BASIC FUNCTIONS, ROLES AND RESPONSIBILITIES IN A FULLY DEPLOYED CENTER OF EXCELLENCE [1]

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***Abstract*:** The purpose of the publication is to help the creation concept of the structure, objectives and tasks of a Centre of Excellence (CoE). As a result of extensive research, and based on the experience of teams from Burgas Free University from already realized projects and studies related to the establishment of technology transfer offices, in the article are presented and summarized some basic and important functions of the CE, the main roles and responsibilities of different levels in organizational structure in fully deployed CoE, some benefits and barriers to the Innovation Center of Excellence Approach. The study is a part of a project for deploying of CoEs in the Balkan Mediterranean region to provide a central point for innovation and knowledge management with the overall goal of identifying and transferring new technologies and best practices from within and outside of the organization.

Keywords: *SME, innovation capacity, concept, structure, centre of excellence*

ОСНОВНИ ФУНКЦИИ, РОЛИ И ОТГОВОРНОСТИ В НАПЪЛНО РАЗГЪРНАТ ЦЕНТЪР ЗА ВЪРХОВИ ТЕХНОЛОГИИ

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Резюме: Публикацията има за цел да подпомогне изграждането на концепция за определяне на структурата, целите и задачите на Център за върхови постижения в областта на иновациите (Centre of Excellence CoE). В резултат на задълбочени проучвания по темата и опитът на екипи от Бургаски Свободен Университет от вече реализирани проекти и изследвания, свързани с изграждането на офиси за технологичен трансфер в статията са представени и обобщени някои основни и важни функции на CoE, основните роли и отговорности на различни нива в организационната структура в напълно разгърнат CoE, някои ползи и възможни проблеми при изграждането му. Проучването е част от проект за разполагане на Център за върхови постижения в Балканско-средиземноморския регион, с което да се осигури централна точка за иновации и управление на знанията с обща цел за идентифициране и трансфер на нови технологии и най-добри практики.

Ключови думи*: МСП, иновационен капацитет, концепция, структура, център за високи постижения, център за технологичен трансфер*

Introduction

CoEs provide a central point for innovation and knowledge management, with the overall goal to obtain the ability to identify and transfer new technologies and best practices from inside and outside of the organization. CoE does not work on a "one-size-fits-all" model. For each organization, a structure should be created to work for it. There are several scenarios in which a CoE will not meet all needs. When there are many different business or geographic locations, we often find that what works best is CoE's corporate core level, supporting several separate CoE branch departments. It describes an overall concept of the CoE organizational structure, which could be a basic for several similar structures' creation in the Balkan Mediterranean region. The goal of this paper is to summarize some basic and important functions of the CoE, the main roles and responsibilities of different levels in organizational structure in fully deployed CoE and some benefits and barriers to the Innovation Center of Excellence approach.

Functions vary across the different stages of the Innovation Center's life cycle. At the beginning of the lifecycle functions are derived from the tasks solved at this stage: construction and maintenance

[1] The article presents some of the obtained results under project "Innovations Platform and Tools for increasing the innovation capacity of SMEs in the Balkan Mediterranean Area (InnoPlatform)", BMP1/1.2/2370/2017.

of a database with the necessary resources and tools, policies and standards; providing expert services for business management solutions and projects; creation of a primary prototyping laboratory. In the next stages of development, the functions are defined by an extended scope of activity: maintaining knowledge about the activities and processes typical of a particular business field; providing specific business knowledge; ensuring the criteria and standards for reporting the results and progress of the project [1][2][3][4].

The functions of the Innovation Center of Excellence are due to the idea that innovation is measuring, planning activities, delivering [5]. In implementing the project according to its program and specific strategy, the efforts are not only into to research and to go more depth into different challenges, but also to accelerate project. In that sense one based function is acceleration.

Another important function arises from the possibility of the platform for services which are provided to customers - enterprises, namely information about all types of innovation. Platforms provide both financial solutions and intellectual capital [6]. This means that it is linked to many platforms that provide knowledge and communication with many science centres.

Let's also pay attention to the functions to help customers and their businesses to redefine new challenges and sometimes to redefine new business models. The customer service platform provides training, advice, and many new things.

The 4th function is innovation culture and development. As is well known, innovations cannot be taught by traditional methods. The idea behind this function is that there must be many people who are progressively changing their attitudes. This means promoting the ability to design, to start new ideas within a company and, on the other hand, to stimulate dissemination of the innovation ideas [7]. The second important point of this function is development. The built lab offers a list of approaches, to meet all the challenges arising from new projects and will engage all customers to develop new opportunities to develop new services or a new business [8].

The strategic objectives of the Innovation Center of Excellence are:

- Scientific excellence: solve scientific challenges in various fields such as nanotechnologies, robotics, ICT, green industries, maritime industries, etc.;
- Technological innovation: deliver technological solutions; stimulate entrepreneurship, growth and employment at regional level;
- Social goals: provide the enabling technologies for environmentally sustainable production methods.

The focus of the activity is in helping organizations to move from incremental to breakthrough improvements, creating the next generation products, to remain leaders in their field, to control their future, gain competitive advantages. This will be accomplished through (Figure 1):

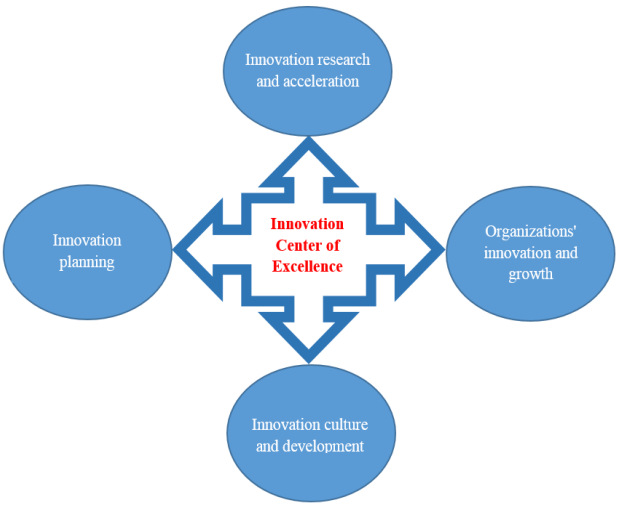

Figure 1. The Centre of Excellence Purposes

• Providing information about new user data;
• Supporting the process of adopting and adapting new technologies;

• Supporting external cooperation through innovation partnership networks;
• Helping identify new business opportunities;
• Supporting the introduction and entry into new or emerging markets;
• Provide opportunities for rapid experimentation in our laboratories;
• Providing a database with new ideas, ideas, innovation and creative problem solving;
• Providing a unit to serve processes, methods, approaches and models to use the collected information and data;
• Providing industry best practice information;
• Provide an educational resource fund through training and practical experience.

Applying the innovation management approach to organizational growth requires a number of specific functions of the day-to-day work of the Center [9]. These functions are presented in the following Figure 2:

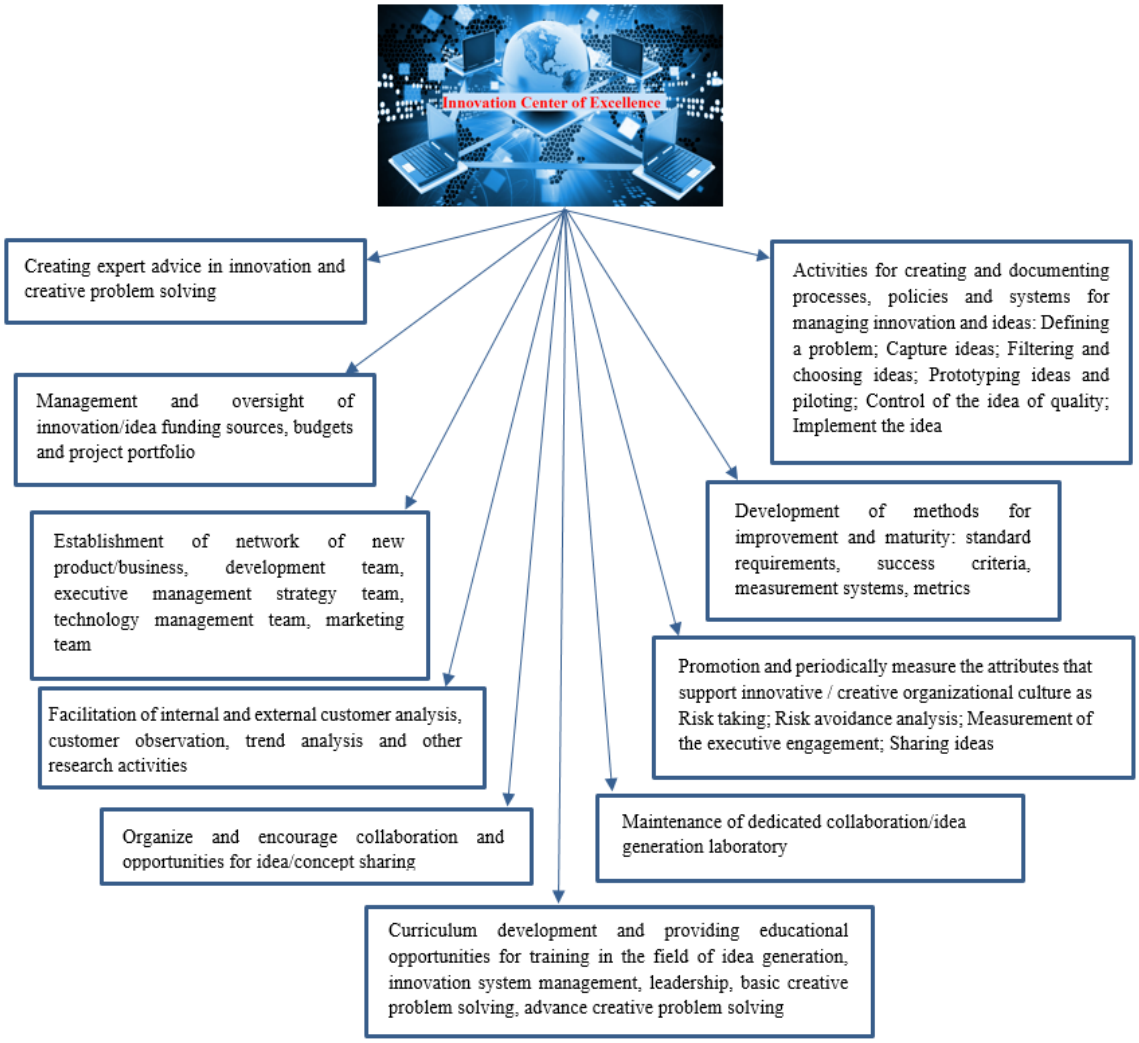

Figure 2. The Centre of Excellence Functions.

The key to these performance goals and operational functions are people, knowledge, processes and collaboration (Figure 3).

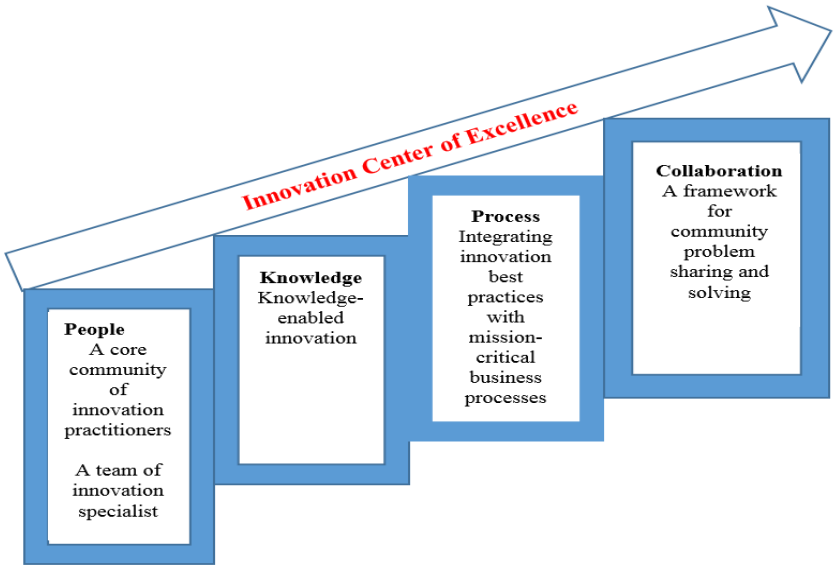

Figure 3. The CoE Major Key Success Factors

Innovation is an outgrowth of the people and the culture of the organization. If people are encouraged to innovate and motivated appropriately, the culture and processes will follow. Different people bring different skill sets and viewpoints to any project, so exposing ideas and innovations to a broad team can improve the chances of success with new ideas [10].

Innovation is the transmission of knowledge from research to development to application, with sharing knowledge through collaborative innovation becoming increasingly important. The cumulative nature of knowledge and cheap reproduction imply that the knowledge to be made freely accessible so that diffusion of innovation can occur as quickly and cheaply as possible [11], [12]. Effective application of knowledge can bring faster development of new products and services, optimize R&D investment, and ensure closer alignment with market needs, more successful product introductions and competitor differentiation.

There needs to be a process in place to manage ideas from concept to implementation.

Innovation is increasingly collaborative, involving more people during the process of innovation. Collaboration is at the core of "open innovation" — a trend where disparate sectors and/or disciplines come together as a means to innovate. Relationships developed across sectors, disciplines and areas of study and practice may yield greater returns. The platform can become an interdisciplinary network that includes young professionals who can reveal the answers to persistent challenges.

Roles and responsibilities in fully deployed CoE

Roles and responsibilities vary depending on the current structure and budget of CoE, but resources usually fall into one of the following four categories:

- CoE Leaders,
- CoE Core Team,
- Expanded CoE team
- teams responsible for each relevant project.

If a large project cannot be funded, then we can create a small core team that will begin to develop along with the investment from sponsorship or from the organization subject to innovation and the CoE's value-added value.

The management of a fully deployed CoE will consist of CoE Manager, Financial Manager, Technical Manager, Enterprise Manager, and Project Leadership Team.

The management team provides executive assistance and management of the project teams. Since both (financial and technical managers) are represented in leadership, engineers and business is working as partners in project assurance.

The core CoE team consists of the CoE Administrative Manager, Financial Manager, Technical Manager, Business and Entrepreneurship Leader, and Executive Team Leaders. This management team

is responsible for the implementation and input from the project teams. They are tasked with standardizing delivery processes and delivering value added services to CoE. They must take care of ownership and improve best practices and methodologies, enable project team members to participate in certain ventures, find and deliver projects, fund their funding, participate in their management, control, lead to a successful end, etc.

Extensive CoE - includes many experts, depending on the size and maturity of CoE. The expanded team depends on the field of applications and the need for knowledge in the different areas. It is formed dynamically to support the CoE's projects. These experts provide feedback to the main team about how they can improve their work.

Implementation teams for each project - they work under the guidance of CoE and manage the project on the ground. They are responsible for the day-to-day achievements and scope and results of the projects in accordance with the best practices and methodology defined by CoE. The project team (s) consists of Project Manager, System Architect (s), Business Architect (s), Small and Medium Enterprises (SME) and QA participants. Some of these participants may be appointed by the partner or a resource provider (technology, know-how, research, information, etc.).

CoE's philosophy is that attracting and collaborating with customers gives the best results. This collaborative philosophy of the CoE's team and of the teams and staff on site provides the best effect. We believe that customers are best served if they can be trained and later develop and independently develop the functions of CoE.

In some cases, some organizations want to create their own development team before having trained, experienced staff. In this case, CoE can help by offering specialists one or more critical roles while the client starts working alone [13]. Typically, in this model, CoE will assign leading roles until the client is ready and can provide these resources on its own. In many cases, customers will also use certified partners to take on the needs of a particular project - for example, System Architect.

The typical CoE client is maintained and provided by CoE, with certified specialists being an integral part of the customer team, providing top-of-the-line technical expertise and support, as well as a link to resources and training from CoE. This includes:

- Access to CoE's expert design resources - a live connection with CoE's experts who respond to technical and design issues and ensure successful project design.
- Direct access to CoE's project management team, a team of expert diagnostic and situational managers working in different fields that are deployed to support delayed or difficult projects.
- Access to specific information, documentation and artifacts of the CoE implementation methodology, design of best practices, project management and testing.
- Extended technical information and support, including technical notes and notes for developers that are not directly accessible to customers,

Considering the available resources of each of the partners in the CoE's project, we believe that the initial structure of a regional CoE from different partners should be defined by each partner individually.

This is because of the possible regional and national peculiarities as well as due to the different experience of the sites to be worked on [14].

However, a recommended structure to which the partners adhere is as follows:

1. Appointment of a CoE steering team to include in its composition -

- Head of CoE;

- Financial Leader or Specialist in charge of the CoE financial activity, as this activity can initially be undertaken by the Lead Partner of the project;

- Executive Team Leader or Technical Manager (s);

2. Ensuring the administrative area, differentiated for the activities of the center;

3. Provision of the necessary technical and software tools for the information structure, training and information resources, demonstration center, conditions for conference connections, etc.

4. In the CoE, the following major teams of specialists should be organized:

- a team to investigate prospective customers;

- a CoE Team and the necessary experts on relevant projects to organize and conduct meetings with and between them;

- a technical team to deal with the technical aspects of certain projects;
- Organizational Coordinator;
- Technical contractor (s) - Responsible for providing technical support to the center - Hardware, software, administrative support, etc.

5. Development of the necessary rules, standards, criteria necessary for the successful work of the CoE.

Benefits of an Innovation Center of Excellence Approach

The financial sustainability of the Innovative Center of Excellence will be based on the proposed activities and services. Its affirmation among the business community derives from the realization of the following economic and social effects [15]:

Increasing the revenue of potential beneficiaries through:

Supporting the implementation of new products / services;

Helping to manage of new product and service investment risk / reward ratio.

Reducing the cost for potential beneficiaries through:

Providing specialized research services, requiring special scientific expertise, in developing a new product / service;

More accurate estimation of project-based work;

Reduced product development lifecycle time and cost;

Reduction of organizational rework and/or duplication of effort.

Reducing the risk for potential beneficiaries in the process of developing a new product/services through:

Opportunity to share risk in research;

Exploitation of consistent and proven methodology.

Increasing the speed of commercialization of new products / services through:

Providing information about specialized resources that have an enhanced focus on growth;

Decreased time to problem resolution;

Assistance in managing risk taking;

Providing dedicated research and prototyping activity.

Improved communications and change management through:

Providing centralized coordination and communication across business units;

Supporting the creation of scientific-technical alliances and consortia;

Helping to overcome organizational and financial barriers to innovation;

Providing processes, models or approaches available for moving ideas into execution;

Increasing awareness of growth focus and desire for new ideas;

Focusing on customer needs and problems;

Helping for reduce the impact of informational, staff and psychological barriers to innovation;

Offering specialized training for all good practices, standards and processes.

Support for training of the workforce to achieve a functioning competitive innovation-oriented economic model through:

Providing training on creative problem solving;

Providing training on idea management;

Providing training on innovation management concepts.

Developing innovative culture among young people through:

Stimulating the entrepreneurial spirit and promoting the importance of innovation among students, young professionals and start-up entrepreneurs;

Raising awareness of good European innovation practices;

Support for young entrepreneurs, emerging and existing high-tech SMEs through business consultations.

Using the opportunities offered by the Innovative Center of Excellence, organizations are able to supplement their innovation initiatives to maximize sustainability until value creation is measurable, repeatable and transferrable. The Laboratory of the Innovative Center of Excellence will provide chance for rapid prototype development to the organizations, enabling a level of creativity that results in ideas that shape, define and change the way organizations do business.

Barriers to the Innovation Center of Excellence Approach

The functioning of the Innovative Center of Excellence and the implementation of its mission will be carried out in an environment of high degree of uncertainty and uncertainty in the behaviour of the participants of the target groups. This leads to the following barriers that may limit success [16]:

Barriers resulting from the lack of interest in innovation and innovation process:

Low innovative enterprise culture;

The innovation activity of the business is directly influenced by the existence of an economic crisis by limiting public and private funding for research and development and indirectly as a result of worsening the environment for innovation;

Executive-level conflict on strategic direction or intensity of growth focus;

Lack of organizational readiness for growth focus;

Potential for executive-level disconnect due to assumption of a well-managed system;

Lack of ability to reduce the influence of organizational change;

Lack of commitment by business leaders to the innovation process;

Mistakes made in the work of the center:

Lack of appropriate measures to evaluate results in program milestones, budget execution, quality and deadlines;

Lack of appropriate feedback mechanism with end users of the Center of Excellence;

Lack of appropriate communications mechanism that limits correlation of increased capabilities, value and benefits to the activities and work products of the Innovation Center of Excellence;

Barriers due to the Center's activities:

Centralizing innovation management may lead to individual or business unit level apathy;

Centralizing innovation management may impede the ability of the organizations to crowd source innovations from your own staff;

The Innovation Center tends to assert its ownership of the innovation management processes, thus obtained “innovation bureaucracy” can hinder a companies’ ability to be innovative;

As the source of innovation, the Innovative Center of Excellence may determine which group should lead the development, which may slow the ability of the organizations to respond to threats and opportunities in the marketplace.

Conclusion

The publication aims at helping the creation of successful CoE and the definition of its structure, objectives and tasks. As a result of extensive research in the article are presented the basic and supplementary functions of the CoE, the main roles and responsibilities of different levels in organizational structure in fully deployed CoE, some benefits and barriers to the Innovation Center of Excellence Approach. The study is part of a larger project for deploying of CoEs in the Balkan Mediterranean region to provide a central point for innovation and knowledge management with the overall goal of identifying and transferring new technologies and best practices from within and outside of the organization.

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