What is meant by ‘Agility’ in a supply network management context?

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Introduction
Although the management of supply networks has reached a high degree of sophistication in many contexts and settings, there is a growing perception that the basic structures may need re-visiting in light of emerging changes in the global business environment. In particular, it has been powerfully argued by academics and practitioners alike that commerce and industry are faced with an increasing and persisting level of business turbulence (Gattorna & Ellis, 2009; Singh, 2009; Browning, 2011; Christopher & Holweg, 2011). In particular it is suggested that, in response to such challenges, an ‘agile’ posture or approach – as distinct from one based around the reduction of costs through increased control – should be adopted (Christopher & Holweg, 2011).

However, whilst the concept of agility in both manufacturing and supply networks has existed for some two decades, there is a lack of clarity over what such a concept entails. Achievement of clear answers to questions such as: “What is meant by agility?”; “What practices are to be found in an agile network?” are important pre-requisites to any testing of the proposition that agile supply networks are more successful than non-agile ones in a turbulent business environment.

Literature Review
Using the ISI Web of Knowledge, Science Direct and Emerald databases, a search was undertaken for papers that discussed agility in both a manufacturing and a supply network context. This returned a total of 87 papers published since 1998 - a date that reflects the emergence of the concept of agility within the supply network management literature.

A pilot content framework was developed by all three authors independently and then tested in a random selection of 5 papers. Subsequent analysis of the remaining papers by one author (with a 10% validation check by the remaining authors, and inter-coder reliability of 0.80) resulted in the framework at Figures 1-3. Figure 1 represents the strategic level issues raised within the literature – in essence, why an organisation/network might wish to adopt an agile posture. Figure 2 represents the tactical means by which authors suggest that supply and demand should be kept in balance. Finally, at the operational level, specific actions reported in the literature are listed under the headings of ‘people’, ‘processes’ and ‘technology’ in Figure 3.

Practitioner Perspective
The second stage of the research was to compare the analysis of the literature with a practitioner viewpoint. This was developed by means of an online survey distributed to the membership of the Chartered Institute of Logistics and Transport, Australia (CILTA) which resulted in a total of 54 usable replies. This represents some 5% of the CILTA membership which, it is recognised is below the typical 10% response rate for such surveys (Larson, 2005). However, given the high degree of unanimity in the responses, the survey provided a useful triangulation of the literature search, and this was confirmed during an industry engagement meeting in which similar views were offered by the contributors.
The Results of the Research

In each of the boxes in Figures 1-3, the number represents the percentage of papers (N=87) that included discussion of the particular concept. Concepts which returned <5 hits were discounted. Similarly, in Figure 4, the number represents the percentage of practitioner responses that incorporated the concept (N=54).

Figure 1: Responses at “Strategic Considerations” level

Figure 2: Responses at “Balancing Supply and Demand” level
Figure 3: Responses at “People, Processes, and Technology” level

Figure 4: Practitioners’ responses across the agility framework
Conclusions
In analysing the above data, the main focus was the review of the literature, with the practitioner perspective being used to provide confirmatory support. At the strategic level, there was a high level of agreement over the reasons why an organisation or network might wish to adopt an agile approach, and this was supported by the practitioner survey. At the next level, there was similarly a strong thread within the literature that offered a number of approaches - such as the use of actual not forecast demand; the achievement of rapid responses; flexibility and the development of a customer focussed network featured highly, and each of these approaches were also mentioned by practitioners.

There was, however, significantly less unanimity amongst academics when the operational level was reached. In a sense this is unsurprising as many contributions to the literature were reporting the results of specific case studies in which certain approaches may/may not have featured. Nevertheless, these results can be seen in stark contrast to the clarity with which, for example, the operationalisation of the Lean Thinking methodology (Womack & Jones, 1996) has been clearly documented and understood. Furthermore, the absence of discussion within the literature of ‘blockers and enablers’ emanating from issues such as the organisational, cultural, governance and similar considerations is an indication of the immaturity of the concept of agility.

In short, it is considered that there is broad agreement over the areas that need to be addressed in order to deliver an agile supply network. However, the understanding of the subject would be greatly improved through further research that robustly tests the relative importance of specific drivers and approaches, and the extent to which these can be balanced with other relevant considerations. For example, there would appear to be a significant tension between the desire to achieve, on the one hand, a long term relationship with partners within a supply network and, on the other, the potential requirement for a network in which organisations are invited to join/leave at short notice to meet market demand. Indeed, the literature is silent on the achievement of an appropriate balance between organisational continuity and agility. The literature is, similarly, silent on the means by which agility can be measured – and self-evidently development of appropriate metrics represents an important strand of research that is a pre-requisite for downstream research.

Nevertheless, in terms of the questions posed at the beginning of this abstract, it is suggested that there is a good (and common) understanding amongst both practitioners and academics of the meaning of the concept of agility, and this will provide a sound foundation on which to build further research. However, getting below this strategic level will require significant further investigation across a number of important lines of enquiry.

References