Towards a New Understanding of the e-Business Strategic Process: The Rise of a Dynamic Interaction-Based Approach

Reimer Ivang

Abstract In the early 1970s, strategic planning was introduced onto the corporate management scene and since then it has been a dominating conceptual frame for understanding and designing various strategies in the corporate world. Nearly a decade later, strategic planning has been used by various scholars to explain how companies could strategize in the field of ICT and e-business. Strategic information systems planning (SISP) is an example of this application of strategic planning in the field of e-business. The prominence of SISP within the corporate IS strategy literature has been dramatic, but today there exist other different understandings of how strategies are emerging. However, e-business strategic literature is still dominated by the planning e-business approaches. The question therefore remains: Is it still optimal to build a static, programmed analytical information plan, or must the e-business strategic process adapt to changes in the planning environment and internal changes within the organization? E-business strategy, because of increased uncertainty and environmental complexity, must encourage interaction between key stakeholders that implement and use the e-business technology. The literature reveals the lack of a dynamic theory of e-business strategy. The current paper proposes an e-business strategy conceptualized as a dynamic interaction-based process, in which several organizational components co-create the e-business strategic framework of the company. The process is based on group-learning processes where the strategy emerges though the processes of action and reflection. These experience-based group-learning processes help organize the process of e-business strategizing so that improvisational and dynamic competences can emerge.

Keywords e-Business · Strategizing · Value creation · Competitive advantage · Group learning · Experience-based learning

R. Ivang (✉)
Aalborg University, Aalborg, Denmark
e-mail: ivang@business.aau.dk

F. J. Martínez-López (ed.), *Handbook of Strategic e-Business Management*,
Progress in IS, DOI: 10.1007/978-3-642-39747-9_3,

1 Introduction

It is generally agreed that, in order to stay competitive, organizations need a strategy for utilizing digital applications; therefore, most organizations today are involved in developing and implementing e-business strategies. In this research handbook on e-business strategic management, it is logical to set forth the different approaches that exist for developing and implementing an e-business strategy. Early attempts to formulate e-business strategies concentrated on the analytical task of deriving e-business strategies from business plans. The limitations of these analytical and planning-oriented approaches, however, were soon discovered. The critics suggested informal and incremental e-business strategic development and implementation to ensure flexibility, creativity, and strategic thinking in the development of emergent strategies.

In previous e-business strategic research (Sambamurthy et al. 1994; Philip 2007; Newkirk and Lederer 2006; Segars and Grover 1998), a contradiction appears between published planning methods and the generally held views about effective implementation of e-business strategies. More to the point, new case studies (Hamel and Breen 2007) of such successful e-business pioneers as Google, Facebook, and Amazon clearly illustrate that these firms have not adopted formal planning and analytical approaches to e-business strategizing and implementation.

The explicit e-business strategic methods described in the literature predominantly assume a comprehensive e-business strategic process. Despite the fact that many researchers (Pyburn 1983; Vitale et al. 1986; Earl 1993; Bondarouk 2006, Bhandari et al. 2004) consider incremental approaches to be more effective, methods that can be used to facilitate emergent e-business strategizing are few and not detailed enough. Important topics in e-business strategic management include the process, tools, and activities that result in an e-business strategy. All of these elements are relevant in the daily life of managers on different levels who are constantly faced with the challenge of developing e-business strategies.

For companies and managers, uncertainty has become a way of life, and they are finding it increasingly difficult to predict changes in their environments (Luftman 1996). Environmental turbulence increases the risk of e-business investment failures (Salmela et al. 1996). E-business decisions are characterized by increasing complexity, and emergent interaction-based approaches can enable decision-makers to draw on their intuition and support improvisation in the e-business strategic process. This contribution, therefore, takes a closer look at an alternative approaches to developing and implementing e-business strategies. The goal is to present a different methodology that can be applied to e-business strategic thinking—an approach that is more dynamic and interaction-based.

This approach has, so far, been underexamined in the e-business strategic literature (Salmela and Spil 2002; Ivang et al. 2009); therefore, it is important to analyze it more closely. This chapter provides an understanding of the dynamics in the approach and opens the organizational black box in order to investigate how different organizational components optimally work together to develop a

competitive advantage in e-business. Section 2 begins with a brief look at the digital revolution and how this revolution impacts an organization's external and internal e-business environment. In Sect. 3, the normative and descriptive approaches to strategy are explained; this explanation is carried forward into Sect. 4, in which the dominant approaches to e-business strategy are explained. Section 5 explains the dynamic, interaction-based approach to e-business strategic thinking.

2 Digital Revolutions: A Look Towards the Challenge

Before engaging in a more detailed discussion of e-business strategy, it is necessary to begin with a rigorous look at the digital technology itself and the evolution[1] that digital technology has undergone during the last decade. The objective is to compare this evolution with the development that similar technological revolutions have experienced. The result of this concise reflection on the course of technological change is to show that it is not constant, but is sometimes quite rapid, as in the early days of the Internet. This dynamic development of the digital technology introduces uncertainty into the strategy process; managers can get stuck simply doing nothing. Therefore, the course of technological change is important for managers to understand in order to develop successful e-business strategies.

The cyclical pattern of technological development does not involve a short cycle of five to 10 years like the business cycle, it is instead much longer. The idea of a long cycle was introduced by Nicholai Kondratiev (1892–1938), a Russian economist who founded and directed the Institute of Conjuncture in Moscow in the 1920s (Freeman and Loucã 2001). The idea of a long wave cycle was taken up by Joseph Schumpeter, who came across Kondratiev's work in Germany before he moved to Harvard University USA. Later Schumpeter put forward the idea that each long wave represented the application of a new group of technologies, each of which had a very powerful transformative effect on the economy, effectively bringing about another industrial revolution.

When comparing technological developments that result in industrial revolutions, it can seem surprising that the comparison covers three decades and not a much shorter period. Nevertheless, this is one of the more important discoveries revealed by the long wave theory. According to the long wave theory, technological revolutions are often spread over a longer period from the time of the initial

[1] The use of the terms "evolution" and "revolution" alternates in this chapter, but both concepts should be considered in the context of technological revolutions spreading over the first invention of technology until it is generally accepted and incorporated into different levels of society. However, it is easier to understand the process in which technology becomes accepted in society if presented in terms of "evolution," as many small adaptations seen together constitute the process in which "revolution" becomes reality.

innovation until the respective technology has found its place as an integral and a natural part of daily life for both consumers and companies. Comparing different technological revolutions reveals an often forgotten perspective on a development that is exhaustively described by the media. The development attracted much attention in the beginning of the new millennium, when the dot-com bubble burst and e-commerce and e-business were declared dead as concepts. The comparison also contributes valuable knowledge to e-business decision-makers, as it provides valuable insight into the current context of technological development and in turn the overall challenge that these decision-makers are facing.

The gist of this discussion is that the computer, the microprocessor, and digitalization should be regarded as a technical revolution in line with the printing press and the steam engine (Perez 2002; Freeman and Loucã 2001). It has often been claimed that digitalization will comprise the same importance for the economy as steam, railways, and mass production (Van Hoek 2001; Huizingh 2002; Perez 2002; Jelassi et al. 2014). The development can be divided into different periods and stages as illustrated in Fig. 1.

As shown in Fig. 1, the development is divided into two main periods, each of which contains several stages: (1) the installation period encompassing the changing and wildness phases; and (2) the application period encompassing the golden age phase and the adult phase. According to Perez, there is another stage, the collapse, between the two phases.

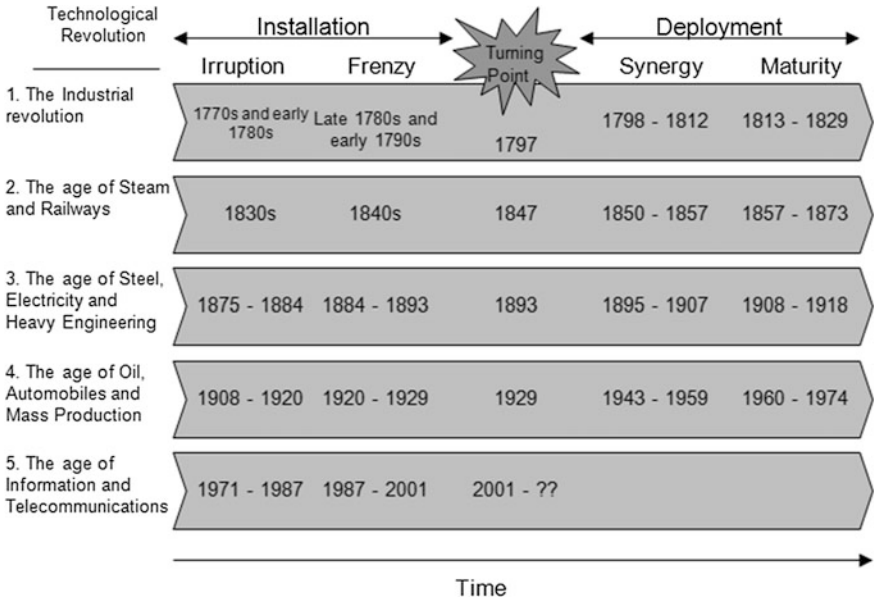

Fig. 1 Technological revolutions and their development (adapted from Jelassi et al. 2014; Perez 2002)

As can be observed in Fig. 1, technological revolutions stretch over significant periods of time, the time from the discovery of the original invention until its recognition in the existing economy often being considerable. Freeman and Loucã (2001) argue that we are currently experiencing a fifth Kondratiev long cycle.

The era of information and telecommunication began in 1971 with the introduction of the microprocessor, which made it possible to produce and market computers in sizes and at prices that enabled companies and individuals to own and use this new technology. This resulted in new transformative technologies, comprising computers, telecommunications, and the Internet, together with developments in biotechnology. These technologies have begun to transform our daily lives in myriad ways. According to Freeman and Loucã (2001), the "dot-com bubble" of the late nineties shares many of the characteristics of similar bubbles seen in earlier long cycles, such as the railway mania of the 1840s and the Wall Street crash of 1929. Based on the above, as well as on the analyses carried out by Perez (2002) and Jelassi et al. (2014), there are strong indications that digital technology in the beginning of 2001 enters the early Golden Age phase, when it diffuses to all parts of the existing economy.

Regarding this, Perez (2002) writes:

> The world of computers, flexible production and the Internet has a different logic and different requirements from those that facilitated the spread of the automobile, synthetic materials, mass production, and the highway network. Suddenly, in relation to the new technologies, the old habits and regulations become obstacles, the old services and infrastructures are found wanting, the old organizations and institutions are inadequate. A new context must be created; a new "common sense" must emerge and propagate. (p. 44).

The notion of the long cycle and technological revolutions posits a number of important implications for managers developing e-business strategies and academics trying to understand the development process. First, if technological change is cyclical, one can expect different results at different points in time; i.e., a given type of strategic approach will result in different success rates dependent on the environmental complexity at a given point in the long cycle. Second, Freeman (1986) shows how technologies often progress hand in hand with institutional changes. Each of the long cycles discussed in this section was associated with significant institutional change, such as education and training, industrial relations, corporate structures, systems of management, capital markets, and the legal framework. It, therefore, must also be anticipated that there are implications for managers that are engaged in e-business strategizing.

As can be seen in the above quote, the challenge for e-business decision-makers is to develop strategies that enable organizations to develop this new "common sense" in which digital technology is a natural part of everyday business. Before decision-makers reach this state, they will have to discover which new forms of value creation (Amit and Zott 2001) the individual company should pursue. This process of discovery is, however, seldom an analytical and planning-oriented process. It is a process by which the company has to challenge existing knowledge and wisdom to reap the new possibilities for value creation made possible by

digital technology. It is likewise necessary that senior staff, engineers, and customers be willing to relinquish traditional ways of acting and instead begin applying the new technology in areas where it makes sense and generates value. In other words, there is a great deal of learning involved in e-business strategizing during the current stage of the digital revolution.

Several authors (Pyburn 1983; Earl 1993; Segars and Grover 1998) note that organizational learning can be linked to effective-business strategizing. The transformation takes time and requires experimentation and adaptation. The digital revolution, as described above, is without a doubt one of the greatest forces in the perceived growing environmental uncertainty among companies (Luftman 1996). Therefore, the questions remain: How can companies best develop and implement strategies in the current phase of the digital revolution? What kind of strategic mindset is optimal when the challenge is to invent a new logic and learning, and develop a new common sense? In order to answer these questions, we must first briefly discuss the nature of strategy and the differences between strategies and strategic processes.

3 What is Strategy?

Parallel to many other concepts in the sphere of social science, there is no single accepted definition of the concept of strategy. The concepts of strategy and strategic processes have been studied since the early 1960s (Chandler 1962; Ansoff 1965), and later scholars (Porter 1980, 1985; Prahalad and Hamel 1990; Grant 1991; Barney 1991) have made seminal contributions to the strategy literature. Almost everyone agrees that strategy is important, yet almost no one agrees on what strategy is and how it is defined and practiced (Magretta 2003). Most researchers, however, accept that strategy deals with circumstances of great importance to an organization. Smaller matters in the organization will only be considered strategically important if they, for one reason or another, influence the organization in a significant manner, or if they constitute a new phenomenon that catches the attention of management. The dividing line between what is strategic and what is not is thus a more or less subjective judgment of what is important and what is not deemed important. As a consequence, the very concept of "strategic" becomes critical.

There have been several attempts to compile the various approaches to the phenomenon of strategy and in that way to draw the strategic map. One of the best-known attempts was conducted by Mintzberg et al. (1998), who compiled descriptive and normative approaches to strategy. The *normative approaches* normally focus on the content of strategy (e.g., which strategies a company should choose), whereas the *descriptive approach* focuses on the strategic processes (e.g., why the strategic processes operate as they do). The normative strategy literature is based on the assumption that senior staff can lead the company by means of rational decisions. The descriptive strategy literature considers the development of

strategy as a complex organizational process with which staff members at different levels in the organization are involved, and where the strategy is influenced by phenomena such as culture, power, or learning (Mintzberg 1999).

In sum, there is a big difference in the ways strategy is described in the literature, depending largely on who conceives the strategy, and if it is conceived of beforehand or if it can evolve as a pattern of actions. In essence, there are different understandings of how strategic processes unfold and who creates strategies. The process leading to a strategy can be described as: "Strategy processes are concerned with the how, who and when of strategy" (de Wit and Meyer 1998, p. 5). Thus, the process leading to a strategy deals with how and when strategies are created, as well as with which persons are involved in the strategy process.

A naive picture of a strategic process is a group of people, probably in black suits, disappearing into an office or a conference room, and then reappearing after some hours or days carrying a strategic plan written down on the basis of various analyses that define concrete suggestions. Although sessions like these can be and often are one of the elements in a strategic process, the actual creation of a strategy is multi-faceted. The critical question to be asked in this connection is whether the strategy is a result of an intentional, systematic, and rational action.

Researchers within the normative research tradition have great confidence in senior staff and their ability to base their strategic decisions on rational choices. If the reality and the environment of the organizations are understood as stable, then the specific strategic approaches bring compilation of data and description of this reality into focus. This makes it possible to develop strategies and strategic alternatives on the basis of the best possible description of the reality. According to these researchers, the construction of a strategy must be taken over by senior staff in the organization, as they are more experienced in identifying relevant strengths, weaknesses, opportunities, and threats.

Descriptive researchers, on the other hand, assume that there are limitations to such rational choices. These researchers are of the opinion that the organization's culture is an unexplored jungle of opportunities that can be understood merely through concrete actions and experiments. Thus the reality cannot only be observed, but can also be lived and understood through social interaction. In this manner strategy becomes a creative, social and action-oriented activity: "Strategy making has to be an active, dynamic process" (Mintzberg et al. 2005, p. 121), and "Strategy has to come out of a creative process conducted by thoughtful people" (Mintzberg et al. 2005, p. 5). As these quotations illustrate, we are dealing with an active, dynamic and creative process, in which the strategy develops through creative interaction among people.

The two different approaches to strategy leads to one of the most frequently discussed elements in the strategy literature; namely, whether the strategy is the outcome of a meticulously planned process, or if a strategy can be a pattern of consistent actions over time (McGee et al. 2005). In other words, the question remains: Does the strategy explain future actions, or does it evolve from previously undertaken, present individual and organizational actions? The answer varies depending on the person who is asked, as well as in which context the strategy will

be put into practice. Moreover, the answer will often be a combination of the two alternatives, as individuals or organizations in most cases rarely realize 100 % of their original objectives. On the other hand, the realized objective rarely differs greatly from the original objective (Mintzberg and McHugh 1985); i.e., the realized strategy is often a combination of planned and evolving actions. The literature on planning considers it possible that thinking precedes action, whereas the evolving understanding of strategy will argue that thinking and action are closely interconnected (Starbuck 1985). Weick (1987) adds that thinking will often strengthen action, as it will endow the action with meaning when it is seen in retrospect.

Thus, it is highly debatable whether the strategic processes are to be understood as a planned or evolving process. Keep these two possibilities in mind in the following overview of the various approaches to developing and implementing e-business strategy.

4 The State of e-Business Strategy

As previously mentioned, strategizing in relation to information systems and e-business remains a critical concern for both practitioners and academics (Philip 2007; Chen et al. 2010; Newkirk and Lederer 2006; Evans 2001; Cagliano et al. 2003; Birkhofer et al. 2000; Good and Schultz 2002; Lord 2000). The e-business strategic process has been greatly inspired by the literature and practices within the more "conventional strategic processes." Chaffey (2012) describes how e-business strategies have much in common with corporate, business, and marketing strategies; e.g., (1) strategy should be based on the current performance in the marketplace, (2) it defines how the company meets their objectives, and (3) it sets allocation of resources to meet goals. Even though e-business strategy and other types of strategies have much in common, there are areas where e-business strategies and the e-business strategic process are different from other types of strategies. First of all, digital technology enables new and innovative forms of value creation (Amit and Zott 2001); managers need to understand these new forms of value and incorporate them into the e-business strategic process. Secondly, related to the new forms of value creation, there is a great deal of learning and discovery associated with e-business strategy. Thirdly, Tassabehji (2003) mentions that disruptive technology threatens competitiveness and enables new forms of innovation. Companies and managers must also acknowledge that competition can come from new areas and that market dynamics can change as a result of e-business. Lastly, e-business will result in cannibalization, channel conflicts, and pricing issues, which must be considered in the strategy process of every organization. All in all, there seems to be a new "digital mindset" that successful managers need to adopt in order to develop an effective e-business strategy. The successful development and application of this digital mindset is the primary goal of e-business strategy.

As mentioned above, there are, both in conventional strategy and in e-business strategy, different processes and approaches towards creating strategies (Premkumar and King 1994; Sambamurthy et al. 1993; Earl 1993; Mintzberg et al. 1998; McKiernan, 1997). When dealing with e-business and information systems strategy, it is typical to categorize the different approaches along a continuum ranging from traditional planning to more incremental and adaptive approaches (Ivang et al. 2009; Newkirk and Lederer 2006; Earl 1993; Sabherwal and King 1995). This continuum reflects the above-mentioned distinction between normative and descriptive approaches to strategic processes. In Table 1, the two main approaches to e-business strategy, comprehensive and incremental, are briefly summarized.

The planning approach towards e-business strategy creation works best when the following conditions can be assumed: (1) members of organizations will make rational decisions that will provide maximum benefits to the organization; (2) stable conditions exist and structures can be identified; and (3) the future can be predicted accurately.

Predictability is the main argument for engaging in formal procedures involving data collection and analysis. The comprehensive strategic development process is formal and structured, based on written rules and procedures. It is based on a top-down planning strategy, and narrow participation profiles are present (Raghunathan and Raghunathan 1991; King 1978; Premkumar and King 1994; Raghunathan and King 1988). The process of strategy creation is conceptualized as a rational, comprehensive, and analytical task where the key outcome is a portfolio of e-business initiatives that will assist an organization in executing its business plans and realizing its business goals (Lederer and Sethi 1988). A large number of planning methods exist that define a linear, systematic approach to e-business strategy (Salmela and Spil 2002). Furthermore, the planners and implementers are typically detached.

In contrast to the comprehensive planning approach, the incremental approach is more dynamic, creative, and informal (Newkirk and Lederer 2006). The incremental approach assumes that the future cannot always be predicted, so organizational plans must be updated on a regular basis. Planning is, however, still

Table 1 Different approaches to e-business strategy

Characteristic	Comprehensive	Incremental
Analysis	Formal analysis	Informal analysis
Integration with business strategy	Plans are tightly integrated with business strategy	Plans are loosely integrated with business strategy
Review of plans	Plans are periodically reviewed to adapt to changed circumstances	Plans are continuously reviewed to adapt to changed circumstances
Representation and input	Plans are based on representation from many organizational groups	Plans are based on representation from a few individuals
Simplicity vs. complexity	Plans are complicated	Plans are simple

Source Salmela and Spil (2002)

possible and beneficial (Sambamurthy et al. 1994; Ciborra 1994). Therefore, the incremental approach is still conceptualized as an analytical process in which analysis comes before implementation. The planning is, however, smaller in scope and updated when needed. It focuses on only one or a few themes, with e-business decisions made on a case-by-case basis (Earl 1993).

The focused agenda keeps the planning team small and allows the use of personal experience and experimentation with new and innovative ideas, sometimes at relatively low levels in the organization (Ciborra 1994). Explicit planning methods are seen as having only a minor role. Consequently, the incremental approach does not provide similar explicitly systematic methods for e-business planning, as is the case under the planning approach.

The two above-mentioned approaches to e-business strategizing are well-developed and documented in the existing literature. However, there are also other alternative approaches that are currently under development. One of these approaches is referred to as the dynamic interaction-driven approach (Ivang et al. 2009). This approach acknowledges that the environment is always in a state of flux, and is thus not possible to predict. The resulting uncertainty indicates that environmental turbulence increases the risk of e-business investment failure (Salmela et al. 1996). Only through actions and the reflections derived therefrom will it be possible to understand and strategize in this ever-changing environment (Venkatraman 2000; Holmqvist and Pessi 2006; Newkirk and Lederer 2007).

The differences between the dynamic interaction-driven approach and the better-known planning and incremental approaches can be seen in Table 2.

As shown in Table 2, the dynamic interaction-driven approach to e-business strategy is a clear alternative to the incremental and planning approaches. The complete literature review to support the above table can be found in Ivang et al. (2009). As noted by Salmela and Spil (2002), there is a need for more research on the interaction and emergent approaches to developing e-business strategy. Fuglsang and Sundbo (2005) note that these types of approaches are not well-developed in the strategy management literature. Spil and Salmela (1999) went further, arguing for a dynamic theory of e-business strategy.

In the following section, the dynamic interaction-driven approach to conducting e-business strategizing is conceptualized.

5 The Rise of a Dynamic Interaction-based e-Business Approach

Earlier in this chapter, it was explained how the digital revolution had evolved and it was argued that the revolution currently was in the synergy phase calling for innovative approaches and trial and error processes. The goal of e-business is to create new understandings and engage in processes, which will result in the emergence of a new common sense. The synergy stage is a stage where a lot of

Table 2 Three approaches to e-business strategizing

Aspect	Approach	Indicators	Theoretical identification
Size of plan	Planning	Large, complicated and highly integrated with overall strategy	King (1978), Premkumar and King (1994), Raghunathan and King (1988)
	Incremental	Smaller and loosely integrated with overall strategy	Sambamurthy et al. (1994), Ciborra (1994)
	Interaction-driven	Actions, ideas, and prototypes substitute plans. Plan derives from action and reflection	Venkatraman (2000), Holmqvist and Pessi (2006)
Approach to analysis	Planning	Formal, multiple analyses are used as inputs to the planning process	Earl (1988), Raghunathan and Raghunathan (1991), Bergeron et al. (1991)
	Incremental	Personal experiences and judgment are used to derive plans	Sambamurthy et al. (1993) Vitale et al. (1986)
	Interaction-driven	Implementation is based on analysis. Reflection of actions in groups substitute data collection and analysis	Holmqvist and Pessi (2006), Bhandari et al. (2004)
Planning organization	Planning	Planning is based on formal representation by many different groups	Galliers (1987), Earl (1988)
	Incremental	Planning is based on an informal network of a few key individuals (often executives)	Pyburn (1983), Vitale et al. (1986), Earl (1993)
	Interaction-driven	Both network and hierarchy. The interplay of the two is essential	Bhandari et al. (2004)
Basis for decisions	Planning	Formal methods and criteria are the basis for decision	Ein-Dor and Segev (1978)
	Incremental	Shared group understanding of a few key individuals is the basis for decision	Sambamurthy et al. (1994), Ciborra (1994)
	Interaction-driven	The results derived from experiments and prototypes. Did the prototype result in the expected value?	Bondarouk (2006), Holmqvist and Pessi (2006)
Plan implementation and monitoring	Planning	Plans are periodically reviewed to adapt to changed circumstances	Galliers (1987)
	Incremental	Plans are continuously reviewed to adapt to changed circumstances	Earl (1993), Vitale et al. (1986), Sambamurthy et al. (1993)
	Interaction-driven	The result of sense-making creates the basis for the next step. Organizational members are at the same time enabled and constrained by others in the organization	Bondarouk (2006), Bhandari et al. (2004)

Source Adapted from Ivang et al. (2009)

experimentation has to be conducted, in order to locate where and how the technology can be utilized to generate competitive advantage. This means that the boundaries are unclear and stable structures, which can serve as bases for predictions, do not exist. Therefore, the strategic mindset of managers engaging in e-business strategizing must be open for innovation and the creation of the unknown.

In line with Weick et al. (2005) and Galliers (2007), the term "strategizing" is used to cover the complete process from envisioning to planning, taking action, and assessing outcomes. This means that the process of strategizing covers both strategy formulation and execution. Earl (1993) asserts that both quantitative and qualitative evidence suggests that the "organizational approach" is the most effective. According to Earl (1993), the organizational approach is based on organizational learning and the continuous interplay between formal and informal methods and behaviours in the organization. This means that e-business strategy is best performed when there is a continuous interplay between several organizational units, the hierarchy and the network.

In organizational settings, strategy and learning have a dualistic role to play in e-business management and practice. Strategy is a learning process where the stakeholders in the strategy process (the hierarchy and the network) are themselves the learning unit. In addition, this strategy is seen as being important for the direction of learning in organizational settings, and it is management's responsibility to direct and support individual and organizational learning (Dodgson 1993). After all, the success of strategy depends on its implementation. E-business strategizing is understood as a learning process that encompasses all levels of management and the informal network organization. Based on Kolb's learning theory (1984), the strategy process starts with taking action and the goal is to produce both single and double-loop learning (Argyris and Schön 1978). The interplay between the two constructs (the hierarchy and the network) can be seen in Fig. 2.

As can be seen in Fig. 2, there are three basic elements that constitute the dynamic interaction-driven approach to e-business strategizing: (1) the hierarchy, (2) the network, and (3) experience-based learning, a mechanism that facilitates

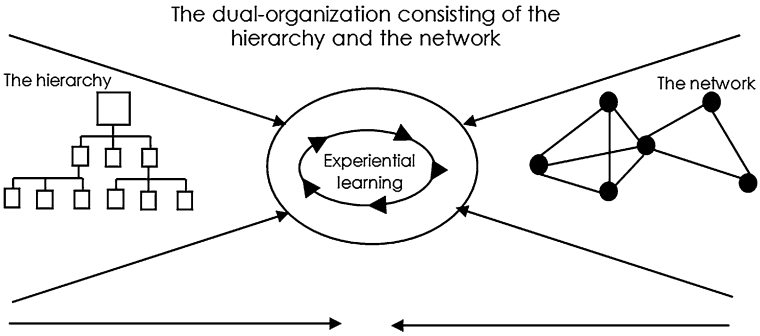

Fig. 2 Theoretical conceptualization of a dynamic interaction-driven approach to e-business strategizing

the development and implementation of the most effective e-business strategic initiatives. In the following three subsections, these three elements will be carefully explained and conceptualized in relation to e-business strategizing.

5.1 Experiential Learning as an e-Business Strategic Engine

The first element of the dynamic interaction-driven approach to e-business strategizing is the strategy process itself. Since earlier in this chapter strategy has been associated with learning, it is no surprise that organizational learning and more precisely organizational experiential learning is a key conceptual platform of the approach.

Research on experiential learning (Kegan 2005, Kolb 1984) is used to understand how the two organizational structures interact when formulating and executing e-business strategy. Experiential learning is utilized because learning and strategy have a dualistic role to play in e-business management (Auer and Reponen 1997). Moreover, several cases involving e-business pioneers demonstrate how e-business processes are constructed as learning processes, and not as rational planning processes. Hamel and Breen (2007) describe Google's use of a Darwinian process where organizational members using experiential learning are developing and implementing e-business strategy simultaneously. According to Hamel and Breen (2007), Google's success owes much to serendipity, and therefore Google's long-term strategy is not to innovate through top-down planning processes, but rather through trying to recreate the fertile innovation climate that is found within Silicon Valley itself. Google utilizes the value of trial-and-error processes, employing action and reflection to reach the future before its competitors do.

Kolb (1984) includes trial-and-error processes and learning through action when describing the concept of experiential learning. Kolb's theory is based on the idea that people have a natural capacity to learn, and that experiences act as catalysts for engaging in this process (Kayes 2002; Bondarouk 2006). Kolb views learning as being derived from experience and requiring an individual to resolve opposing demands (Kolb 1984).

According to Kolb (1984), learning involves the interplay between two interdependent dimensions of knowledge: acquisition and transformation. Knowledge acquisition demands the resolution of the tension between appre-hension (concrete experience) and comprehension (abstract conceptualization). Another dimension of knowledge is transformation, which reveals a dialectical tension between reflective observation and extension (active experimentation).

Kolb's original learning cycle includes four steps:

1. Doing
2. Reflecting
3. Thinking
4. Deciding

Kolb's cycle describes learning on the individual level; however, the theory has previously been used with success to understand learning on a group and team level (van der Heijden and Eden 1998; Kayes et al. 2005; Bondarouk 2006).

To accommodate the individual learning cycle within a collective organizational learning cycle, the model needs to be adjusted; the individual "doing-reflecting-thinking-deciding" cycle becomes a collective one, consisting of "collective acting-group reflecting-knowledge disseminating-sharing understanding-mutual adjustment." The process is shown below in Fig. 3.

The organizational learning process, as shown in Fig. 3, can start in different phases; however, in order to make the learning effective, the entire cycle must be completed (Bessant 2002). The organizational learning process is a cyclic and iterative one, where the two organizational components in close cooperation discuss and interact to understand the implications of e-business strategic decisions. The overall goal of the process is to enable the development of double-loop learning.

Double-loop learning involves the actors in the process learning not only how the technology is changing, but also what the consequences of their actions will be. The actors also learn the meaning behind the unconscious models they are using to understand their business, organization, and the market in which they are operating. In relation to developing e-business strategy, organizational members collaboratively engage in trial-and-error processes involving technology. The goal of these trial-and-error processes is to reach a common understanding in which e-business is utilized in the optimal manner at the strategic, tactical, and operational levels.

As is the case in Silicon Valley, the dynamic interaction-driven approach to e-business strategy starts with actions, and not with typical planning-oriented activities (Mentzas 1997). This is due to the increasing change and uncertainty (Miller and Friesen 1980, 1982, 1983, Salmela and Spil 2002), which makes it harder to predict the business environment in which e-business will be leveraged.

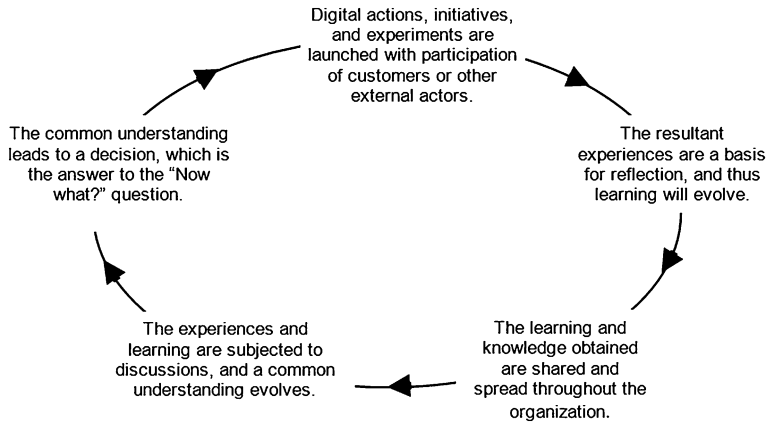

Fig. 3 The role of experiential learning in e-business strategy (*source* Ivang 2007)

Furthermore, IT changes rapidly, which makes it difficult to predict the IT and technologies that will become available during the planning horizon (Tanriverdi et al. 2010; Benamati and Lederer 2000). Weick (1987) argues that, under conditions of extreme ambiguity and uncertainty, the ability to act and carry out experiments is essential in order to be successful. It is the actions that lead to experience and knowledge, which ultimately diminishes the experienced uncertainty.

5.2 A Five-step Process of e-Business Strategizing

The five-step model of e-business strategy consists of the following five steps: (1) action, (2) reflection, (3) sharing of learning, (4) common understanding, and (5) decision. Often the process will start with actions, which can be initiated by internal or external demands. However, certain elements of the hierarchical organization can also decide to initiate some experiments with new or existing technology in new contexts. These actions consist of individual users interacting with a given technology, thereby creating valuable insights and experiences. This step resembles what Weick et al. (2005) call "starting with chaos." The chaos is exemplified by the current phase of the digital revolution and the fact that e-business and e-business strategy is an emerging phenomenon in many organizations. During the action step, individuals' everyday work situations are interrupted by a new technology. As a response to interruptions, users will start to reflect on their behaviors (Walsham 2005). The realized experiences provide a basis for reflection when the implementation team and the participants from the hierarchical organization—in collaboration with the external participants reflect on their experiences.

In other words, the action step is the phase during which organizational members are interacting with technology and creating the basis for the e-business strategy of tomorrow. As noted earlier, in the current phase of the digital revolution, the challenge is to develop a new common understanding in which the technology has found its optimal place. Starting with action instead of planning means that managers and employees form a project group with the purpose of trying out technology in a new customer case. Starting with action as the first step is an effective countermeasure against the common "go live" problem. Bondarouk (2006) explains that the "go live" problem is related to user dissatisfaction with the new system and is a missing link between existing processes and the new system. The dissatisfaction can also be related to excessive technological complexity or lack of support for the end user (Holmqvist and Pessi 2006).

Crucial learning is generated in the interplay between acting and experimenting with technology, and this reveals cues and data that would not be created in traditional planning approaches. This learning is critical in successful e-business strategizing. Actions are often launched as experiments where the outcome is unknown. Even if the experiment does not succeed, it will still produce learning and experience that can be used in successful experiments later. Therefore, it is

important that the right to act and fail is maintained. It is important to include end-user involvement in the e-business strategy process, since interacting with technology goes well beyond simply designing and building it. Using technology often reveals interesting elements that could not have been predicted in advance, and therefore would seldom be uncovered in a traditional planning process. In some projects, the greatest value of a specific technology turned out to be far afield from what was actually envisioned and planned by the implementation team (Ivang 2007).

The second phase is reflection. Action without reflection has limited value when the goal is to expand the existing business utilizing new business opportunities created by emerging technology. In most cases, action and reflection cannot be considered independently of one another. When interacting with technology, employees will often experience unforeseen results that spark reflection on actions; thereafter, the experiment can progress in new directions. Equally important, however, is the usual reflection of the team in meetings during an experiment and after it has been completed. In these meetings, the project team asks, "What happened? Why did this happen? Why did the experiment produce unforeseen results? Which elements were positive? Which elements were negative?" These questions give rise to common sense, and the results of the experiment advance from tacit to explicit knowledge. Bondarouk (2006) split the reflection phase into the following elements: discussing mistakes, describing and locating the experienced problems using the technology, and making comparisons with other IT implementations. The reflection phase is a process of abstraction from which a frame of reference and understanding will emerge. This frame of reference enables the individual actors to make sense of the actions and thereby convert individual learning into group-based learning. During the reflection phase, experiential knowledge is grouped and categorized so that the experiences of individuals are accessible for a larger group of organizational actors (Weick et al. 2005).

Following reflection, the third phase is to spread and share the obtained learning and knowledge in the organization. When the project group members have experimented with technology and reflected on their experiences, knowledge must be shared so that the experiences, both positive and negative, are disseminated throughout the organization. A negative experience with technology can represent nothing more than a mismatch between technology and a specific context. When sharing this experience, it could possibly trigger reflection by other organizational players leading to enhanced performance.

Coughlan et al. (2005) show how critical effective communication is between IT, sales and marketing, and the rest of the organization if the company is to realize the full value of its investments in digital technology. Most active knowledge dissemination takes place when organizational members spread information in reaction to various experiments. As the word spreads, it is typical for different departments in the organization to request a case description or other material in written form. It is important, however, that knowledge sharing is not reduced to compiling a report that the recipients have to read.

Knowledge has been found to spread most effectively by discussion at formal and informal events, demonstrations, and briefings. Both managers and employees of the organization are involved in this task of knowledge dissemination. This is the phase when, through conversations, experiences and learning come to life and create the basis for future action (Taylor and Van Every 2000).

The fourth phase consists of reaching a common understanding between the project group and the rest of the organization. This involves setting the different individual experiments into a collective context where new directions and possibilities might emerge; therefore, the common understanding should not be understood solely as an isolated event. Common understanding of a single experiment can, and often will be, a fixed meeting where the two organizational components meet and have discussions. It is important that these conversations and discussions are based in an open environment where there is a time and place to share contrasting experiences, and that they result in a common understanding of the experiment (Baker et al. 2005).

As Bondarouk (2006) notes, it is important during this phase to integrate the initial goals of the experiment with the experiences of the implementation team and end-users of the system. This discussion can lead to common understanding when the objective of the project was the right one, and the potential mistakes can be explained by a faulty process.

The last phase is the decision phase. Does the organization want to invest more in the project, or should it be shut down? This is when the organization must find an answer to the "Now what?" question. What implications do the acquired knowledge and experience have for the e-business strategic direction of the organization? This decision is reached in a complex interaction between the actors in the network and the hierarchy. Frequently, the decision of whether to invest further in the project or to end it is obvious and straightforward; however, if the results of the experiment also have implications for the overall e-business strategic direction, and organizational processes can be altered, the decision becomes more complex. Another factor that can complicate the final decision is the fact that, in order to scale, there may be a need for more resources to progress to a more durable technology.

Using Kolb's experimental learning cycle in an organizational setting, the exchange and spreading of experiences is an essential task, as these experiences can act as interruptions that initiate sense-making (Weick et al. 2005). The dissemination of knowledge can take place at many different formal and informal activities, such as conversations, meetings, presentations, and so on. It is in the decision phase that shared experiences create the basis for future actions (Taylor and Van Every 2000). Experiences and learning are subjected to discussion, and a common understanding evolves. The goal is not to agree on a single "correct" understanding, but to participate in an exchange of the different ways in which the digital technology can be used. Common understanding leads to a decision when the "Now what?" question is asked (Weick et al. 2005). Should the experiment continue, or should it be abandoned?

5.3 The Dual Organization as a Platform for e-Business Strategizing

The above-described, experience- and group-based e-business strategizing and learning process requires a platform to function. The process will not perform optimally if the hierarchy or the network alone is involved in the process. In other words, the process cannot be only a bottom-up or top-down process. The dynamic interaction-driven approach to e-business strategy builds on the theories of the dual organization and experience-based learning. According to Stacey (2003), thinking in dualistic terms has a "both… and" structure; one is mindful of both but locates them in different locations or times. When dual thinking is associated with the organization, the focal point becomes how to utilize both the formal and informal elements of the organization, and these elements are not viewed as counterproductive.

Organizational charts and job descriptions generally reflect the formal structure, or "prescribed" network, in a given organization. In contrast, the informal or "emergent" network refers to the often covert and unsanctioned informal relations that emerge over and above such prescribed patterns of interaction (Conway and Steward 2009). The two structures operate from different logics and perspectives (Gray and Starke 1984). To be successful, the e-business strategic process requires multiple views from different stakeholders (i.e., individual-level mental models) and their interaction to achieve shared mental models at the organizational level (Kim 1993).

The concept of the dual organization (Fuglsang and Sundbo 2005; Stacey 2003) can be used as a platform to understand how effective e-business strategy processes are orchestrated and supported in the organization. It is grounded in the principle that organizations comprise two different organizational components: (1) the hierarchy and (2) the interactive network organization.

This theory does not regard these two organizational elements as being competitive, but argues that these two elements can coexist effectively (Fuglsang and Sundbo 2005). When the dual organization is used as a platform, it becomes clear that the e-business strategizing process is based on many interactions within the organization. New ideas evolve out of interactions between the employees and the managers, and their interactions with external stakeholders and constituencies. This process is designed to balance both exploitation and exploration capabilities (March 1991, 1995; Sutcliffe et al. 2000). The roles of the hierarchy and the network organization are described below.

As Ivang (2007) notes, the hierarchy dictates changes in e-business strategy from the top, and is also involved in the implementation of the changes. In relation to e-business strategy, the role of the hierarchical organization can be described as follows:

1. *Formulate goals*: The first role of formulating goals and setting boundaries is a task for the hierarchy organization, which sets the frames in which the

innovative and creative processes could unfold. The hierarchical organization must guard the innovative processes associated with developing e-business strategy. This task is a key role for the hierarchical organization, as it is important for the employees in the network organization to have clear guidance, in order to build up self-confidence and gain the ability to act with power and force. Members from both the hierarchy and the network organization need goals to be sufficiently precise that they make sense and enable direct action; however, goals cannot be so rigid that the employees are locked into specific applications, technologies, etc. Eisenhardt and Sull (2001) identify five simple categories of rules that can guide the e-business strategic process: (1) How rules, (2) Border rules, (3) Priority rules, (4) Timing rules, and (5) End or Stop rules.

2. *Prioritize*: Here it must be understood that the e-business strategy is under constant development and refinement. Therefore, the strategy should not be regarded as a traditional one, to be captured in a document. The network organization presents results and projects for the hierarchical organization. The presentations facilitate the sharing of results among the different members. The presentations are, therefore, not focused entirely on getting new projects accepted or acquiring more resources. The main goal is to share and spread the knowledge generated by members' participation in different projects.
3. *Facilitate:* Facilitation is handled via individual members of the hierarchy who are assigned to different projects and work as closely together with this team as possible. Stacey (2003) notes the value of managers' firsthand experiences in gaining the optimal understanding of the new technology in relation to the company, markets, and customers. Providing management with the opportunity for firsthand experience is critical, as this enables the managers to understand the value of technology, facilitate the development of the organization, and provide common understanding. Managers with firsthand experiences carry what they have learned into their management networks; therefore, the impact of the dynamic interaction-based approach to e-business strategy is significantly enlarged.
4. *Protect the network*: In times of crisis, it is common for companies to cut expenses, and here the hierarchical organization plays a key role in protecting the network organization, ensuring that members can continue learning and making mistakes, in the process inventing the components of tomorrow's e-business strategy.

The network organization is composed of employees from marketing, sales, and IT. Often external players (e.g., customers) will also be involved in the process. Both the network organization and the hierarchy should be accepted as action-taking components; however, most of the actual work involving technology and optimization of systems is handled in the network organization. The main task of the network organization is to execute and experiment on a daily basis, thereby setting e-business strategy into motion. Thus, the primary role of the network is to

create the learning environment in which many different stakeholders interact and become engaged in the e-business strategizing process.

The positive coexistence of the hierarchy and the network demonstrates that effective e-business strategy processes are based on both formal and informal decision-making, and a process can be implemented in both directions, bottom-up and top-down. The fact that the organization is seen as a duality (i.e., a combination of two structures, the hierarchical, managerial one and a loosely coupled interactive one) creates the platform for understanding how e-business strategy is created in the interaction between the two structures.

As shown in Fig. 4, the process of developing and implementing digital solutions via the interaction-based approach is very different from similar innovation models such as the "innovation funnel" (Dooley and O'Sullivan 2000) and the second- and third-generation "stage-gate" (Cooper 1994), because the process focuses on actions and the resultant interaction. More traditional models employ data collection, analysis, formulation, and implementation.

The dynamic interaction-based approach to e-business strategy holds a variety of different implications for managers. Firstly, it is important that managers understand e-business as an evolving field where best practices are currently under development. For managers, this means that e-business strategizing has more in common with innovation than with planning. If the goal is clear and the environment is stable, it is easy for managers to develop a plan that will help them reach the goal. In relation to e-business, however, the goal for many organizations is not totally clear; before it can even determine the goal, the organization needs to embark on a journey where managers develop the strategy as they go along. In order to minimize mistakes, however, the e-business managers must create an

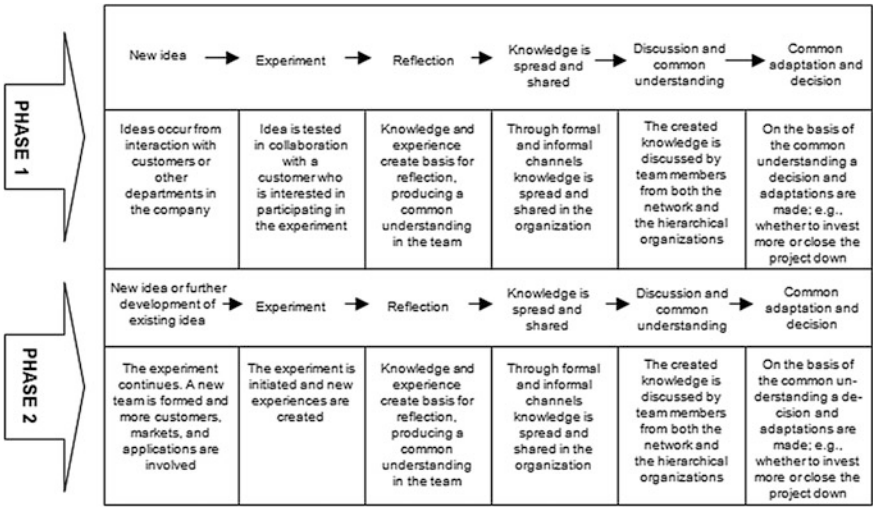

Fig. 4 Interaction-based e-business strategy framework (*source* Ivang et al. 2009)

environment where many different professional competencie interact in value-adding processes.

These different competences must go through trial-and-error processes to locate the areas where digital technology can be utilized to generate value for the organization. The goal is to create the future of the organization, a future in which the digital technology is a natural part of organizational life and the organization utilizes technology to gain competitive advantage.

6 Perspectives

This chapter is a step towards creating a dynamic interaction-based approach to e-business strategy. It describes the process and interaction between the different organizational components involved in e-business strategy.

The need for more dynamic e-business strategic approaches is based on the understanding of the synergy stage of the digital revolution. At the synergy stage, organizational members on different levels need to invent the future and develop a new common understanding of digital technologies. This calls for strategizing approaches that focus more on innovation than planning. Organizational members will often experience the strategy context as highly unpredictable and insecure. As uncertainty has become a way of life, and companies are finding it ever more difficult to predict changes in their environments (Luftman 1996), the e-business strategic process has to make use of more diversified strategic tools and processes. Simple addition of more tools into a planning or incremental process would not suffice here, since the method of strategizing is crucial.

A dynamic interaction-driven approach builds on interactions between key stakeholders that implement and use the technology, as interaction is a prerequisite for making sense of the ever-changing environment (Weick 1995), and therefore a prerequisite for formulating and executing e-business strategies.

The organizational context, the dual organization, and experience-based group learning act as the engine and create the context for setting these different tools into action. Together, the dual organization and experience-based group learning will improve the company's improvisational capabilities and IT-enabled agility. These dynamic capabilities emerge as a result of the interplay between complex organizational elements and stakeholders. Not all problems in e-business strategy can be solved with this alternative approach, but the ability to understand and explain e-business strategic processes in companies is enhanced with this alternative approach to e-business strategy.

The conceptualized alternative presented in this paper is a significant contribution to the literature because it will help researchers and practitioners understand the complex processes and learning cycles that take shape within companies that must develop e-business strategies.

References

Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic Management Journal, 22*, 4930520.

Ansoff, I. (1965). *Corporate strategy*. New York: McGraw-Hill.

Argyris, C., & Schön, D. (1978). *Organizational learning: A theory of action perspective*. Reading: Addison-Wesley.

Auer, T., & Reponen, T. (1997). Information systems strategy formation embedded into a continuous organizational learning process. *Information Resources Management Journal, 10*(2), 32–43.

Baker, A. C., Jensen, P. J., & Kolb, D. A. (2005). Conversation as experiential learning. *Management Learning, 36*(4), 0.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120.

Benamati, J. & Lederer, A.L. (2000). The emerging IT group and rapid IT change. In *SIGCPR 2000*, Evanston IL: ACM.

Bergeron, F., Buteau, C., & Raymond, L. (1991). Identification of strategic information sytems opportunities: Applying and comparing two methodologies. *MIS Quarterly, 15*(1), 89–101.

Bessant, J. (2002). Developing routines for innovation management within the firm. In Sundbo Jon & Fuglsang Lars (Eds.), *Innovation as strategic reflexivity* (pp. 127–139). London: Routledge.

Bhandari, G., Bliemel, M., Harold, A., & Hassanein, K. (2004). Flexibility in e-business strategies: A requirement for success. *Global Journal of Flexible Systems Management, 5*(2/3), 11–22.

Birkhofer, B., Schögel, M., & Tomczak, T. (2000). Transaction- and trust-based strategies in ecommerce—A conceptual approach. *Electronic Markets, 10*(3), 0.

Bondarouk, T. V. (2006). Action-oriented group learning in the implementation of information technologies: Results from three case studies. *European Journal of Information Systems, 15*, 42–53.

Cagliano, R., Caniato, F., & Spina, G. (2003). E-business strategy: How companies are shaping their supply chain through the internet. *International Journal of Operations and Production Management, 23*(10), 1142–1162.

Chaffey, D. (2012). *E-business and e-commerce management* (5th ed.). Harlow: Prentice Hall.

Chandler, A. D. (1962). *Strategy and structure*. Cambridge: MIT Press.

Chen, D., Mocker, M., Preston, D., & Teubner, A. (2010). Information systems strategy: Reconceptualization, measurement, and implications. *MIS Quarterly, 34*(2), 233–259.

Ciborra, C. (1994). The grassroots of IT and strategy. In C. Ciborra & T. Jelassi (Eds.), *Strategic information systems* (pp. 3–24). Chichester: Wiley.

Conway, S., & Steward, F. (2009). *Managing and shaping innovation*. Oxford: Oxford University Press.

Cooper, R. G. (1994). Third-generation new product processes. *Journal of Innovation Management, 11*, 3–14.

Coughlan, J., Lycett, M., & Macredie, R. D. (2005). Understanding the business-IT relationship. *International Journal of Information Management, 25*(4), 303–319.

De Wit, B., & Meyer, R. (1998). *Strategy, process, content, context: An international perspective* (2nd ed.). London: International Thomson Business Press.

Dodgson, M. (1993). Organizational learning: A review of some literatures. *Dodgson Organization Studies, 14*, 375–394.

Dooley, L., & O'Sullivan, D. (2000). System innovation manager. *Production Planning and Control, 11*(4), 369–379.

Earl, M. J. (1988). Formulation of information systems strategies: Emerging lessons and frameworks. In M. J. Earl (Ed.), *Information management: The strategic dimension* (pp. 157–174). Oxford: Clarendon Press.

Earl, M. J. (1993). Experiences in strategic information systems planning. *MIS Quarterly, 17*(1), 1–24.

Ein-Dor, P., & Segev, E. (1978). Organisational context and the success of management information systems. *Management Science, 24*(10), 1064–1077.

Eisenhardt, K. M., & Sull, D. N. (2001). Strategy as simple rules. *Harvard Business Review, 79*(1), 107–116.

Evans, C. (2001). An e-strategy for online business. *Information Systems Management, 18*, 8–21.

Freeman, C. (1986). The role of technical change in national economic development. In A. Amin & J. B. Goddard (Eds.), *Technological change, industrial restructuring and regional development* (pp. 100–115). London: Allen and Unwin.

Freeman, C., & Louçã, F. (2001). *As time goes by: From the industrial revolutions to the information revolution*. Oxford: Oxford University Press.

Fuglsang, L., & Sundbo, J. (2005). The organizational innovation system: Three models. *Journal of Change Management, 5*(3), 329–344.

Galliers, R. D. (1987). Information systems planning in the United Kingdom and Australia—A comparison of current practice. *Oxford Surveys in Information Technology, 4*, 223–255.

Galliers, R. D. (2007). Strategizing for agility: Confronting information systems inflexibility in dynamic environments. In K. C. Desouza (Ed.), *Agile information systems, conceptualisation, construction and management*. Burlington: Elsevier.

Good, D. J., & Schultz, R. J. (2002). E-commerce strategies for business-to-business service firms in the global environment. *American Business Review, 20*(2), 111–118.

Grant, R. M. (1991). The resource-based theory of competitive advantage: Implications for strategy. *California Management Review, 33*(3), 114.

Gray, J. L., & Starke, F. A. (1984). *Organizational behavior: Concepts and applications*. Columbus: Merrill.

Hamel, G., & Breen, B. (2007). *The future of management*. Cambridge: Harvard Business School Press.

Holmqvist, M., & Pessi, K. (2006). Agility through scenario development and continuous implementation: A global aftermarket logistics case. *European Journal of Information Systems, 15*(2), 0.

Huizingh, E. (2002). Towards successful e-business strategies: A hierarchy of three management models. *Journal of Marketing Management, 18*, 721–747.

Ivang, R., Rask, M., & Hinson, B. (2009). B2B inter-organisational digitalisation strategies: Towards an interaction-based approach. *Direct Marketing: An International Journal, 3*(4), 244–261.

Ivang, R. (2007). *Towards a new understanding of the digital strategic process*. Dissertation: Aalborg University.

Jelassi, T., Enders, A., & Martínez-López, F. J. (2014). *Strategies for e-business: Creating value through electronic and mobile commerce, concept and cases* (3rd ed.). London: FT Prentice Hall.

Kayes, A., Kayes, D. C., & Kolb, D. A. (2005). Experiential learning in teams. *Simulation and Gaming, 36*(3), 330–354.

Kayes, D. C. (2002). Experiential learning and its critics: Preserving the role of experience in management learning and education. *Academy of Management, Learning and Education, 1*(2), 137–150.

Kegan, R. (2005). The hidden curriculum of youth: Whaddaya want from me? In M. E. Wilson & L. E. Wolf-Wendel (Eds.), *ASHE reader on college student development theory* (pp. 67–80). Boston: Pearson Custom Publishing.

Kim, D.H. (1993). The link between individual and organizational learning. *Sloan Management Review, 35*(1), 37–50.

King, W. R. (1978). *Strategic planning for management information systems*. March: MIS Quarterly.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs: Prentice-Hall.

Lederer A.L. & Sethi, V. (1988). The implementation of strategic information systems planning methodologies. *MIS Quarterly*, *12*(3), 445–461. doi10.2307/249212 http://dx.doi.org/10.2307/249212.

Lord, C. (2000). The practicalities of developing a successful e-business strategy. *Journal of Business Strategy, 21*(2), 40–47.

Luftman, J. (1996). *Competing in the information age: Practical applications of the strategic alignment model*. New York: Oxford University Press.

Magretta, J. (2003). *What management is*. London: Profile Books.

March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science, 2*(1), 71–87.

March, J. G. (1995). The future disposable organizations and the rigidities of imagination. Organization (Articles on organizational futures). *Sage, 2*(3/4), 427–440.

McGee, J., Thomas, H., & Wilson, D. (2005). *Strategy: Analysis and practice, text and cases*. Boston: McGraw-Hill.

McKiernan, P. (1997). Strategy past: Strategy futures. *Long Range Planning, 30*(5), 790–798.

Mentzas, G. (1997). Implementing an IS strategy–A team approach. *Long Range Planning, 30*(1), 84–95.

Miller, D., & Friesen, P. H. (1980). Momentum and revolution in organizational adaptation. *Academy of Management Journal, 23*, 591–614.

Miller, D., & Friesen, P. H. (1982). Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. *Strategic Management Journal, 3*, 1–25.

Miller, D., & Friesen, P. H. (1983). Strategy-making and environment: The third link. *Strategic Management Journal, 4*, 221–235.

Mintzberg, H., & McHugh, A. (1985). Strategy formation in an adhocracy. *Administrative Science Quarterly, 30*, 160–197.

Mintzberg, H., Ahlstrand, B., & Lampel, J. (1998). *Strategy safari: A guided tour through the wilds of strategic management*. New York: Free Press.

Mintzberg, H., Lampel, J., & Ahlstrand, B. (2005). *Strategy safari: A guided tour through the wilds of strategic management*. New York: Free Press.

Mintzberg, H. (1999). Bees, flies and CEOs: Do we have too many bees making strategy and not enough flies? Across the Board, pp. 37–42.

Newkirk, H., & Lederer, A. (2006). Incremental and comprehensive strategic information systems planning in an uncertain environment. *IEEE Transactions on Engineering Management, 53*(3), 380–394.

Newkirk, H. E., & Lederer, A. L. (2007). The effectiveness of strategic information systems planning for technical resources, personnel resources, and data security in environments of heterogeneity and hostility. *The Journal of Computer Information Systems, 47*(3), 34–44.

Perez, C. (2002). *Technological revolutions and financial capital: The dynamics of bubbles and golden ages*. Cheltenham: Edward Elgar.

Philip, G. (2007). IS strategic planning for operational efficiency. *Information Systems Management, 24*, 247–264.

Porter, M. E. (1980). *Competitive strategies: Techniques for analyzing industries and competitors*. New York: Free Press.

Porter, M. E. (1985). *Competitive advantage*. New York: Free Press.

Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review, 3*, 79–91.

Premkumar, G., & King, W. R. (1994). Organizational characteristics and information systems planning: An empirical study. *Information Systems Research, 5*(2), 75–109.

Pyburn, P. J. (1983). Linking the MIS plan with corporate strategy. *MIS Quarterly, 13*, 1–14.

Raghunathan, B., & Raghunathan, T. S. (1991). Information systems planning and effectiveness: An empirical analysis. *Omega, 2*(3), 125–135.

Raghunathan, T. S., & King, W. R. (1988). The impact of information systems planning on the organization. *Omega, 16*(2), 85–93.

Sabherwal, R., & King, W. R. (1995). An empirical taxonomy of the decision-making processes concerning strategic applications of information systems. *Journal of Management Information Systems, 11*(4), 177–214.

Salmela, H., & Spil, T. A. (2002). Dynamic and emergent information systems strategy formulation and implementation. *International Journal of Information Management, 22*(6), 441–460.

Salmela, H., Lederer, A.L. & Reponen, T. (1996). Prescriptions for IS planning in a turbulent environment. In: *Proceedings of the ICIS Conference* (pp. 356–368), Cleveland.

Sambamurthy, V., Venkatraman, S., & DeScantis, G. (1993). The design of information technology planning systems for varying organizational contexts. *European Journal of Information Systems, 2*(1), 23–35.

Sambamurthy, V., Zmud, R. W., & Byrd, T. A. (1994). The comprehensiveness of IT planning processes: A contingency approach. *Journal of Information Technology Management, 5*(1), 1–10.

Segars, A. H., & Grover, V. (1998). Strategic information systems planning success: An investigation of the construct and its measurement. *MIS Quarterly, 22*(2), 139–163.

Spil, T.A.M. & Salmela, H. (1999). The fall of strategic information systems planning and the rise of a dynamic IS strategy. In T. Käkölä (Ed.), *Proceedings of the 22nd Information Systems Research Seminar in Scandinavia (IRIS),* University of Jyväskylä, Department of Computer Science and Information Systems, Jyväskylä.

Stacey, R. (2003). *Strategic management and organisational dynamics: The challenge of complexity*. Harlow: Prentice-Hall.

Starbuck, W. H. (1985). Acting first and thinking later: Theory versus reality in strategic change. In J. M. Pennings, et al. (Eds.), *Organizational strategy and change* (pp. 336–372). San Francisco: Jossey-Bass.

Sutcliffe, K., Sitkin, S., & Browning, L. (2000). Tailoring process management to situational requirements. In R. Cole & W. Scott (Eds.), *The quality movement & organization theory*. Thousand Oaks: Sage.

Tanriverdi, H., Rai, A., & Venkatraman, N. (2010). Reframing the dominant quests of information systems strategy research for complex adaptive business systems. *Information System Research, 21*(4), 822–834.

Tassabehji, R. (2003). *Applying e-commerce in business*. London: Sage Publications.

Taylor, J. R., & Van Every, E. J. (2000). *The emergent organization: Communication as its site and surface*. Mahwah: Erlbaum.

Van der Heijden, K., & Eden, C. (1998). The theory and praxis of reflective learning in strategy making. In C. Eden & J. C. Spender (Eds.), *Managerial and organizational cognition: Theory, methods and research* (pp. 58–75). London: Sage.

Van Hoek, R. (2001). E-supply chains—Virtually non-existing. *Supply Chain Management, 6*(1), 21–28.

Venkatraman, N. (2000). Five steps to a dot-com strategy: How to find your footing on the web. *Sloan Management Review, 41*(3), 15.

Vitale, M.R., Ives, B. & Beath, C.M. (1986). *Linking information technology and corporate strategy: An organizational view*. Paper presented at the 7th International Conference on Information Systems, San Diego, CA.

Walsham, G. (2005). Learning about being critical. *Information Systems Journal, 15*(2), 111–117.

Weick, K. E. (1987). Organizational culture as a source of high reliability. *California Management Review, 29*(2), 112–127.

Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sense-making. *Organization Science, 16*(4), 409–421.

Weick, K. E. (1995). *Sensemaking in organizations*. Thousand Oaks: Sage Publications.