

Sharovara OlenaAssistant, Department of Project Management, orcid.org/0000-0003-3429-1486

Kyiv National University of Construction and Architecture, Kyiv

**JUSTIFICATION OF THE NECESSITY OF KNOWLEDGE MANAGEMENT
CONVERGENCE IN MULTINATIONAL PROJECTS**

Abstract. *Over the past decade, major projects typically involve professionals from all over the world, expanding the scope of competencies that a project manager must have. Multinational project teams and the creation of virtual project teams are the norm in a modern globalized economy. The transition from project management, in which the entire team is local, to the management of teams covering different time zones and nationalities becomes a new challenge. Globalization researcher K. Omaye considers that globalization is an irreversible process that deprives the traditional notions of national politics, trade, and citizenship. In this sense, in his opinion, the economic nationalism of individual states has now become meaningless. The formation of a single global meta-space (which is influenced by PESTLE factors) for free and effective business on an international scale becomes an urgent need. However, every single common global space based on the action of the principle of universality. A fundamental scientific problem arises – creation of an adequate model of convergent knowledge management in multinational projects, describing the process of scientific and innovative development of society at all its stages and levels. Considered from a rational and empirical approach what is important in the knowledge management is their functionalist perspective, because it allows to know about the rational world while integrates the disciplines and individuals as substantial components of multinational projects. There is a need to convert different intellectual resources into shared knowledge platform within a project to deliver better-customized services. Current efforts in managing knowledge have concentrated on producing; sharing and storing knowledge while projects require the combined use of these intellectual resources to enable organizations to provide innovative and customized services and deliver projects successfully. A review of the literature and research evaluations published by the researchers were made to justify the necessity of Knowledge Management Convergence in Multinational Projects.*

Keywords: *Knowledge Management; Convergence; Multinational Projects; Knowledge; Information; Data*

Introduction

The development of the post-industrial era has led to a rethinking of classical economic resources and management processes. At present, information and knowledge have become the dominant elements of economic development, both individual companies and the economy as a whole. The article discusses practical approaches to assessing the role of information and knowledge in multinational projects.

The term knowledge is widely used, but often quite vaguely, among leaders of organizations and information management specialists. There are a huge number of definitions of this term, having different origins and in different contexts. One of the frequently used definitions of knowledge from the point of view of managers is the following: “Knowledge is a combination of data and information, to which opinions, skills and experience of experts are added, which results in a valuable asset that can be used when making decisions. Knowledge can be

explicit (formalized) and / or hidden (non-formalized), individual and / or collective” [2, 3, 5].

That is, knowledge of the project is placed in the heads of people, in various physical objects, such as print materials, audio, video materials, multimedia tools, as well as in various objects of the information system, for example, programs, electronic documents, multimedia files, and databases. All these elements are knowledge objects (KO), i.e., specific pieces of information that are interconnected with each other and, if properly applied, help to solve the tasks of the project. Knowledge is not only a result of the knowledge of reality, but also a constant process of testing the experience gained through analysis and generalization of information, as well as the formation of actions to refine these results in the event of discrepancies. In the process of accumulation, new knowledge moves from an implicit form to a formal one and integrates with existing, thus providing new opportunities for innovation development [1; 3].

Analysis of last achievements and publications

The theory of knowledge management was formed as a section of management under the influence of research by such scientists as Drucker P., Svibei K., Eric Nonaka I., Senge P., Alavi M. and others. The most authoritative researchers in the field of general theory of knowledge management can be attributed to such authors as D. Skirm, H. Takeuchi, U. Borhhooff, G. Bhatt, B. Lev, L. Prusak, T. Davenport, B. Milner, B. Bukowitz.

Various models of knowledge management are formed within different approaches and theories in different fields science – epistemology, psychology, management, cybernetics, computer science, cognitive science, artificial intelligence theory, synergetics, creativity, quantum theory, heresy and etc., each of which studies in its aspect as it is notions of "knowledge" and management processes.

The phenomenon of knowledge was also considered in their works by a large number of scientists of different fields of science, among which we will note the works of Gogunsky V., Neizvestniy S., Yatsyshin Y, Kutsenko M., Tesla I., Khlevna I., Ambos T., Serna E.

The search equation results in 431 potentially relevant documents. After relook for duplicate results, 237 unique documents remained. Then, by reading all potentially fitted abstracts, introduction and conclusions, 73 articles were accepted that read for the full text and 29 were marked for quality review. When the quality review was carried out, there were 21 documents for data extraction.

Research aim and task

Despite the strong influence of culture, values, professional standards, etc., management scholars typically pay relatively little attention on it, as they tend to focus on the transfer and adaptation of "best practice" across societies because of their technological efficiency. [10, 12]. In particular, multinational projects tend to face "institutional duality" between the home country where their headquarters are located and host countries where their subsidiaries are operating [13, 14]. This neglect means that an important piece of the puzzle has been missed, given that "the success of their transfer is determined by the transferability of meaning and value, in addition to the transferability of knowledge [13]. Studies about the Knowledge transfer, however, have not paid much attention to the possibility of multiple meanings across different countries.

Furthermore, in so far as the extant literature does consider Convergence of Knowledge Management, it exhibits conflicting views on how effectively Knowledge is transferred. For example, it was rather identified as a form of "exploitation" of local labor enabling companies to demand that employees continue to work for longer

hours than expected in their job descriptions. In South East Asia, on the other hand, it may be accepted in that peoples' behaviors tend to be collectivistic [15], yet it may still depend on the economic status of a host country [16; 17].

The existing literature, therefore, exhibits several gaps in research. First, knowledge transfer, although highly manifested, remains poorly underexplored in multinational business research. Second, although discussions about transfer and adaptation of practice in multinational business research focus primarily on best practices at the social and industrial level, they tend to neglect day-to-day practices. Therefore, this initial study of the literature identifies an important research question that must be answered.

Knowledge management diversity in present moment

Knowledge management now has a decisive role in the system of organizational, managerial, and economic interactions implemented in the process of project management. In today's economic conditions, characterized by, in particular, the reorientation of the economy to the innovative model of development with its accompanying decline in dependence on raw material exports, the role of economic goods with high added value, which creation is determined by the quality of used knowledge. Which, is determined by the efficiency of the applied methods of managing this knowledge.

After studying the various definitions of the concept "knowledge management", it can be concluded that each organization/ project team must clearly formulate a definition that will reflect specific processes understood by the term "knowledge management".

Despite the fact that knowledge management is one of the basic management concepts that influence current business development trends, it should be noted that organizations and project teams often have an erroneous understanding of knowledge management, which is based on the management tools that an organization uses in a specific moment.

In every organization, documents are created, data is entered, information is sent and, in many ways, daily work and production processes are documented. On the other hand, employees exchange ideas daily, to inform or clarify doubts or discuss formal or informal topics about their functions. All this is a permanent process in which data and information are refined into knowledge [6; 7]. The problem with this knowledge is that, mostly, it resides in individuals and, sporadically, in small groups. In this way it can be classified as explicit or tacit according to the way it is shared: if it is left in documents or published by some means then it is considered explicit, because it is possible to use it and apply it in the activities where it is required. But, if it is only in the mind of the employees, either because it has been accumulated by the

experience or because you simply do not want to share, then it is tacit, because it is hidden and it is not published or communicated. [4]

A synergistic set of concepts that shape the horizons of a new understanding of convergent transformation in knowledge in multinational projects requires an interdisciplinary approach.

In general, the comprehension of the presented problem requires solving problems:

- Analysis of the main characteristics of multinational projects;
- Analysis of existing models of knowledge management.

In multinational projects, the main differences can be in the following areas: various general educational and professional standards, language barrier, culture and values, personal views and worldviews, technological differences, content management etc.

With regard to knowledge management models – there are four main Knowledge Management lifecycle models in use internationally:

1. The Wiig KM Model (1993) It focused on the three conditions that an organization must fulfill for successful business:

- A business (products / services) and customers.
- Resources (people, capital and facilities).
- The ability to act.

In this model, he emphasized on the concept that knowledge is the way to make decisions and solve problems. Therefore, the KM is important to facilitate the best use of knowledge in organisations. He proposed the term "working smarter," which means we use all our available best knowledge. Therefore, the Wiig KM cycle has specified how employees or organizations build and use knowledge.

The stages of the model: Building knowledge, holding knowledge, pooling knowledge, applying knowledge.

2. The Meyer and Zack KM Cycle (1996) – In this cycle, the main factor is the information products. Meyer and Zack suggested that the processes used to design products could be extended to the intellectual domain. At the same time, each stage of the KM cycle increases the product produced by the model. They suggested that knowledge products are presented as a repository that holds the content and structure of information. This repository contains the raw material of knowledge, data, and information that are the core elements of knowledge products.

The stages of the model: Acquisition, Storage/retrieval, Distribution, Presentation or use.

3. The McElroy KM Cycle (1999). He emphasized that organizational knowledge is held both subjectively in the minds of individuals and groups and objectively in explicit forms. In this model, he suggested using the knowledge of the organisation in business process environment and evaluating it through feedback loops.

When it meets the organisation expectations, it is reused and become a part of the organizational capital, and if not, the business process behavior is adjusted and reused again.

The stages of the model: Individual and group learning, Knowledge claim formulation, Information acquisition, Knowledge claim evaluation, Knowledge integration.

4. The Bukowitz and Williams KM Cycle (2000) – "The way organizations generate, nurture and use strategically correct knowledge to create value" is the concept that Bukowitz and Williams have pointed out in their model. Therefore, it deals with the storage of knowledge, relationships, information technologies, communication infrastructure, functional capacities, process knowledge, environmental awareness, organizational intelligence and external sources. In addition to the dependence on long-range processes, which make knowledge management convenient for the company's objectives.

The stages of the model: Get, Use, Learn, Contribute, Assess, Build and Sustain, Divest.

If we consider the basic international standards and regulations in the field of knowledge management, we might see a variety of them:

1. A series of standards CWA 14924 – European Code of Conduct for Knowledge Management.
2. Series of standards PD 7500 – British regulations in the field of knowledge management.
3. Series of standards HB 189-190 and AS 5037-2005 – Australian regulations in the field of knowledge management.
4. DIN PAS series – German Standards Institute
5. VDI 5610-1: 2008 – Union of German Engineers
6. NF X50 190: 2000 – French Association for Standardization.

7. In addition, it should be taken into account the contribution to the development of the theory of knowledge management by Japanese scientists, on a series of publications by I. Nonaka and H. Takeuchi.

8. Butterworth-Heinemann Publishing Company – launched the series "Resources for the Knowledge-based Economy" and started publishing an annual yearbook on KM and others.

Knowledge Management Convergence

The main mechanisms of Knowledge Management Convergence are:

- Knowledge development;
- Knowledge Transfer;
- Technology transfer;
- Benchmarking;
- System self-organisation and evolution;
- Change of personality of project participants.

In this article we will focus on Knowledge transfer in Multinational projects.

Knowledge transfer (KT) is one of the most important processes for knowledge management, and mainly consists of three activities: gather the knowledge from a source, code it through a channel, and pass it to a recipient [21]. KT inside the knowledge management could be seen as a final process, because after create, store and share the knowledge, only when transfer occurs knowledge management makes sense and could be said that is useful and [20], otherwise – from that point of view – knowledge management is just an effort to create a repository of knowledge.

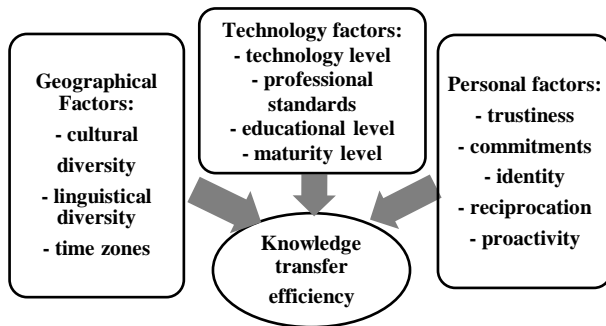


Figure – Knowledge transfer efficiency factors in Multinational projects

Knowledge Management Convergence in Multinational projects might deliver such benefits as: Best decision making, Smoother collaboration, Enhanced

learning, Improved communication, Improved employee skill, Increased employee satisfaction, New or better way of working, Sharing best practices, Enhanced the continuity of the project, Improved employee loyalty and retention, Improved productivity/efficiency, Increased empowerment of employees, Increased sales/profits, Time reduction, Develop new business opportunities, Developing core competencies, Enhanced flexibility, Improved business processes, Faster new product development, Improved responsiveness, Reduced risk, Enhanced customer relation, Enhanced products or services quality, Enhanced customer satisfaction, Better management of intellectual capital, Increased speed of innovation, Improved revenues through licensing of patents, Reuse of information and Knowledge.

Conclusions and perspectives

Summarizing this analysis, we might give a conclusion that successful management of knowledge in multinational projects requires the creation of a new convergent model of knowledge management, the novelty and originality of which determine the changes in the structure of fundamental and applied research related to the development of knowledge management, as well as new approaches to Managing the community of professionals involved in multinational project.

References

1. *Philosophical Encyclopedic Dictionary. (2000). Moscow, 166.*
2. *Nonaka, I. & Takeuchi, H. (2011). Company – the creator of knowledge. – The origin and development of innovations in Japanese firms. Moscow: Olympus Business, 384.*
3. *Alavi, M. & Leidner, D.E. (2001). Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues, MIS Quarterly: Management Information System, 25(1), 107 – 136.*
4. *Serna, E. & Serna, A. (2019). Maturity of knowledge management in requirements engineering. RISTI – Revista Iberica de Sistemas e Tecnologias de Informacao, 17-01, 123 – 141.*
5. *Tuzovsky, A.F., Chirikov, S.V. & Yampolsky V.Z. (2005). Knowledge management systems (methods and technologies). T: Publishing house NTL, 260.*
6. *Davenport, T. (2010). Process Management for Knowledge Work. Handbook on Business Process Management. USA: Springer, 600. DOI 10.1007/978-3-642-00416-2.*
7. *Rus, I. & Lindvall, M. (2002). Knowledge Management in Software Engineering. IEEE Software, 19-3, 26 – 38.*
8. *Kimiz, Dalkir. (2011). Knowledge management in theory and practice. Mass.: MIT Press, 485.*
9. *Mohapatra, S., Agrawal, A. & Satpathy, A. (2016). Designing Knowledge Management-Enabled Business Strategies. Springer, 196. DOI 10.1007/978-3-319-33894-1.*
10. *Elger, T. & Smith, C. (2005). Assembling Work: Remaking Factory regimes in Japanese Multinationals in Britain. NY: Oxford university press, 422. DOI:10.1093/acprof:oso/9780199241514.001.0001*
11. *Chen, J.-S. & Lovvorn, A.S. (2011). The speed of knowledge transfer within multinational enterprises: the role of social capital. International Journal of Commerce and Management, 21-1, 46 – 62.*
12. *Oliver, N. & Wilkinson, B. (1992.) The Japanization of British Industry. 2nd ed. Oxford Blackwell, 384.*
13. *Kostova, T. (1999). Transnational transfer of strategic organizational practices: a contextual perspective. Academy of Management Review, 24-2, 308 – 324.*
14. *Kostova, T. & Roth, K. (2002). Adoption of an organizational practice by subsidiaries of multinational corporations: Institutional and relational effects. Academy of Management Journal, 45-1, 215 – 233.*
15. *Abo, T. (2015). Researching international transfer of the Japanese-style management and production system: hybrid factories in six continents. Asian Business & Management, 14-1, 5 – 35.*

16. Vo, A., & Stanton, P. (2011). *The transfer of HRM policies and practices to a transitional business system: the case of performance management practices in the US and Japanese MNEs operating in Vietnam*. *International Journal of Human Resource Management*, 22-17, 3513-3527.

17. Vo, A.N, Rowley, C. (2010). *The internationalization of industrial relations? Japanese and US multinational companies in Vietnam*. *Asia Pacific Business Review*, 16, 1-2, 221 – 238.

18. Ambos, T.C. & Ambos, B. (2009). *The impact of distance on knowledge transfer effectiveness in multinational corporations*. *Journal of International Management*, 15-1, 1 – 14.

19. Bushuyev, S. & Bushuyev, D. (2017). *Fundamentals of individual competencies for managing projects, programs and portfolios (National competence Baseline, NCB Version 4.0). Volume 1 Project Management / under the editorship of Bushuyev S.D. K.: Summit Book, 178.*

20. Kumar, J.A. & Ganesh, L.S. (2009). *Research on knowledge transfer in organizations: a morphology*. *Journal of Knowledge Management*, 13-4, 161 – 174.

21. Albino, V., Garavelli, A.C. & Gorgoglione, M. (2004). *Organisation and technology transfer. Benchmarking: An International Journal*, 11(2), 584-600.

Received 04.10.2019

Шаровара Олена Михайлівна

Асистент кафедри управління проектами, orcid.org/0000-0003-3429-1486
Київський національний університет будівництва і архітектури, Київ

ОБҐРУНТУВАННЯ НЕОБХІДНОСТІ КОНВЕРГЕНТНОСТІ УПРАВЛІННЯ ЗНАННЯМИ В БАГАТОНАЦІОНАЛЬНИХ ПРОЄКТАХ

Анотація. За останні десятиліття у великі проєкти зазвичай залучаються професіонали з усього світу, розширюючи сферу компетенцій, які повинен мати менеджер проєктів. Багатонаціональні проєктні команди та створення віртуальних команд проєкту є нормою в сучасній глобалізованій економіці. Новим викликом стає перехід від управління проєктами, в яких вся команда є місцевою, до управління командами, що охоплюють різні часові пояси та національності. Дослідник глобалізації К. Омайє вважає, що глобалізація – це незворотний процес, який позбавляє традиційних понять національної політики, торгівлі та громадянства. У цьому сенсі, на його думку, економічний націоналізм окремих держав тепер став безглуздим. Нагальна потреба – це формування єдиного глобального метапростору (на який впливають фактори PESTLE) для вільного та ефективного бізнесу в міжнародному масштабі. Однак кожен спільний глобальний простір базується на дії принципу універсальності. Виникає фундаментальна наукова проблема – створення адекватної моделі конвергентного управління знаннями у багатонаціональних проєктах, що описує процес наукового та інноваційного розвитку суспільства на всіх його етапах та рівнях. Зважаючи на раціональний та емпіричний підхід, важливим в управлінні знаннями є їх функціоналістичний погляд, оскільки він дає знання про раціональний світ, інтегрує дисципліни та окремих людей як істотні компоненти багатонаціональних проєктів. Необхідно перетворити різні інтелектуальні ресурси на платформу спільного знання в рамках проєкту для надання кращого користування послугами. Поточні зусилля з управління знаннями зосереджені на виробництві, обміні та зберіганні знань, а проєкти вимагають комбінованого використання цих інтелектуальних ресурсів, щоб організації могли надавати інноваційні та спеціалізовані послуги та успішно реалізовувати проєкти. Огляд літератури та оцінки досліджень, опубліковані дослідниками, було обґрунтовано необхідністю конвергенції управління знаннями у багатонаціональних проєктах.

Ключові слова: управління знаннями; конвергенція; багатонаціональні проєкти; знання; інформація; дані

Link to the post

APA Шаровара, Олена. (2019). *Justification of the necessity of knowledge management convergence in multinational projects*. *Management of Development of Complex Systems*, 40, 12–16; dx.doi.org/10.6084/m9.figshare.11968923.

ДСТУ Шаровара О.М. Обґрунтування необхідності конвергентності управління знаннями в багатонаціональних проєктах [Текст] / О.М. Шаровара // *Управління розвитком складних систем*. – 2019. – № 40. – С. 12 – 16; dx.doi.org/10.6084/m9.figshare.11968923.