UDC 338.43(497.7)

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CAPACITY FOR INNOVATION AND PRODUCT DEVELOPMENT OF FOOD INDUSTRY IN REPUBLIC OF MACEDONIA

Abstract

There is a consensus among the researches and the practitioners that the capacity for innovation is crucial for competitiveness of companies and their respective national economies. Innovative endeavors of companies bring improved products and efficient manufacturing, distribution and marketing. Our research shows that the Macedonian food industry puts emphasis on the technology and the financial issues when decides on new product launching. The "soft" areas of marketing or human relations are considered sufficient or their importance is not adequately recognized. This is consistent with the Global Competitiveness ranking of Macedonia as efficiency driven economy. Following the triple helix model, companies in food industry in Republic of Macedonia could benefit if they cooperate more with the scientific institutions, work together in business cluster, or use the support of the state established Innovativeness Fund. Our companies should work more on systematic scouting of the mega trends in the industry, in the standards of food safety and in the area of the growing social concerns about food ingredients that are considered not adequate or even dangerous for consumers. The concern for these trends should replace the current technology and finance orientation in their decision-making. Moreover, the development of the staff, the reestablished R&D departments and intensive business networking and clustering should also get more attention in order the Macedonian food industry to be more competitive on the regional and the global market.

Keywords: Innovation, globalization, New Product Development, Triple Helix Model

INTRODUCTION

To take advantage of the globalization, a company has to be agile and knowledge based. Moreover, it should innovate regularly its product line, processes and its marketing strategy. When it comes to their innovative capacity, the big companies with high financial strength and with established technology and know-how have obvious advantages. However, the big companies are same time prone to multilayered and slow decision-making. In these terms, the small businesses are more agile, creative, have better consumer intimacy and readiness for risk taking. Their flat organizational structure creates fertile culture for innovation. It proliferates faster, resulting in shorter response time, virtue that large firms are unable to provide (Bianchi at al. 1997). Nevertheless, to stay competitive, companies, no matter the size, have to constantly innovate, using industry specific knowledge in the process of improvement or extension of their product line. This paper provides overview of the specifics of the Macedonian food processing industry in relation to their capacity to innovate and for new product development. There is consensus among the researches and the practitioners that the capacity for innovation is crucial for competitiveness of companies and their respective national economies. Our research shows that the Macedonian food industry puts too much emphasis on the technology and on the financial issues when deciding of new product launching. The "soft" areas of marketing or human relations are considered sufficient or their importance is not adequately recognized. This is consistent with the Global Competitiveness ranking of Macedonia as efficiency driven economy.

LITERATURE REVIEW

Innovation is dynamic process, performed by organizations successfully involved in management of internal and external, driving or impeding factors (Tiwari and Buse 2007). Literature classifies innovation by its scope, level, nature and depth Cleveland (2005). The "level" describes type of innovation: new products and processes, continuous improvement, cross-company redesign, new markets and customers and strategic business redesign. Others stress that the knowledge acquisition is the key factor that determines a firm's innovation performance (Cohen and Levinthal 1990; Yli-Renko, Autio and Sapinza 2001). For Yap and Souder, crucial question is how firms to remain innovative with limited resources and little market influence. Variations in the innovativeness may help explain why some companies succeed, while many fail (Frambach 1993). According to Rogers (2003), innovation is idea, course or object perceived as something "new" by some, or all of members of a group, that will use it.

The three stages of the innovation process are the concept, the implementation and the marketing. The concept encompasses idea generation, idea evaluation and project planning. The implementation entails design, prototyping and testing, while the marketing stage is made of initial production, market roll out and market penetration (Fabian and Schmidli, 2005). Successful innovation requires coordinated efforts of all parts of a company. Finally, the creativity of the leader together with special skills and knowledge of the innovation management that they need to possess, are the two crucial factors for the process (Kettunen at al. 2007).

The innovative products can help the businesses in strengthening their competitive position, especially on the new markets (Boutellier at al. 2000). The innovative ventures bring novel or improved products and promote efficient manufacturing, distribution and marketing. However, important aspect for food processing companies is their ability to understand and to accommodate to endless variations in consumer preferences in different countries or regions. When go out of their native country, in order to achieve same level of meeting the taste of the consumers, companies need to study the overall social context in the particular country or region where they plan to enter. Rovira-Nordman and Melen (2008) call for intelligent combination of technological and social knowledge when discovering new market opportunities.

In their innovative efforts companies are faced with many obstacles. The lack of innovativeness drive is one of major internal barrier Other barriers are among the financial aspects of the innovation process in terms of the high costs of the R&D of new products and the uncertainty of market success of these products. Moreover, innovativeness is not entirely domain of the businesses. Businesses are only one side of the Triple Helix Model, comprised also by the research institutions and the government (Etzkowitz, 1993, Rangaa and Etzkowitz, 2013). The management of the innovation on the level of the economy calls for coordinated efforts of all parties of the process. The role of the knowledge and learning has been widely recognized (Johanson and Vahlne,1997, Forsgren, 2002, Petersen at al., 2003). Small businesses are particularly dependent on support from outside and we are still looking for appropriate models (Ericsson and al. 2000, Sapienza at al. 2005).

Many believe that industrial clusters allow companies to be more innovative and share the unique knowledge that is spatially concentrated and difficult to be replicated elsewhere. In the clusters there is intensive sub-contracting between many vertically interrelated companies on the value chain (Boari 2001). Success of the new product development is contingent on the willingness of a company to take additional risk and on the presence of culture that tolerates product failure (Harveston at al. 2000). However, for small firms the risk is often disproportional with their capacity to absorb it (Duysters and Lokshin 2001). Clusters foster the

risk mitigation (Eisingericha at al. 2010). In these agglomerations small firms are able to innovate through alliances with strong-tie partners, customers and suppliers (Morosini 2004, Yli-Renko at al. 2001).

SPECIFICS OF FOOD INDUSTRY

Food industry operates in constantly changing market with the taste of consumers as decisive factor of that change. Together with the meeting of the tastes and preferences of consumers, companies must apply high quality standards and care for the nutritional value of products, safety and labeling. Companies should also ensure that the new product will not retake the market share of the existing products. Companies successful in launching new products follow market-driven process and seek answers to the following questions: (a) what are unfulfilled needs in the market segment, (b) if we meet that needs, will the market recognize our efforts, (c) how long we will keep our first mover advantage? The development of a new product in the food industry can be surveyed from technological, market and financial perspectives. The accumulated technological knowledge in developing the new products is crucial in the whole process. It reduces the number of trials and the related costs, avoiding errors from past be repeated. In addition to the classic parameters such as the size of the potential market, market share, or planned margin, one of the most important features of new product development is achieving a quick market roll out. The speed of the roll out can be increased by proper project scheduling and it is particularly important when the product is neither technologically nor otherwise significantly different from the products of the competition. The increased competition from the private brands producers and from the small patisseries lowers the profits in the food industry, worldwide. This forces companies to lower their R&D budgets. Some raise debt and some chose mergers and acquisitions to achieve economies of scale that will enable steady development.

Although companies operate under similar conditions, almost each of them has distinctive approach to the new product innovativeness. However, there are some common criteria: (1) the concept should be innovative enough, but not too radical to be understood as very risky, (2) benefits for the user (nutrition facts and so on) should be clearly stated; (3) differentiators (what is different with this product in comparison with other products has to be stated; (4) merchandizing (distribution channels, in shop displays) to be defined and (6) existence of an action plan how, when and who will perform the planned activities. In Kraft Foods, the process of developing new products starts with mega consumer trends analyze, new

technologies emergence and brand positioning. While Kraft puts the emphases on the idea and design stages, same time is equally concerned with the marketing and consumer related issues of the new products development. Well-structured process with clearly defined stages and gates that provides decision-making based on specific metrics for each phase is a must for all companies. It ensures that the efforts and the investments will bring sustainable results (Cooper and Edgett, 2017).

OUR RESEARCH

Our research is based on a survey of executive managers in 38 companies in the food industry in the Republic of Macedonia. Among the most prominent companies included in the survey are Vitaminka Prilep, Prilep Brewery, Zito Prilep, BImilk Bitola, Evropa Skopje, Ideal Sipka Bitola, Donia Prilep, Soleta Skopje and Vitalia Skopje. Seven of the surveyed companies qualify for the list of the top 200 most successful companies in the Country. The survey was conducted during 2014 and 2015.

The food processing is one of the strongest parts of the economy of the Republic of Macedonia. The country has many competitive advantages of the including a good combination of continental and sub-Mediterranean climate, environmentally friendly production practices, sound food processing technologies, highly qualified labor available throughout the rural areas, very good access to the EU markets and a reputation for quality food products. With app. 600 million euro worth trading, mainly with the EU countries, the food processing sector is also among the major exporters. Its contribution, together with the agriculture, to the Gross Domestic Product is app. 16% (Invest Macedonia, 2017). In these terms, the indicators generated with this survey somehow present the general prevailing attitude of the business leaders in the Republic of Macedonia. Moreover, they correspond with the results presented in the Competitiveness Report compiled by the Global Economic Forum. According to this referent Index, Republic of Macedonia is efficiency and not innovativeness driven economy (Global Competitiveness Report, 2015).

The survey included a semi structured interviews. On the first question, do they, as top managers, use external sources of information to trace the global trends in the food industry, 18 answered that they are doing this regularly. Frequently check the mega trends 17 of the interviewed and rarely 3. On the question about the person responsible in their organization for regular checking of the market and other relevant social and economic trends, 19 of the interviewed answer that they are doing that task in their company, 13 answered that they have appointed person, 5 established separate unit and one of the managers answered that they have sector for regular market trend scouting.

On the question do they carefully monitor the other companies, especially their competition, 8 of the interviewed managers answered that they regularly follow the competition, 22 frequently, 7 are doing that rarely, while one of the interviewed never refers to the moves of the competition.

On the question of use of external expert knowledge in their new product development process, 3 of the interviewed answer that they are relying on external professional expertise regularly, 10 are doing that only for larger ventures, 24 are doing that on a case by case basis, and one is not using external expertise, at all.

Nearly two-thirds of the managers (22) think that their companies lack staff needed to properly meet the challenges related to the development of new products and they will have to make new employments of educated personnel. Approximately other third of the interviewed (12) reported that their companies are well-equipped with human resources. Three of the interviewed do not consider this important deciding factor, and one of the interviewed answered that, in order to properly address this issue, his company will need completely new team.

Constantly invest in the professional development of their teams, 23 of the interviewed managers, 11 answered that they invest in training and professional development of their teams when some investment in new plant or process is done, while 4 reported that their investment in the professional development of the staff is negligible.

When asked about the technology employed, 29 of the managers consider their current technology sufficient for the new product development requirements. Nevertheless, they would consider additional investment if needed and 9 of them answer that they will definitely need to change the applied technology if new products are to be added to their current product lines.

Regarding their general attitude towards the investment in technology, one of the managers answered that the needed investment is never an issue in his company if the market requires a particular investment, 9 reported that the volume of the incremental investment is sometimes a decisive factor. For 28 of the managers financial issues are very relevant factor for their new product decision.

Regarding the research and development budgets, 11 of the managers reported their regular budgets for these purposes. Limited budgets for R&D have 16, while other 11 have no R&D budget at all.

Regarding the competiveness internationally, 3 of the interviewed managers responded that they mostly compete internationally. For the rest of the interviewed managers (35), the local market is the key for their operations.

In terms of their experience and value that they perceive in various forms of business networking and clustering, 22 do not see tangible benefits of their membership in these associations. For 16 of the interviewed managers the benefits are quite limited and there is no interchange of relevant knowledge or risk syndication, like in case of the clusters in the developed countries.

CONCLUSIONS AND RECOMMENDATIONS

Our research is limited by its volume. However, the fact that it involved the most important players in this sector we can draw some, we believe, relevant, conclusions about their general attitude in relation with the new product development initiated innovativeness. This particularly having in mind that the answers we collected proved the major findings of the Competitiveness Report about the profile and the trends of the economy of the Republic of Macedonia in terms of its competitiveness. According to this Index, Republic of Macedonia is not an innovativeness driven economy and still competes on the low cost of the production factors (Global Competitiveness Report, 2015).

The general orientation towards the technology issues in relation with the new project development is mirrored in the low number of managers who regularly and thoroughly monitor the mega market, economic and social trends.

Practically half of the managers reported that, in fact, do not follow the market trends in an organized manner. Moreover, it seems that they tend to keep even such scarce information for themselves. Also, it seems that they fail to monitor their competitors.

The number of managers who answered that they regularly use external knowledge in their new product development process is less than 10%. This means that they are missing the opportunity to work close with research and development institutions in academia and are lacking the opportunities that such regular cooperation within the triple helix model, brings.

The answers regarding the level of the human resources are inconsistent. While 60% of the managers answered that they constantly invest in professional development, nearly two-thirds of them, think that they lack proper staffing to meet the new challenges related to the development of new processes and products and that they will have to make new employments of educated personnel.

The answers regarding the technology are also internally inconsistent and prove the findings of the Global Economic Forum Competiveness Index that assesses the sophistication of the technology employed by the companies in the Country as below the EU average. The applied technology is often energy inefficient and lacks automation and information system integration.

Regarding the finance for the new product development, almost 75% of the managers answered that the volume of investment is very relevant for their final decision in case of new project development. This is also consistent with the Competiveness Index findings that the country suffers from the lack of access to the EU structural funds, compared with some common benchmarking countries, like Bulgaria or Croatia.

Regarding the research and development budgets, managers reported very limited budgets. This is consistent with the fact that the Country invests in R&D ten times less than it plans in its strategic papers. In other words, this common denominator for the entire economy is present in the food industry, too. However, it considerably limits the competitiveness of this industry, especially on the foreign markets. Macedonian food industry should put much more emphasis on its competiveness internationally. If that happens, then the various forms of business networking and clustering, that are now insufficiently used, will come into focus.

REFERENCES

Bianchi, P., Miller, L., Bertini, S. (1997). *"The Italian SME Experience and Possible Lessons for Emerging Countries"*, Nomisma.

Boari,C. (2001). *"Industrial Clusters, Focal Firms, and Economic Dynamism: A Perspective from Italy"*, IBRD & Worldbank.

Boutellier, R., Gassmann, O., Von Zedtwitz, M. (2000). *"Managing Global Innovation: Uncovering the Secrets of Future Competitiveness"*. Springer

Cohen, W., Levinthal, D. (1990). *"Absorptive capacity: A new perspective on learning and innovation"*. Administrative Science Quaterly, 35(1), 128-152.

Cooper, R., Edgett, S. (2017).*"Best Practices in the Idea-to-Launch Process and Its Governance"*. Stage-Gate.

Duysters, G., Lokshin,B. (2011). *"Determinacies of alliance portfolio complexity and its effect on innovative performance of technology acquisitions"*. Strategic Management Journal. 28. pp. 805—825.

Eisingericha, A., Bell, S., Tracey, P. (2010). *"How can clusters sustain performance?* "Research Policy. 39. p.p. 239–253.

Erawatch (2013). *"Country Report Former Yugoslav Republic of Macedonia"*. ECJRC and Institute for Prospective Technological Studies.

Etzkowitz.H. (1993). *"Enterprises from Science"*. The Origins of Science-based Regional Economic Development".

Fabian, C., Schmidli, C. (2005). *"Problems of R&D Internationalization of Small and Medium Companies"*, European Academy of Management.

Forsgren, M. (2002). *"The Concept of Learning in the Uppsala Internationalization Process Model: A critical review"*. International Business Review. 11 (3). pp. 257–277.

Harveston, P., (2000). *"Synoptic versus Incremental Internationalization: An Examination of "Born Global" and "Gradual Globalizing Firms"*. University of Memphis.

Invest Macedonia (2017). *"Agriculture and agro processing industry in Republic of Macedonia"*. Agency for Foreign Investments and Export Promotion of the Republic of Macedonia

Johanson, J., Vahlne, J., (1977). "*The Internationalization Process of the Firm—A Model of Knowledge Development and Increasing Foreign Market Commitments"*. Journal of International Business Studies. 8, pp. 23–32.

Kettunen, J. (2007). *"Innovativeness in higher education management"*. Bhavishya Journal of Future Business School. 1(2), pp. 65–74.

Kettunen,J., Ilomäki,S. and Kalliokoski, P. (2007). *"New Business Creation Through Mergers And Acquistions – Findings From An Interview Study"*. Teknologiainfo Teknova

Morosini,P. (2004). *"Industrial Clusters, Knowledge Integration and Performance"*. World Development. 32 (2).

Petersen, B., Pedersen, T. and Lyles, M. (2008). *"Closing knowledge gaps in foreign markets"*. Journal of International Business Studies. 39 (7), pp. 1097-1113.

Ranga, M., Etzkowitz, H. (2013). *"Triple Helix Systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society"*. Industry and Higher Education. 27 (4). pp. 237-262.

Tiwari R., Buse,S. (2007). *"Barriers to Innovation in SMEs: Can the Internationalization of R&D Mitigate their Effects?"*. European Commission.

Global Economic Forum. (2016). "The Global Competitiveness Report 2015-2016"

Yap, Ch., Souder, W. (1994). "Factors Influencing New Product Success and Failure in Small Entrepreneurial High-Technology Electronics Firms". Journal of Product Innovation Management. 11 (5). pp. 418–432.

Yli-Renko,H., Autio,E. and Sapinza, H. (2001). "Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms", Strategic Management Journal. 22 (6-7), pp. 587–613.