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Innovation and creativity management in enterprises

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ABSTRACT

Creativity and innovation management presents increasing challenge for contemporary enterprises. For a growing number of companies innovation and creativity are the basis of their competitiveness. Product, process, organizational and marketing innovations need creativity. The paper contains description of tools used in enterprises in the field of innovation and creativity management. It also contains results of surveys carried out in enterprises running their businesses in Poland.

Keywords: Creativity management, innovation management

1. INTRODUCTION

Creativity means the ability to produce work that is both new and valuable [1]. New means unusual, unique, varied, original, breaking from existing patterns and contributing something to the field which was not recognized before [2]. Valuable indicates that the product meets a need or solves a problem; it is useful, effective, efficient, serves a purpose and contributes to society [2]. Creativity should facilitate value creation. In many enterprises it plays an important role as an input factor required to build value of a company and its competitive advantage. In manufacturing sector it is connected with product variation which may take a form of customization of products. Because of that creativity is often regarded as a source of competitive advantage [3,4]. As production becomes increasingly efficient across

segments, locations and organizations due to such practices like offshoring and outsourcing, and as manufacturing is increasingly regulated and automated, creativity is emerging as the most important differentiating business element, directly related to competitiveness. Creative outputs must possess originality, novelty, newness, or other characteristics that set them apart from competitors [5]. In general creativity is the process of discovering new ideas that are both original and useful [6]. A new solution or output must break down the boundaries of conventional thought, while accomplishing determined goals in an appropriate manner [7]. Creative outputs should also reflect usefulness, problem solving ability, situational appropriateness, goal accomplishment ability and value [8]. In a business context, such ideas would include products, services, processes and/or procedures [9].

Creativity is also defined as the recombination of existing knowledge into novel configurations that is reflected in the meaningful novelty of some output [7]. Burnett defines creativity as the art of establishing new and meaningful relationships between previously unrelated things [10]. Consequently most successful innovations are rather simple improvements, instead of paradigm challenging innovations [11]. Creativity is usually needed when standard procedures or routines are insufficient to solve a particular problem. The creative process also includes ordinary tasks such as storing and retrieving information [2]. For instance, an advertising agency's output can be considered a creative success when it achieves a client's e-communication objectives in a novel manner [7,12]. In creative processes, relatively more innovative ideas are generated to extend the space of potential solutions, to move "outside the box" [13].

Woodman and Schoenfeldt point out that creativity results from an individual's behavior in a given situation, where the situation is defined by the contextual influences (like environment) that affect creativity process efficiency [14]. Creativity is the thinking process where it is activated and triggered by some drivers. There are suggestions that the major factors triggering creativity are creativity thinking skills and intrinsic motivation of work in the social contexts [15]. Some authors suggested that creativity is an integrative application of experience transformation, individual subjective consciousness, motivations, knowledge, and experiences [16,17]. Creativity (the generation of new ideas) is essentially an individual act, but one that relies principally on interaction with others [18]. Innovation (the successful exploitation of new ideas) is a "fundamentally social process built on collective knowledge and cooperative effort" [19].

Yeh and others suggested that creativity is the course of the development of innovative and valuable products by individuals in specific fields, and such course involves the integration and effective application of cognition, affections, and skills [17,20]. Having creative people in proximity (for example in the same organization), it is one of the most important aspects for creative performance. This does not mean the creative people communicate continuously or that they are present in the office all the time, but there is the possibility to interact, to reflect on work, share knowledge and coordinate work was considerably important [2].

Especially in organizations producing customized output, the creative talent of an individual plays a critical role [6]. Consequently, the management of creative talent is more person-centered when creative input is an intrinsic [21]. Researchers have indicated that both effectiveness of brainstorming and the diversity of group composition increase group creativity [22]. There are many other reasons why multi-disciplinarily in groups can increase efficiency [23].

For example, multi-disciplinary collaborations can bridge gaps that result from disciplinary specialization. The organization can be beneficial to integrate results from various disciplines [24]. Appointment of a cross-disciplinary group is an important creativity-enhancing factor [23,25]. Connected with this phenomena organizational creativity refers to the creation of a valuable, useful application toward the organizational action and progress [26]. The creative output (new products, services, ideas, procedures, and processes) stems from the complex mosaic of individual, group, and organizational characteristics and behaviors occurring at each level of social organization [27]. Enterprises must collaborate with other entities, such as venture funds, R&D agencies and institutions and industry professionals, in order to leverage resources. In essence, managing creativity and managing innovation require different levels of collective activity carried out between different agents [18]. Innovation and creativity require many actors, open communications, and professional networking.

2. CREATIVITY MANAGEMENT IN PRACTISE

2. 1. External sources of new ideas

Firms develop their innovation activity and creativity processes generating new ideas individually or collectively. There are many examples of situations which require specialized knowledge that a company cannot develop alone, and the organization has to look for external support. In this situation collaboration with specialized parties is often the only possible way. In such cases the creativity process is realized in collaboration with others, across organizational boundaries. Collaborations have been growing in the past decades. One of the main reason is the fact that the cost of infrastructure, software etc., is still escalating owing to the introduction of new-generation technology. Enterprises have limited budgets and many of them are unable to finance all activities connected with a new product development. Necessary resources are usually very expensive. Funding bodies are also changing their policies by cutting individual research grants and are keener to invest in larger, cross-domain projects [23]. As a consequence, researchers feel pressure to collaborate more closely. It is rare these days that any single individual possesses the necessary range of skills for multi-disciplinary research [23]. Such cross-domain research more and more often involves collaboration between parties from various sectors, for example, between external consultants and industry. The importance of such a cooperation increases the range of potential innovation partners and, ultimately, increases the likelihood of creative input [6,28,29].

The basic advantage of collaboration is that it brings together a clash of views, a cross-fertilization of ideas which has the potential to generate novel ideas [23]. Collaboration can be also a source of stimulation and creativity. In industry, cross-organizational cooperation has positive influence on project success and speed to market [23]. This effect can be explained by, for example, greater information diversity and better access to knowledge. The better problem-solving abilities of cross-functional teams stems from the higher creativity of the team, and leads to more radical changes of products [23]. Collaborative practices add an extra layer on the expert practice that increases complexity, but has the potential to increase group creativity [23].

Special source of new ideas is the creative industry like sector of knowledge-intensive business services (KIBS). This sector offers high-qualified knowledge-based services to

business customers. Clients of KIBS look for original solutions and creative input for their innovation activity [30,31]. KIBS specialized in creative services, such as design and communication, manage symbolic knowledge and hence they can develop specific knowledge management strategies or rely on external creativity inputs where the customer is not necessarily involved [32]. Despite huge differences between sectors, Brown proposed the design thinking approach to explain to manufacturing firms how they can benefit from adopting the same method of design companies to innovation (rooted in three stages: inspiration, ideation and implementation) [33].

There is also another external source of creativity and new ideas. Interaction with customers is especially valuable for creativity to understand client needs and while managing client expectations and think and discuss possible solutions [2]. Market orientation describes a strategy based on knowing what the customer wants. In the most creative firms this is developed into a proactive market orientation which forecasts what consumers would want if it was available and therefore focuses development on future, rather than current needs [34]. Apple is often cited as a key example of this approach. Consumers were not aware of the fact that they wanted ipods, iphones or ipads, but once available, these were all highly covetable and commercially successful bits of technology [34]. An increasing number of companies have been encouraging consumers to unleash their creativity and contribute to firms' online marketing activities [35].

The Internet provides ample opportunities for consumers to participate in firms' online marketing communications [36,37]. These online marketing communication programs put a heavy emphasis on consumers' creativity to produce innovative ideas or output [35]. Consumer creativity in solving consumption-related problems, such as how creative consumers cleverly mix different food ingredients to make a special dish [38,39], and its application for designing and developing new products [40-42].

2. 2. Internal creativity vs. cooperation with external parties

One of the challenges of managing creative processes realized on the basis of external resources is to identify and involve competent and motivated team members from external organizations, when formal boundaries no longer provide managerial authority [6]. The coordination of specialized work involving various actors is notoriously difficult. It requires extra work at the boundary between organizations [23].

It is also costly for the organizations. Critical is the ability to recognize the value of external resources. Creative industries (like KIBS) are characterized by the unpredictability of the worker's output in terms of its quality and content [31]. It encompasses the needs and understandings of individuals from different communities. The typical problem is how to translate understanding across cognitive boundaries related to occupation or different organizational norms [43].

The creativity management may be limited by a formal hierarchy. Overly creative individuals, who constantly question, challenge or "dodge" existing rules, seldom fit into organizational life [6]. Without adequate coordination, specialists might not be able to work out expected output. One of the problems with activity coordination is misunderstanding how a problem can be solved that can lead to mismatched activities by collaborators [23]. On the other hand organizational conditions in the form of structural and interpersonal relations and arrangements may stimulate creative and innovative processes [9].

Supporting creativity involves the knowledge management, the management of individuals with diverse backgrounds, and teams that cross-departmental and organizational boundaries [44].

Collaboration and coordination are especially difficult in multi-domain collaborations. Thus, it is not surprising that large-scale research and other types of collaborative efforts are more likely to fail, while smaller joint efforts involving fewer participants from few disciplines more often result in substantial outputs [45,46].

Table 1. Attitude towards external and internal sources of new solutions.

	external resources	internal resources	equally
higher level of innovativeness	45,5%	36,4%	18,1%
better knowledge of branch	32,7%	49,1%	18,2%
better knowledge of customers expectations	23,6%	58,2%	18,2%
higher creativity	27,3%	50,9%	21,8%
higher flexibility	30,9%	43,6%	25,5%
lower costs of project realization	27,3%	50,9%	21,8%
better differentiation of products	21,8%	58,2%	20,0%

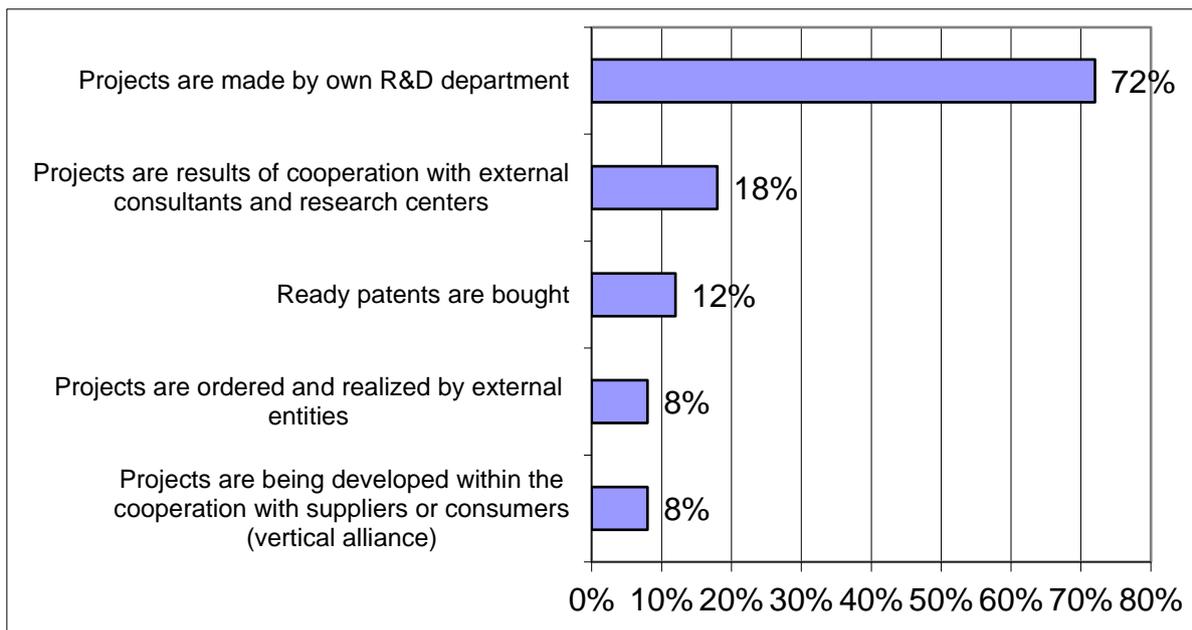


Figure 1. The sources of projects of new products.

The target of empirical part of the paper is to evaluate how creativity management is organized within enterprises and how all members contribute to the originality and usefulness of new solutions (like new design). Empirical part contains two stages. During the first stage the sample amounted 55 manufacturers. The method CATI was used to receive information about attitude of managers of these companies towards usefulness of external resources in the field of creativity and innovativeness. The first question concerned opinions about features and characteristic of external and internal sources of new solutions.

What is interesting only in one case the opinions showed the advantage of external resources over internal ones. It was a higher level of innovativeness. In the case of all remaining questions, internal resources were preferable. It is convergent with answers to the next question connected with indication preferable source of projects. It may be seen that in this sample companies obviously prefer internal R&D departments. In case of companies which use external support, most of answers showed that the reasons were:

- broad offer of possibilities (huge choice of tested solutions) 18%
- deeper knowledge about newest solutions 18%
- lower costs of new product or new technology development 14%
- higher level of technological advancement 14%
- lower risk of mistake 10%

The last question at this stage concerned cooperation with customers. Received answers concerned:

- too high prices – 60%,
- innovativeness of products – 16,4%,
- quality of products – 14,6%,
- shortening time of delivery – 5,5%,
- general logistics activity – 1,8%.

Summarizing this part of survey it may be said that external resources were not preferable in this sample (manufacturers). Cooperation with customers focused mainly on cost reduction. The participation of customers in the process of development of new solutions was very limited. The second stage of survey contained 58 companies from KIBS sector. In this case the cooperation with customers is much more deeper and more intensive. Respondents answered as follow:

- in the area of new solutions our customers cooperate with us closely – 62,1% of respondents,
- customers defined their needs and wait for our finished solutions – 29,3%,
- customers suggest some solutions – 8,6%.

The reasons of using external resources were as follow:

- deeper knowledge about newest solutions – 45,2%,
- lower costs of new solution development – 40,5%,
- higher level of technological advancement of external organization – 40,5%,
- lower risk of mistake – 40,5%.

Table 2. The meaning of contacts with external specialists in the field of innovation and creativity.

Answers	Percentage
they help to avoid mistakes	82,5
they help to get acquaintance about technological novelties which may appear in the future	57,5
they help to define direction of strategic development of the company	42,5
they help to get knowledge about activity of competitors	42,5
they help to discover quite new areas of innovativeness	45,0
they help to change the way of functioning of the company	15,0

69% of respondents said that contacts with external specialists were important or very important, but in the same time 27,5% of them had problem with clear answer – they hardly knew if this way of contacts is useful. Only for 3,5% of respondents these contacts had no value.

3. CONCLUSIONS

Presented results show clear difference between manufacturers and companies from KIBS sector. In case of manufacturers fields of cooperation with external partners in the area of new solutions development are rather narrow. Much more intensive cooperation has place in the case of companies offering new solutions. The basic factors for external cooperation are similar but number of respondents which pointed them differs significantly. When the business is knowledge-intensive and highly customized, the design provider and customer strongly interact in the field of new solution provision.

Biography

Dr. Mariusz Szuster is currently a lecturer in Poznań University of Economics and Business, at the Faculty of International Business (Department of International Logistics).

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