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**Organizational forms
of coordination and
integration of activities in
project management**

1. Introduction

What is crucial in all complex undertakings is coordination and integration of activities performed by the numerous contractors. It seems to be especially important if the time assigned to achieving the objective is finite, for instance in projects oriented at a goal that needs to be achieved within a given deadline. Meeting the requirements connected to the completion time is one of the three primary factors (in the triangle of objectives) taken into account when evaluating the level of success of the project (Dennis Lock, 2009 pg.17).

Completion of a project on time is, in turn, conditioned by how much the activities performed by different persons will be integrated and coordinated. Project management practice proves that the most frequent source of failure in these terms is inaccurate choice of methods and structural solutions which do not allow for effective integration of activities undertaken within the project. Hence, the importance of coordination should not be underestimated, especially given such characteristics like complexity and uniqueness which seem to be inherent in most projects. The primary aim of this

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publication, therefore, is to determine the structural solutions for effective coordination, solutions which would ensure prompt completion of the project.

2. Coordination and integration of activities in implementation of complex undertakings.

The authors of classic readings on management tend to treat coordination and integration of activities as key conditions for efficiency, which is clearly described by K. Adamiecki in his "law of harmony" (J. Zieleniewski, 1982). The principle refers to the necessity of coordination of activities in terms of quantity and time. Also praxeologists point to coordination and integration of activities in complex ventures as essential factors. They underline the need to integrate into the so-called "concatenation of activities" all those and only those elements which are vital for the success of the whole (T. Kotarbiński, 1965, pg.209). Systems of actions in an organization seem to have the tendency to destabilize. Coordination is a form of reaction to this phenomenon. Without it achieving organizational effect would be impossible. The essence of coordination is arranged and orderly cooperation between different elements of the whole, with a coordinating unit usually involved in the process. Realization of complex initiatives consists in performing different sequences of tasks which interweave in a planned and deliberate way. If this procedure is disturbed, the level of efficiency of the process will be decreased. Disturbance may be caused by the lack of resources needed to proceed with the actions, delays in certain activities or inappropriate performance of tasks. The significance of coordination is especially visible in complex undertakings, which planned as one whole, rely in their success on the interdependence between their various elements.

Any kind of action undertaken in an organization, including complex initiatives is constantly vulnerable to unpredictable changes of conditions. People involved in the undertaking may perform their tasks incorrectly, they may have negative feelings or display negative behaviours, which may tear the internal bonds and hinder the progress towards the desired goals. In such circumstances, the integrity may be weakened by the appearing breaks and tensions. Then, eliminating measures should be taken on the part of coordination body, the unit, which having at their disposal the general knowledge of the whole is able to reestablish the broken bonds.

3. Project as a complex venture.

A project is a complex undertaking of a very unique kind. According to most of the authors attempting to define its nature, project can be described by the following characteristics: it is set in time, goal-oriented, comprises actions of sequential nature, is innovative, interdisciplinary and requires the involvement of specialists from different fields or organizational units (J. Skalik red. 2009 pg. 13). Some authors see the need for coordination as a typical characteristic of a project and claim that only those undertakings can be described as "projects" which meet the following criteria (Karbownik, 2004):

- are limited in time of duration,
- are oriented at a specific goal,
- comprise coordinated actions,
- bear the characteristics of exceptionality and uniqueness,
- the processes they comprise remain under constant control.

Among the above-mentioned characteristics of a project, the importance of coordination for its successful completion is included in the following: specific time of duration, orientation towards a given goal, interdisciplinary and sequential character of activities undertaken within its scope. The need for coordination in managing a project results from its modular nature and its internal structure as well as interdependency of individual tasks. While the practice of project management tells that the most serious problems appear at the interface between various modules, being able to locate them becomes necessary for the effectiveness of coordination process which, in turn, must fit into and respect interdependencies of different tasks in the project (R. Jones, 2009, pg. 87). Interdependencies stem from the sequential nature of the process of performing individual tasks and subtasks. They may be of the following types (R. Jones, 2009, pg.87):

- closure-initiation(CI),
- initiation-initiation (II),
- closure-closure (CC).

Coordination process should maintain the control over these interdependencies and eliminate potential delays. In these matters it is measured against milestones and control stages, but its effectiveness, especially in case of complex ventures, is determined by the structural aspects of coordination activities. Given the complexity of coordination problems, one can resolve them adopting either pre-situational (taking place before the activities) or situational (accompanying the activities) approach. In the pre-situational approach coordination consists

in designing systems of cooperation and planning the process beforehand, whereas situational approach in practice means that the systems of cooperation are chosen and agreed on systematically as problems appear (K. Bleicher, 1976, pg. 127). When the situational approach in managing a project is domineering, the project seems to be more prone to failure. Therefore, it is the pre-situational approach which is worth broader popularization.

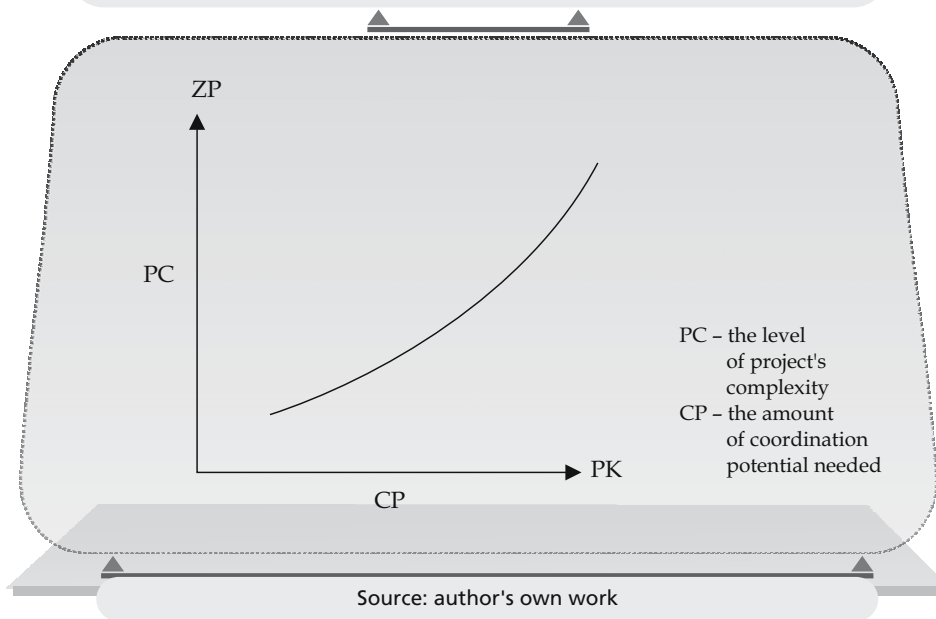
4. The problem of coordination in organizational structures of project management

There exists a great variety of organizational structures which can be utilized in project management. The choice of structures is determined by numerous factors, among which the most frequently listed are the following: scope and complexity of a project, the level of uncertainty of goal-achievement, expected time of duration, complexity of problematic situations, needs in terms of centralization and coordination (Łobos, 2003). Every structure used in project management to some extent creates conditions for coordination activities. What poses the greatest problems, though, is adapting the scope of activities to the actual needs in these terms. In case of complex projects extended in scope, coordination may have hierarchical nature. Its effectiveness in ensuring harmonious progress is contingent not only on the knowledge and technical skills of the coordinator, but also on the scope of his authority, which enables efficacious interventions in case of any problems connected with deficiency in material, financial, human or knowledge resources.

Therefore, we could use the notion of coordination potential (CP), the quantity of which is determined not only by the coordinator's knowledge and skills but also by structural solutions determining his scope of power necessary for effective reactions to appearing difficulties. We can then observe a relation of dependency between the level of project's complexity (PC) and the amount of the coordination potential necessary for effective and efficient project management (figure 1).

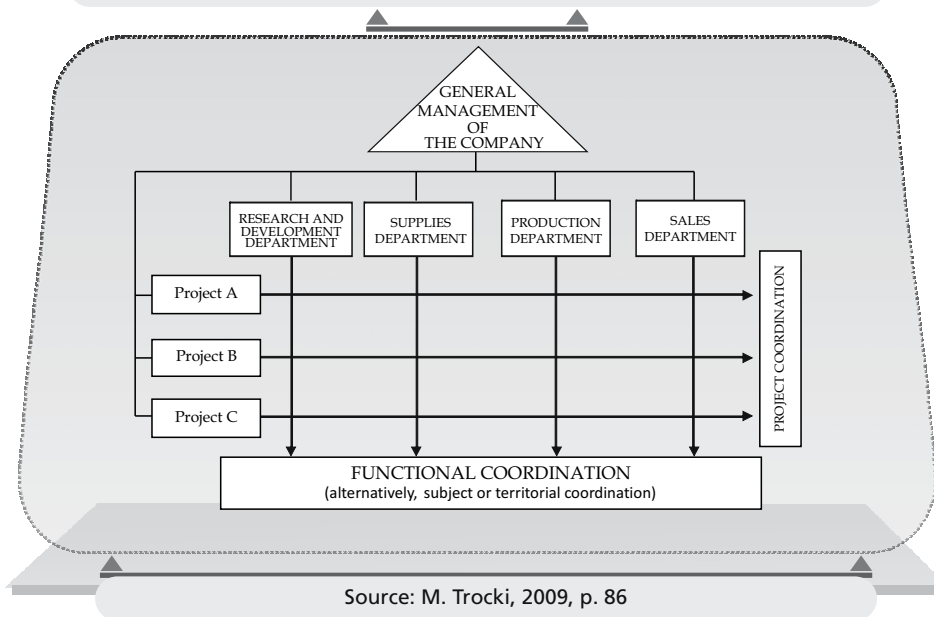
Taking into consideration the above-mentioned interdependency and thus making individualized choices of project structures with coordinating units functioning within them may help tackle the problem of structural aspects of efficient coordination in managing project. The process of selection is a rather difficult task because the appearance of a new venture in form of a project in an organization usually comes into conflict with its existing structure. The source of conflict lies in the fact that introducing temporary operational

Figure 1. The influence of project's complexity on the amount of coordination potential needed



structures for the sake of the project disturbs the previously introduced order. When designing organizational structures for project management, one can adopt one of the four possible approaches: functional approach, organizational approach, matrix approach or team approach (Levine H., 2002). The greatest number of problems is generated by matrix approach which combines functional and organizational approaches. In matrix structure, the personnel involved in the project realization reports simultaneously to their functional manager (who is their direct superior) and to the project manager. In this structure classic functional division is accompanied by project structure with decision-making positions responsible for specific projects. Such situation increases the number of interactions between the managers of different functional departments to coordinate the course of action (figure 2).

Figure 2. Project implementation - matrix structure

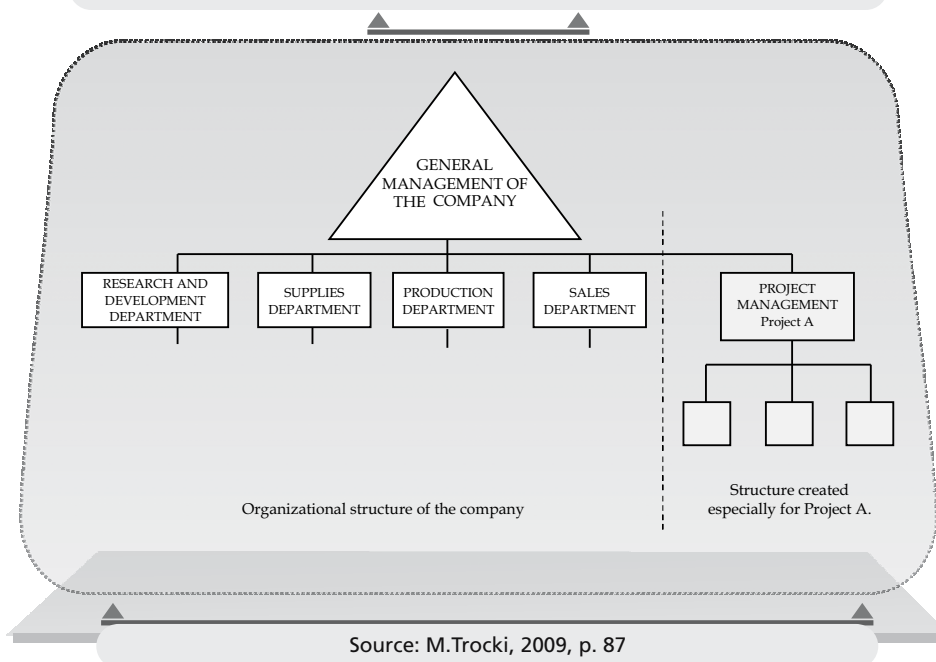


Source: M. Trocki, 2009, p. 86

Similarly, problems cannot be avoided within the most widely used “pure” project organization (figure 3), which is most useful in managing large and diversified projects with extended time of duration. It also generates problems connected to cooperation of units of already existing organizational structure of a company with the project unit.

Very often failures in complex project management have their sources in structural aspects of the process and are the result of a lack of coordinating body with high potential for support within the organizational management structures. This could be supported by the observations related to managing complex IT projects in banking sector made by the author of this publication.

Figure 3. "Pure" project organization



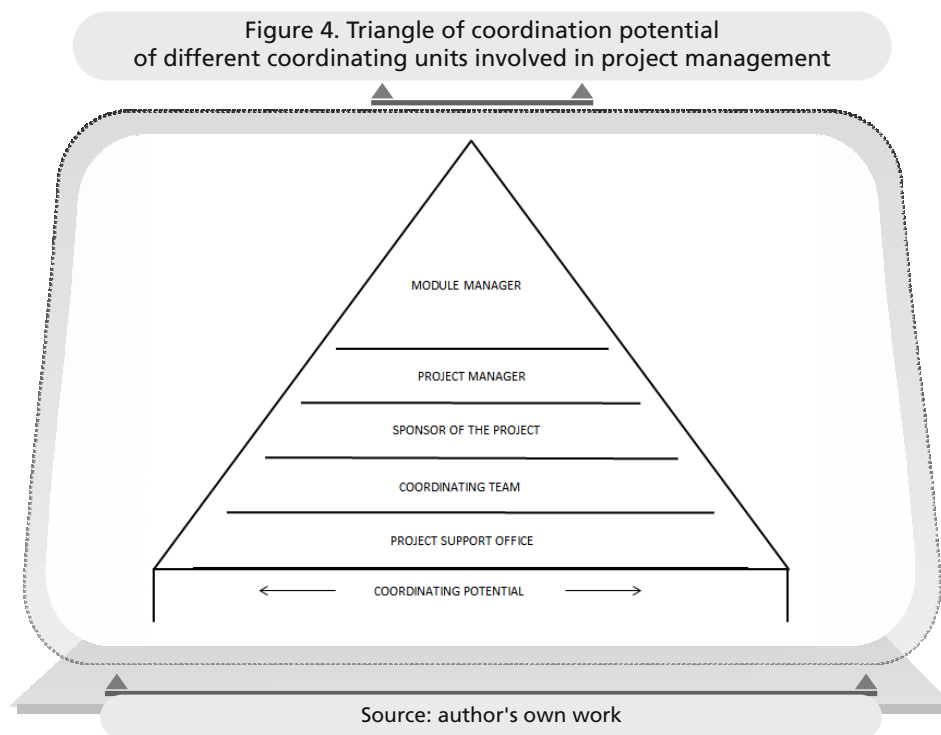
5. Utilizing high-potential means in managing complex projects

Coordination units in managing complex projects are: module manager, project manager, sponsor of the project, coordinating team, project support office. Coordination potential of these bodies is varied (figure 4).

Naturally, in complex projects with relatively small impact, it is the project manager who functions as a main coordinating body. His coordinating potential is determined not only by his range of knowledge and access to information but also his personality, powers of observation, the ability to make use of the possessed information as well as his powers of persuasion and ability to motivate people.

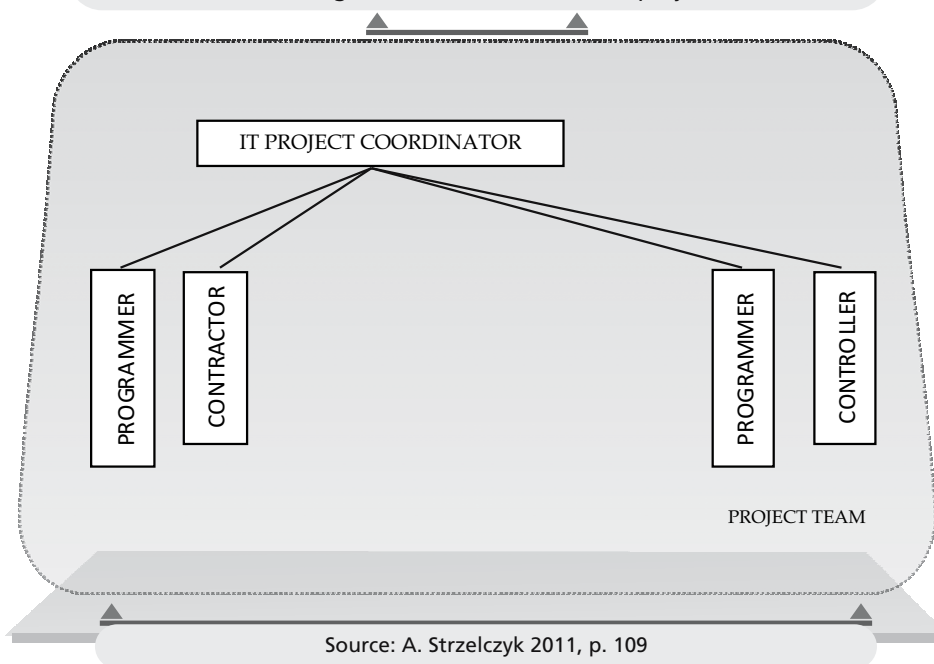
In the structural solutions used in project implementation the structural support of module manager is usually underestimated. Module manager is responsible for realization of chosen modules of the project as well as locating and eliminating obstacles. For example, in IT projects, which are inherently

complex ventures, this coordinating role is played by IT project coordinator (figure 5). The person on this position can not only coordinate the tasks of his own project team but can also extend his coordinating activities over members of other teams.



Another person with a considerable amount of coordinating potential is the sponsor of a project, who monitors the realization of the project from the business point of view and from the perspective of goals achieved by the whole organization. The sponsor is usually ascribed more authority than the manager of the project, as he or she is in charge of the coordination team, which, in turn, is responsible for maintaining the appropriate course of activities performed within the scope of a given project. The greatest amount of coordination potential seems to belong to Project Support Office which is situated on higher levels of the organization (Wysocki, MCGary 2005). It is becoming more

Figure 5. Integrating programmer
in the organizational structure of IT project



and more important with the increase in complexity and number of projects. There also appears the need for selection and training of the rising number of project managers together with the necessity to create formal procedures.

6. Conclusions

As the above discussion shows, coordination and integration of activities is a crucial issue in project management. Solving the problem requires creating the appropriate composition of forms of coordinating units within an organization. The choice of these is determined by: the size of the organization, the number, specificity and complexity of projects, the character of the environment in which they are implemented and the availability of project management specialists. In the process of selection of organizational forms of coordination one should respect the crucial role of the project manager for project implementation.

The organizational form of support of the process of coordination should not weaken the position of the project manager in the project environment. Well-chosen form of coordination is also connected with making the most of its potential while meeting the needs of harmonization and synchronization of activities done within the scope of the project. However, the ill-chosen form of organization, generating coordination potential disproportionate to the actual needs of the project, may inflate the costs of project management.

Summary

Solving the problems connected to coordination in managing complex projects is crucial for their successful completion. The paper discusses organizational forms of coordination in implementing a project and the factors that should be considered when selecting them, so that the amount of coordinating potential generated by the chosen form is proportionate to the actual needs in this field.

Streszczenie

Rozwiązanie problemów koordynacji w zarządzaniu złożonymi projektami ma kluczowe znaczenie dla ich powodzenia. Stąd też w artykule przedstawiono organizacyjne formy sprawowania działań koordynacyjnych w projekcie oraz uwarunkowania ich doboru, umożliwiającego dostosowanie potencjału koordynacji do występujących w tym zakresie potrzeb.

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