

Identifying and prioritizing capabilities and skills necessary for marketing knowledge-based companies of Science and Technology Park in Kermanshah

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Abstract

The aim of this study is identifying and prioritizing capabilities and skills necessary for marketing knowledge-based companies of Science and Technology Park in Kermanshah. For this purpose 120 of experts, deputies and managers of knowledge-based companies of Science and Technology Park in Kermanshah have been selected with the use of simple random sampling method and responded to the author-made questionnaire and finally, the obtained data from the research sample have been analyzed with the use of single-sample t-test. The results indicate that from the point of view of the experts, deputies and managers of knowledge-based companies of Science and Technology Park in Kermanshah inclination toward learning, team work skills, communicational skills, analytical skills, planning skills and sales management skills are considered as necessary skills for marketing knowledge-based companies of Science and Technology Park in Kermanshah ($p < 0.01$). Also strategic marketing, international marketing and exports, research and analysis of market, innovation and development of new products, service and internet marketing are among necessary capabilities for marketing knowledge-based companies of Science and Technology Park in Kermanshah ($p < 0.01$).

Keywords: Capabilities and skills for marketing, knowledge-based companies, Science and Technology Park in Kermanshah.

Introduction

One of the effects of knowledge-based companies on economy is creating evolution in common factors of production. In knowledge-based companies, knowledge and information are considered as production and increasing wealth factors which in the past didn't have any place in wealth production factors. In other words, economy in the new age has been distanced from "resource-based economy" and has neared "knowledge-based economy" (O'Shea *et al.*, 2006).

Knowledge-based companies have a key role in creating knowledge-based economy development. Knowledge-based companies are private or cooperative companies which are established for synergy of science and wealth, knowledge-based economy development, achieving scientific and economic objectives such as development and application of innovation, invention and commercializing research results and development in information field with value-added (Pettigrew, 2000).

In knowledge-based companies, economic growth and creating employment is realized proportional to innovation capability. It is obvious that research and development achievements continuously changed into investment, process or novel systems and access to investment capabilities for scholars and entrepreneurs is an important factor in national economy (Siegel *et al.*, 2003).

On one hand, in current over competitive age, those companies will be more successful that based

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on the dominant conditions of the market, competitors conditions and their own strengths and weaknesses, can secure their desired position and with offering superior value than the existing competitors in market can create more customer satisfaction in their customers. One of the dimensions of achieving customer satisfaction is providing products and services matching the requirements and values demanded by the customers or even beyond that (Slater & Olson, 2000).

The ultimate mission of Technology Parks is that they can match the results obtained from the university research with the requirements of industry and in this way fill the gap between the relationship between industry and university and this would eventually lead to knowledge commercialization. Commercialization in academic institutions will be in terms of different economical activities (Poorezat *et al.*, 2010).

Since one of the aims of higher education in third millennium, in addition to progress in the field of knowledge and technology, financial and budget dependence is to enter national and transnational business markets and creating wealth, therefore; technology park can be an important center for gaining income in universities (O'Shea *et al.*, 2005). Because technology is a tool for obtaining entrepreneur university, which facilitates the trend of changing scientific ideas into products proper for supplying them to market by providing appropriate facilities and services (Ferguson, & Olofsson, 2004). Also considering this emergent phenomenon can solve so many of problems in establishing policies related to employment (Koh *et al.*, 2005). According to 1997 reports of Boston Bank, activities of Technology Parks results in economic development at national and regional level and in all the cases in a direct and indirect causes employment creation at an extensive level.

Considering the importance of knowledge-based institutions and companies and the university's missions in the field of identifying and prioritizing capabilities and skills necessary for marketing, the importance and necessity of knowledge-based companies of Science and Technology Park in Kermanshah becomes multiple-folds and lack of identifying and prioritizing capabilities and skills necessary for marketing knowledge-based companies in science and technology park will result in changing into companies which cannot sell their products and services. Hence, in this study we seek to iden-

tify and prioritize the capabilities and skills necessary for marketing knowledge-based companies of Science and Technology Park in Kermanshah and for a better clarification of the subject we mention some of the studies conducted in this regard below.

Background of the study

Mahdavi *et al.* (2011), in their study have analyzed the efficiency of science and technology parks in helping the process result evaluation of knowledge-based companies in science and technology parks. In this paper they have tried to study the best evaluation pattern and performance and efficiency assessment model of knowledge-based companies, which is more based on tacit knowledge dimension, in terms of transferring years of experiences of Isfahan scientific and research settlement and with the aim of localization of executive consistent processes with country's social and cultural structures.

Senobar *et al.* (2011), in their research have studied the effect of innovation drivers on innovation capacity of knowledge-based companies and have found out that each of the innovation drivers have a positive and significant effect in creating and increasing innovation in companies. Among these variables information technology management and knowledge management have the highest coefficient which indicates their higher effect on creating innovation, increasing capacity and important drivers in companies.

Allahyarifard and Abbasi (2011) in their paper, have studied the proper organizational structure pattern of knowledge-based companies and based on the results and the point of view of them it seems that combinational organizational structure and pattern of "horizontal-team, network and virtual" is useful and effective for knowledge-based companies and it can cause an increase of their productivity, hence they have proposed it as a proper pattern of organizational structure or small knowledge-based companies.

Behboodi and Amiri (2010) in their paper, have studied the long-term relationship between knowledge-based economy and economic growth in Iran and have found that there is a long-term relationship between different axes of knowledge (human and education capital, economic and institutional regimes and information infrastructures) and all the axes of knowledge have positive effect on economic growth in Iran. Also the coefficient of ECM

is negative and small which means the speed of deviation adjustment from short-term to long term is slow.

Nazeman and Eslamifar (2010), in their paper have studied the knowledge-based economy and sustainable development (designing and testing an analytical model with universal data) and they have found that extending education and absolute scientific research is not sufficient for improving the level of development alone and that economical and scientific progress requires evolution of economic environment over time and application of advanced knowledge in the context of economic life, especially in globalization process, production and business.

Marques and Ferreira (2009) have identified and studied the factors which lead to increasing innovative capabilities of small and large Portuguese companies in line with performance improvement and creating competitive advantage and their results indicate the positive effect of determining factors of innovation capability on increasing innovation capability of companies and as a result performance and competitive advantage improvement among other companies.

Lai and Shyu (2005) have compared innovation capability in two science and technology parks of china's Zhang and Taiwan's Hinsju during 1990 to 2000, based on Porter's model and with the use of questionnaire. The results of the study indicate that the difference of innovation capability in these two parks results from determining factors of their innovation capability such as research infrastructures, amount and type of the demands of region's customers and existence of clustered industries and active instead of dead and deserted industry.

Brendan *et al.* (2007, as cited in Allahyarifard and Abbasi, 2011), in their research, have studied the fundamental capabilities of marketers and they have also conducted a comparative study of managers and students perceptions and found that necessary skills and capabilities and inclination toward learning about products, finding solutions for marketing problems, establishing relationship with local and foreign beneficiaries and awareness of an extensive range of marketing fields are necessary.

Methodology

The current study is applies from aim point of view, descriptive-correlation from the point of view of method and survey research from conduct point of view.

Research population and sample

The population of the current research includes all the experts, deputies and manager of knowledge-based companies in science and technology park of Kermanshah. The desired sample for this study has been selected with the use of simple sampling method and the sample consists of 118 individuals. It should be mention that for the purpose of confidence regarding the returning of acceptable number of questionnaires for analysis, 240 questionnaires have been distributed among the individuals of the sample and finally with eliminating the confounded questionnaires we managed to prepare 120 questionnaires for the purpose of analysis.

Data collection instrument

In this research for studying the dimensions of capabilities and skills necessary or marketing knowledge-based companies in Science and Technology Park, author-made questionnaire has been used. This questionnaire has been developed based on standard model of Brendan *et al.* (2007, as cited in Allahyarifard and Abbasi, 2011) and it has 12 dimensions of inclination toward learning, team work skills, communicational skills, analytical skills, planning skills, sales management skills, strategic marketing, international marketing and exports, market research and analysis, innovation and service and internet marketing) which has 36 items in a-five-scale-Likert (strongly disagree to strongly agree). The content validity of this questionnaire have been confirmed by specialists and experts of this field and its reliability have been obtained to be 0.76 with the use of Cronbach's alpha test, which indicate to a proper reliability of the questionnaire.

Results

In this research, independent sample test was used in order to identify and prioritizing capabilities and skills necessary for marketing knowledge-based companies in Science and Technology Park of Kermanshah and the results of which have been presented in table 1.

The results of independent sample t-test indicate that from the point of view of experts, deputies and manager knowledge-based companies in Science and Technology Park in Kermanshah, inclination toward learning, team work skills, communicational skills, analytical skills, planning and sales management skills are considered to be the necessary skills for marketing knowledge-based

companies in Science and Technology in Kermanshah ($p < 0.01$) and also strategic marketing, international marketing and exports, market research and analysis, innovation and development of new prod-

ucts, service and internet marketing are considered to be necessary capabilities for marketing knowledge-based companies in Science and Technology Park in Kermanshah ($p < 0.01$).

Table 1. Independent sample test for marketing knowledge-based companies.

Variable	Index $t = 3$				
	mean	Standard deviation	Df.	t	Sig.
Inclination toward learning	4.10	0.71	119	17.014	.00
Team work skills	4.10	0.68	119	17.685	.00
Communicational skills	4.15	0.84	119	15.048	.00
Analytical skills	3.98	0.56	119	19.138	.00
Sales management skills	4.17	0.60	119	21.399	.00
Planning skills	4.07	0.52	119	22.409	.00
Strategic marketing	4.14	0.56	119	22.203	.00
International marketing	4.21	0.56	119	23.833	.00
Market research and analysis	4.07	0.72	119	16.113	.00
Innovation and development of new products	3.76	0.95	119	8.826	.00
Service marketing	3.44	0.11	119	4.358	.00
Internet marketing	3.60	0.26	119	5.219	.00

Conclusions

During the last two decades, there are some studies regarding the difference between the point of views of manager and academic society regarding what should be taught in economical and marketing schools (Beamish, & Calof, 1989; Neelankavil, 1994, as cited in Behboodi and Amiri, 2010). It seems that there are some teaching gaps between economic plans (Beamish & Calof, 1989, as cited in Nazeman and Eslamifar, 2010), accounting (Sneed & Morgan, 1999), marketing studies (Stern & Tseng, 2002) and executive management plans (Kretovics, 1999). Studies indicate that specialists and graduates of marketing and economy should have high levels of verbal and written skills. Also regarding analytical and problem solving skill studies (John, & Needel, 1989) indicate that these items are included in required skills for graduates. On the other hand, some of the people working in economy and marketing centers believe

that the taught materials for the purpose of higher education are to a high extent theoretical and no specific practical application can be assumed for them (Beamish & Calof, 1989; Sneed & Morgan, 1999).

The current research is one of the researches that study the capabilities and skills necessary for marketing knowledge-based companies. In general, it appears that the employees of knowledge-based companies in Science and Technology Park in Kermanshah have more agreement on some of necessary skills on which basis we can rank these skills. The results indicate that regarding applied knowledge and required skills we should consider some differences while teaching them (Beamish & Calof, 1989; Philips and Zuber-Skerritt, 1993; Neelankavil, 1994) and each of these dimensions should be considered in courses of graduates. The results of this research have also indicate that graduates need required capabilities and skills regarding tendency toward inclination toward learning, team work skills, communicational skills,

analytical skills, sales management skills, planning skills, strategic marketing, international marketing, market research and analysis, innovation and development of new products, internet and service marketing. They also need an extensive knowledge regarding marketing regarding marketing subjects in order to make these capabilities in line with those fields.

It appears for effective development of marketing management, graduates of education centers would need to develop strategic thinking skills, leadership and management skills and they should have capability for developing their knowledge in strategic planning, brand and product management, interpersonal and intrapersonal relationships and familiarity with customers' behaviors. Therefore, these items are a part of fundamental skills which promotes the capability of marketers in sales and process management and the development of which will give the right to marketers to follow proper methods (Gray *et al.*, 2003, as cited in Nazeman, & Eslamifar, 2010).

There are significant differences between the perceptions of marketing management, students and educational centers regarding some of these skills and capabilities in the field of knowledge which can be effective in choosing different educational programs. Of course it should be noted that in most of the cases these opinions are similar, however; in general, we should also note that when we are having specific individuals in our research sample we should note that each of these groups (such as students, managers, experts and ...) have their own position-related views and this to some extent justifies the different results.

In the end, we should say that the results of our study have useful results for increasing knowledge in the field of marketing knowledge-based companies. Regarding the obtained results of the research it should be said that with the use of these results we can establish regular relationship between current desired teachings and students' efficiency rate.

The results of the current study have important points regarding required skills of students and these results can light the way for future planning and designing prospects before us and for this reason the following skills will have great importance:

- Inclination toward learning
- Interpersonal skills
- Problem solving skills
- Written skills
- Team work skills
- Verbal communication skills

- Capability of work panning, retaining order and analytical capability and skills have important roles

Furthermore, students should have capabilities in the following fields:

- Marketing relations
- Familiarity with customers' behavior
- Brand and sales management
- Strategic marketing
- Market analysis
- Direct and indirect marketing & innovation and development of new products

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