

The Impact of Market Knowledge on the Innovation Process of Slovenian Firms

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Abstract: In this study, we address three research questions: (1) What does make the innovation process successful? (2) Which strategic orientations support the innovation process? (3) What is the linkage between success factors influencing innovation process and strategic orientation of firms? The results of two studies carried out in Slovenian firms were applied to find the answers. In the first study, the answers on the 75-item questionnaire obtained from 82 non-service Slovenian firms for their successful and unsuccessful new products were applied to reveal the most important success factors which influenced the innovation process of Slovenian firms. In the second study, the answers on the 47-item questionnaire obtained by 214 Slovenian non-service firms were analyzed with structural equation modeling to find the relations among culture, entrepreneurship and market orientation as well as their direct or indirect impact on the firm's innovativeness and competitive advantage.

The results conclude that activities of innovation process that generate, disseminate or apply market knowledge have been the most important factors that have differentiated between successful and unsuccessful Slovenian new products. On the other hand, we could not confirm market orientation of Slovenian firms. The results of both studies confirmed the strong linkage between available market knowledge and firm's market orientation.

Because this study concentrates on both innovation process and the firm's strategic orientation, its results can provide important references in developing firm's environment facilitating radical innovations especially in the transition firms.

Key-Words: innovations, market knowledge, market orientation, learning orientation, Slovenia

1 Introduction

In recent years, the management environment and customer preferences have become more dynamic and complex than ever before. Any corporation can hardly survive without going through certain changes [1]. Innovation is a means for changing an organization, whether as a response to changes that occur in its internal or external environment or as a preemptive move taken to influence an environment. Because environments evolve, firms must adopt innovations over time and the most important innovations are those that allow the firm to achieve some sort of competitive advantage [2]. Nowadays, the combination of efficiency, quality, flexibility and innovation is essential [3]. The main challenges for managers especially those in the transition firms are to create organizational culture that supports innovation processes with capability to provide radical innovations.

2 Conceptual Framework

Weerawardena defined innovation as "an application of ideas that are new to the firm to create added value, either directly for the enterprise or indirectly for the customers, regardless of whether the newness and the added value are embodied in products, processes, work organization or management, or marketing systems" [4]. Innovation can be regarded as a process or an discrete event [5]. Process innovation is described by the various stages that the potential adopter goes through over the course of an innovation effort. Firms which successfully innovate often follow the same or similar phases during the course of the innovation process, firms which omit or reject these phases will run the risk of a failed innovation attempt [6]. These stages include identifying problems, evaluating alternatives, arriving at a decision, and putting innovation into use.

For advocates of innovation as an event, however, implementation of innovation occurs when there is

actual acceptance of risk and the commitment of resource occurs [5]. Points of interest for enthusiasts of innovation as a discrete event include organizational characteristics such as firm size or age, and conditions of the industry that promote or impede innovation such as market concentration or the maturity of the industry. This approach to innovation also aids those firms that wish to become more innovative themselves, and seek to do so by mimicking the organizational characteristics of benchmarked firm [7].

2.1 Market Knowledge

Successful companies profit from their superior knowledge and exploit the potential for improvement and development more quickly and effectively than their competitors do [8]. Firms have to decide which knowledge and competences are worth retaining and where these sources of competitive advantage can be tracked down [9]. From this perspective, a firm represents a system in which the players produce knowledge within the framework of learning processes, acquire it from outside if appropriate, test it, apply it in products and transfer it to the market. Company's knowledge and competences form a basis for creating product innovations [10].

An organization's ability to recognize the value of new information, assimilate it, and use it strategically is regarded as crucial for its ability to innovate [11]. Therefore, the important impact on the organizational innovation capability has change in market knowledge [5]. It refers to the magnitude of change in decision makers' knowledge about customers and competitors between two points in time. Decision makers' desire to make good decisions motivate them to update and change their knowledge about the marketplace, but inertial forces that result from cyclical nature of the market evolution system, as well as people's bounded rationality and cognitive makeup, deter them from changing their knowledge [5].

The third aspect of knowledge which could influence the organizational innovation capability is shared knowledge defined as "facts, concepts, and propositions that are understood simultaneously by multiple agents" [12]. Thus, shared market knowledge among a group of decision makers is the extent of overlap in individual decision makers' market knowledge [5].

2.2 Market Orientation

Kohli and Jaworsky, and Narver and Slater defined market orientation as the culture that (1) places the highest priority on the profitable creation and maintenance of superior customer value while considering the interest of other key stakeholders; and

(2) provides norms for behaviour regarding the organizational development of and responsiveness to market information [13], [14]. Narver and Slater argued that market orientation consists of three major factors: customer orientation, competitor orientation, and interfunctional coordination [14]. Market orientation is reflected by the extent to which a firm's strategic planning process is dependent on the outcome of market information acquisition, dissemination, and interpretation activities about customers, competitors, channel members and strategic partners [15].

Dickson asserted that a strong market orientation is necessary, but not always sufficient to facilitate the type of innovation that is required to achieve a long-term competitive advantage [16]. In addition to strong market orientation, a firm must also be able to institutionalize higher order learning processes, the type of learning that enables radical innovations [15].

2.3 Learning Orientation

Huber defines learning orientation broadly as the development of new knowledge or insights that have potential to influence behavior through its values and beliefs within the culture of the organization [17]. The more stringent definition of learning orientation requires that learning results in new behaviors [18]. Learning orientation may be viewed as the degree to which firm's proactively question whether their existing beliefs and practices actually maximize organizational performance [18].

3 Innovation Process in Slovenian Firms

The innovation as the process and associated success factors were examined by many authors [19], [20], [21]. In the model developed by Cooper and Kleinschmidt, new product outcome (success or failure) is the result of the interaction of the new product strategy with both the new product market and the competition [19]. The new product strategy includes the new product itself (i.e. its features, benefits, advantages) as well as the components of the product launch. This strategy results in the new product process, which is a set of activities, actions, tasks and evaluations carried out by individuals (e.g. a project leader and a team) that move the project from the idea stage to the launch. Finally, this process takes place within a corporate environment consisting of resources, skills and experience in marketing, production, technology and management, which may provide synergy and/or familiarity. Three strategic factors, two environmental factors and five development process factors are taken into account in the model described.

Product advantage, marketing synergy, and technical synergy are the strategic factors included in the model. Product advantage refers to a product's perceived superiority relative to competitive products. Marketing and technical synergy refer to a product's fit with a firm's existing marketing and technical skills and resources. Marketing synergy was measured by the number of adequately skilled resources in marketing research, marketing communications and distribution. Market environment factors are described by two factors, i.e. market potential and market competitiveness.

Development process encompasses five factors. They are protocol, the level of proficiency in pre-development, marketing, technological activities, and the degree of top management support. Protocol variable measures the firm's understanding of both the marketing and technical aspects of a potential new product. Marketing aspect of a potential new product was measured by the firm's market knowledge about the new product (customer needs, wants, level of price acceptable for the potential customers, competitors' products, strategies, pricing and strengths). The level of proficiency in pre-development was measured by proficiency of pre-development planning process and by concept development and evaluation proficiency. Marketing proficiency was measured by marketing research proficiency, pre-test proficiency, and launch proficiency.

Because of the crucial role market knowledge plays in the innovation process it is embedded in the model as one of the success factors. We applied this model to test the following research hypotheses:

H1. The level of new product success is positively correlated with the level of marketing synergy.

H2. The level of new product success is positively correlated with the part of protocol referring to the level of market knowledge.

H3. The level of new product success is positively correlated with the proficiency of the marketing related activities, i.e. market research, market pre-testing, and market launch.

These hypotheses were tested on the random sample of 82 non-service Slovenian firms [22]. Two questionnaires with 75 statements were sent to the top managers of randomly selected firms at the end of the year 2000. Managers were asked to select two typical new products introduced by their firm in the last five years. One new product was a clear commercial success and the other a clear commercial failure. Each respondent indicated on an 11-point scale anchored by 'strongly disagree' and 'strongly agree' how well each statement described the products chosen. The data collection phase was concluded in February 2001. We received 155 usable questionnaires from 82 companies, 82 for successful products and 73 for failures.

Factor analysis with all 75 variables was carried out to find the appropriate number of uncorrelated factors. Taking into account the factors' eigenvalues we decided on six factors. The results from entering all six factors in discriminant analysis simultaneously are given in Table 1. The canonical correlation ($R=0.679$) was significant. The factors are listened according to their importance determined by the relative magnitude of the standardized coefficients and canonical loadings given in the second and the third column of Table 1. The results of discriminant analysis show that new product advantage, and marketing activities were the most important factors that differentiated between successful and unsuccessful Slovenian new products.

Table 1. Results of discriminant analysis

Factor	Standardized coefficient	Cannonical loading
New product advantage	0.837	0.581
Marketing activities	0.775	0.511
Development	0.317	0.175
Technological activities	0.279	0.153
Market pre-test proficiency	0.188	0.102
Market competitiveness	-0.010	-0.005

The major part of factor marketing activities (F1) consisted of the activities which generate or use market knowledge. They were marketing research proficiency, launch proficiency, marketing synergy, and market information. Market research proficiency

comprised three activities, provided information on market characteristics and trends, information on market potential, customers' preferences and their purchasing processes, as well as information on competitors' existing and potential new products. The

positive impact of this factor on the success of Slovenian firms was confirmed by the highest correlations between this factor and three success measures i.e. relative sales, relative market share and window of opportunity. All results referring to marketing activities support the hypothesis H3.

Many researches confirmed that market information has a crucial impact on a clear definition of the project prior to its development in terms of target market, product positioning and product benefits [19], [20], [21]. In our study, this success factor was described by four items: the firm's knowledge of potential customers' needs, the size of potential market for the new product, price sensitivity of new product, and its knowledge of competitors. Correlation coefficients between this factor and success measures ranged between 0.518 and 0.577 and took the second place in three success measures. These results confirm the hypothesis H2.

Marketing synergy was measured by the sufficient number of adequately skilled resources employed in market research, market communications, and distribution. Marketing synergy was estimated high when the eventual knowledge gap referred to small amount of substitutive market knowledge. According to the correlation coefficients between this factor and success measures ranged from 0.462 to 0.502 this factor had also an important impact on the success of the Slovenian new products. These results confirm the hypothesis H1.

All these findings confirmed the importance of market knowledge in transformation of inventions into innovations. One of the important reasons for the failure of Slovenian new products was the lack of this kind of knowledge especially the lack of its substitutive component. This finding can be explained by the fact that in the 1990s many Slovenian firms had to find new markets for their products. Because the new markets were more demanding Slovenian managers should have learnt a large amount of new market knowledge and at the same time they should have unlearned a large amount of their current market knowledge.

4 Slovenian innovations as an event

Many authors confirmed the strong positive impact of the firm's market orientation on the firm's innovation capability [13], [14], [23], [4]. The impact of market orientation together with culture and entrepreneurship on the organizational innovation capability and consequently on its competitive advantage was

analyzed on the sample of 214 Slovenian firms in the years 2004 and 2005.

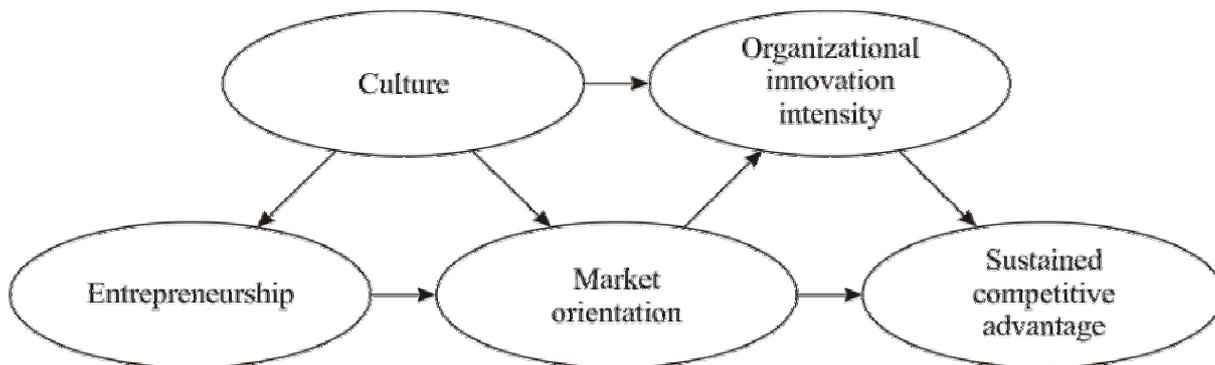
The theoretical framework of our research is presented by the model shown in Fig.1. For market orientation it was hypothesized that (1) there is a positive relationship between culture and market orientation, (2) there is a positive relationship between entrepreneurial intensity and market orientation, and on the other hand (3) there is a positive relationship between market orientation and organizational innovation intensity, (4) there is a positive relationship between market orientation and the sustained competitive advantage.

Firms that scored highly on market orientation continuously collected information about target-customers' needs and competitors' capabilities, disseminated and used this information to create continuously superior customer value. 10-item scale applied for this construct was an adaptation of the 14-item market learning scale proposed by Day [24]. A maximum likelihood structural equation modeling (SEM) was applied to test the theoretical model presented in Fig.1.

The values of fit indices showed that the original model should be respecified to fit better with the sample data. Out of 47 items, 17 items with poor square multiple correlation or large error variance were eliminated in order to obtain better fit indices. The fit indices for construct market orientation showed that the items proposed by Day [24] and Weerawardena [4] to measure the firm's market orientation in the innovative firms were not appropriate to measure the same construct in Slovenian firms.

According to these results Slovenian firms have not possessed enough market knowledge because they have not developed their market and learning orientation. Our results also show that the lack of market orientation is the crucial impediment in developing the innovation capability and improving the performance for the firms that are not able to shape the market. For these reasons, Slovenian firms have not been able to develop more innovations and to introduce radical changes to products, marketing, and managerial systems. Innovation intensity of Slovenian firms has not been on a satisfactory level. In the years 2001 and 2002 only 20.2 percent of Slovenian firms introduced innovations, which presents only a half of the percent of the European firms introducing innovations.

Fig.1. The factors and their relationships in innovative organizations



5 Conclusions

The results of both studies show that firms are not capable to develop their innovativeness without market orientation. The lack of market knowledge has been one of the most important reasons that Slovenian firms have not introduced more and especially radical innovations [22]. The main reason for that can be found in the 1990s when Slovenian managers should have unlearned a large amount of knowledge referring to former Yugoslav market and they should have substituted it with a large amount of new knowledge about new and more demanding markets. Firms with lack of market knowledge need structures, processes and tools for information acquisition, knowledge creation and utilization. How well knowledge processing routines and practices will be orchestrated within the firms will be reflected in their ability to recognize emerging trends and identify latent market needs. However, it is not enough that a firm is sensitive to recognizing changes in the market and is able to identify opening opportunities. In order to improve its performance the firm must be able to transform its knowledge into valuable products or profitable business models.

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