JUKKA LANKINEN, MAIJA RÖKMAN and PEKKA TUOMINEN

Market sensing in the food industry in Pirkanmaa

ABSTRACT

The purpose of this study is to describe and analyse market sensing in the food industry in Pirkanmaa. The data was gathered by a mail survey and it was statistically analysed using the SPSS package. Three empirical dimensions in market sensing were elaborated by factor analysis.

1 Introduction

Food industry is the largest industry in Europe and it employs over 4 million people. In Finland, the food industry is the fourth largest branch of industry after metal and engineering, forest and chemical industries. In 2007, the gross value of production in the Finnish food industry was 9.5 billion euro and value added 2.2 billion euro. The Finnish food industry is the biggest manufacturer of consumer goods in Finland. The largest production sectors of the food industry are meat processing, dairy products, bakery, brewing and soft drinks industry. (www.etl.fi)

The Finnish food industry is characterised by small and medium sized firms. Almost 70 per cent of all firms in the food industry employ less than 5 employees and less than 25 firms have more than 250 employees. In Finland the food industry operates in approximately 1.900 sites. The Finnish food industry employs 34.800 wage and salary earners and it is the third important

JUKKA LANKINEN, M.Sc.
University of Tampere • e-mail: jukka.lankinen@uta.fi,
MAIJA RÖKMAN, Senior lecturer in marketing
University of Tampere • e-mail: maija.rokman@uta.fi
PEKKA TUOMINEN, Professor of marketing
University of Tampere • e-mail: pekka.tuominen@uta.fi

employer among industries. The whole Finnish food chain employs approximately 300.000 persons and this amounts 12 per cent of the whole employed labour force in Finland. (www.etl.fi)

The most important export products of the Finnish food industry are cheese, alcoholic drinks, butter, chocolate, sugar-derived products and meat. In 2007, the most important export countries are Russia (23 %), Sweden (17 %), Estonia (10 %), Germany (6 %) and USA (4 %). In 2007, the value of food exports was 1.4 billion euro. (www.etl.fi)

The Finnish food industry develops and manufactures foodstuffs in order to meet the needs on domestic and international consumers by processing domestic agricultural products and imported raw materials. Almost 85 per cent of the raw materials used by the Finnish food industry are domestic. The market share of Finnish food products in Finland is 81 per cent. (www.etl.fi)

It is evident that companies in the food industry will face a lot of challenges due to dynamic market changes and intensive competition. Firms have to develop their organisation and strategies and be constantly aware of the changing needs of customers. Sensing markets and developing new intensive ways to collaborate with other firms will be one of the key capabilities in the future. Based on these facts, it is clear that market sensing in the whole food chain is vital for the firms in the food industry in Pirkanmaa and in whole Finland.

The purpose of this study is to describe and analyse market sensing in the food industry in Pirkanmaa. In this study, empirical dimensions in market sensing in the food industry in Pirkanmaa are elaborated and conclusions with managerial implications are provided.

2 The concepts of market sensing and market-sensing capability

Market-driving firms are distinguished by ability to sense events and trends in their markets ahead of their competitors. These firms can anticipate more accurately the responses to actions designed to retain or attract customers, improve channel relations or thwart competitors. (Jaworski & Kohli & Sahay 2000) These firms can act on information in a timely, coherent manner because the assumptions about the market are broadly shared. This anticipatory capability is achieved through open-minded inquiry, synergistic information distribution and mutually informed interpretations about the market. Day (1994) defines this distinctive capability as market sensing. It can provide a firm with an edge over its competitors. It is easy to encounter firms in trouble because they have faulty or inadequate information about their markets. (Anderson & Narus 2007)

Market sensing can be defined as a process of generating knowledge about the markets that individuals in the firm use to inform and guide their decision-making. Market sensing is a process of learning about present and prospective customers and competitors. Market sensing enables firms to formulate, test, revise, update and refine their market views, which are simplified representations of the market and how it works. (Anderson & Narus 2007)

Market sensing greatly contributes to the market knowledge by providing a way to test assumptions about customers, competitors and the firm's own resources and capabilities that often are largely implicit. Substantive facets in market sensing include defining the market; monitoring competition; assessing customer value; and gaining customer feedback. To attain

a distinctive capability in market sensing, the firm should strive to be superior to its competitors in each of these facets. (Anderson & Narus 2007)

The concept of market-sensing capability refers to a firm's ability to learn about its market environment, and to use this knowledge appropriately to guide its marketing actions. Market-sensing capabilities are connected to a firm's ability to use market knowledge that can be obtained through formal and informal mechanisms from various personal and public sources. (Day 1994; 2002; Lindblom & Olkkonen & Mitronen & Kajalo 2008) The three elements of market-sensing capability consist of sensing, sense-making, and response. Sensing refers to acquisition of information on consumers, competitors and channel members. Sense-making refers to the interpretation of gathered information against past experience and knowledge. Response refers to the utilisation of the gathered and interpreted information in decision-making. (Day 1994; 2002; Lindblom & Olkkonen & Mitronen & Kajalo 2008)

The focal study is grounded on the theoretical model of market-sensing capability proposed by Foley & Fahy (2004). The model has been constructed from the ideas of Day 1994; Sinkula & Baker & Noordewier (1997) and Day & Van den Bulte (2002).

According to Foley and Fahy (2004) market-sensing capability is comprised of four components: first, learning orientation with a commitment to learning, open-mindedness in learning and shared visions; secondly, organisational systems with decentralisation in decision-making, formalisation of decision-making rules, use of reward systems and benchmarking activities; thirdly, market information with development of a market information system; and finally organisational communication with organisational values and clear decision-making criteria. All components of market-sensing capability with their sub-components have a specific resonance in market sensing (Foley & Fahy 2004).

3 Conducting the empirical study

The empirical data was collected by a mail survey from all the companies in the food industry in Pirkanmaa in March 2006. The use of a mail survey was deemed appropriate because it provided an opportunity for respondents to give considered answers. In the questionnaire a quantitative attribute-based measurement approach was used with a 5-point Likert scale. This scale was utilised because it is widely used and respondents readily understand it. (Aaker & Kumar & Day 2007; McDaniel & Gates 2006) The original 4-page questionnaire was piloted in small focus groups and some changes and modifications were made to the questionnaire.

176 questionnaires were mailed. Altogether 39 questionnaires were returned on time. Consequently, the response rate was 22 per cent. This percentage can be seen as a potential source for a non-response bias. (Armstrong & Overton 1977) However, when measuring by the turnover, the firms which took part in this survey account for almost 60 per cent of the markets in the food industry in Pirkanmaa. This fact increases the credibility of the results. The response rate can be regarded as rather fair when dealing with the common response rates from the management in any industry. No reminders were used in order to secure the anonymity of all responding firms.

The quantitative data was statistically analysed with percentages, means and standard deviations using the SPSS package. The empiri-

cal dimensions in collecting and analysing market information are based on factor analysis.

Assessing the credibility of the results is tightly connected to the valid and reliable measurement of the study. Valid measurement is a perquisite for the successful study. Constructs such as market sensing and market-sensing capability cannot be directly and perfectly measured with one single item. Validity refers for the degree which a questionnaire is truly measuring the construct it is supposed to measure. (Malhotra & Birks 2007; Peter 1981) In order to increase the validity of this research, a lot of efforts were allocated to the content and design of the theoretical constructs of market sensing and market-sensing capability. Reliability is a matter of internal consistency and it refers to the degree to which the instruments are free from error and thereby yield consistently accurate measurements of the construct of interest (Churchill 1979; Schmidt & Hollensen 2006).

4 Empirical dimensions in market sensing in the food industry in Pirkanmaa

After the preliminary analysis, in which frequencies, percentages, means, standard deviations, and correlations were calculated, factor analysis was conducted. The aim was to reduce the number of individual 5-point Likert scale variables.

Factor analysis was employed to reduce the dimensionality of the original criteria to a smaller number of factors by forming a linear combination of the original data while retaining as much variance as possible. (Aaker & Kumar & Day 2007; Malhotra & Birks 2007; Schmidt & Hollensen 2006) The Kaiser-Meyer-Olkin measure was 0.71, and Bartlett's test of spherity was 485 (significance 0.00).

Kraiser's eigenvalue criterion was used in determining the number of factors. The factor analysis isolated three factors based on eigenvalues over 1.00. The factor matrix was rotated with the orthogonal method of varimax rotation because this method spreads variance evenly among factors. (Malhotra & Birks 2007; McDaniel & Gates 2007; Schmidt & Hollensen 2006)

With the three factors the total percentage of explained variance was 76 per cent. Communalities of the original variables were quite high. The factor analysis brought up three factors that represent the empirical dimensions in market sensing in the food industry in Pirkanmaa. These empirical dimensions in the table 1 are named and interpreted based on the highest factor loadings as follows:

(1) *Activity in utilising market information,*
(2) *Insufficiency in collecting market information, and*
(3) *Reluctance in disseminating market information.*

The first dimension "Activity in utilising market information" is heavily composed of variables that emphasise the importance of actively collecting and analysing market information. The second dimension "Insufficiency in collecting market information" underlines the need to collect and systematise market information more also in the future. The third dimension "Reluctance in disseminating market information" characterises the desire to keep the market information inside the firm and not to share it with other members in the distribution chain.

TABLE 1. Empirical dimensions in market sensing in the food industry in Pirkanmaa.

	Activity in utilising market information	Insufficiency in collecting market information	Reluctance in disseminating market information	Communality
Our company constantly collects information about business customers	**0.91**			0.84
Our company actively analyses market information	**0.90**			0.87
Our company constantly collects market information	**0.88**			0.80
Our company receives information from the other members in the distribution chain	**0.88**			0.85
Our company actively analyses other companies' values	**0.88**			0.86
Our company actively analyses other companies' attitudes	**0.87**			0.79
In our company the collected and analysed information always leads to measures	**0.86**			0.74
Our company actively analyses other companies' leadership styles	**0.86**			0.83
Our company constantly collects information about consumers	0.85			0.77
Our company actively analyses information about competitors	0.84			0.78
Our company actively collects information about competitors	0.84			0.79
Our company actively analyses information about business customers	0.83			0.72
Our company actively provides information to other members of the distribution chain	0.79		-0.33	0.75
Our company actively analyses information about consumers	0.62		0.32	0.50
Our company feels that sensing changes in the market is relevant for our business	0.60	0.49		0.62
Our company should attach more weight to information collecting in the future		**0.93**		0.94
Our company aims to pay more attention to information collecting in the future		**0.86**		0.74
Our company collects market information arbitrarily		0.69		0.53
Our company feels that exchanging information between companies in the distribution chain can be harmful to us			**0.85**	0.76
EIGENVALUE	10.53	2.78	1.18	14.49
EXPLAINED VARIANCE	55 %	15 %	6 %	76 %

5 Conclusions and managerial implications

Companies in the food industry in Pirkanmaa, especially the smaller ones, should pay greater attention on market sensing in the future. Collecting and analysing the information was frequently rather humble in the smaller firms. The information collected and analysed did not always lead to concrete measures for improving the business by strengthening competitive advantage.

The use of customer databases should be intensified in the food industry in Pirkanmaa. Even larger companies do not take enough advantage of the potential provided by the customer databases. Even 43 per cent of the larger companies did not use customer databases for obtaining market information. One partial explanation for this might be the insufficiency or lack of customer databases in the companies. The use of customer databases would enable the food companies to improve their customer management.

Companies in the food industry in Pirkanmaa act rather similarly in market-sensing regardless of their size. No significant differences were found between small, medium and large companies. A lack of resources is often an evident reason for differences in the market-sensing capability between companies of different sizes. Large and medium-sized companies often have more monetary and personal resources at their disposal for market sensing. ■

References

AAKER, D. & KUMAR, V. & DAY, G. (2007) *Marketing research*. John Wiley & Sons: New York.

ANDERSON, J. & NARUS, J. (2007) *Business market management. Understanding, creating and delivering value.* Prentice Hall: New York.

ARMSTRONG, J & OVERTON, S. (1977) Estimating non-response bias in mail surveys. *Journal of Marketing Research,* Vol. 14, No. 3, 396–402.

CHURCHILL, G. (1979) A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research,* Vol. 16, No. 1, 64–73.

DAY, G. (1994) The capabilities of market-driven organizations. *Journal of Marketing,* Vol. 58, No. October, 37–52.

DAY, G. (2002) Managing the market learning process. *Journal of Business & Industrial Marketing,* Vol. 17, No. 4, 240–252.

DAY, G. & VAN DEN BULTE, C. (2002) Superiority in customer relationship management: consequences for competitive advantage and performance. *Marketing Science Institute* Vol. 41, No. 2, 31–44.

FOLEY, A, & FAHY, J. (2004) Towards a further understanding of the development of market orientation in the firm: a conceptual framework based on the market-sensing capability. *Journal of Strategic Marketing,* Vol. 12, No. 4, 219–230.

JAWORSKI, B. & KOHLI, A. & SAHAY, A. (2000) Market-driven versus driving markets. *Journal of the Academy of Marketing Science,* Vol. 28, No. 1, 45–54.

LINDBLOM, A. & OLKKONEN, R. & MITRONEN, L. & KAJALO, S. (2008) Market-sensing capability and business performance of retail entrepreneurs. *Contemporary Management Research,* Vol. 4, No. 3, 219–236.

MALHOTRA, N. & BIRKS, D. (2007) *Marketing research. An applied approach*. Prentice Hall: London.

MCDANIEL, C. & GATES, R. (2006) *Marketing research: essentials.* John Wiley & Sons: New York.

MCDANIEL, C. & GATES, R. (2007) *Marketing research with SPSS.* John Wiley & Sons: New York.

PETER, J. (1981) Construct validity. A review of basic issues and marketing practices. *Journal of Marketing Research,* Vol. 18, No. May, 133–145.

SCHMIDT, M. & HOLLENSEN S. (2006) *Marketing research. An international approach*. Prentice Hall: London.

SINKULA, J. & BAKER, W. & NOORDEWIER T. (1997) A framework for market-based organizational learning: linking values, knowledge and behaviour. *Journal of the Academy of Marketing Science,* Vol. 25, No. 4, 305–318.

www.etl.fi <02.02.2009>