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IMPORTANCE OF CREATIVITY OF EMPLOYEES IN ADAPTATION OF FOOD COMPANIES TO INNOVATIVE TRENDS IN THE WORLD

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Abstract

The purpose of this paper is to identify a gap in knowledge and understanding of the need to motivate employees for creative and pro-innovation activities in the organization. Another aim is to provide an overview of innovation in one of the low-tech industries - in the food industry. The concept of innovation and creativity is presented. The characteristics of the concept of creativity have been briefly described. Then examples of ways how food companies are dealing with current trends in the area of innovation in the world are briefly described. Among these trends, the focus on radical innovations has been highlighted, more tightly aligned firm innovation and business strategies, better insight into customers' needs and increased collaboration with other entities. Analyses based on the desk research technique were performed with the inclusion of literature regarding the examples of implementation of innovations in the food sector companies. The conducted analyses allowed us to confirm that exemplary food companies are actively engaged in improving their competitive position, by introducing creative solutions in their products or by new ways of organizing different processes. It has been shown that creativity should be used as the primary source of innovation in the food industry.

Key words: creativity, innovations, low-tech sectors, crowdfunding, sharing economy, open innovation.

Classification JEL: J24 - Human Capital; Skills; Occupational Choice; Labor Productivity; O31 - Innovation and Invention: Processes and Incentives; O32 - Management of Technological Innovation and R&D

1. Introduction

Creativity and innovation are the prerequisites for creating value by companies because they determine their competitive position. It should therefore not be surprising that efforts are being made both by theorists and practitioners to analyze the course of innovation processes, the factors that affect them, or the tools that shape innovation. In literature can be found publications focused on sector-specific innovations. There are also analyzes in the area of creativity, regarding its sources or factors influencing creativity in the organization. Moreover, a large part of the studies and research in this area are interested in the creative industries or creative companies in the high-tech sectors. It is difficult to analyze the topic of creativity and innovation in the field of traditional sectors with low technological potential, which are generally considered in the literature of the subject as characterized by low creativity and limited innovativeness.

On the other hand, it seems that due to the continued importance of the food-related sectors in economies of even the most developed countries in the world, they cannot be ignored when discussing innovation or creativity. However, it should be noted that in the entities of these sectors people are also working, and these are precisely employees who are attributed to such a characteristic of creativity. It cannot be assumed that human resources in companies in these sectors are less creative, and perhaps they do not show creativity, because of the lack of expectations on the part of managers in this area. Changes in world market trends, however, do not seem to leave the illusion that the development of the low-tech sector is in a state of confusion

- without a focus on innovation and encouraging employees to take creative action - may prove deadly in the long run. Innovation in these sectors - as in foodstuffs - may ultimately not be and will not have the same characteristics as it is in high-tech sectors but is essential to keep up with the modern market.

The purpose of this paper is to provide an overview of innovation in one of the traditional industries - the food industry - and to identify gap in our knowledge and understanding of the need to motivate

employees for creative and pro-innovation activities in the face of new trends in the area of innovation promoted by the greatest companies in the world. Analyses based on the desk research technique were performed with inclusion of literature regarding the examples of implementation of innovations in the food industry.

2. The concept of innovation and innovativeness

The concept of innovation was propagated by J.A. Schumpeter in his work *Theory of Economic Development (1912)*. He pointed out that innovation is a new combination of factors of production that leads to the emergence of a new good, a new technological approach, a new market, a new source of material and/or new management organization (*Schumpeter, 1960: 104*). This process was described as the 'creative destruction', which he pointed as the main factor and manifestation of the economic development because new solutions (products, services and technologies) compete with the old and finally displace them in the market. Thus, innovation protects the economy against repetition, in particular against duplication, thereby facilitating its transition to the next stage of development (*Mellor, 2011: 39*). Innovation can be conceived as a new combination of knowledge, e.g., in order to innovate organization there is a need to use a new knowledge.

Innovation is also seen nowadays as a strategic instrument for building and expanding the capacity of organizations. It is the key to progress and development; it is also the source of inventions in all spheres of life (*Farazmand, 2004: 5, 8*). In many definitions of innovation, innovativeness in the formulation of ideas, conduct or the creation of goods (products and services) is emphasized above all. Thanks to them they are qualitatively different from the hitherto ones, but at the same time they must be socially useful as the test of successful innovation is its success on the market. At the same time, innovations allow the companies to escape from the intense competition of modern global economy.

Although there are many types of innovation¹, the claim that only radical innovation² can be a source of enterprise development seems to prevail. According to G. C. O'Connor and R. DeMartino (2006), radical innovation results in organically driven growth through the creation of whole new lines of business that bring new features to the market. These innovations can lead to the creation of entirely new markets. As can be seen from the definitions proposed by various authors, two dimensions of radical innovations from technology and consumer needs may be indicated. C. M. McDermott and G. C. O'Connor (2002) define radical innovation as the development of new technologies or new ideas into markets. While J. Eliashberg et al. (1997) describe radical innovation as the source either in consumer demand or technology superiority. These observations means that innovations are perceived differently by firms and by consumers. From a firm perspective, innovativeness is related to environmental familiarity, and project firm fits both in technology and marketing aspects. From a consumer perspective, innovativeness is related to new products, adoption risks and the level of change in established behavior patterns (*Danneels & Kleinschmidt, 2001*).

Radical innovations are disruptive, which means that they alter consumer habits and behaviors. However, a new technology is not always viewed by consumers, as consumers may not notice the change (*Urban & Hauser, 1993*). The innovations of a given entity depend on the innovations being introduced,

¹ Nowadays, five areas of innovation are distinguished by the impact criteria: product, marketing, process, organizational and management. Experience shows that companies often make changes starting with product innovation (usually the invention), but over time its importance decreases, and then process innovations gain greater weight (*Mellor, 2011: 47*). Diverse sources of innovation are discussed by P. Drucker (1992: 46-142).

² Radical innovations stand out near to the incremental innovations in the division of innovation according to the criterion of change scale. According to this division, the second type of innovation is incremental innovation. In practice of the business activity also a different approach to the essence of innovation is well known - the East approach. *Kaizen* from Japan is an example of implementing improvements in a gradual and continuous manner. *Kaizen* is a way of thinking and lifestyle deeply rooted in the Japanese mentality, is an organizational culture focused on the continuous improvement of processes. In order to implement innovations, one must first change the way of thinking and involving employees in the process of continuous improvement, after which effects can be expected (*Czerska & Szpitter, 2010: 356*).

their type and frequency of implementation. Moreover, what kind of innovation will be introduced to the subject depends on the source of innovation³. Hence, it turns out that radical innovation is most often the result of inventions, which in consequence means that they are very rare. A universal source of innovation is creativity.

3. The role of creativity in the organization

The creativity plays a major role in innovative companies regardless of their size or having an extensive R&D department. It fosters not only the opportunities for radical innovation but also those that constitute the majority, e.g., incremental innovations that are solutions to the daily functioning of the organization. According to the concept of everyday creativity, the creativity manifests itself in the small activities of daily life and is linked even to minor improvements made by man in the professional and non-professional life. Such an approach to creativity is represented by I. Fillis and R. Rentschler (2010) who defined the creativity as showing imagination and originality of thought in moving beyond everyday thinking.

In the literature of the subject, it is possible to find many definitions of creativity. Creativity is defined as a novel and useful solutions. It is an appropriate response to the task or problem and considered a source of competitive advantage (*Amabile, 1983: 357*). Creativity can also be described as thinking about new things or making a new combination of existing elements. The effect of creativity consists in breaking up a learned pattern of thinking and using its knowledge to generate new ideas (*West, 2000: 20; Yusuf, 2007*).

According to C.M. Ford (1996: 1115-1116), the first creativity is an attribute of a product presented by an actor. The concept of the creative product should be thought of in broad terms, that is, as anything that people can examine and judge, including communicated ideas and processes evaluated independently from the outcomes they produce. It indicates that creativity assessments are domain specific and that they change with the time as a domain evolves by retaining creative actions. Moreover, C. M. Ford claims that creativity is a judgment made by members of the field about the novelty and value of a product. At the same time, these two characteristics are not independent of social construction processes within a field.

Creativity as the force in all the people begins with a yearning to answer an unanswered question by imagining more than one correct new answer. It is inspirational, jumping, it is the search for other things, it reveals the least likely solutions (*Bono, 2001: 310-311*). It is the individual who is the source of a new idea (*Mumford, 2000*). Creativity is often reminded to be something that happens when people act. Thus, creative thinking is one of the man's personal dispositions. There are individuals who have new ideas and others who are as intelligent as they are.^{3 4}

It should be noted that the creativity theory argues that the innovation process starts from generating ideas. It focuses on the individuals who creatively use available resources (*Brennan & Dooley, 2005*). Whereas the componential theory suggests that creativity is most likely to occur when peoples' skills overlap with their strongest intrinsic interests (*Amabile, 1997*). T. M. Amabile (1997) assumes that the creativity consists of many components which, when converging in the right way, would likely lead to very high creativity. There are three inside- components: domain-relevant skills, creativity-relevant processes, and task motivation. There is also one outside-component that is surrounding environment (e.g., social contacts). The theory assumes that the best outcome can be gained and the highest sense of creativity may be established if all these components will come together (*Amabile, 2012*). It is difficult to disagree with the above approach because creativity depends on the context in which new products,

³ Sources of innovation should be sought in the available internal resources of the organization, primarily employees and their environment. Numerous sources of organizational innovation are mentioned in the literature. For example, A. Chybicka (2006:111-112), lists among them: 1) the environment of the organization;

4 the personnel department (including the recruitment and selection of candidates for work, taking into account the creative predispositions of future employees and motivations to creative problem-solving); 3) creating systems to reward creative behaviors and attitudes; 4) appointment of the so-called innovation agents; 5) the degree of definition of the target market; 6) organizational culture; 7) organizational structure; 8) the degree of involvement of top management in implementing untypical, unused solutions; and 9) efficient communication between management staff and employees.

ideas and behaviors are offered.

Creativity is associated with change, nonconformity, ingenuity, and progress, which in turn is a necessary factor in the proper functioning of profit-oriented organizations. In this situation, the ability of creative thinking increasingly becomes desirable competency of employees. Thus, organizations must fulfil the requirement of the flexibility of action. Such flexibility consists of the ability to initiate and adapt to the rapidly changing conditions under which the organization's strategy is developed (*Czerska & Szpitter, 2010: 356-357*). Therefore, most theorists have defined creativity as the development of ideas about products, practices, services or procedures that are novel and potentially useful to an organization (*Zhou & Shalley, 2003*). In literature, the notion of creativity is often associated with the notion of innovation and ideas are considered novel if they are unique in relation to other ideas currently available in the organization. Ideas are useful if they have the potential for direct or indirect value to the organization, either in a short or a long term. Thus, given this definition, creativity can range from suggestions for incremental adaptations in procedures to radical changes (*Mumford & Gustafson, 1988*). However, the concept of innovation and creativity should not be used interchangeably.

The relationship between creativity and innovation began to be noticed in the 1960s emphasizing the importance of building interdisciplinary and holistic models describing social reality. Scholars departed from treating the individual as passive and reactive in favor of empowerment and activation. Moreover, the consequence of linking the micro level to macro processes, such as globalization, the concept of intellectual capital, and knowledge management was indicating the departure from narrow, individualized creativity as a singularity. This change leads to focus also on a broader context - organization, institution, or factors of the proinnovation development. The role and importance of the relationship between the creativity of the individual and the innovation of groups, teams and organizations have also increased.

M. Baer (*2012*) treats innovation as an umbrella concept that includes creativity and its implementation. Creativity, as a sub-process of innovation, consists of the development of novel and useful ideas. While the implementation of creativity refers to the translation of the ideas into new and improved products or ways of doing things, all of which is encompassed by the concept of innovation. Thus, creativity has been investigated as either a separate and prerequisite concept of innovation or a component of innovation.

In the creativity theory, innovation does not exist without creativity and thereby can be conceptualized broadly as generation and implementation of a novel and useful idea in an organization. In this case, innovation can be understood as a successful and intentional implementation of creativity. Creativity as such can be limited to the idea and does not necessarily have the benefit of others. Innovation, therefore, requires creativity, but creativity does not always lead to innovation. What is more, one can say that creativity precedes innovation. It is a process of developing and expressing innovative ideas to solve problems or meet needs (*Luecke, 2005: 123*). In this sense, therefore, it is not so much a talent in itself as a deliberate process of producing innovation. Although creativity is the domain of everyone, the participation of people undertaking an everyday professional activity, education, and not only the unique, special and sublime feature of outstanding individuals.

At the root of this understanding of creativity are classic theories, e.g., of A. Maslow, C. Rogers, and R. May - treating creativity as a human need, the expression of self-realization. Thus, the role of managers is to create an environment in which creative behaviors can be exposed and developed. In particular, it is necessary to point out the need for leadership skills of top management, manifested in cultivating the subjectivity of employees, and encouraging and supporting their creative activity (*Kaliszczyk, 2012: 367-378*). It is talking about creating a climate for creativity. Among the factors that affect this climate are: positive worker group, positive relationship with supervisor, resources, challenge, clarity of purpose, autonomy, positive interpersonal interchange in the working group, intellectual stimulation, support of senior management, orientation for awards, flexibility and risk taking, emphasis on quality as well as original ideas, participation, and organizational integration.

The climate for creativity and innovation has a particularly strong impact on innovation when implementing new ideas. Without this, the innovative potential of employees may not be exploited, and

the phase of implementation of new ideas will not take place. On the road are barriers in the form of a work environment that is not conducive to innovation. On the contrary, when the work environment is characterized by greater acceptance of risk, novelty, greater trust and support, or giving the employee more autonomy, there is greater chance that an employee will be able to put his or her ideas into practice. It is also necessary to incorporate various tools to stimulate creativity within the organization, as well as changes in managers' performance of the entity management functions. It is imperative to place emphasis on other ways of planning, organizing, motivating, leading and controlling in an organization than is done in businesses where performance results are not expected in the form of innovative solutions.

Above described claims are in line with the concept of R. Florida (2002) who shows that nowadays we are observing a shift in the employment structure. There is a transition from blue and white collars workers to no collar workers, that is, the development of a creative class described as people whose work is based on generating new knowledge, creating information or widely understood new forms of actions on the market. The representatives of this social class combine the great autonomy of the activities undertaken and the great freedom of operation. The creative class includes journalists, artists, designers, scholars, workers in the fields related to information and communications and new technologies, experts, consultants, and teachers.

The notion of creativity is connected with the concept of a creative organization. It is a modern culture enterprise that seeks economic benefits employing its workers' creativity, knowledge, and implementing innovations (Ensor *et al.*, 2006). The essential features of a creative organization may be distinguished (Florida, 2002): the organizational intangible resources - individual artistic creativity; manufactured product - creative, artistic, not only aesthetic but also useful; arts and business symbiosis - the idea of artists and technologists are implemented by sales managers; and the resulting economic benefits through creative activities, implementing performance in which creative products are sold and make money.

Such creative organization is creative regarding the processes, products and personnel, as well as the work environment and work culture, even the first word of the name is directly associated with the creativity. The creative organization is characterized by the artistic creativity that often is identified in talent or artistic flair. At the same time, however, it is important to have lateral thinking, knowledge and skills achieved through both their generation and competence. The main goal of the creative organization is to ensure the continuous creativity.

Creative organizations are associated with the concept of creative industries. Such sectors include various organizations (Mackiewicz *et al.*, 2009: 8; Ulatowska, 2012: 24-25). Among them are advertising agencies, architects' offices, exhibition companies, exhibitions and auctions of art and antiques, computer games companies, software companies, film and video studios, music studios, television and radio studios, theaters, publishers, graphic design and industrial design companies, and clothing design companies.

To sum up, the need to emphasize that creativity as the prerequisite for innovation is an important competitive factor for contemporary organizations. In all types of organizations, not only in the creative sector, core processes are often characterized by the existence of creative tasks within these processes. An example of creative activity is related to the design, which is gaining more and more importance and is predominantly competitive companies in many industries, even such as food industry (Szultka, 2012: 17). Besides we also need to remember that creativity is universal source of innovation and is subjectively judged as the value and originality of the activities of the entity or group located in a specific context, and therefore every organization, no matter what type of business can benefit from it and manifest creative features, the public's reaction approach to different areas of their operation.

4. Ways of adapting food companies to the trends of innovation in the world

The food sector has traditionally been considered as a low-tech sector (Christensen *et al.*, 1996; Garcia-Martinez *et al.*, 2000). One of the reasons is that innovation in the food industry does not usually make use of scientific inputs and the innovation in this sector tends to be more incremental than radical. On the

other hand, this does not mean that it is not necessary to undertake innovative activities in this sector and the creative attitudes of employees. The food sector, similarly as the others, is exposed to numerous external conditions, some of which are universal. Without taking up innovative activities, staying in the market for such companies can be an increasingly difficult task. Some of the knowledge bases are science-based and stem from research organizations such as Smith (2000) states that despite the fact that the food processing industry is an industry with relatively low levels of internal R&D, it might be claimed that this is one of the most knowledge-intensive sectors of the entire economy. He also stated that 'low-tech' industries are knowledge intensive and are frequently part of 'high-tech' systems. This is because they use machines or devices created by companies from high-tech sectors.

Knowing the trends that are taking place in the world and the creative approach to doing business gives food companies the opportunity to be competitive. This is possible thanks to the introduction of new production technologies as well as food innovations. From the food, customers expect more than just a product that will do nothing more than fuel to shovel down at working-day breaks or the dinner table. Times have changed, and the food no longer can have a reputation of being bland and tasteless. Companies must pay attention to the ingredients, quality, and its health benefits, which is important to consumers. They would prefer to see the conversion of agriculture to organic farming, which is recently combined with the marketing of healthier, organic or lighter options. In addition, there are other aspects of the development of food companies, such as interested in food's capacity to embed local jobs. It is also important to shape social, environmental and economic sustainability of food companies. Reduction of carbon footprints and conservation of the soil, energy, water, and farmland are key tasks for food companies that are closely watched by more and more consumers.

In the food sector, we already have a response to the above challenges. According to the content of the presentation of some of the world's largest food and beverage makers at the Consumer Analyst Group of New York conference (CAGNY) held on February 20-24, 2017 in Boca Raton, Florida, there is no doubt that 'Big Food' is facing its share of challenges. Consumers are demanding healthier food with fewer artificial ingredients while savvy startups are winning market share and shelf space. It was evident from the CAGNY presentations that main food and beverage companies recognize these consumer shifts. Thus, e.g., Coca-Cola is going to focus on the World Health Organization's guidelines for limiting added sugar and is working to repair its image in public health circles. Mondelez International plans to introduce 'well-being innovation' in 2017. PepsiCo is seeking to continue developing 'better-for-you products' and single-serve packaging formats. General Mills' goal is: "to reach \$1 billion in net sales from natural and organic products by 2019 without additional acquisitions". One of the company's priorities is to return yogurt in the United States to growth through 'core renovation' and 'natural and organic penetration'. Having said that, natural and organic is a "significant growth opportunity" for the companies (Badaracco, 2017).

It is possible to identify trends in the area of innovation that cover various sectors, and which appear to be already subject to the food mentioned above companies. For example, in the Global Innovation 1000 (GI 1000) survey prepared by Strategy & PwC, in 2014, information on their anticipated innovation activities for the coming years was obtained. The research was carried out among the world's 1,000 largest research and development companies. Among these trends can be mentioned among others (Jaruzelski et al., 2014):

- Focus on radical innovations.
- More tightly aligning companies' innovation and business strategies.
- Better insights into customers stated and unstated needs.
- Increased cooperation of entities, with entities including startups.

These trends are probably not a complete list, but the above appears to be particularly important for the low-tech sector, such as the food industry. The action of entities in the low technology sectors will to some extent be conditioned by adapting to these trends. This, however, requires working with creative workers and creating favorable conditions for creativity within the organization. It can be expected that maintaining such market positions by economic entities will not be possible without the introduction of

innovations. In the following, examples have been drawn up showing that food companies can be in line with these trends.

Firstly, the trend is to move from incremental innovation to breakthrough innovation in the coming years. According to the GI 1000 data, only 14% of the expenses refer to radical solutions. In the future, the largest companies in the world plan to shift their R&D spending mix over the next decade - from incremental innovation to new and breakthrough innovation. They focus largely on creating value through incremental innovations to products already proven in the market. They use a variety of means to generate ideas. First and foremost, most involve closely monitoring their markets, customers, and competitors. Indeed, breakthroughs, for example, involve higher risk than incremental innovations, so it is important to make sure both that these innovation goals make sense given the company's market position and strategy, as well as that the right risk management capabilities (*Jaruzelski et al., 2014*).

There are food firms that are mainly process-innovation oriented (*Archibugi et al., 1991*) and use new technologies developed by upstream industries (*Martinez & Burns, 1999*). In addition, most product innovation such as by other institutions in the food industry, are rather incremental than radical. Most often this is justified by the fact that this may be related to consumer inertia that means that this is the result of conservative consumer behavior and aversion to new food products (*Galizzi & Venturini, 2008*).

At the same time, however, looking at the historical overview and current trends of innovation in food processing technologies, we may notice that they have developed themselves steadily over the last century. For example, it can be seen that despite the initial lack of consumer confidence and reluctance, it was possible to introduce various new developments in this area. Other solutions, despite the many pieces of evidence of no harmful impact on the consumer, have not been disseminated. Taking the example of aseptic processing, it is one of the major development in food processing. The process introduced after the first commercial was launched in 1927. Then in the early stages, the growth in aseptic technology was restricted to glass/can packing and was rather limited. This condition was revolutionized by the advent of Tetra Pak aseptic filling and packaging machine in 1951. The company marks a new era in aseptic processing. In contrast, the military-industry complex has a major impact on innovation in the food industry through the use of irradiation technology. However, negative public perception of irradiation for food processing and preservation still undermine the potential of this technology (*Tetra Pak*).

The examples highlighted above show that there is an interest in radical change in the food industry. The companies in the sector can deal with combining product and service innovation as well as by proposing social innovation and technological innovation. This means that there is a need for a creative approach to these issues that allows new solutions.

As for the next trend for greater coherence between business strategies and innovation strategies, this is a significant change in management thinking. Second trends means that companies seek new, innovative sources of competitive advantage. Development of innovation is no longer limited by business goals. Moreover, although it seems obvious it is not. C. Christensen (2012) pointed out that corporate performance measures reward decisions that ensure quick returns and the highest return on capital in the short term. This approach discourages investing in solutions that must mature for many years and can be the basis of breakthrough innovations. However, world-leading companies (*GI1000*) have perceived that it is inappropriate to further divide business objectives from innovative goals. This approach is critical in that many companies in the world, including those in the food industry, still do not carry out innovative activities that rely on a well-thought-out innovation strategy (*Jaruzelski et al., 2014*).

As noted by the Nestle representative, that is included in the GI 1000; there has been a strong push over to align what company do in R&D with what they do in the business. For example, Nestle completed a study to design foods that would better meet the needs of older people. Their nutritional requirements differ from those for younger people because of bone, joint, and muscle conditions. In the case of this company it became apparent that by both the business and the R&D strategies were intensely involved, thanks to the business side know what it is going to get, and the R&D side knows what it has to work on (*Jaruzelski et al., 2014*).

The pattern of innovation listed above, called design-oriented includes firms that have the necessary

capability to develop new products, but they do it with keeping an eye on the market. In high-tech companies, new product development is part of their core activities. On the other hand, often low-tech firms' capabilities are too low. This means that businesses within this pattern develop products with the aim to either anticipate some market needs or to satisfy an existing market necessity they have identified. It is equally important for food companies to develop deeper consumer insights and to link research related to psychological need states with marketing communication strategies. It means that focus on the industry design capability is essential for good innovation and is an essential complement to the consumer insight piece (*Expert Group on Future Skills Needs, 2009: 148*).

An example of food design is the so-called *functional food*. From the market point of view, the most popular products include calcium-enriched products, margarine, and butter containing omega 3 fatty acids as well as cholesterol-lowering and fermented beverages containing live bacterial cultures (probiotics). These products are targeted to customers with specific needs. For example, the Polish company Bakoma offers Yogurt Men in a bottle and cup. This yogurt underlines that proteins are playing an important role in a man's diet. Targeted to men, the product has a protein that should help maintain proper muscle mass as well as prevent excessive weight gain. Bakoma points out that proteins are basic building blocks in the body, they are the basic structure of all living cells. Men's yogurts are essential in the daily diet, and the amino acids they deliver allow users to rebuild their body's protein on a regular basis (*Bakoma*).

This approach is another significant trend, namely the focus on consumer attention. This is a crucial issue because as it turns out, companies can spend more money, hire the best engineers, develop the best technology, and conduct the best business market research, but all their efforts are driven by a thorough understanding of what their customers need and want. Without that their performance may fall short. The tendency is that consumers are not just asking for their advice and input but they are also defining what the products and services should look like. What's more, they can even drive and create products themselves (*Jaruzelski et al., 2014*). The manifestation of this approach is evident in the case of crowdfunding, where on platforms such as Kickstarter, consumers can take an active part in the development of new products.

For example, the Free Bread project allows people to enjoy food that they probably wouldn't eat because of their health issues, such as allergies (*Free Bread*). This project aims to create a supply of gluten-free bread in the New York City area. Another example of the efficiency and the capacity of crowdfunding to revolutionize the food industry by allowing people to directly finance the creation and availability of healthy foods is the Hebridean Food Company (*Hebridean Food Company*). The company was trying to target a gap in supermarket supply of soups without artificial preservatives, flavoring and coloring by offering unprocessed, but flavorsome and affordable alternatives. Thanks to the crowdfunding the company could attract 281 investors to expand its business, and cooperate with the leading global discount market chain, Aldi, that currently features a few of their soups in their offer. The company also works with Wholefoods, the American Food Market, Southbank Fresh Fish and the department store Selfridges & Co. in the United Kingdom. Another example is the Polish company Scabrosus, which recycles waste generated, e.g., by extrusion of juices, which by using crowdfunding collected money for its further development. Scabrosus processes residues and produces fibers, which are now very popular in the food industry (*Scabrosus*).

In addition, it is becoming increasingly common to include a customer involvement in the final product phase. For example, by providing users with a 'beta' version of the product for testing. This is providing in the food industry, consumer acceptance, which is crucial for the analysed sector.

Another example is the growing number of entities on the market that are beginning to create sharing economy. Technological advancements and the rise of industrialization have transformed food into a commodity. The food industry has an impact on the people eating habits dictated by work and leisure activities. Snacks have become more common across the world, and the tradition of taking a long break to prepare and eat a wholesome meal at home is slowly losing its supporters. Consumers turn to ready meals, cooking aids and takeaway meals. Also in many countries, many people today lack basic cooking skills. The younger generations no longer know how to recognize fresh and good quality ingredients or how to cook wholesome and tasty meals from scratch. The answer for that situation is the company

Mealby for which home-cooked food is 'de-commoditized food' and something that is prepared by a person rather than a company. The company offer tools, resources and marketing material allowing cooks to easily and professionally sell food from home (*Mealby Blog*).

Another example of innovative food company embracing the sharing economy model is GrowUp. It was funded via Kickstarter in 2013 as British startup to "build sustainable commercial farms growing for local markets" (*GrowUp*). They created the GrowUp Box, which is a small-scale agricultural production unit, built from a disused shipping container and using aquaponics to grow up vegetables quickly. On the other hand, the German website Foodsharing allows individuals, retailers, farmers or restaurants to share food they are not going to use before it becomes damaged, contributing to the reduction of food waste (*Foodsharing*).

In this situation, as it turns out to be one of the types of skills necessary for the functioning of the food business sector there is a creative approach to building relationships with customers and investing time in better understanding the customer's requirements.

All innovations, including those of breakthrough nature, will require increased efforts to establish more diverse and interdisciplinary teams than ever before to work on innovation. At the same time, it can bring benefits in the form of risk sharing between a larger number of stakeholders. Corporations, being global leaders, have the greatest power of diffusion of innovation at the enterprise level. This is because, at the beginning or the end of the value chain and creating new product demands, they force their subcontractors to create new, innovative solutions. The concept of open innovation is a manifestation of cooperation in the area of innovation. The benefits of open innovation are numerous: better utilization of resources, including information and knowledge, leading to reduced costs; and company access to resources to overcome bottlenecks within their innovation process (*Mitchell, 2015*).

In the case of the food sector, open innovation with high-tech industries can deliver a competitive edge for food companies. It can be facilitating information flow not only from food companies but also from other industries such as biotechnology, nanotechnology, or information technologies. Being influenced by outside sources makes people think outside the box, and consider internal ideas that were previously unexplored. In short, open innovation can expose the hidden innovation potential. This type of co-innovation permits food manufacturers to expand capacity not only to meet customer expectations but also to decrease time-to-market (*Mitchell, 2015*).

Arla Foods has set up the Arla Strategic Innovation Center (ASIC), which includes a series of pilot dairy plants and laboratories across Northern Europe for conducting experimental innovation, as well as some sensory and consumer facing facilities. Within the center, Arla strongly supports open innovation (*Arla*).

Collaborating with companies from high-tech industries has given companies the opportunity for more radical innovations. The Unilever uses its open innovation platform to look at new ideas. For example, for searching new solutions that can prevent oil oxidation of products without impacting the flavor, appearance and product quality, or for completely novel cooling technology, a retrofit to existing fridges or freezers, or a step-change in refrigeration design (*Unilever*).

Another example of deepening cooperation with other actors is co-operation with startups. In 2010, the PepsiCo10 program was launched. It was a digital incubator program. The initiative was aimed at discovering emerging and innovative small media and technology companies with ready-to-go products or service technologies in the areas of social media and/or community- based marketing, mobile marketing, place-based technology, digital video, and gaming. The work from the PepsiCo10 winners was used as an 'engine of change' across the PepsiCo business, and new technology was the 'new driver of creativity' in marketing (*Joshi, 2016*).

The above examples show that in the food sector there are already numerous actions that are conducive to the development of innovation. Their introduction, despite the fact that these innovations may be different, always requires an idea of what needs to be changed and how to do it. Creativity is, therefore, a prerequisite for innovation, also in the food industry. Even producing a new kind of ketchup requires creativity. The very idea of new product features for the consumer is not just a technical solution but requires creative design. However, you cannot ignore the knowledge of production technology or

chemistry. For example, the idea of ketchup, which is stronger than other reducing cancer risks, is the result of combinations of various ingredients that produce chemical reactions under certain conditions.

On the other hand, it should be noted that most of the adaptation measures outlined above apply to western countries. As in other sectors, in the food industry, both the creation of global trends as well as responding to them is dynamic in the region. Entities from Poland and other European countries, as illustrated by the brief examples presented above, also undertake actions aimed at responding to world trends. However, it seems that the flowering of activities in this area is still ahead of us, especially in the low technology sectors.

5. Discussion and implications

As discussed above, the concept of a creative approach to doing business in the low-tech sectors is becoming more significant. At the same time, however, there is a gap in our knowledge and understanding of the need to motivate employees for creative and pro-innovation activities in the organization. However, such studies are necessary because food companies are dealing with current trends in the area of innovation. It is not enough to be on the market. There is a need to know the trends and understand that it is necessary to adapt to them. Big corporations are obviously excellent examples. Moreover, although some may argue that the potential of such companies is definitely greater, and therefore the possibility of adapting to trends is also greater, it is not entirely true. According to the examples presented in the study, also small companies have a chance to follow trends. However, it is necessary to know these patterns.

As highlighted in the paper, focusing on radical innovations may not be particularly important for the food business because of the conservative consumer behavior. What does not mean, however, that such innovations cannot emerge in the food industry, and perhaps over time, e.g., new production methods will replace those now widely accepted by customers.

However, in order to achieve this, a creative approach to combining products and services innovations as well as organizational or marketing is unquestioned. More tightly aligned company's innovation strategy and business strategy is a trend for many companies, especially international corporations. This pattern of innovation, which is a design-oriented concept, makes food companies pay more attention to market and consumer expectations to match their strategies and innovations. The design capability of a company is as it seems not only with the technical knowledge but also the creativity of the organization's employees.

Better insight into consumer needs is linked to the food industry with previously analyzed trends and the ways in which they are derived. Consumers become active participants in product and service development processes. To meet such needs there are concepts such as crowdfunding, sharing economy and participation in food testing. Attracting customers in this kind of action undoubtedly also requires creative ideas on how to do it best.

The latest trend in the development of low-tech companies increases from collaboration, that is, from the broadened cooperation between the various departments of the company, thereby creating interdisciplinary teams, as well as engaging with external actors. The open innovation model, or supporting new ideas by creating startups, is crucial. As can be seen from the above, in each of these places we find a place for creativity, which is such an important feature of human resources in the organization.

Summarizing firstly, the paper underlined the focus on creativity issues in the organization. This theme usually associated with the creative industries also seems relevant to the low-tech industry. Innovation in the food sector can mean the use of existing ideas or technologies in creative ways. This allows development of new products or new uses of well-known production processes. This implies that innovation in these sectors may be softer and require more marketing and production skills than the technological ones.

At the same time, however, while we have focused on the four trends presented in the field of innovation, it seems that firms from the food industry constantly seek to take action to create innovation. They appear to think that what they do in their day-to-day activities is not innovative because these are

not radical changes. Very often they cannot imagine that without a developed R&D department and significant amounts of money for research there are capabilities of introducing any innovation. As a result, they generally do not think about what they do in terms of innovation. Managers are aware that due to the specificity of the products offered, it is necessary to take care of the consumer trust, which not only means having to know the consumer's needs for their taste and preferences, but also the food safety provided by the food supply chains.

Lastly, it is necessary to study how managers combine utilizing human resources as a source of new ideas in the organization. Managers in the reality of food companies often deal with focusing on innovation as a result of research and development. Enterprises that do not have such divisions or resources to buy outside R&D results often find themselves in the wrong hands to be innovative. With this approach, they do not focus on the resources within their reach that are the employees of the organization. Undertaken discussion provide conclusion that it is reasonable to think of creativity as one of the important sources of innovation in a low-tech organization. The creativity of employees seems to be a key source of innovation, especially since most players in this sector do not have the financial resources to carry out their own research and development activities. Limited funding is probably not the main problem of low innovation of these companies. It seems that the potential for innovation lies within reach of food business managers, but there is no knowledge or experience in how to harness the creativity of employees. This is particularly problematic for small and medium-sized companies that often do not have patterns to follow in the companies of similar size.

6. Conclusions and recommendations

This paper attempts to present arguments indicating that there is a need to change the approach to the low-tech sectors in the area of innovation. The author has specifically focused on how global trends in the area of innovation can have a huge role in the behavior of food businesses. It seems that the creativity of workers is facing such challenges and is an important source of innovation in these sectors. However, in order to do so, it seems reasonable to present recommendations in this regard.

On the basis of the above, it should be noted that an important direction for research in the area of innovation in the low-tech sectors should include, among other things, continuing studies regarding the characteristics of innovation in the low-technology sectors. It is also important to develop models of creativity and innovations for the food industry and other low-tech sectors. Thus, a central opportunity for future research lies in studying the differences in creative processes in high-tech, creative sectors and low-tech sectors. Another future direction, for example, is to study how some of the managers contribute to greater creativity among low-tech industry workers. It is also important to make analyzes of which departments in such companies are more often or should be more often encouraged for creative activities than others. Furthermore, certain firms may also have business-specific characteristics that allow them to benefit from more open forms of collaboration that foster the creativity of their employees in the organization. At the same time, it is advisable to encourage the food business company to carry out innovative activities. It is important to show good practices in this area as well as to explain that employees are a valuable source of innovation in the company. There is an opportunity to improve their innovation level so that they go shoulder to shoulder with current trends in innovation.

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