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Shaping the Competition and Building Competitive Advantage in the Global Telecommunication Industry: The Case of British Telecommunications Plc

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Abstract:

Our paper investigates the drivers that shape the global telecommunication industry, and the sources of competitive advantage for the traditional telecommunication operators. The analysis is based on a case study of *British Telecommunications Plc.* (*BT*) and the co-operative relationships formed by the company in response to the increasingly dynamic and competitive environment.

A detailed chronology of the co-operative relationships and business networks formed by *BT* is provided to illustrate the diversity and complexity of strategic responses to globalisation process in the sector. We investigate the key motives that have driven *BT* in its choices of partners and collaboration agreements, and how the company has repositioned itself for the growing demand of value-added services in communications.

Introduction

The demand for telecommunication services has increased rapidly during the last decade, particularly in the areas of mobile telephony, international calls, and business data services. This global demand is very much triggered by the globalisation of business operations across all industries, and the associated with it labour, capital and resource mobility. At national level the increasing demand for information and communication services comes along with changes in life style and living standards of people.

The primary drive for growth in the telecommunications and the information technology sectors is also associated with the speed of new technology implementation, which extends the market potential by introducing new services, and developing new capabilities to key players, as well as reducing their costs. Additional factors affecting the competition and growth in the sector, are the world-wide de-regulation and privatisation, and the government efforts to change the monopoly position of the national communication carriers.

Most of the investments in R&D in the sector lead to convergence of technologies that create multiple and adjacent markets. The convergence also has bridged the boundaries between separate markets such as computing, communication, and media content. The new 'digital' value chain across the three sectors is in its making, according to Shillingford (1999). The national telecommunication carriers are on one side the main beneficiaries of this growth, and on the other – their strategic monopoly position is challenged not only by governments, but also by new market entries in new emerging and technologically connected market segments. Deregulation facilitates new entrants to obtain a licence and to launch new services, and this fuels further competition that reshapes the industry.

British Telecommunications PLS (BT) is within the group of the largest national telecommunication carriers with a global reach trying to reposition itself and to protect its market. This paper examines the strategic manoeuvres by *BT* in response to the drivers for globalisation, and the shifting boundaries of the market place. The emergence of new parallel markets such as for mobile communications, and for digital data services pose a question for the sources of competitive advantage, and the 'employment' of intangible resources such as long-term business relationships and co-operative alliance formations.

There is a current belief that the competitive advantages of firms derive mainly from their core competencies. Our analysis of the telecommunication sector shows that firms are building competitive advantage stretching beyond their core business activities, and in areas of growth associated with new market segments of the global information sector. The strategic behaviour by *BT* also shows the tendency of new competence building through strategic alliances and long-term collaborations.

The Complexity of the Telecommunications Industry and the Emergence of Multiple and Adjacent Markets

The boundaries of the traditional and mature industries usually are identified by the Standard Industrial Classification (SIC) code. Problems of diversification are dealt with within the boundaries of the industry. The telecommunication sector is one example when such an approach is not appropriate. The boundaries of the industry are defined to a greater extent not by the firms, but by the product/service markets that they supply. There are eight key market segments: *residential* vs. *business* data telecommunications; *voice* vs. *electronic* data transmission; *national* vs. *international* communications; *fixed-line* vs. *cellular* services. There is a strong overlap already between these markets even though turnover and growth is very much evaluated separately for each segment. The sources of competitive advantage, however, derive from different technological and structural factors, specific for each segment. Large national carriers such as *BT*, face the challenge to develop multiple strategies for each market segment.

The core of the telecommunication industry is in the communication and information transmission, and this makes it a backbone for the entire global information sector. The structure of the industry is evolving along the line of four elements: *hardware*, *communication networks*, *network management systems*, and *service content*. The core sub-sector of communication networks has evolves as three parallel markets: *terrestrial* networks, *cellular* networks, and s*atellite* networks. Yet, these traditional infrastructure providers together with the hardware manufacturers are expected in the future to control only about 10% of the total value added in the entire sector (Knetsch, et.al., 1999). It is not surprising therefore, that the established market players will seek to move to new market segments with high growth potential, such as mobile communications, digital data transmission, and value added services (VAS).

Another description of the telecommunication industry includes three elements only: *equipment manufacturers* (producing various hardware devises), *network operators* (managing the infrastructure and operations of communication networks), and value added *service providers* (or designers and re-sellers of communication content) (van-der-Vlies, 1996). According to Knetsch, et.al. (1999), the latter segment is where the future growth of the industry lies. It is expected that the shift in revenue is towards content providers (expected

to control about 45% of the total value-added in the industry), and the firms engaging in customer operations and billing (to control another 45% of the total value added).

If we consider the telecommunication operators and service providers as the core of the telecommunication industry, there are a number of other sectors that are closely linked, such as: electronic equipment manufacturers, cable manufacturers, satellite manufacturers, dry battery manufacturers, and electronic components manufacturers. There are already established close links and formal business networks through long-term contracts, and vertical integration between firms in all these sectors and the main telecom infrastructure providers. The formal boundaries of the telecommunication industry therefore are outlined in Table 1.

Table 1. *Related Sub-sectors Within the Telecommunication Industry**

1623	Water, sewer, and utility lines
3577	Computer peripheral equipment
3661	Telephone and telegraph apparatus
3663	Radio and TV communication equipment
3669	Communications equipment
3674	Semiconductors and related devices (part of SIC -367 electronic components and accessories)
3679	Electronic components
3692	Primary batteries, dry and wet
3812	Search and navigation equipment
4812	**Radio telephone /cellular communications, paging (part of SIC 48 - Communication)**
4813	**Telephone communications**
4822	**Telegraph & other communications**
4832	**Radio broadcasting stations**
4833	**Television broadcasting stations**
4841	**Cable services**
4899	**Communication services**
7374	Data preparation and processing services
7375	Information retrieval services

* The traditional telecommunication sector evolved from the SIC-48. This table does not include the satelite manufacturers, probably located under space research and technology (SIC-9661), or under government funding projects (SIC-98) and Nonclassifiable Establishments (SIC-99).

Each of these sub-sectors has at present a different level of competition, and is exposed to different sets of technological and regulatory factors. One of the distinctive features of the large national telecommunication companies is that they have operations in most of these industry sub-sectors, and the former market leaders are exposed to severe competition by all of them. The strategic response of a company such as *BT* is an indicator of how large former telecom monopolies reposition themselves in the fast changing home and global market environment.

Deregulation of the Global Telecommunication Market

The deregulation of telecommunication services has made the home market conditions in many countries more competitive. The pursuit of overseas sales and operations by national carriers, however, is determined simultaneously by ‘pull-factors’ such as international

business opportunities for expansion, and by 'push-factors' such as home market competition. The process started in 1984 with the anti-trust action of the US Government, the breaking of *AT&T* – the US monopoly in the telecommunications - into 7 regional operating companies (RBOC's or baby Bells), and *AT&T* as the main long distance operator and equipment manufacturer. Subsequently, the industry was regulated by the 1996 US Telecommunications Act, passed with the aim of liberalisation and further deregulation of the US market, although Waverman (1998) expresses doubts concerning the application of the legislation to the regional *Bell* operating companies.

Parallel to the regulatory changes in the US, other countries, such as UK and Australia attempted to change the monopoly position of their national telecom carriers using various forms of privatisation, flouting of shares, and licence agreements. The Australian government forced the main carrier *Telstra* to share the residential market with another company *Optus Communications Ltd* (owned by *Bell-South*, US and *Cable & Wireless*, UK), allowed by the government to build its own cable network. The British Government efforts since 1980s aimed to give priviliged wrights to *Mercury Communications Ltd*. and *Cable & Wireless* to compete against the main telecom operator *BT*.

On the mobile market *Telstra* (Australia) was forced by the government to share customers with two established international players *Vodafone* (UK) and *Optus Communications Ltd* (US and UK). The value-added-service market in Australia at present is almost entirely dominated by international players such as *GE Information Services* (US), *BT Tymnet* (UK), *Sprint International* (US), *IBN Information Network, Easylink* (owned by *Singcom* and *AT&T - US)* (van-der-Vlies, 1996).

In 1997, the World Trade Organisation reached an agreement on liberalising the global telecommunications markets with the aim to create free market access. Within the European Union, 1st January 1998 was the date on which the deregulation measures and ending of national telecommunications monopolies came into effect (although Spain, Greece, Portugal, Belgium and Luxembourg were given extensions).

As a result of these measures, all industry players faced rapid increase of global competition. Examples of the internationalisation of competition can be seen in most national markets that have exposed their telecommunications to privatisation and liberalisation. Following the privatisation of the Brazilian telecom operators for example, at present the main competitors there are *Telefonica* (Spain), which owns the main carrier *Telesp*, and *MCI World Com Inc.* (US), who bought a controlling stake in the long-distance carrier *Embratel*. In Germany, following deregulation of the communication services provision, the *Deutsche Telecom* market has been eroded by companies with foreign participation, such as *E-Plus*, *VIAG Intercom*, and *Mannesmann* in mobile telephony, and *MCI World Com Inc*. (US) in fibre optic cable networks, among others.

In the context of this worl-wide de-regulation, and the subsequent internationalisation of ownership of assets, the case of *BT* illustrates the restructuring of national monopolies in telecommunications under government supervision. The main question is how does *BT* restructure its home market operations, and how does it respond to the global challenges and opportunities.

Shaping the Competition in the Telecommunication Market

The overlook of the industry makes it clear that the global telecommunication market is in a stage of fundamental restructuring. There are four leading factors that increase the competitive pressures on the traditional telecom operators. The first is the rapidly growing market demand - particularly in the international call market, the business market for integrated high bandwidth data transmission services, the internet market, and the market for entertainment services to home. According to Knetsche, et.al., (1999), the shift in market demand and customer needs is not met by the main telecom carriers, attempting to bundle services, rather than focussing on reliability, availability, and unique tailor-made solutions.

The convergence of cable network technologies allows the bundling of broadband services to include cable TV, internet, and data transmission. A new area of competition, therefore, emerges between cable optic service providers and media content service providers (including news, movies, and publishing) that are based on satellite and microwave transmission. These processes result in the creation of new and powerful market players, which affects directly the strategic choices by the traditional telecom operators.

Yet it is recognised by authors that consumer behaviour sometimes is difficult to change. The majority of people may prefer to keep separate their entertainment equipment (such as television) from their regular voice and data communication facilities, and particularly away from their 'computing for work'. Consumers also may prefer their experience of high-street shopping instead of buying over the internet, which could be a major barrier to the total digital convergence (Shillingford, 1999). As a result, most telecom operators are careful to invest in further bundling of network capacity and services, which enhances the network economy of the operations.

The second factor shaping competition is fast developing technologies with reduced time-to-market period of implementation. The technological dynamics, and particularly the convergence of micro-electronics with computer industry and telecommunications, as well as the fast move towards packet-switching and circuit-switching technologies leads to a revolution in the concept of network integration. The old paradigm of centralised architecture is replaced by a new network model, where network intelligence/ control and service functionality migrate from the operator all the way to the user's desktop unit (Knetsche, et.al., 1999).

The change in emphasis from voice transmission to data transmission (including video), brings a set of infrastructural issues that at present determine the strategic choices of the main telecom operators. These strategic dilemmas are: how to get return on investment in broadband capacity, leasing vs. buying communication facilities, capacity swapping arrangements between carriers, how to increase the utilisation of increased capacity in the backbone (due to implementation of DWDM – dense wave multiplexing technology, condensing signals). A situation emerges where demand is not satisfied, and yet there is not sufficient expansion in infrastructure due to under-utilised capacity.

Answers to many of these questions are sought in the context of cost drivers that favour building a global scale of operations. The spread of rising technology costs can be achieved much faster across international markets and higher volumes. Trebling and Estabrooks (Trebling, et. al., 1995 p. 536) comment on the persistence of significant network economies

in both overseas and landline systems. Economies of scale, scope, joint production, and pooled reserves in capacity are pervasive in such networks.

There is also another implication of the new technological developments. Replacing of the existing technology takes time, particularly in regard to the mass market. The dynamic changes in the technological landscape shorten the time for technological exploitation, and therefore the period for collecting return on investments by manufacturers. The implementation costs in this sense make even more difficult for firms to gain economic benefits from their innovation. Simultaneously to that, there are constraints on manufacturers to transfer costs to consumers, as the latter are also exposed to the pressure for continuous hardware replacement.

The third factor shaping competition is the increase in international business opportunities for expansion, as a result of the world-wide deregulation, and the growth of international business operations. While the US and the UK have led the sector in deregulation policies, the business opportunities for telecom companies have grown globally. The global scope of deregulation have raised new issues of re-regulation and regulatory policies for growth and fair competition, issues about ownership roles, foreign investment, and the implementation of cost-based price mechanisms.

One of the fastest growing global markets for the telecom operators is the information-processing services for banking and insurance. Information based services can be produced in one part of the world and delivered almost anywhere else. For example, front and back office functions in international banking could involve locating cheque processing in low labour cost countries. It is expected therefore, convergence of products and process technologies to take place between industries, integrating the two distant sectors of banking and telecommunications. Telecom carriers in countries where large number of MNCs are based have a comparative advantage in servicing global customers.

The forth factor is the effect of capital market conditions on the telecom carriers (Knetsche, et. al., 1999). While exposed to fluctuations of the capital markets, network operators have absorbed billions of US dollars for expansion in capacity and new acquisitions. This source of financing expansion is based primarily on expected performance. As a result of favourable capital markets, many telecom companies were able to raise funds for aggressive international expansion. This internationalisation of asset ownership in fact is distracting companies, putting investments in different geographic areas. This distracts firms to focus on global expansion, rather than enhancing their home market performance. This is particularly the case of *Telefonica* (Spain). While the company is acquiring capacity globally, its local infrastructure is still behind certain European standards.

The acquisition wave is another major factor that increases competition. The sources of this competition are not only from within the telecommunication sector – new market entries and new resellers of excess capacity, but also from parallel sectors of the economy – the expansion of cable TV operators, diversification of other utilities (gas, electricity, and water), and aggressive moves from established businesses in railway transportation, computing, and media and publishing. The dynamic changes in the global business environment of telecom operators undermines their home market monopoly position, and puts pressure on them to seek alternative sources for competitive advantage in building new collaborative relations and business networks.

Sources of Competitive Advantage

Before we look at how *BT* has responded to these global factors that shape the environment for the telecommunication operators, we would like to revisit some of the theoretical expectations from the resource-based theory of competitive advantage. Firms are expected to transform and organise resources into capabilities, which are selectively employed to build competitive advantage that protects their market share, their customer base, or their profit margins (Grant, 1998). Among the traditional input resources, used by firms, are the following: physical, financial, technological, organisational resources, human resources, reputation, capital equipment, skills, patents, brand names. Regarding the intangible assets collected and developed by firms, Grant (1998) admits that they are heterogeneous, and their imperfect transferability precludes the use of market prices in their employment and exchange. All knowledge intensive and technology intensive industries, such as telecommunications, in this respect, rely substantially on intangible assets and complex organisational, technical and network capabilities.

Most material inputs in the telecommunication sector are high value added products by themselves, as they are capital intensive products and require advanced technology for their manufacturing. The inputs for the telecommunication industry therefore bring more value than the outputs of many other traditional industries. The embodiment of knowledge and capital in the inputs for telecommunications makes this sector one of the most capital intensive and knowledge intensive industries. For firms in the sector high value added material inputs are minimum standard, rather than a source of competitive strength.

Procurement in most cases takes place in high quantities, and involves contract-specific investments on behalf of the suppliers. The dependency on compatibility and standards makes business procurement almost restricted to unique suppliers that control certain cutting-edge technologies (Doz, et.al. 1990, Ford et.all, 1999). The technological dependencies within the value chain therefore restrict firms in their choice for diversification seeking competitive advantage.

Among intangible investments by firms Webster (1999, p. 11-12) distinguishes between capacity capital (which raises the maximum level of production per time), knowledge capital (which improves actors' understanding of the market and the profit opportunities), and control capital (which enables firms to modify their demand and their cost curves, by increasing their market power and resource utilisation). Illustrations of capacity capital accumulation are the cases of acquisitions of foreign assets, and the internationalisation of ownership in the telecommunications. The accumulation of knowledge capital is facilitated usually by engaging in relationships and activities that provide an opportunity for knowledge transfer and knowledge creation.

The main control capital of the traditional telecom operators derives from their monopoly position regarding the communication infrastructure. However, the evolution of communication technology has generated three distinctive market segments: terrestrial networks for voice and data transmission (including switches and transmission equipment), cellular base networks of stations and fixed radio links, and satellite networks. What is unique about the telecommunication industry, is that the convergence of technologies and the other factors that affect competitiveness of firms, drive the competition between these segments, rather than within each separate market segment. What is observed is a multimarket contact between competitors, which strengthens rivalry, rather than weakening it (Baum and Korn,

1996). Large firms, such as *BT,* are forced to compete in multiple market segments, where they face competition from new and aggressive market entries with more focused capabilities developed for a single market segment.

The main competitive strengths of most telecom firms seam to derive from their abilities to extend their operations into the value-added services (VAS) offered to residential and business customers. In addition to the classical voice and data transmission, two more generations of services have evolved. The second generation of services includes: mobile phones, fax machines, electronic networks. The third generation of telecom services includes internet, electronic data interchange (EDI), videoconferences, on-line information, call charge advice, calling line identification, voice mail, paging services, narrow and broadband cable services for business and entertainment, tele-point services, and corporate business services. The most severe competition among new and old cable operators seams to be at present for the control of the broadband cable TV and pay-per-view media services, or the control of cable and satellite networks for business data transfers.

This range of second and third generation value-added services, introduced to the telecom market, demonstrates the broad 'service' diversification that have taken place due to cutting-edge technology development. While the source of innovation started outside the telecom sector – in the aviation industry, marine and space navigation – now these leading technologies have been brought to the mass communication market for household consumers and international businesses.

The size of the customer base seams to be the main source of competitive advantage for telecom operators. In spite of the increased competition, the traditional business activities still bring high returns, due to global increase in demand. Part of the control capital of firms are their organisation and co-ordination capabilities, which give them a cutting edge market strength. An illustration of that are the bundling of services by telecom firms, which allows them to move to a revenue based on subscription, rather than on service pricing.

One of the leading assumptions in the resource-based view of the firm is that the heterogeneous distribution of resources among competitors can be stable over time, and is sustainable by firms. In the fast changing business environment for the telecommunications most of the traditional carriers are loosing competitive strength in their core market continuously. Some of their core competencies become redundant with the shifting market boundaries. Therefore their leading motives for strategic repositioning are very much driven by the need to re-build their competencies and capabilities base.

In our work on the motives that have shaped the strategic profile of *BT*, we have used published secondary sources with references to the main collaborative strategic moves by the firm and their implications. We attempted to classify the motives into 4 main groups that summarise the motives described in the literature. Our classification framework is elaborated from Harrigan 1988a; Zajac 1990; Hennart 1991; Agarwal and Ramaswami 1992; Lorange and Roos 1993; Auster 1994; Doz and Hamel 1999; Doz, Olk and Ring 2000 (Table 2.).

The leading motives refer also to Webster's investment capabilities of firms. The knowledge capital is accumulated by firms mainly through learning, competence building and seeking complementarity. The capacity capital is accumulated via new market entry and market development strategies, as well as cost-sharing, risk reduction, R&D, and new product development. The control capital is very much a product of successful attempts by the firm to

shape competition by pre-emptying the moves of its rivals. We also classify the failed attempts by *BT*, in order to explain how failures are affecting company's choices of partners and modes of collaboration.

Table 2. *Leading Motives for Alliance Formation*

Leading Motifs	Motifs described in the literature
1. Learning / Competence Building / Complementarity	various kinds of learning and internalisation of tacit, collective and embedded skills; acquiring means of distribution; gaining access to new technology; converging technology; diversifying into new business; restructuring; improving performance; achieving competitive advantage; complementarity of goods and services to markets; legitimation
2. Cost-sharing / Risk reduction (R&D and new product development)	cost sharing and pooling of resources; risk reduction and risk diversification; developing new products and technologies; obtaining economies of scale; recreating and extending supply links in order to adjust to environmental changes; co-specialisation
3. Competition Shaping / pre-emption	developing technical standards; achieving vertical integration; co-operation with potential rivals or pre-emptying competitors; bandwagon effect and following industry trends
4. Market entry / market development	market seeking; overcoming legal / regulatory barriers

BT's **Attempts to Strategically Reposition Itself within the Telecommunication Sector** [1]

To illustrate the strategic repositioning of the former telecommunication monopolies, this section explores the history of deals by *BT* and the most recent wave of strategic alliances and co-operative relationships. The historical overview of the strategic manoeuvres by *BT* gives rich examples of the effect of deregulation on *BT*'s strategy, and the diversity in partnerships, formed to enhance its global and local market position.

Table 3. *Strategic Attempts by BT to Respond to the Developments in the Telecom Sector*

Year	Deal	Driving Motive	Implications
1981	*BT* separated from the Post Office; *Mercury* - a new market entry - given 25 year digital telecom licence in order to create competition on the UK market.	Government attempt to create competition	The beginning of the liberalisation policies in the telecommunications in the UK, paralleled with new regulatory activities aiming to spur competition.
1984	Privatisation of the firm - created *British Telecommunications PLC* (49% Government ownership). It has lost half of its labour force since 1992. It has *Martlesham Research Centre* – a world leader in technology.	Government attempt to create competition	The beginning of commercialisation of the telecommunication network infrastructure.
	Partnership with *Cegetel (Generale des Eaux)*, France, to offer fixed-line services, and GSM mobile services. *BT* holds 26% stake in	**4**	Early internationalisation and expansion in mobile services in France.

[1] Main sources: KeyNoteReport, 1998, Reed, 1999, Savvas 1999, Gray 1998, ComputerWeekly 1998, Bradbury 1998, McGinn 1998, Stocks 1998, Marketing 1998, 1999, Black 1999, Stoneham, 1998.

	Cegetel.		
1991	Failed attempt to form a global alliance *Syncordia* with *NT&T* and *Deutsche Telekom*, to offer one-stop-shopping for corporate customers.	**Failed 3**	Unsuccessful attempt for a global alliance, aiming to shape the competition in business commincations.
1992	*BT* sells 51% stake in *Mitel* (Canada) with a loss of £120 Mln Pounds.	**Failed 4**	Withdrawal from Canadian market.
	Mistimed exit from *McCaw Cellular Communications* selling its 17% share to *AT&T*.	**Failed 4**	Misconceived adventure into overseas cellular operations and withdrawal from mobile services in the US.
1993	Took 20% equity stake in *MCI Communications Ltd*. (the 2nd largest US operator after *AT&T*) and formed the *Concert* alliance, now with 3,700 big corporate customers in 50 countries and more than $2 Bln annual revenue.	**1**	Established alliance for global business communication services.
1995	A contract with *Banco Santander*, Spain.	**1**	Corporate alliance in Spain to gain new competencies for the provision of digital financial services, and access to new business clients.
	Establishing the *Picienne* alliance (joint venture) with Berlusconi's *Mediaset* (Italy), *Telenor* (Norway), and *Banco Nazionale Lavore* (Italy).	**4**	Corporate alliance in Italy.
	A contract with *Tele Danmark* in Denmark.	**4**	Corporate alliance in Denmark.
	A joint venture in Sweden with *Telia*	**4**	Corporate alliance in Sweden.
	Investments in the Far East		Entering new markets in the Far East.
	Investment in a multimedia enterprise, formed by *MCI* and *News Corporation* (Rupert Murdoch – Australia / US)	**1**	Corporate alliance with firms from the global media industry.
1996	An alliance with *Telenor* (Norway) - each took 37.5% stake of a new venture *VIAG Intercom* (Germany) – to provide telecommunication services in Germany (after being excluded from a joint venture with *Deutsche Telekom* and *France Telecom*). Subsequently *BT* acquired 45% of *Viag Intercom*.	**3**	Investment in the German market for mobile and data communication services.
	BT proposed merger with *Cable & Wireless PLC* – part of its motivation was the building of its Asian presence – especially as *Cable & Wireless* held 57% of *Hong Kong Telecom* and as a partner in the second largest network operator in Australia. May 1996 the merger talks collapsed partly because of a variety of regulatory hurdles both in Europe and China, and also because of valuation disagreements between *BT* and *Cable & Wireless* [Stoneham, 1998 #59].	**3**	Failed to extend its capacity in broadband services and its business network in the Far East
	Partly in response to this failure, *BT* in November 1996 proposed a full merger with *MCI* to form *Concert Plc*.	**3**	Attempt to consolidate its global business services operations, and to gain control of a large stake of the US data communication market.
1997	Lost the bid for *MCI* against its rival *World Com*.	**Failed 3**	Failed to consolidate its co-operative venture with MCI.

1998	Formed an alliance with *Telephonica* (Spain) which later opted for its own deal with *MCI* in order to extend its presence in Latin America's market.	**Failed 3**	Attempt to extend its European business network in Spain.
	The alliance with *Portugal Telecom* – also under threat as *Portugal Telecom* opted for a deal with *MCI* for an expansion into Latin America.	**Failed 3**	Attempt to extend its European business network in Portugal.
	Investments by *BT*'s Community Partnership Programme in: Arts and Marketing Partnerships, Voluntary Sector Partnerships (Children in Need and Comic Relief), and Education and Employment Partnerships.	**1**	Diversification in business partnerships within the UK to boost its image on the home market and to pre-empty competition from new market entries.The diversification will lead to offering new internet services.
	BT joined a US initiative: *Universal Asymetric Digital Subscriber Loop (IDSL) Working Group*, designed to develop a universal interoperability standard for high-bandwidth local data access technology, that will be commercially viable by the year 2000. Other members are *Compaq, Deutsche Telekom, France Telecom, NTT, Microsoft, Intel*.	**3**	Join an international alliance for the establishment of global standards, and new technologies, aiming at global connectivity.
	Signed contracts for purchasing of equipment with *Siemens /Newbridge Alliance* (£20 Mln.); with *Cisco* (£40 Mln) – who competed with *Bay Networks, Nwebridge, Cabletron*, and *3Com*. The contract with *Cisco* included: purchase and installation of ports, upgrading *BT* Ethernet, three year contracted staff (35 members), devoted to supporting the contract, and Cisco certification of 32 *BT* internetworking engineers.	**1**	Established long-term business relationships with global suppliers of equipment.
	Formed a strategic alliances with specialist consultancies to develop "Best-of-Breed" intranet systems under the *BT*'s services – *BT* Intranet Complete, and Intranet Builder. The six partners are: *Associated Design Consultants, Lernout and Hauspie, Interactive Developments, Key 3D, Lloyd Northover Citigate and Module Communications*. Their specialised skills are in graphics design, advanced speech and language, E-commerce, new media consultancy services, communications and intranet analysis and interactive communications.	**1**	Diversification within the UK market in business communication services and applications. The use of partnership contracts aims to capture skills and knowledge on an emerging peripheral market for communication design applications. These alliances will assist *BT* to develop design, content, and online publishing technologies, and to implement E-business solutions.
	BT joined a "Billing-for-Business" initiative, organised by The Telecommunications Managers' Association, sponsored by *NTL*, and supported by *Energis* and *Global One*. Other potential supporters are *AT&T, Colt, Cable & Wireless*, and *Vodafone.* This initiative was triggered by concerns of members of the association, that they could not adequately make checks on costs. The Association was also involved in discussions on continental leased-line prices, and the establishment of a benchmark for international	**3**	Joined an international alliance to tackle the issues of billing and by customers' ability to exercise cost control.

	circuits.		
	Formed a strategic partnership with *Netscape*, to support its free e-mail services. This is in the context of a strong relationship with Netscape's rival *Microsoft.*	**1**	Extending strategic alliances with firms in the software industry.
	BT and *AT&T* decided to merge the two companies' overseas operations into a $10Bn 50: 50 joint venture, with *AT&T* putting in $2Bln of assets against *BT*'s $1.4Bln.	**2**	*AT&T* effectively becomes Concert's US arm. International corporate customers will become customers of this new joint venture
1999	A deal with *Microsoft* to create a raft products and services for third generation mobile devices. These products are designed for markets outside the US, using Windows CE operating system. This deal forms a direct competition to another alliance *"Symbian"*, comprising *Ericsson, Nokia, Motorola, and Psion.*	**1**	Strategic alliance with software firms for the design of new products and service technologies for the cellular market. This is an example of a war of standards between two rival technologies - Windows CE and Epoc.
	BT put on hold the development of an Internet Banking system with the support of *JCP Computer Services* – an electronic commerce system developer, and its Java-based software "Trustbase Money Manager".	**1**	Difficulties in managing business relationships in strategic technological alliances.
	A four year consortium *between Coventry City Council, Siemens Business Services and BT*, to provide Net-enabled PCs for schools, to train staff in IT, to host an Internet service, and to deliver desktop and curriculum software	**1**	Formed diversified consortium in the UK for provision of communication services in education.
	Subcontracted its customer billing.	**2**	Outsourcing of bulling operations.
	Relinquished calls and access to its local loop to *Long Distance International* (US) and *Unique Air* (a mobile operator).	Government attempt to create competition	
	The formation of a new alliance between *AT&T* and *BT*, called *Advance*, to offer mobile telephony to international travellers, with new global account service package.	**4**	Formation of new global alliance in international communication services.

Since 1992, *BT* has formed more that 50 alliances in 44 countries, many of these have been non-equity alliances or involved minority shareholdings. Until the failure of the *MCI* bid in 1997 *BT* appears more concerned with rapid expansion of its international network of operations (including assets acquisition), rather than restructuring its core operations within the home UK market. Part of its strategy has always been an attempt to achieve unambiguous control. However, in *BT*'s portfolio of co-operative relationships we see a significant number of minority holdings in various markets. The wide range of bi-lateral and multirateral agreements shows evidence of serious attempt to establish itself as a global leader in multiple markets.

The failure to establish roots in the Canadian market and the withdrawal from there in the early 1990's shows the effect of already strong global competition. The fragmentation of *BT*'s European operations demonstrates also lack of co-operative climate within the telecommunication sector.

The long list of ventures and the variety of public and private organisations involved, particularly during 1998 and 1999, suggest that the globalisation of *BT* is driven by technology and demand opportunities, as much as by its efforts to acquire knowledge capital

(Table 4.). The wide variety of business networks and alliances also shows that the home market competition has pushed *BT* to diversify not only in areas of mobile communications, but also in internet communication and other related communication services in finance and education.

BT has shown preferences to support its strategic alliances with an international joint venture. There is also a preference for bi-lateral agreements, where costs and benefits could be more easily assessed.

Table 4. *Leading Strategic Motives for BT*

Leading Motives	***No. of cases***
1. Learning / Competence Building / Complementarity	**10**
2. Cost-sharing / Risk reduction (R&D and new product development)	**2**
3. Competition Shaping / pre-emption	**5**
Failed attempts	**- 4**
4. Market entry / market development	**5**
Failed attempts	**- 2**

Our review of *BT*'s co-operative relationships demonstrates that there is a strong tendency towards equity-bound agreements, and failure to participate in complex global strategic alliances. The type of co-operative agreements is chosen by *BT* not only in terms of control, but also in terms of flexibility in operations and realisation of the market potential. Our chronology of the expansion of *BT*'s business network is an illustration of this variety, and the richness of co-operative ventures that exists within the telecommunication sector.

Conclusions

This paper has argued that the fundamental characteristics of telecommunications are different from many traditional service industries and have facilitated the sector's internationalisation. Partly as a consequence, the speed with which the newly liberalised and privatised industry has internationalised is remarkable. Regulatory constraints to globalisation that derive from national government usually shape the level of competition in their home markets, although this does not affect directly the internationalisation strategies of the leading telecom operators (*France Telecom* (France), *Telefonica* (Spain), *Deutsche Telecom* (Germany) *KPN* (The Netherlands), *BT* (UK), *AT&T* (US), *MCI* (US). Examples of successful internationalisation on new market entrants, such as: *Mannesmann* (Germany), *Orange* (UK), *Cable & Wireless* (UK), *Sprint* (US), *WorldCom* (US), and *Qwest* (US) show that among the main comparative advantages are access to capital and access to cutting-edge technology.

Most of the new rivals such as *QWEST* (US), *WorldCom* (US), and *Vodafone* (UK) challenge the traditional telecommunication firms with their competitive advantage in the mobile technology and high bandwidth data transmission. At the same time terrestrial communication networks have been much slower to diversify in new activities. They have allowed in their home market the emergence of competitors offering VAS, and therefore,

shaping the demand. Government liberalisation policies have only facilitated this process. In response to these market conditions, many telecommunication companies have attempted to create a world wide presence, partly in order to forestall and pre-empt competitors' moves. This international expansion in overseas capacity has been in pursuit of overseas sales and profits.

In this context the internationalisation of BT is not an examples of the most successful re-positioning on the global market. While the company continues to maintain strong presence of international operations, it has failed to enlarge its international ownership structure.

What is also striking, is the speed with which the new industry leaders have adopted collaborative approaches. The use of strategic alliances and joint ventures has been a major mechanism not only for access to international markets, but also for learning and development of new capabilities in the new emerging market segments. Many of the *BT*'s alliances within the home market are also driven by the same motive for learning and building knowledge capabilities. Focusing on peripheral markets and engaging in diversification into cross-industry services has been used by *BT* to develop new market niches for the communication value-added services.

The fastest technological convergence has taken place in the cellular market and the fibre optic cable market, which are both driven by key global competitors. Among them are the network operators: *MCI World Com Inc.* (US), *BT* (UK), *AT&T* (US), *Optus Communications Ltd* (Australia), *NTT* (Japan); and hardware developers: *Ericsson* (Sweden), *Nortel* (Canada), *Motorola* (US), and *Nokia* (Finland). The web of communication facilities world-wide is still in its making, and the role of *BT* in this context depends on its capabilities to forge further alliances.

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