# Corporate management of IT projects in Russia

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## Introduction

In the early 90s Russian IT companies have undergone the period of fast growth which was caused by the fast growth in demand for their services and material absence of competition. At that time most of such companies employed accepted PM approaches similar to those offered by BAAN, SAP, Oracle, and Microsoft.

With the increasing competition on the market for IT technologies and due to emergence of new businesses, the need in precise and reliable evaluation of IT projects duration and budgets became urgent. This is also associated with the diminished cost-effectiveness of the projects and their increased complexity, but mostly - with the customers' improved competence and their increased requirements for service timeliness, costs and quality. Additional requirements are associated with the geographic dispersion of project participants and the need in remote control of their joint work on some projects.

Conventional methodologies offers standard software tools (usually MS Project) for project time and cost planning and management. However the attempts to use such tools revealed serious discrepancies with the approaches to project activities planning and performance accounting accepted in Russia. Thus, the serious drawbacks were the lack of possibilities for planning and recording of duration of activities and volumes of work done on the activities, poor possibilities for resource work and cost simulation, and restrictions on project risks simulation. Resource plans provided by MS Project were often clearly far from optimal which discredited the very idea of the use of software tools for project planning.

Moreover, accepted methodologies of IT project management are usually concerned with the management of a single project and do not offer any techniques for multiproject management, corporate standards development and application, or general approaches to organization resource management.

All this dictated the necessity for the Russian companies to develop their own methodologies that are not in the conflict with accepted approaches but include such aspect of project management that are either altogether lacking in accepted PM techniques or not tackled well enough.

In this paper we will describe the technology of project management that is used by the Russian company I.T.Co, a major Russian company specializing in information technologies, including software development, introduction of large corporate systems of enterprise management, e-commerce, etc. Its branches are the thousands of kilometers removed from each other and operae in the different language and cultural environments. I.T.Co simultaneously runs over 300 geographically dispersed projects, which makes multiproject management employing the corporate standards vital for this company.

### Features of project management software used in Russia

Particular features of project management technology in Russia are associated with the features and possibilities of software employed, with Spider Project being the most popular Russian professional PM package. Listed below are a few of its features that are actively used in IT project management while lacking or being underdeveloped in well-known American packages:

1) Usage of work volumes together with activity duration in the setting of activity characteristics. If the volume of works and productivity of assigned resources are set as an initial data, activity duration is calculated in the process of project scheduling;

2) The possibility to set resource pools for an activity. Activity resource pool is a set of resources capable of executing the activity albeit with the different productivity;
3) The possibility to create databases of project element characteristics (resource productivity on standard activities, duration of standard activities, standard activities' unit costs, etc.) and to use them in all company's projects;
4) The possibility to create a library of standard fragments (standard phases and work packages) and to construct projects from these fragments with the automated correction of the standard fragment activities' characteristics after the assignment of the volume of this phase in the current project;
5) The possibility to calculate Resource Critical Path (actually, Critical Chain is not very clearly defined analogue of Resource Critical Path), resource floats and resource critical assignments;
6) Built-in risk analysis that allows to calculate the probability of compliance with project deadlines and budget and to evaluate contingency reserves of project parameters (duration, cost, needs in materials and equipment) that should be provided for to ensure the implementation of set parameters with the set probability. These contingency reserves serve as the analogs of Project buffers defined in the Critical Chain theory.

**Organization of corporate PM**

Corporate PM is supervised by the company vice president for project management who has direct charge of multproject manager and multiproject management team, with the multiproject including all major projects run by the company. The information for multiproject management is prepared by the Analytical Sector of Project Support Office (PSO).

*Project Support Office*

PSO comprises the three sectors:
1) Analytical Sector,
2) Methodological Sector, and
3) Archives.

The functions of the *Analytical Sector* include:
- the integration of the models of individual projects in a single simulated multiproject model, embracing the organization's activities on all projects run by this organization;
- multiproject model maintenance and regular updating;
- multiproject performance analysis;
- analysis of the change requests and of the impact of their consequences on the achievement of the company's global goals;
- estimation of expected parameters and potential contract provisions for the newly emerging projects and evaluation of their potential interaction with the projects run by the company;
- organization of document flow by projects, including the organization of interaction with the regional divisions;
- provision of project information to the administration and to the participants of the individual projects.

*Methodological Sector*:
- develops PM guidelines and standards for the organization;
- organizes PM education for the company staff;

- develops and approves corporate databases of the characteristics of standard activities and project resources (manpower, contractors, equipment, and materials), as well the library of standard project fragments (standard work package models);
- provides methodological support and internal consulting for the managers of the individual projects.

*Archives*:
- maintains project archives;
- together with the methodological sector, elaborates the case studies used for the training of project managers;
- maintains historical databases of the company staff members and contractors that had participated or are participating in the implementation of the projects.

To describe the existing approaches, let's review the separate phases of lifecycle of the project of IT implementation in the Customer's organization, from initiation to completion.

**Project initiation and planning**

Projects can be initiated either by the central office of the company located in Moscow or by any of regional branches. The information about potential project is directed to the Methodological Sector of the company's PSO to make a decision concerning the possibility of its implementation and potential provisions of the future contract. To analyze the proposal, the team including a manager from the PSO Methodological Sector and the analyst from the Analytical Sector is assigned.

Proposal analysis includes (Exhibit 1):
- the search for similar projects in the corporate history (together with the PSO Archives staff);
- development of project Work Breakdown Structure (WBS) basing on the corporate library of the standard project fragments;
- evaluation of qualification and willingness for the implementation of considered information system of potential Customer's personnel and setting respective correction factors to apply to the corporate databases (the volumes and duration of standard project activities, resource productivity, etc.). These correction factors are set basing on the information about the potential client provided by project initiator (usually one of the sales managers) in a form of the filled questionnaire.
- creation of the most probable project computer model based on the standard fragments and company's databases with the correction factors taken into consideration;
- creation of optimistic and pessimistic versions of the project computer model;
- integration of project model in the multiproject that embraces the company's project-running activities
- calculation of probable, optimistic and pessimistic schedules of project implementation, taking into consideration the involvement of resources in the implementation of other projects and ongoing activities;
- determination of the necessary probabilities of compliance with the deadlines and budget defined in the contract taking into consideration the consequences of their violation for the company (these probabilities should be approved by the company's top management),
- calculation of project target finish date and total cost that could be achieved with the set probabilities, activity and assignment time and cost buffers (contingency reserves) in the optimistic project schedule,

- determination of the Resource Critical Path (RCP) – the set of activities with total floats close or equal to zero. Total floats are calculated taking into account all schedule constraints including resource limitations;
- determination of critical assignments (with assignment floats close or equal to zero);
- determination of management reserves for project cost and duration;
- determination of project resource composition.

The distinctive feature of this approach to the development of project computer model and project planning is assessment of work volumes and resource productivity as initial data for the determination of expected project duration. Project activities are relegated to the different types of work and the volumes of work on these activities are measured in man-hours or other appropriate units (e.g. the number of workplaces on a site where the information system is to be installed). In cases where the work volume units cannot be defined, the volume of work is measured in %%.

The productivity of resources depends on their qualification. Several qualification levels together with the corresponding productivity are defined for each standard type of work. Qualification levels are set for each resource for the works he or she can perform. That's why people are interested in the improvement of their overall qualification level and in the rapid and adequate execution of works.

PSO maintains corporate databases of resource productivity on the standard activities and the reference databases of activity resource pools containing the lists of potential performers for each type of work. PSO also maintains the library of standard fragments defining the activities necessary for the execution of standard work packages, their interactions, and resource pools capable of the execution of each activity. These fragments are created for certain standard volumes of work.

Computer model of the project is assembled from the standard fragments only. If the work packages with no analogs in the corporate fragment library arise in the project, then the models of these fragments are created and included in the library. When a fragment is integrated into a project, its volume in this project is set together with the duration of the fragment's activities. Resources are allocated by the PM package in the process of project scheduling, taking into consideration the involvement of resources in the implementation of other projects and the priorities that can be set for particular performers to be used on respective types of activities.

Basing on the results of the analysis, the Program Committee (Change Control Board) decides on the expediency of project implementation and potential contract provisions. If their decision is positive, the analysis of corporate personnel databases is performed and the project manager is assigned (this is performed by the head of PSO with the approval of the Program Committee); all the information is submitted to the project manager for reviewing and approval (together with the company human resource management service). If the project manager has no objections concerning preliminary calculations, he or she joins in further negotiations and the elaboration of future contract provisions. In the process of negotiations he or she reviews the results of preliminary assessment of potential Customer's qualification and willingness for the execution of planned works. If the project manager's assessment differs from the preliminary assessment, the factors used for the evaluation of the Customer's team's productivity are corrected and the project is recalculated. If the negotiations turn out to be successful and the contract is concluded, project manager turns to PSO for help in the selection of personnel. He or she is provided with the access to historical database containing the information about the staff members' performance in the previous projects, evaluations of their qualification and their

involvement in other projects. Having set the priorities for the employment of staff members in this project (technically, these are resource priorities in the pools of resource allocations for the execution of activities), project managers prepares project schedule using the corporate databases of activity characteristics and resource allocation pools, performs risk analysis with the set priorities taken into consideration, and obtains the recommendations for the roles of the staff members in the project team. The project manager makes the final decision on the choice of the project team members which is agreed by the head of PSO.
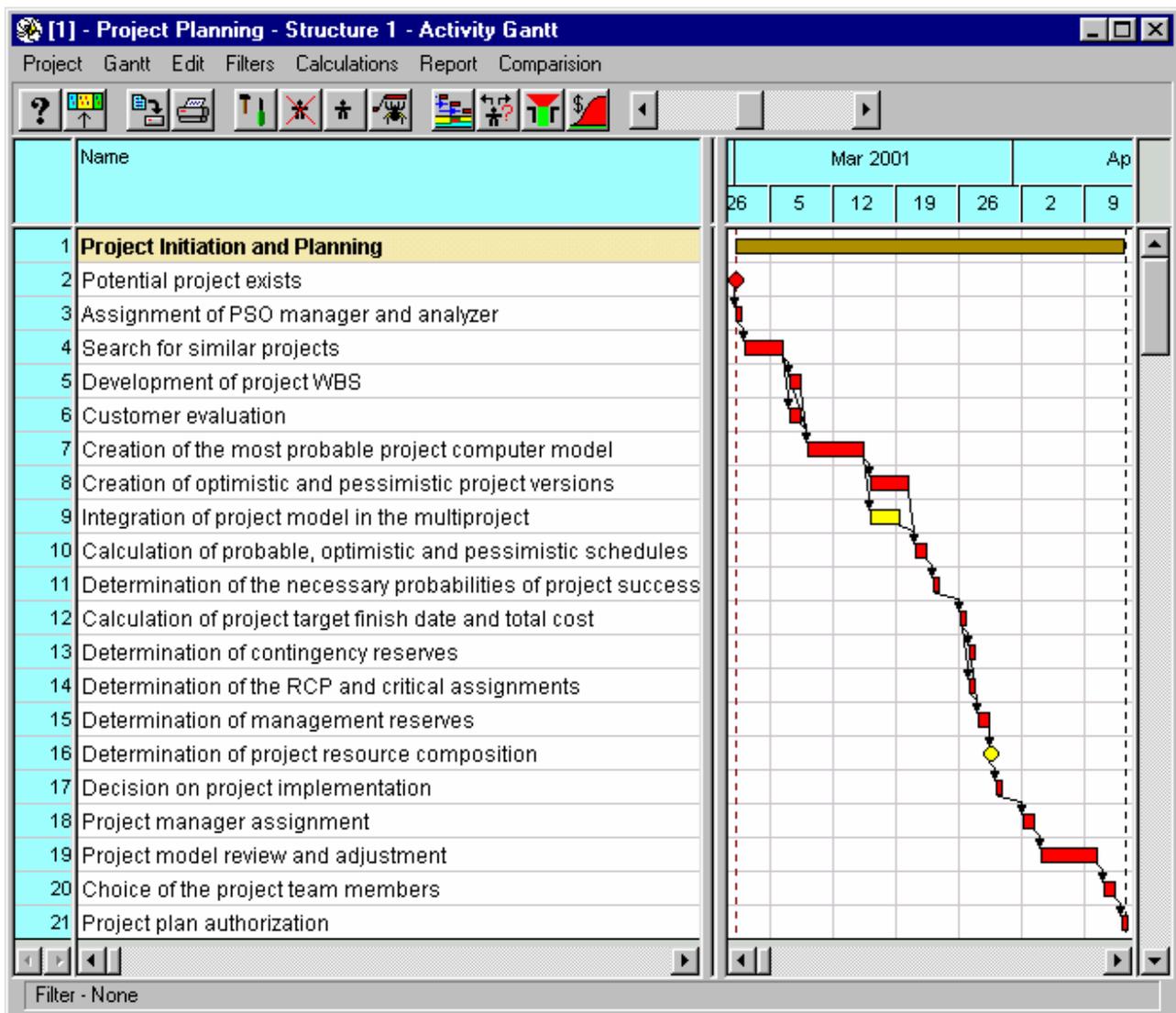


**Exhibit 1. Steps of project initiation and planning**

**Project execution (Exhibit 2)**

PM technology supported by Spider Project allows to create and to use several WBS in one project in parallel. This feature is widely used. The next stage of PM organization is the development of the Responsibility WBS. In this structure the project activities are clustered into the phases for which certain project team members are responsible.
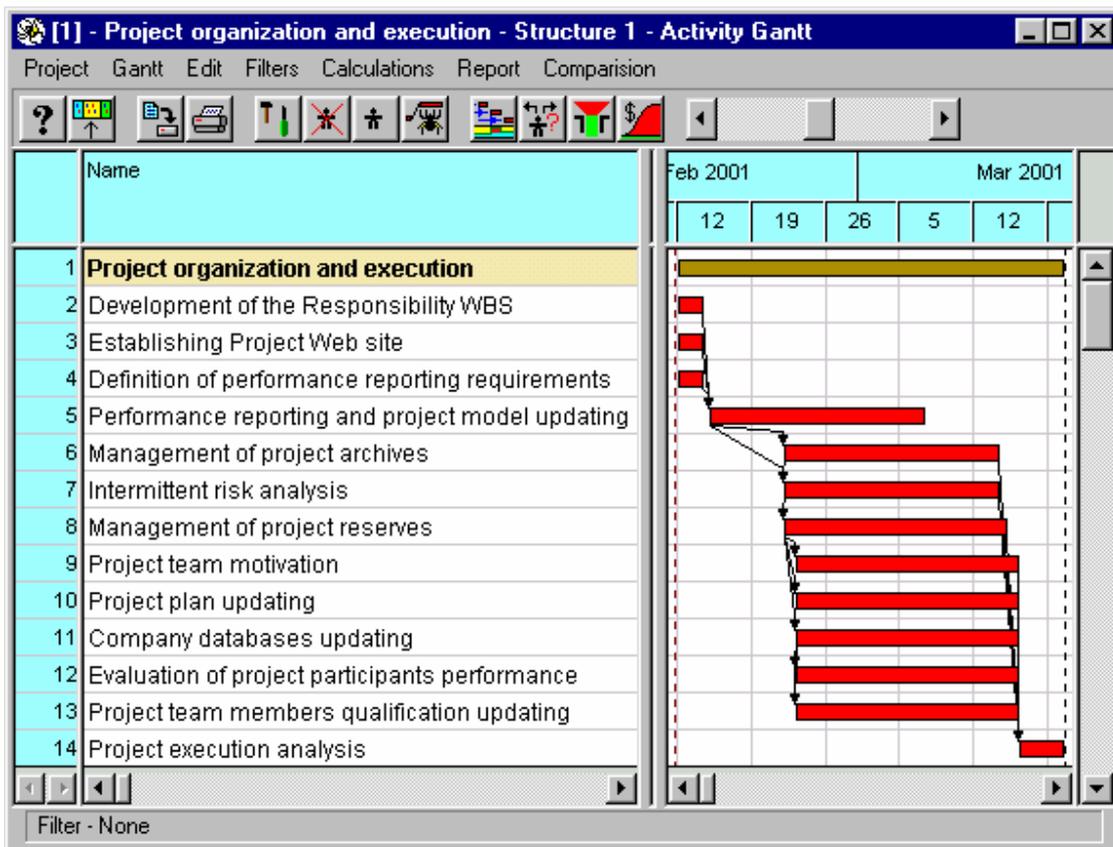
**Exhibit 2. Steps of project execution**

The project web-site or page is opened in the Internet that will be used by the project participants for information sharing and, particularly, for setting tasks for the project team members and receiving progress reports on project implementation. The project tasks are placed on this page as the subprojects corresponding to the phases (or work packages) of Responsibility WBS. The protocol of project progress reporting is defined, basing on the necessary frequency of the project computer model updating (usually once a week) and the preparation of reports for the company's administration. Each intermediate version of the project computer model is included in project archive automatically maintained by the package. Maintaining of the archives allows not only to evaluate the project's current status compared with the baseline version, but also to analyze the trends and performance for any time period since it is possible to compare the current version not only with the baseline but also with any intermediate version.

The tasks set for the project team members correspond to the optimistic project version. They are not advised about their assignment reserves (time buffers) that have been accounted for during the project planning. However the failure to comply with the deadlines planned in the optimistic project version is not punished. The task performers only have to explain the causes for such delay. If these causes are justifiable (risk events, errors made during the determination of work volumes or the assessment of the client's qualification), statistical analysis of such causes allows to reassess risks in future planning of this and other projects. If the delay is caused by overvaluation of the performer's qualification, he or she may jeopardize their qualification ratings that can be recessed (both the qualification for this type of works and the overall qualification level), with their salaries cut. During the project implementation, project manager regularly analyses the risks, checks the remaining reserves and informs the administration when in any of the projects these reserves get below the permissible level corresponding to a certain probability of project completion on time and within allocated budget. Permissible level is different for every project and the probability of successful project completion is recalculated in the process of regular risk analysis (usually, on the monthly basis).

Project team motivation depends on timely achievement of project milestones and cost savings. It means that if contingency time and cost reserves are positive at the moment of the achievement of  project milestone, the team's performance is considered successful.

The information about the actual volumes of work and duration of activities executed by project resources is analyzed at the Project Office Methodological Center. In case of over- or underestimated resource productivity on any types of activities, respective databases are corrected or else the activity performer is moved from one qualification category to another.

Besides the PM package Spider Project, Lotus Notes are used for project information exchange and document flow management in the projects.  The integration of these systems allows to keep the record of completed volumes of work and duration in any of these two systems. If performance accounting is done in Lotus Notes, the data is exported weekly to Spider Project for model updating, re-planning and allocation of new tasks. All branches of the company as well as the individual project team members work in the same information environment regardless of their physical location.

It is noteworthy that in performance accounting the volumes of work done are recorded besides the duration of the performer's work on particular activities. It is only natural that the activity performer could have spent 50% of planned time having done only 40% of planned work. Projection of remaining time is made basing on the evaluation of remaining volumes of work and the productivity of allocated resources. The lack of the notion of work volume and the assumption that duration of work is proportional to the volumes of work done conventionally used in the standard PM packages distort the real picture of project implementation and hinders the analysis of work status.

Upon the project completion, the manager should provide his evaluation of his project team members' qualification, his recommendations on the corrections that should be made in existing databases, and his analysis of the risks encountered during project implementation. The project is considered completed only when such analysis is performed. The project team should estimate not only its own performance but also their co-operation with the functional managers and regional branches. If the cultural differences caused any problems the team should describe and analyze these problems separately.

## Concluding remarks

Approaches to the management of IT projects in Russia are mostly similar to the approaches used in the other countries although there are some essential differences. Russian IT managers use the notion of activity work volume along with its duration for project planning and performance measurement. Risk analysis is the necessary part of project planning and approaches to risk simulation differ from the conventional approach. Resource Critical Path (RCP) technology of project control is similar to the Critical Chain theory. Project managers use for the project control the optimistic schedules and contingency reserves calculated in the process of risk analysis. Information exchange via project web-site is used for distributed project management. Planned tasks and progress reports, current project versions, orders and other project data are accessible for the authorized project participants. The cultural differences between the CIS countries do not have much impact due to personnel education and the management culture inherited from the USSR.