
<td>69.2</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>30</td>
<td>11.5</td>
<td>80.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>50</td>
<td>19.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Concerns over intellectual property issues are slightly more pronounced. Cumulatively 37.3% of SMEs agree or strongly agree with the statement. This again may be due to the lack of advice and support services provided for Saudis SMEs. Thus legally complicated issues like intellectual property provide a significant obstacle to business collaboration without help and advice in place to surmount the problem (table 5.97).

Table 5.97: SME attitudes towards R&D collaboration with another business: “determining intellectual property”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>45</td>
<td>17.3</td>
<td>17.3</td>
</tr>
<tr>
<td>Agree</td>
<td>52</td>
<td>20.0</td>
<td>37.3</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>78</td>
<td>30.0</td>
<td>67.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>30</td>
<td>11.5</td>
<td>78.8</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>12</td>
<td>4.6</td>
<td>83.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>43</td>
<td>16.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

A relatively high number of respondents claimed that R&D with another business was ‘too time consuming.’ Cumulatively 45.7% of SMEs agreed with the statement (table 5.98).
Table 5.98: SME attitudes towards R&D collaboration with another business: too time consuming

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very problematic</td>
<td>43</td>
<td>16.5</td>
<td>16.5</td>
</tr>
<tr>
<td>Quite problematic</td>
<td>76</td>
<td>29.2</td>
<td>45.7</td>
</tr>
<tr>
<td>Neither problematic nor unproblematic</td>
<td>81</td>
<td>31.2</td>
<td>76.9</td>
</tr>
<tr>
<td>Quite unproblematic</td>
<td>20</td>
<td>7.7</td>
<td>84.6</td>
</tr>
<tr>
<td>Very unproblematic</td>
<td>12</td>
<td>4.6</td>
<td>89.2</td>
</tr>
<tr>
<td>Don't know</td>
<td>28</td>
<td>10.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Overall, approximately half (50.4%) of the SMEs surveyed claimed they would be enthusiastic to pursue Research and Development in collaboration with another business (table 5.99)

Table 5.99: SME overall enthusiasm for research and development collaboration with another business

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very enthusiastic</td>
<td>40</td>
<td>15.4</td>
<td>15.4</td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>91</td>
<td>35.0</td>
<td>50.4</td>
</tr>
<tr>
<td>Neither enthusiastic nor unenthusiastic</td>
<td>66</td>
<td>25.4</td>
<td>75.8</td>
</tr>
<tr>
<td>Unenthusiastic</td>
<td>20</td>
<td>7.7</td>
<td>83.5</td>
</tr>
<tr>
<td>Very unenthusiastic</td>
<td>17</td>
<td>6.5</td>
<td>90</td>
</tr>
<tr>
<td>Don't know</td>
<td>26</td>
<td>10.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

SME environment: discussion

The survey of the Saudi SME environment investigated particular SME problems or needs in terms of planning, financing, and networking, in order to detect areas in which an incubator may be able to redress structural problems within the business environment. The ‘properties’ of Saudi SMEs were also measured in order to see whether a viable “market” existed for potential incubation.

The pre-launch business and marketing planning activites of Saudi SMEs are, as predicted by the literature, particularly weak. This has both positive and negative implications.
for business incubation. On the positive side, it demonstrates the clear need for mentoring and assistance in the construction of adequate business and marketing plans which could be provided by a business incubator. On the negative side, as discussed above in the student survey, entrepreneurs with no business plan whatsoever would not ordinarily meet the application criteria for a business incubator. Nonetheless, the large scale introduction of business incubators would conceivably compel entrepreneurs to construct proper business plans before launching their ventures, with business incubators ‘filling in the gaps’ in their proposals.

In terms of business facilities, it would seem business incubation has the potential to provide tangible benefits for Saudi SMEs. Despite the ubiquity of phones and fax services, Saudi SMEs are lacking in secretarial support and, most significantly, high-speed internet access. Since small size is an important constraint for process and product innovations, which are the core of competitiveness (European Commission, 2001), SMEs are unable to obtain benefits from economies of scale both from the output and input side (Akcomak and Taymaz, 2004) Therefore, the economies of scale (e.g. access to technical assistance on spot at no/low charge) could facilitate e-commerce introduction as a powerful selling and advertising channel and an edge in international competition. The low level of broadband correlates with a low level of website presence. Incubators would almost certainly provide high-speed internet access, significantly improving the likelihood of website creation. Moreover, firms would typically be linked to, and have a presence upon, the incubator’s own website and the incubator would likely assist tenants in the construction and maintenance of their websites. Thus IT/internet provision marks a clear area were incubators could palpably assist Saudi SMEs. The high degree of uncertainty and ambivalence demonstrated in attitudes towards business and university collaboration implies that Saudi SMEs currently lack both the networks to maximize their individual potential and perhaps the level of commercial “sociability” with other businesses and organisations that is so important within the incubation environment. Mixed to negative results about collaboration are alarming and against the findings in literature that most small technology companies would benefit from information sharing (for example Carayannis et al., 2000). This notion does not appear to
prevail amongst Saudi entrepreneurs. However, an incubator would address these problems by assisting businesses to network as well as, where possible, facilitating collaborations between incubated firms. Academia-business collaboration is as important as business to business collaboration and incubators are likely to make it more sustainable (and welcome).

Saudi SMEs need support to test out possible markets, differentiate their product or service from the competition, prepare cash-flow statements and book-keeping, and present a case for financial support. Effective incubator programmes focus on these difficulties. In terms of funding, problems clearly exist in the provision of government grants and loans. However, this is clearly an area where an incubator could provide a useful service to incubated businesses. First, the poor publicity of the government funding opportunities would no longer present an obstacle to businesses – the incubator would provide information on the available funding sources. Second, the difficult application process would be made easier via mentorship from incubator staff. Third, incubators are sometimes willing to act as guarantors, making government loans, the government’s preferred, and more generous, avenue for Saudi SME funding (vis-à-vis business development grants), easier to acquire. However, a critical structural problem that emerges from the data significant is the time delay between application and receipt of government loans or grants. One way in which this problem could be addressed is through the provision of ‘bridging loans’ by the incubator. These loans/grants could expedite businesses’ development.

Although the majority of SMEs surveyed operated in the ‘manufacturing’ sector, a significant proportion (10.8%) operated in the technology sector. The assumptions of the Development Plans reflected in various governmental policies are not totally met in this respect. As chapter 2 shows, it is the technology incubators that create the most jobs, both directly, by absorbing the highly skilled graduate manpower from universities, as well as indirectly, by providing lower-end jobs and absorbing a number of the available native, technical workers who at the moment lack opportunities commensurate to their skill levels. Also, the government policy (‘Saudisation’) is to create highly competitive jobs by eliminating foreign manpower from the workplace and this is more easily achieved in
technology-oriented firms that could possibly use bonds with research universities to create unique technology (as virtually all industrial technology was imported into Saudi Arabia at the expense of the 'homegrown' development). By pursuing these outlines the goal of substituting foreign businesses by native companies in providing many transformation services to the industry could be met. It is also important that the companies have the capacity to compete against technology and financial hubs of Qatar and UAE. The vast majority (84.2%) of businesses were less than 5 years old. Therefore, the ordinary market for incubation – ideally technology-focused, young firms - arguably already exists in Saudi Arabia, yet, at present, it is small. It is one of the main goals of an incubator to disperse and popularize technology. Which means there is a demand for business incubation.

Saudi SMEs were shown to be seriously deficient in business planning aspects; very few firms (17.7%) had prepared plans prior to start-up. Despite numerous efforts by the government, both in the form of education investment and the existence of the chambers of commerce, the level of business planning is low. This failure has ambivalent implications for the introduction of a business incubation programme. On the one hand, entrepreneurs are ordinarily required to submit business plans as part of the incubator application process - an entrepreneur unable to produce a business plan would have little hope of entering an incubator. On the other hand, incubators are able to provide mentoring and assistance to entrepreneurs in the construction of competent business plans.

Thus, as the results from the student survey also implied - any business incubation programme would have to provide high levels of support in business planning to prospective applicants. However, mechanisms to provide business planning support would also need to be available before an application to an incubator – possibly through Chambers of Commerce small business units. A question has to be posed, however, why do not the available methods and tutoring already available to entrepreneurs function effectively in fostering careful business planning? This is partly explained by the proportion of businesses who have visited these support units. As the survey shows, very few businesses had visited their Chambers of Commerce (17.7%), let alone taken part in their (or any other organisation’s) small business
support programmes. Thus, Chambers of Commerce or local/national governmental organisations wishing to provide business planning support would have to publicise their role and/or find a way to reach potential entrepreneurs.

One area that would need to be addressed in case of launching a large Saudi incubation programme would be the under-utilisation of Chambers of Commerce and, hence, the difficulties of ‘establishing contact’ with SMEs and entrepreneurs who would be eligible to apply. Another area would be assistance for Saudi SMEs to be considered in conventional finance schemes, rather than through specially designed loan schemes. Helping Saudi SMEs obtain such finance is usually achieved through advice and counselling in the preparation of business plans, introductions to banking officials and the packaging of continued support and mentoring services.

Saudi SMEs demonstrate a range of problems and needs in terms of their facilities, planning, funding and networking resources which could be addressed by business incubation. Thus, the survey of the Saudi SME environment demonstrates that business incubation would add tangible value to SME survival and growth.

**Business Incubation**

Looking at business incubation directly, it is important to appraise the knowledge, attitudes and expectations across potential future incubatees (students), potential future collaborators and staff (academics), and those who would have been the target audience of incubation (SMEs).

The findings question of incubator ‘knowledge’ does not constitute a positive or negative condition for incubation. Indeed, it would be expected that knowledge of business incubation would, among SMEs at least, be fairly limited given only one incubator is currently operating in Saudi Arabia. However, in the case of widespread lack of knowledge about incubation, the government (or incubator provider) would, according to the scale of the programme, need to advertise and explain the incubation process to its potential clients.
Clearly, attitudes towards incubation represent an important condition for any future incubator programme. Negative attitudes towards the concept and the services it provides would axiomatically constitute a negative condition.

Finally, the ‘expectations’ of what an incubator programme should provide are important in terms of making sure that any future incubator programme actually addresses the needs of its clients. Of particular interest are divergences across the three samples (e.g. do students want something different to SMEs? etc.)

A) Knowledge and Understanding

Students, academics and SMEs were all asked about their knowledge of incubators. A total of 113 students (73.9%) claimed that they knew what an incubator is, 32 students (20.9%) did not have any knowledge. An almost identical percentage of academics 14 respondents (73.7%) also claimed to know what an incubator is, 3 academics (15.8%) did not know. SMEs had the lowest incidence of respondents claiming to know what an incubator is, only 154 (59.2%) claimed to have knowledge, 106 (40.8%) had no knowledge. (table 5.100)
Table 5.100: Student, Academics and SME's claimed Knowledge of incubators

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of Incubator</td>
<td>113</td>
<td>73.9</td>
<td>73.9</td>
</tr>
<tr>
<td>No Knowledge of Incubator</td>
<td>32</td>
<td>20.9</td>
<td>94.8</td>
</tr>
<tr>
<td>No response</td>
<td>8</td>
<td>5.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td><strong>Academics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of Incubator</td>
<td>14</td>
<td>73.7</td>
<td>73.7</td>
</tr>
<tr>
<td>No Knowledge of Incubator</td>
<td>3</td>
<td>15.8</td>
<td>89.5</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>10.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td><strong>SMEs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of Incubator</td>
<td>154</td>
<td>59.2</td>
<td>59.2</td>
</tr>
<tr>
<td>No Knowledge of Incubator</td>
<td>106</td>
<td>40.8</td>
<td>100.0</td>
</tr>
<tr>
<td>No response</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

T-test shows that the average difference for responses on the student sample between two different sets of data is 5.5%, demonstrating the accuracy of these results. The average difference for responses on the academic sample between two different sets of data is 7.8% demonstrating the accuracy of this result. The average difference for responses on the academic sample between two different sets of data is 0% demonstrating the accuracy of this result.
Table 5.101: Accuracy of Incubator Knowledge Amongst Students and Academics and Saudi SMEs

<table>
<thead>
<tr>
<th></th>
<th>Help all sizes of businesses</th>
<th>Businesses owned by incubator</th>
<th>Securarial support</th>
<th>Reduce Start-up cost</th>
<th>Shared Facilities</th>
<th>Reduced Rent</th>
<th>Free Training</th>
<th>Unlimited tenure</th>
<th>Any business can join if pays</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td>33 (21.6%)</td>
<td>32 (20.9%)</td>
<td>33 (21.6%)</td>
<td>122 (79.7%)</td>
<td>121 (79.1%)</td>
<td>33 (21.6%)</td>
<td>31 (20.3%)</td>
<td>32 (20.3%)</td>
<td>31 (20.3%)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>120 (78.4%)</td>
<td>121 (79.1%)</td>
<td>120 (78.4%)</td>
<td>31 (20.3%)</td>
<td>32 (20.9%)</td>
<td>120 (78.4%)</td>
<td>122 (79.7%)</td>
<td>121 (79.1%)</td>
<td>122 (79.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
<td>153 (100%)</td>
</tr>
<tr>
<td><strong>Academics</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academics</td>
<td>6 (31.6%)</td>
<td>7 (36.8%)</td>
<td>16 (84.2%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>13 (68.4%)</td>
<td>16 (84.2%)</td>
<td>10 (52.6%)</td>
<td>9 (47.3%)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>13 (68.4%)</td>
<td>12 (63.2%)</td>
<td>3 (15.8%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>3 (15.8%)</td>
<td>3 (15.8%)</td>
<td>9 (47.3%)</td>
<td>10 (52.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
<td>19 (100%)</td>
</tr>
<tr>
<td><strong>SMEs</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMEs</td>
<td>109 (41.9%)</td>
<td>108 (41.5%)</td>
<td>119 (45.8%)</td>
<td>205 (78.8%)</td>
<td>124 (47.7%)</td>
<td>151 (58.1%)</td>
<td>124 (47.7%)</td>
<td>163 (62.7%)</td>
<td>81 (31.2 %)</td>
</tr>
<tr>
<td>Incorrect</td>
<td>151 (58.1%)</td>
<td>152 (58.5%)</td>
<td>141 (54.2%)</td>
<td>55 (21.2%)</td>
<td>136 (52.3%)</td>
<td>109 (41.9%)</td>
<td>136 (52.3%)</td>
<td>97 (37.3%)</td>
<td>179 (68.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
<td>260 (100%)</td>
</tr>
</tbody>
</table>
An identical question was used across all three surveys to test the accuracy of respondents’ actual knowledge of business incubation. This question was asked across the three surveys (SMES, business academics and students).63

Table 5.101 showed that, across all student answers the mean correct response rate was 32%. In only two statements were the majority of answers correct. In response to the question about incubators reducing start-up costs, 122 respondents (80%) ‘agreed’ (i.e. answered correctly). In response to the statement that incubators involve shared facilities, 121 respondents (79%) ‘agreed’ (i.e. answered correctly). These are perhaps the most “obvious”, well-known or easily deducible features of incubators. However, in all other statements, no more than 22% of students achieved a correct answer. Clearly, knowledge and understanding of business incubators amongst students is low. Across all academic answers, the mean correct response rate was 67% - the highest of the three surveys. On two statements ‘incubators reduce start-up costs’ and ‘incubators provide shared facilities’ all academics answered correctly. Across all SME answers, the mean correct response rate was 50.6%. Statements that ‘incubators help all kinds of businesses’ and ‘businesses are owned by the incubator’ received less than 50% of correct answers across all three surveys.

Academics and SMEs were asked whether they knew about the Eastern Province business incubator programme. Whereas 52.6% of academics were aware of the programme, students Q12, academics Q32, SMEs Q38).

63 A series of statements was presented to which respondents could either ‘agree’ or ‘disagree’ – the statements were either true or false statements. Responses were coded as ‘correct’ or ‘incorrect’ according to whether respondents had agreed with true statements or disagreed with false statements (correct) or agreed with false statements or disagreed with true statements (incorrect). The statements were presented as follows:

i. "[Business incubators] are designed to help all sizes of businesses." (Agree = incorrect. Disagree = correct.)
ii. "Incubated businesses are always owned by the incubator." (Agree = incorrect. Disagree = correct.)
iii. "[Business incubators] typically provide secretarial support." (Agree = Correct. Disagree = incorrect.)
iv. "[Business incubators] reduce start-up costs." (Agree = Correct. Disagree = incorrect.)
v. "Facilities (e.g. office equipment, meeting rooms) are often shared in an incubator." (Agree = Correct. Disagree = incorrect.)
vi. "[Business incubators] offer reduced, or sometimes free, rents. (Agree = Correct. Disagree = incorrect.)
vii. "They usually offer training." (Agree = Correct. Disagree = incorrect.)
viii. "Incubated businesses can stay in the incubator as long as they like." (Agree = incorrect. Disagree = correct.)
ix. "Any business can join an incubator as long as it's willing to pay" (Agree = incorrect. Disagree = correct.)

(Students Q12, Academics Q32, SMEs Q38).
only 11.5% of SMEs knew about it. The superior academic familiarity can in part be explained given the proximity of the Eastern Province incubator to the KFUPM – and the relative distance of SMEs based in Riyadh from the project. (table 5.102 and 5.103)

Table 5.102: Academics’ Knowledge of Eastern Province incubator

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10</td>
<td>52.6</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>47.4</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 5.103: SMEs’ Knowledge of Eastern Province incubator

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>11.5</td>
</tr>
<tr>
<td>No</td>
<td>230</td>
<td>88.5</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Clearly, both generic and specific knowledge of business incubation is low. Academics performed markedly better than students and SMEs, however it is students and SMEs who are the actual candidates for incubation projects – that they have such limited knowledge of incubation (and its benefits) suggests that efforts would need to be directed at publicising information about any incubation programme. Chambers of commerce could play an important role here.

B) Attitudes

Once knowledge of business incubators had been tested across the three surveys, a correct explanation of business incubation was explained to respondents (see Appendix K for questionnaires), based on the explanation, the attitudes towards business incubation could be measured.

The SMEs were then asked whether they would be interested in applying to join a business incubator if one were launched in their locality. Table 5.104 showed that the majority (44.2%) don’t know while about (34.6%) answered positively.
When SMEs were asked if they would be interested in joining an incubator if they were starting a new business, the majority, 153 (58.8%) of SMEs replied that they would be interested. Only 50 (19.2%) claimed that they would not be interested (table 5.105). This would suggest that the concept of business incubation holds significant appeal for Saudi businesses, - so long as it is clearly articulated what business incubation involves.

**Table 5.105: SME interest in joining an incubator if starting new business**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>153</td>
<td>58.8</td>
<td>58.8</td>
</tr>
<tr>
<td>No</td>
<td>50</td>
<td>19.2</td>
<td>78.0</td>
</tr>
<tr>
<td>Don't Know</td>
<td>57</td>
<td>21.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>260</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Attitudes towards business incubation amongst SMEs were predominantly positive. There was also implied recognition (between the two questions) that incubators are probably more useful to fledgling than established SMEs.

**C) University incubators**

University-based incubators make up a large proportion of worldwide incubators. Such incubators are predominantly technology-based and involved in the commercialisation

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64 The average difference for responses on the academic sample between two different sets of data is 0.75% demonstrating the accuracy of this results.
65 In Europe, incubators that are attached to universities are the most common form of incubation project. University incubators provide a "nursery" for the commercialization of university research (in particular through technology incubators) (OECD 1999: 8). For instance, after the original Batavia incubator, in the 1960s and 1970s the next "stage" in the US (and at that time, worldwide) incubation industry involved the roll out of first university incubators (e.g. the US University Science
(through licensing or patenting) of university research. Once presented with a full definition, students and academics were asked whether the introduction of a local municipal or university incubator would make them more or less enthusiastic towards starting a business (table 5.106).

Table 5.106: Student and Academic attitude towards university incubator

<table>
<thead>
<tr>
<th></th>
<th>Much More Enthusiastic</th>
<th>More Enthusiastic</th>
<th>Neither Enthusiastic nor Unenthusiastic</th>
<th>Less enthusiastic</th>
<th>Much less enthusiastic</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>68</td>
<td>63</td>
<td>7</td>
<td>10</td>
<td>5</td>
<td>153</td>
</tr>
<tr>
<td>Percent</td>
<td>44.4</td>
<td>41.2</td>
<td>4.6</td>
<td>6.5</td>
<td>3.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Cumulative</td>
<td>44.4</td>
<td>85.6</td>
<td>90.2</td>
<td>96.7</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

|                |                        |                  |                                        |                  |                       |       |
| **Academics**  |                        |                  |                                        |                  |                       |       |
| Frequency      | 6                       | 10               | 3                                      | 0                | 0                     | 19    |
| Percent        | 31.6                    | 52.6             | 15.9                                   | 0                | 0                     | 100.0 |
| Cumulative     | 31.6                    | 84.2             | 100                                    | 100              | 100.0                 |       |

Respectively, 85.6 per cent of students, and 84.2 per cent of academics answered that the introduction of an incubator in their local community or university would make them either 'much more enthusiastic' or 'more enthusiastic' than they were now to start a business. However, three academics replied that they would be 'neither nor enthusiastic.' Notably, these were the same three academics that had developed technology through their research but had not undertaken commercial collaboration.

Academics were asked if they would be interested in participating in a university-based incubator programme if the university were to launch an incubator. The results almost perfectly match their attitudes with the same 3 academics remaining 'very uninterested' whilst the remaining 16 academics are either interested or very interested (table 5.107).

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66 In the Korean national case study (see Chapter 2) 85% of incubators were attached or strongly affiliated to universities and specialized in hard or soft technologies. Similarly in the Chinese case studies, the “majority” (Lalkaka 2004) of incubators are “spin offs” from University projects or research institutes. In terms of ownership (of patents and collection of royalties) this usually stays with the parent institution (e.g. University) which also provides the finance for the incubatee.
Table 5.107: Academics' Interest in joining in a university-based incubator programme

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Interested</td>
<td>6</td>
<td>31.6</td>
</tr>
<tr>
<td>Interested</td>
<td>10</td>
<td>52.6</td>
</tr>
<tr>
<td>Neither interested nor uninterested</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>Uninterested</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Very uninterested</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In a question to students, it was sought to discover which benefits of an incubator were considered most important. These are the standard facets of an incubator as determined by the literature review (e.g. Smilor, 1987). Table 5.108 shows that the majority of respondents regarded all facilities as either very important or quite important. The attributes cumulatively regarded as most important were those associated with cost (financing help, cost reduction) and training (mentoring and training). Overall, attitudes towards business incubation were generally positive across students and academics.

Table 5.108: Student's Perceived Benefits of Incubators

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Important</td>
<td>74</td>
<td>74</td>
<td>75</td>
<td>73</td>
<td>71</td>
<td>63</td>
<td>66</td>
<td>75</td>
<td>66</td>
</tr>
<tr>
<td>Quite important</td>
<td>71</td>
<td>70</td>
<td>69</td>
<td>69</td>
<td>72</td>
<td>81</td>
<td>73</td>
<td>69</td>
<td>74</td>
</tr>
<tr>
<td>Neither Important nor unimportant</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>7</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Quite unimportant</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Very unimportant</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>152</td>
<td>153</td>
<td>153</td>
<td>153</td>
<td>153</td>
<td>153</td>
<td>153</td>
<td>153</td>
</tr>
</tbody>
</table>

67 T-test shows that the average difference for responses between two different sets of data is 17.8%, demonstrating the accuracy of this result.

263
D) Expectations

Although the incubator currently operating in Saudi Arabia is not University-based, Saudi universities represent clear potential for future incubation projects. The KFUPM already has its own Research Centre (complete with a patents department) and, as discussed in Chapter 2, the commercialisation of University research is one of the most common reasons for launching an incubator programme (OECD, 1999: 8). Thus, academics were asked a series of hypothetical questions based around their preferences and expectations if their university was to launch an incubator in the future.

Academics were asked if/when they would expect their university to become involved in an incubator programme. Whereas only three academics (15.8%) predicted an involvement within the next year, thirteen (68.4%) believed involvement would take place within the next ten years and a further three (15.8%) believed it would be in excess of ten years. No academics believed that the university would ‘never’ be involved in an incubator programme (table 5.109).

Table 5.109: Academic’s expectation of university involvement in an incubator programme

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near Term (Next 12 Months)</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>Medium Term (Next 10 years)</td>
<td>13</td>
<td>68.4</td>
</tr>
<tr>
<td>Long term (More than 10 Years )</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
</tr>
</tbody>
</table>

When academics were asked whether a university-based incubator should be ‘general or technological’, thirteen (68.4%) opted for general and six (31.6%) opted for ‘technological’ (table 5.110) – a rank to an extent reflecting the information in Chapter 2 (NBIA, 2002), which states that general incubators are the most popular type with technology incubators a close runner up.
Table 5.110: Academics' Preference on industry type of university-incubator

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>13</td>
<td>68.4</td>
<td>68.4</td>
</tr>
<tr>
<td>Technological</td>
<td>6</td>
<td>31.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

When academics were asked who should be permitted to join a university-based incubator programme opinions were fairly split between 'only current staff' 'current staff and students' and 'anyone' (table 5.111)

Table 5.111: Who should be allowed to join a university-based incubator?

<table>
<thead>
<tr>
<th>Access Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only Current staff</td>
<td>7</td>
<td>36.8</td>
<td>36.8</td>
</tr>
<tr>
<td>Both Current staff and Students</td>
<td>6</td>
<td>31.6</td>
<td>68.4</td>
</tr>
<tr>
<td>Anyone</td>
<td>6</td>
<td>31.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Ten academics (52.6%) set the minimum desired educational level of incubated business at Masters level whereas nine (47.4%) said Bachelors; no respondents set a 'doctorate' or high school' as the minimum requirement.

Academics were then asked to give a figure for the expected share of incubated businesses’ profits the university should receive. As Table 5.112 shows, the highest proportion (36.8%) of respondents recorded answers between 41% and 50% of profits, although no candidates thought the university should receive more than 60%.

Table 5.112: Expected university share of net profits generated by incubated businesses

<table>
<thead>
<tr>
<th>Expected Share</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 10%</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>11 to 20%</td>
<td>2</td>
<td>10.5</td>
<td>10.5</td>
</tr>
<tr>
<td>21 to 30%</td>
<td>3</td>
<td>15.8</td>
<td>26.3</td>
</tr>
<tr>
<td>31 to 40%</td>
<td>3</td>
<td>15.8</td>
<td>42.1</td>
</tr>
<tr>
<td>41 to 50%</td>
<td>7</td>
<td>36.8</td>
<td>78.9</td>
</tr>
<tr>
<td>51 to 60%</td>
<td>4</td>
<td>21.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
A figure between 41 and 50% seems prohibitively high, it is for instance, significantly higher than many venture capitalists would seek, at least in equity terms. As Hoeser's (2003) case study of the Argentinean incubator programme shows, one of the potential problems involved in the University incubation projects has been the level of equity split between the university and the incubated enterprise. Hoeser showed that demands for a high equity stake by the university has discouraged some enterprises from engaging in the incubator projects. On the other hand it is worth noting that the major difference between an incubator and some other type of business advisory facility is the responsibility an incubator assumes for the success of its tenants. It is unlikely that an unsuccessful incubator would continue to receive the funding necessary to sustain its functioning. Taking over part of equity is important both to make the incubator self-sustainable and to motivate the tenants and staff.

When asked about their preferred source of incubator funding, academics opted unanimously for ‘both public and private’ funding (vis-à-vis purely ‘private’ and purely ‘public’).

Academics were asked if there was any particular organisation or business they would expect to be involved in a University-based incubator. As Table 5.113 shows, the Human Resource Development Fund was the most popular response, named by 7 academics as a likely partner to university-based incubator. This would seem to fit with the Development Fund’s role as the government’s favoured vehicle for SME support. However, numerous studies discussed in Chapter 2, revealed that privately-funded incubators provide both higher quality services and generally a better success rate than government funded ones.

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aramco</td>
<td>3</td>
<td>15.8</td>
<td>15.8</td>
<td>15.8</td>
</tr>
<tr>
<td>Chambers of Commerce</td>
<td>4</td>
<td>21.1</td>
<td>21.1</td>
<td>36.8</td>
</tr>
<tr>
<td>SAGIA</td>
<td>1</td>
<td>5.3</td>
<td>5.3</td>
<td>42.1</td>
</tr>
<tr>
<td>Commercial Banks</td>
<td>1</td>
<td>5.3</td>
<td>5.3</td>
<td>47.4</td>
</tr>
<tr>
<td>Human Resource Fund</td>
<td>7</td>
<td>36.8</td>
<td>36.8</td>
<td>84.2</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>15.8</td>
<td>15.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.113: Academic expectations of businesses or organisations to be involved in a university-based incubator.
Discussion: Knowledge and expectations of Business Incubation

The role of SMEs in growth and development is universally recognised, and is demonstrated by the volume of studies, research, and literature dedicated to the subject. One of the mechanisms employed to nurture small firms for more than two decades is business incubation.

Prior accurate knowledge and understanding, of business incubation was low especially among students. However, this does not automatically represent a negative condition for Saudi business incubation, as universities and Chambers of Commerce could provide necessary marketing for and information on business incubators (especially that incubator awareness was substantially higher with the academics). Arguably, it is more representative of the fact that, to date, only one incubator is currently operating in the country. However, the low-levels of awareness about business incubation suggest that the introduction of a national incubation programme would require a well-targeted publicity campaign in order to reach all of its potential clients.

Once respondents had an understanding of business incubation, attitudes were positive across all three surveys. Students, academics, and SMEs all identified properties relating to financing and cost-reduction as the most useful ways an incubator contributes. This is clearly a positive indicator as it creates the important demand for incubation which would contribute to the success of the programme.

With the exception of projected university-incubator profit shares, academic expectations for any future university incubator were not prohibitively constrictive and were broadly in line with those set out by Shalaby (2004). Academics also demonstrated a high level of interest to participate in a university incubator programme (a critical condition for success). Enthusiasm among academics and students for joining an incubator was high and broadly congruous. In sum, general attitudes about, and expectations of, incubation were encouraging for future incubator success.

One important threat to the incubation programme’s success in Saudi Arabia is the inclination both of the government and the majority of the surveyed academics for the
incubators to be publicly funded and managed. As some studies suggest, this is not the most effective in the long run as privately-funded incubators deemed more professional. Publicly funded incubators also risk dodging adequate benchmarking and measuring procedures due to political pressure. Also, as literature suggests, the importance of the incubator management is such, that if it is badly performed, the negative consequences for the incubatees – and possibly the whole programme when the number of incubators is extremely low, could be significant. It is much easier to attract good managers to private-sector incubators.

The experience of Brazil, suggests the degree of private involvement was a major feature of the success of the incubation programme. This might be of particular importance in Saudi Arabia, as the communication between different rungs of power is not clear and competences of different local and central agencies in charge of the SME sector development overlap. One possible solution would be for the government to promote the concept of business incubation to large business, thus, encouraging private money to become involved in the programme (sponsored by large businesses and organisations). Another solution would be to clearly define governmental/local responsibilities and tasks towards business incubation programme.
CHAPTER 6: CASE STUDY

(The Jeddah Business Incubator)

6.1 Introduction

The case study was conducted in June and July 2007. Findings are based on semi-structured, in-depth interviews with the Director of the Jeddah Chambers of Commerce Business Incubator (JCCBI), the general manager of the incubator and the fourteen tenants at the incubator. Tenants also completed an updated version of the SME questionnaire survey analysed in the previous chapter. (see Appendix K)

6.2 Incubator Characteristics

There are a number of key factors that determine success in establishing and operating incubators. This section examines the role of those factors such as, location, management team, admission criteria, services, type of companies they attract as clients and other issues relating to the incubator goals and the services.

A) Location and Size

Business incubators can have different types of location and can be housed in different types of premises ranging from purpose-built new developments to converted buildings.

The Jeddah Chambers of Commerce Business Incubator (JCCBI) opened its doors in June, 2005. The incubator is funded by the Jeddah Chambers of Commerce and located in a new, purpose-built building next to the Chambers of Commerce, based in the ‘financial district’ of Jeddah (off the main King Abdulaziz Street). This location is expected to have a positive effect on the operation and usefulness of (JCCBI) providing access to markets for goods and services as well as a degree of businesses expertise in the surrounding community.

The location of business incubator largely reflects the aim it pursues. Thus a multi-purpose incubator like the (JCCBI) may well be located in an inner city area which the case
for (JCCBI). This area in the city of Jeddah is attractive location for new-economy entrepreneurs and investors to live, work, network and promote themselves. However, being located little far from a University is expected to a have a negative effect on the interaction between the tenant firms and academics. A strong relation with the university is specifically needed for technology focused businesses because being connected to a university allows easier contact for firms to the incubators and give the tenants access to lab space they may otherwise not have.

Instead of offices, tenants are allocated desk space (1.4m x 1.4m) in open-plan floors that are rented to tenants on a monthly basis. Each tenant receives a desk space and the full use of the incubator facilities. Significantly, only the manager/owner of the tenanted firm is physically incubated while other employees are able to use incubator facilities for meetings and client presentations but are not allocated space nor do they participate in incubator training programmes.

Occupying two floors, the incubator houses 14 businesses but has recently expanded its capacity to 24 ‘desks.’ To operate successfully, incubators need to have sufficient capacity to accommodate a minimum of a round 20 tenants (ECED, 2002) at any time to achieve economies of scale. Having up to 24 businesses within the incubator seems to be a reasonable number and quite suitable to the space available.

B) Incubator Funding Sources

Business incubators could not exist without funding. The main problem related to funding is the lack of or limited access to it. In the majority of cases, the process of business incubation is taken up by public sector. While a good idea in practice, its result is that business incubators become heavily reliant upon government funds.

The (JCCBI) does not have a formal relationship with the government and is exclusively managed and financed by the Jeddah’s Chamber of Commerce. The problem that may arise is that there is limited access to funding in the Kingdom; there are no established venture capital funds. As a result, if the Jeddah Chambers of Commerce decided to stop
financing this business incubator, then the incubator would have few options left and could end up having to close down.

In contrast, Brazilian incubators are generally limited to universities and funded by plural government and non-government sources (Chandra, 2007). A major feature of incubation in Brazil is the degree of private involvement. The largest sponsors of incubators are not for-profit and for-profit organizations, accounting for 40% of the total (Lalkaka and Shaffer 1999). The coalition of partners that support incubators is a notable feature of the Brazilian incubation experience.

In the United States, government grants, university/corporate support along with rental and consulting income constituted primary sources of funds for incubators (Knopp, 2001). Since a majority of incubators in the USA are run as non-profit entities, they operate under a business model that generates additional revenue from rental income and consulting services.

In comparisons, the Chinese government uses business incubators as policy tools of market creation by offering financial support for them both for construction and operations. On the other hand, the funding responsibilities of German business incubators have trickled down to being that of the host towns the particular business incubators are located within. Out of one hundred and thirty individual business incubators seventy-five percent of their local host towns hold equity in the business incubators. Forty-five percent of the cases receive money specifically from local town banks. Similar to the problems that arise when a national government is giving business incubators most of its funding, the same goes for when towns give a majority of the funding for business incubators (OECD, 2002). If the internal government changes and the towns decide to pull out support, the business incubators would have very few places to turn to.

C) Incubator Goals

The mission statement of a business incubator needs to be clear, so that everyone involved with each aspect of the incubator knows what the purpose of the incubator is and what its long-term goals are. This also aids in the development of intermediate goals, which
are very important for business incubators. They are important because they define what the overall goal is intended to be. In addition, once the mission is clear, it will be easier to admit tenant companies that fit into the overall purpose of the business incubator.

Once a clear mission is set, there is a need to develop it into logic, so that others can relate to it. This is especially important when it comes to raising funds. It also aids in having the business incubator becoming more accepted in the community it is placed in. An example of this is the Helsinki, Finland Business Incubators. At the time that business incubators in the region were first starting up those in charge proclaimed the Finland Business Incubators as vehicles for employment, technology transfer, and exports. They were so successful in selling their points, that fifty percent of their budget was from the government, with forty percent of that coming directly from the European Union (Abetti, 2004). The Helsinki business incubators were so successful in using their mission statement that they were able to receive funding from inception until 2006 (Abetti, 2004).

The stated goals of the Jeddah business incubator are, according to the manager (i) to provide a suitable business environment to nurture new businesses in their early years; (ii) to minimise the costs of new business establishment for the entrepreneur; (iii) to support the skills and creativity of the owner of small projects; (iv) to give the opportunity for the small projects to succeed and to protect it in their early years; (v) converting the research and studies into real projects that are suitable to be marketed; (vi) provide strong projects to the society in the future that are able to be sustained and be developed; (vii) practice the concept of society development through developing the economy to the society’s individuals.’

According to the Director, ‘the main goal of JCCBI, from [my] point of view, is to create a business environment for the entrepreneurs to start their work, to be successful in their work, to cut the unemployment rate and diversify the economy.’ He went on to describe how he defined the properties of a business incubator: ‘The incubator is an organisation that works to support bright and enthusiastic entrepreneurs with strong business models, who have the right feasibility study and some of the required resources to achieve their goals. This [the Jeddah Chambers of Commerce] incubator provides them with the right working environment
in the early critical years of the project's life. We are looking to enhance their chances of success by resolving their technical, logistical management issues with very reasonable monthly payment, allowing the project owner to concentrate on the core of his business at the critical start-up period.' It could be concluded that the goals set by (JCCBI) were general in nature and more or less similar to the goals of different incubators in various parts of the world (OECD 1999: 8, NBIA 2002, UKBI 2005). Putting a specific mission statement may serve better in the devolpment of intermediate goals. This is especially crucial for a pioneer incubator such as JCCBI.

Whatever other goals may be served by an incubator, its principal function is still to help entrepreneurs launch new businesses. The incubator's services eliminate the need for the entrepreneur to attend to matters not directly concerned with the business and reduce the cost of operation. The below-market rentals offered by most incubators also reduce the operating costs for the new business during its critical early stages. The benefits of the incubator relative to a more traditional start-up are therefore both technical and financial.

In general, the goals of business incubators are fundamentally economic, as noted. However, there are other purposes served by incubators, and most of these goals derive from the interests of the sponsors as well as the tenants.

D) Management and staff

The JCCBI has a staff of five. The Managing Director is who has been in post since May 2007, previously he was the Director of the Jeddah Chamber of Commerce SME Support Unit, and has been closely involved with the incubator since its launch. It is recommended that the incubator manager should possess a high level of educational qualification and considered the most important intervention tool for incubator success (Ric and Abetti, 1992). The quality of the management team is considered as a critical factor in successfully establishing and operating incubators (ECED, 2002). Greene and Butler (1996) note that “this role, like every other aspect of incubators, varies widely between incubators,
but includes a selection of responsibilities such as networking, counseling, providing emotional support, and providing expertise in diverse areas as marketing, business operations, finance, and accounting” (Rice and Abetti, 1992; Smilor and Gill, 1986).

The General Manager is based full-time at the incubator and oversees its day-to-day operations. Three additional support staff makes up the rest of the team. These support staff are also based full-time at the incubator to give business and management advice, help with facilities (where necessary) and assist with ‘business, marketing and operational planning.’ Furthermore, as discussed below, a great deal of time is expended helping tenants to apply for funding. The General Manager and the support staff are also involved in promoting the incubator to, and networking with, other businesses and banks. Finally, support staff make quarterly reports on the progress and performance of each tenanted business to the Director. There are no recognized professional qualifications or standard in this field, although specific incubator management functions (e.g. personnel management, financial advisor) are areas where such standard exist. In the future need may arise to for setting professional standards.

The ratio of incubator staff to client companies is also a key performance indicator. Generally, the staffing of a business incubator can vary enormously depending on its size and resource. Research conducted by the Centre of Strategy and Evaluation Services for European commission (ECED, 2002), showed that the ratio of management to tenant firms is about 1:9. It should be noted here that the ratio of incubator staff to client companies in JCCBI is much narrower (1:4).

E) Incubator Type

The incubator is ‘general’ and accepts almost all type of business; therefore it does not have the specialist laboratories or technical expertise found in many technology-based incubators. As discussed in the literature, (NBIA, 2002) mixed-use (or ‘general’) incubator places no restriction on the commercial type of firm tenanted and is suitable for all
businesses. Their objectives are also likely to be ‘general’ and focused around employment generation and local economic growth.

All tenants in JCCBI are ‘owner-managed’; no third-parties owned stakes in the businesses. Table 6.1 provides an analysis of the activities of tenant businesses. As can be seen, eight of the companies are marketing-based, four described themselves as ‘education consultancies’ and two are ‘professional training providers.’

The presence of three company types within the fourteen tenants, suggests that JCCBI tend to be general and mixed in terms of business models. It is generally accepted that incubator models are driven, in large measure, by the type of tenant business and the agenda of the primary sponsors (Chandra, 2007). JCCBI is supported by the local chamber of commerce in Jeddah with the view of giving support to all type of new business. Therefore it is expected that they take in a variety of business incubatees in unrelated industries.

It seems reasonable to suggest that for countries where incubation programmes are at the beginning much attention should be paid to the selection of the type of incubator that best suits the prevailing local conditions. The Saudi economic environment could offer a plurality of approaches to incubation ranging from the classical general to high technology types. However, close examination of the needs of the SMEs in the Saudi Arabia should dictate the optimum type.

<table>
<thead>
<tr>
<th>Company type</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>8</td>
<td>57.1</td>
<td>57.1</td>
</tr>
<tr>
<td>Education consultancy</td>
<td>4</td>
<td>28.6</td>
<td>85.7</td>
</tr>
<tr>
<td>Professional Training providers</td>
<td>2</td>
<td>14.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

68 By contrast, the Chinese incubators tend to generally more monolithic in terms of business models, this may be due to their high level of dependence on the government for direction and support (Chandra, and Fealy, 2007).
F) Current tenants

A key factor influencing the successful performance of incubators is the number and quality of tenants. As of July 2007, the JCCBI had fourteen businesses as tenants. It is clearly important to achieve a critical mass in order to maximize the economies of scale with regard to service provision and costs. The successful performance of a business incubator depends ultimately on the number of clients they attract and the performance of these firms.

New-economy incubators tend to have considerably fewer tenants because of the significant investment they make in each incubatee. Smaller incubators may focus their effort on only 2 or 3 companies. Business incubators typically focus on attracting a combination of pure start-up companies and firms at an early stage of development.

Table 6.1 shows the various company types in JCCBI and these were three types (Marketing, Professional training providers and education consultancies). The education consultancies provided services for potential university students who want to study overseas. The consultancies marketed packages to students in terms of fees, flights, accommodation etc. as well as assistance with application processes. These packages are then marketed at potential students. According to the four tenants involved in the business, it is a service for which there is a growing demand in Saudi Arabia as increasing numbers of Saudi students look to study overseas. Asked to explain why so many tenants were in the same, relatively niche, business sector the general manager explained, ‘well, it is a new business area and it is a new, booming market which intelligent entrepreneurs are trying to break into.’

The ‘professional training providers’ are engaged in the design and sale of professional training programmes for (typically large) commercial organisations and government departments. One company is specifically focused upon IT-training for the employees of large organisations, the other provides a wider-range of management and leadership-based training for mid-level managers in commercial enterprises and government departments. Again specialist, professional training is said to be a rapidly growing sector in the Saudi economy, particularly in the
government sector. The current tenants in JCCBI more or less work in similar sectors (marketing, education and training), this may be explained by the popularity and attractiveness of these businesses for Saudi SMEs when the incubator was opened.

However, it was put to both the incubator management and the tenants that having so many businesses working in similar sectors may lead to the tenants being in direct competition with one another. Mr Sultan, the director, rejected this claim and explained, ‘first, we would not admit a direct competitor into the incubator if we already had a tenant specialising in a very particular business area. Second, many of the businesses we have here are in the same or similar sectors, but they are not chasing the same clients, or at least the same business, because they are providing different, very specialised, services.’ Moreover, it was suggested by the two training providers that working alongside each other was of tangible commercial benefit, according to Respondent 13 (R13): ‘We provide a similar service to similar clients but in totally different areas of expertise. This means we can learn from each other in terms of marketing without worrying about competition. In fact, we have in the past exchanged contacts in major institutions because it tends to be the same person who buys the training packages. Overall I think it has been of great benefit working alongside (R14).’

As new businesses, all tenants were creating a product or service new to their firm. As Table 6.2 shows, four firms (28.6%) claimed to be introducing entirely new services to the market. In addition, nine tenants claimed to be introducing services that ‘significantly improved’ their market (Table 6.3).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>28.6</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>71.4</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 6.2: Created service new to the market

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
<td>28.6</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>71.4</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 6.3: Introducing services that significantly improved their market
As discussed earlier, only the managers of incubated companies are ‘hosted’ full-time in the incubator, however as Table 6.4 shows, the majority of the incubated companies have more than one employee. As stipulated by the incubator, all employees must be Saudi nationals (this is in contrast to the 26% of mean total employees who are non-Saudi amongst the Riyadh-based SMEs.)

Table 6.4: Employee numbers for JCBI tenants

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 employee (includes manager)</td>
<td>6</td>
<td>42.9</td>
<td>42.9</td>
</tr>
<tr>
<td>2 employees</td>
<td>4</td>
<td>28.5</td>
<td>71.4</td>
</tr>
<tr>
<td>3 employees</td>
<td>3</td>
<td>21.5</td>
<td>92.9</td>
</tr>
<tr>
<td>4 employees</td>
<td>1</td>
<td>7.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

G) Incubator Application and Admission

Most Business incubators adopt specific criteria to screen individual applicants. The quality of the entrepreneurs selected for admission, their commitment to success, their experience and skills, the nature of their products, etc- will of course have a very important bearing on how successful the incubator itself is in achieving its mission.

A study of Kakati (2003) reveals that entrepreneur quality, resource-based capability and competitive strategy are the critical determinants of a start-up's viability and achievement. The screening practice of the first cluster (on market and personal factors) seems best to distinguish between successful and unsuccessful starting enterprises. Steffensen et al. (2000) do not directly focus on screening practices, but
observe a difference between two types of spin-offs from the University of New Mexico's (UNM) research centers: planned versus spontaneously occurring spin-offs. Planned spin-offs are initiated by the Research Centre and are offered incubation facilities by the university. Spontaneous spin-offs are established with little encouragement from the research centre by an entrepreneur who identifies a market opportunity. The fact that only the planned spin-offs are incubated in the university indicates the presence of implicit screening practices.

There are four mandatory qualification criteria for incubatee admission to JCCBI. Entrants must be:

- Saudi nationals
- Resident in the city of Jeddah
- Graduates, from a Saudi university
- In possession of a license to engage in private enterprise, (this is to prevent government employees, or former government employees, from commercializing government technology without permission).

Assuming entrepreneurs meet these criteria, the first stage of application is the submission of an outline business plan. The second stage involves a presentation to and interview with, the admissions committee. Entrants must also take a test to demonstrate computer literacy. At this point a decision is made upon admission.

If the application is approved at this point, the entrant signs a contract committing him or herself to the regulations of the business incubator. A further condition (discussed further, below) of incubation is that the tenanted business is staffed entirely by Saudi nationals and must remain so for the duration of its tenancy.

Speaking to tenants about the application procedure revealed that the process was quite stringent. As (R 7) put it, 'it took me about two months from the beginning of my application to being accepted by the incubator. The interview was tough; they asked me many difficult questions about my business. I am just thankful that I would have done my research and was
Respondent five said: 'I applied with a friend of mine from university, but he didn't spend long enough in the application process and they rejected him.' As the director explained, many applications have been rejected 'due to the weakness of the feasibility studies submitted.' He approximated the acceptance to rejection ratio at approximately 1:4 and claimed that demand was 'extremely high'.

If identifying weak but promising start-ups and helping them is one of the most critical functions of an incubator, then the screening criteria become very important to ensure that any ineligible applicants have not been selected in a place of a promising and needy applicant. For this reason, screening criteria have received considerable attention in the literature. Procedures of admission to the Jeddah incubator was generally very close to the procedures adopted in many other incubators and following the methods which were developed by Lumpkin and Ireland 1988 and methods advocated by the US Department of Commerce. (Merrifield, 1987) gave description of the two methodologies. However, some differences and similarities were observed between these methods and the methods used in (JCCBI). The main difference between the American and (JCCBI) Incubator policy seems to be the focus on financial criteria in the US versus the more 'soft' criteria as the management team and market fit in Jeddah.

There are no universal selection criteria for tenants, and one study (Lumpkin and Ireland, 1988) found that the goals of the sponsor were the predominant factor in selecting candidates firms. The Allen and McClusky (1990) findings were similar. For example, corporate "seed capital" incubators admitted new ventures with high growth potential and high cash harvest potential; property development incubators admitted tenants mostly for their ability to pay rent.

While an important aspect of tenant entry is admission criteria, it is not the only aspect. One must first have entrepreneurs and thus potential tenant companies willing to enter a business incubator before admission criteria can be applied. It should be noted the lengthy procedure (as described by some of the tenants) followed in (JCCBI) may result in low numbers of potential tenants. One such example of this is in Argentina where they have a low number of
potential tenant companies available for entrance into a business incubator. The result of this problem is that the mission statement and admission criteria of the Argentinean business incubators are kept vague. This is done so that possible tenant companies are not excluded from entrance into the business incubator (Hoeser, 2002). Admission objectivity could also be a problem. In Nigeria and the Philippines, those who have political connections have a much better chance of getting into a business incubator. “In some instances genuine entrepreneurs are denied admission in favor of political appointees and top government functionaries” (Adegbite, 2001). This means that regardless of how big an impact your product could have, you need the right connections to be admitted into a business incubator. This can ultimately lead to discouraging others to attempt entrance into business incubator and no tenant companies wanting to enter the business incubator. Both of these can lead to the ultimate failure of a business incubator. In general a balance must be observed in evaluating the candidates and selections must be restricted to those who have a high probability of achieving commercial success, making sure not to screen out any promising applicants. The criteria in use in JCCBI needs further revisions to lift some of the restricting criteria that may risk the rejection of potentially successful candidates.

H) Tenancy and Graduation Criteria

The process by which tenants exit an incubator can also bring forth problems. Like the previously mentioned issue of tenant entry, this is also a problem for Nigeria where tenant companies have been known to stay up to twenty years within a business incubator. One reason for this appears to be the reduced rent rates. Another reason brought forth by the tenant companies is because, they say, the government has yet to provide a suitable alternative location (Adegbite, 2001). When tenant companies do not exit business incubators in a timely fashion, usually set forth by the individual business incubator, it has a profound effect on the business incubator. The biggest consequence is that it stops the flow of new tenant companies coming into the business incubator. If there is no room within, new tenant companies can not enter, because the business incubator can not support them.
There are also important sectoral factors that influence exit rules. In the case of biotechnology incubators, for example, tenants will require lengthier incubator stays than 3-5 years. Pharmaceutical companies in incubation may require 10-12 years incubation.

A further factor is the extent to which rental charges are adjusted to become more expensive the longer a company remains in an incubator. The practice of increasing rental charges to above market rates is quite frequently used as an alternative to fixed-term tenancies to encourage firms to graduate. In this regard, rents, which are subsidised by the Chambers of Commerce, are staggered according to the duration of tenancy (as shown in Table 6.5 below). Thus, in the first six months, monthly rent is set at 600 Saudi Riyals (SR), approximately £85 GBP. In the next six months, it rises to 700 SR (approximately £99 GBP) per month and after one year of incubation it is set at 1000 SR (approximately £141 GBP).

Table 6.5: JCCBI rent structure

<table>
<thead>
<tr>
<th>Length of tenancy</th>
<th>Monthly rent cost*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 months</td>
<td>600 SR (approx. £85)</td>
</tr>
<tr>
<td>6-12 months</td>
<td>700 SR (approx. £99)</td>
</tr>
<tr>
<td>12 - 24 months</td>
<td>1000 SR (approx. £141)</td>
</tr>
</tbody>
</table>

The residency period in new economy incubators is considerably shorter. In the early days, some of them stated that they could turn an idea into a fully operational business in 6 months or less. Of course, in the case of a dot.com the actual business was usually nothing more than a website.

The maximum tenancy in JCCBI is 2 years and the average length of tenancies is only one year. There is no 'minimum' graduation criterion – although as part of quarterly reporting and appraisal sessions with incubator staff, tenants are given a timetable of objectives which includes prospective graduation dates. It is also a priority of the incubator to make sure that firms are 'properly prepared' for graduation, particularly in terms of their revenue streams and, of course, their move to new accommodation. As Dr Sultan explained, many firms have

* Rents are calculated in GBP according to June 2007 exchange rate of 1 GBP = 6 SR.
'stayed for just 6 months and left because they have succeeded; the incubator became too small for them.' Since its opening in June 2005, all companies that have left the incubator are still in business. The longer tenancy period may partly be a reflection of differences in business cycle times. It may equally reflect a more protective stance by incubator management vis-à-vis their incubator offspring, preferring to nurture firms until they have reached a later stage of maturity.

The JCCBI did not state clear criteria for graduation; however, it specified the maximum tenancy to be two years. Usually businesses remain in the incubator until they achieve a certain size (Garrity, 2002) In this case study the results demonstrated that most of the firms (12) were graduated within the first year. This is similar to the graduation time in private incubators where start up usually graduates in one year (Rosenwein, 2002; Rothaermel and Thursby, 2005).

As of July 2007 (two years, one month after the opening of the incubator), the majority of businesses (58.3%) have been in the incubator for less than six months. Moreover, only two businesses have stayed for more than one year. That seven of the 12 firms graduated in only six months, may indicate a good performance and higher effectiveness of this incubator (table 6.6).

<table>
<thead>
<tr>
<th>Table 6.6: Length of tenancy in JCCBI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>0-6 months</td>
</tr>
<tr>
<td>6-12 months</td>
</tr>
<tr>
<td>12-18 months</td>
</tr>
<tr>
<td>18-24 months</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
j) Facilities

Start-up firms have a need for certain services but are often too small to justify the cost of providing these services in-house. Access to those services through the incubator means that entrepreneurs can focus their attention and capital on the critical task of getting their product or service to the market, while still presenting a professional image to their business contacts and customers.

It is important to note that the first two dimensions of a business incubator, shared services and small spaces, have been available in the marketplace for many years via serviced offices and so called nursery factories, to name two of the more common options. A business incubator must include a number of additional dimensions to distinguish itself from such real estate ventures. These additional dimensions relate to how incubators facilitate management development and growth in their clients (Allen and Weinberg, 1988).

In Jeddah incubator, each tenant is provided with a phone and high-speed internet connection. Printing and fax facilities are available and shared by all tenants. All tenants have access to conference and meeting rooms. A front desk is manned by a secretary, who also answers incoming phone calls on behalf of the tenants. This range of facilities and assistance is expected to cut their overhead costs at this critical stage (Garrity, 2002). This contrasts favourably to the Riyadh-based SMEs, 11.2% of whom had high-speed internet access and only 26.9% had secretarial support.

However, only ten (71.4%) of tenanted businesses (table 6.7) had created company websites. Although this is a significant improvement on the Riyadh-based SMEs, (of whom, only 18.5% had websites), it was hypothesised in this chapter that almost all incubated businesses would have their own website. However, it was revealed that all four tenants without websites were also the newest members of the incubator and none had spent more than 3 months in the institution.
Table 6.7: Tenants with websites in JCCBI

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>71.4</td>
<td>71.4</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>28.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As R3, manager of a marketing company put it, ‘there’s no point having the website yet because we’re not really open for business, we will build the website when we have the products.’ The Director of (JCCBI) revealed that ‘obviously we strongly advise entrepreneurs to create an internet presence and of course we are able to help them create this, if they should need our help. But in truth, it is not an immediate priority for businesses – they need to get their finances and business planning in order before they start thinking about websites.’

J) Funding

Availability of capital, as well as the structure of financial markets is a key determinant of growth of fledgling ventures (Bhide, 2000). Lack of financing for new ventures will thwart the creation of dynamic local economies built around a robust SME sector. Access to financing is a crucial factor for innovation (Mytelka and Farinelli, 2003). Gaps in financing, particularly for early stage ventures, can be a major deterrent to new business creation, often leading to a fledgling venture’s early demise.

The JCCBI does not provide funding directly to the tenants. Instead, once an entrepreneur has been approved for incubation, incubator staff assist the prospective tenants apply to the funding sources. There are three main sources of funding. First, the incubator ‘has a strong relationship’ with private banks and if necessary, the SME Support Unit is able to act as guarantor. According to Mr Sultan, it is ‘a given’ that if entrepreneurs meet the incubator entrance criteria they will be eligible for bank loans. The second source of funding is provided by the government-sponsored Saudi Arabian Centenary Fund which provides very-low interest business loans. Entrepreneurs are eligible for the Centenary Fund loan if they are (a) Saudi, (b) 18-35 years old, (c) working for their business full-time and (d) the business and the entrepreneur are based in the
same city (the loans are administrated regionally). Finally, the Abdulatif Jameel Fund provides similar very-low interest loans to Saudi businesses. Eligibility is based upon: (a) Saudi nationality (b) the exclusive employment of Saudi nationals (c) entrepreneur’s age between 20-40 years (d) full-time commitment to the business (e) business is based in same city as entrepreneur (f) submission of a feasibility study and (g) application is backed by a guarantor. The business incubator is able to be especially useful in the provision of the last two criteria.

No tenants had obtained funding from their family, the Saudi credit bank, venture capitalists/private investors or parent companies. The only four sources of funding said to have had any impact on start-up funding were: the manger’s own funds, private bank loans, the Saudi centenary fund and the Abdulatif Jameel fund. Of these four sources, the Centenary Fund was the most cited source of start-up funding and rated as having the highest impact (tables 6.8, 6.9, 6.10).

As Table 6.8 shows, the manager’s own funds had, relatively, the lowest impact on start-up funding. However, only two businesses entered the incubator with no funds at all (i.e. they relied entirely upon loans).

Table 6.8: Impact of manager’s own funds on start-up funding

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Impact</td>
<td>6</td>
<td>42.9</td>
</tr>
<tr>
<td>Medium impact</td>
<td>3</td>
<td>21.4</td>
</tr>
<tr>
<td>Low impact</td>
<td>3</td>
<td>21.4</td>
</tr>
<tr>
<td>No impact</td>
<td>2</td>
<td>14.2</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 6.9 showed that the impact of private bank loans was rated highly by 50 % of the respondents. The bank loans are, ordinarily, set at special new business rates but were less preferred than the Centenary Fund and the Abdulatif Jameel Fund. (As R2 explained: ‘bank loans have a higher rate of interest than the government funds, but the good thing is that they take much less time to approve. You can walk into a bank and in
the next day they have approved your loan. I think you need a bank loan first before you move to the government.'

Table 6.9: Impact of Private Bank Loan on start-up funding

<table>
<thead>
<tr>
<th>Impact Level</th>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Impact</td>
<td>7</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Medium impact</td>
<td>4</td>
<td>28.6</td>
<td>78.6</td>
</tr>
<tr>
<td>Low impact</td>
<td>0</td>
<td>0.0</td>
<td>78.6</td>
</tr>
<tr>
<td>No impact</td>
<td>3</td>
<td>21.4</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Every tenant who had applied to the Centenary Fund for a low-interest start-up loan had received the loan (table 6.10). As stated above incubator staff spend a significant amount of time ensuring that applications are properly prepared. Moreover, as the director explained: 'being inside the incubator is very helpful for loan approvals, we are able to act as guarantors and referees and of course, the people who approve the loans see that the businesses are in the incubator and have been through our vetting procedures. I would be very surprised if we ever had a tenant who was not approved for this loan.'

Table 6.10: Impact of Centenary Fund Loan on start-up financing

<table>
<thead>
<tr>
<th>Impact Level</th>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Impact</td>
<td>11</td>
<td>78.6</td>
<td>78.6</td>
</tr>
<tr>
<td>Medium impact</td>
<td>3</td>
<td>21.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Low impact</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>No impact</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

To evaluate the ease of access to financial support several indices related to the speed, and simplicity of the procedures were tested.

The speed of the Centenary Loan was rated highly by tenants, the majority (78.5%) cumulatively rated it as 'fast' or 'very fast' (table 6.11). The director stated that 'I don’t think
that being in the incubator speeds up the application process, but it does mean that our tenants fill out the application forms correctly so there are no delays having to re-send parts of the application etc.'

Table 6.11: Speed of Centenary Fund Loan Receipt (from time of application)

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very fast</td>
<td>5</td>
<td>35.7</td>
<td>35.7</td>
</tr>
<tr>
<td>Fast</td>
<td>6</td>
<td>42.8</td>
<td>78.5</td>
</tr>
<tr>
<td>Neither fast nor slow</td>
<td>3</td>
<td>21.4</td>
<td>100.0</td>
</tr>
<tr>
<td>slow</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Very Slow</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As Table 6.12 shows, the opinions on the ‘simplicity’ of the Centenary Loan application process were more mixed. Although the majority of tenants (57.1%) cumulatively regarded it as very simple or simple, three tenants (21.4%) regarded it as ‘difficult.’ Respondent 7, who described it as difficult said that ‘the application form is about twenty pages long, you need references, certificates, CVs, you also have to present yourself for interview where you give a presentation, it took me a long time to put it together.’ The director agreed that ‘the Centenary Fund is not an easy application process, they get a lot of applicants and they need lots of documentation to make sure there are not any fraudulent claims. But the important thing is that here at the incubator we help the tenants put together their application to make sure there’s no discrepancies. Also, the paperwork is made easier because we ask for almost exactly the same things when they join us here, so they’re repeating the same process for much of it.’
Of the current tenants, only two had not received a loan from the Abdulatif Jameel Fund Development loan (table 6.13). However, these two tenants claimed that they had not yet submitted an application, but fully intended doing so or were in the process of doing so. The Abdulatif Fund is for business ‘development’ and therefore plays a different role to the Centenary Fund, it is designed for new businesses looking to expand. In other words, the business has to be in operation, and demonstrate proof of being so, before it is eligible for the loan.

The speed of the Abdulatif Jameel Loan (after submission of application) was rated as higher than that of the Centenary Loan. Of the twelve tenants who had applied, all rated it as either ‘very fast’ or ‘fast’ (table 6.14).
Table 6.14: Speed of Abdulatif Jameel Fund Development Loan Receip

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very fast</td>
<td>4</td>
<td>28.5</td>
<td>28.6</td>
</tr>
<tr>
<td>Fast</td>
<td>8</td>
<td>57.1</td>
<td>85.7</td>
</tr>
<tr>
<td>Neither fast nor slow</td>
<td>0</td>
<td>0.0</td>
<td>85.7</td>
</tr>
<tr>
<td>Quite slow</td>
<td>0</td>
<td>0.0</td>
<td>85.7</td>
</tr>
<tr>
<td>Slow</td>
<td>0</td>
<td>0.0</td>
<td>85.7</td>
</tr>
<tr>
<td>Don't know</td>
<td>2</td>
<td>14.3</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

However, the Abdulatif Jameel Loan was rated as a more difficult application process than the Centenary Loan (table 6.15). Six tenants (42.8%). The one tenant who rated it as ‘very difficult’ was the tenant currently in the process of putting together his application (R3). The application process involves two interviews and the submission of company accounts. The director explained that: ‘it’s is a very stringent application process and to be honest, I think businesses would really struggle without outside help, especially as they’re new businesses.’

Table 6.15: Simplicity of Abdulatif Jameel Fund Development Loan application process

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very simple</td>
<td>1</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>Quite simple</td>
<td>3</td>
<td>21.4</td>
<td>28.5</td>
</tr>
<tr>
<td>Neither simple nor difficult</td>
<td>2</td>
<td>14.3</td>
<td>42.8</td>
</tr>
<tr>
<td>Quite difficult</td>
<td>6</td>
<td>42.8</td>
<td>85.6</td>
</tr>
<tr>
<td>Very difficult</td>
<td>1</td>
<td>7.1</td>
<td>92.8</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1</td>
<td>7.1</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

As Table 6.16 shows, tenants ubiquitously regarded the incubator’s role in helping to secure funding as ‘very important’. Probed further on this topic, R9 revealed: ‘the excellent thing about the incubator is that it guarantees funding. Banks know that if we are working here, it is safe to lend us money, especially as the incubator guarantees it.’ Respondent 10 said
that ‘I think I would have struggled with the application forms for the Jameel Fund without their help, they show you how to answer the questions in the way that will get an approval.’

Table 6.16: Opinion of Incubator role in helping firms to secure funding

<table>
<thead>
<tr>
<th>Role</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Important</td>
<td>14</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Important</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Neither Important nor unimportant</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Unimportant</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Very unimportant</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

K) Training and technical assistance

Each new tenant undertakes a compulsory one-week course entitled ‘How to start your small business’. The course is taught inside the SME support centre, Jeddah Chambers of Commerce. The course contains the following modules:

- Investment opportunities (evaluating and selecting them)
- An introduction to business management
- Marketing and marketing research
- Technical study of the project
- An introduction to financial management
- A financial study of the project
- How to produce a feasibility study
- An introduction to accounting
- An introduction to sales
- Brief of the government’s regulations, business incubators franchising

No further ‘formal’ training is provided, however tailored advice is constantly available from support staff and the general manager. Tenants rated the training they had received in
the incubator highly. Ten tenants (71.4%) rated the training role of the incubator as 'very important.' (Table 6.17)

Table 6.17: Opinion of Incubator training role

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Important</td>
<td>10</td>
<td>71.4</td>
<td>71.4</td>
</tr>
<tr>
<td>Important</td>
<td>4</td>
<td>28.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Neither important nor unimportant</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Unimportant</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Very unimportant</td>
<td>0</td>
<td>0.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

According to the General Manager (JCCBI), 'much more important than formal training is the mentoring we give to businesses.' When probed on what 'mentoring' involved in the Jeddah Incubator, he described it as 'mainly encouragement, when it is needed, advice, obviously when [the tenants] are in need of it, helping [tenants] with anything they need. I think we're a bit of safety net, it's the small things as much as the big things, we can reassure them they are not making a mistake, and if they are making a mistake we can correct them and help them to do things properly.' The views of the manager were reflected in the survey of tenants. All tenants rated the incubator's 'mentoring role' as 'very important.'

As requirements of the application procedure, and the follow-up assistance provided upon admission to the incubator, every tenant had compiled a comprehensive feasibility study and business plan (in comparison to the 17.7% of Riyadh-based SMEs who had written a full business-plan). Ten tenants (71.4%) had written marketing plans (again, in marked contrast to the 1.5% of Riyadh-based SMEs.) Again, of the four tenants who had not written marketing plans, each had spent less than six months in the incubator. Tenants unanimously regarded the incubators' role in assisting with business planning as 'very important.'
Networking and Business Links

Networking is a key to success that a business incubator needs as early as possible. There are multiple areas where networking is important. One such area is funding. Funding is especially important because if one does not know the right people, the chance of finding investors is decreased.

A database should also be kept of potential donors. This not only helps the business incubator for funding during start-up phases, but also can help match up tenant companies with potential donors. One group of business incubators that has done this type of networking well is the Helsinki, Finland business incubators. The Helsinki business incubators keep a database that makes experts and donors easily identified and able to be contacted (Abetti, 2004).

Networking, in the form of seminars and workshops for the incubators community, is another important activity that should be done by business incubators. These seminars and workshops allow for new ideas to be discussed in a “safe” setting. As a result, it can potentially bring in new entrepreneurs, and thus possibly new tenant companies. The reason a “safe” setting is important is because especially in communities where taking risks is seen in a negative light, personal interaction with those involved in the business incubator community can change people’s minds. Going along with this idea, public workshops and seminars also play a role in garnering more acceptance of a business incubator within its respective community.

According to Mr. Sultan, the incubator has developed ‘good connections’ with large companies based in Jeddah. The Chambers of Commerce has been active in promoting the incubator to local businesses. One of the key tasks performed by incubator staff is to introduce incubator tenants to other businesses. These businesses may be able to offer advice to tenants, they may also constitute potential suppliers, buyers or collaborators. Several tenants had secured sales through the networking efforts of incubator staff who had recommended them, and made introductions to, potential clients. As the manager put it, ‘sometimes the staff become like marketing and salespeople for the tenants, of course we
expect the tenants to do things for themselves, but we can help them by making introductions. It gives them credibility which they might not have if they had approached firms on their own in this stage of their development. So far, we have been very successful in finding potential clients for our tenants.’

The incubator has also held two ‘networking events’ where receptions have been held for local businesses to meet the tenants. Asked about their relationship with local businesses tenants were broadly enthusiastic, R13 (IT training company) said that ‘I made some really good contacts, potentially clients, at the last event, I think the businesses here want us to succeed, so they are trying to help and want to give us business.’ However, to date, no sales have come directly as a result of the receptions.

According to table 6.18, the majority (78.6%) regarded the incubator’s role in creating business contacts as ‘very important.’ As shown in the literature, apart from providing basic services and resources to the start-up venture, the incubator plays a critical networking role (Smilor and Gil, 1986).

Organized networking was identified as a significant differentiating factor that distinguished incubators from other structures that merely provided office space and basic services (Hansen, et al., 2000a). The government and local Universities involvement with the incubator is limited, however there is increasing recognition to expand this involvement.

Table 6.18: Role of incubator in creating business contacts

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Important</td>
<td>11</td>
<td>78.6</td>
<td>78.6</td>
</tr>
<tr>
<td>Quite Important</td>
<td>3</td>
<td>21.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As stated above, there are no ‘direct links’ to the Saudi government, the incubator is an autonomous project managed entirely by the Chambers of Commerce. Instead, the incubator director and manager are regularly consulted by government policy-makers who have, understandably, shown a keen interest in the project. The manager explained, various
Ministry of Trade representatives have visited the incubator on ‘fact finding’ missions on several occasions in the past two years.

At present there is no link with any of the Saudi universities. However, the director claims that discussions are underway to build such links with the potential of opening a second incubator at King Abdulaziz University (Jeddah) which would be a joint project between the university and Jeddah Chambers of Commerce.

M) Business Collaboration

Two of the incubator’s tenants had collaborated with other businesses, based outside of the incubator. None of the incubator tenants had collaborated with other tenants, in any formal capacity. (R 13), the IT training company, had worked with a software firm to develop a ‘tailor-made’ online training programme for a government department. The intellectual property of the programme was purchased by the government and the firms were paid separately. (R 9), an education consultancy, had worked alongside a travel bureau to create a travel-study package for Saudi students studying abroad.

These results indicate a low level of collaboration and reflect the inability of the incubator in resolving this difficulty. The results showed that Saudi SMEs are not enthusiastic about joint ventures with other companies. As mentioned earlier, one of the key assets of an incubator is its ability to “fill in” for an entrepreneur’s “impoverished network” (this is Smilors, 1987 “fourth criteria” for incubation). As Carayannis et al (200) states, networking may go as far as joint research and development but certainly most small high-technology companies benefit from information sharing. Hoeser (2003) regards the difference between the willingness to network in Argentina and Brazil as a critical factor in determining the relative success of the two incubator programmes. Thus, an SME’s willingness to collaborate with other businesses has an effect upon its success within an incubation programme. This collaboration, according to the government’s policy ought to facilitate the Saudisation as SMEs are believed to be excellent vehicles for replacing foreign nationals with native workers.
and reducing the reliance upon foreign-based enterprises for the provision of materials and technologies for the giant utilities industries (Otsuki, 2002)

N) Future Developments

Asked what the future holds for the Jeddah incubator, the manager stated that 'we would like to make a formal link with King Abdulaziz University [Jeddah], I think this would be most useful and beneficial for the tenants.' The proposed link would 'allow tenants to use some of the university facilities, we would also look to recruit from the university.' He also thought that such an agreement could be made 'within 12-18 months.' He predicted continuing success for the current incubator 'we will soon have 24 desks available, although we don’t necessarily want full capacity, we prefer good entrepreneurs to full capacity. In terms of the incubator’s weaknesses he replied that: ‘I wouldn’t say we have any major weaknesses but we can improve in the links we have with large businesses, I think we could look into some form of collaboration or sponsorship with one of the larger national or international businesses.’ Asked to give his overall assessment of the Jeddah incubator the manager stated that ‘Overall, we are doing well. This is the first incubator in Saudi Arabia and so far, it is successful. We can show that it helps SMEs and entrepreneurs to succeed and cuts unemployment. I am sure Jeddah will be full of incubators in the future.’ To date, the incubator had not had any failed businesses, either amongst tenants or amongst graduated businesses. The director put it ‘We’ve had no failures until now. Demand is very high. From the Director’s point of view, it has has been a very successful project.’

The director was asked how he saw the prospects of business incubation in Saudi Arabia. He replied that he anticipated a rapid expansion in Riyadh, Jeddah and the Eastern Province. ‘I think what we have shown here is that incubation can really help Saudi SMEs, we can address a lot of the problems that are holding them back.’ However, he was skeptical about a government-run incubation programme: ‘If incubators are to expand they are going to need to move away from the Chambers of Commerce and will
require funding from the government or other sources. Nevertheless, the problem will be in the management. Mixed management (governmental and private) would not do the job. If incubators are to be funded directly by the government there needs to be a special department set up for them, one that understands how they work and does not try to use them for different purposes. But the most important thing is that the director is independent so that there is some continuity, without the government making changes or setting different priorities.'

Recently, the Kingdom of Saudi Arabia has adopted a long term economic strategy to develop a knowledge-based economy. Currently the Kingdom is in the process of launching a giant incubation programme covering all regions of the Kingdom. The major universities with collaboration with King Abdullaziz city for science and technology (KACST) are seeking to play a full part in this strategy through the development of a substantial science parks. Through this project, the major universities aim to satisfy the demands of the knowledge-based industries, and to commercialize its research outcomes, in addition to enhancing the research environment and encouraging researchers and graduates to participate in the incubation programme and to establish spin-off knowledge-based companies.

The first outcome of this ambitious programme was already materialized in King Abdulaziz University. There, already Knowledge and Business Alliance Business Incubator, has emerged at King Abdulaziz University, to reflect the pioneer role of the university, in creating a new entrepreneur generation, and effectively participating in serving the society and national economy. The Jeddah incubator was moved to this incubator and will start to operate in the second half of 2009.

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CHAPTER 7 – CONCLUSION AND RECOMMENDATIONS

7.1- Introduction

The purpose of this concluding chapter is to summarise and discuss the main findings of the thesis in relation to the research questions that guided the study. The chapter also includes recommendations, theoretical and practical implications of the research findings, research limitations, and suggestion to future research.

This research aimed first, to seek, through inductive enquiry based on available secondary data and the literature, to establish a set of politico-economic conditions under which business incubators are likely to be successful. These conditions included, the macro economic conditions, micro economic conditions, the political environment, the levels of government and non-governmental support, the levels of co-ordination between interested agencies, the relationship between business, science and academia and the salient cultural context.

Second, these general properties were deductively applied in a specific environment: Saudi Arabia, to explore the SMEs environment in Saudi Arabia, and to find out whether business incubation might help meet the needs of the emerging market economy in the Kingdom. In addition, the basic characteristic of the early phase of Saudi experience in business incubation was investigated. To achieve this task, information on Jeddah business incubator was collected through face to face interviews and questioners.

The researcher collected (primary) data in order to address these questions - and has outlined the likely course and level of success of incubation development in Saudi Arabia. In order to address this issue, five main objectives were used to guide the research. The study aimed to examine:

1- The potential of success of incubation in the Kingdom
2- Education and Business
3- The SMEs Environment
4- Knowledge and Expectations for Business Incubation
5- The Jeddah Incubator
To summarise the main findings of the thesis, the results will be presented one after the other in relation to each of the objectives. Also, because the study employed a three-staged stepwise methodological approach to obtain a fuller and richer understanding of the research issues, the findings will be discussed according to the three stage process, (starting with the results from the focus group, then those from the follow-up surveys, and finally, those from the case study.

7.2- Potential for Success of Incubation in the Kingdom (Focus Group)

7.2.1 Summary of main findings:

The major outcome from discussion with the focus group turned the attention to the major challenges facing the SMEs in the Kingdom and the opportunities for future progress. It can be concluded from this discussion that despite their strategic and economic importance, the state of SME’s in Saudi Arabia leaves much to be done. Radwan and Al-Kibbi (2002) also note that the SME sector in the Kingdom of Saudi Arabia remains underdeveloped. SMEs lack the primary tools that enable them to grow and develop. They lack funds and credit options, they operate in an unfriendly business environment, they are handicapped by extreme regulation, and they function without the availability of basic statistics and data needed to ensure sound business decisions. Indeed, Otsuki (2002) identified seven reasons as to why SMEs in Saudi Arabia are underperforming, namely: lack of funds, lack of skilled human resource, lack of management skills, lack of marketing penetration, lack of modern technology, lack of information and cost problems.

The discussion has shown that a joint, national effort towards a new SME support strategy is possible and that it can lay a concrete ground for a giant jump in the role and potential of the SME sector. As argued by Boubshait (1999), there is wide support amongst participants that the process of business incubation and the development of facility-based business incubators can serve as a vehicle which can bring all these functions together.

In Saudi Arabia, at the macro-level, new business creation is facilitated by a stable macro environment, and low rates of inflation and interest. With vigorous privatisation
process and economic stability, it is expected that all the needed conditions, such as technology development and economic diversification (Saudi Ministry of Finance, 2002), for establishing business incubation and hence SME development are currently present. The consensus, reached by participants is that, the introduction of business incubators programmes could serve as a viable tool for providing support for SMEs. Prior studies (e.g. Boubeshait, 1999; Radwan and Al-Kibbi, 2002; Radwan, 2005) also note that incubator programmes are influential to the development of SMEs.

7.2.2 Conclusion:

The successful development and operation of Saudi Arabia national business incubator programme requires an intensification of the policy reforms already underway. The main problems that could face business incubators as cited by participants are:

- Lack of clearly defined funding policies and modalities.
- Absence of coordination and cooperation between public and private sector for putting a long term planning to launch a viable incubation processes
- Legislation and regulation
- The absence of a proper legal framework to promote not-for-profit business incubators.
- Lack of a well established government and Universities R & D centres

7.3-Education and Business

7.3.1 Summary of main findings:

Concerning graduate skills and training, the main findings of the research indicated that, very few students (9.2%) had undertaken paid work experience. However, one need to be cautious as this may be a reflection of current economic conditions rather than student attitudes toward work (Oxford Business Group, 2007). The results also, revealed that
student's business planning skills were poor, with just over half (52.6%) had any experience of writing a business plan as part of their studies. Such findings reveal that universities need to revise their curriculum in order to develop students' management skills and encourage creativity as put forward by Bailey (1995). However, most academics (78.9%) believed that students possess the adequate skills and knowledge necessary to start a successful business. The positive belief expressed by most of the academics about the skills of students should be taken with cautious because it does not reflect a measured criterion and it is more subjective, especially the more objective question about the number of students who actually wrote a business plan showed deficiency in this skill.

A second key condition for a successful business incubator is related to vocational training, an activity that this research demonstrated to be low amongst business students in Saudi Arabia. In general, the results indicated that students share many of the problems the general population experience in small business development, such as the lack of business and management skills, abilities and inadequate vocational training. In fact, Cordesman (2003) and Looney (2004b) argue that in order to compete, the technical knowledge and skills of Saudi students must be raised to international standards.

When testing the entrepreneurial attitudes, the data demonstrated low numbers of students (4.6%) expected to work in the public sector. Students' expectations are in line with Saudi seventh and eighth development plans. In addition, findings showed that the overwhelming majority of students (79.7%) demonstrated a high level of enthusiasm to start their own businesses in the next five years. Such results confirm the entrepreneurial nature of young graduates (McLarty, 2005).

When testing the graduates employment prospects, the finding demonstrated that, a potential surplus of unemployed graduates exists where less than half of final year students (49.7%) had received job offers at the time of enquiry. Looking at this finding in light of the previous result regarding the high level of enthusiasm of students to start their own businesses in the next five years, one can conclude that there is a positive environment for incubation.
However, it should be noted that universities produce a number of graduates whose chances of contribution to business development are limited (e.g. Islamic studies, etc.).

The findings related to university and business links revealed that the majority of students (53.6%) had undertaken commercial internships as part of their degree programme. Indeed, internships act as useful linkage between businesses and universities (Bates, 1996). Regarding commercialisation of university research the results demonstrated that a high proportion of academics (84.2%) had undertaken commercial research. The commercialization of university research is seen as a key driver of national competitiveness (Henderson et al., 1998; Mowery et al., 2002). Not surprising, the most popular area of research was Information Technology (47.4%). A significant proportion of academics (31.6%) have conducted research on SME development. Furthermore, a significant proportion of academics (36.8%) regarded the relationship between local business and their university as ‘quite poor’. This represents a major impediment to the success of incubator (Boubshait, 1999). The relationship between the university and business was deemed unsatisfactory by the majority (68.4%) of academics. In general, the surveys showed mixed results in terms of suitability of business-academia relationships for business incubation.

7.3.2 Conclusion and recommendations:

Based on the results of this research, it can be concluded with some confidence that the educational quality of students needs further strengthening. Business and technology students, described within this work as the most suitable for business incubation, lack needed skills. While students’ vocational skills are of particular importance, yet in Saudi Arabia this is one of the weakest links of business-education cooperation; with less than 10% students taking up paid jobs and just over 50% taking part in commercial internships.

By assuming that there is a positive correlation between the entrepreneurial attitudes and the desire of students to start their own business, it can also be concluded that young Saudis are potentially prepared to start their own enterprise. This could reflect a positive environment for entrepreneurship in the kingdom. Good and well-developed infrastructure in
addition to higher income amongst Saudis could explain this tendency of students for self employment.

It is recommended that establishing a national Graduate Enterprise Programme sponsored by the government and targeting final-year undergraduate students of any discipline for a range of training workshops and placement opportunities within local businesses could work as an effective tool to achieve this linkage. A programme like this could allow students to learn more about the realities of small business and to explore their own potential for self-employment.

Furthermore, Introduction of programmes for training graduates in entrepreneurship is expected to widen their ability to initiate their own business. The best practice in training young graduates in entrepreneurship and business management means training should be designed around researched and known needs. They should also be interactive - allowing students to question, discuss and work with the information provided.

Effective training programmes promote practical learning by allowing students to learn by doing, building their knowledge through experience, and building upon participants' knowledge base - moving from the known to the unknown. Programmes should be flexible in structure, timing and materials used so that they respond to the needs and capabilities of the trainees. Training should be linked to the broader community - its resources, networks, markets and social structure. An integrated approach will make each component relevant to the complete process of managing a business. For example, training should be relevant to the needs and interests of trainees and focused on improving skills and competencies rather than providing certificates. Finally, good training should be arranged in sections or small "bites" and should encourage ownership of learning by ensuring participants remain active in the programme. It should be practical, providing know-how rather than theoretical content.

Training institutions should be encouraged to help young graduates to learn about business in a safe and practical way. They should provide an environment for the young to plan, develop and operate their own companies under the supervision and management of a support agency. This role could be shouldered by incubators effectively; therefore it should be
emphasised that introduction of incubation programme in Saudi Arabia would bring tangible benefit in this area.

Regarding the links between universities and industry it can be concluded that those links are unsatisfactory and measures should be adapted to encourage stronger links. The quality of basic research and its links to industry is a cornerstone for innovation and depends on knowledge flows which could be boosted by mechanisms such as joint industry research, public/private sector partnerships, technology diffusion, shared infrastructure and movement of personnel. There is a need to develop an integrated set of actions for industry, government, universities and other research organisations, venture capitalists and the researchers themselves. The process of commercialising research and the culture change, which accompanies that, needs to be significantly strengthened.

Formal and informal links between universities and the business environment were shown to be limited. Indeed, the linkages between business (local and national) and universities were regarded by the majority of academics as underdeveloped. As discussed in the literature, links between universities and incubators are regarded as an important condition for incubator success, whether the incubator is based inside or outside of the university. If the relationship is poor, two major problems are likely to ensue: (i) incubator clients will be disadvantaged in building commercial relationships with the private sector and marketing their products/services to private sector clients; and (ii) the products/services produced by incubator clients may not be responsive to the needs of commercial sector – driven instead by the "rationale" of the academic environment.

Thus, it is recommended that any university-based incubator programme would need to build strong links to the business community as a priority. As the way in which knowledge is produced undergoes fundamental change, the exploitation of research will need to become an integral part of the research process. Participation is unlikely by simply demanding that financiers take more risks or academics get involved for the good of society. It is important that action is taken to ensure that participation is based on mutual self-interest.
Finally, the major conditions required for a successful business incubation discussed are: (1) a surplus of qualified work force, (2) initiative and enthusiasm to take up business challenges. The latter condition appears to be met in Saudi Arabia; the former, however, exists only partially, as the skills of fresh university graduates indicate critical deficiencies as discusses above. If the general goal of tackling unemployment (which is sizable among university graduates – over 30%) is to be achieved, decisive and rapid steps must be taken. This presents a potential for successful business incubation in Saudi Arabia.

7.4 The SMEs Environment

7.4.1 Summary of main findings:

With regard to the Saudi SMEs properties, the main findings of the research demonstrated that the majority (84.2%) of SMEs were less than 5 years old, reflecting Otsaki’s (2002) assertions that there is a high rate of failures among SMEs in Saudia Arabia. Also, the majority of SMEs (89.2%) were involved in manufacturing, vis-a-vis technology (10.8%). In line with Boubshait (1999), the two most common types of SMEs ownership structure were owner-managed (56.5%) and family-owned (31.9%). The mean total number of employees was 9.66; the mean number of Saudi employees was 7.1 and the mean number of non-Saudis was 2.53. The research also showed that, sales were mostly distributed locally (50.89%) with 25.86% at the regional level, 8.08% nationally, and only 4.89% internationally. Such results echoed Otsuki (2002) concerns in terms of the lack of market penetration that negatively affect SMEs performance.

As for SMEs facilities, business planning and funding, the main findings of the research demonstrated that all SMEs had access to telephone and fax and some had secretarial support (26.9%). However, ADSL internet provision was extremely limited (11.2%) and only few SMEs (18.5%) had their own websites. A plausible explanation would be the lack of attention to technology as noted by Al-Kurdi (2002). On the other hand the research demonstrated that few SMEs had prepared business plans (17.7%) or marketing plans (1.5%) before starting their businesses. Regarding the funding of SMEs, the findings revealed that Private bank
loans made the highest impact (68.5%) upon SME start-up funding, followed by government grants (49.2%), family funds (37.7%), owner's own funds (37.5%) and government loans (35%). Within the last two years, the majority of SMEs have applied for a government grant (56.2%); approximately half of all such applicants had received a government grant. Fewer SMEs applied for a government loan in the same time period (30.8%), however the loan approval rate was much higher. When testing the support to SMEs, the results revealed that the majority of SMEs (67.8%) rated highly the government's overall responsiveness to their needs. The majority of SMEs (62.7%) also claimed to have enough information about SME support programmes. However, only a minority of SMEs (17.7%) had visited their local Chambers of Commerce. The results also showed that SME attitudes towards collaborating with other businesses and organisations were mixed. Attitudes towards R&D collaboration with other businesses were more enthusiastic (50.4%) than attitudes towards R&D collaboration with universities (35.7%). Such mixed results about collaboration are against findings in the literature (for example, Carayannis et al., 2000).

7.4.1 Conclusion and recommendations:

In general this research confirmed that business facilities of Saudi SMEs were generally lacking in secretarial support, high-speed internet usage, and website construction – all regarded as critical business facilities which would ordinarily be provided by an incubator. It is especially relevant that in light of fierce international competition the businesses in Saudi Arabia must seek modern e-commerce channels on the Internet. The study of the Jeddah incubator showed that all participants have or will have in the near future set up web pages. Thus, incubation could clearly add tangible value in terms of 'hard' provisions to Saudi SMEs.

Saudi SMEs were found to be deficient in business networking and had minimal experience in collaborating with other businesses and no experience in collaborations with universities or other outside institutions. A key function of business incubation is to "fill in" the "impoverished networks" of entrepreneurs - thus incubators would also have the potential
to provide qualitative improvements to Saudi SMEs. It cannot be omitted that in order to meet the goal of increased competitiveness and modernisation of business in Saudi Arabia, international contacts must also be established and maintained. This is partly being introduced by the Saudi Ministry of Planning in the form of cooperation with countries successful in their business incubation programmes such as Italy or South Korea, to adapt their methods. Business incubation could certainly use this opportunity to help the businesses grow internationally, in addition to the national expansion.

In terms of funding, several problems were highlighted. Both government grants and loans were rated as poor in terms of the length of time they took to apply for and in the length of time it took the government to process and award them. The complexity of the application process was also criticised by past-applicants. The findings from the Jeddah incubator show that at least the application process should be made significantly easier within an incubator. Moreover, the incubator achieved an approval rate of 100% in securing government grants, government loans and bank loans. This finding reflects on the importance of meticulous application process that selects the best projects, with high potential of success. A properly constructed application process should take account of the criteria employed by the financial institution available to SMEs which further increases the chances of their survival.

To conclude, the SME survey has shown that market exists for incubators in Saudi Arabia, and that incubators could provide tangible benefits to entrepreneurs in terms of (1) business planning, (2) basic ‘hard’ facilities, (3) improved networking and (4) funding assistance.

7.5- Knowledge and Expectations for Business Incubation

7.5.1 Summary of main findings:

The main findings of the research about knowledge and expectations of business incubation in Saudi Arabia showed that the majority of students (73.9%), academics (73.7%) and SMEs (59.2%) claimed to know what a business incubator is. However, because business incubation remains a young industry (OECD, 1999), when this knowledge was tested, the
mean correct response rate was much lower – the lowest percentage of correct answers coming from students (32%), followed by SMEs (50.6%) followed by academics (67%).

With regard to the attitudes towards incubators it was found that if they were to start a new business, a majority of SMEs (58.8%) would apply to an incubator if the option was available to them. In addition, student’s enthusiasm in business activity would be enhanced in the event of the availability of an incubator. Also, in line Shalaby (2004), findings suggest that academics interest to participate in a university-based incubator was high (84.3%). Students and SMEs identified cost-savings and the provision of start-up finance as the main benefits provided by business incubators.

Regarding expectations for business incubation, the findings revealed that all academics surveyed expected to be involved in business incubation within the next 10 years. Moreover, all academics believed that a university-based incubator should be both publicly and privately funded. In addition, the majority of academics (68.4%) believed that a university-based incubator should be exclusively focused upon technology and also believed that the university should hold 50% of equity in incubated businesses.

Attitudes towards business incubation are predictably positive. Over half of surveyed SMEs claimed they would apply to a business incubator if they were to start another business. Students overwhelmingly believe that the availability of business incubation would encourage their involvement in private enterprise. The greatest appeal of incubators – as identified by students and SMEs alike – was deemed their potential to reduce cost and assist in start-up finance. Access to finance and the ability to reduce cost are the two most sought offered services among incubatees (Albert, 1986; Al-Kurdi, 2002). Fund shortages are one of the reasons much Saudi business faces the problem of limited availability of information and data on the production technology and know how – one of the major shortfalls of Saudi businesses according to Otsuki (2002). The example of the Jeddah incubator shows that these problems are effectively tackled once the business is in the incubator.

Expectations for a university-based incubator, as set out by business academics, were broadly in line with those proposed for the prospective KFPUM-linked Eastern Province
incubator. More significantly, academics demonstrated a willingness to participate in university-based incubator programme. There were also expectations amongst all academics that they would, at some point, become involved in an incubation programme.

7.5.2 Conclusion and recommendations:

Even amongst potential ‘interested parties’ (i.e. business students, academics and SMEs) current knowledge and understanding of business incubation was found to be low. This is not, however, surprising given that only one business incubator currently operates in the Kingdom. What seems evident, once again, is that in the event of a national programme of business incubation being introduced, its sponsors would need to take steps to publicise its benefits and existence. As the findings from the SME survey demonstrate, few Saudi SMEs have visited their Chambers of Commerce or participated in any form of local or national governmental programmes. Either a way must be found to encourage entrepreneurs to visit Chambers of Commerce, or else an alternative means must be provided to reach (and potentially co-ordinate) Saudi entrepreneurs.

7. 6-The Jeddah Incubator (Case Study)

7.6.1 Summary of main findings:

Unlike in other countries such as the US where 24% of incubators are government sponsored and 8% venture capital (NBIA, 2000), findings of the case study showed that the Jeddah incubator is in independent of the government and sponsored by the Jeddah Chamber of Commerce. Currently, the ratio of full-time staff to firms is 1:3 (5 staff and 14 firms) which of a much better ratio than OECD 2002 recommendations of 1:20. In addition, only the business owner is physically incubated, whilst employees are allowed to use meeting facilities.

The services offered were consistent with Hackett and Dilts (2004) propositions and include: high speed internet, secretarial services, desk space, conference facilities, formal training, on demand coaching and assistance from staff ‘with everything they [incubatees]
need', networking events, financial application assistance and low rent is charged for services (subsidised by the chambers of commerce).

The tenants were eight marketing firms, four education consultancies, and two professional training companies. Twenty-nine percent of the tenants claim to introduce an entirely new service to the market, 64.3% tenants claim to significantly improve their market with their products and most firms (42.9%) had one employee (including manager), only one (7.1%) had more than three. The maximum tenancy is two years. There are no ‘minimum’ graduation criteria. However, 58.3% of companies stay in the incubator for less than 6 months with the majority (85.7%) no longer than 12 months. Such results support the hypothesis that tenancy of incubated firms should be limited (Garrity, 2002) and firms graduate within two years in public incubators and within one year from private incubators (Rosenwein, 2002 in Rothaermel and Thursby, 2005).

The Jeddah Incubator does not offer direct funding, but can act as guarantor and networking with banks. In fact Smilor (1987) note that credibility (in the form of a guarantor) is the main sought offer benefited by incubatees. Staffs help incubatees with the financial application process. Incubated businesses are funded by: their manager’s own funds, private bank loans, Saudi Centenary Fund, and Abdulatif Jameel Fund. Saudi Centenary Fund has the most impact on start-up financing (every tenant received a loan, majority of tenants (78.5%) considered the process fast and only 21.4% difficult). 85.7% tenants rated the impact of Abdulatif Jameel Fund as high to medium (85.7% considered the process fast and as much as 42.8% as difficult).

The benefits to incubatees is reflected in that 71.4% companies have set up web sites with the rest planning to do so when they have developed their products, two tenants have secured sales through the networking efforts of incubator staff. Indeed, Rice (1992) notes the importance of networking opportunities as a non-real estate parameters in incubator management. Furthermore, all incubated firms claimed the incubator role in helping secure financing was very important. (71.4%) of incubated firms claimed the incubator training role was very important and 28.6% claimed it was important. All
incubated firms claimed the incubator role of mentoring was very important. All incubated firms claimed the incubator help in business planning was very important.

The case study revealed that the Jeddah incubator was providing a wide range of soft inputs to clients, however harder measures were more difficult to establish. It was shown that client business skills (IT, ICT, business presentational skills) have improved, as well as confidence and business professionalism as a consequence of incubation. Such findings reflect the shift in focus from "hard facilities" to "human provisions" in modern incubators (Adkins, 2001; Kirby, 2004; Hackett and Dilts, 2004). Clients also demonstrated high levels of networking both inside and outside the incubator (the role of ‘business networking’ was rated by 78.9% of clients as ‘very important’). Indeed, as highlighted in previous studies (Hanson et al., 2000), networking remains an important feature of incubator facilities. Since 2005 the incubator itself has grown in terms of staff numbers (5 full time staff were available to 14 businesses), and gained recognition by the enterprise support community (most notably private banks’ small business units, and the SME support unit at the Chambers of Commerce). However ties to universities were only just beginning. Government interest in the project was high. Yet, the incubator management was keen to maintain ‘independence’ from local and central government. This keenness on independence is recommended by previous research (Shalaby, 2001). An internal evaluation was conducted quarterly by incubator staff providing objectives for incubatees. However, unlike Barrow (2001), who highlighted the need for adequate incubator management, a formal evaluation mechanism for the incubator itself was not yet in place. Nonetheless the incubator enjoyed continued support from the Chambers of Commerce, with proposals for expansion to other branches.

In terms of hard outputs, in line with Allen and Weinberg (1988), clients reported much-improved funding assistance and availability, significant cost-reductions, and high enterprise growth. Tenants reported extensive usage of incubator facilities, taking advantage of secretarial and conferencing facilities, as well as improved communication resources. Ten of the fourteen tenants had established websites with the help of
incubator staff. The incubator itself was meeting internal targets, was over-subscribed 4:1 in terms of applications, and was looking to expand. The incubator staff conducted both periodic as well as on demand mentoring sessions helping the incubatees succeeds. Moreover, the synergies resulting from close cooperation of similar companies—who do not directly compete with one another—have been noted.

The services provided by the incubator appear to be responsive to the major structural and institutional flaws of Saudi SMEs. Similar concerns were noted by Al-Kurdi (2002), Otsuki (2001) and Shablaq (2003). These are summarized below:

1. Lack of finance – by providing links with financial institutions and assistance with grant/loan application processes (e.g. the Abdulatif Jameel Fund application process is perceived as difficult and if it were not for the incubator assistance, this source of funding would not be so widely available to the start-up businesses),

2. Poor management–by active mentoring and business advice from the incubator staff,

3. Poor business planning–by basing the application process upon outlined business plans and feasibility studies and, if required, helping the incubatees develop proper business plans,

4. Poor market intelligence – by organizing promotional events in the incubator where the entrepreneurs can get acquainted with prospective collaborators and learn about their needs and, requests.

5. Under-utilisation of technology – businesses are encouraged to use the internet and establish web-pages, as well as cooperate amongst themselves to create effective processes,

6. A difficult business and legislative environment – again the mentoring and helping as well as the advice with application and paperwork.

Unfortunately the young age of the incubator prevented an adequate measurement of the amount of graduates, sales turnover and profitability.
Typical, beneficial services not provided to the incubatees were: technology assistance (as the incubator had no connection to labs or research units), although the incubator commits to resolve incubatees’ technical issues, lack of direct funding to the incubatees in the form of bridging loans/grants -but the proficiency in other financial assistance diminished the demand for this service.

Thus, the case study broadly confirms the view of Mian (1996) – ‘the vast majority of the respondents [incubator tenants] believed that the services they were receiving were adding value to their fledgling firms’ (Mian 1996: 203 in Barrow, 2001). It must be noted that the Jeddah incubator fulfils the seven critical success factors pointed out by Shalaby (2003):

1. Choosing the right Manager: the Jeddah incubator manager is independent from government,
2. Gaining Local Support: the incubator is sponsored by a local chamber of commerce, there are plans to start cooperation with the local universities, the incubator staff also claim it has ‘good connections’ with large companies based in Jeddah’
3. Choosing the right projects for the incubator: the application process is considered stringent, with the feasibility studies playing an important role which assures an increased success rate,
4. Securing finance: the incubator is subsidised by the local chamber of commerce, and participants pay a monthly fee for the incubator services,
5. Marketing: the demand for the incubator’s services is already high with 4:1 application/admission ratio; promotional events are organized, recruitment at universities is planned,
6. Ongoing evaluation: the incubated businesses are required to report quarterly to the Director,
7. Centralised administration: the Jeddah incubator has a full time general-manager who reports to the Director of the incubator.
It must also be noted, that the Jeddah incubator is responsive to the major goals set by the government in modernizing the economy (see Chapter 4 for details):

1. Creating jobs – although the majority of the companies have only 1 employee, the firms graduate and expand, thus creating employment,

2. Saudisation – the nurtured businesses are required to be staffed entirely by Saudi nationals,

3. Modernizing economy towards a knowledge-based society – four education consultancies hosted in the incubator help students secure study abroad – this foreign knowledge can be repatriated later and many Saudi problems e.g. poor business university curriculum can thus be tackled.

4. Boosting local economies – all incubatees are required to be Jeddah locals.

7.6.2 Conclusion and recommendations:

Being the first incubator in Saudi Arabia, Jeddah incubator is expected to play a pivotal role in the incubation movement in Saudi Arabia. Even though creating and establishing a business incubator takes time, Jeddah incubator, in only one year or so, performed successfully as a business creation tool. However, some of its main features need further strengthening. First, the emphasis in Jeddah incubator appears to be more on tangible services such as office space/equipment as well as some consulting advice. With relatively smaller client base ranging from 14-24 incubatees, more effort should be exerted on softer services such as networking relative to the provision of physical space and hard infrastructure. This could facilitate transitioning to the newer approaches to incubation that relies less on the hardware of incubation and more on the software of value adding services. Furthermore, the business incubator has to market itself, participating in seminars, making speeches, publishing special information material, and using the media and the Internet in order to create an attractive image.

Based on the aforementioned results and the experience of the first incubator in the Kingdom, it may be concluded that business incubators are feasible for business development
in Saudi Arabia. Furthermore, they could turn to be better than other form of new-business development assistance. The steps that could enhance successful creation of incubators includes:

- Precise definition of incubator goals
- Finding sources of funding for both the incubator and its tenants
- Assessment of tenants needs, in terms of training, and technical expertise
- Analysis of domestic economic activity
- Creation of start-up plan and market potential
- Marketing and promotion of the incubator.

With regard to the goal of the incubator, there should be a strong focus on economic and business-development goals. Also, it is recommended that the incubator itself be established with the objective of becoming a profitable and self-sustaining organisation. This will help sustainability of the incubator and prevents collapse of the incubator in case of withdrawal of support provided to them. Goal should also focus on the training in capacity building and development in the areas of financial management and accounting control. It is also recommended that the incubator should establish continuing relationships with external funding agencies. Unlike many U.S. incubators, Saudi incubators will need to be sources of direct funding and investment capital for tenant firms. Organisations such as Saudi Industrial Development Fund (SIDF) and The Saudi Credit Bank (SCB), and others specializing in providing start-up capital and seed money may serve as sources of funding for new companies.

With regard to entrance and exit policies, it is recommended that incubator need to be highly selective in choosing incubator participants. It is advised to clearly define the target market and adopt admission criteria that focus on projects where an incubator can genuinely add value. Regarding the tenancy period, it seems that limits on tenancy period, is not needed under Saudi condition. The result of this research showed that most of the tenant firms would like to graduate as quickly as possible. However it is recommended that a multiple limit
structure for different types of firms for example, a simple business might be restricted to one year to get started, where a high-technology, high-value-added company might be allowed as long as it takes.

Furthermore, the networking under the Saudi context is underdeveloped and mostly relations with other business are very restricted. People generally prefer to network with other family members or relatives. Therefore, it is expected that incubator would serve as a local nucleus for networking and development of support relationships for sharing of knowledge and information of value to entrepreneurs in wider circles. Services offered must include basic internal business functions, such as planning, and consulting on organisation, financing and financial planning, accounting services, tax assistance, and the like.

Finally, given the above recommendations, incubator managers in Saudi Arabia will need to meet the requirements for effective management. This will require the ability to evaluate business plans according to the best standards, to be able to recommend projects and new entrepreneurial undertakings as worthy of funding. Therefore, selection of managers must be done very carefully. Those selected should be trained properly before they start their work. The training should be held in countries with deep and extensive experience in business incubation.

7.7 Overall Conclusion and Recommendations

7.7.1 Conclusion: Are incubators the right approach for Saudi Arabia?

The fundamental question this thesis addresses is whether conditions exist for the successful introduction of business incubation in Saudi Arabia? However, in order to address this question properly, a further dimension (as laid out in Chapter 2 and 4) needs to be recalled: what would "success" look like in the Saudi context? In Saudi, as in many places elsewhere (especially developing nations), incubators are looked at as a means to promote the survival of new enterprises – which in turn, are intended to promote the (mutually reinforcing) objectives of (i) generating employment opportunities (reducing unemployment)
and (ii) diversifying of the economic base (in the Saudi case, away from oil dependence). Thus, the promotion of private enterprise (which directly addresses the aims of reducing unemployment and diversifying the economic base in an oil-based economy) remains the firm priority of the Saudi national development strategies. Thus, "success" is seen as the promotion/survival of more small enterprises in the country.

As explained in the introduction to this thesis, incubation is to be investigated within the context of the Saudi national development strategies and incubation is to be considered as a large-scale national or at the very least, regional, programme co-ordinated and/or sponsored by Saudi central government. The central issue to be addressed is, whether business incubation introduced on a wide, co-ordinated scale will provide an effective means of encouraging and sustaining private enterprise growth in Saudi Arabia?

First, the thesis has shown that incubation has a positive influence on enterprise survival and growth. Quantitatively, incubated businesses have a much higher survival rate than non-incubated businesses. Business incubators have also been shown to provide highly valuable qualitative services to the entrepreneur. But could there be, considering the large-scale ambitions of the Saudi government, a more effective means of promoting enterprise growth and survival? As Barrow puts it 'there seems little doubt that some incubators give entrepreneurs a terrific deal...but neither is it clear that incubators offer wonderful value to their sponsoring bodies' (Barrow, 2001: 24). Indeed, when Storey (1994) conducted an exhaustive study into small business research and examined every initiative designed to help small firms in the UK, he came to the conclusion that 'no government or local government initiative had ever represented any real value to the tax-payers concerned' (Barrow, 2001: 24). However, as Barrow warns, Storey's findings must be looked at in the context of the difficulties which affect any comparative research in SME support and business incubation (discussed in Chapter 2): 'with innumerable variables to

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71 There are, of course, many other approaches to generate employment within a national economy however the Saudi public sector is at full capacity in terms of its abilities to absorb further labour and, moreover, the country (embodied by its WTO accession in 2005) is committed to a brand of free-market capitalism which inhibits the government's ability to grant subsidies and apply protective tariffs.

72 It is worth pointing out that in Saudi Arabia, income tax is not applied and government revenues originate from oil sales, and the government has been running at a significant budget surplus in recent years.
control for and the difficulty of finding a control group [such research is] daunting’ (Barrow, 2001: 24). Thus, attempting to establish a direct comparison between incubated business and either (i) non-incubated businesses or; (ii) different types of incubator or; (iii) alternative SME support schemes are extremely difficult. Moreover, at a qualitative level, there is no doubt that: ‘many firms and geographic areas have benefited greatly from attracting, stimulating and fostering an entrepreneurial community. It just might be that some aspects of the payback are too vague to assign a monetary value to. That however does not mean there is no value.’ (Barrow, 2001: 25).

This view is supported by new growth theory (Romer, 1986, 1990, 1994 in Hollingsworth and Boyer 1997: 14) which has shown that the “spillover effects” of state-sponsored innovations, educations and some supply-side orientated interventions effectively promote efficiency and growth; however, such benefits often only materialise in the long-term.

Accepting that incubation offers real value to clients, what are their chances given the conditions prevailing in Saudi Arabia? The literature has shown that incubators work best when they respond to certain structural conditions, these conditions include:

- A free market economy
- The availability of private credit
- A legal environment that facilitates easy business creation and protects investors
- A surplus/availability of (skilled) graduates
- A labor force orientated towards private sector employment
- Specific areas of structural weakness in the SME/business environment (so that the incubator can provide tangible ‘hard’ benefits to clients), e.g. communication provision, start-up financing, access to facilities, access to management training
- Stable government (consistent government SME policy)
- Strong links between the ‘triumvirate’ of government, business and education.
These structural conditions are broadly in place in Saudi Arabia. The country operates a free-market economic model, private credit is readily available (however, as in most countries, banks remain cautious about high-risk business start-ups). The Saudi commercial legal regime has been reformed according to the terms of its WTO accession in 2005, and is in the process of further reformation. A surplus of graduates exists. However, the skill-base of these graduates has been revealed as deficient in several areas. New entrants to the labor market are increasingly seeking private sector employment. However, ‘employment culture’ remains routed in the public sector. Weaknesses in the business environment exist that can be readily addressed by incubation, e.g.: lack of facilities, lack of start-up financing, lack of managerial experience and knowledge.

The Saudi government is extremely stable and governmental objectives and policy towards private enterprise development (as evidenced in development plans) has remained stable over the last decade. However, the links between government, education and business – and specifically between education and business- have been shown to be lacking. As discussed extensively above, poor links between academia and business either deprives business of the expertise and research knowledge and deprives educational institutions of the vital access to business required to properly direct the commercialisation of research.

Although this final condition is not currently in place in Saudi Arabia, it has become evident in the course of this research that a large number of conditions are in place, which suggests that incubators can add tangible value to the Saudi business environment. Business incubation represents the most comprehensive, and direct, form of assistance available to small businesses, it is the only process that can develop entrepreneurs ideas into compelling business plans, provide them with professional management teams, source financing, build working organisations, create products and services, acquire strategic partners and customers (through networking) and prepare their fledgling companies for further funding, acquisition, or public equity markets (Barrow, 2001). Moreover, they attempt to do all of this in around six months of starting-up (Ibid). Thus, incubators are unrivalled in the benefits they offer entrepreneurs. For a government that has identified the promotion of new enterprise creation as its top economic priority, has an enormous budget surplus, but is against supply-side intervention in the economy, incubation clearly has much to offer.
7.7.2 Recommendations

Based on the findings, it can be concluded that, the business-education component of the incubation programme in Saudi Arabia reveals salient problems with creating the cornerstone for a successful programme. It is therefore recommended that:

- The collaboration between universities and business should be increased (students should be encouraged to take up jobs during course of study).
- The academic curriculum should be improved in regard to business planning, management and ‘vocational’ training for the students, to reflect the requirements of the successful business marketplace (e.g. mandatory internships should be introduced as a graduation criterion),
- The collaboration between academics and businesses should be encouraged, especially in regard to commercializing research in various fields.

The survey of the business students and academics reveals that any prospective Saudi incubator programme would need to take into account (i) the relatively low level of practical business skills and experience exhibited by Saudi graduates, and (ii) the weak relationship between academia and the private sector. The former could be addressed by an incubator programme that incorporates soft provisions such as mentoring, management-training and business-planning services. The latter would require the improved co-ordination of the academic and private sectors. This could be facilitated at a local level through the Chambers of Commerce or through national government policy. Alternatively, the individual incubator could endeavour to make the links itself; arguably, incorporating business incubators into universities would – if done properly - be constitute of the process of reconciling the business and academic worlds. Finally, the survey reveals that a “market” for incubation exists in terms of a surplus of (potentially) unemployed business graduates with ambitions to start private enterprises.
It is concluded that the business incubator may be a very appropriate and useful tool for development of private companies in the changing Saudi economy. It is highly recommended that incubators should be created in major cities, in municipalities where a specific knowledge base has been created through industrial or educational development, and which holds promise as a resource for entrepreneurial initiatives. Selection of sites for incubators will require evaluation and outside expertise as time goes by and opportunities increase. These considerations are offered as a first step toward creating a viable and helpful incubator in Saudi Arabia, and not as a definitive blueprint for such an incubator.

But how should incubators be introduced in Saudi Arabia? The research has also revealed that for an incubator to be successful, several critical incubator-specific conditions have to be established:

- Strong links with universities
- Strong links with business community
- Strong links with local community
- Clear, consistent and unified policy from sponsoring organisation(s)
- Publicity programme put in place
- Clear and rigorous application procedure
- Provision of both hard and soft resources for clients (with strong provision of training and mentoring services)
- Facilitate internal and external network opportunities for clients
- Regular evaluation processes for (i) clients and (ii) the incubator/incubator staff.

The government policies in Saudi Arabia should address all these factors by creating an official body that co-ordinates governmental and private initiative for establishing a viable incubation programme and take the responsibilities of issuing the necessary legislations that could make the application of the above mentioned conditions possible.
7.8-Implications of Findings

7.8.1 Theoretical Implications

The findings of this study lay some preliminary steps that could contribute in developing a theory of successful incubation. Critical success factors identified in this research are consistent with prior literature and are broadly similar to business incubators in other countries. However, some factors, such as networking and academic-business links, are more critical under the Saudi socio-political environment. Accordingly, such results advance our knowledge that certain critical success factors are very specific to the underlying socioeconomic and cultural conditions that prevail in the Kingdom and possibly in other Gulf countries.

Findings of this study show that networking (both internal and external) is an important factor for successful incubation. Previous research also recognises the key role that networks play in incubatee success (e.g. Hansen et al., 2000; Novak and Grantham, 2000; Peters et al., 2004; Totterman and Sten, 2005). In essence, apart from shared-office facility and other infrastructures, the incubator is also a network of individuals and organisations and typically includes the incubator manager and staff, incubator advisory board, incubatee companies and employees, local universities and university community members, industry contacts and professional service providers (such as lawyers, accountants, consultants and marketing specialists among others) (Hackett and Dilts, 2004). Indeed, over the years, incubator’s role in the entrepreneurial process has changed from just being a business centre with office facilities to one that offers training, networking and consulting in various areas of expertise. Hansel et al., (2000) identify network design, together with entrepreneurial intensity and economies of scale and scope, as important factors for incubation success. Network relationship-building is a key value-added component of the incubation process (Hackett and Dilts, 2004). Moreover, Sherman and Chappell (1998) stress that internally tenants have a tendency to use incubators to facilitate relationships with other incubator residents. However, contrary to Bollingtoft and
Ulhoi (2005) assertions that collaborative relationships are more likely to develop when tenants are under one roof, findings reveal that no collaborative arrangements exist at JCCBI. This is surprising as one would expect that the physical and mental proximity would increase the level of credibility among tenants, leading to collaborations (Totterman and Sten, 2005).

Furthermore, consistent with previous studies (e.g. Totterman and Sten, 2005) findings also confirm the need for incubators to develop external networks that would benefit its tenants. Duff (1994) describes an incubator's external networks as consisting of professional service providers, experienced business people and educators located outside the incubator. External networks can also contain governmental organizations (i.e. expert organizations and universities) and private organizations (e.g. mentors, financiers, accountants, customers and suppliers). However, out of the 14 tenants, to date, only two have collaborated with other outside businesses. Such a low willingness to network externally might be culture specific to Saudi SMEs reluctance to engage in joint ventures and can be related to trust. Totterman and Sten (2004) in their study note that trust among tenants within an incubator is relatively higher as compared to the outside incubator community. The authors' findings revealed that tenants and members of the network were more likely to engage in social exchange with each other, rather than with external actors.

In addition, findings further confirm the importance of developing formal and informal relationships between universities, industry and incubators. While the majority of academics surveyed in this research highlight that linkages between universities and businesses are underdeveloped in the Saudi context, previous studies (e.g. Etzkowitz, 2002; Phan et al., 2005) have theoretically established that strong university-incubator linkages lies at the heart of incubator performance. For example, in their comprehensive review of business incubators studies, Hackett and Dilts (2004) list university ties as a key characteristic for the success of business incubators. Similar findings were obtained by Ratinho and Henrique’s (2009) in their study of business incubators in the context of converging economies (such as Portugal).
However, confirming Vedovello (1997) findings, the authors note that formal linkages and geographical proximity are not driving forces behind university-industry cooperation. Rather, it is the effectiveness, scope and intensity of university links that are more important in determining success.

7.8.2- Practical Implications

The establishment and development of business incubators is a key requirement for the high technology industry. As a huge developing country, Saudi Arabia has made efforts to accelerate the birth and growth of incubators, with the aim of catching up with technologically more advanced countries. As one of the major studies (first PhD thesis), this research provides a better understanding of business incubation in Saudia Arabia. Results of this research offer some practical implications for the successful development of business incubators in Saudi Arabia. Findings of this study are important to both business incubation providers and entrepreneurial researchers in recognizing valid and possible success measures. Incubator providers could utilize the results of the study to identify factors that would increase the chances for the success of incubators. Case study findings presented in Chapter 6 revealed some of these factors and include:

- Clear, consistent and unified policy from sponsoring organisation(s). To improve business incubator performance the development of more effective support programs is required. This will boost chances of success of entrepreneurs. It is also necessary to clarify a business incubator's key goals and develop appropriate support programs to help tenants. One approach is to recruit highly talented people to manage the incubators and develop effective programs. This calls for other skills than traditional administrative and managerial skills, i.e., collaborative and networking skills, which in turn has implications for educators of future entrepreneurial actors.
Strong links with business community and facilitating internal and external network opportunities for clients. Another important mechanism for fostering entrepreneurship is through enhancing links and network with business community. Networks are crucial to entrepreneurial actors. Thus, the ability to connect up to strategically important clusters of networks is a critical managerial skill. Such networks can give entrepreneurial actors the necessary legitimacy, skills, and resources needed when launching a new venture. Under the Saudi context networking with business community is underdeveloped and relations with other business are very restricted. People generally prefer to network with other family members or relatives. Such a situation might hinder the relative success of such relationships.

- Strong links with local community
- Publicity programme put in place
- Clear and rigorous application procedure in order to attract a good mix of tenants in terms of the industry they represent.
- Provision of both hard and soft resources for clients (with strong provision of training and mentoring services)
- Regular evaluation processes for clients; and the incubator/incubator staff.

7.9 Contribution

Findings of this research provide a number of key theoretical contributions, as summarised below:

- This study provides a comprehensive review of the literature on business incubation in the context of Saudia Arabia;
- Using JCCBI as a case study approach, this research identifies the underlying functions, operational issues, challenges and problems related to business incubation in Saudi Arabia. The JCCBI, although still at early development level, broadly
demonstrate similar characteristics of successful business incubators in other countries such as Brazil and Argentina.

- Unlike the common wisdom in the Arab world (a preference for public sector employment; Al-Lamki, 1998), findings reveal a shift in attitudes among young graduates towards private sector employment.

- In line with previous research (e.g. Totterman and Sten, 2005) results indicate that incubators should provide both "hard" and "soft" resources to its tenants. For instance, while space and office facilities are important elements, they are not key focus aspects in supporting tenants. Rather, as findings of this study indicate, for long-term success of its tenants, the focus should be more on the nurturing of business networks.

- Similar to other studies (e.g. Totterman and Sten, 2005), findings indicate that the incubator manager plays a central role in building trust that facilitates networking and social interaction among tenants.

- Case study analysis indicates that, at present, unlike technology incubators (Jaffe et al., 1993), the JCCBI is not affiliated to any university but have future plans to develop a formal relationship with King Abdulaziz University. Such an initiative further reinforces the theoretical and empirical arguments in favour of university linkages (e.g. Jaffer et al., 1993; Rothaemel and Thursby, 2005).

- Consistent with the rich literature on business incubation, this research indicates that, at the national level, incubators are important links in the entrepreneurial value chain.

7.10-Limitations

This study has a number of limitations and summarised below

- First, the case study included only one business incubator (Jeddah Business Incubator). When this study commenced it was the first and the only Saudi incubator. This constitutes some limitation in this study. Most of the incubatees
have not yet graduated. Working with a number of firms of relatively inexperience firms makes it difficult to draw conclusive findings.

- Another limitation is that this study discussed the relationship at a general level; no specific type of incubators was explored.

- The findings relating to the academics were based on a comparatively small number of only business academics respondents. This may not reflect a clear picture and hence it would not be wise to generalize the respective findings.

- In this research, it is assumed that a positive relationship could exist between business education and business start up. Due to limitation of the research data, it was found difficult to assert any significant links between these variable empirically. To investigate this causal relationship future research is needed to assess the overwhelming desire of students to start their own business while on the other hand their education skills is limited as shown in this research. Other factors such as the financial capabilities SMEs support should also be introduced.

- Finally, the scarcity of studies of business incubation as a possible tool that can deal with obstacles facing SMEs in Saudi Arabia plus the absence of studies on any kind of supportive bodies that could lend a hand to SMES is a major limitation in this study. Without such studies, literature that could be used to support the arguments or to compare the findings with was a great lack in conducting this study.

### 7.10-Future Research

There are many possible avenues of future research in this area in addition to the ones already mentioned. First is to replicate this study on a wider sample representing various classes of the youth sector and students in different colleges. Future research should focus on
other variables that could be related to the creation of business incubation programme: small businesses, in rural areas and may be women-owned businesses. What more is needed by SMEs and students in the areas they identified as important? Is there a noticeable impact to the success of their businesses?

In this research, it is assumed that a positive relationship could exist between business education and business start up. Due to limitation of the research data, it was found difficult to assert any significant links between these variables empirically. To investigate this causal relationship future research is needed to assess the overwhelming desire of students to start their own business while on the other hand their education skills is limited as shown in this research. Other factors such as the financial capabilities SMEs support should also be introduced. Future research should also extend the current study to other group of individuals in other colleges and even to those who does not have university degrees. This would allow new comparative insights, which are not available in a single group such as the one in this study.

Much of the literature on business incubators is of the ‘critical success factors’ (CSF) variety, answering the question, ‘What determines the success or failure of incubators and the entrepreneurial projects within them?’ But as Hackett and Dilts (2004) note, the research is mainly a-theoretical, while “theory is the lifeblood of any research area.” They add: “...we must turn our attention from ‘what’ are the most important factors to ‘how’ and ‘why’ and ‘in what context’...these factors are interrelated.” It is believed that this is exactly the area where future research needs to devote more efforts.

Given the limitations above, however, the results of this study shed light and provide important clues to the question of business incubation under the Saudi conditions. Further research is needed to find out other obstacles that might face the proposed Saudi incubation programme. Survival rates of the graduated firms (in comparison to non incubated firms) is important to get to the conclusion that ‘incubators add value’ to the business creation process. It should be recognized, however, that assessment methodologies tend to differ considerably; a comprehensive methodology effort for evaluating incubator performance would represent
an important step to increase the overall knowledge in this sector, which is still limited, fragmented and anecdotal in nature, especially in developing countries.

In developing countries, this should preferably be conducted in broad terms, in order to consider incubators as part of an often ‘challenging’ private sector environment. In this way, it could be analyzed and discussed whether incubators could be a cost-effective mechanism for development purposes, compared to alternative choices, and eventually be incorporated into broader national strategies.
APPENDIX (A)

Historical Development

The 1970s (second stage in incubators industry growth) saw the first University Incubators (most notably, the US University City Science Centre). However, their numbers, especially in the United States and Europe, only began growing rapidly in the 1980s and 1990s and they became increasingly recognised within academic literature, specifically after the formation of the NBIA in 1985.

University incubators could be traced back to the early twentieth century, in the Silicon Valley of California, with a firm formed by a Stanford university graduate (Castells and Hall, 1994). One of the employees invented the vacuum tube. This became the beginning of a research tradition in electronics in Silicon Valley. Stanford Industrial Park, established in 1951, aimed to further support such a high-technology industrial base.

During the 1960s, there was a growth of innovative microelectronics firms in the region. The Department of Defence's electronic-based programmes for the United State's aerospace programme supported the first spin-offs. The next wave came in the 1970s with the consolidation of semiconductor merchant producers and the launching of the personal computer. The computer industry continued to dominate Silicon Valley through the 1980s and at the same time the industrial structure became internationalised and a second round of spin-offs evolved.

One important factor behind the innovative environment of Silicon Valley is the aerospace programme mentioned above, which meant high prices paid for the most innovative technologies (Castells and Hall, 1994). In addition, there is a culture of circulation of the most talented people between different firms, making it impossible to define the owner of every specific innovation. As a result of this circulation, the firms could accelerate their own path of innovation, thereby giving way to new spin-offs.

Beginning in 1973, the National Science Foundation supported a series of experiments with innovation centres through its Experimental Research and Development Programme. By 1981 the Programme had expanded to include a total of eleven centres. These served as the basis for future university efforts in launching innovation/incubator centres. (Allen and Weinberg 1988, p200) Through these formative efforts it was recognised that fledgling firms could benefit from a supportive environment which could be structured to achieve a balance between entrepreneurial independence and linkages to an incubator organisation. (Cooper, 1985) A frequently cited example of the involvement of an incubator organisation in enterprise development is the Fairchild Corporation, which between 1957 and 1970 was directly or indirectly responsible for the start-up of 35

Outside of universities, the second major surge in incubator development came in the United States in the early-mid 1980s – a period of recession in the US economy. The closure of many large businesses, (in particular in industrial manufacturing plants) left behind numerous empty premises and thousands of unemployed former workers (Clark and Minor. 2000). From this vacuum emerged numerous small business incubators which aimed at alleviating the distresses caused by regional economic decline by harnessing surplus business spaces and manpower, facilitating investment in new ventures and generating job opportunities (Ibid).

By 1984 there were still only 26 incubators in the US (Meyer, 1987, p53), but then came an explosion in numbers. The business incubator concept was adapted to "incubate" a much wider range of enterprise types, with a concomitantly broader set of objectives and desired outcomes. The type of organisation interested in incubators was also broadened by the entry of policy-oriented public sector institutions driving for job creation, or welfare-oriented bodies seeking to provide enhanced job opportunities for the unemployed and minorities. By January, 1990, 385 Business Incubators were operating in the United States (NBIA 1990). Naturally, this exploding activity brought with it an expanding analysis and literature as more researchers began to explore this phenomenon.

The "incubator industry" also became more formalised with new institutions, such as The Pennsylvania Business Incubator Association which commenced operations in 1984 (Hogan, 1991, p. 54), followed shortly afterwards by the National Business Incubation Association (NBIA) and other regionally-based incubator associations.

The third key period of growth in the incubator industry occurred during the “dot-com boom” of the late 1990s. This boom also encouraged additional research in the field as the media became fixated on “infinitely scaleable, dot-com e-business start ups” that had been “hatched” in incubators (Hackett and Dilts, 2004). Unfortunately, many of the incubatees and incubator projects launched in this time shared the fate of the many thousands of dot-com start-ups that went bust after the ‘crash’ of 2000.

The incubator concept spread internationally. In Europe, a uniformly accepted definition of business incubators does not exist (Monck et al., 1988). A variety of names are applied to these centres including, among others, Science Parks, Business Innovation Centres, Technology Centres, and Research Centres (Storey and Tether, 1998; Monck et al., 1988; Lindelof and Lofsten 2002). One of the first incubators in Europe was established at Cambridge Science Park, United Kingdom, and Sophia Antipolis in France in the late 1960s (Storey and Tether, 1998).
The dispersion of incubators to the rest of Europe was relatively slow. The concept spread in the United Kingdom (UK) more quickly with Business Innovation Centres (BIC) being developed more than 20 years ago (OECD, 1999). BICs and Science Parks are part of a continuum of such services offered in the UK. The only distinction between them is that Science Parks usually have formal and operational links to academic institutions while BICs, being property based initiatives do not have these links (Storey and Tether, 1998).

In Germany, the first incubator was built in Berlin (Berliner Innovation-und Grundersentrum-BIG) in 1983. It was set up jointly by the government and the Technical University to commercialise technology projects (OECD, 1999: 49). The incubator concept was spread nation-wide, driven by city councils. German incubators are monitored by a special Government programme (Arbeitsgemeinschaft Deutscher Technologiezentren), which was established as part of the unification between East and West Germany and the economic restructuring of East Germany (OECD, 1999). As at 1999, there were 103 incubators in the east and 27 incubators in west of Germany.

Finland was ranked first in the UNDP Technology Development Index for its strength in innovation and in the networking skills that take place between companies and research institutions (National Technology Agency of Finland, 2002). This has been due in large part to the successful application of the science park and business incubator concept (Tarkianen, 2002) and demonstrates why the idea has spread so broadly. Incubators were tarnished by the excesses of the internet boom in the late nineteen-nineties. Some 400 incubators worldwide developed companies that rapidly listed on stock exchanges to take advantage of this boom (Lalkaka, 2001). Then, as technology shares started loosing their value, many of the incubators that had supported these companies collapsed along with their graduates. Despite this, incubators are still a growth industry.

In Australia, the development of incubators was supported by both the federal and the state governments for the same reason as they were supported in Europe and USA. Incubators were evident in almost all Australian states by 1989, with 17 incubators in operation (Small Business Council, 1989). Of the 17, only 2 were privately funded. Most had direct or indirect connections with academic institutions (University of Wollongong (UOW) and Royal Melbourne Institute of Technology (RMIT) being the first to have incubators located on campus (Small Business Council, 1989). Seventy-eight million Australian dollars were set aside by the Commonwealth Government in June 1999 for the development of incubators that focused on the commercialisation of ideas, research and technology in the information technology and communications area. This was done under the Building on Information Technology Strengths (BITS) Programme, intended to increase the long-term success rate of new ICT-related business formations. The outlay of this funding continued till 30 June 2004 (Directory of Community, Industry and Tourism Australia DCITA, 1999). There are 10 ICT
focused BITS incubators around Australia, eight are for-profit and two are non-profit centres (DCITA, 2003: 29). According to Australian and New Zealand Association of Business Incubators, in total, Australia has more than 60 incubators in operation (ANZABI, 2003). The majority of these are a part of state or local government economic development initiatives.

At present the incubator industry could be said to be in a fourth stage of development marked by a period of “consolidated growth” within Western economies and rapid expansion in the developing world. As a device that has long been associated with the fostering of new technology (particularly in its University-based and Science Park incarnations) and entrepreneurship, business incubation has increasingly found favour in the “globalised” economy. Within developing economies the threats and opportunities associated with competing in a globally competitive marketplace have created a pressing need to commercialise new technologies (both as a means of technological transfer and economic development/diversification) thus the introduction of incubator projects has become a popular development programme amongst regional and central governments. Amongst Western nations, already-existing incubator projects are typically being expanded to further harness the entrepreneurial forces that have traditionally fuelled technological innovation. Thus as of 2002, a new incubator was opening in the United States every week and 8,000 US SMEs were residing in incubators at this time (NBIA, 2002).
Definitions of Incubators

Over the past five decades and across several continents, many different models of incubators have emerged. There is no formal, or legally recognizable definition available, therefore criteria amongst the relevant literature fluctuates between the generic and highly specific.

Given this high degree of ambiguity and the consequent tendency to confuse incubators with other business development tools, before considering precisely what a business incubator is, it seems worth considering first what it is not. Firstly an incubator is not a “small business development centre” (sometimes also called “advice centres”) – whereas such development centres typically dispense advice, training, occasionally funding and can perform various “networking” roles, they do not house, adopt or generally “nurture” young businesses, - nor do they ordinarily focus exclusively on ‘young’ businesses (as do incubators).

Similarly, certain investors/investment groups purport to call themselves “incubators” however while they may (occasionally) offer business guidance and funding (as do incubators) they do not provide training, services or housing.

Moreover, there are many businesses and organisations that provide ‘accommodation’ and shared office services for businesses. However these are effectively providing ‘serviced office spaces’. In other words, they derive their purpose and/or revenue streams from real estate development/servicing and not from any stake in new business development. No responsibility is taken for, or stake invested in, the development and success of the housed businesses. Neither is training or guidance provided. An “entry policy” is unlikely, therefore any type or age of firm is liable to share the space and tenancy is more likely to be linked to the ability to pay and not limited to the age of the firm as in an incubator.

Thus, it is important to distinguish the incubator from the advisor, the investor, the landlord or even the professor. In doing so it already becomes apparent that business incubation is concerned with housing new (or very young) small businesses, providing them with business services, including advice, training and sometimes funding. The incubator will have a responsibility for the businesses’ success. The incubator is likely to specialise in certain types of businesses and tenancy is always limited.

Researchers have felt the need to define incubation and illustrate the features, which distinguish an incubator from other support programmes. As a result, research in the early 1980s focused on the basic task of identifying the common features of incubators. Smilor and Gill (1986) identified these features as the collective activities that assist entrepreneurs in the development of new technology-based firms, both start-ups and fledglings. It further seeks to effectively link talent,
technology, capital and know-how to leverage entrepreneurial talent in order to accelerate the development of new companies, and thus speed the commercialisation of technology.

In similar manner Albert and And Gaynor (2001) defined the incubator as a collective and temporary place for accommodating companies which offers space, assistance and services suited to the needs of companies being launched or recently founded. He identified four principle characteristics which are: The availability of modular and expandable space to rent for a limited period, access to shared cost services relating principally to administrative functions, access to management or technological support as well as privileged access to business and scientific communities and a place for interaction between companies and for moral support co-ordinated by the management team.

In Australia, the Commonwealth Department of Industry, Tourism and Resources, which has the current responsibility for incubator funding, defines them as:

A facility designed to assist new and growing businesses to become established and profitable by providing premises, advice, services and support. The incubation period is normally from one to three years, during which time fledgling businesses can become established before graduating into the wider business community (DEWRSB 73, 2001: 128).

Although, in general, there is a common understanding of incubation as a concept, many slight differences exist in the application of the concept. For example, do incubators help create and grow new businesses in a community? (Campbell, 1989). or accelerate the successful development of entrepreneurial companies or both? (Sherman and Chappell, 1998). As a result, varying definitions have evolved to differentiate incubation from other forms of support; example of these definitions is the following:

"A business incubator may be defined as an organisation which offers a range of business development services and access to small space on flexible terms, to meet the needs of new firms. The package of services offered by a business incubator is designed to enhance the success and growth rates of new enterprises thus maximising their impact on economic development... A business incubator consists of five dimensions namely enterprise development, a consultancy network, entrepreneurial synergy, flexible space and shared services". Duff (1994, P 11). On the other hand Tornatzky et al. (1996) defined it as a technology business incubator give the investor/entrepreneur the place and time to develop the product, as well as access to skills and tools needed to create a successful business. Finally, Allen and Bazan (1990) defined incubator as network or organisation providing skills, knowledge and motivation, real estate experience, provision of business and shared services. Allen and McCluskey (1990) defined incubator as a facility that provides affordable

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space, shared office services and business development assistance in an environment conducive to new venture creation survival and early stage growth.

But what, precisely, is the purpose of a business incubator? At the most generic level it is safe to define a business incubator as ‘a dynamic business development process’—(both the NBIA (2002) and the UKBI (2004) use identical wording.)

In addition to promoting survival rates, a focus is often placed upon the ‘development’, ‘growth’ and ‘nurturing’ roles of the business incubator for SMEs in the early stages of formation. For instance, Greene and Butler (1996:51) assert that ‘the purpose of a business incubator is to provide some combination of necessary resources in order to nurture a new and/or growing business to some level of maturity.’

Looking at the broader socio-economic roles of incubators, the NBIA makes the bold claim that ‘Incubation programmes diversify economies, commercialize technologies, create jobs and build wealth’ (NBIA 2000). Campell (1989) describes business incubators as change agents of an economy that has been based on large manufacturing but is transforming to one with many new, small information or service-type firms. He addresses many of the failures that new businesses face: restricted capital, lack of technology transfer, information costs, and unequal opportunity.

Incubators are crucial in providing a smooth starting conditions and support needed by growth-oriented companies. (Cooper, 1985; Achtleitner and Engel, 2001). ‘Incubators have a positive impact on start-ups either directly by providing intangible services or indirectly by providing access to professional specialist services and lending reputation (Cooper, 1985; MacMullan et al. 1986; Mian, 1996). They provide entrepreneurs with means of financing, consultation services, networking opportunities as well as necessary infrastructure (Cooper, 1985; Achtleitner and Engel, 2001).

As Seidel (2001) put it, the main intangible resources incubators provide are a network of contacts (i.e. contacts with prospective suppliers or customers), feedback on performance, benchmarking, incubator staff’s expertise and acumen as well as the signalling effects an incubated firm receives through incubator affiliation (Seidel, 2001). Since start-ups lack resources and insight due to their short existence, a central purpose of the incubator is to fill physical as well as intangible resources and knowledge gaps. Business incubators bridge the gap the small entrepreneurs face as they are “starved of equity capital and experienced management” (Barrow, 2001: 9). Also, ‘some incubators give entrepreneurs a terrific deal of subsidised rent, shared office equipment and access to tax breaks and grants” (Ibid: 24).

Barrow proposes a differentiation of the incubation spectrum according to their capacity to add value by placing for-profit property development incubators on one end (little or no value-added) and for profit investment incubators (seed capital) on the other (considerable value-added), with non-profit and academic incubators in between. The major goal of for-profit property development incubators is property appreciation and maximised occupancy as well as selling.
services to the tenants in order to create investment opportunities for more property. Non-profit incubators are usually sponsored by governments and non-profit groups and focus on creating jobs by creating employers. (Barrow, 2001:31). University-related incubators sponsored by colleges and partnerships of companies and faculties focus on commercialisation of technology, intellectual property and science. (Smilor, 1987).

A further difficulty in agreeing on a viable definition is that the literature on business incubators often interchanges the terms “business incubator” with “research park” “technology innovation centre”, “science park” etc. Nomenclature differs across OECD countries, the term “science park” often refers to a high-technology-orientated variant of the incubator-model, and is sometimes used synonymously with “technology incubator”. In the UK a “science park” generally has fewer of the typical attributes of an incubator and basically provides workspace near to a university. Many UK science parks also incorporate incubator units. (OECD, 1999: 11). In terms of a general approach, it seems sensible to follow the advice of Thirstein and Wilhelm (2001: 329) who concluded that within the incubator literature there is ‘no clear cut distinction’, unless explicitly specified between incubators, technology parks and innovation centres.

A more detailed definition that can be extracted from all the aforementioned definitions sees incubators as an organisation, which offers a range of business development services and access to small space on flexible terms, to meet the needs of new firms. The package of services offered by a business incubator is designed to enhance the success and growth rates of new enterprises thus maximising their impact on economic development. They embody a systematic approach to new enterprise development that can be described as consisting of five dimensions namely: enterprise development, a consultancy network, entrepreneurial synergy, flexible space and Shared services.

These five dimensions describe the purpose, benefit, design and management of incubators. These elements will be explored in a little more depth to clarify the concept of incubators and to distinguish between unmanaged workspace or serviced offices and business incubators.
APPENDIX (C)
Incubator Funding

VENTURE CAPITAL FINANCE

Incubator managers can provide assistance to clients in accessing to appropriate sources of finance. These include government finance programmes, banks, angels, seed and venture capital, the second board stock market, and so on. Incubators can provide a vital role in helping clients be "investment ready" by assisting them to develop documentation, and present their case in the best possible light to finance providers. Incubators can play a key role in building relationships with financial providers, and conveying their needs and requirements to clients.

Most incubators target high growth firms with significant market potential, and although not all of these are always suited to VC, many will need VC at some stage. There is no one way that venture capitalists select investment targets, but some fundamentals are almost always considered. Market potential, management quality, and cash flow are keys in almost everyone’s investment decision. How a VC selects investments is a function of: (1) whose money they are investing, (2) what other rates of returns are available to those who invest in the fund (LPs) from other investment vehicles, and (3) the stage of company they invest in.

Choosing the right VC firm as “partner” is important for incubator clients. The consideration when clients look for VC partners should extend beyond capital to industry expertise, good track record, and reputation for working well with entrepreneurs. Incubatees should also make sure the VC’s expectations on growth strategy, future fundraising, and investment time horizon are the same as their own.

incubator funding

Incubators are adept at funding for small businesses, but who is actually funding the incubator? According to the European Commission Report (2002), three-quarters (77%) of incubators within the EU operate on a not-for-profit basis. In the United States, state governments or nonprofit organisations fund approximately half of all business incubators.

According to NBIA academic institutions sponsored 20% of the incubators in the USA in 2005 while government-organisations sponsored incubators constituted 21%. For profit sponsors were only 4% and 8% were funded both by public and private funds. 54% of all incubatees were IT and technology firms. (NBIA, 2007)

The fact that such a large proportion of incubators are publicly funded ‘is not trivial’ (Hacket and Dilts, 2004), despite a recent increase in private sector and corporate for-profit incubators, the public sector remains the most active sponsor of incubators. This support has,
historically, been motivated by the belief that incubators make significant economic contributions and are an efficient way of stimulating local economic (re)development.

As the OECD report explains, the economic rationale underlying incubation programmes ‘often remains unarticulated’ (OECD 1999: 12).

Vesper (1983) cites the common reasons for small business failure as poor marketing, poor management, and lack of capital. It is believed that incubators can help eliminate these “extraneous factors” that lead to the early stage failure of small businesses (according to Brooks: poor management, inability to find early stage financing, high overheads, etc.) (Brooks, 1986). The “Theory of Economic Development Through Entrepreneurship” believes that the entrepreneurial process of conceiving new business ideas and then initiating these ideas is the main basis of economic growth (Brooks, 1986). Economists who follow this model are therefore highly concerned with the ‘gap’ that exists between conceiving an idea and realising/‘instantiating’ the firm – Brooks believes that incubators are highly useful to narrow this gap: Once extraneous factors that lead to early stage failure of small businesses (poor management, no early stage financing, high overheads etc.) are controlled or eliminated, the projected increased survival rate of new ventures should lead to increased employment and an expanded tax base (Brooks, 1986: 26).

Indeed, it is argued (Colombo and Delmastro, 2002: 1104) that there are severe market failures that prevent new firms (especially New Technology Based Firms, NTBFs) gaining access to key inputs; in particular, finance. For instance, in the high technology sector, banks lack the technical expertise required to judge the quality of a new business, and the firms often have no record or history on which most institutions base their lending decisions. Moreover, banks are generally prone to regard high-tech projects as being too risky (Storey, 1994).

Another ‘extraneous’ factor, not so far considered, is that small businesses have a high failure rate because, in part, they are more dependent on narrow and often local consumers and producers than are larger firms. In ‘State Investment in Business Incubator’ Allen and Weinberg (1988: 196) argue that incubators can create a ‘positive entrepreneurial environment’ which will also avoid this dependence with the provision of pooled services and an enhanced ability to attract national and international custom through increased prestige.

According to the European Commission Report (2002), three-quarters (77%) of incubators operate on a not-for-profit basis. Despite the wide variety of means in which incubators cover their operating costs, the majority still rely upon public subsidies, - there is a growing ‘argument in favour of dependence on this source of revenue funding to be
minimised’ (Ibid). Incubator operating costs are estimated at an average of 500,000 Euros per annum.

PUBLIC FUNDING

In their most basic and generic form, business incubators reduce the rate of small business failure. According to the NBIA (2000) between 87% and 90% of incubated businesses that graduated from an incubator are still in business. This is in comparison to 20% to 30% of non-incubated businesses (Ibid). ‘The effects of taking up residence in a business incubator also reach into the revenue stream of businesses, as the average firm’s sales increase by more than 400% from the time it enters until the time it leaves the incubator and as startup firms in incubators annually increased sales by $240,000 each and added an average of 3.7 full- and part-time jobs per firm (NBIA, 2000).

Second to this incubators could play a positive role in technological Innovation. As Oakey (1995) points out, high technology, or new firms that innovate and invent (either products or services) promote dynamism in advanced economies. The ‘diffusion’ of new technologies is seen as a key economic role of small businesses (Thierstein and Wilhelm, 2001: 315). These firms have the potential to revolutionise current practice and open up new markets, therefore it is in the public and government interest to support their development.

For instance, in Taiwan, the government recognised a need to formulate an export-orientated strategy, along with high-tech industrial development, in order to maintain economic growth (Hsu and Chiang, 2000: 123). Therefore, publicly funded Taiwanese incubator centres aim to provide favorable Research and Development environments – and reduce financial risks generally - for technical personnel or organisations entering into a new business (Ibid: 129).

As for employmentit is stated in the introduction, locality and prevailing circumstance massively affect incubator objectives. For many incubators, generating new jobs is the main objective, although none of the recognised aims of incubators are mutually exclusive, it is most likely that in areas of high unemployment, job creation will be the main focus, whereas where unemployment is low, technology transfer and wealth creation may be the top priority. For instance, as Thirstein and Wilhelm explain in their survey of Swiss incubators, it was only since the early 1990s, when Swiss unemployment levels soared to ‘unprecedented levels’ that federal technology and innovation policy began to design their activities with regard to employment and the establishment of new firms and the subsequent creation of incubators (Thirstein and Wilhelm, 2001: 315).

74 The highest proportion of cost relates to staff (41%) followed by client services (24%), maintenance of buildings and equipment (22%), and other costs such as utilities (13%) (EC Report, 2002)
According to the European Commission (Enterprise Directorate-General) Report (2002) on ‘Benchmarking Business Incubators,’ of the 900 reported incubators in Europe at the time of study, it was calculated that some 40,000 new (net) jobs were generated each year by incubators.

A national Business Incubation Association (NBIA) survey showed that 87% of incubator ‘graduates’ are still in business. Importantly, the NBIA calculates the ‘cost’ of creating jobs through publicly funded incubators at around $1,100 each, whereas other public mechanisms ‘often cost more’ (1998, cited in Lalkaka, 2002). They go on to calculate that for every 50 jobs created by an incubator client, a further 25 jobs are generated in the local community. In total it is estimated by the NBIA that incubator clients and graduates have generated approximately 500,000 US jobs between 1980 and 2002 (around 23,000 a year, on average). The Impact of Business Incubators study (NBIA, 1996) found that between 1990 and 1996 the average number of employees in the firms considered rose from 4.5 to 13.

As an instrument of employment creation incubators may favour those in the workforce possessing higher levels of skill (depending on each case, of course, on the characteristics of the population tenant firms). However, once established, new businesses can raise demand for services which are often provided by less skilled workers (such as copying, packaging, freight services, printing etc.) It should also be borne in mind that incubation is a medium – to long-term undertaking, unsuitable for responding to short-term employment crises. (OECD, 1999: 10-11).

A final positive role could be the regional Development. Given the “local setting” of incubators, where jobs are created is an important consideration. The EC survey (2002) found that over three-quarters of the personnel recruited by companies came from the same areas where the incubators are located, which ‘points to a favorable impact on local labor markets.’ In the US, the high proportion of incubator ‘graduates’ are “mainly” said to be still located in their local communities (NBIA, 1998 survey, cited in Lalkaka, 2002).

Furthermore, business incubators have often emerged as a response to ‘industrial restructuring’ (OECD, 1999: 8). In seeking to minimise social and economic damage caused to local communities by plant closures or technological, large companies have in some cases played a key role in the evolution of business incubation (Ibid). Business incubators sometimes introduce infrastructure previously lacking in a given community, and can improve operating revenues by extending services to nearby firms. (OECD, 1999: 9)

In Australia, for instance, larger incubators frequently offer telephone answerphone services to local “home businesses”. Incubators can also serve as a point of referral for local firms, signposting the range of business, training and financial support services often on offer for small firms and start-ups. Marketing and matchmaking services have
likewise been offered by some incubators, as well as by tenant firms within incubators, so as to facilitate outsourcing and supplier linkages between tenant and non-tenant local enterprises. (OECD, 1999: 9)

The economic characteristics of the location in which an incubator is established will greatly affect its operation and usefulness. The areas chosen as incubator sites should ideally provide access to markets for goods and services (as small firms within an incubator stand to benefit from trade and networking with larger companies outside) as well as a degree of business expertise in the surrounding community, diverse financial resources (such as venture capital funds, business angels, banks etc.), and local commitment to the incubator programme. However, such ideal conditions will often be lacking, especially as incubators are often established in response to local economic distress. Consequently, prior to setting up a business incubator it may be necessary to improve the local climate for entrepreneurship so as to encourage demand for the services an incubator would provide. (OECD, 1999: 9)

ARGUMENTS AGAINST PUBLIC FUNDING

However, despite the significant justifications for public funding and wide variety of means in which incubators cover their operating costs, there is a growing ‘argument in favour of dependence on this source of revenue funding to be minimised’ (EC Report 2002). Profit-orientated incubators have not been translated into profitability for the majority of public funded incubators (Bearse, 1998). Dependency on public finance inevitably leads to incubators operating in a “politically charged” environment, which can pressure “stakeholders” into constant demonstrations and advertisements of “success”, under-report failures and over-report success, in order to justify continued public funding (Ibid.).

This also makes research difficult as the political, and funding, implications of incubator failure make data on the success and failure of ‘comparable non-incubated companies’ extremely difficult to come by (Ibid). Despite reporting that incubated businesses do ‘much better’ than non-incubated firms, the NBIA does not track the number of companies that fail while in incubators, which would be a better comparison of success rates between incubated and non incubated start-ups (Brissett, 2001)
APPENDIX (D)
National case studies

National case study: republic of south korea

Background, support structure and government involvement

The rapid expansion of business incubators in Korea is one of the most important phenomena affecting the high-tech industries in Korea. Yong Suk, (2008) presented the current conditions of Korean incubators and proposes what factors are important for their continual development. He showed how rapidly this new organisational model, business incubation, expanded in Korea after the IMF bailout crisis. Second, he explored what factors led these incubators to perform better and emphasise that better qualified technical, managerial, and administrative support of incubators are important success factors.

After rapid growth throughout the 1970s, 1980s and early 1990s, Korea — which became an OECD member in 1996 — suffered a profound economic set back in 1997 when (alongside the south east Asian “tiger economies”) it was ‘bailed out’ by the international monetary fund (IMF). The economic crisis had a profound effect upon business practice and the pace and style of new venture creation.

The decline of large conglomerates and heavy industry has seen a shift towards entrepreneurial start-up ventures, thereafter called ‘certified venture firms’. These firms are defined for administrative purposes as businesses with significant R & D activity (over 5% of sales) and some venture capital (more than 10%) with products and services based on commercialising their own or publicly-funded research results (Ibid). These firms have grown four-fold in the last two years (1998-1999), to some 10,000 (as of December , 2000). A global entrepreneurship monitor (GEM ) study found that in 2000, around 9% of Korean workers were employed in firms that were less than three and a half years old, compared with a half-percent in Singapore and Japan.

Although the first Korean incubator was started in 1993, the major expansion has taken place since the start of the century. As of 2004, there were 200, with plans for rapid expansion of numbers in place. The majority are sponsored by the Ministry of Commerce, Industry and Energy, Ministry of Business and Communication and the Small and Medium Business Association. The vast majority ( 85 per cent) are attached or affiliated to universities. The majority of incubators specialise in specific technological fields; for example half of all Korean incubatees are involved in internet and software-related work, around 14 per cent in equipment and instruments, 11 per cent in biotechnology. As of 2004, there were approximately 3,000 incubated companies and 1,200 graduates , with a total of 21,000 employees in the incubators (Ibid). The average area per incubator is 1,700 square meters, each with 15 tenants.
PROBLEMS

Despite the large-scale expansion of the both the SME sector and the incubation process within Korea in less than a decade, there has been a relative failure in the area of for-profit/private incubation. This is predominantly associated with the dotcom boom (and bust) which has seen the number of for-profit incubators reduced from 100 in 1998 to 10 in 2001 (Hong, 2001). However, more recently (Kak-Bum, Bum: 2002 in Lalkaka, 2003) large scale national technology operators like Samsung, LG and Korea Telecom have started to enter the arena and develop their own incubator projects, although these projects remain closely tied to the parent company. Venture capital is also becoming more involved in financing incubator projects.

NATIONAL CASE STUDIES: BRAZIL AND ARGENTINA

In ‘Business Incubation in Argentina’ (2005) Hoeser assesses the relative failure of the Argentine incubator against the strong success experienced in the Brazilian economy. He identified several key factors that delineate the Argentinian and Brazilian experience and which may provide grounds for ascribing suitable economic and political conditions for incubator programmes.

A. ARGENTINA

BACKGROUND, SUPPORT STRUCTURE AND GOVERNMENT INVOLVEMENT

The stated aim of all Argentine incubators is to produce “technology based” “innovative” or “knowledge based” enterprises. This reflects the widespread belief that incubators are to provide a “link” between science and technology (ST) institutions (including universities) and the private/productive sector.

Like ‘many Latin American countries’ the ST sector operates with a good deal of autonomy from the sector, state funding energized the ST sector through academic science in public universities and state sponsored institutes of technology. Significant public funding of these initiatives (which began in the 1950s) was intended as a (state directed) attempt to “boost” the economy in the medium and long term. The assumption was that: ‘investing heavily in basic research in any country would generate a sufficient stock of scientific knowledge which applied research would eventually transform into new products and services to the productive sector’ (Hoeser, 2003: 3).

This is commonly referred to as a “linear” model of innovation in that it supposes a ‘linear’ sequence of events from inventions to end-products. As such, the relationship between Argentine ST and the productive sector has been “supply side” orientated, the ST sector ‘generates knowledge based on internally defined priorities of the ST organisations, without taking into account the needs of the productive sector (Ibid).
A further problem specific to Argentina was a growing "political" antipathy between the universities and the private sector that led to a decline in co-operation.

At the national level, an incubation support network was created in 1997 and in 2001 the Science and Technology Secretariat of the Science Ministry, through the Argentine national technology fund subsidised 7 incubators for a total of $1,000,000 US. As of 2003, twelve incubators were operational in Argentina, with several others in the "launch phase", these incubators fall into the categories: run by universities, run by technology institutions, run by municipalities or run by 'an association of private actors.' There are no private sector for-profit incubators. All the incubators offer the standard facilities of accommodation, administrative services, lab equipment, business plan development and legal and financing advice.

Problems
According to Cardozo (2001 in Hoeser, 2003: 11) the 'general perception' of incubation in Argentina is one of 'failure', especially in comparison to its neighbour Brazil. This perception is based on the small number of incubators and incubatee's, the extremely low number of successful enterprises leaving incubators, and the shut down of many new-technology/internet incubators.

There has also been a problem of low quality incubatee's and 'lax quality standards.'

However, there have been multiple obstacles to success in the Argentine case. One of the most salient problems has been a lack of co-operation and co-ordination between the different incubators and different sponsors. For instance, the City of Buenos Aires and the University of Buenos Aires are sites of political "conflict" between different "factions", however the city's four incubators are funded by one, or both, of the institutions.

Another political problem has been the lack of continuity over time that comes with government changes and with it attitudes and funding resources for the incubation programme, This leads to instability and inconsistency in centralised administration and support of incubators.

There are also various other problems that incubators have run into that do not fit into any broad categories. For example, in Argentina, scientific research is not produced for industry (Hoeser, 2003). This results in a lack of strong links with the market. Another problem that has arisen, that could be seen as both positive and negative, is that of business incubators being based on foreign models. This is positive not just when the country is basing itself on a model that has been successful, but more so if and when a country is able to translate the business model used, to their own specific country and its capabilities. Examples of this can be seen in Argentina, who based themselves on Italian business incubators.
B. The brazilian model

Background, Support Structure And Government Involvement

In Brazil, according to SEBRAE, (2004), the movement of business incubation started in 1984 with the creation of five technological institutions located at Campina Grande (PB), Manaus (AM), São Carlos (SP), Florianopolis (SC) and Porto Alegre (RS). They had been created to transfer the knowledge from universities to companies. Up to 1987, Brazilian business incubators had not had importance, but in this year the National Association of Promotional Entities and Advanced Technologies (ANPROTEC, in portuguese), was created emphasising the concept of business incubators and entrepreneurship in Brazil.

Currently, with over 400 incubators, the Brazilian incubation market is counted as the fourth largest in the world after the United States, Germany and China. They are divided according their type as "55% with technological characteristics; "19% with traditional characteristics;" 18% with mixed characteristics; and " 8% with others characteristics. In the last two decades the number of business incubator in Brazil increased in a fast pace (Chandra, 2007)

Brazilian incubators are generally linked to universities and funded by plural government and non-government sources. Financial support for incubators comes from federal government programmes such as the PNI (National Incubation Support Programme) Brazil was also early to form a comprehensive national science and technology (ST) park and incubation association (ANPROTEC) in 1987 which has shaped the evolution of the sector.’ The Brazilian incubation experience first “took off in 1993 and in the year 2002 Brazil had over 200 operating incubators. Hoeser summarizes the key factors in Brazil’s success as ‘well defined’ public policy, ideal conditions for entrepreneurs and a genuine demand for incubation services, which is designed to support new incubator creation and the expansion of existing ones. The PNI programme is supported by a coalition of government, industry and incubator associations, such as the Brazilian Ministry of Science and Technology, the CNPq (National Council for Scientific and Technological Development) and FINEP (Financing Agency for Projects and Studies), SEBRAE (Brazilian Micro and Small Business Support Service) and ANPROTEC (National Association of Incubators and Science Parks) (Scaramuzzi, 2002). A major feature of incubation in Brazil is the degree of private involvement – for instance, the Federation of Industries for the state of Sao Paulo (FIESP) operates a dozen incubators. The largest sponsors of incubators are not-for-profit and for-profit organisations, accounting for 40% of the total (Lalkaka and Shaffer, 1999).
coalition of partners that support incubators is a notable feature of the Brazilian incubation scene.

Universities played a pivotal role in the creation of incubators in Brazil. Government agencies at the federal level play an important role in supporting incubators but seem to work synergistically with universities, industry and incubator associations. Incubators emerged in Brazil with the end of the military regime in the mid 1980s in a grass roots movement that included individuals from several sectors of society, particularly from the university. During the military era, innovation happened by central government mandate, which directed resources to selected industries related to national security. At this time, the private sector primarily sought technologies from foreign sources in lieu of home-grown R&D (Coutinho and Ferraz, 1995). Import substitution and technological self-sufficiency were the norm in the military government’s Science and Technology policy in the context of a hierarchical, centrally planned system. By 1986, the National Research Council (CNPq) had created five technology parks and two incubators, one in Sao Paulo with the state government and one with the Federal University of Santa Catarina (Hoeser, 2003). After the fall of the military regime in the mid 1980s, the nexus of innovation shifted from a top-down approach to a bottom-up grass roots approach, with the incubator playing a key role in facilitating new venture creation at a local or regional level (Etzkowitz et al., 2005).

The most important difference between Brazil and Argentina seems to be the level of ‘co-ordination’ and ‘harmonisation’ between the ST system/incubator programmes and government and the private sector. ANPROTEC is well funded and does not compete with rival organisations for dominance in the incubator sector, whereas Argentina’s equivalent, the National Innovation System (‘NSI’) remains a “discourse” rather than a co-ordinated administrative body.

Importantly, at a government level, the Brazilian Ministry of Science and Technology (MST) has been consistent in its co-ordination of ST policy since 1985. This means that funding mechanisms have been co-ordinated and productive interaction is welcomed with non-governmental bodies like SEBRAE, a Chambers of Commerce style organisation that provides not-for-profit support (including risk finance) for small businesses.

In Argentina, changing governments meant changing policies and lots of “stopped programmes.” An institutional support network did not exist before 1999.

Conditions For Entrepreneurs

One of the key mistakes of the Argentine model was to create incubators in areas which did not “need” incubation - either through identified SME failings or because of local regeneration initiatives. Instead, incubators were established on an arbitrary basis depending on where a province-finance awarded grants that did not seem to bear much relation to
In such a context it is difficult for any new organisation to ‘find its niche’ in a network of existing institutions’ (Hoeser, 2003: 18)

There is also a fundamental “opposition” between public and private sectors that incubators have failed to surmount. At a “cultural level” researchers in Argentina ‘tend to believe that their research is not produced for industry… and do not want another measure of success apart from their publications’ (Ibid).

This cultural “mis-match” is also manifest in a general lack of integration and “networking-forming” in the areas and institutions around incubators.

**Demand**

At a practical level, the regulatory process of starting a company is unnecessarily strict and limits the amount of new SMEs available for incubation.

Similarly, the ST system itself is relatively weak and Argentina’s (1999) R&D spending (as a proportion of GDP) is less than half that of Brazil (Ibid: 19). This is also borne out in the Science Citation Index which show a significant lag behind the Brazilians (Ibid).

Taken together these factors make for a relatively smaller number of ST based SMEs entering the marketplace which, inevitably, undermines the physical need for incubators in the first instance.

Hoeser (2003: 20) also lists ‘without going into detail’ other constraints upon the Argentine business environment as identified by the World Bank (2002):

- A lack of venture capital, the absence of a legal framework for risk capital
- A lack of credit lines for SMEs
- A lack of social capital
- Difficulties with red tape in starting companies
- Uncoordinated SME policies
- Cultural aversion to entrepreneurs, individualism and the absence of an association culture.
Qualitative Research Methods

The major qualitative research methods include the following:

- Ethnographic research
- Participant observations
- Focus Groups
- In-depth interviews

These methods are discussed in the following sub-sections.

Ethnographic Research Method

Ethnography is a qualitative research method and has roots in anthropology (Sarantakos, 1998; Brewer, 2000; Seale, 2004). Ethnography is defined as ‘collection of data that describe a culture’ (Bernard, 1994). According to Toren (1996), ‘ethnography is the analysis of the way in which collective relations between people at large inform what particular persons…do and say’. According to Neuman (2000), ethnography is description of ‘a culture and understanding another way of life from the native point of view’. Human activity is therefore the focus of ethnographic research (Richardson, 2000). In ethnography, data collection involves ethnographic fieldwork and ethno-historic research (Sarantakos, 1998). The primary method of data collection is ‘participant observation’ (Toren, 1996). Nonetheless, participant interviewing is also important in ethnography (Becker and Geer, 2004), which can be unstructured or semi-structured (Bernard, 1994). In addition, note taking by the researcher is also important in ethnographic research (Morse, 2003). Therefore, participants’ observation, interviewing and field-note taking are essential in ethnographic research.

The main strength of ethnographic research is that it helps in studying participants in their "natural" environment. It has, however, been criticised for its unwieldiness, highly subjective nature (Toren, 1996) and high cost in terms of both time and money (Neuman, 2000).

Participant Observation

Participant observation can be a part of an ethnographic research or an independent method of inquiry. Participant observations can be participatory or non-participatory, structured or non-structured, active or passive (Sarantakos, 1998); controlled or non-controlled (Frankfort-Nachmias and Nachmias, 1996) as well as reactive (obtrusive) or non-reactive (non-obtrusive) (Bernard, 1994).

The advantages of participatory observation research is that it can be applied to any subjects in any environment (Bernard, 1994; Toren, 1996) and, like ethnography, study
participants in their natural setting (Tashakkori and Teddlie, 1998). It facilitates collection of first hand data (Frankfort-Nachmias and Nachmias, 1996) and the study of the research problems that can not ordinarily be studied by other means (Bernard, 1994). This approach is more useful for micro level study (Neuman, 2000) and studying the participants that have, in some way, a "communication problem" (Johnson and Turner, 2003).

The major disadvantages of participant observation include high costs and time consumption (Mahoney, 1997; Johnson and Turner, 2003), training and experience requirement for the observer (Bernard, 1994; Sarantakos, 1998), interruption of the privacy of participants and lack of control of the situation (Mahoney, 1997) and reactivity of the participants (Tashakkori and Teddlie, 1998; Johnson and Turner, 2003). In addition, participant observation is regarded as a tedious and unsuitable method for macro level study (Neuman, 2000) and can be associated with observer bias (Johnson and Turner, 2003).

**Focus Groups**

Focus groups are a useful way of examining ways in which people, in conjunction with one another, construe the general topics in which the researcher is interested (Bryman 2001: 337). According to Carey (1994), a focus group is 'a semi structured group session, moderated by a group leader, held in an informal setting, with the purpose of collecting information on a designated topic'; it is 'quite simply' a group interview or a group discussion.

The focus group method allows the exploration of participants' views and experiences on a specific subject in some depth and as with the individual interview, the focus group discussion involves the exploration of ideas and interpretation of 'what people say' (Cronin 2001: 165). Unlike the individual interview, the focus group is dependent upon interaction between participants. For this reason the type of data produced is unique and is not merely a group-based facsimile of the individual interview. According to Massey and Wallace (1991), the technique is intended to elicit knowledge in a group situation, allowing the researcher to see how participants "collectively make sense" of the issues and as participants bring to the fore the issues in relation to the topic that they deem to be important and significant.

The duration and number of participants in a focus group varies. However, a smaller focus is methodologically superior than a larger group given problems of cohesion and logistics associated with larger group (Scheuren, 2004). A typical focus group, according to Johnson and Turner (2003), is composed of a homogeneous group of about 6 to 12 persons that discuss in depth on a given topic from 1 to 3 hours. A facilitator or moderator leads the group and guides the discussion between the participants. In addition, a "focus group interview protocol" is required that usually contains 5 to 10 open-ended items (Johnson and Turner, 2003). The purpose of organising
focus groups includes generation of ideas and elicitation of participants’ opinions, attitudes and perspectives (Clapper and Massey, 1996). Focus groups are frequently applied for exploratory purposes and may be used for informed development of questionnaires and interviews in quantitative research as well as for enhancing understanding and interpretation of results and findings of previous research (Johnson and Turner, 2003).

Merton et al (1956, cited in Cronin, 2001) cite four criteria necessary for a successful focus group discussion: (1) Range (2) Specificity (3) Depth (4) Personal context. Range refers to ensuring that the focus group schedule enables the maximum number of relevant topics to be covered. Questions should be presented so as not to inhibit participants from raising the topics of interest to them. Specificity involves ensuring that the facilitator ‘encourages participants to move beyond the abstract and situate their talk in actual lived experience’ (Cronin, 2001: 173). By adding clarity and revealing the ‘lived’ sources of attitudes and beliefs, respondents add Depth to their responses. The researcher may also pay careful attention to the Personal Context of participants’ lives, that is, their social position or role and the social ‘category’ to which they belong which must be taken into account alongside the personal context of the other participants in any analysis.

The level of facilitator “involvement” in the focus group should be extremely limited and relative ‘free reign’ should be given to participants. The advantage to allowing a fairly free reign to the discussion is that the researcher stands a better chance of getting access to what individuals see as important or interesting (Bryman, 2001: 342). However, the facilitator may need to be involved to respond to specific points that are of potential interest to the research questions but that are not picked up by the other participants. Clearly, the moderator has to straddle two positions: allowing the discussion to flow freely and intervening to bring out especially salient issues, particularly when group participants do not do so (Ibid)

Focus groups, like any other research method, have advantages and disadvantages (Nielsen, 1997). The advantages of focus groups include: the absence of complex sampling techniques as required in surveys (Scheuren, 2004); usefulness for exploring participants ideas, decision and consensus making in a group setting (Johnson and Turner, 2003); generation of micro understanding of issues under discussion and production of empirical data for policy and planning of the issues(Gaber and Gaber, 2002). In addition, focus groups can be applied as a stand-alone method and/or in combination with other methods of inquiry (Johnson and Turner, 2003). The disadvantages of focus groups, according to Gibbs (1997), include need for a lot of planning, training and experience to facilitate, organise and conduct focus group sessions; tape and /or video recording and note taking to facilitate transcribing of the data; problems surrounding the anonymity/confidentiality of participants; lack of representativeness of general population and limitations of (externally) generalising the results.
An obvious alternative approach to the focus group would be to interview the individuals separately. In an interview setting individuals may be more forthcoming, or rather, less inhibited to speak out as they may in the highly 'socialised' focus group. It is also difficult to analyse the sheer volume of data produced by a 1-3 hour discussion. Moreover, the 'depth' of material yielded in a focus group is likely to be less than that provided by several individual interviews. Moreover, individual interviews have the advantage of eliciting a larger amount of aggregate data. However, this is also a disadvantage: whereas the 'issues that matter' tend to predominate in a focus group discussion and can be approximately ranked in terms of duration of discussion, level of agreement/disagreement etc. Given their unstructured nature, it is difficult to make any comparisons between individual 'open ended' interviews especially as standardisation of questions (e.g. a topic list) means that the agenda has already been 'set' by the interviewer.

Importantly, this initial, qualitative approach allows for the "human" element of decision-making to emerge: 'causality is intrinsic to the internal world of meanings, motives and logics of the human actors and can only be established by research approaches which focus directly on these' (Curran and Blackburn, 2001: 121) Its use at a preliminary stage of a research project can provide insight on a topic and inform the development of an interview schedule or questionnaire (Cronin, 2001: 168).

In-Depth Interviews

The long interview technique is useful and effective in small business research (Wright and Geroy, 1990 in Siu and Kirby, 1999: 141). According to Ghauri and Gronhaug (2002), interviews require actual interaction between the researcher (interviewer) and the respondent (interviewee). Interviews can be of different types such as qualitative interview, quantitative interview and mixed interview (Johnson and Turner, 2003) Pure-qualitative interviews are unstructured and pure quantitative interviews are structured in nature where as semi-structured interviews are mixed i.e. both qualitative and quantitative in nature. Semi-structured and unstructured interviews require greater skills from the interviewer compared to structured interviews. The interviews can be structured, unstructured and semi-structured. (Ghauri and Gronhaug, 2002)The pure qualitative interview, according to Johnson and Turner (2003), is unstructured, exploratory, open-ended and in-depth, probing about and around the topic of interest. Whereas in the quantitative interview, all respondents are asked questions from a carefully written interview protocol and the questions are mostly closed ended and the exploring mechanism is pre-planned (Johnson and Turner, 2003).

Interviews can be applied as a single method of inquiry as well as in combination with other methods. However, interviews are usually used in conjunction with other methods such as questionnaire surveys, observations (Johnson and Turner, 2003). The interview can be conducted either on telephone or in person. Personal interviews are conducted at the respondent’s home or work place and are more expensive than telephone interview as well as
mail questionnaire survey. They provide rich and descriptive data and are important for complex information elicitation (Scheuren, 2004). On the other hand, telephone interviews are efficient in terms of time availability however they are associated with higher non-response rates and are not free from bias (Freeman et al., 1982).

In an unstructured, in-depth interview, the interviewers ‘simply have a list of topics which they want the respondent to talk about, but are free to phrase the questions as they wish, ask them in any order that seems sensible at the time, and even join the conversation by discussing what they think of the topic themselves’ (Fielding and Thomas, 2001: 124). In this sense unstructured interviews can be regarded as a “guided conversation”.

It is 'particularly appropriate' (Adams and Schvaneveldt, 1985: 203) to use these open-ended topic prompts when the object is to know the respondent's 'frame of reference' or the 'level of information possessed.' A greater depth of response is allowable in the open-ended question; and since no clues are given for the answer, it would seem to invite a respondent to give authentic information to a question (Adams and Schvaneveldt, 1985: 202).

The table (3.1) below shows the comparison between closed ‘survey’ interviews (discussed below) and in-depth interviews.

Like other qualitative methods, non-standardised interviews are valuable as ‘strategies for discovery’ (Fielding and Thomas, 2001: 124). In-depth interviews are very appropriate for exploratory and inductive type of studies (Ghauri and Gronhaug, 2002). Moreover, the interviewer can probe the interviewee for clarifications and further explanations (Johnson and Turner, 2003). The objective is ‘to elicit rich, detailed materials that can be used in qualitative analysis... its object is to find out what kinds of things are happening rather than to determine the frequency of predetermined kinds of things that the researcher already believes can happen’ (Loftland, 1971 in Ibid: 125).

However, 'since the response is open, it does take effort and high motivation for a respondent to react to the items and complete the instructions provided by the questionnaire maker' (Adams and Schvaneveldt, 1985: 202) hence low levels of response can be anticipated if either a) it is sent by mail or b) respondents are not properly targeted. (Therefore, in-depth interviews are optimally held 'face to face' with participants who have made a prior agreement to participate.) Another drawback to these kinds of interviews is the risk of ‘interviewer effects’, traditionally this concern has centred around matching the demographic characteristics of the interviewer and respondent. However, at a more general level, there is always the risk that the ‘personal context’ (as discussed above, in Focus Groups) of the interviewer may affect the respondents answers. Moreover, these types of interviews are relatively more expensive and time consuming compared to questionnaire surveys (Johnson and Turner, 2003) and require a skilled interviewer (Ghauri and Gronhaug, 2002) and the respondent’s anonymity is low (Johnson and Turner, 2003). Sometimes, it becomes hard to interpret and analyse data collected by interviews (Ghauri and Gronhaug, 2002)
Table 3.1: comparison between Standard 'Survey Interviews and In-Depth Interviews'

<table>
<thead>
<tr>
<th>TYPICAL SURVEY INTERVIEW</th>
<th>TYPICAL IN DEPTH INTERVIEW</th>
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<tbody>
<tr>
<td>1. It has a clear beginning and end.</td>
<td>1. The beginning and end are not clear. The interview can be picked up later.</td>
</tr>
<tr>
<td>2. The same standard questions are asked of all respondents in the same sequence.</td>
<td>2. The questions and the order in which they are asked are tailored to specific people and situations</td>
</tr>
<tr>
<td>3. The interviewer appears neutral at all times</td>
<td>3. The interviewer shows interest in responses, encourages elaboration.</td>
</tr>
<tr>
<td>4. The interviewer asks questions, and the respondent answers.</td>
<td>4. It is like a friendly conversational exchange, but with more interviewer questions.</td>
</tr>
<tr>
<td>5. It is almost always with one respondent alone.</td>
<td>5. It can occur in group setting or with others in area, but varies.</td>
</tr>
<tr>
<td>6. It has a professional tone and businesslike focus; diversions are ignored</td>
<td>6. It is interspersed with jokes, asides, stories, diversions, and anecdotes, which are recorded.</td>
</tr>
<tr>
<td>7. Closed-ended questions are common, with rare probes.</td>
<td>7. Open-ended questions are common, and probes are frequent.</td>
</tr>
<tr>
<td>8. The interviewer alone controls the pace and direction of the interview.</td>
<td>8. The interviewer and member jointly control the pace and direction of the interview.</td>
</tr>
<tr>
<td>9. the social context in which the interview occurs is ignored and assumed to make little difference</td>
<td>9. the social context of the interview is noted and seen as important for interpreting the meaning of responses.</td>
</tr>
<tr>
<td>10. The interviewer attempts to mold the communication pattern into a standard framework.</td>
<td>10. The interviewer adjusts to the member's norms and language usage.</td>
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Quantitative Research Methods

The main quantitative research methods are as follows:

Surveys (Questionnaire surveys and closed interviews – mail, email, telephone, face-to-face),

Causal modelling.

Survey Method

The aim of the method is to collect as much, comparable, information as possible – particularly in the area of attitude measurement. Surveys are ‘a method of gathering information from a sample of individuals’ (Scheuren, 2004: 9). They are extensively used method for data collection (Neuman, 2000), and specifically for measuring opinions, attitudes, descriptions and causal relationships (Ghauri and Gronhaug, 2002). Used for data collection in several fields (Neuman, 2000) surveys remain most popular in business studies (Ghauri and Gronhaug, 2002). The researcher follows a deductive approach by beginning with a theoretical or applied research problem and ending with empirical measurement and data analysis (Neuman, 2000). The basis steps in conducting a survey research are depicted in figure 3.1.
The questionnaire could be descriptive and/or analytical (Ghauri and Gronhaug, 2002). The development of the questionnaire requires considerable planning and consideration (Scheuren, 2004): it can be structured, semi structured or unstructured (Ghauri and Gronhaug, 2002). Review of the relevant literature is vital in developing the questionnaire (Ghauri and Gronhaug, 2002). The questionnaire may comprise closed-ended and open-ended questions, which can be operationalised as independent, dependent and extraneous variables (Neuman, 2000; Ghauri and Gronhaug, 2002). The questions should be clear, concise, specific, straightforward, logically ordered and constructed in accessible language (Ghauri and Gronhaug, 2002).

Figure 3.1. Steps in the process of survey research.

In designing the questionnaire survey instrument the researcher should make sure to avoid jargon, slang, abbreviations, emotional language, "prestige bias", two or more
questions joint together, asking questions that are beyond respondents' understanding and asking future intentions under hypothetical circumstances (Neuman, 2000). The layout and length of questionnaire is important because it affects the response rate and responses (Ghauri and Gronhaug, 2002; Scheuren, 2004). However, there is no standard length of the survey questionnaire (Neuman, 2000; Ghauri and Gronhaug, 2002); but it should not be too long and laborious from the respondent's perspective (Ghauri and Gronhaug, 2002). The respondents should be selected via a form of probability sampling (e.g. simple random sampling), thus ensuring statistical significance. Maximising the response rate is essential in survey research, clearly if the nonresponse rate is higher then there will be greater biasing effect (Frankfort-Nachmiyas and Nachmiyas, 1996). There are no fixed response rate levels however, a response rate of 50%, 60% and 70% is regarded more like as more than adequate, good and very good respectively (Babbie, 1973: 165). The response proportion can be calculated by the following formula (Frankfort-Nachmiyas and Nachmiyas, 1996: 200):

\[ R = 1 - \frac{(n-r)}{n} \]

Where \( R \) = response rate  
**n** = sample size  
**r** = responses returned

Like all research methods the survey has specific advantages and disadvantages. According to Scheuren (2004), survey advantages include speedy and economical collection of a variety of generalisable data. Moreover, data generated by survey method is inherently statistical (and significant) in nature (Neuman, 2000). Data can be easily coded and quantified, and ranked\(^7\).

Moreover, the fixed-alternative question can be much more directly applied to a hypothesis because the data are quantifiable (and reduced to a 'common dimension') with much less effort (Adams and Schvaneveldt, 2005: 203). In addition, survey makes it possible to ask about several things at one time, measure several variables, test several hypothesis and survey many people, respondents, about their beliefs, opinions, characteristics and behaviours (Neuman, 2000). Another clear advantage to this approach is that it is much easier for participants to complete the questionnaire as they are less time consuming than open-ended surveys. Therefore, response rates are much higher. Moreover, there is increased speed at which responses can be gathered and processed and an absence of the interviewer effects that may undermine face-to-face interviews.

Disadvantages of the survey comprise respondents' apathy and fatigue, low response rate, bias in results and sampling problems (Scheuren, 2004). Surveys are associated with errors, which occur due to badly designed sampling frames, non-response, question wording or order and researcher bias (Neuman, 2000). The "inflexible" nature of quantitative surveys

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\(^7\) Statistical analysis can easily take place using SPSS software. It is likely that a Likert scale will be used to rank the questions and measure response sets, this "vertical" format allows the questionnaire to be pre-coded.

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may miss crucial variables not considered by the researcher. Hopefully the secondary data sources, and prior primary research combined with significant piloting and careful targeting will avoid this problem and help to deliver accurate and relevant measures.

Nonetheless, surveys suffered from further problems such as:

1. Set questions with set answers (meaning the person taking the survey actually has to pick a certain answer even if it does not fit with how they feel on the subject.

2. No way to expand on your answers. When I am asked a question I do not like to give just a yes or no answer I like to state my reasoning behind my decisions or my though process.

3. Giving surveys you have to make sure that it is being answered by a variety of people. I find most surveys are limited to a certain group, ie houswives, working mothers, students, middle class, etc,. To get the most out of the survey it has to be offered to everyone from every background, race, nationality, religious and political background this is a daunting task

4. Incentive to take the survey. If the survey takes more than a few mins then people will not complete it or even start it. Time is valuable and we all have so little of it.

5. I know personally from taking a few surveys that it is aggravating not to know what has been deemed from the survey, I feel I have taken time out of my day to answer the survey at least I could be informed of the results

6. With surveys or really any other test you can never be sure if you are be given the truthful answer or the answer that the survey taker thinks you want to hear, So scientifically they provide no real data

Therefore, it is imperative, that surveys are conducted in conjunction with measures from other research instruments.

There are several types of survey research. The most commonly applied survey types include postal surveys and (closed') interviews which could be on telephone or in-person/face-to-face (Ghauri and Gronhaug, 2002; Scheuren, 2004). These are discussed in the following sections.

Online Surveys

Although there is still a great deal to learn about online surveys, the research to date is valuable to the developers and researchers using types of data collection tool. Online surveys are an effective way to gather information quickly and relatively inexpensively from a large geographic region. E-mail and Web-based surveys are useful I many situation; however, it is important to emphasize that they are not appropriate for all types of survey research. Researchers should carefully assess the target audience, research objectives, and data reporting when selecting a survey format. (Sue and Ritter, 2007)
Postal Surveys

The postal survey is also known as mail survey or self-administered questionnaire survey. In the postal survey, a self-administered questionnaire accompanied with an introductory letter and a return envelop is mailed to the selected respondents (Babbie, 1973). This type of survey has several advantages (Babbie, 1973), which include minimising time, money and manpower compared to other types of surveys (Scheuren, 2004). This type of survey can be conducted by a single researcher, cover geographically scattered population, respondents complete the questionnaire at their convenience, provide anonymity and avoid interviewer bias (Neuman, 2000). The data collected can be easily analysed, particularly information from closed-ended questions (Johnson and Turner, 2003). However, this type of survey requires careful planning and pre-testing (Babbie, 1973). There are several disadvantages of this type of survey. Respondents’ lists may be biased, incomplete and outdated (Scheuren, 2004). Questionnaire survey is not returned which results in low response rate (Neuman, 2000). Some time partially completed questionnaires are returned (Johnson and Turner, 2003). There is need for monitoring the returns and sending follow up mailings to non-responders (Babbie, 1973). The non response, according to Frankfort-Nachmias and Nachmias (1996) depends on the nature of the population and the kinds of questions asked. Researchers do not have control on conditions under which a survey questionnaire is completed (Neuman, 2000). A problem with all ‘self-completed’ items is that of “missing data” – certain questionnaires may be incomplete, illegible, or incomprehensible (Simmons, 2001: 87) Moreover, data analysis for open-ended questions demands significantly more time (Johnson and Turner, 2003) and the format of survey questionnaire provides limited choice to the researcher to ask questions (Neuman, 2000).

Face-To-Face And Telephone Surveys

The chief advantage to administering a survey interview – typically over the phone, or face-to-face – response rates are likely to be higher than those with a mailed out questionnaire whilst costs (especially over the phone) remain low.

The three most common methods of data collection are mail surveys, face to face interviews and telephone surveys (Dillman, 1978). Each has inherent advantage. However when comparing the three, properly structured telephone surveys provide more control over data quality, collection speed and cost efficiencies. In addition, telephone surveys offer a researcher a means to combat on their greatest threats to data integrity, non response bias. Telephone response rate average 10-15% higher than the best conducted mail surveys (Frey, 1989).

Face-to-face surveys have the biggest response rate among all methods. By using this method, the rate of missing or incomplete answers and the possibility for misunderstanding
questions or answers is the lowest, but it is relatively expensive and slow in comparison with telephone or web surveys.

Mixed Methods Of Research

*CASE STUDIES*

The case study method is one of the research methods that use both qualitative and quantitative approaches (Bowling, 2000) it is also defined by Yin (2003: 13) as ‘an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident’. According to Eisenhardt (1989), the ‘case study as a research approach focuses on understanding the dynamics present within single settings’. Case studies can be explanatory, exploratory and descriptive (Yin, 2003). The approach can be used for conducting applied, problem solving research, developing new theory and testing existing theory (Sterns et al., 1998). Several and often complementary sources of data are used in case studies such as documentation, archival records, interviews, observations (direct and participant) and questionnaires (Eisenhardt, 1989; Yin, 2003). The case study approach is suitable for business studies such as conducting intensive study of one or a small number of business networks engaged in doing business with each other (Halinen and Tornroos, 2005). In addition it is used in several other disciplines such as sociology, political sciences and social work (Yin, 2003) as well as economics (Sterns et al., 1998; Roy et al., 2005) and sustainable development (Bond et al., 2001). Case studies can be used to build theories (Eisenhardt, 1989; Yin, 2003) and provide knowledge about delicate processes of interaction (Romm and Hsu, 2002). Case study research is pluralistic in that epistemology-positivistic, normative, and prescriptive types of knowledge all contribute to the overall approach (Sterns et al., 1998).

However, the use of case study approach has been challenged (Yin, 2003) and criticised for not being a scientific research method particularly from generalisation perspective and being situation specific (Dubois and Gadde, 2002; Romm and Hsu, 2002) thus undermining its external validity.

**Sampling**

Sampling a research population is essential, when a survey conducted, due to cost and time factors (Ghauri and Gronhaug, 2002: 112). A sample frame is defined as a ‘listing of units from which the actual sample will be drawn’ (Ghauri and Gronhaug, 2002: 112). However, finding or creation of sampling frame, (Sampling frams is the actual set of units frme which a sample has been drown : in the case of a simple randome sample . all units from the sampling fram have an equal chance to be drown and to occur in the sample which rightly matches to the target population of interest, is not easy.
Types Of Sampling

According to Ghauri and Gronhaug (2002: 113-114), sampling can be of following types:

1. Probability sampling

This type of sampling allows for statistical inferences, assessment of the amount of sampling error and there is known chances for each unit to be included. Examples of this type of sampling are:

- Convenience or accidental sample
- Judgement sample and
- Quota sample (for example small, intermediate and large firms)

According to Tashakori and Teddlie (1998, p75), most common types of probability sampling include simple random sampling, systematic random sampling, stratified random sampling, proportional sampling, non-proportional sampling, cluster random sampling and multistage cluster sampling.

Table 3.2: Types of Probability Sampling

<table>
<thead>
<tr>
<th>Type of sample</th>
<th>Description and sampling procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple random sampling</td>
<td>Every individual in a population has equal and independent chance of being selected for the study. The sample is obtained through selection by chance, a table of random numbers or computer generated random numbers.</td>
</tr>
<tr>
<td>Systematic random sampling</td>
<td>Based on the number needed in the sample, every nth person in the target population is selected for the sample.</td>
</tr>
<tr>
<td>Stratified random sampling</td>
<td>This is used when the proportion of subgroups (strata) are known in the population; selection is random but from each of these strata</td>
</tr>
<tr>
<td>Proportional sampling</td>
<td>The proportion of each subgroup within the sample is the same as the proportion of each subgroup within the population</td>
</tr>
<tr>
<td>Nonproportional sampling</td>
<td>Regardless of the proportions in the population, the sample includes an equal number of individuals from each of the subgroups. The results are generalisable to the subpopulations rather than to population as a whole. This sampling strategy is useful for populations in which some minority groups do not have a large enough proportion that can be represented if simple random sampling is used</td>
</tr>
<tr>
<td>Cluster random sampling</td>
<td>Already formed groups of individuals within the population are selected as sampling units. Because the group is the unit of selection, a relatively large number of groups must be selected. A sample of five randomly selected schools is not a true cluster random sample</td>
</tr>
<tr>
<td>Multistage cluster sampling</td>
<td>This combines cluster sampling technique with others. For example, first select clusters such as school districts, then within each cluster select individuals / schools randomly or with certain attributes similar or stratified samples</td>
</tr>
</tbody>
</table>

Source: adapted from Tashakkori and Teddlie (1998: 75)
2. Non-probability sampling

This type of sampling does not allow for valid inferences about population, evaluating extent of the sampling variation, error of estimation and are unrepresentative and easy to draw.

According to Tashakkori and Teddlie (1998: 75), most common types of nonprobability sampling include purposive sampling, sampling for homogeneity, sampling for heterogeneity, stratified nonrandom sampling, snowball or chain sampling, sequential sampling and convenience sampling. Description and sampling procedure about these is given in the following table.

Table 3.3: Types of Non-probability Sampling

<table>
<thead>
<tr>
<th>Type of sample</th>
<th>Description and sampling procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purposive sampling</td>
<td>Selection of individuals/groups based on specific questions/purposes of the research in lieu of random sampling and on the basis of information available about these individuals.</td>
</tr>
<tr>
<td>Sampling for homogeneity</td>
<td>Cases are selected such that they have the same equality and/or magnitude of the attribute. Regardless of the size of the sample and depending on the objectives of the study, cases might be selected that are extreme or deviant/outliers, have a high intensity of an attribute, or are average/typical on an attribute.</td>
</tr>
<tr>
<td>Sampling for heterogeneity</td>
<td>Cases are selected such that their combination provide the maximum heterogeneity on certain attributes (e.g., ethnicity, education) that are important to the research objective of the study. Usually at least one case is selected from each level of the attribute.</td>
</tr>
<tr>
<td>Stratified nonrandom sampling</td>
<td>This is similar to stratified sampling but in a non-random purposive, convenient manner. Case or cases are selected nonrandomly (volunteer, available, and so on) from each subgroup of the population under study. In sociological research, this is also known as 'quota sampling'.</td>
</tr>
<tr>
<td>Snowball or chain sampling</td>
<td>Select individuals on the basis of information obtained from others selected sample members or from other individuals. Because each new person has the potential to provide information regarding more than one other suitable case, the sample mushrooms as the study continues.</td>
</tr>
<tr>
<td>Sequential sampling</td>
<td>Start with a small sample and continue sampling until a desired level of certainty is achieved. In focus groups, for example, sampling stops when the new groups add little or no new ideas/themes to the ones already obtained in previous groups (saturation).</td>
</tr>
<tr>
<td>Convenience Sampling</td>
<td>Sampling is done on the basis of availability and ease of data collection rather than in terms of suitability based on research objectives/questions. These samples also include what is known as 'captive samples' (groups of individuals who are accessible to the investigator such as students in a class), 'volunteer samples', accidental samples and so on.</td>
</tr>
</tbody>
</table>
APPENDIX (G)

Entrance And Exit Policies

Based on a survey of US incubator managers, Lumpkin and Ireland (1988) identified three groups of screening criteria. A first group is labeled "experience of the management team" and contains management, marketing, technical and financial skills, experience and growth rate projection of the management team. The second group, "financial strength", includes profitability, liquidity, price earnings, debt and asset utilisation, personal investment of the management team and current size of firm. The written business plan, references from others, persistence, marketability of product/service, creativity, uniqueness of product/service and age of the management team are grouped under the denominator of "market and personal factors". They also observed that, in the late 1980s, a vast majority of the American incubators submitted their potential tenants to severe screening practices. Cluster analysis identified four types of incubators, each with a specific screening pattern. About 45.5% of the American incubators screened thoroughly on market and personal factors. This group obviously wants to create synergy between the internal capacities of the tenant (personal characteristics of the management team) and external opportunities in the market (market factors). A second cluster (15.2%) consists of no screening incubators. The third cluster (24.2%) had a strong financial emphasis. The last cluster (15.2%) screened mainly on personal factors.

A study of Kakati (2003) reveals that entrepreneur quality, resource-based capability and competitive strategy are the critical determinants of a start-up’s viability and achievement. The screening practice of the first cluster (thorough on market and personal factors) seems best to be able to distinguish between successful and unsuccessful starting enterprises.

Steffensen et al. (2000) do not directly focus on screening practices, but observe a difference between two types of spin-offs from the University of New Mexico’s (UNM) research centres: planned versus spontaneously occurring spin-offs. Planned spin-offs are initiated by the Research Centre and they are offered incubation facilities by the university. Spontaneous spin-offs are established with little encouragement from the research centre by an entrepreneur who identifies a market opportunity. The fact that only the planned spin-offs are incubated in the university indicates the presence of implicit screening practices.

Efficient screening procedures are vital for an incubator and Lumpkin and Ireland (1988) identified dimensions that play a role. The next question then becomes: who is in charge of the screening process? Hackett and Dilts (2004) state some incubator policy prescriptions, based on their literature review. They conclude that the complexity of the tenant
selection process impels an advisory board, both for economic (understanding of the market and new venture formation) and political (e.g. secure subsidies) reasons.

Although screening criteria have received more attention in the literature than most of the other individual components of the incubation process, these questions continue to be debated. Two methodologies have been developed. Lumpkin and Ireland (1988) employ cluster analysis to identify critical factors, while the U.S. Department of Commerce has developed constraint analysis for this purpose. The U.S. Department of Commerce has developed screening tools and computer simulation models that aid in the identification of new ventures with a high probability of achieving commercial success. These tools go through a three-stage process which seeks to determine first the attractiveness of the business a venture intends to enter, then the fit between the applicant and the business, and finally whether incubation is the best way to proceed.

Merrifield (1987) developed a series of "entrance criteria" for incubation candidates. First he asks about the attractiveness and "fit" of the business (i) "Is this a good business in which anyone should be involved?" and then (ii) "Is this a business in which [the applicant] organisation has the competence to compete?" If these questions are answered in the affirmative, then he asks the final question (iii) "what is the best method for entry and/or growth?" If market entry and growth can be advanced by incubator tenancy then the firm should join. Similarly, the (UK) Enterprise Panel (1996, cited in Kirby, 2003) concluded from an investigation of British Incubators that they are most effective in helping start-up businesses 'with high growth potential to succeed.' Given as most young businesses would (hopefully) claim to have 'high growth potential', how does an incubator manager discern which businesses have the highest potential? Or, more specifically, which businesses will best realise their high growth potential within an incubator?76

Applications to most established incubators may exceed available places (NBIA, 2002). Thus many incubators have in place an extended application and interview procedure wherein the entrepreneur's business idea and business plan are evaluated (Ibid). Typical considerations are (i) the businesses' suitability to the aptitudes and capabilities of the incubator type to which it is applying (ii) the profitability and growth potential of the business and (iii) the contribution to the local community. Clearly the specifics and relative weight of these considerations vary according to the particular incubator's sponsor, objectives and sector.

First, a business must "fit" with an incubator's particular sector niche (e.g. technology, manufacturing, targeted). In all cases (including mixed use) it is likely that the manager will seek to host a 'complementary' range of businesses which may be able to provide goods and

76 The current research (see Chapter 6) showed that Jeddah Business Incubator adopted four qualification criteria for admission and these were: Saudi national, resident in Jeddah, graduate from Saudi University and possession of license.
services to one another or potentially collaborate on R&D. This also has the benefit of enhancing "camaraderie" between businesses within the institution. Similarly, an incubator manager may seek out "anchor tenants" who are able to provide specialist services to other tenants. Occasionally (for-profit) incubators will take a reduced equity in anchor firms in exchange for services provided to other tenants (Barrow, 2001).

The application process itself typically begins with a written tenancy application. If the applicant meets with a broad set of pre-determined criteria, an interview with the incubator manager is scheduled. A further interview may be required with an Admissions or Review Board who would typically be made up of representatives from the sponsor organisation. As Garrity (2002) explains, the applicant’s business plan will be discussed at these meetings and the decision to accept or decline tenancy will be predominantly based upon this document.

The plan must also demonstrate how the business will be financed, - specifically whether it can be "self-financed" (e.g. from the entrepreneurs own funds, family or friends, or low-level unsecured borrowing) or whether it requires more significant start-up capital through bank loans or private investment (Garrity, 2002). Moreover, its eligibility to qualify for government and other public-body grants / loans will be assessed in this context of whether the start-up is financially viable.

Finally, the incubator will ‘want to see a full-time commitment from the entrepreneur’ (Garrity, 2002). The entrepreneur’s educational and professional qualifications and past experience (i.e. his or her CV) will also be a likely factor here.

Some incubators expect prospective clients to have fully developed business plans, whereas others require a less developed idea and offer business plan development assistance. (NBIA, 2006)

In the event that the business plan is deemed “incomplete” but demonstrates high potential, the business may be invited to join the incubator wherein the plan will be further refined with the help of incubator staff (NBIA, 2002).

Many incubators wish to encourage firms that play a role in, or “add value” to, the local community. This can take a number of forms. Clearly empowerment incubators specifically target local community projects, but any incubator can potential play an important role in regeneration, job creation, technology transfer etc.

We can therefore loosely summarize entry criteria as involving some or all of table 2.3

---

77 The business plan should show a clear demonstration of a market, meaning there are people who are ready, willing and able to buy the product or service. (Garrity, 2002)
Table 2.3: Incubator entry criteria

<table>
<thead>
<tr>
<th>Type of business</th>
<th>Business Plan</th>
<th>Community Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does it fit with incubator type?</td>
<td>What are the prospects for growth?</td>
<td>Does it &quot;add value&quot; to the local community?</td>
</tr>
<tr>
<td>Does it complement the &quot;mix&quot; of businesses within the incubator?</td>
<td>Is there a market for the product/service?</td>
<td></td>
</tr>
<tr>
<td>Can it offer specialist services to other tenants?</td>
<td>Is finance available?</td>
<td></td>
</tr>
</tbody>
</table>
**APPENDIX (I)**

Development Plans

Table 8: Expenditures During the Saudi Development Plans.

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Economic Resource Development</th>
<th>Human Resources Development</th>
<th>Social and Health Development</th>
<th>Infrastructure Development</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SR Billion (%)</td>
<td>SR Billion (%)</td>
<td>SR Billion (%)</td>
<td>SR Billion (%)</td>
<td>SR Billion (%)</td>
</tr>
<tr>
<td>First Plan (1970-74)</td>
<td>9.5</td>
<td>27.7</td>
<td>7.0</td>
<td>20.6</td>
<td>3.5</td>
</tr>
<tr>
<td>Second Plan (1975-79)</td>
<td>97.3</td>
<td>28.0</td>
<td>51.0</td>
<td>14.7</td>
<td>27.6</td>
</tr>
<tr>
<td>Third Plan (1980-84)</td>
<td>192.2</td>
<td>30.7</td>
<td>115.0</td>
<td>18.4</td>
<td>61.2</td>
</tr>
<tr>
<td>Fourth Plan (1985-89)</td>
<td>71.2</td>
<td>20.4</td>
<td>115.1</td>
<td>33.0</td>
<td>61.9</td>
</tr>
<tr>
<td>Fifth (1990-94)</td>
<td>34.1</td>
<td>10.0</td>
<td>164.6</td>
<td>48.0</td>
<td>68.0</td>
</tr>
<tr>
<td>Sixth Plan (1995-99)</td>
<td>48.2</td>
<td>11.5</td>
<td>216.6</td>
<td>51.5</td>
<td>87.5</td>
</tr>
<tr>
<td>Seventh Plan (2000-04)</td>
<td>41.7</td>
<td>8.5</td>
<td>276.9</td>
<td>56.7</td>
<td>95.8</td>
</tr>
</tbody>
</table>


**SUMMARY OF THE MAIN OBJECTIVES OF THE EIGHT DEVELOPMENT PLANS**

The First Development Plan (1970-1974)

Emphasized the Kingdom’s rapid transformation into a more ‘advanced nation by focusing on providing a modern infrastructure and basic government services such as water supply and electricity generation as well as expanding social services and developing human resources’ (Cordesman 2003: 344).

The Second Development Plan (1975 – 1979)

Involved over a ten-fold increase in expenditures over the first development plan, after the rise in oil prices following the 1973 embargo. As in the first plan, the emphasis was on infrastructure to enable the acceleration of socio-economic development. The major areas of infrastructure development were:

1. Transport, electricity, water and housing
2. conservation and development of hydrocarbon resources
3. the modernization of the Kingdom’s ‘administrative structure.’

4. the support of the private sector, establishing credit funds and policies aimed to support private sector activity

**The Third Development Plan (1980 – 1984)**

The third plan almost doubled the expenditure of the second. With much ‘infrastructure’ in place, the Kingdom now needed to make ‘more efficient use of foreign labour’ (Cordesman 2003: 346). It focused on making structural changes in the economy by defining oil and gas production levels in ways that would maintain national resources, continuing to build hydrocarbon industries and completing infrastructure projects (Ibid).


The fourth plan saw a major shift in focus. A priority was to re-structure the economy to allow the private sector to play a role in the development process, and a major emphasis was placed upon industrial diversification. Population growth was increasingly recognised as a problem, hence the 33% allocation to human resource development.


This plan was massively influenced by the 1990 Gulf War and the realisation that oil prices were increasingly volatile. Again, the private sector was encouraged to ‘provide services in areas where the government had previously provided services’ (Ibid: 347). Increasing the ‘technology base’ was also a priority. Overall, the plan saw a downward shift in government spending and a further decline in infrastructure development.


By the sixth plan, Human resources development rose to 51.5% of the total budget. Focusing on private enterprise and the non-oil sector the plan included the following macroeconomic strategies:

- a shift from government expenditures from consumption and current operating expenditures to investment
- a steady increase in opportunities for the private sector through the gradual and selective use of alternative financing and privatisation initiatives.
- Mobilization of the private sectors financial assets by broadening the domestic capital market
- Reductions in the number of low-skilled foreign workers and increased capability of the Saudi workforce in order to improve productivity.

As discussed above, the plan continues to emphasise the need to address the Kingdom’s increasingly urgent human resources problems. Macroeconomic objectives include:

- Diversify the economy by generating a non-oil sector growth of 4.01% per year, expanding the role of the non-oil sector from 68.4% to 71.6% by 2004. ‘Much of this growth should be targeted at the manufacturing sector, rather than the service sector’ (Cordesman 2003: 351).

- Enhance the private sectors involvement in the petroleum industries.

- Increase the role the Saudi Credit Bank plays in investing in small businesses

- Increase the share of national manpower in total employment from 44.2% to 53.2% and replace 488,600 workers with Saudi nationals.

- Develop human resources and the value of Saudi nationals through programmes that expand higher education, with an increased emphasis on on-the-job training, by increasing technical school enrolment from 33,000 to 55,000.

- Develop a national manpower database to match individuals with appropriate jobs for their level of qualification

Like other plans, the Seventh stresses the importance of a continued drive toward privatisation. There is an urgently growing need for the level of foreign investment and private sector growth that can alleviate the government’s capital budget deficit (Cordesman 2003: 354).

The Eighth Development Plan (2005 – 2010)

The Eighth Development plan saw a continuation, and relative acceleration, of the SME policies introduced by the Seventh plan. Notably, the role of the Saudi Industrial Development Fund (SIDF) was expanded to finance more loans to the SME sector. The Fund now operates a special loans programme which works alongside private Saudi banks to provide an equal distribution of SR100 million each (£16 million), which will be disbursed by the SIDF (Radwan, 2005: 199). At the same time, the Saudi Credit Bank is to expand the scope of its SME lending, raising the current lending ceiling to SR 200,000 (£32 million) per firm (Radwan, 2005: 199).

The objectives and strategic principles of the Eighth Development Plan comprise the creation of an adequate "enabling environment", which enhances the activities of the private sector and encourages it to implement more investments and to play a leading role in the economic development process. Given the constraints, which impede the development of the private sector, it deems imperative to (1) support private sector development through the creation of an appropriate investment climate, (2) enhance the role of the commercial banks in supporting the development activities of the private sector, (3) develop the capital market, (4)
re-activate the privatization program, and give more opportunities to SMEs to contribute to the development of the economy (Phillai, 2006)
APPENDIX (K)

Questionnaires:

Small and Medium Sized Enterprises in the Industry and Technology Sectors

This questionnaire is part of my Doctoral research at the University of Surrey in England. My thesis looks into the prospects for, and suitability of, the introduction of business incubators in developing economies. Its particular focus is on the potential introduction of business incubators in Saudi Arabia. This questionnaire is trying to find out about the current situation of Saudi technology and industrial SMEs, the business climate in Saudi Arabia, the support facilities that are available and the attitudes towards and knowledge of business incubation processes.

The results will be treated in strictest confidence and analysed on a non-personal aggregate basis. They will be used solely for academic purposes, though clearly the findings could have practical significance for the introduction of incubators in developing economies in general and Saudi Arabia in particular. Should you wish to know more, please do not hesitate to contact me (amasa101@hotmail.com) or my supervisor, Professor David A. Kirby (D.Kirby@surrey.ac.uk). Thank you for your support.

ABDULATIF M. ALSHEIKH

COMPANY NAME ________________________

ADDRESS ________________________________

YOUR DETAILS

YOUR NAME: ______________________

YOUR AGE: ________________

JOB TITLE: ______________________

HIGHEST EDUCATIONAL QUALIFICATION ACHIEVED:

☐ DOCTORATE
☐ MASTERS
☐ BACHELORS
☐ TERTIARY
☐ HIGH SCHOOL
☐ OTHER ______________________

370
YOUR POSITION:

☐ OWNER
☐ PARTNER
☐ DIRECTOR AND SHAREHOLDER
☐ DIRECTOR, BUT NON SHAREHOLDER
☐ OTHER, PLEASE SPECIFY ____________

YOUR COMPANY

IMPORTANT NOTE: IF YOU DO NOT KNOW THE PRECISE FIGURES PLEASE MAKE AN ESTIMATE

TYPE

1. Please Describe the Business’ Main Area of Activity ____________

AGE

2. HOW LONG AGO WAS YOUR BUSINESS FOUNDED?

☐ LESS THAN ONE YEAR
☐ LESS THAN TWO YEARS
☐ LESS THAN FIVE YEARS
☐ LESS THAN TEN YEARS
☐ MORE THAN TEN YEARS

OWNERSHIP

3. How Would You Describe the Ownership Structure of Your Business?

☐ OWNER-MANAGED
☐ FAMILY-OWNED
☐ INDEPENDENT LTD
☐ GROUP SUBSIDIARY
☐ PLC

EMPLOYEES

4. In Total, How Many People Work in the Business? (Full Time Equivalents) ________

5. How Many Native Saudis Work in the Business? (Full Time Equivalent) ________


7. Please List the Educational Qualifications of the Five Most Senior Members of the Business.
   Then, Please Describe the Subject Area of their Final Qualification.

<table>
<thead>
<tr>
<th>JOB TITLE</th>
<th>HIGH-SCHOOL DIPLOMA</th>
<th>BACHELORS DEGREE</th>
<th>GRADUATE DEGREE</th>
<th>DOCTORATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. How are Your Sales Geographically Distributed by Percentage

- Local (within 80 km of enterprise)
- Regional (within 300 km, exclude local)
- National (within Saudi Arabia, exclude local and regional)
- International

Total: 100%

9. Does Your Business Currently Have Access to the Following:

- TELEPHONE
- FAX
- DIAL-UP INTERNET
- ADSL OR HIGH-SPEED INTERNET

10. Do You Currently Have a Website?

- Yes
- No

11. Do You Have Secretarial Support?

- Yes
- No

12. When the company was formed, which of the following sources of finance were used? Please rate the impact of each of the sources used by ticking the boxes below.

<table>
<thead>
<tr>
<th>Source</th>
<th>Overall impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directors' own funds</td>
<td></td>
</tr>
<tr>
<td>Parent Company</td>
<td></td>
</tr>
<tr>
<td>Private investors (including “business angels”)</td>
<td></td>
</tr>
<tr>
<td>Family and/or friends</td>
<td></td>
</tr>
<tr>
<td>Saudi Credit bank loan</td>
<td></td>
</tr>
</tbody>
</table>
13. Please describe any problems encountered in raising capital for the business

14. Before establishing your business, did you do any of the following:

- Attend workshops or seminars related to the business
- Produce a feasibility Study
- Produce a Business Plan
- Have a marketing plan

15. During the last five years, did your business introduce any products and/or processes that were:

<table>
<thead>
<tr>
<th>Product(s)</th>
<th>Process(es)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entirely new to your firm?</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>Significantly improved to your firm?</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>Entirely new to your market?</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>Significantly improved to your market?</td>
<td>□ Yes □ No</td>
</tr>
</tbody>
</table>

16. Approximately, how was your turnover last year distributed between products that were:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New to your firm</td>
<td></td>
</tr>
<tr>
<td>Significantly improved</td>
<td></td>
</tr>
<tr>
<td>Unchanged or only marginally modified</td>
<td></td>
</tr>
</tbody>
</table>

Total turnover in last year: 100%
17. If you didn’t improve or develop any new products or processes, please give a reason you:

18. Please indicate your sources of R&D and rate their overall impact by ticking the appropriate boxes:

<table>
<thead>
<tr>
<th>Source</th>
<th>Overall impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Your own company</td>
<td>High Medium Low</td>
</tr>
<tr>
<td>□ Your suppliers</td>
<td>High Medium Low</td>
</tr>
<tr>
<td>□ Other companies</td>
<td>High Medium Low</td>
</tr>
<tr>
<td>□ Parent company</td>
<td>High Medium Low</td>
</tr>
<tr>
<td>□ Consultancies</td>
<td>High Medium Low</td>
</tr>
<tr>
<td>□ Universities/research institutes</td>
<td>High Medium Low</td>
</tr>
<tr>
<td>□ Other, please specify:</td>
<td>High Medium Low</td>
</tr>
</tbody>
</table>

PUBLIC AND PRIVATE SUPPORT

19. Do you feel that you are well informed about the range of government finance support available to SMEs?
   □ Yes   □ No

20. Can you name any of the financial support programmes that you have heard about?
   □ Yes   □ No
   If Yes, please describe_____________

21. Have you applied for a government grant in the last three years?
   □ Yes, one
   □ Yes, more than one
   □ No

23. Have you received one or more government grants in the last three years?

24. How did you hear about these grant(s)?_________

25. Please rate the following features of the government grant schemes that you have applied for?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publicity about these schemes</td>
<td>□</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simplicity of application system</td>
<td>□</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed of application process</td>
<td>□</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding of SME needs</td>
<td>□</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
26. If you rated any of the features above as “Poor” or “Very Poor”, please explain why:

22. Have you applied for a government loan in the last three years?
   - Yes
   - Yes, more than one
   - No - If No, go to question

26. Have you received one or more government loans in the last three years?
   - Yes
   - No - If No, go to question

24. How did you hear about these grant(s)?

25. Please rate the following features of the government grant/loan schemes that you have applied for:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Excellent</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publicity about these schemes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simplicity of application system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed of application process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding of SME needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

26. If you rated any of the features above as “Poor” or “Very Poor”, please explain why:

27. Are you a member of a Chambers of Commerce?
   - Yes
   - No

Irrespective of membership, have you ever visited the chamber of commerce small business support unit?
   - Yes – physically
   - Yes – on the internet
   - No
28. Have you ever attended workshops, seminars or training programmes held by the Chambers of Commerce?

☐ Yes ☐ No

**Improving support**

29. What, in your opinion, could the Government do to better support SMEs?

[Narrative space]

**NETWORKS AND EXTERNAL PARTNERS**

30. Have you ever undertaken R&D in partnership with a University or research institute?

☐ Yes ☐ No

If Yes, please name which one(s) below.

31. To what extent do you agree with the following statements describing your overall experience with joint R&D projects with University/research institute(s)?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brought in fresh point of view</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brought in expertise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced development time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost-effective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other comments:

32. How did you get in contact with the University/research institute(s)?

33. Irrespective of whether you have conducted R&D projects with Universities/research institutes, please indicate to what extent you agree that the following are legitimate barriers to these kinds of partnerships:

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't need outside help</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No time to investigate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too expensive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>They were not receptive</td>
<td></td>
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<tr>
<td>Bad experience in the past</td>
<td></td>
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<tr>
<td>Couldn't find suitable advice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didn't know any advice was available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of commercial secrets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issues of ownership and intellectual property</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, please specify below</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
34. Have you ever undertaken R&D jointly with other business(es)? □ Yes □ No - If No, please jump to question 34

35. To what extent do you agree with the following statements describing your overall experience with joint (e.g., R&D) projects with other business(es)?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brought in fresh point of view</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brought in expertise</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced development time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost-effective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other comments:

36. Irrespective of whether you have conducted joint (e.g., R&D) projects with other business(es), please indicate to what extent do you agree the following are legitimate barriers to this kind of partnerships:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t need outside help</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No time to investigate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Too expensive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They were not receptive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Bad experience in the past</td>
<td></td>
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<tr>
<td>Couldn’t find suitable advice</td>
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<td></td>
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</tr>
<tr>
<td>Didn’t know any advice was available</td>
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<td></td>
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<tr>
<td>Loss of commercial secrets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issues of ownership and intellectual property</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, please specify below:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

INCUBATORS

37. Do you know what a business incubator is? □ Yes □ No

38. Do you agree or disagree with the following statements about business incubators:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>They are designed to help all sizes of businesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The incubated businesses are always owned by the incubator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They typically provide secretarial support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They reduce start-up costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities (e.g., office equipment, meeting rooms) are often shared in an incubator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going into an incubator is a more expensive way of starting a business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They offer reduced, or sometimes free rents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They usually offer training</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

377
Incubated businesses can stay in the incubator as long as they like
Any business can join an incubator as long as it’s willing to pay

Read the following definition:
"Here is a brief definition of a business incubator. Business incubators are designed to help small businesses in the start-up phase, they are usually a property with small work units which provides an instructive and supportive environment to entrepreneurs at start-up during the early stages of business. Typically a number of new and growing businesses operate under one roof with affordable rents, shared support services, business development services and office equipment, with each business having equal access to a wide range of professional, technical and financial programmes."

39. If the university or local municipality launched an incubator now, would you be interested in applying?

☐ Yes
☐ No
☐ Don’t know

40. What do you think the main benefits to your current business of joining an incubator would be?

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Very important</th>
<th>Quite unimportant nor unimportant</th>
<th>Quite unimportant</th>
<th>Very unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help with financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help with training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help with marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help with business planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help with management skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contacts with other businesses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help from mentors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access to business premises</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared facilities (e.g. secretarial, phone internet, meeting rooms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

41. Are you aware that a business incubator is currently under construction in the Eastern Province?

☐ Yes
☐ No

If yes, please describe what you have heard

42. Do you have any other comments or suggestions to make about support for industry and technology-based SMEs and/or the concept of business incubation that we have not covered in this questionnaire?
43. Do you have any comments that you would like to make about this questionnaire?

Thank you for taking part in the survey.
QUESTIONNAIRES:

Final Semester Business And Science Students

This questionnaire is part of my Doctoral research at the University of Surrey in England. My thesis looks into the prospects for, and suitability of, the introduction of business incubators in developing economies. Its particular focus is on the potential introduction of business incubators in Saudi Arabia. This questionnaire is attempting to find out about the current nature of the relationship between universities and business, the experiences of students and staff in terms of their involvement with business and the attitudes of academics towards, and knowledge of, business incubation.

The results will be treated in strictest confidence and analysed on a non-personal aggregate basis. They will be used solely for academic purposes, though clearly the findings could have practical significance for the introduction of incubators in developing economies in general and Saudi Arabia in particular. Should you wish to know more, please do not hesitate to contact me (amasal01@hotmail.com) or my supervisor, Professor David A. Kirby (D.Kirby@surrey.ac.uk). Thank you for your support.

Abdulatif M. Alsheikh

University ________

YOUR DETAILS

Your name ________

Date of graduation ____________

Your degree ________________

Department/Faculty ________________

FUTURE PLANS
1. What do you expect to be doing in 12 months time?

☐ Employed in the public sector
☐ Employed in a large (national or international) private sector company
☐ Employed in a small, local firm in the private sector
☐ Self employed, running my own business
☐ Don’t know

2. If you were given a choice of a career in either the public or private sectors, which would you prefer?

☐ Public (government) ☐ Private

Please give any reasons for your choice

3. Do you currently have any offers of employment for when you graduate?

☐ Yes ☐ No  If yes, please give details ______________

4. Are you currently engaged in any paid employment?

☐ Yes ☐ No  If yes, please give details of the position ______________

5. How likely is it that you will start your own business in the next five years?

☐ Very likely
☐ Likely
☐ Neither likely nor unlikely
☐ Unlikely
☐ Very unlikely

6. If you were going to set up a business in Saudi Arabia, how would you rate the following problems in terms of importance?

<table>
<thead>
<tr>
<th>Very important</th>
<th>Quite important</th>
<th>Neither important nor</th>
<th>Quite unimportant</th>
<th>Very unimportant</th>
</tr>
</thead>
</table>

381
7. To what extent do you agree with the following statements about starting up a business?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The start up costs are too high</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is difficult to obtain financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is difficult to find suitable premises</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business facilities (e.g. secretarial support, communications, office equipment) are too expensive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is important that people involved in the business receive proper training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New businesses need mentoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is important to have a marketing plan before starting the business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is important to have a business plan before starting the business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is important for a new business to make contacts with other businesses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. During your university studies have you ever:

**Learned about writing a Business plan**

YES □ NO □

**Written a Business plan**

YES □ NO □

**Learned about writing a Marketing plan**

YES □ NO □

**Written a Marketing plan**

YES □ NO □
9. Have you ever spent time with a commercial organization (e.g. an internship) as part of your University course?

☐ Yes ☐ No

If no, go to question 12

10. In terms of your future intentions, did you find your most recent commercial experience:

☐ Very helpful
☐ Quite helpful
☐ Neither helpful nor unhelpful
☐ Quite unhelpful
☐ Very unhelpful

Please give details of the business ______________

Please give details of your position within the business ______________

How long was your placement with the business? _____________

11. Do you know what a business incubator is?

☐ Yes ☐ No

12. Do you agree or disagree with the following statements about business incubators:

They are designed to help all sizes of businesses
The incubated businesses are always owned by the incubator
They typically provide secretarial support
They reduce start-up costs
Facilities (e.g. office equipment, meeting rooms) are often shared in an incubator
Going into an incubator is a more expensive way of starting a business
They offer reduced, or sometimes free rents
They usually offer training
Incubated businesses can stay in the incubator as long as they like
Any business can join an incubator as long as it's willing to pay

☐ Agree ☐ Disagree

READ THE FOLLOWING DEFINITION:

"Here is a brief definition of a business incubator. Business incubators are designed to help small businesses in the start-up phase, they are usually a property with small work units which provides an instructive and supportive environment to entrepreneurs at start-up during the early stages of business. Typically a number of new and growing businesses operate under one roof with affordable rents,"
shared support services, business development services and office equipment, with each business having equal access to a wide range of professional, technical and financial programmes."

13. If the University or local municipality launched an incubator before you graduated, how would it affect your attitudes towards starting a business?

- [ ] Much more Enthusiastic
- [ ] More Enthusiastic
- [ ] Neither more enthusiastic nor unenthusiastic
- [ ] Less enthusiastic
- [ ] Much Less enthusiastic

14. What do you think the main benefits to you of joining an incubator would be?

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Very important</th>
<th>Quite unimportant</th>
<th>Neither important nor unimportant</th>
<th>Quite unimportant</th>
<th>Very unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help with financing</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Reduction of start-up costs</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Help with training</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Help with marketing</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Help with business planning</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
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<td>[ ]</td>
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</tbody>
</table>

15. Do you have any other comments or suggestions to make about your future plans, experiences and knowledge of business and the concept of business incubation that we have not covered in this questionnaire?

16. Do you have any comments that you would like to make about this questionnaire?

Thank you for taking part in the survey.
QUESTIONNAIRES:

Business Academics

This questionnaire is part of my Doctoral research at the University of Surrey in England. My thesis looks into the prospects for, and suitability of, the introduction of business incubators in developing economies. Its particular focus is on the potential introduction of business incubators in Saudi Arabia. This questionnaire is attempting to find out about the current nature of the relationship between universities and business, the experiences of students and staff in terms of their involvement with business and the attitudes of academics towards, and knowledge of, business incubation.

The results will be treated in strictest confidence and analysed on a non-personal aggregate basis. They will be used solely for academic purposes, though clearly the findings could have practical significance for the introduction of incubators in developing economies in general and Saudi Arabia in particular. Should you wish to know more, please do not hesitate to contact me (amasa101@hotmail.com) or my supervisor, Professor David A. Kirby (D.Kirby@surrey.ac.uk). Thank you for your support.

Abdulatif M. Alsheikh

University

YOUR DETAILS

Your name

Job Title

Department/Faculty

Qualifications (please tick all achieved)

☐ Doctorate
☐ Masters of Business Administration

☐ Masters of Science

☐ Masters of Art

☐ Bachelor’s degree

Professional qualifications (please list) ______________________________

RESEARCH

1. Have you undertaken research in the last five years? ☐ Yes ☐ No If No, please go to the next section.

2. Please describe the main area of your research ______________________________

3. What was the source of your research funding? (please tick any that apply)

☐ By the University

☐ By a government organization

☐ By Private Business

☐ By a national company

☐ Other public grant

☐ Other __________

4. Has any of your research been conducted in association with a commercial organization? ☐ Yes ☐ No

If yes, please describe the nature of your association ________________

5. In the course of your research, have you developed any new technologies

☐ Yes ☐ No. If Yes, please give details ________________

6. In the course of your research, have you patented any technologies

☐ Yes ☐ No. If Yes, please give details __________________
7. Have you ever licensed any of these technologies □ Yes □ No. If Yes, please give details

8. In the course of your research, have you developed any new businesses processes
□ Yes □ No. If Yes, please give details

9. In the course of your research, have you patented any businesses processes
□ Yes □ No. If Yes, please give details

10. Have you ever licensed any of these businesses processes
□ Yes □ No. If Yes, please give details

11. Have you ever created a new venture to commercialise your research?
□ Yes □ No. If Yes, please give details

12. Have you ever been involved in any research involving the support of Small or Medium Sized Enterprises □ Yes □ No.

If yes, please describe your research

Research collaborations and funding sources give some indication of the interaction between business, government and academia. As discussed at length by Hoesler (2003) this relationship is critical in creating successful (or unsuccessful) environments for incubators.

THE UNIVERSITY AND BUSINESS

13. In the past 12 months, has the university held any events themed around SMEs?
□ Meetings
□ Seminars
Conferences

Other, please describe ____________________

No Events

14. How do you rate the University's relationships with local businesses:

- Extremely Good Relationship
- Quite Good relationship
- Neither Good nor Poor
- Quite Poor relationship
- Extremely Poor Relationship
- Don't know

15. How do you rate the University's relationships with national businesses:

- Extremely Good Relationship
- Quite Good relationship
- Neither Good nor Poor
- Quite Poor relationship
- Extremely Poor Relationship
- Don't know

16. How do you rate the University's relationships with international businesses:

- Extremely Good Relationship
- Quite Good relationship
- Neither Good nor Poor
- Quite Poor relationship
- Extremely Poor Relationship
- Don't know

17. Do you think that the current relationship between your University and business is satisfactory?
If No, can you suggest any ways in which the relationships between your University and business could be improved?

These are more direct questions concerning the relationship between academia and business (as above).

18. Do you agree that the University should help and encourage its staff to launch commercial ventures.

☐ Strongly Agree
☐ Agree
☐ Neither agree nor disagree
☐ Disagree
☐ Strongly Disagree
☐ Don’t know

19. Do you agree that the University should help and encourage its students to launch commercial ventures.

☐ Strongly Agree
☐ Agree
☐ Neither agree nor disagree
☐ Disagree
☐ Strongly Disagree
☐ Don’t know

TRAINING AND EDUCATION

20. During your teaching in the past year, have you ever asked your students to create:

Business plans: ☐ Yes ☐ No
Marketing plans ☐ Yes ☐ No
21. During the research for their dissertations, are final semester students encouraged to undertake scientific research?

☐ Encouraged
☐ Neither encouraged nor discouraged
☐ Not encouraged
☐ Don't know

22. During the research for their dissertations, are final semester students encouraged to undertake commercial research?

☐ Encouraged
☐ Neither encouraged nor discouraged
☐ Not encouraged
☐ Don't know

23. What would you say was the approximate percentage of students who undertook commercial research ______
scientific research____
other research _____
no research ____

24. Do you agree that business students in their final semester have enough knowledge about business to launch their own businesses immediately upon graduation?

☐ Strongly Agree
☐ Agree
☐ Neither agree nor disagree
☐ Disagree
☐ Strongly Disagree
☐ Don’t know

25. Do you agree that science students in their final semester have enough knowledge about business to launch their own businesses immediately upon graduation?

☐ Strongly Agree
Agree
Neither agree nor disagree
Disagree
Strongly Disagree
Don’t know

As discussed in the focus groups, there is a danger in Saudi Arabia that graduates are not exposed to sufficient practical and commercial knowledge and experience before leaving University. The tendency to focus upon theoretical instead of practical/commercial dissertations is seen as a particular problem.

**POLICY MAKING**

26. Have you participated in any government-sponsored discussions towards SME policy.
   - Yes □ No. If Yes, please give details

27. Have you ever participated in government discussions involving economic development?
   - Yes □ No. If Yes, please give details (including year)

28. In the past year, have you participated in any government events?
   - Forums:
     - Yes, as a speaker □ Yes, as a guest □ No.
   - Workshops:
     - Yes, as a speaker □ Yes, as a guest □ No.
   - Please give details of any events attended

Do you know who funded the event(s)?
   - SMEs

29. How do you rate the importance of the following roles performed by SMEs
Overall importance

<table>
<thead>
<tr>
<th>Role</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversifying the economy</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Helping reduce unemployment</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Developing new technologies</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Helping regional development</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

30. What, in your opinion is the single most important of the above roles? _______

These questions are designed to see whether academics share the same concerns as the government development plans.

INCUBATORS

31. Do you know what a business incubator is?

☐ Yes ☐ No ☐ Not sure

32. Do you agree or disagree with the following statements about business incubators:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Disagree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>They are designed to help all sizes of businesses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The incubated businesses are always owned by the incubator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They typically provide secretarial support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They reduce start-up costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities (e.g. office equipment, secretarial support) are often shared in an incubator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Going into an incubator is a more expensive way of starting a business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They offer reduced, or sometimes free rents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They usually offer training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incubated businesses can stay in the incubator as long as they like</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any business can join an incubator as long as it’s willing to pay</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BUSINESS INCUBATOR DEFINITION:**

“Business incubators are designed to help small businesses in the start-up phase, they are usually a property with small work units which provides an instructive and supportive
environment to entrepreneurs at start-up during the early stages of business. Typically a number of new and growing businesses operate under one roof with affordable rents, shared support services, business development services and office equipment, with each business having equal access to a wide range of professional, technical and financial programmes.”

33. If the University or local municipality launched an incubator, how would it affect your attitudes towards becoming involved in business activities?

☐ Much more Enthusiastic
☐ More Enthusiastic
☐ Neither more enthusiastic nor unenthusiastic
☐ Less enthusiastic
☐ Much Less enthusiastic

34. Would you be interested to participate in an incubator programme if the university launched one now?

☐ Very Interested
☐ Interested
☐ Neither interested nor uninterested
☐ Uninterested
☐ Very uninterested

35. Do you expect to be involved in an incubator programme at some point

☐ in the near term (the next 12 months)
☐ in the medium term (next 10 years)
☐ in the long term (10 years+)
☐ never
☐ don’t know

36. If an incubator was based at your University do you think it should be open to:

☐ Only current staff and students
☐ Both current and former staff and students
37. If an incubator was based at your university do you think it should incubate general (for any type small business) or technological (only for technology based businesses)?

☐ General
☐ Technological
☐ Don’t Know

38. In order for the incubator to be a success, what do you think should be the minimum educational level of incubatees?

☐ Doctorate
☐ Masters
☐ Bachelors
☐ High School

39. How would you expect any profits from an incubator to be divided between the university and the incubated businesses?

Percentage to university ________

Percentage to incubatees ________

40. Do you think the incubator should be publicly or privately funded?

☐ Public
☐ Private
☐ Both

41. Are there any particular organizations or businesses you would expect to be involved in an incubator based at your University? Please name them
42. Are you aware that a business incubator is currently under construction in the Eastern Province?

☐ Yes

☐ No

If yes, please describe what you have heard? ____________________

And, what is your reaction to this information? ____________________

43. Do you have any other comments or suggestions to make about the relationship between business and academia and the concept of business incubation that we have not covered in this questionnaire?

________________________________________________________________________

44. Do you have any comments that you would like to make about this questionnaire?

________________________________________________________________________

Thank you for taking part in the survey.
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