The Role of Information Systems in Supply Chain Strategic agility: a systematic literature review

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Abstract. The prevalent competitive business environment has forced companies to devise strategies to survive. Strategic agility is one such business imperative companies require in the dynamic environment. Strategic agility is comprised of strategic sensitivity, strategic response and collective capabilities. Moreover, companies are collaborating in order to gain competitive advantage. This led to formation of supply chain to work collectively in response to the environment pressures. In addition, information systems are useful to support business initiatives to survive the competition. This study made use of systematic literature review to analyze how information systems are being used in supply chain to promote strategic agility. The findings include that in supply chain setting, strategic sensitivity is mainly required at the downstream (customer side) and information systems, such as, business intelligence system support data analysis and forecast. Strategic response is mostly required at the upstream (supplier side) and information systems, such as, enterprise resource planning systems enhance response effort. Collective capabilities are constantly required throughout the supply chain and information systems, such as, knowledge management systems enhance faster decision making. This study also proposes questions on strategic agility, supply chains and information systems role, for further research.

Keywords: strategic agility, supply chains, information systems role, systematic literature review

1 Introduction

The present business environment is increasing competitive and both researchers and practitioners are constantly engaged in proposing ways to thrive in the environment. There are many different measures business have engaged in and many other being proposed to survive in the volatile business environment. For example, Doz and Kosonen (2008) suggested openness to new evidence, flexibility, readiness to access past choices and willingness to change course in relation to new developments as necessary factors in the current environment. In addition, collaboration with different partners, such as, suppliers, customers, competitors, universities,
consultants and formulation of supply chains (SC) are such examples of measures to respond to the environment pressures. A SC is a group of companies which collaborate to achieve mutually agreed goals (Christopher, 2000). Another business virtue essential in current dynamic environment is strategic agility. In addition, advances in technology bring both threats and opportunities to the present environment.

Researchers have made many attempts to investigate different elements business can use to thrive in the environment, for example, resource-based view (Barney, 1991), dynamic capabilities (Teece et al., 1997), strategic agility (Doz and Kosonen, 2008) and blue ocean Strategy (Kim and Mauborgne, 2005). This research seeks to make a review of past literature specifically on research on strategic agility and information systems (IS) in a SC setting. Systematic literature review (SLR) is used in this research to facilitate theory development and reveal areas where research is required (Järvinen, 2008). “A systematic review is a means of evaluating and interpreting all available research relevant to a particular research question, topic area, or phenomenon of interest.” (Kitchenham, 2004). Furthermore, this research concur with Okoli and Schabram (2010) that “a rigorous stand-alone literature review, must be systematic in following a methodological approach, explicit in explaining the procedures by which it was conducted, comprehensive in its scope of including all relevant material, and hence reproducible by others who would follow the same approach in reviewing the topic.”

The research question is derived from the objective of this study which is to clarify the use of IS in SC with a specific focus of improving strategic agility. SLR (Okoli and Schabram, 2010) and conceptual-analytic research (Järvinen, 2004) guidelines are used to address the research question; how do information systems impact strategic agility in supply chain? Järvinen (2008) argued the need to start on a tentative literature survey to check if there an existent literature reviews on the research theme. We did not find any SLR which adequately addressed the research question and therefore the motivation to perform a detailed literature review.

The contributions of this research includes identify the existing literature for the strategic agility and IS role in SC and make use of it in facilitating theory development. Moreover, this review identifies and scope future research activities by highlighting possible future research questions (Kitchenham, 2004). The next section, Section 2 elaborates the research themes, strategic agility, SC and IS role. Then in Section 3, the research method which is systematic literature review is clarified. After that, Section 4 highlights the results of this research and next Section 5 clarifies the contributions. Finally, the discussion and conclusion of the study is Section 6.

2 Research themes
In this section we briefly describe the research themes namely strategic agility, SC and IS role. From a tentative literature survey conducted as recommended by Järvinen (2008) we noted that these terms are defined differently in literature and therefore our motivation to elaborate these terms in this research context.
2.1 Strategic Agility

There are many terms identified in the literature which relates to strategic agility, such as, business agility, agility, organizational agility, enterprise agility, SC agility and organizational flexibility. We will highlight how these terms are defined in drawing the definition of strategic agility. Table 1 illustrates the definitions of terms related to strategic agility in the literature. This research as Swafford et al. (2008) considers flexibility as an antecedent of agility, that is, agility has more elements than flexibility as explained below.

<table>
<thead>
<tr>
<th>Strategic agility related terms</th>
<th>Definition</th>
<th>Literature</th>
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</thead>
<tbody>
<tr>
<td>Organizational agility</td>
<td>the ability to detect and respond to opportunities and threats with ease, speed, and dexterity, has emerged, next to alignment, as a key business imperative.</td>
<td>Tallon and Pinsonneault (2011)</td>
</tr>
<tr>
<td>Enterprise agility</td>
<td>the ability of firms to sense environmental change and respond readily.</td>
<td>Overby et al. (2006)</td>
</tr>
<tr>
<td>Business agility</td>
<td>the ability of an organization to swiftly change businesses and business processes beyond the normal level of flexibility to effectively manage highly uncertain and unexpected but potentially consequential internal and external events, based on the capabilities to sense, respond and learn.</td>
<td>Van Oosterhout (2010)</td>
</tr>
<tr>
<td>Agility</td>
<td>Agility is the successful exploration of competitive bases (speed, flexibility, innovation proactivity, quality and profitability) through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer driven products and services in fast changing market environment.</td>
<td>Swafford et al. (2008)</td>
</tr>
<tr>
<td>Strategic agility</td>
<td>The main dimensions of strategic agility are strategic sensitivity, resource fluidity and leadership.</td>
<td>Doz and Kosonen (2008)</td>
</tr>
<tr>
<td>Organizational flexibility</td>
<td>the organization’s ability to adjust its internal structures and processes in response to changes in the environment.</td>
<td>Sherehiy et al. (2007)</td>
</tr>
<tr>
<td>Supply Chain agility</td>
<td>The agile supply chain is characterized of market sensitivity, use of technology to share data, process integration and network based.</td>
<td>Christopher (2000)</td>
</tr>
</tbody>
</table>

Table 1: Definitions of terms related to strategic agility

The definitions illustrated in Table 1 have two main common features which could be classified as sense and response to the business environment. For instance, Tallon and Pinsonneault (2011) highlights need to detect opportunities and threats, Overby et al. (2006) advocates for sense environmental, Christopher (2000) argues for market sensitivity and Swafford et al. (2008)
suggests successful exploration of competitive bases as part of agility and all these aspects shows the need for sensing ability for agility. This is termed strategic sensitivity in this research. Doz and Kosonen (2008) also argued that strategic sensitivity is an essential dimension of strategic agility.

Van Oosterhout (2010) notes the need to swiftly change businesses and business processes, this is related to what Overby et al. (2006) and Tallon and Pinsonneault (2011) highlights as the need to respond to opportunities and threats. This is another common feature of the definitions in Table 1, the need to respond to the business environment pressures. Doz and Kosonen (2008) suggest that resource fluidity as another dimension of strategic agility. Resource fluidity involves the reconfiguration of the business systems and redeployment of the resources quickly after consideration of the internal capabilities (Doz & Kosonen, 2008). This is also a response initiative and therefore we propose that the second dimension which includes all response efforts by business to the environment is strategic response.

There is also another dimension which is essential to harness the strategic sensitivity and response. We refer to this strategic agility dimension as collective capabilities, which include leadership capabilities, organizational learning, employee competences, collaboration abilities and resources management capabilities. In fact, collective capabilities are an inclusive strategic agility dimension made up of all the important features not in strategic sensitivity and response. Doz and Kosonen (2008) proposed a third strategic agility dimension as leadership unity. This is included in collective capabilities.

The strategic agility definition used in the research is closely related to the definition by Overby et al. (2006) that “enterprise agility is the ability of firms to sense environmental change and respond readily.” Strategic agility is defined as the ability of firms to tactfully sense the dynamic environment and tactfully re-act or pro-act accordingly. The sense and response efforts are enhanced by collective capabilities, such as, knowledge management and organizational learning. Therefore strategic agility is comprised of three key dimensions strategic sensitivity, strategic response and collective capabilities. And the term "strategic" is used because the research considers these aspects (agility, sense and respond) to be tactfully handled in relation to the competitive business environment.

2.2 Supply chain
SC is essential as a strategic weapon to build up and enhance sustainable competitive advantage, for instance, by cost reduction as well as increasing customer satisfaction (Mentzer et al., 2001). Moreover, SC is essential to include in this research as business competition is now at SC level where network of co-operating companies compete (Sahay, 2003). An important aspect of SC is leveraging the expertise, experience, skills and capabilities of the supply chain partners (Mentzer et al., 2001). The success of supply chain partners in effectively and efficiently collaborate determine their success as a SC and sustainability of their competitive advantage.
Spekman et al. (1998) defined supply chain management as a process for designing, developing, optimizing and managing the internal and external components of the supply system, including material supply, transforming materials and distributing finished products or services to customers, that is consistent with overall objectives and strategies. This definition emphasizes the interaction of the internal and external parts of the SC which is value for strategic agility purposes. Mentzer et al. (2001) defined SCM as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long term performance of the individual companies and the SC as a whole. In this definition relationship between supply chain partners is emphasized. This is relevant to this research in that these relationships means that the supply chain partners’ strategic agility concerns should be related not disjoint as individual or standalone companies.

2.3 Information Systems role
The role of IS in business has received different views from researchers and practitioners. Some authors surprisingly conclude that information technology do not matter (Carr, 2003). But others for instance, Sambamurthy et al., (2003) suggested that IS is crucial in enhancing business performance. Even literature which concludes that IS is crucial in business differs on how it contributes. Thus Ordanini and Rubera (2010) noted two approaches; first that IS indirectly impacts business performance through several key business features, such as, flexibility. Second approach is that IS directly enables business performance. This study inclines to the first view that IS indirectly impacts business performance through strategic agility, a business imperative of specific interest to this research.

3 Research Method
SLR has been utilized as the research method for this research in order to identify gaps and suggest areas for further investigation (Kitchenham, 2004) of research on IS input in SC for strategic agility purposes. The guidelines of conducted a systematic literature review has been derived from Okoli and Schabram (2010). The steps taken in conducting the systematic literature review are planning, selection, extraction and execution as illustrated in Figure 1. Note that these steps are iterative. Below is a description of how the review guidelines were utilized in this research.

3.1 Planning - purpose of the literature review, protocol and training
Okoli and Schabram, (2010) noted that the purpose of a literature review includes synthesizing understanding on a particular subject matter and justifies future research (including the research at hand). That is, looking at the past research to develop the path and hence build the future research direction. As explained in the introductory section, this research aims at drawing literature on strategic agility and IS in SC and map a path for future research. Moreover, a
A tentative literature survey was conducted as recommended by Järvinen (2008) and noted that there is no SLR which adequately address the research question in focus; how do information systems enable strategic agility in supply chain? All the reviews were involved from the ignition of the research to writing the review, that is, drawing the research purpose, drafting research question, conducting and reporting the review. Thus as Okoli and Schabram, (2010) recommended that “it is critical that the reviewers be completely clear and in agreement about the detailed procedure to be followed” so the whole review process was agreed upon.

3.2 Selection - searching for the literature and practical screening
The search was done utilizing four databases and only articles from 2000 were gathered. The four databases used are EBSCOhost Academic Search Premier, EBSCOhost Business Source Elite, EBSCOhost (EJS) Electronic Journals Service and Science Direct (Elsevier). These databases were used because they store the articles of interest to this research. The search was done using keywords illustrated in Figure 1. The other words used to search the literature which relates to strategic agility are agility, business agility, organizational agility, supply chain agility and enterprise agility. The other words used to search the literature which relates to SC are SC
integration, SC performance, SC operation and responsive SC. The other words used to search the literature which relates to IS are information technology (IT), IT infrastructure, IT capabilities and IT services.

![Figure 2: Key words used in the search process](image)

Each database was reviewed by one of the three different researchers and any paper that dealt with any of the three themes in Figure 1 was regarded as potentially relevant. However, the inclusion and exclusion criteria, paragraph below, were applied to the potential articles by the researcher reviewing a specific database. Another researcher was tasked to check the selected articles that they fit to be selected as well as those potential articles that were excluded that they do not fit to be selected.

Peer-reviewed articles published from 2000 which covered at least two of the three themes shown in Figure 2 were included. Articles covering only one of the three research themes were excluded. Moreover, papers included covered the following the topical areas:

- Strategic agility in SC
- Role of IS in strategic agility
- Information systems in SC

### 3.3 Extraction - quality appraisal and data extraction

“The quality appraisal serves two purposes: First, in reviews where there is a minimum quality standard for acceptance, the quality appraisal becomes a second methodological screen (Fink, 2005) to eliminate articles that do not meet the standard established by the reviewer. Second, in all SLRs, there needs to be some scoring of the methodological quality of the articles included in the study, since the quality of the final review depends very much on the quality of the primary studies” (Okoli and Schabram, 2010). The practical screening focused mainly on the inclusion or exclusion of articles based on the applicability of the contents as explained in section above. The quality appraisal was the next step in further scrutinizing the articles (purpose one stated above) to judge if they fit in the review basing on rigor of the research and also articles which included all three themes in Figure 2 were of higher preference (purpose two stated above). The rigor of
the research means if the research applies the appropriate tools, for instance in data collection and analysis, to meet the stated objectives of the investigation (Ryan and Bernard, 2000). After quality appraisal the reviewers agreed that the number of articles selected 28, were sufficient to adequately address the research concerns.

Extraction of the applicable data was done using the conceptual-analytic research principles as defined by Järvinen (2004). These principles could be in short be reflected in defining a theory as including “(1) a boundary that describes the domain of interest; (2) key constructs within that domain; (3) the values those constructs can take on; and (4) the relationships among key constructs” (Järvinen, 2004). All these principles were used in drafting Table 2, which shows the relationship between the main research constructs strategic agility, IS and SC.

3.4 Execution - synthesis of studies and writing the review
The conceptual-analytic research principles (Järvinen, 2004) were also utilized in this phase as (Okoli and Schabram, 2010) suggested that “this step involves combining the facts extracted from the studies using appropriate techniques. The relationships between the constructs were derived, see Table 2 below and areas which needed further studies were noted, see Table 3 – 5. In writing the report of this review recommendation of (Okoli and Schabram, 2010) that “the process of a systematic literature review needs to be reported in sufficient detail that the results of the review can be independently reproduced” were also taken into consideration.

4 Results
We used the articles to relate the three main themes of this research, these are, strategic agility, SC and IS. We noted that there is evidence which illustrates the strategic agility plays a significantly different role in SC depending on the position or importantly the purpose of the partner in the SC. The position of the partner in the SC, such as, upstream (product formulation side) and downstream (customer serving side) also mean different strategic agility requirements. SC partners who are mandated to serve the customers have to know best the customer and also have to gather requirements as they are in direct contact with the customers. SC partners whose main tasks involve developing the product need the ability to quickly and easily make changes to products in line with the customer requirements. IS play essential role in enhancing the required strategic agility dimensions in different parts of the SC. The strategic agility dimensions, collective capabilities, strategic response and strategic sensitivity are tabulated with SC and the role of IS is also highlighted in Table 2.

From Sub-section 3.2 we highlighted that articles included covered the following the topical areas: (A) Strategic agility in SC (B) Information systems in SC (C) Role of IS in strategic agility shown in Table 2. Articles covering topical area A, Strategic agility in SC, for instance, Gunasekaran et al. (2008) were used to relate strategic agility dimensions to different parts of the SC as shown in Table 2. Likewise articles covering topical areas B and C, such as,
Sambamurphy et al. (2003), White et al. (2005) and Tallon and Pinsonneault (2011) were also used in relating IS and its role to strategic agility dimensions, collective capabilities, strategic response and strategic sensitivity as illustrated in Table 2.

<table>
<thead>
<tr>
<th>Topic Area</th>
<th>Collective Capabilities</th>
<th>Strategic sensitivity</th>
<th>Strategic response</th>
<th>Supporting Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Whole Supply Chain</td>
<td>Required for efficient operations of the chain, that includes enhanced, communication, coordination and collaboration</td>
<td>Necessary for gathering market information and business environment facts</td>
<td>Essential for re-acting or pro-acting to the demands of the business environment</td>
<td>Sambamurphy et al. (2003), White et al. (2005) and Tallon and Pinsonneault (2011)</td>
</tr>
<tr>
<td>A Supply Chain downstream (customer serving side)</td>
<td>High level: To enhance the sensing ability and pass information for product formation</td>
<td>High level: To know the environment and gather customer requirements</td>
<td>Low level: To be able to lead adaptation of the supply chain</td>
<td>Holmqvist and Pessi (2006), Mason-Jones et al. (2000)</td>
</tr>
<tr>
<td>A Supply Chain Upstream (product formulation side)</td>
<td>High level: To understand customer requirements and ability to efficiently deliver correct product</td>
<td>Low level: To understand the market changes, technological development and mega trends</td>
<td>High level: To better deliver the required product / service</td>
<td>Gunasekaran et al. (2008), Swafford et al. (2006)</td>
</tr>
<tr>
<td>C Information Systems enables (Role of IS)</td>
<td>- Enhanced decision making - Faster information and knowledge sharing</td>
<td>- support gathering market information - support of</td>
<td>- augmented business process management - fluid resource</td>
<td>Sambamurphy et al. (2003), Alexopoulou et al. (2009), Bhatt and</td>
</tr>
<tr>
<td>Supporting Literature</td>
<td>Collective capabilities include human resources competences, collaboration capabilities, organizational learning, knowledge management and leadership capabilities. All these capabilities are required throughout the SC for operational efficiency. In the SC downstream the most essential human resource competences involve how best to serve the customer. Collaboration is essential with different stakeholders, such as, customers, universities, competitors, suppliers and consultants. IS enhance decision making, information and knowledge sharing and offers more channels of communication. Therefore knowledge management systems, learning tools and expert systems augment collective capabilities. However, there are issues still to be fully addressed in the literature about the impact of IS in SC for collective capabilities as highlighted by Table 3.</td>
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<td>------------------------</td>
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<tr>
<td>Alavi and Leidner (2001), Alexopoulou et al. (2009)</td>
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</table>
Table 3: Research questions concerning role of IS to enhance collective capabilities in SC

Strategic sensitivity is essential for gathering knowledge of both present and future business environment. The knowledge of the future environment is acquired through forecast, trend recognition and scenario planning (Inkinen and Kaivo-oja 2009). Business intelligence systems, data mining tools and forecast tools can play a significant role supporting the strategic sensitivity endeavors. In addition, sensing the present environment is equally important for immediate business concerns (Doz and Kosonen, 2008). Customer relationship management systems and point-of-sale (POS) systems enhance sensing capabilities of the present environment. In a SC setting strategic sensitivity is mainly required at the SC downstream in order to gather information from customers (Nazir and Pinsonneault, 2012). However, there are matters that still require to be thoroughly investigated in the literature about the impact of IS in SC downstream for strategic sensitivity as highlighted by Table 4.

Table 4: Research questions concerning role of IS to enhance strategic sensitivity in SC downstream

Strategic response is important for re-acting and pro-acting to the demands of the business environment. Pro-acting involves the initiatives by business to influence the market, for example, through innovations. Innovation management systems could enhance the pro-action initiatives. Re-acting includes better serving the customer, for instance, by adjusting products in line with the changing customer requirements. Customer relationship management systems could support the efforts to better serve the customer. Moreover, strategic response also includes changes in resources allocation and business processes in line with the dynamic market. These change
efforts could be support by business process management systems and flexible resources management systems. Strategic response is mainly required at the SC upstream where the product is formulated (Nazir and Pinsonneault, 2012). This is because strategic response is essential to better deliver the correct product, that is, effectiveness and efficiency in production. However, further research is required to elaborate the impact of IS in SC upstream for strategic response as highlighted by Table 5.

<table>
<thead>
<tr>
<th>Research Question 3.</th>
<th>How do IS impact strategic response in supply chain upstream?</th>
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<tbody>
<tr>
<td>Research Question 3a.</td>
<td>Does highly integrated SC supported by IS improve strategic response?</td>
</tr>
<tr>
<td>Research Question 3b.</td>
<td>How do IS enhance innovation capabilities in SC setting?</td>
</tr>
<tr>
<td>Research Question 3c.</td>
<td>What are IS elements that hinder strategic response in SC setting?</td>
</tr>
</tbody>
</table>

Table 5 Research questions concerning Role of IS to enhance strategic response in SC upstream

5 Contributions

The first contribution of this research is to draw from literature the dimensions of strategic agility, these are, collective capabilities, strategic sensitivity and strategic response. Doz and Kosonen (2008) proposed the attributes of strategic agility as strategic sensitivity, resource fluidity and leadership unity. This research considers resources fluidity as part of strategic response as Overby et al. (2006) noted the need for a sense and respond component in enterprise agility. More so, Alexopoulou et al. (2009) suggested that the attainment of agile enterprise requires effective knowledge management and learning capacity through data collection and analysis. This illustrates the need for a third inclusive strategic agility dimension and thus this research proposed, collective capabilities which includes knowledge management and learning capacity.

The second contribution of this research is drawing from literature the relationship between dimensions of strategic agility and SC as illustrated in Table 2. Collective capabilities comprised of human resources competences, collaboration capabilities, leadership capabilities, resources management capabilities, learning and knowledge management capabilities are required constantly throughout the SC. Doz and Kosonen (2008) argued the need for leadership unity to enhance strategic agility. Alavi and Leidner (2001) highlighted importance of distinct but interdependent knowledge processes. Strategic sensitivity includes the capabilities to know the current environment and correctly predict the future trends. Sherehiy et al. (2007) supports the need for strategic agility by highlighting that sensing, perceiving and anticipating changes as part of agile capabilities. High levels of strategic agility are required by the SC partners downstream because they are in direct contact with the customers. Strategic response includes having both an external and internal views to relating to changes in the business environment. For instance, Sherehiy et al. (2007) suggested the following agile capabilities with both internal and external focus; quick new products time to market, products and services delivery quickness and timeliness and fast operation time.
The third contribution which is also the main aim of this research is to draw the role of IS and related supporting technologies in SC for strategic agility concerns as illustrated in Table 2. Sambamurphy et al. (2003) also concurred that IS can be an enabler of agility. For collective capabilities IS could be used to enhance decision making, foster collaboration and enhance information and knowledge sharing. This is done by IS, such as, knowledge management systems, expert systems and learning tools. Alavi and Leidner (2001) argued that IS can play significant role in supporting knowledge management processes. IS are essential for enhancing strategic sensitivity by supporting gathering market information and data analysis and forecast. Data mining tools, business intelligence systems and customer relationship management systems could be used for strategic sensitivity. For strategic response IS are of value as noted by Tseng et al. (2011) that IS improve production and process control, inventory, warehouse management, price management and customer service and management.

6 Discussion and Conclusion

There have been several notable attempts in literature to study the main themes of this research, for instance, strategic agility (although different terms were identified in the literature to mean the same thing as explained in Section 2) in SC (Christopher 2000, Agarwal et al. 2007, Swafford et al. 2006), role of IS in strategic agility (Swafford et al. 2008, Sambamurphy et al. 2003, Lu and Ramamurthy 2011, Tallon and Pinsonneault 2011) and IS in SC (Gunasekaran and Ngai 2004, Ngai et al. 2011, White et al. 2005). Strategic agility has been defined as having dimensions, strategic response, strategic sensitivity and collective capabilities. A significant implication of this view of strategic agility is that any further detailed analysis, for instance, impact of IS on strategic agility, has to scrutinize each of the strategic agility dimensions.

The main implication of this research to practice, precisely SC, is that there is need for analyzing strategic agility at two levels. First, each SC partner has to define their own strategic agility requirements in relation to purpose in the SC. Second considering, the whole SC, strategic agility has to be systematic in line with the operations and goals of the SC. These two views imply that IS analysis in SC has also to be viewed from an individual SC partner as well whole SC. IS issues to be considered for whole chain include fostering collaboration and integration. Then each SC partner depending with its purpose in the chain and in relation to its partners, could have IS which augment either strategic response or strategic sensitivity.

There are several limitations which could be noted, for example, the literature search was limited to four databases which mean that some useful papers not contained in the databases could have been excluded. In addition, the articles before year 2000 were excluded which could also mean some useful articles were excluded. Moreover, the three main themes in this study strategic agility, SC and IS mean that there is a broad source of information. Also there have been calls, for instance Vazquez-Bustelo et al. (2007), for empirical studies related to agility and thus we recommend further studies, possibly on questions suggested in Section 4, to include empirical components.
Strategic agility is essential for knowing the business environment (this is covered by strategic sensitivity dimension), re-acting or pro-acting to the environment demands (this is covered by strategic response dimension) and the third dimension, collective capabilities is for smoothening and enhancing the sensing and responding efforts. In SC setting, strategic sensitivity is mainly required at the downstream and strategic response is mostly required at the upstream (Nazir and Pinsonneault, 2012). Collective capabilities are constantly required throughout the SC. IS, such as, customer relationship management systems, learning tools and enterprise resource planning systems play a significant role in augmenting strategic agility dimensions.

References


