RESILIENT SUSTAINABLE AUTOMOTIVE STRATEGY
DECISION SUPPORT

Transfer Dissertation/ Twenty Four Month Report
Addendum

Cover Sheet

This addendum constitutes the additional explanatory work required by the examiner after reviewing the transfer dissertation in *viva voce*. The original dissertation report has not been edited.

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1 Introduction
After examining the Research Engineer and their transfer dissertation, the examiner was satisfied but requested four extra explanatory pieces to be added to the report. These are laid out in the four sections below.

1.1 Situating the research within the context of the literature on “strategy” and “decision-making”
“The aim of this EngD research is to develop a holistic approach for comparing strategic choices, which can be used within organisations to assist decision makers to improve the sustainability and resilience of their company strategies” (Winnard, 2012b). To clarify, this project was commissioned from within the middle-management levels of Ford Motor Company and aims to provide supplemental information for decision-makers at this level and above, by developing extra metrics and assessment methods for the use of teams and individuals who prepare this information for such decision-makers. Therefore the research is only intended to fit within Ford’s current practices, and any attempt to substantially alter the strategic style or decision-making processes of such a large multinational corporation lies outside the project scope, as the project lacks both the resources and senior management buy-in required for such a large change in practice.

Initial data collection within the company also indicates that it does not distinguish between strategic and tactical decisions, nor do decisions always conform to a particular strategic style (Winnard, 2012b), such as those identified by Whittington (1993), varying instead with their situational context and the preferences of managers involved (Winnard, 2012a). This matches the view of Pugh and Bourgeois (2011) that academic models of strategy formation are really different reductionist views of what real companies do, or should do, to achieve success; in essence that many strategic tools and frameworks are needed in reality, at different levels, within firms. It will therefore be necessary for the research to develop appropriate process elements for the approach to fit into each strategic level, during the case study proposed, and according to the needs of the users of the approach within these studies.

1.2 Definition of “resilience” in the context of this research and its links to “sustainable development”
The paper recently submitted by the Research Engineer to the journal of Strategy and Management (JSMA) contains various definitions of resilience within a business context, but does not propose or adopt one in particular (Winnard, 2012c). Building from the paper, the resulting definition of desirable business resilience therefore will be taken as a firm’s “ability to return to stability after disruption” (Bhamra et al., 2011 cited in Winnard, 2012c), to
continue to function during disruption, and to adapt to environmental changes (Walker et al., 2002) (Burnard and Bhamra, 2011). Strategic resilience in particular is concerned with making these adaptations, and rendering organisational stability and effective function possible by generating sustainable competitive advantage (ibid.) or even by inventing new business models (Hamel and Välikangas, 2003); this then, is the focus of the research.

Although Brundtland (1987) gave the seminal definition of ‘sustainable development’ it was quickly translated into many further versions as people sought to operationalize it for their own use, diluting and confusing its meaning (Johnston et al., 2007, Fuller, 2012). The term ‘sustainable development’ is not synonymous with ‘sustainability’ as the first refers specifically to the development of human society (Johnston et al., 2007). The latter, ‘sustainability’ is a wider concept already in general use which can be applied to any activity (ibid.). In the more specific and recent sense derived from ‘sustainable development’, it seeks to ensure the consideration of social, economic and environmental resource bases equally (Walker et al., 2002, Johnston et al., 2007) within any activity. Moreover it is theoretically possible to define this type of ‘sustainability’ in scientific terms, for example using thermodynamics to derive the four System Conditions to define how sustainability can be achieved in The Natural Step approach (Johnston et al., 2007). These can then be translated by adding “eliminating our contribution” to each System Condition to form a set of guiding principles for organisations:

“Eliminate our contribution to…

1. …systematic increases in concentration of substances from the Earth’s crust
2. …systematic increases in concentrations of substances produced by society
3. …systematic physical degradation of nature
4. Conditions that systematically undermine people’s capacity to meet their needs”

(Johnston et al., 2007)

These in turn provide criteria for reviewing investments by the firm, for example (ibid.)

Fuller (2012) cites “sustainable development” as a tool for delivering “sustainability” as a goal, but the development of human society is not typically the aim of commercial companies; in fact the aims of business and society are more often seen as two sides of a trade-off (Porter and Kramer, 2011). In order to create “shared value” across all resources, not only traditional economic profits (ibid.), companies need rational science-derived “operational sustainability principles” (such as those quoted above from Johnston et al.,
2007) to allow them to assess their economic and practical issues as always, yet make choices which move their activities towards full-spectrum sustainability.

Resilience and sustainability are connected when considering companies as complex systems, because they both concern the ability of the organisation to continue to function over time (Winnard, 2012c). The main difference lies in the timescales typically under consideration and the underlying questions posed. A manager thinking about resilience is asking “What outside sources of disruption do I need to make my company resilient to, so that it continues to flourish?”. Whereas, when thinking about sustainability they are asking “What are the impacts of my company’s activities, goods and services on other resources, and how can I improve these impacts to allow it to function well indefinitely?” By considering the parameter diagram of a company (ibid., Figure 1, p8) we can see that the manager is simply looking upstream towards the company’s inputs for resilience purposes, and focussing more on downstream outputs for sustainability purposes; although sustainability seems more likely to prompt managers to think in terms of long term feedback loops, due to the nature of the impacts being considered. When considering these feedback loops over the same timescales the two concepts become nearly identical; the eventual goals are similar –the continuation of a business- but the approaches are different.

The premise of this research is that resilience, being concerned primarily with flourishing survival and actions which can be taken within the company itself, is more closely allied to the goals of businesses, and provides a way to translate sustainability thinking into practical approaches more likely to deliver real strategic advantage for decision-makers. This is because this approach allows sustainability to be framed as a way of minimising risks and exploiting opportunities long-term, which is more relevant to executive officers and therefore more likely to be acted upon.

The examiner noted that the use of a Glossary might have assisted with clarifying some of these definitions; the intention is to add one back in to any further reports or theses.

1.3 Methodological approach description

The research topic can be represented by the overall research question: “How can organisational resilience be used to translate sustainability into a more practical form for Ford Motor Company, and hence support decision-makers with new supplemental methods or metrics?”

As the scope of the work is specific to the host company, will be done by a researcher with previous experience of the host company and embedded within it, and the results are intended to be used to modify or supplement an existing process, it fits the definition of action research (Bell, 2010, pp 6-7). As no prior research exists describing the
process of decision-making at Ford, and it is a social activity between many actors in a complex environment, most of the information gathered is expected to be qualitative, and initial work was required to identify the context in which the research would occur and the current practice within the company, before any modifications could be developed. This is a grounded-theory approach, using participants’ views to establish a description of the process and develop interventions (Creswell, 2009, p13), and analysing the data as it is collected (Bell, 2010, p17).

Neither ethnography nor phenomenological methods were really suitable as the first is limited to too small a group and requires too large an investment of time, and the second again is limited to very broad but detailed observations of a few people (Creswell, 2009, see p13). The decision processes at Ford involve large numbers of people and the individuals change roles over time, so the work must be based around the process itself. Although the initial work was primarily based on semi-structured interviews and some meeting observations, these are not narrative research as no overall chronology of specific events is being constructed (ibid., also p13). However this work is in part an interpretivist method as it asks the interviewees to interpret the meaning of their experiences (Mason, 2002, p56). In terms of other possible methods, an experimental approach was not suitable because the researcher has no control over the context of the research (Yin, 2009, see Fig. 1 p8) so cannot isolate it as required (Bell, 2010, p13), and historical or archival analysis types of research would not be used because they do not concentrate on current practice (Yin, 2009, p8). Surveying would not have allowed the very open questions needed in early stages due to the grounded theory approach (although surveys may be used later), and is better suited to quantitative data from large populations (Creswell, 2009), whereas the interviews allowed flexibility and a richer set of data to be garnered from a smaller group.

For the main part of the research a case study of several samples will be used to focus upon the “interactive processes” of decision-making at Ford and how they influence its function (Bell, 2010, p9). For this type of research Yin (2009) is the most important reference; this project satisfies his requirement that it is based around a “how” research question (ibid. p8), and is studying a real-life complex situation with far more variables than data samples, so requires multiple sources of information to allow triangulation (ibid., p18). The initial literature review and data gathering support the development of the “theoretical propositions to guide data collection and analysis” which is also a feature of case studies (ibid., p18). The “unit of analysis” or case (Yin, 2009, 27) will likely be the individual comparisons of strategy options, and the resulting recommendations, by a range of different teams, within Ford. To address the most common criticisms of this method of research, the
research design must be rigorous, allow generalisation, the overall case study and individual samples must be timely and deliver intelligible concise reports, and lastly it must be able to identify clearly why any modifications to Ford’s process had an effect, if this is part of the design (Yin, 2009, p16).

1.4 Expected contribution to knowledge

The literature review showed that there was very little written about the relationship between sustainability and resilience in a business context. The project expands the research in this area to define more clearly and explicitly how they are related. Similarly there is a dearth of research on ways to exploit this relationship within real companies; this project will develop an approach to allow this to be done, and to pilot this approach within Ford’s activities to allow both the approach and the relationship to be tested. As strategic decisions are made at many different levels within such a large organisation, the approach will also be generic and adaptable so that it provides pragmatic and useful assistance to decision makers at any of these levels.

In this way the research aims to improve the resilience of Ford, (and by generalising the research, other companies) to its changing environment, allowing it to adapt whilst reducing its impacts and feedback effects, and enabling it to flourish long-term.

References


