

ABSTRACT

Yinghong (Susan) Wei: Market Orientation and Successful New Product Innovation: The Role of Competency Traps (under the direction of Hugh O'Neill)

This study seeks to enhance understanding of successful new product innovation by developing and testing a new theory framework for explaining the market orientation–product innovation relationship in the context of firms’ new product development (NPD) processes. Drawing on and adapting key concepts from organizational learning theory, and particularly in the area of capability-rigidity theory, the study investigates how market orientation may create rigidity, known as competency traps, that reduce innovation performance.

Competency traps concern the propensity of a firm to continue relying on processes that have been successful in the past even though they are no longer optimal. Although the concept of competency traps was introduced in management literature more than a decade ago, it has been the focus of little conceptual development and no empirical research. Given the potential adverse consequences of competency traps in NPD, it is important that we understand the sources and impact of competency traps. This study develops an integrated conceptual framework to help researchers and managers identify and reduce the effect of competency traps on NPD. The development of a valid measure of competency traps should enable researchers and managers to better diagnose competency traps. Entrepreneurial

orientation and network learning are suggested as the remedy to manage the possible adverse effects.

The study includes a major survey of the responses of 113 marketing managers from a high-technology industrial zone in China. Structural equation modeling and reliability tests are used for data analysis. Three types of competency traps are identified: (1) vision traps, (2) technology traps, and (3) routinization traps. The newly developed scales demonstrate reasonably good validity and reliability. The findings show that customer orientation leads to a routinization trap. However, routinization traps are positively associated with NPD creativity and NPD efficiency. Vision traps are negatively associated with NPD creativity. The relationship between technology traps and new product innovation is indirect and moderated by entrepreneurial orientation and network learning. Entrepreneurial orientation but not network learning is the remedy for highly market-oriented firms to reduce technology traps. The implications, limitations, and future research directions are also discussed.

**MARKET ORIENTATION AND SUCCESSFUL NEW PRODUCT
INNOVATION: THE ROLE OF COMPETENCY TRAPS**

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EXECUTIVE SUMMARY

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MARKET ORIENTATION AND SUCCESSFUL NEW PRODUCT INNOVATION: THE ROLE OF COMPETENCY TRAPS

This study seeks to enhance understanding of successful new product innovation by developing and testing a new theory framework for explaining the market orientation (MO)–product innovation relationship in the context of firms’ new product development (NPD) processes. Drawing on and adapting key concepts from organizational learning theory, and particularly in the area of capability-rigidity theory, the study investigates how market orientation may create rigidity (known as competency traps) that reduce innovation performance, and then examine whether entrepreneurial orientation and network learning may help market oriented firms reduce this rigidity – competency traps.

Learning traps are a dangerous zone that firms should not step into. Competency traps, one type of learning trap, lead firms to unconsciously fall into a vicious cycle of adherence to inferior routines and denial of the need for change (Fiol and Lyles 1985; King and West 2002; Levinthal and March 1993; Levitt and March 1988). Competency traps concern the propensity of a firm to continue relying on processes that have been successful in the past even though they are no longer optimal. Although the concept of competency traps was introduced in management literature more than a decade ago, it has been the focus of little conceptual development and no empirical research. Given the potential adverse consequences of competency traps in NPD, it is important that we understand the sources and impact of competency traps. Both the marketing and the management literatures and practices call for an integrated conceptual framework for identifying competency traps, their antecedents, and the consequences for firms’ innovation outcomes.

Therefore, this dissertation attempts to fill this important research gap with its three objectives. The first objective is to conceptualize competency traps and develop new scales for competency traps, in order to help researchers and managers identify their existence. The second objective is to investigate the relationship between MO, competency traps, and new product innovation in the capability-rigidity theory framework. The third objective is to examine whether entrepreneurial orientation and network learning are the potential remedy for managers to manage the possible adverse effects of competency traps.

Why Entrepreneurial Orientation can Reduce the Occurrence and Negative Consequences of Competency Traps?

The capability-rigidity theory suggests that market orientation may create rigidity, known as competency traps, that reduce innovation performance. MO is defined as “the organization culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business (Narver and Slater 1990, p. 21). ” MO has three dimensions: (1) customer orientation (the firms understand their buyers in order to create superior value for them continuously), (2) competitor orientation (firms’ understanding of the short-term strengths and weaknesses and long-term capabilities and strategies of both the key current and the key potential competitors), and (3) interfunctional coordination (the coordinated use of company resources to create superior value for target customers).

Competency traps represent a tendency to maintain existing and familiar technologies and routines in NPD (Levinthal and March 1993). Firms with higher levels of competency traps tend to engage in excessive exploitation because the return of exploitation is more certain, quick, and precise than that of exploration (March 1991). This study classifies competency traps into three types: (1) vision trap (bias or overconfidence that may lead to an inability to see weaknesses of NPD processes), (2) technology trap (persistence towards using mature and familiar technology in new product development). Competency traps hurt firms’ NPD innovation by leading to maladaptive specialization when the newer routines are better than older ones.

This dissertation argues that entrepreneurial orientation may reduce the occurrence and negative consequences of competency traps. Entrepreneurial orientation (EO) concerns entrepreneurship behaviors at the firm level rather than at the individual level (Lee, Lee, and Pennings 2001). EO refers to a culture with high tolerance for risk, high innovation, and proactiveness (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000; Richard, Orlando, Barnett, Dwyer, and Chadwick 2004). New product development teams may perceive higher psychological safety in their decision making in highly entrepreneurial-orientated firms than in low entrepreneurial-oriented firms, which may encourage them to search for novel new product ideas.

The moderating role of entrepreneurial orientation in the link between market orientation and vision trap. In highly entrepreneurial-oriented firms, an MO is less likely to create vision traps. First, customer orientation may limit firms' vision because of customers' preference inertia, the credibility of customers as a source of new product ideas, and the stability of customer populations in customer-oriented firms. However, an entrepreneurial culture values risk taking and proactive postures (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). This may help customer-oriented firms to overcome the relatively limited vision available from an existing customer perspective when the firm searches for new product ideas. Firms will be less likely to limit their learning search in NPD to only their existing customers. They may be more likely to also approach different potential future customer populations and even chase feedback from their existing unhappy or unsatisfied customers. Thus, an entrepreneurial culture may give firms the motivation to engage in a more widespread search for customer feedback and to target new and different customer populations to break through the limited vision that may be created by customer orientation alone.

Similarly, a competitor orientation may also limit firms' NPD vision by promoting imitative learning. However, an entrepreneurial culture emphasizes risk taking and the use of original approaches to problem solving (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). Such a culture may discourage competitor-oriented firms from simply imitating in their learning behaviors and encourage them to also experiment with new NPD approaches that are different from those employed by their competitors. Thus, EO may weaken the relationship between competitor orientation and vision traps.

Interfunctional coordination may also limit firms' vision by fostering conformity, groupthink, and an internal orientation. However, an entrepreneurial culture values risk taking and proactive perspectives (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). The risk taking aspect of entrepreneurial orientation may help reduce the danger of prioritizing the minimization of conflict in interdepartmental communication that can lead to groupthink. Furthermore, it is also less likely that a firm with both a focus on interfunctional coordination and an EO will choose

less challenging projects in order to avoid potential functional conflicts between departments and functions. The proactive characteristic of EO (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000) may also help managers recognize and plan ways to deal with the potential coordination challenge if interfunctional teams work on very new, and therefore more uncertain and risky, NPD projects. Therefore, an entrepreneurial culture may weaken the link between interfunctional coordination and vision traps.

The moderating role of entrepreneurial orientation in the link between market orientation and technology trap. In highly entrepreneurial-oriented firms, MO is also less likely to create technology traps. Customer orientation may lead to technology traps, because little professional knowledge about advanced technology makes customers a poor source of information in making NPD technology-selection decisions. In addition, existing customers' preferences for existing technologies may lead customer-oriented firms to resist moving away from existing familiar or mature technologies (Adner 2002; Im and Workman 2004). However, an entrepreneurial culture may weaken or even break these links. Entrepreneurially oriented firms seek to be innovative, risk taking, and proactive. Such firms may therefore be more likely to avoid making technology-selection decisions solely on the basis of inputs from their existing customers.

Similarly, a competitor orientation may also lead to technology traps because a firm focused on competitors may often engage in mimetic technology learning and seek to adopt competitors' technologies (Lukas and Ferrell 2000; Zahra, Nash, and Bickford 1995). However, EO may weaken this link by encouraging managers in competitor-oriented firms to emphasize risk taking and the use of original approaches to problem solving (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). This may lead managers in competitor-oriented firms to resist industry norms, ignore legitimacy threats, and test riskier new technologies in their NPD projects. Simple imitation of competitors' technology may therefore be strongly discouraged in highly entrepreneurial-oriented firms.

Interfunctional coordination may also lead to technology traps because the pressure to seek agreements among interfunctional members makes interfunctionally

coordinated firms stick with familiar or mature technologies with which each functional area is already familiar (Argyris 1982; Carmel 1995; Crawford 1992; Lukas and Ferrell 2000). However, the risk-taking and proactiveness characteristics of an entrepreneurial culture may weaken this link. Risk taking may help firms focused on interfunctional coordination discount the danger of coordination difficulties and conflicts and promote consideration of whether technology options can lead to radical NPD innovation in the technology-selection process. Proactiveness may also help managers in firms focused on interdepartmental coordination expect and be prepared for potential interfunctional conflict. Therefore, this forward-looking posture in entrepreneurial culture may weaken the link between interfunctional coordination and technology traps.

The moderating role of entrepreneurial orientation in the link between market orientation and routinization trap. In highly entrepreneurial-oriented firms, MO is also less likely to create routinization traps. Customer orientation may lead to routinization trap as a result of existing customers' relatively stable preferences, trade-offs between cost and innovation, and relatively stable customer populations in customer-oriented firms. However, by encouraging the development of very fresh and creative new solutions in the NPD processes, an entrepreneurial culture may weaken or even break these links. Furthermore, such a culture will promote the change in rather than the exploitation of existing processes. As a result, entrepreneurially oriented firms are much more willing to take risks and to seek to be innovative in their NPD procedures and routines (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000).

A competitor orientation may also lead to routinization traps, because it leads managers to focus on cost and efficiency, imitative learning, and threats to legitimacy. However, the value placed on innovation, risk taking, and proactiveness may enable a firm with an entrepreneurial culture to weaken these links (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). An EO may discount or offset the cost/efficiency focus of competitor orientation, promote exploration over imitative learning in the NPD process, and encourage risk taking and the use of original approaches to problem solving in NPD (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). These perspectives may motivate competitor-oriented

firms to go against industry norms, ignore legitimacy threats, and experiment with and employ different new NPD routines. Therefore, EO may weaken the relationship between competitor orientation and routinization traps.

A focus on interfunctional coordination may also lead to routinization traps because its internal orientation and concern for minimizing conflicts and promoting harmony among different functions may tempt the firm to stick with existing NPD routines (Maltz and Kohli 2000), which then become more formalized over time. However, by promoting innovation, risk taking, and proactiveness, EO may weaken these links (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). Entrepreneurially oriented firms are more willing to take risks and experiment with different NPD routines and procedures in order to be unique and innovative (Covin and Slevin 1991; Lumpkin and Dess 1996; Lyon, Lumpkin, and Dess 2000). Their proactive attitude enables them to be prepared for potential functional conflicts and coordination difficulties in advance, which reduces the priority placed on avoiding interfunctional conflict. It is therefore less likely that entrepreneurially oriented firms employ the same standardized NPD processes over time.

Data collection and Findings

This study used data from 46 MBA students for pretest and 113 marketing managers in high-tech industry zone in China for the final study. Structural equation modeling and reliability tests were used for data analysis.

The findings of this study show that MO has a stronger negative effect on technology traps (and no effects on vision traps and routinization traps) in high-entrepreneurial-oriented firms than in low-entrepreneurial-oriented firms. In low-market-oriented firms, entrepreneurial culture does not have much influence on firms' technology decisions. But in high-market-oriented firms, entrepreneurial culture does influence firms' technology decisions. When the high-market-oriented firms employ high entrepreneurial culture, they are less likely to fall into technology traps and stick with mature and familiar technology. When the high-market-oriented firms employ low entrepreneurial culture, they are more likely to fall into technology traps and stick with mature and familiar technology.

Therefore, consistent with expectations, EO is the remedy for market-oriented firms to reduce their level of technology traps. This finding demonstrates the importance of entrepreneurship in business practice. Entrepreneurial activities can provide market-oriented firms an additional ability to recognize new opportunities and to create unique perspectives, which reduces rigidity and sustains innovation performance.

Research Questions and Answers

This study answered the following three research questions:

What are competency traps and how to define and measure them?

Although the notion of competency traps is important for both academics and practitioners, little is known about how to conceptualize and operationalize competency traps. The development of a competency-trap scale should enable firms to identify competency traps and stimulate much-needed empirical research. This study classifies competency traps into three types: (1) vision trap (bias or overconfidence that may lead to an inability to see weaknesses of NPD processes), (2) technology trap (persistence towards using mature and familiar technology in new product development), and (3) routinization (inertia from using formalized and standardized procedures or resistance to procedure change). The scales developed in this study for vision, technology, and routinization traps have demonstrated reasonably good validities and reliabilities.

What kind of relationship exists among MO, competency traps, and new product innovation? Why and how does a firm competence such as MO lead to competency traps? What are the consequences of competency traps for new product innovation?

Marketing and management scholars have debated the role of a firm's customer orientation in innovation. Christensen and Bower (1996) suggest that close customer ties deter product and service innovation. A customer orientation may contribute to imitation and to more conservative NPD (e.g., Bennett and Cooper 1979, 1981). In contrast, Slater and Narver (1998) argue that a market-oriented philosophy (customer orientation, competitor orientation, and interfunctional coordination) consists of more than being customer led and is essential to success in terms of NPD.

The findings of this study answered the debate in the following way: consistent with the suggestions of Christensen and Bower (1996), a firm's customer orientation is negatively associated with its NPD creativity. Consistent with Slater and Narver's (1998) arguments that market orientation goes beyond being customer led, a firm's competitor orientation and interfunctional coordination are positively associated with its NPD creativity. In addition, a firm's competitor orientation is positively associated with its NPD resource efficiency.

Capability-rigidity theory suggests that MO, as a capability or a learning mechanism, may create competency traps and decrease new product creativity while directly increasing NPD efficiency. The findings of this study showed that a firm's customer orientation does create routinization traps. However, contrary to expectations, not all competency traps are harmful for NPD. Although vision traps in a firm's NPD process are negatively associated with NPD creativity, routinization traps in a firm's NPD process are positively associated with its NPD creativity and NPD resource efficiency.

How can firms reduce the occurrence and negative consequences of competency traps? Why and how does this work?

On the basis of organizational learning theory and dynamic capability theory, EO and network orientation are suggested as complements to MO to reduce competency traps and to enhance creativity in new product innovation. According to the results of this study, consistent with predictions, EO is more likely to help high-market-oriented firms rather than low-market-oriented firms reduce technology traps. However, contrary to expectations, network learning is more likely to lead high-market-oriented firms rather than low-market-oriented firms to increase rather than reduce the level of technology traps.

Implications for Practitioners

The findings of this study should help managers better understand how to identify and manage the level of competency traps in order to improve NPP. This study has four managerial implications for managers and practitioners.

First, the new scale developed in this dissertation may help managers diagnose the existence and level of competency traps.

Second, it is dangerous for firms to be only customer oriented. It is important to be competitor oriented and have interfunctional coordination in order to have a high level of new product creativity.

Third, managers should be aware that different types of competency traps may have different effects on new product innovation. Vision traps may harm new product creativity. However, routinization trap as a form of rigidity may help a firm's NPD process in terms of new product creativity and NPD efficiency. Therefore, firms should take advantage of good competency traps, such as routinization, and reduce bad competency traps, such as vision, in order to improve their new product innovation rate.

Fourth, managers in high-market-oriented firms should employ EO to reduce technology traps. However, managers in high-market-oriented firms should not be network oriented, because network learning may still lead to groupthink and make the firms stick with industry norms.

This study is a pioneering research attempt to explore the existence and role of competency traps in the relationship between MO and new product innovation. This study also provides insights into the debate between the marketing and management literatures. In particular, this study investigates how to help firms reduce competency traps and improve new product innovation by entrepreneurial activities. Thus, it contributes to the marketing and management literatures by studying the relationship among rigidity-competency traps, MO, entrepreneurship and new product innovation.

Although some useful results have been discovered, the findings should be considered tentative, given the issues examined and the limitations of the study. Future studies are needed to refine this work and to provide additional insights into the literature and practice.

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