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Strategies for Leveraging IT-enabled Service Innovation in Intensively Competitive Market

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ABSTRACT

Many studies have explored service innovations regarding the use of information technologies, yet few have addressed the strategic leveraging in IT investment for sustaining competitiveness. The objective of this paper is to examine different strategies that firms have applied in leveraging advanced information technologies for service innovation in highly competitive market. The analysis of strategy is developed based on two dimensions: (1) IT capability, referring to a firm's ability to deploy IT-based resources, combined with (2) the firm's complementary resources including customer and supplier relationships, financial capital. We investigate the convenience-store industry in Taiwan, where the intensity of convenience stores is ranked as the highest in the world and is observed to be in the intensive competitive market. The case analysis reveals that there are four types of strategies firms apply in leveraging IT for competitiveness: predator, inventor, follower, and hedger. Firms may apply multiple strategies toward different innovation initiatives.

Keywords

Leveraging IT, service innovation, competitive IT strategy, convenience store industry.

INTRODUCTION

An intensively competitive market leads to the challenges such as slower industry growth, and reduced industry profitability (Lele, 1992; Swaminathan, 1998) which create the need for firms to initiate service innovations to compete and sustain the competitive advantage. Information technology (IT), defined as computer-based technology used for information storage, access, processing, and communication, is a critical strategic choice for service design and delivery (Lovell, 1995). Extant literatures, as well as evidences from practices, shows that firms are highly dependent on leveraging IT to facilitate and enable service innovations (Sambamurthy, Bharadwaj and Grover, 2003).

The issue of strategic deployment of IT/IS for achieving superior performance and competitive advantages has been a central theme in the IS literature (Brandenburger and Stuart, 1996; Kettinger, Grover, Segars and Guha, 1994; Picoli and Ives, 2005). Briefly, the resource based view (RBV) provides the perspective of why and how IT can serve as a strategic weapon to competition (Benjamin, Rockart, Morton and Wyman, 1984; Cash and Konsynski, 1985). Whereas these studies posit a direct relationship between IS resources/capabilities and firm performance, others have questioned the direct-effect argument resource, positing arguments based on complementarity which suggest that only when IT is incorporated into critical business resources and processes can IT provide superior performance (Melville, Kraemer and Gurbaxani, 2003; Whittington, Pettigrew, Peck, Fenton and Canyon, 1999). Consistent with this research stream but further extended and elaborated, the dynamic capability theory (Teece, Pisano and Shuen, 1997; Zott, 2003) argues that firms must continually reconfigure internal and external resources to form the competencies to adapt to business conditions so as to sustain advantages in rapidly changing environment. These well established frameworks and theories provide frameworks for the examination of IT-based advantages.

Despite much literature on the issues of IT on productivity (Brynjolfsson, 1993; Oliner and Sichel, 2003), performance (Dedrick, Gurbaxani and Kraemer, 2003; Mahmood and Mann, 2000) and strategic moves (Mata, Fuerst and Barney, 1995), few studies have addressed the issue between IT-enabled service innovation and strategy. Given that service innovation is regarded as a strategic weapon to compete, a broader understanding of IT-enabled service innovation in strategy is required, involving studies dynamically evaluating resources, capabilities, and service strategy (Aleda and Larry, 2003; Vargo and Lusch, 2004). From the research mentioned earlier, there have compressively explained what and why firms should exploit IT to achieve service innovation to obtain sustained competitive advantage. However, certain remains underexplored. First,

although several IT resources/capabilities and their direct effects on firm performance have been identified, the interaction between IT resources and capabilities has not been well examined (Ravinchandran and Lertwongsatien, 2005). This leads to our first research question: How do firms exploit critical resources and capabilities to foster different service innovations to obtain competitive advantage? Second, to respond to a dynamically changing market, firms need to build their capabilities to reconfigure activities and resources, but consideration of how resources are developed and configured within the firm and how they are released have been underexplored in the literature (Wade and Hulland, 2004). This leads to the second research question: How do organizations act to sustain IT enabled service innovation in a dynamically competitive environment?

To answer these questions, we organize this research based on significant work in the strategy literature. Drawing from the resource based view; we examine how firms exploit strategies by the analysis of IT resources, IT capabilities, and complementary resources. From the dynamic capabilities view, we examine the reconfiguration of resources and capabilities when the intended strategy toward different IT-enabled service innovations changes. This research is rooted in a perspective that views the strategy not as the making of a few discrete “one time” decisions, but as the configuration of interrelated and interlocking resource and activities (Rivkin, 2000; Teece, 2007). This perspective directs our attention to the lack of emphasis on a critical consideration of strategy: the resources and their various reconfigurations which results in different strategic impacts on a firms’ competitive advantages.

THEORETICAL BACKGROUND

In this section, we draw from the resource based view (Barney, 1991; Grant, 1991; Wernerfelt, 1984) to examine strategies for service innovation by taking resources as the basic unit of analysis. Further, we use dynamic capability to understand the strategy changes necessary sustain in a competitive environment. In detail, we first focus on the issues of IT and competitive advantages by discussing the strategic implications of resources including the IT-related resources/capabilities and the complementary resources. Further, we focus on the dynamic capabilities to closely understand how firms leverage the ITs to sustain in rapidly changing competition.

Strategic Resources for IT-enabled Service Innovation

IT capabilities and resources

In this research we adopt the resource-based perspective which argues that IT applications are a potential source of competitive advantage when they are valuable, rare, imperfectly imitable, and non-substitutable (Bakos and Treacy, 1986; Benjamin et al., 1984). Some researchers have framed the discussion in terms of IT capabilities, which refer to the ability to deploy and mobilize IT-based resources (Bharadwaj, 2000). Much research has argued that managing IT is a capability that can create superior performance and provide organizations with competitive advantage. Since firms are heterogeneous in developing and nurturing IT capabilities, they are likely to have different potential for leveraging IT (Peteraf, 1993). Ross, Beath and Goodhue (1996) provide illustrative case examples which explain the idea that a firm’s IT capability can provide competitive advantage and enhance firm performance. In sum, a firm with valuable, rare, and costly to imitate IT capabilities may be able to be leveraged to realize the full competitive potential of IT resources like technical IT skills, IT infrastructure. To summarize the IT resource and capabilities literature, this research views firms’ heterogeneous capabilities in managing IT resources as the factor that differentiates firms and enables superior performance in a competitive environment even when the same IT-related resource is homogeneously distributed due to imitation. Therefore, we will take IT capabilities rather IT resources as the unit of analysis to more closely examine firms’ strategy toward IT-enabled service initiatives.

Complementary resources

While many studies posit a direct relationship between IS resources/capabilities and firm performance, others have questioned the direct-effect argument. They further argued and emphasized that IS resources/capabilities are likely to create and sustained competitive advantages only when they are deployed to create unique complementarities with other firm resources (Clemons and Row, 1991; Powell and Dent-Micallef, 1997). This view also follows the same logic as the resource based view: the interaction of complementary resources, which can be ambiguous, thus enhances the value of all resources, making it difficult for competitors to imitate. Hence, IT assets by themselves may not provide much direct value but, when combined with other organizational practices, enable unique combinations of organizational capabilities leading to superior performance (Zhu, Wymer and Chen, 2002).

Dynamic capabilities

The foregoing discussion of the resource based view and resources and capabilities provide a thorough examination of how and why firms can leverage IT and other resources to gain competitive advantage. However, in rapidly changing business environments open to global competition, to engage in innovation for sustainable advantages requires more than the ownership of difficult-to-replicate assets. It also requires unique and difficult-to-replicate dynamic capabilities. By definition, the dynamic capability is the firms' ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environment (Teece et al., 1997; Winter, 2003). Specifically, they proposed three organizational and managerial processes—coordination/integrating, learning, and reconfiguring, as the core elements of dynamic capabilities. Teece (2007) further extends the theory by arguing that competitive advantages can be disaggregated into the capacity to : (1) to sense and shape opportunities and threats; (2) to seize opportunities; and (3) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets. In other words, the value of a resource will be dependent upon the firm's combination of resources and the path that the firm is following. It also pointed out that dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness. Further, some researches also view the ability of deploying IT as the dynamic capability. For example, the ability of firms to leverage their IT capabilities to develop closer relationships and create flexible competencies represents dynamic capabilities which can lead to improved customer value (Sambamurthy and Zmud, 2000).

In summary, the rationale of dynamic capability is that RBV has not adequately explained how and why certain firms have competitive advantage in situations of rapid and unpredictable change. Moreover, dynamically competitive enterprises don't just build defenses to competition; they help shape competition and marketplace outcomes through innovation. From this perspective, strategic choice is about how a firm can accumulate its technological assets due to path-dependent processes of investments, learning, and decision-making that it adopts over time. In particular, this approach mainly emphasizes on the entire mechanism base on path dependencies by which firms accumulate and refigure new resources and capabilities to respond the highly competitive environment.

RESEARCH METHODOLOGY

Case study research have been recognized as having gained acceptance over the past decade in the IS field (Benbasat, Goldstein and Mead, 1987; Orlikowski and Baroudi, 1991). In order to explore the strategic use of IT from the perspective of the contexts in which firms are situated, we use in-depth case studies to examine the heterogeneous resources and capabilities possessed by firms and interpret the behavior or actions undertaken by firms. To better understanding the configuration and interaction of different critical resource and capabilities, we take the case study which is useful when a phenomenon is broad and complex, when a holistic, in-depth investigation is needed, and when a phenomenon cannot be studied outside the context in which it occurs (Bonoma, 1985). Hence, holistic investigation which represents a key characteristic of case research, suits well our need to understand the complex and ubiquitous interactions among strategy, resource, capabilities.

Research Design

According to Yin (1994) , in a multiple-case design, the selection should follow a literal replication logic (conditions of the case lead to predicting the same results) or a theoretical replication logic (conditions of the case lead to predicting contrasting results). We adopt the replication logic in multi case design since the market is highly competitive and with few potential entrants.

Industry selection

In today's highly competitive retail environment, retailers are forced to differentiate themselves through pursuit of service-oriented business rather than focusing on merchandise and lower prices. Such differentiation strategies are common in the convenience-store industry in Taiwan. Service firms tend to be less likely than manufacturers to claim implemented technologies either in the form of advanced machinery and equipment or in the form of intellectual property. However, we found that firms in the convenience-store industry in Taiwan are proactively introducing IT, not only to enhance their efficiency but also to differentiate themselves using a greater variety of value-added services enabled by IT investments. In this study, we use multiple media kiosk (MMK) as an example to describe the strategies used by firms in the market. MMKs provide convenient means of payment for other services such as overnight delivery, banking, parking fees, or event tickets. These innovations in services dramatically changed customer behavior and the rules of competition in the market. The background profile of four companies is presented in Table 1.

	Company A	Company B	Company C	Company D
Founded time	1978	1988	1989	1988
Number of Store	4800	2324	1300	825
Revenue (US\$M, Year:2008)	4121.11	1145.45	554.54	272.73
MMK adoption time	2006	2005	2004	2005

Table 1. Profile of Studied Companies

Data Collection and Analysis

We use primary data from interviews of each firm within the industry and secondary data from newspapers and trade magazines to assess the IT strategies of firms in service innovation. Several interviews were held to provide a deeper understanding of each firm's strategy. The data collection involved five semi-structured interviews and the profiles of interviews are presented in Table 2. The questions mainly focus on the service innovation and the strategic choice. This research involves in-depth case studies of five IT-based service innovations in the Taiwan's convenience store industry, from the mid-1980s until now. These service innovations include CSCMS(Collaborative Supply Chain Management System), E-commerce, Multi-media kiosk, E-wallet.

THE CASE STUDY

Company A

Company A has the greatest overall resources, including the most selling points, the strongest brand image, and a powerful IT infrastructure which affords great capability of collaboration. Recently, Company A has actively undertaken vertical and horizontal integration with the aim of providing an even greater variety of goods and services. After developing this technology over a period of about three years, the Company planned to provide new services on this Kiosk using monopoly deals with information service suppliers. The Company is carrying out this action based on its strong bargaining power resulting from the scale economies created by its huge customer base. Although the Company is a latecomer to this IT-enabled service innovation, it has rapidly implemented the new technology, providing new services due to the rich resources it possesses. However, the relative high cost has resulted in the needs for profit growth to compensate for the investment

Company B

Company B introduced a service kiosk by direct technology transfer from the Japanese partner company in 2005. To develop this new type of service, the Company spun off this virtual service business embedded on the kiosk to form a subsidiary responsible for the new business. Though the same kiosk has been introduced in two other companies, Company B has focused on introducing and improving new services by transforming existing goods and services from physical to virtual distribution. For example, it has replaced physical game cards with virtual information goods by integrating the information flow across the various game card publishing companies. This new application not only reduces the costs and risks resulting from holding physical stocks but also creates revenue growth. The benefits of diversification include extended economies of scope and profitability and more abundant resources that in turn can be used for developing further services for customers.

Company C

Among the four companies, Company C was the first to adopt the kiosk to provide information services. It took three years to develop and bring to market. Relying on strong capabilities and skilled IT employees, the company has developed the kiosk without seeking resources from other organizations. It obtained first-mover advantages by rapidly building up the information service value network after implementing the kiosk system. Initially, company C integrated the information and payment systems of several government departments with banking companies to provide payment services such as payments of fees and fines, frequent user reward services, and banking transactions. These services created a strong cash flow, and profit growth from the transaction fees. In order to sustain these advantages, the company applied intellectual property to the services rather than to the facility itself. Though intellectual property protection for new services is not a common practice in Taiwan, this action did protect them and impede service development through kiosks by competitors to a certain degree.

Company D

The company introduced kiosk through joint-development with external partners. They added special utilities to the kiosk such as footprint scanning, Bluetooth, and infrared transmission, in order to further develop applications for services

requiring authentication. Due to its small market share and relatively smaller number of stores, Company D has not implemented kiosks in each store. As a latecomer, they had the advantage of lower risks in developing a technology with much uncertainty and unknown potential.

ANALYSIS OF STRATEGY

Although the convenience store industry has experienced several waves of IT-enabled service innovations over the years, we use multiple media kiosk (MMK) as an example to describe the strategies used by firms in the market. As depicted in Figure 1, we found four strategies firms applied to enable the service innovations.

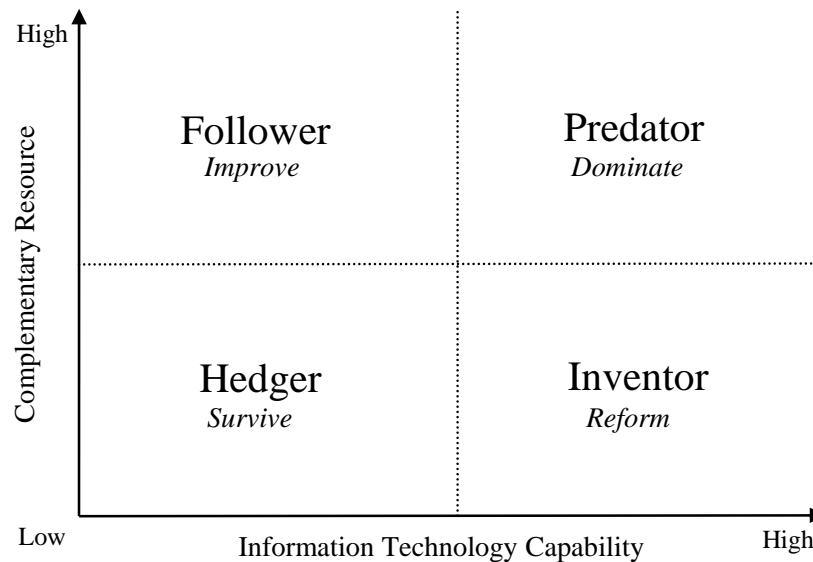


Figure 1. Strategies toward IT-enabled service innovations

Predator to dominate

We describe the Predator as the firm with the richest complementary resources, such as a strong brand image, an open culture, an abundance of capital, and great devotion to IT investment. The typical predator approach is to monopolize relationships with product or service suppliers, and launch vertical integration and horizontal integration through shared IT infrastructure, thereby locking in suppliers and customers. Locking in suppliers enables firms to offer monopolized services and goods, in turn leading to continuous revenue growth. However, to apply this strategy requires strong back-up resources and IT capabilities, and most importantly, sufficient customers to compensate for the high cost of the investment.

Inventor to reform

The inventor has superior R&D capabilities but fewer resources which can be leveraged to achieve service innovation. Using this strategy, firms rely on their IT capability to invent or introduce technology and then to benefit from those investments. This strategy can create the strongest impacts on the market when IT can afford to embed new services to create a service delivery system. In this situation, the firm can reconstruct the service value network regarding the services, creating a first-mover advantage. However, if firms do not protect this invention through intellectual property filings, or continuously develop new value added services for the system, the advantages will soon dissipate due to imitation by competitors that have sufficient resources to outsource this type of IT.

Follower to improve

This strategy benefits firms by reducing the risk that first movers incur, and improves the existing IT or services to provide a range of high quality service options. Followers can easily adopt IT because they have sufficient resources to source the IT from strategic alliances or outsourcing. However, this strategy may result in relatively lower revenues, and may not surprise customers with new services, thus having little impact on building a better brand image.

Hedger to survive

The goal of this strategy is to maintain competitive position through investment on fundamental and mature IT to support operations when firms lack resources and IT capabilities to innovate. Hedging does not lead to deficits if the introduction of the new IT does not provide much revenue growth. However, hedgers should seek opportunities to create new markets which do not require much resources and IT involvement, thus making it possible to obtain strong profit and even enhance competitive position.

Dynamic Changing Strategies

Using the macro and long-term view to examine the strategies firms apply to services innovation, we found changes in strategy toward the same service initiatives. Further, firms may apply different strategies toward different service innovations. These strategic changes appear to be paths which imply that they may learn and develop certain resources and capabilities to adapt to competition. This also results in the need for more robust resource reconfiguration and capabilities.

To explain the strategic changes and how resources and capabilities affect strategic choice, we take company A as the example. Company A underwent three strategy changes across three service innovations. First, at the beginning, Company A followed the MMK and became a latecomer in the services embedded MMK market. Further, due to the patent lawsuit from company C, the development of services and the marketing activities of its competitors such as Company A were impeded. However, the court ruled against Company C. Once Company A was free of the patent lawsuit, its can start building up its value network and services by the development of new services on the MMK. The freedom to develop such technologies was the reason for the shift from a follower to a predator strategy. Second, the CSCMS served as a closed architecture at beginning but when Company C was able to introduce more advanced technologies such as the POSI, POSII, they provided a wider range of abilities to serve as the shared infrastructure and thus offer more services. Third, Company A invented the e-wallet as a tool to allow quick payment with the aim of increasing its market share and customer loyalty. When Company C had locked in customers with this new payment tool for about three years, it saw concrete increases in its customer base. The incentives which shifted from inventor to predator are that they had a powerful company (the public transportation e-wallet publisher) as their strategic partner who has a rare resource: convenience. If Company C cooperates with this company, its resources, including its customer base throughout Taiwan, and the convenience which results from the resource complementarity will help them more bargaining power as well as the potential to obtain more customers. Figure 2 illustrates company A’s strategies changing and the relevant resource and capabilities changed.

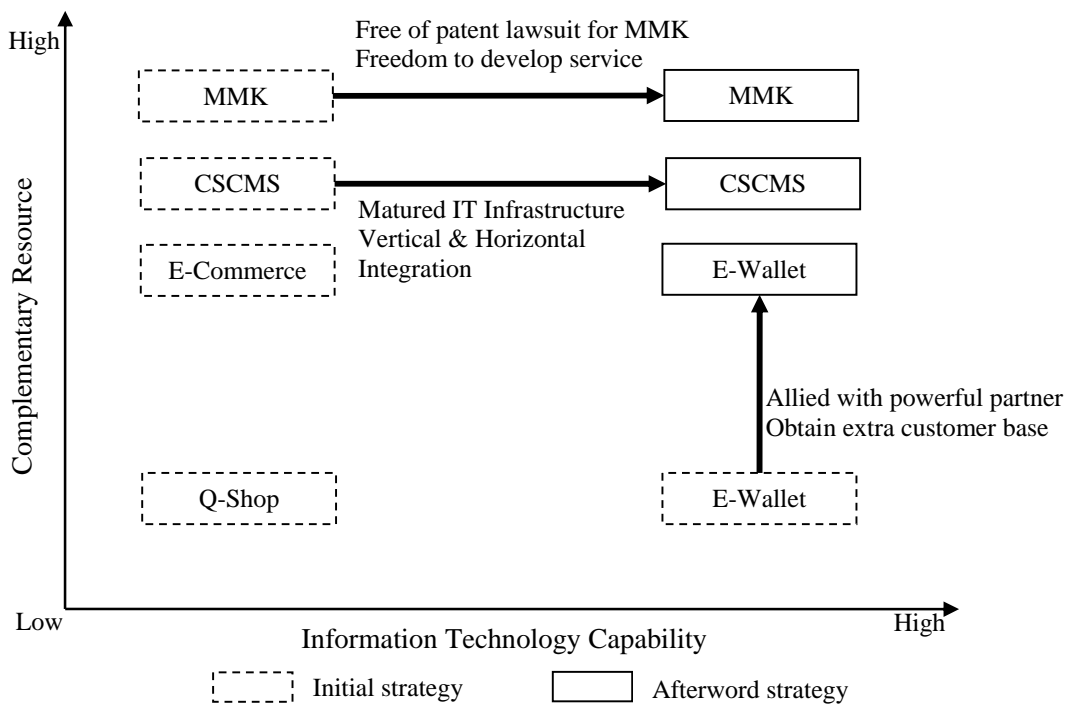


Figure 2. Strategies changes of Company A

CONCLUSION

The purpose of this article is to examine how firms in highly competitive markets exploit different strategic movement towards IT-enabled service innovations under different contexts. From the firms studied, those which have developed a rich set of IT infrastructure capabilities were able to implement dramatic changes in their business processes over relatively short time frames. These findings have several implications for IT strategies based on different resources and capabilities as facilitators in service innovation.

First, the firms explored in this article put up entry barriers using two approaches: leveraging IT infrastructure to construct a well connected value network which increases switching costs for suppliers, and protecting the business model or services using IP protections. This shows that soft and hard technology both contribute to competitive advantage in spite of the complementary resources they possess.

Second, different strategies may be applied to the same technology. The choice depends on the resources and capabilities, along with the attitude of the firm. Diverse attitudes reflect the differing intentions and visions of IT across different managers, affecting the philosophy and behavior of the entire business.

Third, the greatest strategic impact of IT is to create a new service markets which will meet customers' latent needs and rewrite the rules of competition by creating greater benefits for customers.

Firms apply different or the same strategies towards various IT-enabled innovations corresponding to their IT capability, complementary resources. Through examining business resource with IT comprehensively, firms can choose the feasible strategy to enable different innovation initiatives.

REFERENCES

1. Aleda, V. R. and Larry, J. M. (2003) Insights into service operations management: A research agenda, *Production and Operations Management*, 12, 2, 20.
2. Bakos, J. Y. and Treacy, M. E. (1986) Information technology and corporate strategy: A research perspective, *MIS Quarterly*, 10, 2, 107-119.
3. Barney, J. (1991) Firm resources and sustained competitive advantage, *Journal of Management Information Systems*, 17, 1, 99-120.
4. Benbasat, I., Goldstein, D. K. and Mead, M. (1987) The case research strategy in studies of information systems, *MIS Quarterly*, 11, 3, 369-386.
5. Benjamin, R., Rockart, J., Morton, M. and Wyman, J. (1984) Information technology: A strategic opportunity, *Sloan Management Review*, 25, 3, 3-10.
6. Bharadwaj, A. S. (2000) A resource-based perspective on information technology capability and firm performance: An empirical investigation, *MIS Quarterly*, 24, 1, 169-196.
7. Bonoma, T. V. (1985) Case research in marketing: Opportunities, problems, and a process *Journal of Marketing Research* 22, 199-208.
8. Brandenburger, A. M. and Stuart, H. W. (1996) Value-based business strategy, *Journal of Economics and Management Strategy*, 5, 1, 5-24.
9. Brynjolfsson, E. (1993) The productivity paradox of information technology, *Communications of the ACM*, 36, 12, 66-77.
10. Cash, J. and Konsynski, B. (1985) IS redraws competitive boundaries, *Harvard Business Review*, 63, 2, 134-142.
11. Clemons, E. K. and Row, M. C. (1991) Sustaining IT advantage: The role of structural differences, *MIS Quarterly*, 15, 3, 275-292.
12. Dedrick, J., Gurbaxani, V. and Kraemer, K. L. (2003) Information technology and economic performance: A critical review of the empirical evidence, *ACM Computer surveys*, 35, 1, 1-28.
13. Grant, R. M. (1991) The resource-based theory of competitive advantage: Implications for strategy formulation, *California Management Review*, 33, 3, 114-134.
14. Kettinger, W. J., Grover, V., Segars, A. H. and Guha, S. (1994) Strategic information systems revisited: A study in sustainability and performance, *MIS Quarterly*, 18, 1, 31-58.

15. Lele, M. M. (Ed.) (1992) Creating strategic leverage: Matching company strengths with market opportunities, John Wiley & Sons, New York.
16. Lovelock, C. H. (1995) Technology: Servant or master in the delivery of services?, *Advances in Service Marketing and Management*, 4, 63-90.
17. Mahmood, M. A. and Mann, G. J. (2000) Special issue: Impacts of information technology investment on organizational performance, *Journal of Management Information Systems*, 16, 4, 3-10.
18. Mata, F. J., Fuerst, W. L. and Barney, J. B. (1995) Information technology and sustained competitive advantage: A resource-based analysis, *MIS Quarterly*, 19, 4, 487-505.
19. Melville, N., Kraemer, K. and Gurbaxani, V. (2003) Review: Information technology and organizational performance: An integrative model of it business value, *MIS Quarterly*, 28, 2, 283-321.
20. Oliner, S. D. and Sichel, D. E. (2003) Information technology and productivity: Where are we now and where are we going?, *Journal of Policy Modeling*, 25, 5, 477-503.
21. Orlikowski, W. J. and Baroudi, J. J. (1991) Studying IT in organizations: Research approaches and assumption, *Information Systems Research*, 2, 1, 1-28.
22. Peteraf, M. A. (1993) The cornerstones of competitive advantage: A resource-based, *Strategic Management Journal*, 14, 3, 179-191.
23. Picoli, G. and Ives, B. (2005) Review: IT-dependent strategic initiatives and sustained competitive advantage: A review and synthesis of the literature, *MIS Quarterly*, 29, 4, 747-776.
24. Powell, T. C. and Dent-Micallef, A. (1997) Information technology as competitive advantage: The role of human, business, and technology resources, *Strategic Management Journal*, 18, 5, 375-405.
25. Ravinchandran, T. and Lertwongsatien, C. (2005) Effect of information systems resources and capabilities on firm performance: A resource-based perspective, *Journal of Management Information Systems*, 21, 4, 237-276.
26. Rivkin, J. W. (2000) Limitation of complex strategies, *Management Science*, 46, 6, 824-844.
27. Ross, J. W., Beath, C. M. and Goodhue, D. L. (1996) Develop long-term competitiveness through it assets, *Sloan Management Review*, 38, 1, 43-55.
28. Sambamurthy, V., Bharadwaj, A. and Grover, V. (2003) Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms, *MIS Quarterly*, 27, 2, 237-263.
29. Sambamurthy, V. and Zmud, R. W. (2000) Research commentary: The organizing logic for an enterprise's it activities in the digital era: A prognosis of practice and a call for research, *Information Systems Research*, 11, 2, 105-114.
30. Swaminathan, A. (1998) Entry into new market segments in mature industries: Endogenous and exogenous segmentation in the U.S. Brewing industry, *Strategic Management Journal*, 19, 4, 389-404.
31. Teece, D. J. (2007) Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance, *Strategic Management Journal*, 28, 13, 1319-1350.
32. Teece, D. J., Pisano, G. and Shuen, A. (1997) Dynamic capabilities and strategic management, *Strategic Management Journal*, 18, 7, 509-533.
33. Vargo, S. L. and Lusch, R. F. (2004) Evolving to a new dominant logic for marketing, *Journal of marketing*, 68, 1-17.
34. Wade, M. and Hulland, J. (2004) The resource-based view and information systems research: Review, extension, and suggestions for future research, *MIS Quarterly*, 28, 1, 107-142.
35. Wernerfelt, B. (1984) A resource-based view of the firm, *Strategic Management Journal*, 5, 171-180.
36. Whittington, R., Pettigrew, A., Peck, S., Fenton, E. and Canyon, M. (1999) Change and complementarities in the new competitive landscape: A European panel study, *Organization Science*, 10, 5, 583-600.
37. Winter, S. G. (2003) Understanding dynamic capabilities, *Strategic Management Journal*, 24, 10, 991-995.
38. Yin, R. K. (Ed.) (1994) *Case study research, design and methods* Sage Publications, Beverly Hills, CA, .
39. Zhu, X. F., Wymer, W. and Chen, I. (2002) IT-based services and service quality in consumer banking, *International Journal of Service Industry Management*, 13, 1, 69-90.
40. Zott, C. (2003) Dynamic capabilities and the emergence of intraindustry differential firm performance: Insights from a simulation study, *Strategic Management Journal*, 24, 2, 97-125.