# What happens before a project starts? Project start-up from the supplier perspective

Paula Savolainen, June Verner, Lesley P.W. Land, Graham C. Low

# What Happens Before a Project Starts?—Project Start-up from the Supplier Perspective

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**Abstract** Before an outsourced software project officially begins the contracting or supplier organization has already expended effort. Although project start and start-up effort impact on project success in most cases these are undefined concepts. There are no clear definitions of project start, start-up or the activities that should be completed before project start either in the literature or in practice. Ambiguity around project start sets up risks to the profitability of a project and therefore makes the real success of a project not only uncertain but difficult to measure. A vague project start also makes comparisons between projects and between organizations unreliable. In this paper, we describe a pilot study that reviews project start, project start-up, and project start date, and then investigates what the key activities of the supplier are normally performed by the end of the project start-up phase. We use interviews with software supplier practitioners to define those key activities.

## 1 Introduction

In order to have a prosperous relationship between a customer and a software supplier, their joint projects need to be successful. The ISO/IEC 12207 standard defines a project as an endeavour with defined start and finish dates, undertaken to create a product or service in accordance with specified resources and requirements [14]. The definition of project success depends on the point of view taken and can be defined as: (1) meets planning goals, (2) provides end-user (we use the term "customer") benefits, and (3) provides contractor (we use the term "supplier") benefits (i.e., commercial success of the project and potential for future revenues) [6]. Without a general understanding of all three project success criteria and their implications, it is less likely that real project success will be achieved. The first project success criterion, the ability of the project to meet the planning goals, is closely related to the traditional measures of project success, namely cost, time and quality [2].

P. Savolainen (✉)
School of Computing, University of Eastern Finland, P.O. Box 1627, 70211 Kuopio, Finland
e-mail: paula.m.savolainen@uef.fi

Lero—The Irish Software Engineering Research Centre, University of Limerick, Ireland

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The second project success criterion, i.e., end user or customer benefits provided by the project, can be defined by the project's impact on general corporate strategy, business operations, research and development, IS/IT development, and facilities provision and management [5]. These benefits cannot always be measured when the project ends because they may take some time to eventuate and it may take years before any actual customer benefits can be estimated. Customer benefits are not the same as having a project delivered on time, within budget and of appropriate quality [5]. There have been studies which show that projects may be successful although they have been clearly over budget and over time [1, 4, 17, 24].

The third project success criterion, supplier benefits, which is important for the research described here, is necessary for a long-term relationship between a supplier and a customer. It is necessary for a supplier to run a profitable business; therefore the overall project portfolio of the supplier needs to make a profit in the long run. Haried and Ranamurthy [11] note that one of the main aims of a supplier is to get additional future business, therefore one of the main criteria for the success of current activities, from the supplier's point of view, is the possibility of future deals with the customer. In order to gain the required benefits, there needs to be a common understanding between the supplier and the customer of the project, its scope, timetable, and costs and these are formed through negotiation between the customer and the supplier.

However, in a recent study it was discovered that what work is included in the project work from the supplier side is not straightforward [21]. Irregulatiries were found from the moment the project was supposed to start. There may be several weeks between a customer order and the point in time when the project is ready to start. During that time a considerable amount of effort may have been made on the project, in addition to effort directly related to start-up activities. We discovered this when we asked "What is 'project start' and how it is defined?" and are in line with [3], who has found that there is a certain minimum effort required in the start-up phase. Therefore, in this study we extended this question to ask:

> What are the key activities of the software project start-up phase that enhances overall project success from a business perspective (i.e. the project supplier perspective)?

In order to answer this question in the next section we present a literature review and discuss previous research. In Sect. 3 we describe interviews with software supplier practitioners who were asked the research question. Section 4 provides our results and Sect. 5 presents our conclusion and a discussion of further work.

## 2 Literature Review

The aim of our literature review is to gain an understanding of what the literature has to say about project start and project start-up, its importance in projects in general, and the possible activities that might occur during project start-up. The literature we examined includes the existing standards (including ISO, IEEE, and project management), standard software engineering and information systems development texts

(e.g. [18, 20, 22]), journals such as The Information Systems Journal, Software Process Improvement, and Project Management Journal, as well as other peer reviewed articles from databases such as the ACM portal, Wiley InterScience database, the IEEE database, Elsevier ScienceDirect and SpringerLink database.

A search through relevant standards (such as ISO, IEEE and project management) using keywords such as "project", "project start", and "project start date" revealed no useful definitions for project start or related terms. We also examined ISO/IEC 12207, ISO/IEC 15288, ISO/IEC 15504, ISO/IEC 16085, and ISO/IEC 16326 [12–16], more closely, without any success. The well known project management standard, "A Guide to the Project Management Body of Knowledge" (PMBOK) does not describe when a project actually starts, or project start, or project start date [19]. However, PMBOK defines an Initiation Process Group, during which the project charter is developed and stakeholders are identified. When the project charter is approved, the project becomes officially authorized. Fangel provides a definition for project start-up [9]:

> Project start-up is a unified and systematic management process which quickly generates a platform for taking off and for getting going effectively.

He also describes the differences between project start and project start-up by using an example from ship-building industry [9]:

> . . . To me it is natural to distinguish between to start and to start-up. When you are going to drive a car, you start by merely turning the key, releasing the clutch, and simply drive away. You rarely give any thought to the matter of performing the kick-off. When you are going to run the diesel engine of a ship, you perform a start-up which is a process involving several activities all needed before the marine engineer can give the final "Go".
> Examples of the activities are the manning of the start-up, communication with the captain, fuel check, lubrication of bearings, starting pumps, initiation of filters, and building up sufficient air pressure. Such a professional start-up process is the basis for getting the engine going, but at the same time it gives an effective and economical operation of the engine. It seems to me that the difference between a project start and a project start-up is just as obvious as the difference between starting a car and starting up a ship's diesel engine.

Using the example above he succeeds in clarifying the difference between project start and project start-up. However, he gives an incomplete definition for project start and project start date [9]:

> The formal project start may be at the beginning of the start-up process, subject to approval of the developed project plans. Alternatively, the start-up process may be partly or fully carried out before the formal project start.

For the supplier company the project start-up phase can be seen a phase beginning from a moment the company has received an order from the customer or the customer has indicated some other way that they will order a software development project from the supplier; it ends when the project has been started. The project start-up phase and its relationship with the sales process and the actual project are depicted in Fig. 1.

In [21], practitioners were interviewed to determine when suppliers considered the actual start of a project. The most common responses were "We got the order" and

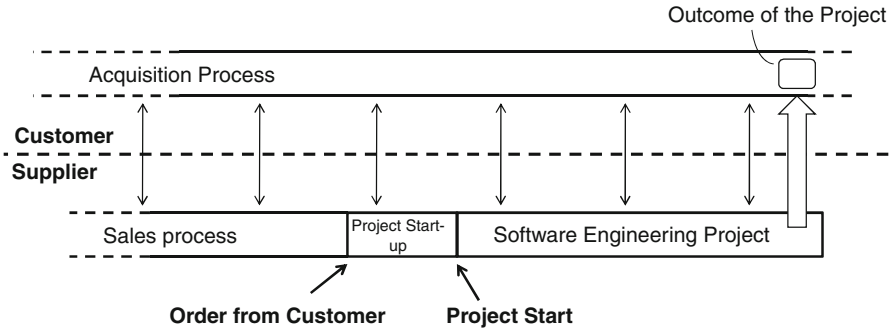


**Fig. 1** The start-up phase of a project. [21]

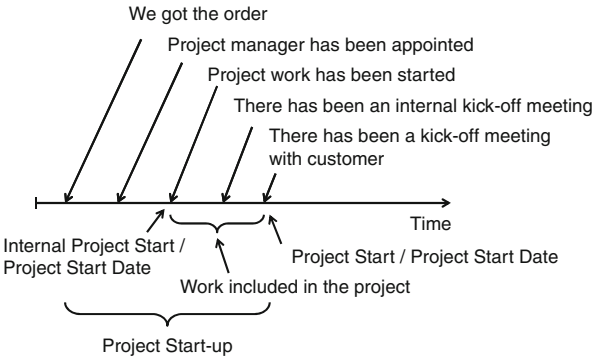


**Fig. 2** The definitions of the project start in a timeline. [21]

"Project work has been started"; one interviewee defined the project start via an internal kick-off meeting. It is possible to place the definitions presented in Savolainen [21] within a time-scale and the placement represents the relative ordering of the definitions as shown in Fig. 2.

There may be several weeks between an order and a kick-off meeting with the customer. During that time a considerable amount of effort may have been made on the project, in addition to effort directly related to start-up activities. Therefore definitions for project start, project start date, and project start-up effort included in the project provided in [21] are important. The project start is the day when the supplier and the customer have the project kick-off meeting. This moment is defined also as the project start date. The customer may expect the supplier to have the project team up and running immediately after that meeting. The project start-up activities that are required should be performed before the project start. The start-up activities should be included in the project work from moment when the project work has been started (internal project start/project start date) to the moment when the kick-off meeting has been performed with the customer. In that span a remarkable amount of work has been done and that effort should be included into the project despite the fact that the work is invisible to the customer [21].

Egginton discusses the start-up process and its importance for project success [7]. As a part of his study he formulated a list of start-up activities which are an essential part of large infrastructure projects. Although the project domain is different, his list is quite similar to that required for software development projects. According to Egginton, during the start-up phase a project team is formed, responsibilities assigned, procedures established, tools and controls installed, communications set up and initial contact between the team and the customer made. He emphasizes that the project manager with a just formed project team is faced with a multitude of activities ranging from understanding organizational aspects to developing specifications, from assessing risks of the contract to ordering some part of development from a subcontractor. Egginton recommends that the start-up phase should begin with a handover of project responsibility from the sales organisation to the project organisation. After a successful handover the next step is the rapid launch of the project, which is best achieved with a project kick-off or "start-up" workshop.

Egginton's observations are supported by Barry et al. [3] who have noted that while studying the relationship between software project duration and project effort, that for a given project, a minimum time is required to get complex work started. An organization needs time to set up the project team, train them and allow them to become familiar with the project.

Fangel argues that an appropriate project start-up process should be adopted for each project [8]. He emphasizes that no two projects are identical and every project start-up varies depending on the characteristics of the project [9]. He has identified two essential activities for project start-up: project planning and team building. During project planning the project's objectives are specified and the main project processes and organization are defined. During the team building process, social relationships between the project's participants are created, and rules of cooperation are clarified. Depending on the character of the project, different procedures generate a complete platform of understanding, plans, and cooperation for the effective execution of the project [9].

Turner and Cochrahe agree with Fangel on the need for a customized start-up process [23]. They have judged projects against two parameters: how well defined the goals are, and how well defined the methods are [23]. Like Fangel they argue that depending on the project type, an appropriate project start-up process should be adopted. They suggest that software development projects provide an example of projects where project goals are not well defined but methods are. Therefore in software development projects, the start-up process should focus on defining the purpose and objectives of the project, and converting these into a design of the project outcome which will deliver the required benefits to customer. Thus negotiations within the project team and between the team and the project's sponsor are essential. Once the purpose and the objectives have been defined, the start-up process focuses on refining them, and launching the project with appropriate project team and organization.

PMBOK describes project management through nine different knowledge areas and five project management process groups [19]. One process group is the Initiation Process Group, during which a project charter is developed and stakeholders are identified. When the project charter is approved, the project becomes officially

authorized. The project charter is meant to link the project to the ongoing work of the organization and authorize the project. Other activities identified as belonging to the Initiation Process Group are defining the initial scope, committing initial financial resources, selecting the project manager, developing clear descriptions of the project objectives including reasons why a specific project is the best alternative to satisfy requirements, and giving the project manager the authority to apply organizational resources to the subsequent project activities.

The literature therefore gives some indication of what possible project activities may be included in the project start-up phase for non-software projects and some limited insights for software projects, mainly from a project management perspective. A more holistic understanding of project start-up activities is specifically required for software projects, and from the business perspective of software project suppliers. The distinction between the project management and business perspectives may be critical as project success criteria and definitions may have different foci. For example, success criteria from the project management perspective may focus particularly on timely delivery of software with at least the majority of client's core requirements properly implemented. However, from the supplier's business perspective, project success criteria may be shifted to current/future profitability (cost) and team performance issues.

## 3 Research Methodology

The interviews described in this section are part of a larger study which included two different sets of interviews performed in four software engineering companies. The larger study aims to gain a better understanding of those activities which are performed in a supplier company before the project has been started and affect the project during its life-cycle. One set of interviews concentrated on activities performed in the tendering process and another set concentrated on the initiation activities performed in the project start-up phase. This study concentrates on the interviews which discussed the project start-up phase.

Two of the software engineering companies where interviews were performed were involved in software development projects for various customers. The other two companies were involved with embedded software projects with close cooperation with industrial companies. The number of employees varied from 20 to 230 employees and the age of the companies varied from 5 to 23 years at the time the interviews were performed. The size of the project groups varied from 2 to 10 team members, the duration of the projects were mainly from 1 to 15 months although one company had projects which lasted for up to 3 years. The main characteristic of all four participant companies is that they deliver unique products (software or embedded software, or in some cases specialized hardware with embedded software) for their customers. For these companies projects are their main way of doing business.

The practitioners interviewed were selected by the higher-level management of the companies who were asked to select project managers or other people responsible for project management for interviews. The interviewees included eleven Project

Managers, one Business Unit Manager, one Team Manager, and one Engineering Manager; altogether 14 practitioners were interviewed. We use title "project manager" when referring to all interviewees irrespective of their titles. No other people except the project managers were interviewed.

An interview instrument consisting of main themes and a form for background data were developed. The interview instrument was constructed by one researcher and validated by two other researchers. The interviews were semi-structured, and took the form of a discussion, using the interview instrument as a guide. Every interview was recorded and the recordings were transcribed to text. The transcribed texts were then analysed. All interviews were reviewed and a summary of each interview (that was a general description of the interviewee's experience of project start-up and activities done during the start-up phase) was developed. We concentrated on extracting information that describes what ought to be the key activities that will enhance overall project success from the project manager's point of view. From these descriptions each relevant activity was selected, listed, and analysed. Activities with similar meanings were grouped and named as a key activity. Analysis was then performed and the results are described in the next section.

## 4 Results

One of our main findings is that project managers find themselves in many different situations. Some project managers first found out about the project only when they were nominated as the project manager for the project. However, one project manager acted as a salesman, sold the project, got the deal, gathered as good a project group as was possible, and continued with the project as a project manager. There are many differences between project manager responsibilities and what their actual contributions are to the future project *before* there is a project at all. This result was independent of the title of the interviewees.

Key activities which arose from interviews were:

1. The project manager should formulate a "big picture" of the project and its objectives;
2. The project team should understand what they are going to do; and
3. The customer and the supplier should gain a common understanding of the project and its objectives.

The first key activity, the project managers' need to gain a holistic understanding of the project and its objectives, were clearly seen in the interviews. As the interviews took the form of discussions, guided by the interview instrument, it was remarkable, that 10 project managers out of the 14 emphasized the importance of this holistic understanding for project success. Some project managers mentioned the need for a better understanding of the customer's business. Additionally, they mentioned that they should better understand the customer's other information systems and the role of this project and its relationship with their other information systems. This information cannot normally be found in the project's documentation. The project manager needs

to understand the purpose of the project because without that understanding it is not possible to write the project plan or rewrite any project plan already created during the tendering phase. This applies especially to the schedule because only with a holistic understanding it is possible to estimate if the original schedule is realistic or not.

Without this understanding the project should not be allowed to start. This was clarified by one project manager who said:

> The customer had a tight schedule and we needed three—four designers and to work with existing specifications. When looking back we should not have done any design work on the first day. Instead, I should have moved to the customer for a while to fathom out, what was the need and if the specifications were finished or not.

Some project managers commented that at this stage, it is not possible to understand in detail what will be done during a project but a more general understanding will first have to be gained. It is essential to understand early what is really important so that the project team is able to devote its time to important matters instead of less important details. Of the four project managers who did not emphasize the importance of an early understanding of the project and its objectives, one was responsible for selling the project to the customer so was mainly concerned with how to make the project team understand what they are going to start to do. This is discussed later in this section.

Just as a project manager needs to gain a holistic understanding of the project and its objectives, the whole project team also needs to understand what they are going to do. One project manager described this point as follows:

> It's better that we don't do anything but sit on our hands for two weeks so that it's clear to everyone what are we aiming for and what are the goals.

The most often mentioned practice to contribute to an understanding of the project within the project team was the reading of available documents. An internal meeting was also mentioned by some project managers who used that meeting as an informative meeting. Some project managers, during the project start-up phase, utilized project planning meetings with the project team as a learning situation; while participating in project planning the project team has an opportunity to understand the scope and objectives of the project itself, and can provide valuable contributions to the project. Besides project planning meetings within the supplier company, meetings with customers were seen also as valuable learning situations. During customer meetings the project team familiarizes itself with business processes from customers side, and thereby it becomes possible for the whole project team to recognize critical parts of the project before project start.

The project managers did not rely only on the information about the project that existed in their own company alone. They understood that before the project was ready to start that there should be a common understanding of the project and its goals between the supplier and the customer, which was the third key activity. Nine project managers out of the 14 mentioned this key activity but it is not always clear that this common understanding exists before project start. While the supplier company has created its own vision of the project this can be quite different from the customer's vision.

> The customer images they will get more and the supplier images they will do less

was noted by one of the project managers. However, another project manager said that the customer's needs could have changed after the supplier company submitted the tender. One reason for changed needs is that it sometimes takes a surprisingly long time between the customer's decision to order the project from the supplier, and the project proceeding to the start-up phase. Therefore the current situation must be checked. By ensuring a common understanding with the customer before project start the project managers can avoid encountering problems in the future. There will be changes during the project execution, and this was expressed by one project manager:

> We shouldn't sustain a daydream at the beginning of the project it would be clear what the final outcome is to be.

If the customer and the supplier have a common understanding of the project and its objectives before project start, it is possible to mitigate any problems connected to change management and negotiations on how to compensate the changes. It was noticed that the project managers had a realistic attitude that there will be changes during project execution and they must prepare for future changes during the startup phase.

## 5 Conclusions and Future Work

The work presented here discusses project start, project start-up, and what activities are included in the project start-up. Although the amount of effort spent in the startup activities may be remarkable, the relationship between those activities and the project start has not been clearly defined in the relevant literature. Therefore we analyzed interviews conducted during a larger study and identified the following key activities:

- Project managers need to gain a holistic understanding of the project and its objectives. They need to have a good understanding of the customer's business, the customer's other information systems and the role of this project and its relationship with their other information systems. It is essential they understand early what is really important so that they know where to focus their attention.
- The project team needs to understand what they are going to start to do by reading available documents. An internal meeting can be used to provide information. Some project managers utilize project planning meetings with the project team as a learning device; while participating in project planning the project team will better understand the scope and objectives of the project itself, and can provide valuable contributions to the project.
- The customer and the supplier need to develop a common understanding of the project and its objectives and not only rely on information that exists in their own company alone. A common understanding of the project and its goals should exist between supplier and customer.

Although the study was based on a limited number of interviews its results can be considered valid because similar problems have been reported elsewhere [10]. Further work includes investigation of the start-up phase more closely, especially in supplier companies. We should also consider the start-up phase and its connections to both successful and failed projects.

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