MAŁGORZATA MIKŁOSZ*

Information technologies in international project management

K e y w o r d s: project management, management by projects, project oriented company, information technologies, TESPI Platform

S u m m a r y: The article presents the process of project management from an international perspecive. Particular attention has been put on presentation of the most popular information technologies which have the key meaning in the context of project completion by organisations from various countries. The article is based on literature and experiences of the author as a trainer, consultant and a coordinator of numerous international projects.

1. Introduction

As the economy becomes more integrated, a vast majority of companies finds project completion as the key activity which helps to achieve planned aims and objectives. It is essential to cooperate with foreign organisations. Even though the procedure of such project completion does not differ a lot from projects undertaken at the national level, it is possible to name the key role of issues related to communication, information transfer and, increasingly often, transfer of digital products. Remote project management and modern IT tools usage are taking on the full meaning. The article is devoted to the impact of new information technologies on international projects management.

* Małgorzata Mikłosz, MA—PhD candidate in management, Faculty of Management, Cracow University of Economics; Danmar Computers

2. International project management

Project management is linked with completion of customer's actions which often take place on a one-off basis, though undertaken by various enterprises, non-profit organisations or public authorities. The specificity of a project is meant by a temporary effort which is taken in order to create a unique product or service (PMI, 2000, p. 4). In comparison with standard and repeated actions of a given organisation, projects are described by uniqueness, an increased risk level or a unique preparatory procedure. Several features of a project are given by reference books as fundamental (Wysocki et al., 2005, pp. 48–49):

- projects are specific in respect of costs, time and quality;
- projects' main goals and objectives are definite;
- projects' time-frames are clear regarding the beginning and the end of the project, the reasons why the project should be closed when the time runs out.

Project management processes are detailed actions, which rely on process organisation regarding not only project completion, but also its initiation, preparation and closure. It is worth mentioning that project completion is related not only to its content, but also wraps the issues related to task group creation, evaluation and various techniques of its implementation (Stabryła, 2006, p. 15).

With regard to the fact that projects management is a wide concept, it is impossible to omit its various aspects. Marek Pawlak suggests defining project management in four surfaces (2007, p. 28; 2001, p. 35):

1. Instrumental—wrapping all the techniques and methods used during the project completion period.
2. Functional—wrapping the process of planning (setting objectives), making decisions regarding project completion and steering with the project management.
3. Institutional—wrapping the process of creating and assigning task groups, appointing decision makers, setting tasks and key competences together with defining interrelations.
4. Social (staff)—wrapping the procedure of appropriate project manager appointment.

Since project management is a process, it is possible to enumerate several stages of its completion (Nosal, 2006, pp. 182–183):

1. Project initiation—consists of: setting priorities, setting aims, risk and restrictions awareness, team creation.
2. Planning—consists of: project's task and time structure planning, budget planning.
3. Completion—including project's inauguration and organisation.
4. Control—wrapping the activities of project audit.
5. Closure—in order to finalise all the agreements and to meet all the financial requirements within the framework of the project.

There are a few factors which support successful project management (Bosschers, 2003, p. 34):

- questions to be answered as soon as possible;
- immediate definition of undefined factors;
- instant threat analysis and elaboration of an action plan in case they occur;
- conflict resolution and common interest aspiration;
- clear separation of problems, aims, wishes, starting points and assumptions from the proper resolution;
- solution approval just-in-time.

At present, the project environment changes tend to dominate within the structures of individual organisations. As far as occasional project realisation is concerned, it is possible to talk about project (or projects) management procedure. However, when it comes to a situation when a project realisation dominates the basic activities, it is likely to be called management through projects (Nosal, 2004, p. 624). Such type of organisation is called POC—Project Oriented Company, and it is characterised by a specific project culture. POCs are described by (Turner et al., 2007, p. 651):

- approval of management through project as a part of strategy;
- realisation of all the activities through project realisation;
- creation of project organisational structure;
- consistent adaptation of PM methods;
- wide range of different project types management.

Actions which lead to project completion are often beyond the organisation's framework. As it was emphasised before, POC's organisational structure is unique. Generally, flexible structures which may easily adjust to a variety of circumstances, are designed for project completion. Pawlak puts an emphasis on the fact that structures meant for project completion need to be accessible to many experts in different fields (2004, p. 15) who are often workers of different organisations. Therefore, a specific network structure is created in order to successfully undertake the project. The structure itself gives an opportunity to involve people (from different institutions) who are equipped with key competences. Owing to that, each of the organisations may deal with things accordingly to their expertise (Nalepka et al., 2006, pp. 108–109). It seems to be the key postulate in the international project management context. Their specifics does not differ a lot from typical projects undertaken by several organisations. However, the geographical distance is taking on a great meaning. It is obvious that the international project completion needs to take the multicultural aspect under consideration. However, not in all of the cases (Low et al., 2001, pp. 276–285).

Forms of communication and information transfer are playing a vital role. As far as cooperation between local or regional organisations is concerned, direct contact is relatively easy. However, cooperation with external organisations makes face to face meetings more difficult to take place. It is linked not only with time restrictions, but also with tense financial efforts. In this context, virtual means of project management

and coordination are of great value and help to sustain the postulate of minimal costs. The specifics of project completion forces project group members to trust each other, to support successful liaison and to coordinate a project competently (Nalepka et al., 2006, p. 110; Perspectives, 1997, pp. 236–238).

In order to successfully accomplish the project, it is necessary to define certain essential issues (Miller, 1993, p. 176):

1. To define precisely the core of the project, i.e. the impact and the aims of the project foreseen to be achieved through project activities.
2. To enumerate the reasons which make the project necessary and to define the benefits.
3. To set the timeframes, organisational rules and the resources needed to fruitfully undertake the project.
4. To appoint representatives responsible for project completion and resources acquisition.
5. To estimate the overall cost of the project realisation as well as the costs of all individual parts.
6. To name the potential risk spheres and the obstacles which may interfere with the project completion procedure.

Modern information technologies are to be used in international project management in order to obtain all the information stated above.

1. TESPI platform as an example of modern information technologies in international project management

Information technologies belong to the fastest developing branches. They deliver many innovative solutions which are designed for management process completion (Baccarini et al., 2004, p. 286). One of the IT solutions, which are used in the projects management processes, are individually constructed internet platforms. Often, an advanced software like MS Project is used in order to manage projects, however its usage becomes impossible because of several reasons. Firstly, while cooperating with various institutions within the network, it is necessary for all the members to be equipped with the software, but it is quite expensive. Secondly, all the network members are obliged to use the same release version of the product. Thirdly, it is necessary for all the members to become familiar with the functions of the software, which may become bothersome and time consuming, especially in case of groups which take part in the project for a short period of time. Undoubtedly, such a software is very useful and makes it possible to use its advanced functions not only during the project completion phase, but mainly during project planning. However, individually constructed platforms become more and more favoured with regard to managing a particular project. Platforms may be based on *open source* solutions, i.e. a type of software which may be legally and fee-free copied, used and modified. A PHProject (ver. 5)

internet platform called TESPI may be used as an example of such a solution. It was created within the framework of ANIMATOR project in order to meet the needs of international Partnership (PEGASES) management. The Partnership included organisations from Germany, Belgium, Italy, France and Poland. The task completion was estimated for 30 months (July 2005–December 2007). Since the Partnership meetings were foreseen to be held every 6 months and were held every couple of days each, it was necessary to develop communication, and information exchange plus a management tool. As a result, the TESPI platform was developed and it contained the following modules:

1. Summary—which consisted of all the elements linked with user account.
2. File manager—which enabled file archiving that are digital products of the project. This module made it possible to manually upload files, which therefore became available to all of the network users. Owing to that, it was possible to exchange files via the server instead of traditional electronic mail. Additionally, a detailed description of a given file was very useful—especially its upload and elaboration date, which allowed tracking any changes and updates. The files uploaded to the platform were divided according to their task group. It was essential to previously elaborate the Work Division Structure, which was a tool used to divide the main project product into elementary tasks, which later were to be realised and therefore to guarantee successful project completion. This made it possible to narrow down the range of searching to the desired category.
3. Projects—this module allowed the project administrator to elaborate detailed information regarding resources exploitation. Owing to that, it was possible to elaborate separate budgets for particular tasks by dividing the sum into given tasks. In addition, the module was connected with working time cards that allowed assigning working hours to individual employees of the project. The function was significantly useful during estimation of time and costs of staff employed on a part-time contract. Moreover, it was possible to create Gantt's charts for individual tasks or the project as a whole. Furthermore, the module allowed creating statistics, which summed up the activity of individual applications within the project.
4. Time card—allowed estimating the nature of undertaken tasks and their completion time in connection with an automatic calendar.
5. Notes—allowed elaborating contemporary notes as project supplement. It was possible to gather all the project information in one place. In order to make the process easier, it was possible to filter the notes accordingly to various categories.
6. Support—the module allowed solving problems on one's own or via administrator's professional advice.
7. Mail—the application was linked with a user's personal e-mail system. However, it did not replace it but cooperated with it. Such a solution allowed receiving mail in the most popular place.

8. Tasks—this module allowed tracking unfulfilled tasks. Moreover, it reminded of the terms, status and the person in charge.
9. Calendar—it allowed writing down task realisation terms. The system possessed an automatic reminder, which was very useful because of the vast number of project tasks and subtasks.
10. Contacts—allowed elaborating mailing lists of participants and clients. It allowed exploiting already existing databases, e.g. those created for personal e-mail.
11. Chat—module dedicated to direct and real-time information exchange.
12. Forum—a tool used as a standard discussion forum designed for project partners.

The application, which was used during platform development, had a few additional modules, but they could not be used in TESPI due to their level of advance. The platform preview is presented in Figure 1.

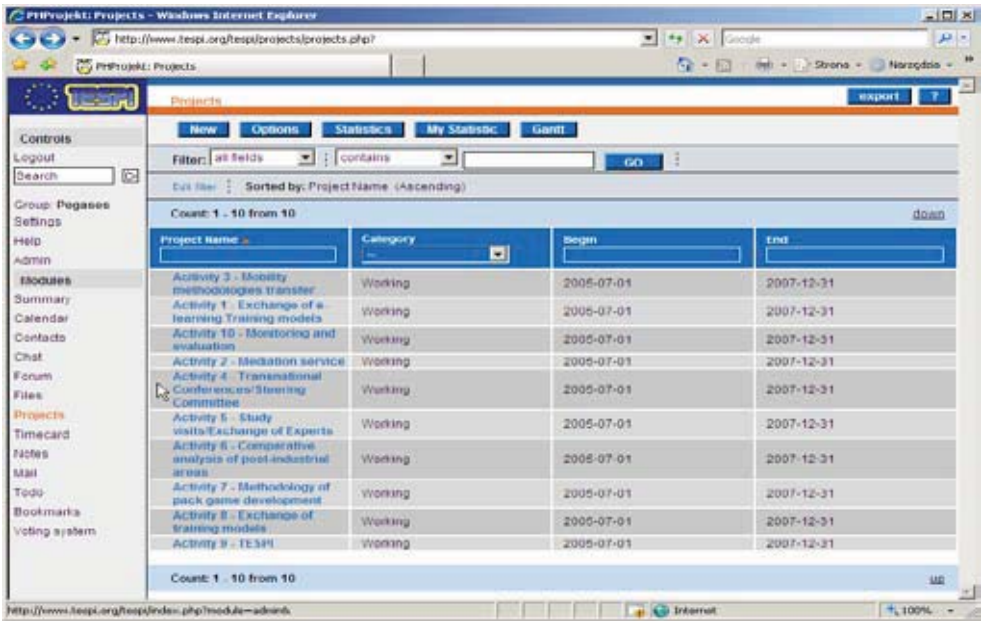

Figure 1. The TESPI platform preview

S o u r c e: www.tespi.pl.

Precise completion of particular tasks together with up-to-date control was possible owing to platform development. An increased level of network users integration was achieved thanks to the collective surface placed in the virtual dimension. It was visible especially in the context of comparison with the effects of two different

international partnerships undertaken within the ANIMATOR project framework. Information exchange via standard electronic communication tools, i.e. e-mail or website, did not ensure achieving important synergic effects. It was a common situation that information got lost among the vast number of messages which were not related to the project. Such an attitude towards project completion forced participants to archive the data on portable memories in order to have access to project documents in different places, while it was achievable via internet platform and the only thing that was required was internet connection. Another sensible aspect was the feeling of a unique relationship that was built between the project participants. The fact of personal login and password possession and the possibility to watch the process of platform development was motivating. Running the platform and creating a database was a great example of successful project management together with completion of the project's aims and objectives.

3. Conclusion

While observing an increased level of technological advancement regarding IT, a special emphasis must be put on its practical use in broad-scaled activities. The application of variety of IT tools in project completion requires elaboration of complex systems which allow handling many aspects of project management. Nowadays it is not enough to use only single solution in order to achieve the best effects and exploit the organisational potential. Due to complex progress of variety of project activities it is necessary to elaborate and exploit the systems directly designed for project management processes. Such an opportunity is provided by internet platforms which include a series of modules often adjusted to the project's specifics, requirements and the level of project staff competences. It is worth mentioning that during the process of progressing globalisation, the project environment itself acquires unique features. It is related to specific competences and skills of the project managers whose vocational group ceased to be simply engineers with pure technical qualifications. It is visible in case of projects which are completed with the support of European Union funds. IT solutions are especially created and exploited to meet the needs of project digital products management. In the era of economy based upon knowledge, the transfer and distribution of information are of key role. Therefore, the process of advanced use of information technologies may be simply called the art of information exchange.

Bibliography

Baccarini D., Salm G., Love P.E.D. 2004. "Management of risk in information technology projects". *Industrial Management and Data Systems*, vol. 104, no. 4, pp. 286–295.

Bosschers E. 2003. *Zarządzanie projektem: Model najlepszych praktyk.* Kraków: IFC PRESS & Nowe Motywacje. ISBN 83-913519-5-5.
Low S. P., Shi Y. 2001. "Cultural influences on organizational processes in international projects: two case studies". *Work Study*, vol. 50, no. 7, pp. 276–285.
Miller S. 1993. *Stealth Management*. New York: McGraw-Hill. ISBN 10 0963531603.
Nalepka A., Kozina A. 2006. *Podstawy badania struktur organizacyjnych*. Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie. ISBN 978-83-7252-346-4.
Nosal E. 2004. "Management by Projects jako nowoczesny sposób zarządzania przedsiębiorstwem". In: *Przedsiębiorczość i innowacyjność MŚP – wyzwania współczesności*. Ed. A. Kaleta, K. Moszkiewicz, L. Woźniak. Prace Naukowe AE, no. 1030. Wrocław: Wydawnictwo Akademii Ekonomicznej im. Oskara Langego.
Nosal E. 2006. "Koncepcja zarządzania projektami na przykładzie realizowania projektów finansowanych ze środków unijnych". In: *Zmiany gospodarcze i społeczne w integrującej się Europie*. Ed. J. Adamczyk. Zeszyty Naukowe Politechniki Rzeszowskiej, no. 226. Zarządzanie i Marketing, no. 6. Rzeszów: Oficyna Wydawnicza Politechniki Rzeszowskiej.
Pawlak M. 2001. "Zarządzanie projektami". *Ekonomika i Organizacja Przedsiębiorstw*, no. 8, pp. 34–39.
Pawlak M. 2004. "Struktury organizacyjne zarządzania projektami". *Przegląd Organizacji*, no. 1, pp. 15–18.
Pawlak M. 2007. *Zarządzanie projektami*. Warszawa: Wydawnictwo Naukowe PWN. ISBN 9788301150419.
Perspectives. 1997. "Teamwork and the high performance company". *Management Development Review*, vol. 10, no. 6/7, pp. 236–238.
Project Management Institute [PMI]. 2000. *A guide to project management body of knowledge*. Pennsylvania, Newton Square: PMI Inc. ISBN 1-880410-12-5.
Stabryła A. 2006. *Zarządzanie projektami ekonomicznymi i organizacyjnymi.* Warszawa: Wydawnictwo Naukowe PWN. ISBN 978-83-01-14846-1.
Turner J. R., Huemann M., Keegan, A. E. 2007. "Human resource management in the project oriented organization: Employee well being and ethical treatment". In: *Gower handbook of project management*. Ed. J. R. Turner. Hampshire: Gower Publishing Ltd. Aldershot. ISBN 9780566088063.
Wysocki R. K., McGary R. 2005. *Efektywne zarządzanie projektami.* Gliwice: Helion. ISBN 83-7361-861-9.

Technologie informacyjne w zarządzaniu projektami międzynarodowymi

Streszczenie: Artykuł prezentuje proces zarządzania projektami w ujęciu międzynarodowym. Szczególną uwagę poświęca się prezentacji najpopularniejszych technologii informatycznych, mających kluczowe znaczenie w kontekście realizacji projektów przez organizacje z różnych krajów. Artykuł powstał w oparciu o literaturę oraz doświadczenia autorki jako trenera, konsultanta i realizatora wielu projektów międzynarodowych.

Słowa kluczowe: zarządzanie projektami, zarządzanie przez projekty, organizacja zorientowana projektowo, technologie informatyczne, platforma TESPI