

THE PROCESS OF OPPORTUNITIES EXPLORATION AND EXPLOITATION IN THE DEVELOPMENT OF SMES' INNOVATIVENESS

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ABSTRACT

The aim of the paper is to present an overview of the theoretical basis and stages of the process of opportunities exploration and exploitation in the development of innovativeness of small and medium-sized enterprises (SMEs) and its preliminary empirical verification on the basis of experience derived from economic practice. The aim of the paper is realized based on the author's own empirical research carried out in the form of a case study conducted among 5 innovative SME companies in Poland. The results indicate that the analyzed companies associate opportunities directly with entrepreneurship and the development of innovative activity. They take various actions that are part of theoretical principles of effective opportunities exploration and exploitation, which allows them to obtain a number of pro-innovative benefits and which supports the creation of competitive advantage.

KEYWORDS

entrepreneurship, business opportunities, innovation management, small and medium-sized enterprises.

Introduction

Innovativeness, along with innovations implemented on its basis, is an important component of competitiveness and building a competitive advantage of small (also micro) and medium-sized enterprises (SMEs) [1]. The specificity of these entities, manifested in their internal resource-related constraints, and the growing dynamics of market activity lead to a departure from the formal, long-term planning of innovative activity in favor of dynamic solutions taking into account the potential of the external environment. Due to this fact, the development of the external perspective in innovation management [2] and the ability to exploit opportunities in the development of innovativeness of SMEs arouse interest of theoreticians and practitioners of small business management.

Opportunities are an interesting concept developed mostly in the area of entrepreneurship [3] and

strategic management [4]. They express the dynamic and creative approach to exploiting the potential of the environment aimed at implementing innovative solutions into economic practice. Their effective exploration and exploitation allow small and medium-sized enterprises to obtain a number of pro-innovative benefits. The aim of the paper is to present an overview of the theoretical basis and stages of the process of opportunities exploration and exploitation in the development of innovativeness of SMEs and its preliminary empirical verification on the basis of experience derived from economic practice.

The aim of the paper is realized on the basis of empirical research carried out in the form of a case study conducted among 5 innovative SME companies in Poland. The results indicate that the analyzed companies associate opportunities directly with entrepreneurship and the development of innovative activity. They take various actions that are part of

theoretical principles of effective opportunities exploration and exploitation, which allows them to obtain a number of pro-innovative benefits and which supports the construction of a competitive advantage.

Literature review

Management sciences lack a uniform approach to defining and interpreting the nature of opportunities [5], despite their significant impact on the development of scientific concepts and ideas in the area of entrepreneurship and strategic management. D.J. Hansen, J. Monllor and R.C. Shrader [6], on the basis of a review of 102 definitions presented in papers published in the leading entrepreneurship and management journals, have identified 5 main dimensions used in definitions of opportunities:

1. Personal qualities and competencies of the entrepreneur/organization, including knowledge, abilities, entrepreneurial alertness and motivation.
2. The environmental context encompassing the characteristics of the environment (e.g.: time, uncertainty, dynamics) and market determinants.
3. Cognitive processes, including creativity, thinking and learning.
4. Behavioral processes such as planning, taking action, creating or participating in social interactions.
5. Results and effects of exploitation of opportunities, such as new business ventures, new markets or resources.

Many of these dimensions are mentioned by R. Krupski [7], who defines opportunities as beneficial events (e.g. the collapse of a competitor) or a series of certain events (e.g.: the creation of a market niche) of economic character or producing economic effects closely associated with a given moment and period of time, creating the possibility of achieving additional benefits and developing intangible or tangible assets. Other definitions of opportunities also emphasize their prospective [8] and external nature [9], as well as the processual approach to their materialization expressing the continuum ranging from initial awareness to a completely developed concept of a particular business venture [10]. All this makes the concept of opportunities a valuable theoretical basis for considerations in the area of management concepts in both large and small business companies. According to the specificity of entrepreneurship and creative business activities the concept of opportunities seems to be very interesting for innovation management in companies of the SME sector.

Small (also micro) and medium-sized enterprises are the most numerous category of entities in the

market economy. The International Finance Corporation, based on studies conducted in 155 countries, identifies more than 160 million of formal micro, small and medium-sized enterprises which are distinguished on the basis of more than 260 classifications and employ a total of over 500 million workers [11]. These entities are also the foundations of the EU's economy in which they are distinguished based on a uniform, formal definition of SMEs formulated by the European Commission. It defines the boundaries of the SME sector at 249 employees (FTE) and an annual turnover of EUR 50 million or an annual balance sheet total of EUR 43 million. In addition, it takes into account the percentage of capital and/or ownership ties between SMEs and other enterprises, which in the case of too high values can affect the ultimate level of the remaining quantitative measures [12]. On this basis, almost 23 million SMEs (in non-financial sectors) are identified in the EU28, which is 99.8% of all enterprises, generating € 3.9 trillion (57.4%) of value added and employing 90 million (66.8%) people. In the years 2013–2015, one could see positive development trends in this sector expressed in an increase in the number of SMEs as well as in their growing participation in the creation of added value and employment [13].

Small and medium-sized companies are characterized by certain qualitative characteristics distinguishing them significantly from large companies. This specificity is primarily noticeable in the areas of: their management system, autonomy, personnel, organizational structure, marketing and sales, market relations, production systems, specializations, scope of activities, sphere of research and development as well as finance [14]. Thanks to this specificity, SMEs can effectively build their competitiveness and competitive advantage. Their competitive advantage is based primarily on strategic flexibility and high adaptability to changes [15], business virtualization and cross-organizational cooperation [16], as well as the natural dynamics and exploitation of opportunities [17]. The results of the research conducted by E. Stawasz [18] indicate that innovativeness also plays an important role in shaping competitiveness of the smallest operators, although this potential is often not exploited fully, mainly due to internal shortages of tangible resources [19].

Innovativeness is understood as the ability of companies in the SME sector to implement important strategically, commercially and economically justified changes or novelties [20]. They are materialized as various types of innovations which in the processual approach are seen as a sequence of actions ranging from the invention – a basic idea, sketch or

model for a new (or improved) product, process or system – to the results of its dissemination to a group of potential customers. The conversion of an idea into an innovation requires the engagement of certain resources and the undertaking of such activities as: research, design, development, engineering, manufacturing, logistics, marketing and sales [21]. From the subject-related perspective, innovations are characterized by such features as: a significant degree of novelty and originality, the revolutionary impact on the market and socio-economic environment as well as acceptance on the part of the board, customers and other company stakeholders which expresses their high assessment of the value and usefulness of the proposed solutions [22].

Innovations contribute to an increase in the value of a company and to building a lasting and effective competitive advantage by improving quality, productivity as well as economic and financial performance, increasing customer loyalty, internationalization of activity, or upgrading processes and management methods [23]. They are associated directly with entrepreneurship, which is the basis for the functioning and building of competitiveness of small and medium-sized enterprises. These relationships are particularly evident in the approach presented by J.A. Schumpeter [24], developed further by P.F. Drucker [25]. Entrepreneurship is seen as new (original) configurations of production factors, implementation of a new production method, opening a new market, acquiring a new source of supplies or establishing a new organization that affects significantly the structure of the market. Innovations arising as a result of these configurations have the ability of creative destruction in the economy – as they destroy old industries while introducing new industries and approaches. They are introduced by entrepreneurs who seek opportunities for innovations which have their source in changes, including economic successes and failures, changes in the market structure, as well as demographic cultural or socio-economic changes.

The role and importance of the entrepreneur in the development of SMEs' innovativeness is also emphasized by E. Maravelakis et al. [26] and R. Mbizi et al. [27]. According to these authors, SMEs' innovation potential is based mainly on the entrepreneurial attitudes of the owner-manager related to the building of a pro-innovative mindset and a bold market orientation based on the strategic vision of business activity and the dynamic use of market opportunities. It follows that the relationships between entrepreneurship, innovativeness and exploitation of market opportunities become key pillars building com-

petitiveness of the SME sector companies in today's market, at the same time positively affecting the economic development [28] (Fig. 1).

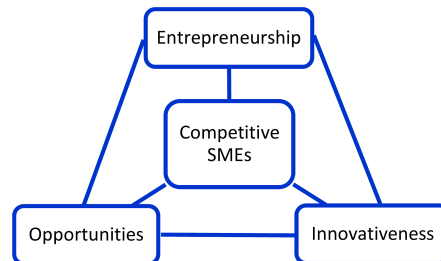


Fig. 1. The foundations of competitiveness of the SME sector companies [own study].

Moreover, the literature highlights the close and direct relationship between entrepreneurship, opportunities and agility. This is especially stressed by S. Trzecieliński [29] who notes that the occurrence of opportunity creates the category of “agile enterprise” in which opportunity usage is the essence and cultural medium. In these terms the agility of the company lies in its ability to seize the opportunities. The more the variable and dynamic the enterprise environment is, the more opportunities appear and the better climate for running small business is.

The development of SMEs' innovativeness is therefore based mainly on their natural entrepreneurship, agility and exploitation of market opportunities. This is confirmed by definitions proposed, among others, by C.M. Gaglio [30], J.H. Lee and S. Venkataraman [31] as well as by L.J. Kornish and K.T. Ulrich [32]. They note that opportunities are for enterprises the foundations for the introduction of innovative or novel products/services into the market. Opportunities as ideas for conducting innovative activities require, however, a specific commitment in terms of resources (including investments), providing in return the possibility of obtaining significant profits. Their specificity indicates, however, that they are also a source of business risk that can lead to incurring a loss by entrepreneurs implementing the idea. At the same time, the results of numerous studies indicate that proper exploration and exploitation of opportunities is associated with obtaining many pro-innovative benefits by SMEs.

Exploration expresses actions aimed at defining, seeking and developing opportunities which are then used in the phase of exploitation in order to achieve specific market effects and benefits. Exploration is therefore more subjective and creative in its nature, as it is associated with creativity and focus on initiating innovative solutions. Exploitation is more objective, rational and analytical, encompassing the initi-

ation and development of business ventures based on commercialization of explored opportunities.

The international [33] and Polish [34, 35] literature presents numerous models of opportunities exploration and exploitation. Many of such models highlight the processual approach to these issues by proposing specific stages and paths of conduct, and also draw attention to the cyclical and iterative nature of the actions taken.

Associating opportunities directly with entrepreneurial activities, these models provide a number of proposals for the development of SMEs' innovativeness. Two main approaches to exploration and exploitation encompassing (1) discovery and (2) creation of opportunities [36] form their conceptual basis. The first approach stresses the objective existence of opportunities in the environment awaiting identification and exploitation by entrepreneurs wishing to achieve possible benefits. The other approach perceives opportunities in subjective terms as created in the environment through business activity of entrepreneurs. Therefore, the discovery of opportunities is considered to be based to a greater extent on the existing challenges, available patterns of behavior, past experience and intuition, as well as current methods of problem solving. The creation of opportunities is facilitated by heuristic information processing based on the creative assigning of meaning to the surrounding reality, discussion, new interpretation of events, as well as the trial and error method [37].

Based on the conducted literature review [33–35, 38, 39], 5 stages of opportunities exploration in the development of SMEs' innovativeness can be proposed:

1. Preparation – this stage refers to individual characteristics of entrepreneurs, company managers and employees in connection with their general and specialist knowledge, education, family life, networks of social relationships, passions, hobbies as well as life and work experience. This stage is often not planned, purposeful or consciously implemented, simply constituting part of the life of every human being. These characteristic features influence the propensity to run one's own business, involvement in activities conducted, acceptance of change, the level of risk taken, as well as cognitive skills, abilities and creativity of a given person. These features are an important factor in the interpretation of external conditions (the environment) and the perception of given opportunity [40].
2. Imagination – this stage provides a direct connection between the approach based on opportunities and the strategic level of management. At the same time, it reflects the vision of the development of a company as an entity building its competitive advantage on innovativeness and implementation of innovative market solutions.
3. Amplification – this stage encompasses resource-related and organizational preparation of opportunities exploration and exploitation. A given company's intentions and plans in the area of redundancy of procedures and the organizational slack of its own resources (mostly intangible), as well as the specification of rules for access to external resources become key [41]. The organizational slack increases the company's flexibility and enables an increase in the dynamics of further exploitation of opportunities. At this stage, the space of opportunities, understood as the area/dimension of the environment in which the company will discover or create events that are opportunities, needs to be also determined and expanded [42].
4. Generation – this stage encompasses the monitoring of opportunities space aimed at the discovery or creation of opportunity-like events leading often to their redundancy. The company may follow different paths of actions and approaches to generating opportunities, including: the path of systematic exploration, legacy, the failure-stimulated approach, the passive, case-based or creative approach [43–45].
5. Screening – this stage is aimed at choosing particular opportunities that entrepreneurs are interested in based on certain criteria such as legality, resource capability for opportunities exploitation or obtaining particular tangible or intangible benefits. These criteria are individualized and relativized in terms of the time spent on their monitoring and screening, as well as assessing the potential use, benefits, costs and risks associated with opportunities exploitation.

After the screening stage, the enterprise moves on to the opportunities exploitation phase in the development of innovativeness which includes the following 5 stages:

6. Formation – at this stage further formation and development of selected opportunities takes place with the use of R&D support, external consulting, opinions of social networks, a business plan and market analyses. This way, the entrepreneur gathers the missing information and creates a more refined picture of what the future innovation will look like in the context of a given market segment and customers' needs.
7. Evaluation – at this stage, the final decision on the possible exploitation of a given opportunity in the

company's innovative activity is made. The assessment criteria include, first and foremost, the desirability and feasibility of the particular innovative undertaking created on the basis of the identified opportunity. The following elements are important in this respect: honest and objective assessment of the resources potential necessary for the implementation of a given innovation, as well as limited optimism based on impartial observation of reality and rationality of decisions.

8. Operational – this stage refers to the creation, development and market commercialization of effective innovations created on the basis of opportunities. The operational stage is focused on the achievement of certain tangible and intangible benefits. This stage should be monitored because even despite the screening of opportunities, there may appear some negative effects of their use associated with changing internal and external conditions.
9. Updating – this stage encompasses proactive and reactive actions aimed at maintaining the market success of particular innovation. They include product/service modifications, entering a new market, company restructuring, as well as incorporating the potential stemming from a new market opportunity.
10. Accumulation – this stage encompasses actions aimed at retention of knowledge, resources, competencies, procedures and organizational solutions that enable effective exploration and exploitation of opportunities in the development of a given company's innovativeness. It constitutes the basis of the iterative nature of the entire process and is associated with the development of organizational learning.

The presented process is sequential, however, often the stages are carried out in a different order or simultaneously. It assumes the possibility of moving between the stages, for example, negative conclusions at the screening or evaluation stage provide the basis for a return to the stage of preparation, amplification or generation. The proposed process is also iterative in nature because accumulation forms the basis for exploration and exploitation of future generations of opportunities.

The general nature of this process and the possibility of using a variety of paths and practices within its framework increase flexibility and allow to customize an approach based on opportunities to the needs and capabilities of a given company. This also translates into the development of SMEs' innovative-

ness, including in particular: increasing the number and level of innovative novelties implemented as well as increasing competitiveness and building a competitive advantage based on innovations and a positive image of the company.

Research methodology

The main aim of the study was the preliminary empirical verification in business practice of the theoretical assumptions presented. Recognizing that the main role of management sciences should be the presentation of examples of good management and best management practices [46], the aim of the paper was realized on the basis of the author's own monographic study [47] carried out in the form of case studies of 5 companies in the SME sector – leaders of innovativeness in Poland. The following entities were purposefully selected for the study:

- ID Block Systems sp. z o.o. from Warsaw,
- i3D S.A. from Gliwice,
- Centrum Badań DNA sp. z o.o. from Poznań,
- P.W.Roltex sp. z o.o. from Sulechów,
- EkoWodrol sp. z o.o. from Koszalin.

All the analyzed companies meet the criteria of the uniform, formal definition of SMEs used in the European Union. Their leading role in the implementation of innovations has been confirmed by prestigious awards or distinctions granted at least at the national level.

The method of interview with representatives of selected enterprises actively involved in the management of innovative activities was used as the detailed research method. The standardized interview was the research technique and an original interview questionnaire in the paper form was the research tool.

The study encompassed 2 owners and 3 managers of the analyzed entities. They were mostly men (4 respondents), aged 31–40 (3 respondents) or 41–50 (2 respondents). All the respondents had at least 5 (2 persons) or 10 years (3 persons) of experience, and higher education: technical (3 persons) or economic (3 persons)¹.

Characteristics of the surveyed SME companies

All the surveyed companies are focused on the creation, development and commercialization of innovative solutions with at least a national range. Their success in this field is confirmed by awards

¹One of the respondents indicated both technical and economic education.

and distinctions won for business activities and products/services offered.

ID Block Systems sp. z o.o. creates, develops and commercializes proximity technology, security solutions for personal documents and banknotes, as well as IT systems that protect intellectual property. It is a micro-enterprise focused on conducting active research and development activities in cooperation with domestic and international partners. Its position of the leader in innovativeness is confirmed by, among others, the “Innovative Company” title won in the national competition called National Innovativeness and Development Leaders in 2013 as well as by many other national and regional awards for innovative activities. The company has also repeatedly received the EU grants to implement their projects in the framework of the Innovative Economy Operational Program.

i3D S.A. creates and develops innovative technologies in the area of virtual reality and immersive, three-dimensional graphics. Its products fully reproduce the real world in virtual reality, significantly speeding up the processes of design, design verification or testing modeled objects. The leading product of the company is Quazar3D software which is a modern graphics engine to create interactive applications of virtual reality. The company is a small enterprise and its success in the field of innovation implementation is confirmed by many national and international achievements. These include an award in the “Innovation Initiator” competition organized by Newsweek Poland and PwC in 2015 for the E-physiology project that allows one to conduct virtual three-dimensional vivisections, or one of Laval Virtual Awards granted in France for the best global solutions in the area of virtual reality and convergence technologies.

Centrum Badań DNA sp. z o.o. is a small innovative biotechnological company providing services in the field of genetic and microbiological medical diagnosis based on molecular research technologies. The company’s offer includes over 500 genetic tests for: microbiological diagnostics, predisposition to genetic cancer diseases and identification of family relationships. Most tests are based on in-house developed innovative diagnostic methods. The company also provides laboratory, bioinformatics and design services for science and research institutions, medical institutions and companies from the agri-food industry. Its position as a leader in innovation management is confirmed by many achievements, for example, an award for the development and implementation of comprehensive diagnostic test panel, the identification of pathogens transmitted by ticks in the “In-

novative Project” contest organized by the Polish Agency for Enterprise Development in 2012, or an award for an innovative service won in the National Leaders of Innovation and Development competition in 2011.

Roltex sp. z o.o. is a medium-sized multi-discipline company conducting production and commercial services in the field of metal processing, warehouse management and internal transport. It carries out complex projects related to the processing of metal sheets, pipes and metal, ranging from design, through production to assembly. The company also produces various types of elements of black, stainless and acid resistant steel as well as aluminum. The technological process is carried out on the basis of innovative processing techniques, among others, using a laser cutter that meets all requirements for modern laser technology solutions in industry, medicine and electronics, as well as the extensive modern machine park. The company also offers a wide range of equipment for warehouses, shops or production halls, ranging from simple platform trucks to powerful storage systems (pallet, post, shelf systems, etc.). The innovative nature of its business activity is emphasized, among others, by its “Innovative Medium-sized Enterprise” award in the National Innovativeness and Development Leaders competition in 2012 as well as the “Market Leader of Innovation 2012” title granted in the framework of the national program of assessment and promotion of positive patterns and innovative activities.

EkoWodrol sp. z o.o. is a medium-sized company specializing in technologies in the field of water treatment and waste water treatment, internal installations and technological networks, as well as water and sewage systems, including: water treatment installations, water supply networks, sanitary sewers and rain drainage systems, as well as water drainage and hydrotechnical structures. The company has its own R&D Department and a modern test laboratory to test fittings and check valves. This resulted in patenting and producing devices innovative on a global scale, e.g.: Szuster System elbow check valves and innovative pneumatic pumping stations which apart from pumping waste water additionally remove the problem of noxious odors. Success in the company’s innovative activity is confirmed by, among others, taking second place in the ranking of the 500 most innovative companies in Poland in 2010 provided by the Institute of Economic Sciences of the Polish Academy of Sciences and the MSN Scientific Network, as well as being awarded with the “Regional Innovation and Development Leader” title in 2011 for two innovative products:

deaerating- aerating columns (EKON) and purge columns (EKOS).

Research results

The detailed substantive scope of the research included:

- the perception of the concept of opportunities in business practice,
- the range of association of opportunities with entrepreneurship and innovative activities provided by the surveyed companies,
- analysis of the process of opportunities exploration and exploitation in the development of innovative activity of the surveyed companies.

In order to ensure high objectivity and freedom of expression, the respondents were asked general questions, without suggesting the formulation of responses based on the theory of management sciences. In view of the need to preserve the anonymity of solutions used by individual entities, the presented results are, however, aggregate for particular substantive issues examined in the paper.

In the first part of the study, the perception of the concept of opportunities in business practice was analyzed and assessed. The respondents in their statements defined opportunities through the prism of the dimensions identified in the theoretical part of the paper. For example, they pointed to the fact that the ability to “exploit emerging opportunities and willingness to take risks should be the main characteristic of every manager or enterprise focused on business development” (personal characteristics and company competencies). They emphasized the environmental context of opportunities, in particular market conditions (e.g.: “entrepreneurial opportunities arise directly from business activity, particularly from dealing with external entities or the market environment”, “opportunities are also “impossible” places where competitors decided not to seek the field for business exploration”).

The statements made by the respondents emphasized the importance of cognitive processes, creativity and learning as conceptual components of opportunities (e.g.: “entrepreneurial opportunities are new (...) emerging ideas, concepts, potential synergy effects”). Some respondents pointed to the role of behavioral aspects, in particular social interactions, in defining entrepreneurial opportunities (e.g.: “the company (...) finds business opportunities mainly through contacts with customers and business partners, as well as in conversations with cooperating specialists”). Tangible and intangible effects of exploitation of opportunities in business practice were

an important part of perception of the concept of opportunities. The respondents pointed out in the definitions that opportunities are: “emerging chances to take action that will bring tangible benefits in the future” or actions aimed at the implementation of “projects resulting in a product or service”. According to the respondents, effective exploitation results in, among others, “profits”, “better company image” and “image building”, which provides “a source of long-term competitive advantage”.

The results obtained, therefore, confirm that the perception of the concept of opportunities by the respondents is coincident with the definitions formulated in the framework of management sciences.

In the next part of the study, the focus was on the association of opportunities with entrepreneurship and innovative activity made by the surveyed companies. The respondents note strong, positive correlations in this area. One of them in his statement said that: “the ability to perceive and exploit business opportunities is an integral part of entrepreneurship”. In his opinion, these relationships are seen, first and foremost, in competitive industries which require companies to “focus on dynamic development and continuous investment in new technologies”.

In the statements made by the respondents, close relationships between opportunities and innovative activity were also mentioned. They said, among others, that opportunities are the main factor which “activates the innovation potential of enterprises”, and their exploitation results in “the uniqueness of the final outcome of innovation development”. Another respondent pointed out that: “business opportunities arise primarily from the need, the desire to improve, get rid of problems (stemming from laziness)”. In his opinion, therefore, opportunities arise from different types of needs, and innovations based on opportunities are a response generated to meet these needs.

The results obtained indicate that the respondents directly associate opportunities with entrepreneurship, the development of innovative activity and building competitiveness of small and medium-sized enterprises in business practice.

In the third part of the study, the respondents were asked to describe the actions taken by their companies for the purpose of exploration and exploitation of opportunities in the development of innovative activity. 4 out of 5 respondents confirmed that their activity is of processual nature, and it is possible to indicate the specific stages of this process. On the basis of the respondents’ statements, an analysis was conducted of the course of processes of opportunities exploration and exploitation in the surveyed companies and their convergence with

the proposal presented in the theoretical part of the paper.

The respondents' characteristics indicate very good preparation for exploration of opportunities. They all have very high levels of general and specialist knowledge (higher education), as well as many years of industry experience. Most of the respondents are also owners developing competencies in the area of running their own business. In management roles, they have a significant impact on processes of innovation management in the surveyed companies. Professionally, they deal with, among others, design, development and sale of innovative products. One of the respondents says that: "I am the author of most projects and patent applications in the company. That is why I have a key impact on the final shape of innovation processes, their duration and the level of involvement of the company in each of them". In addition, the passions and interests of the respondents are often directly related to their business activity or encompass other valuable areas, for example, computer science or sailing.

Due to the scope of the study, it was not possible to analyze the characteristics of the other owners, managers and employees. The statements made by the respondents indicate, however, that they take into account the potential of human capital of the company in the process of opportunities exploration and exploitation. For example, one of the respondents said that: "each employee can come up with a new idea or a project which is later analyzed". Another respondent pointed to the fact that internal meetings with employees, often with the use of heuristic methods (e.g.: brainstorming), play an important role in the exploration phase.

In their statements, the respondents pointed to a direct connection between the approach based on opportunities and the strategic level of management in the surveyed companies, which indicates activities characteristic of the imagination stage. One of the respondents noted that an important feature of opportunities is their compliance with the strategy for the development of the group. Another one pointed to a direct connection between opportunities and the company's development and its strategic planning horizon: "with a focus on the development, such activities [related to opportunities exploration and exploitation] are performed continuously and do not consist in actions planned only for a short period of time. It can be said, therefore, that the search for opportunities is a continuous process". A representative of another company stressed the role of opportunities in implementing its strategic vision, by saying that the company "eagerly exploits opportunities to

implement non-standard projects that result in the company being perceived by the market as a continuously innovative company".

Further statements made by the respondents show that amplification is also an important stage in the process of exploration and exploitation. One respondent said that "in order to be able to exploit a particular opportunity, it is necessary to engage human, time, or financial resources. This leads to the situation in which the company needs to be all the time "at the ready" and be open to the emergence and exploitation of opportunities". Similar views were presented by other respondents who stressed that the effectiveness of opportunities exploration and exploitation depends on the ability to mobilize, reconfigure, and protect resources, as well as the ability to adapt them to changing conditions. One of the representatives of medium-sized enterprises stressed the importance of the company size as a factor conducive to amplification: "the size of our company and independence in daily activities mean that most decisions can be made in a relatively short time, which also has a positive effect on the exploitation of emerging opportunities. This allows us also to fairly quickly organize additional resources".

In one of the interviews, the respondents' statement describing the process of exploration and exploitation of opportunities in the company brilliantly encapsulated the course of the generation, screening, formation, evaluation and operational stages: "after identifying an opportunity [the generation phase], the situation is a little different and in this case we can distinguish several stages. The first stage is a meeting with the board of our company and presentation of a particular opportunity, followed by joint deliberations whether the opportunity can bring beneficial effects to us [the screening phase]. After the acceptance, an employee or employees responsible for the comprehensive diagnosis as well as preparation of all the resources and information necessary to exploit this particular opportunity [the formation phase] are appointed. Then, after gaining far more knowledge about the opportunity, another meeting is organized, where the potential benefits and risks that need to be taken into account are discussed in more detail [the evaluation phase]. Knowing the ratio of potential benefits to potential losses, the final decision is taken on whether to continue the work related to the exploitation of the emerging opportunity [the operational phase]".

The generation stage in most of the surveyed companies is carried out both by means of discovery and creation of opportunities. Only in one case, the respondent stated that the company focuses pri-

marily on exploring opportunities. For this purpose, the surveyed companies monitor their environment, e.g.: through analysis and research of the market, trends, and needs reported by users, participation in trade fairs, conferences, economic missions, and the use of social media (e.g.: “contacts with partners and networking in order to establish and maintain relationships”).

At the generation stage, the surveyed companies use different paths of opportunities exploration. Most often they follow a proactive formula. For example, one respondent stated that: “emerging opportunities are a result of earlier actions – they certainly do not come from “sitting and waiting”. We can see that when we take proactive actions, (...) once in a while there emerge new opportunities to achieve additional benefits (financial or informational)”. Among various paths of opportunities generation, the respondents mentioned errors of their competitors, the use of ready-made solutions, a coincidence, and even intuitive actions. Confirming the theoretical assumptions, one respondent stated that his company generally “implements the ‘several fishing rods’ plan, that is, focuses on the simultaneous development of a few projects, hoping for success of at least one of them”. This indicates the occurrence of redundancy of opportunities and the use of screening and evaluation at the later stages.

Among the activities characteristic of the screening stage, the respondents pointed to taking specific actions focused on the need to select the opportunity for further exploitation. One of the respondents said that “an analysis of the reported idea (technological, marketing and sales, or competitive) in order to assess whether it is worth pursuing by the company” is an important task. In another important company, “a discussion of the needs, ideas during sessions/meetings” and “a preliminary selection of ideas for implementation” are considered important. The weak point of the information obtained was, however, the scarcity of statements concerning specific criteria applied in the surveyed companies at the screening stage. Only one respondent said that in his company it is important to “identify an opportunity, define what we want to achieve, what requirements the innovation needs to meet, who the recipient, the customer, is”.

The analysis of other statements also reveals that the surveyed companies take a series of actions at the formation stage. These actions include: the process of designing a new application, technical evaluation of deployment possibility (specifying the current technical state, parameters of a new product and patent protection), industrial research and validation, that

is, the formalized process of determining and validating the critical parameters of products/services. At the same time, these activities are complemented by detailed business analysis, including analyses of the market, investment profitability, competition, as well as the SWOT analysis, developing a business plan for the implementation of a given innovation and measures to acquire external financing when needed. These analyses are the basis of the final evaluation of the innovative product/service based on the opportunity selected by the company’s board and its market deployment.

This deployment is performed at the operational stage and includes: developing a strategy for commercialization of a given innovation, planning marketing and sales activities, taking sales-related actions encompassing promotional activities as well as partner training. In this case, an important role is played by the innovative potential of the surveyed companies, as its high level allows them to achieve market success of the introduced innovations. One of the respondents stressed that his “company has a large innovative potential provided by adequate human resources, technology and know-how”. For many years, services that we provide have been changed and modified based on solutions implemented by company employees and the expansion of our machine park, which resulted in our technological capabilities increasing year by year. These two factors complement each other and mean that the scope of services and options offered keeps increasing”.

The analysis of the respondents’ statements indicates that they mentioned the updating and accumulation stages the least often. With regard to activities that are part of the specificity of the updating stage, one respondent pointed to the fact that in his company “post-project” analyses, conducted after the market launch of an innovative product/service, play an important role. Their objective is to assess “whether the product meets the user’s expectations, how it stays ahead of the competition, and what can be improved so that our product could be even better”. Such analyses often lead “to creating new products or improving existing ones”. With regard to the specificity of the accumulation stage, another respondent indicated that “the experience obtained as a result of opportunities exploration and exploitation is an additional benefit, as it can be often of key importance in the case of the emergence of other opportunities, leading to their exploitation”.

The statements made by the respondents confirm therefore the substantive legitimacy of all the stages of the proposed opportunities exploration and exploitation process. They also stress that oppor-

tunities exploitation significantly supports the development of innovativeness of the surveyed companies. The benefits mentioned included: the ability to build and maintain the position of the market leader, expanding the company's offer through the inclusion of innovative products and services, "wide publicity stemming from the implementation of solutions unavailable previously in the market", "sustainable development and expansion into new markets", "increasing the value of tangible and intangible resources", as well as maintaining a long-term competitive advantage.

The respondents also pointed out to indirect benefits resulting from opportunities exploration and exploitation. One respondent stressed that "even if we haven't found an opportunity for the development of innovation, many times we have had a chance to meet and gain new customers or suppliers, which has lead to increased sales and profits. The overall result of these activities has certainly been beneficial, and the obtained fruits of such work encourage the continuation of such actions".

Limitations and future directions of research

When analyzing the results obtained and formulating conclusions concerning their possible applications, the limitations of the research conducted should be considered. Those include, first and foremost, a too small research sample and purposeful sampling which do not allow to generalize the results and formulate statistical regularities. Another limitation is the narrowing of the research to a specific point of time, without incorporating in the results changes taking place in the surveyed economic entities. Reducing the cognitive perspective to opinions of single individuals representing the analyzed companies is also a major weakness. This results in considerable subjectivity of statements and assessments provided by the respondents. One should also assume that they do not have complete knowledge of all the processes and actions taken in the surveyed companies. This means that some activities related to exploration and exploitation of opportunities in the development of SMEs' innovativeness might have been omitted. Attention should also be paid that in business practice, it is difficult to identify whether enterprises/managers have recognized and used opportunities. This identification can be made by indicating the symptoms of recognition and using the opportunity [48].

Since the results obtained confirm the theoretical assumptions presented in the paper, the continuation

of the research is planned. The further research will be carried out on a representative sample of small and medium-sized enterprises in selected countries of the European Union. The study is to encompass companies from countries with different levels of socio-economic development and innovativeness to capture similarities and differences in the approach to exploration and exploitation of opportunities in the development of innovativeness in business practice.

Conclusions

The results obtained indicate that the examined SME companies – leaders of innovativeness in Poland – perceive exploration and exploitation of opportunities as a significant factor in the development of their innovativeness and building a competitive advantage. They carry out numerous activities and take certain steps to ensure the effectiveness of the approach based on opportunities in innovation management.

The research conducted allowed to carry out the initial, positive verification of the theoretical assumptions. On the basis of the research, the following cognitive conclusions can be formulated enriching the scientific achievements of management sciences:

- attempts at the formulation of a uniform definition of opportunities in management sciences have failed. Thus, it may be more beneficial to distinguish specific dimensions/areas that should be included in definition proposals,
- the concept of opportunities can be considered as closely associated with entrepreneurship and innovativeness. Relationships between these 3 constructs are an important factor in building effective and competitive advantages of SMEs in today's market,
- a significant diversity of paths and ways of doing things can be observed in the process of opportunities exploration and exploitation. This allows to determine its subsequent stages, but impedes the formulation of specific, model rules of conduct. The proposal of general rules (meta-rules) that can be further specified in the context of a given company and its environment could be a more valuable approach.

The discussed results demonstrate examples of solutions used in management practice of selected leaders of innovativeness in Poland. Therefore, they can be used as a benchmark for other companies and on this basis the following managerial proposals can be formulated:

- the process of opportunities exploration and exploitation is based on experiences that go be-

yond the sphere of a given person's industry. Its milestones include: the organizational slack of resources, creative generation of opportunities, proper screening and evaluation of ideas, successful implementation of innovation and use of organizational learning to improve the process,

- in the individual stages of the process of opportunities exploration and exploitation, SMEs may use different solutions, adapted to the specificity and external context of the functioning of a given company,
- SMEs' owners and managers should pay particular attention to the stages of updating and accumulation. These stages determine the iterative nature of the process of exploration and exploitation of opportunities enabling the achievement of innovative success in future periods.

In view of the importance of the subject undertaken for the growth of innovativeness and competitiveness of small and medium-sized enterprises, the research will be continued. One should hope that a larger sample and an international scope of empirical work will allow to draw further, more specific, cognitive and practical conclusions.

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