Abstract
The digital technology is increasingly important for businesses as it has the capability to enable, support and sometimes influence the overall strategic direction of the corporation. Thus, strategies that define how, why and when companies plan to utilise the digital technology are increasingly important. The purpose of the article is to analyse what different strategic processes are used in the empirical context and further discuss to what extent the widely used strategic continuum (planning – incremental) are sufficient to understand what is happening in the case. We conclude in the article that a strategic continuum spanning from planning to learning, where the incremental approach is in the middle is more powerful as an analytical tool in relation to the specific cases. The research is conducted in one of Denmark’s biggest companies with an annual turnover of 2.2 billion EUR and over 22,000 employees.

Introduction
Identifying, implementing and using Information Technologies (IT) is a very challenging topic that first was raised decades ago and has been discussed ever since (Bondaruk, 2006). The digital technology and the different possibilities that are represented by implementing the technology internal or external to companies are constantly growing. Implementing new digital applications leads to increasing digitalised buyer–supplier relationships with new opportunities and threats as a result. An example of this can be seen in Ivang and Sørensen (2005) were electronic auctions change existing relationships towards a more competitive nature in spite of sellers wanting to engage in value adding relationships. Rask and Kragh, (2004) however, documents that buyers do not only participate in e-marketplaces with the sole strategy of exploiting suppliers: buyers also use e-marketplaces to find new or alternative suppliers.

The strategic literature contains various perspectives, definitions, and descriptions of how to define the concept of strategy (Mintzberg, Alstrand and Lampel, 1998). The concept of strategy has become an umbrella term, covering a set of practices designed for moving or changing a company into a new position in an existing market, to locate and penetrate a new market, to utilize the digital technology etc.

It is generally agreed in the literature that companies need a strategy for how to apply IT applications in relation to customers in order to be competitive (Evans, 2000, Cagliano et al., 2003, Birkhofer et al., 2000, Good & Schultz, 2002, Lord, 2000). However, the answer to how this strategy is created and what method will result in the best performance and thus, enable companies to reap the long-term advantages from the investments is widely discussed and there are no clear guidelines. Looking into the literature that deals with e-business strategy, IT strategy and Strategic Information Systems Planning it is clear that they all to a large degree discuss how digital applications are identified, developed and implemented. However, the proposed methods, techniques and procedures are definitely not the same spanning from planning oriented to incremental approaches. This span is not surprising when looking into the literature on strategic approaches as this can also be found in the general strategic literature (Mintzberg, Alstrand and Llampel, 1998, 2001; Farjoun, 2002; Pettigrew, 1985; Drejer og Printz 2006).

Using Salmela & Spil (2002) as our basis it is possible to identify two distinct approaches to developing a digitalisation strategy. We define an approach, as “a set of goals, guiding principles fundamental concepts, and principles” (Iivari et al., 1998). The taxonomy developed by Salmela & Spil (2002) gives an informative insight and is developed as a continuum covering two distinct approaches. The two approaches are placed on the continuum so that at one end the strategic process starts with analysis and planning and ends with action and implementation. At the other end of the continuum the incremental approach is placed where action and planning is an integrated but still rational process. These two distinctive approaches are well research and developed. However, by looking in some of the most recent literature (Bondarouk 2006, Holmqvist & Pessi., 2006, Bhandari et al., 2004) we can see a rough
sketch of a third and alternative approach is under development. This approach is more oriented towards improvising and interaction in the sense that actions are the starting point and analysis is introduced as reflection in groups. This means that action is placed in prior to and not after the analysis. The process of developing a digitalisation strategy for the customer – supplier related area is thus an iterative process where actions in the sense of prototypes and experiments is the basis for strategy development. The results are via reflection converted into new actions and thus the strategy is the result of an intended emergent process.

Each of the three approaches offers different explanations for behaviour in terms of outcome and processes. The rational planning model, posits that members of organisations will make decisions that will provide maximum benefit to the firm. This approach is typical associated to stable conditions where structures can be identified and the future can be predicted. The predictability is the main argument for engaging in formal procedures involving data collection and analysis. The incremental model utilise a planning terminology but acknowledges that the future not always can be predicted. Therefore the plans must be updated on regular basis. Planning is, however, still possible and beneficial. Finally, the learning and interaction approach to strategy making understands the future as flux and thus it is not possible to predict. Only through actions and the derived reflections will it be possible to understand and act in this ever-changing environment. Based on a literature study, a prediction matrix is developed in table below.

<table>
<thead>
<tr>
<th>Statement ID</th>
<th>Indicators</th>
<th>Planning approach</th>
<th>Incremental approach</th>
<th>Learning approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Large, complicated and highly integrated with overall strategy</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1b</td>
<td>Smaller and loosely integrated with overall strategy</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>1c</td>
<td>Actions, ideas, and prototypes substitute plans. Plan derives from action and reflection</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>2a</td>
<td>Formal, multiple analyses are used as input to the planning process</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2b</td>
<td>Personal experiences and judgment are used to derive plans</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2c</td>
<td>Implementation is analysis. Reflection of actions in groups substitute data collection and analysis</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3a</td>
<td>Planning is based on formal representation by many different groups</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>3b</td>
<td>Planning is based on an informal network of a few key individuals often executives</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3c</td>
<td>Both network and hierarchy. The interplay of the two is essential</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>4a</td>
<td>Formal methods and criteria are the basis for decision</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>4b</td>
<td>Shared group understanding of a few key individuals is the basis for decision</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4c</td>
<td>The result derived from experiments and prototypes. Did the prototype result in the expected value?</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>5a</td>
<td>Plans are periodically reviewed to adapt to changed circumstances</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5b</td>
<td>Plans are continuously reviewed to adapt to changed circumstances</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>5c</td>
<td>The result of sense-making create the basis for the next step. Organizational members are at the same time enabled and constrained by others in the organization</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The matrix clearly shows that the three approaches are distinct and thus very different. We will use these three approaches as our analytical model for understanding the different cases. Thus we will use it to validate if there is a need for all three approaches or if the two approaches (planning and incremental) is enough.

Findings
The empirical research was conducted in one of Denmark’s biggest industrial companies. The company has over 22,000 employees and a turnover of above EUR 3.0 billion. The company has production in over 20 countries and
sales in over 130 countries, covering all continents on the globe. The company consists of three relatively autonomous divisions with a total of 15 business areas, of which 10 are included in this study. The 10 business areas has been analysed via extensive interviews and dialogues in order to localise the used strategic approach and the achieved success. The analysis clearly shows the different key actors in the different cases interpret and understand the environment as being stable and slow moving. The actors’ main argument for this perception of the environment (markets, customer relations, technological development etc.) is that the products and customer relationships have not changed significant in the many years that the company has been operating. This finding would, in relation to above discussion about strategic approach and the perception of environment, indicate that the actors mainly was using planning approaches because the stable market conditions is by the actors understood as predictable. However, the findings, that the below matrix document, interestingly shows that there is a large span of strategic approaches in the company.

<table>
<thead>
<tr>
<th>Cases</th>
<th>Statement 1 - Size of Plan</th>
<th>Statement 2 - Approach to analysis</th>
<th>Statement 3 - Planning organization</th>
<th>Statement 4 - Basis for decisions</th>
<th>Statement 5 - Plan Implementation and monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1A</td>
<td>1B</td>
<td>1C</td>
<td>2A</td>
<td>2B</td>
</tr>
<tr>
<td>1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

We find three groups of cases, namely the planning, incremental and learning oriented cases. The findings in the above matrix illustrate the cases on the left of the table and there scores related to the planning, incremental and learning strategic orientation on the right of the table with the identification of the current indicators in between. At the bottom of the table, the hits and misses of each indicator related to the case’s strategic orientation is calculated. For example have the case 8 hit in indicator 1B where the indicator 1C was expected.

There are several interesting findings in the matrix. We will only deal with the ones that we find the most interesting in relation to the purpose of this article: 1. the hits in relation to the different strategic approaches, 2. problems relating to statement two, and 3. the most successful approach.

Looking at the different hits in relation to the strategic approaches it is clear that all three approaches are represented in the case. Looking deeper into the findings it is clear that the incremental approach is the approach that has the highest amount of hits in the different cases. The reason for this is probably that in the reality there will often be an element of incrementalism in many of the cases. The incremental element is often represented because human beings accumulate learning and approach each situation every day with a mindset, a recipe they have acquired from the past, which they use to understand the present in order to design actions to cope with it (Stacy, 2003). This also means that the incremental approach as analytical tool is not distinct enough for our purpose. We therefore get a more powerful analytical tool by adding the learning approach to the strategic continuum. In the cases where the incremental and the learning approach was used there was a very distinct difference between how the two practiced. It was obvious that the actors using the incremental approach still had a tendency to leave planning to executives and implementation to employees at lower ranks of the organisation. This means that planning and implementing capabilities was split. This was not the case in the learning cases. This influences several of the statements e.g. statement five as executives that were not involved in implementation have a need for different types of monitoring and reporting processes. This need was not so significant in the learning cases because the executives was involved in the implementation and thus got first hand information.
Looking at statement two it is obvious that this statement compared to the other statements are not to the same degree a strong identifier of strategic orientation in the case. The reason for statement 2 not being a strong identifier could be that the analytical procedures depend very much on the individual context of the different cases. What we experienced was that the analytical procedures often were the most neglected part of the strategic work. Even though many of the persons involved in the strategic work had an academic background the strategic work was often conducted under extreme time pressure, which may have influenced the employees in the different cases to pick procedures that seemed most efficient and not the ones that was inline with what the theory would dictate. Further more there was a clear distinction the between the approach to analysis and the believers and non-believers of the digital technology. By this we mean that in the cases where actors was using the learning approach they where believing in the digital technology and thus these cases was occupied with locating where and how to implement the technology and not so much if and why. The cases that was using the planning and incremental approaches was very much dealing with cost/benefit analysis and return on investment calculations. This indicates that the actors to a higher degree was non-believers and thus was searching for arguments etc. to convince people to place the digital technology on the agenda and allocate resources. This is the reason why some cases that otherwise was incremental was using a planning approach to analysis because they could not rely on personal experience as is typical in the incremental approach and thus, had a need to produce calculations etc. that documented the business case of using the digital technology towards customers.

The study also clearly documents that the learning approaches are being used by the actors in the cases and thus, there is evidence in the cases that the learning approach is an additional approach to the planning and incremental approaches. There is also evidence in the cases that indicate that the learning approaches have been the most successful. This incites us to conclude that based on the current study the most optimal strategic approaches for developing inter-organisational digitalisation strategies is the learning approaches. We now ask the question why the learning approaches are the most optimal and if it makes sense that these approaches are the most successful?

To discuss this question we draw on the work of C. Perez (2002) and her insights on technological revolutions and bubbles. Perez (2002) describes how the world has experienced five different technical revolutions. Where of the ICT revolution is the most recent. Interestingly Perez (2002) documents that the five different revolutions have progressed two similar consecutive periods (1) the early installation period, which consists of an irruption stage and a frenzy stage, and (2) the deployment period, which consists of a synergy stage and a maturity stage. The two overall periods are typically separated by a downturn of crash. Using this map as our guide we agree with Jelassi & Enders (2006) in the notion that the current ICT revolution is in the early synergy stage of the deployment period. The main argument for placing the ICT revolution in this stage is the bursting of the dot.com bubble that occurred in 2000 and the early 2001. This crash is according to Perez (2002) a typical event that indicates that the installation period is ending and the beginning of the deployment period. The first stage of the deployment period is the synergy phase, which is described as a period where a vast learning process must take place among engineers, manager, sales and service people and obviously consumers, about how the new technology can be utilised. The reason for this is that
the world of computers, flexible production and the internet has a different logic. Suddenly, in relation to the new technologies, the old habits and regulations become obstacles. This means that a new context must be created; a new “common sense” must emerge and propagate (Perez, 2002). It is in other words not sufficient just to have the appropriate technology in place. In addition, managers need to be willing and able to abandon previous ways of doing things and start using the new technology in such a way that it actually creates value.

In relation to this article we ask ourselves what strategic approaches are the most appropriate for a context where a new context must be created and a new common sense must emerge. The current research clearly shows that learning approaches was used and we also found strong indicators that this approach were the most successful. In the light of Perez (2002) and the above description we must state that this is not a surprise. The synergy stage is a stage where a lot of experimentation has to be conducted in order to locate where and how the technology can be utilised. This means that there are not clear boundaries and stable structures that can serve as basis for predictions as the planning literature states. Therefore the strategic work must open for innovation and the creation of the unknown. In this context the learning approaches are the most appropriate and therefore there is a need for more research in this area. We have not in our literature review been able to find a well defined learning approach to developing an inter-organisational digitalisation strategy and therefore we inline with Salmela og Spil (2002) call for more research on the learning and emergent approach to developing an inter-organisational digitalisation strategy. Fuglsang & Sundbo (2005) directly state that this approach in the general strategy literature is not well developed and this indicates to us that there is a clear cab that needs research.

These findings incite us to start formulating how the process of creating strategy is conducted when innovation, learning and sense-making is conducted. We will in this article only deal with some of the basic elements of the approach, as our future research specifically will deal with this area. Utilising the digital technology in the customer – supplier context is closely connected to innovation and thus is experienced as highly unpredictable and insecure. The new strategic approach is coined; the interaction based approach because learning in very dynamic and flux situations best are conducted via interaction (Weick, 1995). The interaction based approach is designed as a open-ended innovative process and therefore the actors do not have a well defined plan to seek comfort in. The interaction-based approach should be understood as a process defined by a set of value creating activities that together creates the room and possibilities for strategising to occur. We propose the following model as overall framework for the strategic work. Most importantly the model starts with action and introduces analysis as reflection.

The above outlined process is below framed as a figure. As can be seen in the figure the process of developing and implementing digital solutions via the interaction-based approach is very different from other similar innovation models as the “Innovation funnel” (Dooley and O’ Sullivan, 2000) and the second and third generation “stage-gate” (Cooper,1994), because the below process has focus on actions and the thereof obtained learning. The other
traditional models undergo traditional planning process with data collection, analysis, formulation and implementation.

The starting point in the model is typically an action or “chaos” as Weick et al., (2005) describes it. The actions will work as interruptions to the existing flow of understanding and thus initiate reflection and sense-making. This sense-making is the basis for individual and group based learning that can initiate reconceptualization of existing meaning structures and thus make individuals and organisations capable of making the impossible, possible. During the reflection phase the experiences are grouped and categorised so that the experiences of individuals are accessible for a larger group of organisational actors (Weick et al., 2005). To aid the reflection this phase will often involve the use of theoretical models, concepts, external or internal actors etc. According to Bondarouk (2006) the spreading of the experiences and reflections is an essential phase that distinguishes individual and organisational experience based learning. When using the experience based learning in an organisational setting the exchange and spreading of the experiences is an essential task as these experiences can act as interruptions and this initiate the sense-making that is so essential. The exchange and spreading of experiences include many different formal and informal activities as conversations, meetings, presentations etc. It is in this phase that the experiences through conversation start to exist and thereby the basis for future actions is created (Taylor and Van Every, 2000).

The creation of a common understanding involve a common accept and respect of different ideas, conceptions and understandings. The goal is not to agree on one single “correct” understanding but to a higher degree to see it as an exchange of different meanings of how the digital technology can be used in a the customer – supplier relationship. It is sense-making activities were all the actors through conversation articulates their experiences, understandings, interpretations and reflections. If there exist a big disagreement in this phase it is often a good idea to redo the experiment in a new setting. In the last phase the “now what” (Weick et al., 2005) question is asked. Should the experiment continue or should it be discarded. The process as it is described above should not be regarded as a linear process but much more as an iterative and cyclic process.

References


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