Identifying Innovation Strategies: Insights from the Greek Food Industry

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Paper prepared for presentation at the 110th EAAE Seminar 'System Dynamics and Innovation in Food Networks' Innsbruck-Igls, Austria
February 18-22, 2008

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Abstract

This paper emphasizes on the concept of innovation which is more and more nowadays recognized as of significant importance for all companies across different business sectors. The paper initially provides a review of the innovation literature in terms of types, classifications, and sources of innovation that have been proposed over time. Then, innovation in the context of the food industry is examined and it is attempted to identify innovation strategies followed by Greek food companies based on a value driven approach of innovation. The paper finally, provides insights from eight Greek food companies, which were selected from four subsectors: fruit and vegetables, dairy products, meat products (cured meats), and bakery products. The criterion used for the selection was market success and outstanding performance (e.g. market share, achieved results). Evidence indicates that companies tend to innovate along the dimension of offerings, which is more related to the traditional view of product and process innovation.

Keywords: *business innovation, innovation strategies, Greek food industry*

Introduction

Innovation has become a central issue in the business agenda of companies, and in many cases it is recognized as the cornerstone for organizational survival and growth. Particularly, in the food and drink industry (hereafter food industry) significant market forces and changes are driving the industry to emphasize on the developments of innovations in order to address market needs. At the same time however, the level of research and development expenditures (part of overall innovation activity) in the food industry is rather low compared to total manufacturing (EU, 2007). This paradox appears due to specific characteristics of the industry. Innovation is important in the food industry, but has a different character than in e.g. telecommunications or electronics. The research by Caloghirou et al. (2004), which included 558 companies from seven European countries, showed that the food sector (in comparison to the computer sector and other related industries) is less likely to innovate. Innovation is more process, marketing and management oriented and less a technology-push based on basic science, with new products being mainly variations of older ones (Sawhney et al. 2006; EU, 2007). Analysing innovation in the context of the food industry is also a complex task due to the strong links of the industry with the different sectors in the food chain. In many cases food companies rely more on suppliers than on internal effort for technological innovations (Rama, 1996). For example, the industry has links with various non-food sectors such as chemicals, food technology, packaging, machinery, where, high levels of innovation achieved, but also the industry forms the link between agriculture and food retailing. Moreover, the food sector is comprised of various subsectors with distinct characteristics. Some of the major subsectors include fruits and vegetables, dairy products, beverages, snack foods, flour and bakery products, confectioneries, meat and

poultry products, fish and marine products and fats and oils. Even within subsectors significant differences seem to exist in terms of innovative performance. The dairy sector, or water and soft drinks for example, are leaders in innovation as opposed to meat, pasta and rice products (CIAA, 2006). In this paper, it is attempted to expand the traditional view on innovation, often expressed in terms of product and process innovation. On the contrary, innovation is approached following the concept of business innovation as this was proposed by Swahney et al (2006). Based on their proposed model and dimensions on business innovation this paper aims at identifying innovation strategies and practices followed by companies in the Greek food industry, and in particular to identify how various companies and sub-sectors act upon these dimensions. In order to do this, the paper will use secondary data that have been published in industry forums, market surveys, and corporate publications.

Conceptualizing innovation

Context and sources of innovation

The concept of innovation comes with a plethora of definitions, types, and classifications and has been approached from many different angles. At the bottom line of these approaches stands the recognition that innovation refers to something new, is a process, and differs from invention, new product development or research and development. These concepts are far less holistic. Invention for example, is the first occurrence of an idea for something new, while innovation is the first attempt to carry it out into practice (Fagerberg, 2004). According to Von Hippel (1988) there are two main sources of innovation: manufacturer innovation and end-user innovation. Manufacturer innovation is where an agent (person or business) innovates in order to sell the innovation, which is a very common source. The other source of innovation, end-user innovation, is where an agent (person or company) develops an innovation for their own (personal or in-house) use because existing products do not meet their needs. An example of this source is a company, International Flavors and Fragrances (IFF), which a global supplier of specialty flavors to the food industry and has built a toolkit that enables its customers to modify flavors for themselves, which IFF then manufactures (Von Hippel, 2005). Similar to Von Hippel (1988), many other authors identified that opportunities for innovation exist both within and outside a company or industry (Drucker, 1998; Porter, 2001). In particular, Drucker (1998) identified seven major sources of innovation some related to the company internally and some externally: unexpected events (failures as well as successes, which energize the innovation process), incongruities (result from a difference between perception and reality), process need innovations (those created to support some other process or product), industry structures changes (in response to growth and changes in the marketplace), demographic changes (shifts in the makeup of the population), changes in public perception and new knowledge or technology (new options available for companies and customers). This paper follows an approach of business innovation proposed by Kim and Mauborgne, R. (1999) and Sawhney et al (2006). According to them, business innovation is a much more holistic approach, than product and process innovation, which is linked to new value that is brought in firms, instead of new things. Sawhney et al (2006), defined innovation as the *"creation of substantial new value for customers and the firm by creatively changing one or more dimensions of the business system"*. Their framework of business innovation included twelve dimensions: offerings (develop new products or services), presence (create new distribution channels or innovative points of presence, including the places where offerings can be bought or used by customers), processes (redesign core operating processes to improve efficiency and effectiveness), customer (discover unmet customer needs or identify undeserved customer segments), platform (use common components or building blocks to create derivative offerings), solutions (create integrated and customized offerings that

solve end-to-end customer problems), customer experience (redesign customer interactions across all touch points and all moments of contact), value capture (redefine how company gets paid or create innovative new revenue streams), organizations (change form, function or activity scope of the firm), supply chain (think differently about sourcing and fulfilment), networking (create network-centric and intelligent offerings), and brand (leverage a brand into new domains).

Types and classifications

One very common classification of innovation is radical and incremental (Abernathy and Utterbach, 1978). Radical innovation, involves considerable change in basic technologies and methods, created by those working outside mainstream industry and outside existing paradigms. This involves more uncertainty about future outcomes and much larger risk. Incremental innovation is a step forward along a technology trajectory, or from the known to the unknown, with little uncertainty about outcomes and success and is generally minor improvements made by those working day to day with existing methods and technology, responding to short term goals. Another common classification is the one by Christenssen (1997) of disruptive and sustaining innovation, where disruptive innovation is a technological innovation, product, or service that eventually overturns the existing dominant technology or status quo product in the market and by contrast, sustaining innovation improves product performance of established products. Tidd et al. (2005) in their research distinguished four commonly accepted types of innovation: product (refers to new products or improvements on products), process (where some part of the process is improved to bring benefit), position (refers to an existing product or service that is repositioned) and paradigm (major shifts in thinking cause change). Finally, another classification is the one by OECD (2005). According to the third version of the Oslo Manual (OECD, 2005) four types of innovations are distinguished: product innovations, process innovations, marketing innovations and organisational innovations. This classification maintains the largest possible degree of continuity with the previous definition (first and second version) of technological product and process innovation used in the second edition of the Manual. The classification by OECD presents similarities to the classification by Tidd et al. (2005) particularly, regarding product and process innovations. However, marketing innovations (the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing) and organisational innovations (the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations) present significant differences. In the following table (Table 1) an overview of some of the most important types and classifications of innovation is presented.

Table 1. Overview of types and classification of innovation

Types or classifications of Innovation	Author (s)	Context
Programmed vs. non-programmed innovation	Cyert and March 1963,	Innovation planned through R&D vs. innovation occurring when there is slack in the organization in the form of more resources available than are presently needed, which are then used for innovation purposes
Product vs. process innovation	Knight, 1967	Any new product introduced by the organization vs. the introduction of new elements in the organization's task, decision, and information system or its physical production or service operations
Social innovation	Young, 1967	Refers to either innovations that aim to meet a societal need or the social processes used to develop an innovation
Incremental vs. Radical innovation	Abernathy and Utterbach, 1978	Fundamental changes that represent revolutionary changes in technology vs. minor improvements or simple adjustments in current technology
Organizational innovation	Daft, 1978	The creation or adoption of an idea or alteration of business structures, practices, or behaviour new to the organization
Financial innovation	Miller, 1986	Creating and then popularizing new financial instruments as well as new financial technologies, institutions and markets.
Architectural innovation	Henderson and Clark 1990	A type of technological shift that changes the linkages between components in a system
Disruptive vs. sustaining innovation	Christenssen , 1997	Disruptive innovation is a technological innovation, product, or service that eventually overturns the existing dominant technology or status quo product in the market and by contrast, sustaining innovation improves product performance of established products

Innovation in the food industry: a review of the research

Various research efforts have been carried out as regard innovation in the food industry, in various sub-sectors and different countries. Earl's (1997) research, approached innovation in the food industry under a very broad view, by focusing on different types of innovation, and moreover, by identifying the importance of foodservice companies and food retailers in addition, to food manufacturers and food processors. Martinez and Briz (2000), examined the innovative performance of the Spanish food manufacturers based on the classification of product vs. process and radical vs. incremental innovation and highlighted the 'evolutionary' rather than 'revolutionary' nature of innovation activities in this particular sub sector of the Spanish food industry. Harvey's (2000) research examined product innovation (radical vs. incremental type), but also considered organizational innovation. Interestingly, his research focused at the retailers' level and examined their performance. Trail and Meulenberg (2002) investigated the way twelve food-manufacturing companies in six European countries innovate as regard product or process innovation. Results indicated that firms behaved differently depending on their dominant "orientations" towards the product, the process, or the market, the types of market they sup-

ply (particularly whether they supply branded or private-label products), the nature of their ownership (public, private, co-operative), market size and scope, and company size. Another research by Avermaete et al. (2003) examined determinants of innovation in Belgian small food firms, based on four types of innovation: product, process, organizational and marketing. They concluded that innovation was regarded important by small firms and emphasis was placed on all four types of innovation, but some aspects of innovation are depended by the age and the size of the company, as well as the regional economic performance. Salavou and Lioukas (2003) examined strategic drivers of radical product innovation adoptions in the context of SME's in the Greek food industry at the manufacturer level. Menrad (2004), analysed the innovation system of the German food industry, and in particular the structure and innovation activities of industrial companies with specific emphasis on interactions between the different actor groups, as well as the political and legal framework. Pannekoek et al. (2005) examined 74 entrepreneurial innovation projects in Dutch greenhouse horticulture and identified product superiority, and co-operation with supply chain partners as the most important success factors for entrepreneurial innovation. A focus on two specific types of innovation, incremental and process, was given in the research by Francis (2006), which examined the main determinants of cycle time performance in incremental innovation development projects within the UK fast moving consumer goods industry. This research included the perspectives of the UK's leading retailer and two typical manufacturers (one for lager and beer and products and one for private label biscuit and confectionery products) that both supply this retailer. Trienekens et al. (2008) focused on the apple supply chain where they approached innovation based on the categorization: product, process, market and organization. The literature review shows that innovation in the food industry has been approached in most cases in a very traditional way, focusing on new products or process rather than on new value. In fact, the review revealed only one research effort by Matthyssens et al. (2008). In their research in they functional foods industry they provided examples of how food ingredient suppliers try to "break" the dominant logic implied by the industry recipe, and hence try to generate innovative customer value.

Innovation and the Greek food industry

Key characteristics, trends and structural changes

The food industry is one of the most dynamic sectors of the Greek economy, constituting the top manufacturing activity, placed higher than the petroleum and the non-metallic minerals sector (CIAA, 2005; National Statistical Service of Greece, 2005; SEVT, 2006). The sector accumulates 6,5% of the Gross Domestic Product, 25% of the Gross National Product of the industrial sector, employs 26% of the total workforce of the secondary sector, on a full or part-time basis, and grows with a high development ratio which reaches 5% on average each year (Hotel and Restaurant 2004, National Statistical Service of Greece 2005). Nowadays, foodstuffs and wine together make up 35% of Greek exports and the sector accumulated 14% of total investments (including investments in trade and services) (SEVT, 2006). The importance of the Greek food industry lies also on the strong link of the industry with the primary sector. The food industry in Greece played traditionally a central role for the processing of agricultural raw materials and food supply of the population. Historically, the Greek food sector is characterized by the existence of small-medium size companies (SME's), however after the 1990's, large domestic companies were created, and multinational companies have also entered the market. The Greek food industry has the strong presence of national companies, despite the presence of major international manufacturers and distributors. The industry is characterized by the existence of significant differences. At the food processor level, nearly 1400 companies exist and most of them are mainly small family-based companies. On average a Greek food company employees

sixty persons in comparison to the European average, which is a one hundred (CIAA 2003, Greek General Secretary of Trade 2005). Only lately a number of mergers and acquisitions has occurred, but not as intense as in the retailer sector. At the wholesaler level, most companies are also small family-based companies and concentration of the market is relatively low. As a result, the role and the power of these companies have diminished the last years in favour of retailers. At the other end of the food supply chain, at the retailer level, the appearance of new multinational players in the early 1990's resulted in a major sector transformation, with a decline of the traditional grocery store and the growth of the hypermarket, cash and carry and discount sectors. In fact, foreign retailers are still entering the Greek market. The latest entrance is that of a German retailer which will open the first stores in 2008. The entrance of foreign retailers resulted in increased levels of competition fostering domestic retailers to accelerate their growth through acquisition of smaller ones, and entry to new markets (Doukidis, 2004). Retailers, both domestic and multinational ones have nowadays become the most powerful players in the sector exercising their power to every other entity in the food supply chain. In the following table (Table 2) the key characteristics of the Greek food industry are presented.

Table 2. Key characteristics of the Greek food industry (Source: SEVT, 2006)

	Absolute figures	Position in the Greek industry (%)	Ranking in Greek industry
Number of companies	1400	21%	1st
Employment	67800	26%	1st
Turnover	10.2 b. €	24%	1st

Sources of innovation

In this section sources of innovations as proposed by Drucker (1998) are explored in the context of the Greek food industry. As far as unexpected events it seems that failures in safety and quality systems that originated in north European countries, supported process innovation with the implementation of quality and production standards. Quality issues are particularly important for the Greek consumer and subsequently for food manufacturers. A recent survey by the Greek General Secretariat of Consumers revealed that Greek consumers consider quality, by far, the most important criterion in selecting products and store (GGSC, 2007). Not surprisingly, Greek food manufacturers seem to acknowledge this situation. The survey by Semos and Kontogeorgos (2007), revealed that they consider HACCP implementation as a way towards increasing the value they deliver to their customers. Regarding process need innovations it is one of the most important sources of innovation for the Greek food industry. Many surveys have pinpointed the fact that Greek food companies invest mostly in modernising their production processes and in increasing their production capacity of existing products. In addition, a significant part of the investments is used for the development of new products (Greek Retail, 2005b; SEVT, 2006, IOBE, 2006). Considerable changes in the structure of the Greek food industry occurred the last years with the entrance of multinational retailers resulted in mergers and acquisition from local retailers. Similar changes occurred also at the manufacturer's level. All these changes resulted in increased competition, often expressed with the need to develop innovative products (e.g. at the private label category) (Greek Retail, 2005a). As regard demographic changes, Greece did not face radical shifts in the make up of population. In terms of foreigners for example, increases in their population, although large, did not create opportunities for new products or services, due to the fact that food consumption differences were not significant (Marketing Week, 2007). In terms of structural market changes, there is no doubt that nowadays

more busy-two income families and single-parent families exist than in the past. However, increases in prepared meals and takeout foods are not significant, because the changes in the consumption patterns of the Greek consumer are very slow (Greek Retail, 2005b). As in many other European countries, changes in public perception in the Greek food industry were significant with Greeks becoming more health and diet conscious, demanding products with more vitamins and other supplements, chemical free or organics. This health and diet trend is generally becoming on the most important dynamics for innovation. In North America for example health-driven innovation is dominant (CIAA, 2006). However, in Greece this trend is mainly expressed with a turn in the consumption of "traditional products". Companies therefore face a paradox in the sense that they have to innovate based on traditional products. Regarding new knowledge or technology, although it is generally accepted that it is one of the strongest forces of innovation, the Greek food industry fails to adopt these technologies and applications. Research by Manthou et al. (2005), and Matopoulos et al. (2007), revealed that companies from the Greek food industry are late adopters or do not adopt at all new technologies particularly, Internet-based applications. For example, many companies, of all sizes and levels of sophistication, have a web presence on the Internet but their capability to connect their products with customers nearby or on the other side of the globe is limited.

Overview of innovation strategies

In this section innovation strategies from the food industry are identified based on the model and the twelve dimensions of business innovation proposed by Swahney et al (2006). The subsectors selected were the following: fruit and vegetables, dairy products, meat products (cured meats), and bakery products. Two companies per subsector were selected with the criterion of market success and outstanding performance (e.g. market share, achieved results) and the analysis follows.

Insights from the fruit and vegetable sector

Two companies were selected for this sector: Almme and Chios Gum Mastic Growers (CGMG). Almme is one of the biggest fruit processors (mainly peach) in Greece, and is exporting in most European markets, as well as in USA, Russia and Japan. The innovation strategy of the company focuses on the dimension of offerings with the development of new products (e.g. expanding canned fruit range, develop new packaging, fruits in pots, peach puree etc.). Another, dimension of business innovation that is important is the platform dimension. The company took advantage of the primary material (e.g surpluses in peach production) and entered the fertilizer's market by producing organic fertilizers from organic residuals. CGMG was traditionally an association of growers of Chios gum (comes from a tree that produces natural gum only in southern part of Chios island). The last years, CGMG emphasized a lot on business innovation, particularly, on the dimension of offerings and platform, where based on Chios gum they developed a wide range of new products other than gum (e.g. bakery products, gourmet products, beverages, cosmetics and pharmaceuticals). CGMG innovated also across the dimensions of presence and customer experience, by creating their own stores (called mastiha shops and mastiha corners) in most big cities in Greece, as well as some very crowded places (e.g Athens international airport, Mykonos island), but also in New York and Paris. As regard customer experience, the stores developed were of high appeal and design in order to create a very positive experience for the consumer.

Insights from the dairy sector

Statistics say that the dairy sector is one of the most innovative ones (CIAA, 2006), and this is very much the case also in the Greece, although it seems that innovation is to a large extent based on the dimension of offerings. Traditionally, the dairy sector is of high importance for the Greek food industry due to increased consumption of dairy products by Greeks. The last five years, the sector is in great turbulence, mainly due to the fact that traditional large companies are loosing market shares in favour of small, countryside-based companies (ICAP, 2007). Competition is therefore very tough, although many companies were accused and finally penalized by the Hellenic Competition Authority with large fines, as a result of price fixing behaviour and anti-competitive practices. The companies that were considered for this sector were: Delta and Olympos, which are lately competing in the dairy market relentlessly. Delta is the dairy part of the biggest Greek food company Vivartia (one of the largest in Europe) and the biggest producer of milk products with a market share of approximately 40%. The company tends to innovate based mainly on the dimension of offerings by creating new products (e.g. functional products: milk with less lactose, new flavours for existing yogurts etc.). On the other hand, Olympos started as a small-local milk company from Central Greece, but managed to become in six years the second most important player in the Greek milk market. The company emphasised also on the dimension of offerings by developing new products (e.g. based more on package changes, than technology).

Insights from the meat sector

The meat sector is one of worst performing sectors in terms of innovation (CIAA, 2006). The meat market in Greece has sales of approximately 320m. €, and in comparison to other sectors is dominated to a great extent by Greek companies. The sector is quite concentrated with five companies holding nearly 70% of the market share (Hellastat, 2007). The companies that were considered for this sector were Nikas and Creta Farm. Nikas is the leader in the market and operates since the early 1970's at that time as a traditional family-owned business. Much of innovating from Nikas comes along the dimension of offerings with the company creating new products and packaging. A latest innovation of the company came along the dimension of brand. The company extend its brand by entering in 2007 a completely different market, that of traditional Greek pastries. Similarly to Nikas, Creta Farm started as local Cretan company in the late 1970s, but has become one of the leaders in the Greek market, with a turnover that rocketed from approximately 5m. € to 67m. € (from 1995-2003). Much of the success of the company is due to important innovative activities that the company undertook, particularly in terms of offerings (e.g. new packaging) and customers. Innovating along the dimension of customers was achieved by focusing on customers who emphasised on more health and diet cured meat. Such an example involved the circulation in the market, of a very low fat cured meats range, which was a result of the development of a specialized pig variety which had hardly any intramuscular fat. Similarly, the last five years the company produces and distributes to Greece and abroad a cured meats range, which instead of using animal fats it consists of extra virgin olive oil. The company innovated also along the dimension of processes, by becoming a completely vertically integrated company including the pig reproduction unit, the animal feed production unit, the slaughterhouse, the cutting unit and the packaged meat unit. This enabled Creta Farm to achieve greater efficiency and higher quality.

Insights from the bakery sector

The bakery sector in Greece is a very concentrated sector with four companies holding nearly 70% of the market (Eurotoday, 2007). In general, the sector was in turbulence the last years due to the conflict with traditional bakeries that were opposed to the establishment of "bake off" corners inside supermarket stores. Despite turbulence, sales in the sector are increasing and the share of industrialised bread is expected to reach 10% in 2008 (Eurotoday, 2007). The companies selected were Katselis and Karamolegos. Katselis is the leader in the market with a share of approximately 40%. Significant part of the innovation activity of the company comes along the dimension of offerings with the development of new products (e.g. four functional bread products for 2006). In addition, the company innovated across the dimension of presence by developing 32 points of sales across Greece, and also across the dimension of platform by developing a coffee and snack chain in ten cities. Karamolegos started as family-based company in the 1970s, and has become the second most important player in the market with a market share of approximately 20%. The company sells through big retail chains nearly 70% of its products (both branded and private labels). The company, in an effort to increase its market share, started to focus on innovative activities across the dimension of offerings. This included the launch of new bread products (e.g. a new "functional" bread containing b-glycane or new pakkaging). In the following table (Table 3), an overall presentation each company is provided based on the dimensions of business innovation. The dimension along with the abbreviations are: offerings (Off), platform (P), solutions (S), customer (C), customer experience (CE), value capture (VC), processes (Pro), organizations (Org), supply chain (SC), presence (Pre), networking (N), and brand (B).

Table 3. Overview of innovation strategies from Greek food companies

Company	Subsector	Dimension of Business Innovation											
		Off	**P**	**S**	**C**	**CE**	**VC**	**Pro**	**Org**	**SC**	**Pre**	**N**	**B**
Almme	Fruits and vegetables												
Chios Gum Mastic	Fruits and vegetables												
Delta	Dairy products												
Olympos	Dairy products												
Nikas	Meat products												
Creta Farm	Meat products												
Katselis	Bakery products												
Karamolegos	Bakery products												

Conclusions

Greek food companies, according to statistics, have poor innovative performance and this related to: the size of the companies, to managerial inefficiencies, to a more conservative business mentality and to low levels of clustering (SEVT, 2006; CIAA, 2007). Undoubtedly, size remains a major factor in determining whether or not companies invest in innovation activities, in the type of innovations that require significant investments (e.g. offerings, presence). However, size constraints are not always the most important constraint. The research by Voudouris et al (2000) in Greek companies revealed that some companies, called "hidden champions", had achieved outstanding results and the main reason was that they had adopted innovations along the whole value chain (i.e. in the production process or in the provision of services, in marketing, in logistics). The more innovation, in its radical sense, is becoming the privilege of big companies, as a result of investments needed, the more companies should take a broader view of innovation by focusing on other activities. This paper investigated innovation in the context of Greek food industry. The review of the literature revealed that in the food industry innovation is mainly related to new product development, as well as research and development activities. However, given the specific characteristics of the sector and the intrinsic difficulties, in comparison to the electronic sector for example, it would be valuable to approach innovation not only in terms of how successful companies are in developing new products or processes, but to identify in what ways new value is delivered. Based on this, the paper adopted the business innovation model by Swahney et al. (2006) with the aim of identifying innovation strategies by the Greek food industry. The paper emphasized on eight companies (most of them business leaders) from four different food subsectors. Insights from the companies suggest that they seem to emphasize mainly on the dimension of offerings by developing new "radical" products or by focusing on "incremental" innovations. The goal of the paper was not generalize conclusions for the Greek food industry, but to bring into discussion what is the right way to approach innovation in the food sector, as a result of its specific characteristics. Future work should focus on developing and selecting appropriate indicators in order to provide a complete framework for the identification of the innovative strategies of food companies.

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