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The Modern Approach to Competencies Management Based on IT Solutions

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Abstract

Purpose: to outline ways how to support the innovative and competencies management in modern corporations including those operating in IT and online banking sector.
Design/methodology/approach: the analysis of the best practices of competencies management including those which use IT-tools.

Findings: Analysis of advanced practices of competencies management shows that modern social and IT technologies can be used to solve business problems and form new unique competencies. Among the most important examples of this kind of technology are electronic portals and platforms with different features, which allow attraction of a large number of internal and external experts to collaborate. Modern Internet technologies can also help in collective collaboration in the innovative process itself.

Research implications: Though the form of IT portal for innovation process seems to prove its efficiency, the optimal functionality of a portal is still in question. So the future investigation and testing is required, including the special research in the Internet banking sector, if a portal is designed for its special purposes.

Practical implications: The results of the analysis of the best practices in the field of competencies management can be used in the development of corporate tools aimed to form and control the unique competencies and competitiveness.

Social implications: Creation of modern corporate portal of this kind can help a corporation to achieve better results and to increase the competitiveness level both on domestic and foreign markets.

Originality/value: The analysis will help to improve the efficiency of management in companies, the growth of innovation activity of enterprises, as well as the competitiveness of products and services, which in especially actual in online finance sector.

Keywords: **Competencies; IT-solutions; Crowdsourcing; Platforms; Open innovations; Key competencies management**

INTRODUCTION

The practice of "open innovation" refers to the active collecting and use of both internal and external knowledge, projects and competencies from the market to accelerate internal innovation processes, generating own unique competencies and marketing

development. In today's world, knowledge is widely distributed and therefore a company will receive the maximal effect, if it attracts (in form of purchase or licence) the results of external R&D or gathers inventions, while opening for sales or licensing its own technology simultaneously. A more enforced version of this approach encourages the intensive search and attraction of external teams to corporation's needs and the possibility to sell the services and research work of corporation's own teams to external customers, if it is possible and profitable. The natural way to improve this activity is to use modern IT tools. The aim of the paper is to analyze some best practices and outline the requirements for an IT platform for competencies management.

MAIN FINDINGS

The "open innovation" ideology implies that in the decision process on new competencies development a company should consider the alternative whether to develop it autonomously, within the corporation, or the competencies would be acquired on the market. Also, a company should possess a wide range of tools to find the missing knowledge on the market in case of its availability, and to sell existing competencies if they are not fully-used or if they can be sold without damage. In the modern economic conditions the emphasis is transferred from the mergers and acquisitions of businesses and purchases of the results of intellectual activity to the search of the active project teams (even at the formation stage). McManis [1] reported that the opposite and not less important task is to attract external demand for corporate's own developers, if they are underloaded or have the available time.

According to the modern interpretation of the "open innovation" principle, for every corporate planning period (according to its planning cycle) a company should have a clear idea which competencies it should develop internally and which competencies should be planned to be bought or taken from outside [2].

Tikhvinsky [3] reported that an advanced and modern way to organize the competencies management in a corporation is to create a software platform for external search and management of competencies, including a list and a classifier of competencies, or to subscribe for an existing one. This platform allows professionals-both internal and external to the company – to communicate among themselves, in a formatted and moderated manner, which does provide legal or intra-corporate approval of all actions performed (for example, the deal of the competencies purchase, or the choice of one solution among several proposed with the subsequent agreement).
This platform can also be used as a tool for organizing the collegial work of many individual experts based on the methods of expert analysis and collegial work, and can be designed to perform such tasks that in a traditional offline way, using formal project teamwork and sessions in companies could be ineffective by reason of significant money and time loss. The example of the significant gain from online support can be the case of the organization of multinational team collaboration for solving a new technical problem in a short timeline. Without a portal the data transfer and mutual connection that could be significantly more difficult and time consuming.

Gawer [4] reported that advantages of these platforms are:

- the possibility of delivering company's problems and obtaining solutions to them from the employees or involved external specialists, even when tasks may be supplied in the form of a search for the required competencies ("ordering for innovations");
- the systematization of the idea generating process, rapid assessment of generated ideas by experts and other participants of the innovation community, that is built around the company;
- turning the ideas coming from the community into innovative projects and possibility of monitoring for its implementation on the same portal by the same experts;
- monitoring of the performance of all participants in each project through the various stages of the innovation process by the portal-based interface;
- the semi-automatization of identifying the best ideas, the best innovators and experts on the basis of the rating methods.

Software platforms that are aimed to implement "an order for innovation" and creation of new competencies generally consist of three major modules:

- A module for generating ideas that is a tool for setting corporation's goals and problems, which can be delivered to the open innovation community, as well as the tool of idea generation for the non-corporate user's intended purposes (if they are also the registered users of the platform and the corporation allows that). The release of this module contains the database of ideas as solutions for the problems, comments on them left by the experts and moderators, and the assessment functionality for the innovative community of the portal users or appointed experts. Also the database of teams offering solutions not having but only willing to develop the ideas can also be kept and moderated.

- A module of the evaluation and selection of the ideas, which provides a selection of the best ideas from the database based on their ratings. The module provides an environment for peer review of the best ideas and the subsequent selection of ideas for implementation on the basis of the expert evaluation. The result of the work of this module is the list of ideas selected for implementation, and the list of ideas that have been rejected because of their uselessness, inefficiency, non-marketability or for other scientific or business reasons, but can be reassessed and used again in the near future.

- Modules for training and project management give the tools to describe the concept of an innovative product or service/solution on the basis of the selected ideas, and to manage the project together with partners. The release of this module contains systematically and continuously updated management information on the progress of the project.

Architecture and technology are often the same on different platforms and belong to a large class of "idea management" tools, which are intended to improve the business results. The corporation can consider the possibility of using the existing platform.

Gratton [5] notes that over the past few years, many companies have launched their own platforms of the same kind for the purpose of making a profit by attracting a large number of external participants for generating the ideas and innovative projects. Some firms use independent multicorporate platforms and the important profit of the latter is the common and large expert base.

The platform InnoCentive is one of the first of this kind, which is focused on crowdsourcing. It is designed to organize the process of generating ideas and complex problem solving for day-to-day needs in business, social, scientific, and technical spheres.

Using a unique methodology of InnoCentive each task with the assistance of specialists is evaluated and then divided into smaller sub-tasks, which are assessed and then addressed through the system's interface to the community that has approximately 300,000 people. Those who are interested in challenge and reward for work (which is announced inside the system by the customer) represent their ideas the customer to evaluate their decisions. The customer chooses the winner who picks up his award and gives in turn the right to use the intellectual property if it is created in the initiated project. InnoCentive supports the widest range of tasks: from the generation of business ideas for marketers that promote a particular product to complex technical or scientific problems. Sometimes, according to the results of that proposed decision the team of the authors receives invitations to work in the customer's corporation, thus forming the new competencies [6].

NineSigma is one of the largest innovation partners for companies worldwide, contributing to the promotion of the practice of "open innovation" including competencies management. Thanks to its own social network, Grand Challenge program, the rapid growth of the platform was supported. Due to move to new large markets, NineSigma has reached a serious level of development.

NineSigma platform has a whole range of options for business, the purpose of which is to develop innovative solutions to enhance domestic resources and to attract external. NineSigma platform has offices in the United States, Europe, Asia, and Australia. NineSigma network of solvers is one of the biggest in the world and consists of more than 2 million people. And the structure of the participants is as follows: 52% are representatives of business, 34% are students or academic staff of educational institutions, 14% is government institution, non-profit structures, other consultants [7].

Another popular resource is Yet2.com. Unlike NineSigma and InnoCentive, Yet2.com deals with the exchange of ready-to-introduce technology between companies, universities and government laboratories, and the basic unit of transfer is a package of intellectual property, although the practical results of the transaction can be hiring teams. Yet2.com helps clients to describe the technology that they want to buy or sell, and distributes this description by its global network. Members of the network initially communicate with the customer through Yet2.com. Thereafter, the parties shall

cooperate directly.

For example, Yet2.com accumulates the descriptions of all the patents, the authorship of which is owned by units of Proctor&Gamble (P&G) and its key partners, and uses this database as the B2B-market for intellectual property. Given that only 10% of 27 000 company-owned patents are used regularly; the remaining 90% in the absence of such a market would constitute a "dead load". By means of this IT-system those patents are actively transferred to the market, if they do not contain any secret information [8].

A good example of an internal portal to search new contacts and networking in technology development is the InnovationNet which is also used in P&G. It is a web-portal of P&G internal network for 18,000 innovators of the company engaged in scientific research, engineering development, carrying out marketing activities, procurement and registration of patents. It looks like the "global cafe" for the ideas exchange.

The Wazoku project, which is a platform for idea and innovation management, helps businesses of all sizes to get the best ideas from employees, partners and customers. Mechanisms of Wazoku allow capturing, creating, evaluating, prioritizing and then choosing best ideas and their sources. The basic module of the Wazoku is called IdeaSpotlight. It applies the crowdsourcing technology to gather information, assess it, and then subsequently sort. One of the disadvantages of its crowdsourcing is considered irregular qualification of project participants. And for example, if we are talking about collecting views on the bone marrow transplant, you need specialists in this area, and not just amateurs. That is why Wazoku emphasis on gathering information from within the client company and other companies in the industry [9].

The New Zealand startup HunchBuzz provides a platform for the cloud-based customer and employee interaction. HunchBuzz allows entrepreneurs and businesses to build strategically and manage innovative internal and external ideas network with powerful research tools for feedback and gamification. Hunchbuzz enables enterprises to explore and create new innovative ideas through the community or, on the contrary, in a closed secure environment, enabling innovative research market [10].
The foreign experience in the area of technology transfer, innovation, and other objects of competence management reveals the variety of possibilities for automatizing of the idea generation management and communication exchange between creative teams using IT-portal.

A Russian example is the Witology portal, which creates online community with new principles of interaction and extensive capabilities for large-scale collective intellectual work. To date, the productive work involved hundreds of thousands of participants, more than 30 national-scale projects have been already implemented for clients such as the Moscow City Government, “Azbuka Vkusa”, Sberbank, Rosatom, Russian Railways, Agency for strategic initiatives and many others. The most famous project within Witology was in financial sector. Sberbank, the leading bank of Russia, which is

creating a wide platform for e-banking so it looked for new ideas in field of customer relations with the help of Witology functional.

The capabilities of the considered platforms of open innovation are presented in the Table 1.

Table 1: The capability of the open innovation platforms.

Platform Capability	**InnoCentive**	**NineSigma**	**Yet2.com**	**InnovationNet**	**Wazoku**	**HunchBuzz**	**Witology**
Ideas generation	+	+		+	+	+	+
Expert evaluation of ideas	+	+		+	+		+
Solving complex technical problems	+	+					+
Marketing solutions	+	+		+		+	+
The presence of social networking		+			+		+
Integration with corporate programs	+	+	+	+	+	+	+
Scientific competitions		+					+

Now almost all banks across the globe offer online banking with different capabilities and the competition is intense. Online Banking platforms have existed for more than a decade now and offering online banking is now as good as a commodity [11]. Hence the present focus is not on getting the customers to adopt online banking, but, instead, having the customer adopt the latest technology in online banking. With more and more customers enrolling for online services, the banks are under constant pressure to provide distinctive and unique features catering to niche segments [12,13]. So they need a well-managed system to adopt and use the innovations, and “open innovation” princnple is widely used.

In Russia one of the most influential companies in the area of e-payment is Qiwi, which is listed in the stock market. It possesses the system of gathering innovations, which are then selected to it fund, Qiwi Ventures. Another influential financial entity in Russia, Alfa-bank, develops a platform of collecting the innovations in banking sector to search a synergy between startups and its own banking platform.

So, the question is, what basic parameters should be implemented in the IT system dealing with new competencies formation and innovation search. The System should include the function of interaction with the external environment to heir the teams capable of new competencies generation and development. On the one hand, it should have an information space, which includes information on a wide variety of professionals, teams and tasks. The information put by participants themselves obviously contains a large amount of information "noise" that must be filtered both by the System (in the case of poorly completed forms) and by the supporting team interface. And, on the other hand, the portal should provide the capable teams (including research) with the information about customers’ needs and should have the functionality to arrange close technological and commercial interaction between them. If the System is promoted properly it will soon be filled with the vast array of information that can be used for the efficient operations of the company in the search of the sources of new competencies.

For the efficient organization of the portal activities the company needs to supply information regularly for inclusion in the portal database (information about teams, competencies, customers, problems etc.), what should be reflected in corporate regulation documents. The portal should reflect the following information:

- the ordering forms for work, problems, and services;
- the forms to describe the commands and personal cabinets of leaders and team members;
- the competency description forms;
- the R&D description forms (for completed and unfinished R&D), including the description of the patents, and other IP objects.

To generate and gather ideas the corporate and external crowdsourcing function can be

used. Crowdsourcing technology combined with the use of modern information and communication technologies, united within a single portal, can provide a unique and versatile tool and a method of management and search for innovative solutions, development of corporate innovation climate, support technology exchanges and attracting key competencies from the market in order to increase the competitiveness of the company.

The portal should support the involvement of a large number of participants including professionals from the company, universities, research institutes and other structures, as well as from the private sector. The system should provide the ability to professionals, experts, and other interested people and structures to serve as active participants in the development and establishment of various ideas and have functional collaboration to implement the customer's tasks. The system must allow collecting data to get sufficient feedback in the form of identifying the feasibility and the efficiency for those or other proposed innovative solutions through the communication interface with large number of experts.

The portal introduction shows significant positive practical effects for a company.

- Improving the transparency and openness for new ideas coming from internal and external experts and even customers will increase speed of corporate's development.
- The company's development of small and medium-sized projects, including those of breakthrough nature will increase of investment attractiveness of the whole firm.
- Creating the demand for services and technologies, improving the competitiveness of a company, will become the solution of certain marketing problems.

Within the framework of the portal it is possible to seriously improve the organization of technology transfer, "custom for innovations", purchasing and selling the objects of intellectual property (patents, licences, etc.). The sections organized for teams of inventors, researchers and developers of new products, technical solutions and technologies, will make them be interested in commercializing their inventions, as well as their objects of intellectual property rights to the company interested in expanding their business and in creating new markets for high-tech products.

The section of intellectual property trade within the portal should be organized in the online forms through which intellectual property owners (including holdings) will be able to declare on their sites (according to properly made guidelines). Potential buyers should be able to gain access to information that enables them to order specific objects of intellectual property, and even create an application on the portal to the conclusion of a juridical firm agreement.

When there is more than one applicant for exclusive ownership of an intellectual property object the System with the agreement with a seller may start competitive bidding procedures in order to win a preferential right to conclude a license agreement. More complicated deals with the owners of the intellectual property for sale of objects,

the negotiations, and conclusion of license agreements, contracts of purchase and sale, delivery of intellectual property can be organized in an offline mode, although the document templates can be provided by the System.

The portal should have a function to search for specialists and teams from a number of external participants to integrate them in the firm.
To attract talented employees in the company that would become part of a competitive team, a company should follow some best practices carrying out each recruitment procedure.

- Clearly specify in the portal the aims and goals which are required from the new team, what qualities should they possess and what qualities/skills, which the company is ready to teach them.
- Prescribe, what will be the training program, which starts after the staff/team is hired.
- Briefly describe the system of motivation and benefits associated with the result. Gains of the team should be associated with the effective work for the company. The Portal term can be equipped with an automatic system of compensation size depending on the number and impact of implemented projects.
- Reflect on the portal the personal characteristics of the members such that career development, training. Based on these data, the company could improve a cycle of development of the staff and external teams, establish a system of trainings aimed at achieving the corporate goals.

For internal staff-members of the portal the staff appraising system according to the following criteria can be organized (the members can be concentrated in a single database):

- what professional skills an employee has inside;
- what skills the employee seeks to develop;
- what programs an employee participates for corporate and personal training in his/her specialty;
- how much he or she is paid and satisfied with the payment (based on a poll data);
- how and employee is characteristed as a team worker;
- results performed in the projects finished.

The same moments could be applied apply to external specialists.

The process of formation of a staff reserve can also be carried out within the framework of the portal. Under the process of forming the reserve the need for personnel in this category should be determined for the nearest and remote perspectives taking into account the following factors:

- the emergence of additional or new leadership positions;
- open positions associated with natural retirement of personnel for various reasons;
- requests for new competencies.

Within the framework of the Innovative Portal the task of supporting the reserve can be limited to the positions associated with key unique technological competencies.
Using the mechanism described above it is important to focus not on the number of involved discussion of interested individuals (business representatives, scientists, students, etc.) but on the quality of the ideas of active participants in the process of generating proposals and hiring personal and outsourcers in the Portal. Due to low physical and financial cost, the mechanisms described above should be considered as efficient and recommended for implementations.

CONCLUSION

In modern conditions it is extremely important to actualize in industrial companies the competencies management mechanisms and tools for this task. Introduction of new approaches will help to improve the efficiency of management in companies, the growth of innovation activity of enterprises, as well as the competitiveness of products and services, which in turn will accelerate the pace of socio-economic growth.

In this paper the analysis of the most popular platforms of open innovations is carried out. There is considered the functioning features of such platforms, as InnoCentive, NineSigma, Yet2.com, InnovationNet, Wazoku, HunchBuzz, Witology. Such mechanism of open innovation allows companies to make a profit and develop the competencies by attracting a large number of external participants which can generate the ideas and innovative projects.

The results of the analysis of the best practices in the field of competencies management can be carried forward in the development of the conceptual bases of the corporate portal creation to manage innovation and competencies with a view to applicating the most effective mechanisms to form and control the unique competencies and competitiveness.

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