Management issues of smart growing business: knowledge-oriented employees as a critical competitive factor

Anna A. Dokukina

1 Plekhanov Russian University of Economics

Abstract. Modern companies are creating their value through various projects. In this connection project management approaches to smart growing business is developing faster than other managerial techniques; methodology and tools are getting more efficient and supplementing different business areas. Despite the high level of development of the management field, there are a lot of challenges in implementation of knowledge-admired concepts and models. Knowledge management as a system is one of them. Globalization makes business create new success factors, and experience can be the crucial one, especially if the company is innovative and operates in the high technological industries. Referring to the early definition of knowledge management – “in its simplest form, knowledge management is about encouraging people to share knowledge and ideas to create value-adding products and services” – researchers in this field of study try to highlight social intentions of knowledge management as primary ones. But at the same time several significant changes in organizational environment, such as growth, can create the need for more precise and formal initiatives in terms of managing knowledge. This paper presents the outline of research devoted to the knowledge management system to be integrated into the project management of a company. The main question is about the personal issue: are the employees ready for implementation of Project Knowledge Management, and what managerial decision can be made in this connection.

Keywords: business smart growth, information society, organization, knowledge management, social factor, employees, decision making.

JEL Codes: O10, O31, O32

1. Introduction

Global market relations determine the economic development of companies and new management approaches and techniques. Modern business activity is characterized by de-materialization of the value chain, and therefore the decrease in need for physical resources and increase of knowledge-intensity of work content. As a consequence, knowledge plays an important role as intangible resource of organizations. At the same time the degree of temporary forms of co-operation and working constellations is also growing. Comparing to other managerial approaches, project-oriented tools are quite new, but according to several recent researches, popular enough and prevalence of economic activities is exactly project-based. [4]

1. Assoc.Prof. PhD (Economics), Tel.: +7 916 6118987; fax: +7 495 9582947
E-mail address: Dokukina.AA@rea.ru
The main problem in project management (PM) is that knowledge is generated within one project and then lost. Failure to transfer this knowledge within the organization leads to wasted activity, for example very common “re-inventing the wheel”, and decreases the project performance as a result.

This happens because the focus on short-term performance of the project concept could be interpreted as conflicting with the long-term knowledge management goals of the organization in which the projects are organized. So organization should find a way to harmonize those processes and find common goals and objectives for both approaches.

At the same time knowledge management (KM) as an organizational approach is getting more and more popular in modern business environment since it is a source of competitive advantage. However most of the literature has no empirical basis, but is focused on the conversion of tacit knowledge. [1, 5]

Despite the existence of several actions to prevent the loss of knowledge and some experience, only a few firms manage systematically to identify and transfer valuable knowledge from projects to following projects. [3]

Being a universally recognised as critical competitive asset knowledge defined increased interest in KM. Taken together, a commitment to effective KM in the context of a project-based business strategy is emerging as a potent means of establishing and sustaining competitive advantage.

So far, literature has identified the specific problems and challenges of project knowledge management (PKM) but does not provide businessmen with concrete solutions of how to manage knowledge in project-based performance. Of course there are several empirical researches focusing on single or few cases and project types; there are also models developed for specific organisations, but there is still a lack of general and transferable solution. Men of light and leading in this sphere, such as Hanisch, Lindner, Mueller, & Wald (2009), consider a systematic approach towards PKM as rather uncommon by now. [4]

Since project activity can be considered as company’s operation, IT and KM are used to improve business. However, most of the attempts to link IT and KM to project environment are still sparse and disconnected. Even after valuable investment in IT, managers face the difficulty integrating it into the business performance, which is even more critical in case project-based company. [1]

Lierni & Ribière (2008) conducted the research and found that largest group of PKM users came from organizations with more than 10,000 people and most of them represent IT industry. At the same time, they noticed that there is an increasing interest in developing integration of KM into the project management of the firms and, therefore, a trend of focusing more on people rather than on IT. [6]

These ideas define presented research issue related to understanding of human factor in PKM system within the smart growing company.

2. The Model of project knowledge management system: basics of the research

2.1. Research scope and objectives

The study is focused on managerial effectiveness of various projects and opportunities to keep the corporate unique knowledge. It is self-evident that all companies are facing problems and making mistakes. To find a solution they are spending certain amount and types of resources – money, time, people, – which are nearly equal because, all in all, reduce company’s profit. However, in spite of the difficulties of knowledge-oriented development, the corporations can introduce appropriate system to combine their operational, information and intellectual advantages.

The primary objective is to explore the KM approach and develop critical success factors for its implementation within a company. It is a rather new science dimension, but there are a lot of researches and case-studies to analyze. PM best practices should be reviewed as well in order to find solutions for knowledge capturing and sharing between employees, business units, project offices and company in general. In particular, the research looks at two potentially knowledge-admired elements – IT and HR – and
analyzes how they can be integrated. Finally, to develop and implement a practical-oriented model of PKM System based on gained information and experience.

2.2. Research Questions
At the beginning of the research proposal there were just few questions:
- can KM really increase company’s efficiency, or it is just new trend (like innovation myths)?
- is there any solution for knowledge management given by PM best practices?
- how do companies deal with this issue nowadays?

After collecting some information about the subject some more questions were raised:
- how PKM can be efficiently implemented?
- are there any software solutions for PKM?
- are the employees ready for implementation of PKM?

For obvious reasons most of these issues are beyond the scope of this article. So this paper essentially deals with the individual’s attitude of being a part of the corporate KM System and being involved in knowledge capture. Of course, among the conclusions some additional points of the project are also mentioned.

2.3. Methodology
Research methods include literature review, interview, survey, sample and appropriate tool.

As it has been found out, PKM as a scientific area is not well developed and described in the literature. This can be explained by the age of KM in itself, since it became an independent field of study only in mid-90s. In Russia, for example, first publications were translated only in 2003\(^3\). So the background is mostly focused on business articles representing world best practices. Additionally, it should be mentioned that appropriate terminology of PKM and existence of this approach was discovered only in the half of publications. Mostly they were about situation analysis and problem definition for future researches. On the other hand, this helped to put the questions and specify certain points of the main subject and problem solving. Particularly, it is connected with the corporate culture importance in KM and following studies in HR management field.

In order to get real business cases and best practices around 10 interviews with representatives of Russian and European companies were made. The format of interview was informal and unstructured conversational type, without predetermined questions and the object of interview in order to let people describe his or her own perception and understanding of the subject. Although, there were several predefined dimensions for the conversation, topics to discuss in other words:
- project management practice in respondent’s organization;
- understanding of KM approach;
- common communication and information sharing channels;
- intentions to develop organizational culture and its present values;
- best practices or problems which an organization aims to develop

As a means to develop the appropriate model of PKM System and support empirical assumptions about individuals’ behavior in terms of the KM process a web-based survey was created. The main aim of the survey was to prove that modern well-educated or experienced staff is ready for being a part of a PKM System. At the same time key problems and weak areas should be defined in order to find a managerial or technological solution to try and eliminate them. Finally, any surprising opinions were expected.

In case of this survey a stratified sampling probability method was used. A stratum is a subset of the population that shares at least one common characteristic. Examples of strata might be males and females, or managers and non-managers. In case of PKM research it was 100 people sample of high-educated professionals or last year students.

The survey was send to various companies and universities in Russia and Europe. The survey was available on both Russian and English languages. The meaning of questions was absolutely similar, so responses could be analyzed together. All the responses were collected in less than one week, after the required amount of respondents was reached, collecting process was stopped. SurveyMonkey was used as a web-based tool that enables to create online surveys.

3. On the issue of employees as a part of the corporate PKM System

3.1. Concept of PKM System in brief

PKM is an approach that provides the link between the principles of knowledge management and project management. Love et al. (2005) set the standard for understanding knowledge issues in project environments. They put a particular focus on KM in the context of cross-functional and international project teams as well as on the role of organizational learning in projects. [7]

There are a lot of common examples of unsuccessful KM within project activity. For example capturing knowledge and experiences is dropped because of missing time resources. Moreover, there are individual and social barriers to capture individual knowledge and experiences, which Disterer describes in his earlier researches (2000, 2001). [2]

Disterer (2002) tried to adapt several KM practices for project-based firms regarding their implementation in routine organizations, which are already well established. Unfortunately only few of them can be transferred (Fig. 1). [3]

Knowledge capturing process should be well managed; working steps and time budgets should be aimed at keeping and transferring knowledge; experiences must be predefined. Additionally responsible person has to be defined in order to manage how experiences have to be documented, stored and preserved.

Even though knowledge management should be implemented to each step of the project, project closing is becoming the most important phase to identify and to capture new knowledge, especially analysis of failures and mistakes.

Full and by, the corporate KM system can be described as follow (Fig. 2).
Fig. 1. The general model of PKM System

Background for management decision. Employees behaviour and KM

Based on the survey results company’s top management can define if their employees are ready to be engaged in PKM processes and define areas in their behavior and cultural maturity.

Background and demographic information.

a. The average age of the respondents is 27 years, ranging from 20 to 47 years;

b. 90% of respondents are working, and 6% from them are self-employed. 10% of overall amount are still students, but only 2 of them do not have any work experience (Chart 1).

Chart 1. What is your current occupation?

58% of respondents have work experience more than 3 years and 38% less than 3 years. So the results of the survey represent the opinion of experienced staff with deep understanding of business (Chart 2).
c. 67% of respondents are working in project-based organizations and 27% of them are taking a part in projects. So the biggest part of the sample is familiar with project management techniques and practices (Chart 3).

Therefore, this sample is representative for case of this research and understanding of the results is quite important of PKM model developing.

1. **Personal behavior.**
   a. It is useful to know the attitude of individual to Social Media technologies and his or her usage of it. 43 % of the respondents are active users of Social Media, taking advantage of various networks and services. On the other hand, 45% of respondents are using Social Media only for communication and taking advantage of services’ convenience. It is important to take into account the remaining 12% who are not really using this technology. It shows that not every single worker is ready to accept new ways of communication for various reasons and it can be of primary importance in implementation of PKM approach. The main idea is to apply common tools for all the users, and if employee does not use it in his personal life, it would be much harder for him to do it at work. Socialization duty is the one that hardly can be just forced in business environment, and 12% are crucial (Chart 4). However this is a subject for future research.
b. Blog type of Social Media can be also considered as an example. Here is the one, which is known for quite a long time and common for overwhelming amount of the Internet users. At the same tool it is one of the first and most important tools of KM, when it is just an empirical science even. 67 respondents do not use this tool at all, while 23 of them have a public one and only 10 respondents are taking their personal notes. This information is a bit surprising, but can be explained by a new political and advertising role of blogs, which can confuse regular users (Chart 5).

c. 70% of respondents have their school notes archive, which is quite impressive for the sample with an average age of 27 years. But only 33% can rapidly find something there. This is a brilliant example of how people appreciate their knowledge; they do not want to lose it even 10 years after, even understanding low relevance of this information. At the same time they are not making an effort to store recent information (Chart 6).
d. The most interesting part of the survey is represented by two questions: what people do when they need some information and when they find this information. Most of the respondents (77.6%) often try to find solution themselves, and 86% of the samples are using search engines in order to find solution on the Internet. This fact is not surprising, but it proves people’s intention for independence in their decision making process and creativity. And on top of it, only 2.3% of the same sample ask questions in Social Media, and 83.7% practically never do that. At the same time it is also found out that almost 85% of the sample will most likely call a competent friend rather than ask a question in Social Media, probably because they do not want to make their questions in public (Chart 7).

\[chart 7. What are you doing when you are facing an issue you don't know how to deal with?\]

\[chart 8. What are you doing when you found a brilliant solution for some issue?\]

e. Only 2.4% of respondents are posting their discovered solutions on the Internet. That can be explained by one of the KM barriers called “Fear of exposure”. It means evidentially that 86% of the respondents are often looking for information which is generated by only 2.4% of them. This fact is surprising and confusing at the same time. In this connection the following question appears: if 3% is enough to find relevant information? (Chart 8.).
The next idea is about perfect balance between knowledge creators, knowledge consumers and how company can influence that. On the one hand, it is dramatic for knowledge; on the other hand, if all 100% often publish their solutions on the Internet, there will be a search and quality issue. So it is not only a cultural, but also an IT issue.

Many efforts have been recently done in order to find a system which is capable to analyze a huge amount of various information and provide user with a human-adapted answer. This approach is called Big Data and known as one of the most hyped terms in the market today. The first Big Data Hype Cycle helps enterprises develop strategies to address the growing business need for insight from datasets of increasing volume, velocity and variety.

Gartner\(^4\) defines big data as “high volume, velocity and/or variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision-making, and process automation”

Probably this will be still a question for a couple more years, but going back to the survey results, 61.2% of respondents are doing nothing with generated knowledge, while only around 9% are writing it down at least for themselves. So a lot of information is lost for individuals as well as for society. In fact, it creates a problem. But KM is an approach to solve it. There is a bunch of tools and processes of information capture, share and reuse, which can be adapted for individuals or large companies.

2. **Knowledge Management.**
   a. Looking at individuals’ attitude to KM it was figured out that 77% of the respondents are aware of KM existence, and even 20% of them know how to deal with that. Still there are 23% who do not know what it is even about (Chart 9).

   ![Chart 9](chart.png)

   Chart 9. What do you know about Knowledge Management?

   b. The following results are not so optimistic, because only 2% of the respondents use this approach on everyday basis. Of course there are people who are doing it when the subject is important (24%), but that does not contribute to the efficiency or overall KM System within an organization, it just helps to reduce the risks. There is also a fact that 10% of the respondents have tried to do KM, but gave up because of complexity of the process. That means a good system and optimized processes can 5 times increase KM users (Chart 10).

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\(^4\) The world's leading information technology research and advisory company (http://www.gartner.com).
c. Most of the respondents (82%) believe that sharing their knowledge can lead to their promotion, 27% of them think that this can happen because company’s management would mention their skills and competences, while 8% do not consider it to be noticeable for the top management. Basically it means that most of the employees are ready to share their knowledge, especially if the firm states it as a noticeable action (Chart 11).

![Chart 10](chart10.png)

**Chart 10.** Are you using Knowledge Management methodology and techniques?

- Using KM on everyday basis: 64%
- Using KM when the subject is important: 24%
- Used to, but it was too hard to maintain: 10%
- Never done that: 2%

No, it is not a significant factor for promotion:
- No, nobody will mention that: 8%
- No, because everybody will be the same level and employee will: 8%
- Yes, because it will show employee’s competence to the: 2%
- Yes, because it will increase company’s knowledge: 60%

**Chart 11.** Do you think that sharing knowledge with colleagues can lead to a promotion?

d. Finally 84% of the respondents intend to work in admired knowledge company, constantly learn and share their knowledge, while 12% state that they just do not need it. That can be reasoned by not understanding overall picture of KM approach and the way of its implementation to the particular specializations (Chart 12).
In short, the survey results demonstrate that employees are ready for being a part of the firm’s KM System and want to be involved in knowledge capture and share for both personal and corporate purposes. The most serious problem is that there is no clear understanding of concrete actions they should do in order to achieve these goals. So, common tools and processes description provided by the company are needed.

4. Conclusion

PM is quite developed management approach, but still there are several issues to solve, and in this connection KM is one of them. In particular, there are no precise methodological patterns that can be effectively applied.

At the same time, for already 20 years KM methodology is being developed. There are a lot of world best practices, empirical studies and publications about how companies should treat it. The conditions of innovation economy are the background to such processes. Smart growing organizations have to address complex business changes, react fast, and be flexible to new and interdisciplinary economic, managerial and financial issues. That is why the business organized on the project basis is on a strong increase, and projects are accepted to be one of the most admired knowledge organizational forms.

However, project has a temporal nature, so when it is over, the project documents, details, contact persons, etc are hard to access, or even lost. Therefore, the acquired knowledge and experiences have to be identified, prepared and distributed through specific actions to bridge the boundaries between one project and business developments, or the firm's permanent organization. An important knowledge management function has to handle the knowledge and experiences from projects.

Promising activities focus on the closing of projects, where dedicated and conscious steps of reflection have to be taken. Therefore a working atmosphere, which allows open and constructive discussions, must be provided by management. Additionally systematical collections of project profiles and contact persons can support the reuse of knowledge in other projects. Faster finding of similar problems or experts for certain questions can speed up and improve project work. Moreover a systematically exchange of knowledge and experiences makes the acquainting of a new employee considerably easier.

According to Peter Van Sommers “It is widely acknowledged that traditional Project Management techniques are no longer sufficient”⁵. The success of projects depends on the right combination of knowledge and experience, therefore dissemination and usage of existing knowledge is critical. Companies must spend

sustainable learning efforts not only for one project, but for the future of the company. Failures must be seen as opportunities to improve rather than to blame people involved.

Beside existence of various models and approaches, most of the researches are common in culture issue regarding implementation of KM. As a conclusion, here are some general ideas.

Our society has chosen technocratic evolution dimension and is successfully following it. Most of the innovations in any industry (such as creation of new computers for medicine, new analytical software for psychology, new planning systems for management and etc.) are based on the technological progress. KM is a much more complicated concept, and refers not to only one evolution dimension. However, the society is already mature enough regarding the cultural side. But even if such a conceptual sociological question is still a purpose for discussion, it is obviously possible to develop appropriate culture with single company – that is idea many researches are focused on recently.

With this, possible cultural or societal influences on PKM must be considered when comparing the results to further research from other parts of the world. Another point of interest might be the comparison of the study’s findings to research conducted in the non-profit sector. In this context, the question arises, whether PKM might be affected by different working styles, long-range goals and sustainability and different intrinsic motivations of employees. [8]

Some of them have already developed the PKM approach, but it also does not provide common findings about the organization, instruments, and appropriate methods. Moreover, the actual user behavior of PKM systems has not been investigated so far. Perhaps, this explains why there are no precise PKM tools and methods. There is an experience at this filed, but still no common success factors defined.

Managerial decision on integrating of PKM systems is more common for companies with high project- and knowledge-intensity as can be found in the plant construction sector, construction and consultancy services.

The most important implications for project managers arising from the present study are that successful KM initiatives require appropriate incentives for team members and a user-friendly information system that facilitates the sharing and management of knowledge among all project participants. However the generalization of the findings may be partial by reason of limited empirical study sample.

Organization must be favorably disposed to develop and maintain a working culture of sustained focus towards project objectives and goals. Additionally, senior management must promote a culture of trust and dependence with the use of open communication to nurture team participation, mutual support, and collaboration in all project teams. With the use of factors such as performance measurement, innovation, learning, and team coordination, organizations can establish and promote behaviors and values for effective use of information.

Technically, unique and effective IT systems are needed to meet specific business and project needs. This approach will help a firm link IT with business results and a future development. IT systems should not be designed in isolation with the assumptions that people will use it for productive purposes. Besides, information behavior and values, and consequent information management practices should influence IT practices, which may not be the case in many organizations. Finally, the results show that KM and PM practices support each other and together, they influence information behavior and management practices.

In summary, the paper concludes that KM activities in project-based firms have comparatively little to do with technology; rather, the focus must be on the behavior and attitudes of people as determined by the professional, organizational, and, perhaps, national cultures from which they come. In their efforts to implement effective KM, senior management must give particular attention to these cultural issues, which are critical for the success of knowledge-management activities. There are a few recommendations top management can do:

1. Create a no-blame culture that is really the key. If people are to be open about their project knowledge, they must feel assured that there are no unfavorable consequences of openness.
2. Allocate sufficient time and resources for project post-mortems and documentation. There should be a rule, strictly enforced; that a project is not over until the knowledge gained is properly managed. If possible the post-mortem should be facilitated by a qualified facilitator who is not involved with the project.
3. Establish easy to reference project records. These should be with unique reference to documentation of failures and what could have been done to avoid them.

These are issues, which are related to culture and, hence, can only be changed by intensive efforts from the top management.

This study has examined the critical success factors for KM initiatives in project-based organizations. Drawing on the suggestions of various researchers in recent years, the study makes an attempt to propose a conceptual model of such factors. Six factors have been identified and included in the model:

1. Familiarity with KM.
2. Coordination among employees and departments.
3. Incentive for knowledge efforts.
4. System for handling knowledge.
5. Cultural support.

Successful KM initiatives require appropriate incentives for team members and a user-friendly information system that facilitates the sharing and management of knowledge among all project participants.

There are solutions for the first four parts, but there was nothing for the fifth one. During the social technologies investigation the idea of using new collaborative approaches came up. Of course, the thought concerning using Corporate Social Networks is not absolutely new, but taking into account its potential synergy effect for KM initiatives, it can be pretty innovative.

This finding leads to development of PKM model that includes three components:

I. Individuals – personal KM and attitude should be developed. Regarding the implementation, it is about hiring right staff for a company doing PKM.

II. System – appropriate system using (for instance, in our case Enterprise 2.0 has been studied) approach and providing collaborative and knowledge management tools for users.

III. Management – developing specific corporate culture and establishing necessary organizational processes.

As it has been mentioned above, this paper mostly covers the ideas related to the first, and, partly, the third layer. So, the theme provides wide opportunities for future researches based on the framework of the PKM model. Regarding the findings the following subjects are considered for more deep research:

1) What factors should be the basis to make IT corresponding to PKM needs, and to what extent the technical decision should be universal and unique at the same time.

2) How to involve in knowledge capture and sharing top management representatives or high-qualified staff?

3) How to implement PKM in terms of high privacy and security requirements for the firm’s business activity?

4) What is the best way of financial motivation calculation for knowledge management activity?

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6. References


