

CHAPTER 5

Human Resources in Business Environment Institutions Providing Innovation Support Services

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Summary: The purpose of the article is to indicate the essence of the issues related to the human resources potential of Business Environment Institutions (BEIS) providing innovation support services. For this purpose, a review of Polish and international literature dealing with these issues was applied. Statistical data from the report of the Association of Organizers of Innovation and Entrepreneurship Centres in Poland (SOOIP) was also analysed. Based on the research, it should be stated that: 1) the competences of employees providing innovation support services need to be supplemented, especially in the context of sector development, in accordance with the Industry 4.0 paradigm; 2) investing in the competences

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of innovation support services consultants will be crucial for the centres to meet the criteria set out in the new accreditation instrument and for providing services that help create Industry 4.0 solutions.

Keywords: Business Environment Institutions (BEIS), human resource management, innovation, consulting services, and entrepreneurship development

1. Introduction

Human resource management should be understood as a strategic concept in which employees (the organization's resources) are treated subjectively (taking into account their needs and expectations). It includes using this resource optimally, in the right place and time in terms of quantity and quality in accordance with the objectives and mission of the organization (Kozioł et al., 2000, p. 25). This term can also be understood as all activities related to the disposition of human resources by a given organization to achieve its intended goals (Armstrong, 1996).

However, it should be clearly emphasized that the most important attributes of a human resource include knowledge, abilities, skills, health, attitudes, values, and motivation. In addition, these are inextricably linked to a given person, and it is ultimately up to them how they will be used. Therefore, the organization has limited power over human resources (Szymankowska, 2014, p. 354).

Currently, human resource management is one of the basic elements of building a competitive advantage in business. Hence, the need to approach human resources, especially personnel issues, as strategic decisions (Pocztowski, 2007). Proper building of employee-employer relationships is necessary for the full use of human resources, and thus becomes an added value of the company (Reilly, Williams, 2012). The aim of the article is to indicate the issue of human resources who provide innovation support services in BEIS. Desk research technique was used as a research method.

2. Business Environment Institutions in Theory of Economics

The central premise of the institutional approach in the theory of economics is that institutions matter for economic activity. Therefore, the success or failure of national economies in economic development usually depends primarily on the quality of institutional arrangements (Sadowska, 2016). One of the precursors of American institutionalism, Thorstein Veblen, considered institutions as mental constructs. According to Veblen, social competencies are dominant ways of thinking that take into account social conditions, as well as individuals, and communities (Bonett, 2013). On the other hand, the way of life, which consists of the institutions operating at a given time, can be characterized as the dominant spiritual attitudes or life concepts at a given time (Veblen, 1998). In his interpretation of institutions, Veblen emphasized that it is the people themselves impose certain constraints on themselves to form habits of thought, and voluntarily, as according to him, an institution is “the established habits of thought common to the whole people” (Veblen, 1919).

The category of institutions was also the subject of research inquiries of D. C. North, an outstanding representative of the new institutional economics. According to him, institutions are the principles or rules of the game in society or, more formally, they are man-made constraints that determine relations between people. North explains that institutions put constraints on human interaction – legal, administrative and customary relations of repeated human behavior. They are a system of formal rules (e.g., constitutions, legal norms, property rights) and informal rules (sanctions, taboos, traditions, customs, conventions, norms, or rules of conduct) (North, 1997).

The cited views of researchers indicate the formation of two concepts of defining institutions in economic theory. The first (represented by T. Veblen) emphasizes the self-evolution of attitudes and the way of perceiving the world by people, who treat institutions as habits of thinking. Man is limited because of the possibilities of choice, and his activity (or lack thereof) is the result of routine, or habit. The second concept, represented by representatives of the new institutional economics – D. C. North, K. J. Arrow (Arrow, 1970) and O. E. Williams (Williams, 1998) emphasizes the role of human

freedom and independence, which are limited by external constructs (i.e. institutions). This interpretation is based on the assumption that human activity is dependent on institutions, which impose restrictions (including habits and routines) and guide human behavior (Sadowska, 2016).

The research of J. Wilkin (2002) allows distinguishing the most important institutions in the economy and society into three groups: norms, markets and organizations. Norms (legal, religious, ethical, moral, customary) determine the behavior of an individual, which is accepted in a given social group, and treated as a pattern that results from the existing system of values. On the other hand, markets determine the way human behavior is regulated by market mechanisms and organizations are institutions created to achieve specific goals (e.g., foundations, businesses, local government units, political parties), operating within existing principles and rules of conduct (Sadowska, 2016). Based on literature, the following forms of these institutions can be distinguished (Pizło, 2009; Marczyńska et.al, 2008; Wilkin, 2002):

- driving institutions, i.e. institutions that foster the creation and growth of entrepreneurship;
- stabilizing institutions, i.e. institutions that ensure the functioning of existing businesses by mitigating the effects of internal and external turmoil.

Both stabilizing and/or driving institutions are necessary for the development of entrepreneurship due to their activating, distributive, and educational functions. The occurrence of these institutions varies from country to country depending on its capacity, but also on the creation of conditions for their operation. New institutional economics focuses mainly on enterprises, especially on the internal activities of companies and their relations with the environment (Boehlke, 2000; Bolechowski, 2021).

3. Business Environment Institutions Providing Innovation Support Services

Business Environment Institutions (BEIS) accompany the development of entrepreneurship in Poland practically from the onstart of political changes. The first centres were established in the early 1990s. Initially, entrepreneurship centres, and later increasingly specialized innovation

centres, were a response to the regional need for support in social transformation processes.

When discussing issues related to BEIs, it should be stated that there is no commonly accepted definition of this term (Gródek-Szostak et al., 2017; Siguencia et al., 2018; Carney et al., 2011). This is aggravated by the fact that the subject literature uses the term interchangeably with terms such as: entrepreneurship support institutions, business facilities, business support institutions, or business-related institutions (Dorożyński, Urbaniak, 2012; Busenitz et al., 2000; Amezcua et al., 2013). For the purposes of this article, BEI is defined as a system supporting innovative processes or activities related to the creation, management, and development of an enterprise (Górzyński et al., 2006).

The lack of standardization of terminology also results from the multitude of organizations included in the BEI. Their basic division includes three groups: 1) business (e.g., SMEs, large companies, business organizations), 2) public administration (e.g., national institutions, province, county and commune governments, regional development agencies), 3) science (e.g., universities, research institutions, scientists) (Podgórska, 2011). These groups include foundations and associations, public-private companies, chambers of commerce, craft organizations, employers' associations and unions, business representative institutions, individual local government units (Matusiak, 2006, p. 108), clusters and technology parks, entrepreneurship incubators, or various types of funds.

The above-mentioned institutions include those whose main task is to support the implementation of innovations. Their main tasks include stimulating research and development activities, implementing the results, and activating the potential of economic entities. This in turn impacts the economic potential of the regions (Szopik-Depczyńska, Depczyński, 2013, p. 269).

Undoubtedly, innovation centres are a special form of a Business Environment Institution. Its activities are related to broad promotion and incubation of innovative entrepreneurship, technology transfer, providing innovation support services, activating academic entrepreneurship, and support in establishing cooperation between science and business. On the other hand, innovation support services are defined by the Commission Regulation (EU) No 651/2014, of 17 June 2014 declaring certain types of aid compatible with the internal market, pursuant to Art. 107 and 108 of the Treaty.

Table 1. Categories of innovation advisory services listed in the service brochure of an innovation centre

Innovation support services
Innovation audit
Analysing alternative development paths through the innovation implementation
Detailing and evaluation of the selected development path of innovation implementation
Preparing a detailed financial model for the developed or implemented
Innovation
Consulting the selection of innovative ideas
Searching for partners for R&D and innovative projects
Searching for and establishing contact with an innovative technology supplier or buyer
Assisting in preparing for, and conducting negotiations with the innovative technology supplier
Assisting in preparing for, and conducting negotiations with the investor regarding the development and/or implementation of the innovation
Consulting in the preparation/verification and finalization of a contract between the supplier and the buyer of innovative technology
Consulting in intellectual property management, including the protection of intellectual property rights, research on the state of the art and patent purity
Identification of, and mapping key business processes related to the implementation, modification, and optimization of innovations
Assistance in the development of functional/technical documentation necessary to implement the innovation
Development of a marketing strategy for the implemented product or service as part of the innovative technology
Development of a detailed plan for implementing innovation
Risk analysis of the implemented innovation
Consulting and assistance in the development and implementation of pilot innovations
Consulting, assistance and training in end-to-end implementation of innovations
Monitoring and evaluation of the effects of innovation implementation
Analysis of the impact of the implemented innovative technology on the natural environment

Consulting on the development of human resources
related to innovation implementation

Other reasonable consulting necessary to implement a technological innovation

Source: Gródek-Szostak, 2017

Table 1 summarizes the innovation consulting services provided by BEIS accredited under submeasure 2.3.1 of the Smart Growth Operational Program, BEI Innovation Support Services for SMEs of the Polish Agency for Enterprise Development.

1. The group of centres providing innovation support services includes: Centres declaring a full range of support services,
2. Centres with a mixed profile, not offering a full range of services,
3. Centres offering only “soft” services.

The centres that offer services in all areas of support have the greatest potential to provide comprehensive services. They can both offer space for business, as well as innovation support, R&D, and consulting services. Moreover, among the centres with a mixed profile, there is considerable potential for comprehensive support for enterprises. The last group of centres has the lowest potential for providing innovation support services. This, in turn, suggests that its potential to coordinate services within the consortium may be insufficient (SOOIP, 2019).

The development of innovation is increasingly often regarded as the main factor of socio-economic development and a key factor in building competitiveness. Subject literature offers studies with empirical evidence on the relationship between innovation and the results achieved by SMEs. They demonstrate that innovation creates value for new and mature enterprises in this sector (Rosenbusch et al., 2011, p. 441–457; Vermeulen et al., 2003).

4. Human Resources Potential of BEIS Provides Innovation Support Services

Polish BEIS employ 1,049 people providing innovation support services (on average 26 per centre). 625 (60%) work under an employment contract, and 417 (40%) based on a permanent/long-term contract of cooperation (SOOIP, 2019).

Table 2. Skills and knowledge of consultants providing innovation support services at BEIS

Area of skills and knowledge	No. of employees	Average no. of employees per centre
Knowledge of Industry 4.0 trends and the current state of the art of Industry 4.0 solutions	91	2.22
Industry automation knowledge	137	3.34
Practical knowledge on the synergistic integration of technologies	261	6.37
Skills in using specialized configuration and simulation programs for mechatronic solutions	60	1.46
Engineering skills related to construction, programming, production and simulating mechatronic solutions	68	1.68

Source: SOOIP, 2019, p. 38

Most often, the consultants/experts are experienced in project management, obtaining third-party financing, and analysing market needs. In centres providing comprehensive services, most employees have engineering skills related to the construction, programming, production, and simulation of mechatronic solutions. In centres with a mixed profile, knowledge in the field of industry automation dominates, while in centres providing soft services only knowledge of Industry 4.0 trends and the current state of the art of solutions for Industry 4.0 and industry automation prevails.

Apart from using their own potential, BEIS leverage the knowledge and qualifications of third-party experts. In this respect, the barrier is the difficulty in finding a qualified employee at rates appropriate for a non-profit, with project budgets limited by tender regulations.

The most frequently indicated competence in the SOOIP study (2019) was the practical knowledge of the synergistic integration

of technical fields with industry automation. These are essential competences in the context of providing innovation support services. On average, 2–3 employees per centre have these competences, as well as the knowledge of Industry 4.0 trends and the current state-of-the-art solutions for Industry 4.0, important for providing services in accordance with the Industry 4.0 paradigm. Therefore, we can consider the human resources potential in relation to key competences to be limited.

5. Conclusions

In 2016, the Polish Agency for Enterprise Development (PARP) published a guide “Standards for managing business environment institutions in Poland”. In the area of human resources management the following standards were proposed:

- appropriate competencies and qualifications of the management to manage the center;
- ensuring development of skills and qualifications of the employees to provide high quality services, in accordance with the adopted strategy;
- clearly defined place and tasks of each employee within the organisational structure of the center;
- involvement of the center’s employees in creating and implementing the center’s strategy;
- employee motivational policy to achieve the best results.

Both consultants and centres pursue an active training policy resulting from the progressing industry specialization of business, as well as from the detailed scope of services provided. The cost of continuous improvement of personnel qualifications is a significant operating cost of any centre supporting technology transfer. Communication technologies and preferences in terms of communication change, as do the tools used for technology transfer, and the transferred technologies themselves (Osiańczak, Olliviere, 2011).

The competences of specialists providing innovation support services need to be supplemented, especially in the context of sector development, in accordance with the Industry 4.0 paradigm. Moreover, investing in the competences of innovation support service consultants will be crucial for the centres to meet the criteria set out

in the new accreditation instrument. They will also be important to ensure services for the creation of Industry 4.0 solutions.

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