INNOVATION ACTIVITIES AND ENTREPRENEURIAL STRATEGIES IN INTERNATIONAL FOOD SECTOR

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ABSTRACT
The global food and beverage industry is one of the most basic industries in the world. The Food Industry has maintained its fundamental role over the years and remains a key driver of growth, while it is fundamental to the manufacturing industry. The purpose of this study is to identify the innovation initiatives that have been implemented in a particular sector as well as those strategies and practices, which help to innovate in this sector worldwide. Based on an Online Desk Research, information was collected from some sources, i.e. electronic databases, business press and food industry. The authors found out that these innovative activities include technological and non-technological activities that enterprises of the industry try to exploit and gain a competitive advantage in the market. The five top trends in the food and beverage industry are the production of nutritional products with high nutritional value, the functional drinks, the convenience food products, the supply chain transparency, and the innovative packaging. Innovation can be found anywhere in the food production chain including chain-links like primary production, harvesting and handling of raw materials; raw materials and other ingredients; adoption of new technologies aimed at milder or more economical food processing; standardization and upgrading of food quality and safety; management and monitoring of production processes; packing; distribution and marketing. Anyway, good practices and strategies promote for sure innovation in the Food industry.

KEYWORDS: Strategy; Entrepreneurship; Innovation; Food Industry; Food Sector.

1. INTRODUCTION
Strategy has to do, between others, with an enterprise's total of actions to accomplish and preserve higher-level services offer compared with its competitors. To earn higher profits, an enterprise focuses on the exploitation of new resources or the better combination of existing ones and consequently, an appropriate strategy is what makes an enterprise to gain higher performances and rents. The main characteristics of an effective business strategy are the diagnosis of the competitive challenges, the strategy oriented policy, and the coherent actions (Rumelt, 2011).

A right strategy planning should begin with a clear picture of the enterprise's interior and exterior environment. An enterprise has to do with shareholders, human resources - managers, executive managers and employees - and the Board of directors internally, and externally with clients, suppliers, creditors, collaborators, competitors, trade unions, governments, mass media and the whole of
stakeholders. Then, the second step is strategy formulation and finally, the last is strategy implementation. For this implementation, connected activities need to be applied in order a business to gain one or more competitive advantages and thus this strategy to be successful for the business. Innovation activities can be some of these, since Rumelt (2011) suggested that a strategy is a set of actions an organization should implement and also actions an organization should avoid.

2. LITERATURE REVIEW

According to OECD's ‘Frascati manual’, innovation is about converting an idea into a marketable product or service, a functional production or distribution process - new or improved - or even a new method of social service provision. In this way the definition refers to the process. On the other hand, the word "innovation" means a new or improved product, equipment or service successfully placed on the market, and the emphasis is given to the outcome of the process. Certainly, it is related to Research and Development, especially in the field of Business, and R.&D. departments.

In the European Union, the 'Innovation Union' initiative, Europe's strategy to promote this process, created an enabling environment for Europe to promote new ideas. The Innovation Union is part of the EU's growth strategy "Europe 2020", which set the investment of 3% of gross domestic product (GDP) in research and innovation in the public and private sectors by 2020 and the production of competitive products and services in the international market.

The important thing is to make it clear that innovation is not an invention. Innovation is a continuation of an invention. If an inventor conceives the idea of the next successful product but fails to find someone who can produce it, then the world will continue to ignore its existence. While inventions can take place anywhere, e.g. in universities & research institutions, innovation takes place mainly in enterprises but also in other types of organizations. In order a business to turn an invention into innovation, it should combine many forms of knowledge, competences, skills and resources (European Union, Research and Innovation, 2014).

The Oslo Manual (2005) identifies four types of innovation according to their subject: product innovation, process innovation, marketing innovation and organisational innovation.

• Product innovation is the introduction of a good or service that is new or significantly improved in terms of its attributes or uses for which it is intended. This type of innovation implies significant improvements in technical specifications, components and materials, embedded software, friendly in use or other functional features. Examples of product innovation: the first portable MP3 player, the introduction of the ABS braking system, GPS (Global Positioning System), navigation systems or other car subassembly improvements.
Process innovation is the implementation of a new or significantly improved production or delivery method. This type of innovation involves significant changes in techniques, technology, equipment and / or software. Examples of new production methods are the application of new automation equipment to a production line or the application of a method for designing the development of computer products.

Marketing innovation is the implementation of a new marketing method that involves significant changes to product design or packaging, placement, promotion or pricing. It aims to better serve the needs of the customer, opening new markets or re-placing the product of the company on the market with the aim of increasing sales. The feature of marketing innovation compared to other changes to the company's marketing tools is that in this case a marketing method that has not been used by the company is applied. New marketing methods can be used for both new and existing products. For example, the first use of a significantly different medium or technique - such as the presentation of products in movies or TV programs - is a marketing innovation.

Organisational innovation is the application of a new organisational method to the company's business practices, workplace, organisation or external relations. The goal is to increase performance by reducing administrative or transaction costs, improving workplace satisfaction (and thereby boosting productivity), gaining access to non-marketable assets (such as uncodified external knowledge) or reducing procurement costs. Its distinctive feature compared to other organizational changes in a company is the implementation of an organizational method that has not been used in the past by the company. Examples are the application for the first-time of methods for developing and enhancing staff loyalty, such as education and training systems, and the introduction of production or procurement management systems for the first time, such as supply chain management systems.

Table 1 shows the differences between the two latest editions of Oslo Manual concerning the types of innovation.

Depending on the originality of the results, innovation is categorized in:

- Incremental innovation that involves modifying, refining, simplifying, consolidating and improving existing products, processes, services and production and distribution activities. Most innovations belong to this category. Some examples of small-scale innovation: The Sony Walkman was available in many variations that were not identical to the original product, but all models followed the original. Most cars make some minor changes per year to improve the benefits of safety, vehicle performance and user comfort.

- Radical innovation that entails the introduction of new products or services that evolve into
new large enterprises or create new industrial sectors or bring about significant changes in the whole of an industrial sector and move towards the creation of new values. An example of radical innovation comes from the banking sector that underwent a transformation when ATM machines appeared and offered the service of money withdrawal almost everywhere around the world by using the plastic card.

Table 1. Comparing types of innovation in the current and previous Oslo Manual editions

<table>
<thead>
<tr>
<th>Fourth edition, 2018 (OM4) compared to third edition, 2005 (OM3)</th>
<th>Differences</th>
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<tbody>
<tr>
<td><strong>011.3</strong> Product subcomponents</td>
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<tr>
<td><strong>0M3</strong> Subcomponents</td>
<td></td>
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<tr>
<td>Goods</td>
<td></td>
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<tr>
<td>Services</td>
<td></td>
</tr>
<tr>
<td>Goods and services include knowledge-capturing products, and combinations thereof. Includes the design characteristics of goods and services.</td>
<td>Inclusion of product design characteristics, which were included under marketing innovation in OM3.</td>
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<tr>
<td><strong>Process</strong> Production</td>
<td></td>
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<tr>
<td>Delivery and logistics</td>
<td></td>
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<tr>
<td>Ancillary services, including purchasing, accounting and ICT services</td>
<td>Ancillary services in OM3 moved to administration and management.</td>
</tr>
<tr>
<td><strong>Organisational</strong> Business practices</td>
<td></td>
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<tr>
<td>Workplace organisation (distribution of responsibilities)</td>
<td></td>
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<tr>
<td>External relations</td>
<td></td>
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<td>Administration and management</td>
<td></td>
</tr>
<tr>
<td>Organisational innovations in OM3 are under administration and management subcategories a, b and f in this edition of the manual. Ancillary services in administration and management (subcategories c, d, and e) were included under process innovation in M.</td>
<td></td>
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<tr>
<td><strong>Marketing</strong> Design of products</td>
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<tr>
<td>Product placement and packaging</td>
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<td>Product promotion</td>
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<td>Pricing</td>
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<tr>
<td>Marketing, sales and after-sales support</td>
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<tr>
<td>Marketing innovations in OM3 are included under subcategories a and b in this manual. Innovations in sales, after-sales services, and other customer support functions were not included in OM3. Innovations related to product design are included under product innovation in this manual.</td>
<td></td>
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<tr>
<td><strong>NIA</strong> NIA Product and business process development</td>
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<tr>
<td>Product and business process development</td>
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<tr>
<td>Not explicitly considered in OM3, most likely reported as Process innovation.</td>
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• The breakthrough innovations are surprising. They rarely meet and are the product of a separate
scientific or mechanical inspiration. They are called "breakthroughs" because they achieve what most of people did not even realize is possible. Revolutionary innovations produce something new or satisfy a need that was unknown in the past. Innovations of this kind often have applications and consequences that go far beyond what those who invented had in their minds. Such innovations have the power to create new industries disrupting existing ones and they are known as "disruptive innovations". An example is the first EARS laser printer built by Xerox that could print 60 copies per minute with 600 dots per inch.

Creating and sustaining competitive advantages diachronically and thus, obtaining wealth is at the core of strategic management and especially, for businesses in food industry (Zaridis, 2017; Zaridis & Mousiolis, 2015; Zaridis, 2012; Chen, Fairchild, Freeman, Harris, & Venkataraman, 2010; Zaridis, 2009). Several authors defining corporate strategy (Hitt, Ireland, and Hoskisson, 2011; Makadok and Coff, 2002; Andrews, 1971) suggest its relation with the commitments, decisions, achievements and finally the firm’s ability to generate profits. The performance differentials across the firms, the effective competitive positioning, and the firm’s idiosyncratic bundle of resources were at the top of research efforts among scholars (Ketchen, Ireland, & Snow, 2007; Ireland et al., 2003; Barney, 2002; Barney, 1991; Porter, 1980; Schendel & Hofer, 1978).

Entrepreneurship has to do with opportunities identification and exploitation, and strategic management with creating and sustaining one or more competitive advantages. The interaction of both gives the potential of opportunities exploitation in most of cases (Zaridis et al., 2019), while it may also be possible to link entrepreneurial intensity (E.I.) to company strategy and thus managers will need to ensure consistency between intended strategy and levels of EI. The concept of entrepreneurial intensity also provides numerous opportunities for further research (Morris and Sexton, 1996) considering also the strategy classification framework (Miles and Snow, 1978) that classified firms as prospectors, analyzers, reactors, or defenders, based on their product/market focus, environmental scanning activity, and approaches to planning. Anyway, it seems that a firm’s strategic management practices influence its entrepreneurial intensity (Barringer and Bluedorn, 1999).

3. METHOD
In order to acquire important elements for the Innovation initiatives and activities implemented in the Food Industry worldwide, external desk research was used that involves research done outside the organizational boundaries and collecting relevant information (Crouch & Housden, 2003). Information from secondary research is readily available, while there are many sources from which relevant data can be acquired less expensive and less time-consuming because of the availability of data (Granello & Wheaton, 2004; Crouch & Housden, 2003; Farmer, 1998).

Online Desk Research is useful, since there is an incredible amount of data available online on internet,
when different sources are used (Cooke, Hastings & Anderson, 2002). So, information was collected from sources, such as Electronic databases, the business press and the Hospitality Industry.

Concerning Electronic Databases, a systematic search of electronic databases was conducted to identify important and relevant academic papers, while the following electronic databases were used (see Table 2).

### Table 2. Electronic databases used

<table>
<thead>
<tr>
<th>Electronic Databases</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Google Scholar</td>
<td>International articles / chapters in books</td>
</tr>
<tr>
<td>Scopus</td>
<td>International articles</td>
</tr>
<tr>
<td>ScienceDirect</td>
<td>International articles / chapters in books</td>
</tr>
<tr>
<td>ISI Social Science Citation Index / Web of Science</td>
<td>International articles and book reviews</td>
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<tr>
<td>ABI/Inform</td>
<td>International articles</td>
</tr>
<tr>
<td>Emerald</td>
<td>Journal articles and management reviews</td>
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</tbody>
</table>

The above databases have been systematically searched using the following search terms (see Table 3).

### Table 3. Search terms used

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Entrepreneurship</th>
<th>Innovation</th>
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<tbody>
<tr>
<td>Food Industry</td>
<td>Agrifood Sector</td>
<td>Internet</td>
</tr>
<tr>
<td>Product design</td>
<td>New product development</td>
<td>Agribusiness</td>
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</table>

Concerning Business Press and Food, the above search terms were searched in Google search engine.

This methodology has two limitations that are shortage of resources prevented the use of some industry sources - lack or extremely expensive to purchase - and that related information technology is limited in low and middle income countries, so information is difficult to be retrieved (Cooke, Hastings & Anderson, 2002).

### 4. RESULTS

#### 4.1 FOOD INDUSTRY AND INNOVATION

The Food Industry is fundamental to the manufacturing industry and, more broadly, to the economy in many countries worldwide. It consistently constitutes one of the most important sectors of the secondary sector of the economy and one of the driving forces of manufacturing, with significant investment and business activity across Europe. The food industry has maintained its fundamental role over the years and remains a key driver of growth.
The global food and beverage industry is one of the most basic industries in the world. It is consumer-driven and structured into a global and multidimensional network that impacts on consumers’ eating habits and preferences. The five top trends in the food and beverage industry are as follows:

1. Production of nutritional products with high nutritional value, fresh and healthy gluten-free, low-lactose and low calories products.
2. Functional drinks that are food drinks appropriate to meet different consumer needs such as satisfaction, rejuvenation, memory enhancement and other functional benefits.
3. Convenience food products, which are available for easy use in preparing a meal, such as ready-to-eat, ready-to-cook, ready-made products on the retail shelves.
4. Supply chain transparency. Farm-to-table policy provides information and traceability to consumers about the origin and production process, and builds a loyal customer relationship and a reliable reputation in the market.
5. Innovative packaging. Nowadays, the companies focus on creative, innovative and sustainable ways of packaging and present products in a way so that they attract and convince them to buy, using the three main points for packaging that are simplicity, mobility and friendliness to the environment (SpendEdge, 2019).

Thus, this research tried to shed light to the innovation initiatives and activities in this complicated industry and some of the findings are mentioned below.

Innovation can be found anywhere in the food production chain including chain-links like primary production, harvesting and handling of raw materials; raw materials and other ingredients; adoption of new technologies aimed at milder or more economical food processing; standardization and upgrading of food quality and safety; management and monitoring of production processes; packing; distribution and marketing.

Concerning the technological innovations in the food and beverage industry, we can mention activities used in Manufacturing-Production stage such as:

- New methods in manufacturing final products and other products / services with new raw materials
- Use of new environmentally friendly materials
- Biotechnology products
- New energy technologies in the primary sector
- Organic base medicines
- New diagnostic methods in medicine or production
- Sensor technologies
- Products to provide protection for the user or the environment
• Total waste management systems
• Trash / Waste utilization
• Reduction of energy consumption per unit of product / service
• "Green" technologies in the production / provision of goods or services
• Method of measuring and controlling processes and / or quality of products with sensors
• Systems that measure and control product inventories
• Introduction of methods based on digital technologies for production development (e.g. automated production line)
• Introduction of simulation programs for the control and optimization of final and / or intermediate production methods and products.

Innovation activities have also been used in Commerce - Wholesale Trade, such as:
• Introduction of ecological products into the product assortment
• New types of certification services
• Introduction of additional services: combined services (e.g. technical and advisory services, examination and services certification)
• Selling directly to the customer - Electronic product exchange
• Reduction of energy footprint in production processes
• Methods of locating and controlling loads
• Digital product handling
• Introduction of direct feedback channels between customer and producer
• Electronic catalogs (e.g. on optical discs)
• Customer service centers to coordinate all customer requirements.

Other innovation activities that have been used in food sector are:
• Software applications development for innovative applications (e.g. in agricultural sector)
• Flexible and user-friendly software development
• Industrial design of an original product / process / service.
• Development and provision of simulation and modeling services.
• Remote software maintenance and counseling
• New multimedia applications and programs
• Distance learning applications
• Application of thermography and non-destructive testing techniques / techniques in the assessment of technical systems.
• Telematics and digital transmission applications.

So, in the food industry can be distinguished the following kinds of innovation:
• Food technologies and new food products (biotechnology, genetics, hygiene and safety,
environmental care, organic / organic food, quality control techniques, etc.)

- Innovative methods, practices and tools of management (quality systems, MBO, Just in Time Management, ERP, supply systems, flexible and selective production systems, etc.)
- Information and communication technologies in all the activities and functions of an enterprise (management, marketing, monitoring and control of production, quality control, supply chain, etc.)
- Innovations at strategic decision-making level (development of partnerships, turning to new products, etc.)
- Innovative, flexible forms of work design and organization (teleworking, job rotation, job-sharing, and so on).

4.2 STRATEGIES AND PRACTICES TO INNOVATION ADOPTION IN FOOD INDUSTRY

The term "good practice" is used in many sectors. These are essentially guidelines, techniques or methodologies that are the result of research and study and their implementation has been shown to lead safely and reliably to a desired outcome.

The "good practice" may vary from country to country and from environment to environment. Generally, for identification "good practice" need to be considered one or more of the following criteria:

Innovation /originality. The action contains elements of innovation and / or originality in relation to one or more of the following factors:

- The subject of the intervention
- The methodology for its implementation (e.g. administrative structures, procedures, methods, organizational forms)
- Utilization of new technologies

Results/Impacts. The action brings significant developmental results that respond to a real need of the business:

- Improving the environment or quality of life
- Improving business competitiveness
- Extending the product market and increasing market share
- Added value to local and regional development
- Proven growth in a sector's productivity
- Proven enhancement of entrepreneurship
- Reduction of transport time/cost in product and service logistics

Sustainability. Continuity of practice after the end of the initial funding.
Some of them that are used in the food industry are located at the General Management, Documentation and traceability of products, Using and Saving Energy Resources, Use and Saving Water Resources, Raw Materials, Waste and Waste Management, Air Quality & Noise Control, and Natural Environment Production Procedures (Athens Chamber of Commerce & Industry, 2010).

The business strategy can be planned by the top executives, but the enterprise itself also stands out for its employees. Consequently, in order for innovation to be successful and profit-making, especially for a business in the food industry, employees should get informed, trained and get accustomed to this innovation. Otherwise, the innovation itself could become an obstacle in the development and progress of the business. Besides, good practices and strategies promote for sure innovation in the Food industry.

5. DISCUSSION

In summary, it is understood that innovation is not a static process, nor is it necessary to innovate in a business, discover a patent or anything else. An enterprise could simply innovate a function within its organization. For example, it could innovate how to promote its products, how to monitor or control its stocks, the process of buying and selling commodities and so on. All the above add value to the business, make it competitive, customizable, flexible.

In the years following the crisis, innovation is increasingly being cited as a tool to tackle it. It is clear not an end but a tool of work. It is not the goal of the business, but the means of achieving its goal (Optimum Trust, 2016).

In addition, an interesting economic point of view, the European Central Bank quotes the benefit of the use of innovation, which is its contribution to economic growth. Simply put, innovation can lead to an increase in productivity, i.e. the same factor produces a greater effect. As productivity increases, the amount of goods and services produced is growing - in other words, the economy is growing.

Innovation and increased productivity have enormous benefits for consumers and businesses. As productivity increases, workers’ wages are rising, and they now have more money and can therefore buy more goods and services. At the same time, companies increase their profits and thus have the opportunity to invest and recruit more employees (European Central Bank, 2017).

CONCLUSION

The Food Industry has maintained its fundamental role over the years and remains a key driver of growth, while it is fundamental to the manufacturing industry and to the economy in many countries worldwide. It consistently constitutes one of the most important sectors of the secondary sector of the
economy and one of the driving forces of manufacturing, with significant investment and business activity across Europe.

The global food and beverage industry is one of the most basic industries in the world. It is consumer-driven and structured into a global and multidimensional network that impact on consumers’ eating habits and preferences. The five top trends in the food and beverage industry are the production of nutritional products with high nutritional value, the functional drinks, the convenience food products, the supply chain transparency, and the innovative packaging.

Nowadays, the companies focus on creative, innovative and sustainable ways of packaging and present products in a way so that they attract and convince them to buy, and so this research tried to shed light to the innovation initiatives and activities in this complicated industry and some of the findings are mentioned below.

Innovation can be found anywhere in the food production chain including chain-links like primary production, harvesting and handling of raw materials; raw materials and other ingredients; adoption of new technologies aimed at milder or more economical food processing; standardization and upgrading of food quality and safety; management and monitoring of production processes; packing; distribution and marketing.

Concerning the technological innovations in the food and beverage industry, we can mention activities used in Manufacturing-Production stage such as new methods in manufacturing final products, the use of new environmentally friendly materials, the biotechnology products, new energy technologies, organic base medicines, sensor technologies, total waste management systems, "green" technologies in the production, methods of measuring and controlling processes with sensors, digital technologies for production development, etc. Innovation activities have also been used in Commerce - Wholesale Trade, such as introduction of ecological products into the product assortment, new types of certification services, introduction of additional services, reduction of energy footprint in production processes, methods of locating and controlling loads, digital product handling, direct feedback channels, electronic catalogs, customer service centers, etc. Other innovation activities have also been used in food sector such as software applications development, flexible and user-friendly software development, industrial design, simulation and modeling services, remote software maintenance and counseling, new multimedia applications and programs, distance learning applications, telematics and digital transmission applications, etc.

So, in the food industry can be distinguished five kinds of innovation, namely the food technologies and new food products; the innovative methods, practices and tools of management; information and communication technologies; innovations at strategic decision-making level; and innovative, flexible forms of work design and organization.
These innovative activities include technological and non-technological activities that enterprises of the industry try to exploit and gain a competitive advantage in the market.

The business strategy can be planned by the top executives, but the enterprise itself also stands out for its employees. Consequently, in order for innovation to be successful and profit-making, especially for a business in the food industry, employees should get informed, trained, and get accustomed to this innovation. Otherwise, the innovation itself could become an obstacle in the development and progress of the business. Besides, good practices and strategies promote for sure innovation in the Food industry.

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