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## Project Managers: What Should They Be Like?

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Try to create with e'en the smallest jots.  
In other case, why are you a magician?  
In humane race, you bear Almighty's mission,  
Then try to say the word in which lives God  
K. Balmont

The article discusses working conditions and basic duties of project managers in comparison with those of linear managers. It provides the main duties of project managers and basic requirements for their professional, communicative and personal characteristics and competencies. It also discusses the issue of project manager salary.

**Key words:** project manager, project mania, project manager's responsibilities, requirements for a project manager.

### Introduction

The current methodology of project management and was successfully developed in the second half of the twentieth century while developing large and complicated construction projects, designing nuclear weapon, combat ships, and space systems. The accumulated experience appeared to be applicable for civic life by the end of the century, which led to the explosion in popularity of project management in most of the developed countries. The project took place in almost all problem solving processes in any kind of human activities. This effect can be called a "project mania".

The methodology of project management is being actively used in Russia as well, mostly due to the activity of Russian Project Management Association "Sovnet".

Currently, the number of projects being implemented both in Russia and in the world exceeds the number of good project managers several times. Meanwhile, a central figure of the project is a project team leader, who is responsible for project's success to a great or even absolute extend. Despite the requirements for project managers described in details in textbooks, the issue of effective project management is still being under discussion in technical

journals [1-3]. In this regard, it would be useful to study the content and conditions of successful work of a project manager, as well as the requirements that should be ideally met by the person in charge.

### Specific conditions of project manager's activity

A project manager job in different organizations and projects can vary from a project team representative to a project team leader. In the first case he/she presents a project for an external environment, inside the team being an ordinary performer. In the latter case, he/she has the same authority as linear leaders, and is responsible for the process and results of the project.

Project manager's risks and responsibilities can be much higher than those of a linear manager, since they have to make decisions in conditions of uncertainty. The level of uncertainty is extremely high, especially at the beginning, for innovative projects related to development of cutting-edge technologies. A project team leader is responsible for his/her decisions, actions or **inactions**. The main spheres of the leader's responsibility are results, personnel, terms, material resources, and project budget.

Apart from this, a project manager should meet a number of special requirements. This position implies the functions of a mediator between project performers and

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the administration or a customer and other stakeholders. It requires the ability to lead people and ensure cooperation as well as well developed professional skills to understand the project content. Finally, the methodology of project management is an essential condition as well.

As a **team leader**, a project manager should have the abilities inherent for any top manager: the ability to persuade, to "tackle an issue", to conduct talks and make decisions. They should have good stamina and teamwork skills, be reliable, responsible, communicative, creative, and self-motivated. The list can be continued.

A project manager should have excellent **leadership skills**, which first of all implies cooperative management style. A project manager should be able to motivate the personnel and create comfortable working conditions for each team member to work to their utmost capacity and produce to the maximum of their abilities. It can be achieved if each team member, though working quite independently, feels the managers' support and is interested in the project tasks.

**Professional qualification** of a project manager includes all knowledge, experience and skills related to the project content. It is desirable for a project manager to be a professional in the project sphere, or at least not to be a layperson. As a rule, there are specialists in particular areas, though, but it is impossible to manage effectively without deep understanding of the project essence.

In the 90s of the XX century and some years after there was a widespread opinion that it is possible to manage organizations, projects and processes without being a professional in the sphere of their activity. Currently, the whole branches of industry are being managed by people having no professional training and experience in these spheres. The fallacy of such viewpoint is proved by the failures and accidents regularly reported by mass media.

The crisis of unprofessionalism has spread in many countries including the developed ones, and the crisis spiral keeps on spinning. The reduction of higher education quality, which is resulted from

its mass character and decline in financing per student, leads to the reduction of teaching staff quality, which, in its turn, has negative impact on secondary and higher education quality.

The continuing reforms of Russian education system made the situation worse. As Malyi M. puts it in his book: "There are millions of people who pretend to be doctors, engineers, teachers, journalists, and politics. Many of them have a twenty-year experience of such acting. No wonder, there is not a lack of talents in theaters: many Russians play others' role in their lives" [4].

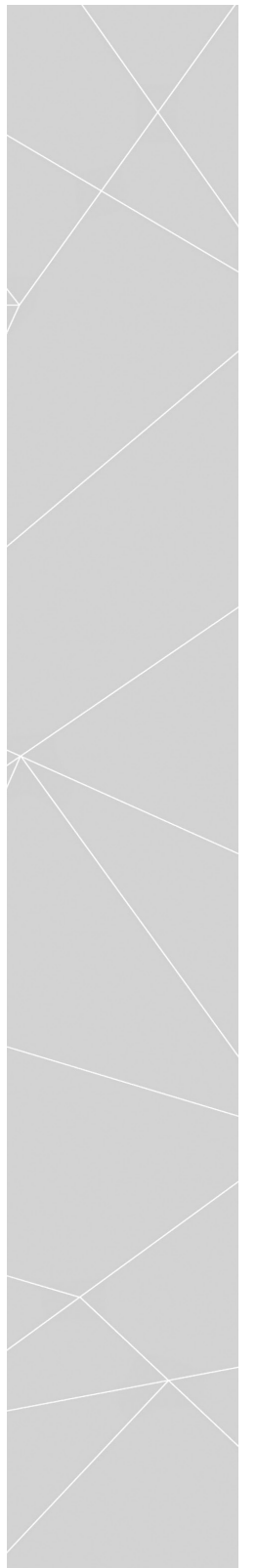
It is obvious that, in a large project, a project manager and a team cannot be specialists in all aspects of the project. But each of the team member should be a professional in a particular area, and the project leader should have basic knowledge in the sphere of the project implementation to clear up the project details and, if necessary, to understand and assess invited experts' opinions. The experience in IT-project implementation proves that only specialists in some of the IT areas can effectively manage such projects.

Finally, a project manager should have an adequate **project management qualification**, which means knowing the methodology and techniques of project management as well as practical experience in this sphere. Bearing the main responsibility for the project, a project manager should feel confident for the work to be organized and completed successfully.

Since projects are created to solve some particular problems, it is desirable for a project leader to be able to use **applied system analysis**. Besides, the subject "project management" can be regarded as a special case of applied system analysis.

It is also important for a project manager to know the methods of feasibility study, assessment of project solutions, economic and management accounting at least to understand adequately the corresponding documents and make correct decisions in these spheres.

High erudition in related disciplines of science and deep understanding of



global challenges, political and economic issues also contribute to effective project management.

#### Project manager's tasks

There are a great number of tasks for a project manager to perform:

- to specify the set objectives in terms of quality requirements, terms, costs, resources, etc.;
- to register the coordinated objectives in a project specification and obtain customer's approval;
- to check feasibility of the project goals;
- to coordinate the organizational structure of the project and arrangement of the project performance;
- to arrange the system of planning, management and information according to the project type and scale;
- to plan the project;
- to control and manage the project;
- to make decisions on alternatives regarding the subject of the project and the implementation process;
- to arrange and make principle decisions, for example about laying-off;
- to provide necessary resources;
- to manage team members and their motivation factors;
- delegation of tasks and goal setting for counterparts;
- to coordinate the project members both inside and outside the project;
- to inform regularly the head of the enterprise and the customer about the project performance and needs.

All these tasks can be performed successfully only on condition that the project manager is supported by the head of the enterprise.

To choose a project manager is a complicated task mostly based on personal quality of a candidate rather than the project's content. In this case, a competency model could be an effective tool. This model can be created by the analogy with the competency model of a faculty member of University, since the sets of key competencies are practical the same [5].

The desirable features of a project manager's personality are the following [6]:

- flexibility and adaptability;
- leadership and self-driving;
- assertiveness, confidence, the ability to persuade, smooth tongue;
- ambition, strong will;
- effective communicator and integrator;
- wide scope of interests;
- consistence, enthusiasm, imagination, fidelity;
- the ability to coordinate technical solutions with terms, costs and human resource;
- good self-organization and self-discipline;
- the ability to be more a generalist than a specialist;
- the ability and wish to spend a lot of time planning and controlling;
- the ability to identify problems;
- decision maker;
- the ability to use time effectively.

Any project manager should possess at least 70–80 % of the features mentioned above. Perhaps, Imhotep, the first Egyptian pyramid designer and builder, must have met most of these requirements [7, 8]. In the XXth century in the USSR, the most effective managers were Kurchatov I.V. [9], Beriya L.P. [10], Korolev S.P. [11], Tupolev A.N. [12] and some other prominent program and project leaders.

#### Specific requirements for project managers, their rights and responsibilities

It is crucial for the personal goals of a project manager be the same as the project goals. Though a complete overlap of objectives is unreal, too big difference between the project objectives and those of a project manager makes the project manager be unsuitable for the job.

To meet a big number of the requirements, project manager should be healthy and keep healthy. It is an uneasy task since their work-week often exceeds 60 hours. In addition, their responsibilities can imply business trips and work far from their homes. Kerzner H. notes that if a project manager tends to love his/her job more than his/her family, it can result in bad family relationship, loss of friends and,

possibly, divorce [6].

Research proved that in the USA, the number of divorces in the families of project managers and leading specialists of the teams doubled the average number of divorces, when they were working on large space projects. They manifested the following typical features of work addiction:

- every Friday they felt to have two more working days before Monday;
- they felt 5 hours p.m. to be a noonday;
- they did not have time for rest;
- they always took work home;
- they always took work for holidays.

A creative component is quite important in innovative projects. To use a creative potential of the team members to full extend, a project manager has to know modern approaches to staff management and organizational behavior. The method of "sticks and carrots" is absolutely contraindicated for the team members since it leads to their demotivation.

As a rule, heads of big organizations do not participate in routine work of their staff. In regard to project managers, in our opinion and experience, they have to take part in developing project solutions. It is inevitable since they should directly influence the project results. The effectiveness of the influence is ensured by direct participation in the project, because the project results are less predictable than the results of linear manager's activity. It does not mean that project managers should deal much with details, but it is for them to participate in making conceptual decisions.

One of the complicated issues is to set a salary level for a project manager. It is reasonable that project managers have approximately the same salary as the people they have to regularly negotiate and collaborate with. As a rule, these are the heads of functional units. Experience shows that conflicts appear if project manager's salary is significantly more or less than the salary of linear managers. Linear managers often say that they cannot "control these prima donnes who are paid higher and have higher rank than the linear managers" in addition to their

common responsibilities [6]. At the same time, organization of effective project team should not be impeded by salary and ranks. If necessary, a person with higher position can be subordinated to a person with lower rank for the time of a project performance.

To choose a project manager is an important top managers' responsibility. If a person seems to be a potentially successful project manager, there are some options for the top managers of the enterprise:

1. to increase salary and rank and offer him/her a project management job.
2. to offer him/her a project management job without a pay and rank raise. The salary and rank are increased in three-six months on condition of successful project progress.
3. to slightly increase salary without rank raise or to raise rank with the same level of salary. The successful project results ensure significant pay and rank raise.

Many top managers consider with reason that an employee entering project management has only two paths of the career development – promotion or dismissal [6]. If an employee was given a pay and rank raise and failed, there is no position left for him/her in the previous linear structure. Thus, most top managers and employees prefer the latter option, since it ensures safety for both parts. It is quite natural for the employee to resist coming back with the stigma of having been a manager of a failed project. Many top managers become aware too late that a set of requirements for a project manager differs from that for linear managers. The first is based on communicative abilities while the latter is based on technical knowledge and skills. However, the author considers it applicable for a common promotion.

Project manager's possibilities are very dependable on his/her position in the organization and the project team. Thus, it is recommended to register his/her rights and responsibilities to avoid possible conflicts on this issue. Project manager's rights relating to staffing and decision making, disciplinary rights and others should not only be clearly defined but registered.

## Dependence of Interdisciplinary Project Management on Difference Between Corporate Cultures

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The article discusses the influence of corporate culture on a large interdisciplinary project organization. In particular, the case when large organizations involved in a project have a vertical linear structure and unique corporate culture. The article describes the project "The opening of the research and educational center "Modern manufacturing technologies" as an example.

**Key words:** interdisciplinary projects, management, corporate culture, networking.

The world is rapidly changing due to development of new technologies. It primarily influences the management sphere. Nowadays, the management models which did not exist 50 years ago are used, the management theory itself appeared only in the middle of the previous century and since then has been developing at ever evolving pace.

For instance, to develop innovations a company needs a special reliable environment where one can promptly exchange ideas, thoughts, and knowledge. Besides, one of the premises for development is that in modern science the interdisciplinary issues are becoming more topical (biology, economics, philosophy, physics, etc.). Interdisciplinarity and cooperation are those keys to success for business development [5]. Thus, innovative developments in such spheres as medicine and IT do not surprise anybody, but nowadays, such sphere as bioinformatics (a discipline at the interface of mathematics, IT, and medicine) is being developed. The experts of this sphere process and analyze large amount of data in the medical laboratories, develop software to handle information, since ordinary medical professionals fail to process such a large amount of data.

Hence, it is clear that interdisciplinary

projects are under development. **Interdisciplinary projects** (projects based on network cooperation) are projects uniting efforts and resources of several companies-partners on mutually beneficial terms to achieve innovative results [5].

For example, one of the interdisciplinary projects implemented in National Research Tomsk Polytechnic University (TPU) is "The arrangement of the research and educational center 'Modern manufacturing technologies' in Institute of High Technology Physics (IHTP), TPU.

The functions of "Modern manufacturing technologies" center are to develop and implement additive technologies of domestic production. The center makes complete production cycle of additive technologies: from ideas of new material development to investigation of final product. The developed technologies are demanded by aviation and space, automobile, machine-tool and ship-building industries, chemical production and nuclear engineering [6].

The project managers are both research-educational institutions, research institutes and large corporations: Institute of High Technology Physics (TPU), Institute of Strength Physics and Materials Sciences (SB RAS), All-Russian Scientific Research Institute of Aviation Materials, S.P. Korolev

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