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No project is an island: linking projects to history and context

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Abstract

Theories on project management are dominated by a perspective on singular projects, treating the unit of analysis as a lonely phenomenon. Anchored in a comparative case study, this paper discusses how the interior processes of a project are influenced by its historical and organizational context. The paper illustrates how the structures and procedures employed in a project have to be understood in relation to previous and simultaneous courses of activity, to future plans, and to standard operating procedures, traditions, and the norms of its surroundings. The findings suggest that future research on project management needs to extend its temporal scope, analyzing how project practices evolve through history over prior, present, and future projects, as well as its organizational scope, analyzing how project practices relate to long-term institutions as well as simultaneous activities in its environment.

Keywords: Project management; Temporary organizations; History; Contingency theory; Organizational context

1. Introduction

Projects are one of the most significant characteristics of contemporary organizations (Clegg, 1990; Ekstedt et al., 1999; Whittington et al., 1999). At present, projects are initiated to solve tasks and work assignments of almost any type or size, in almost any type of business (Maylor, 2001). Actually, the Western economies seem to be heading towards a "projectified society" (Lundin and Söderholm, 1998), where project management and time-limited organizational structures are not just used for handling extraordinary undertakings, but also represent an increasingly larger share of the organizations' ordinary operations (Hobday, 2000; Turner, 1999).

Consequently, from being a practitioner-driven normative theory, there is a growing scholarly interest in projects, and the role these temporary structures play in organizations. Except for the line of research which addresses project management issues per se (Dvir et al., 1998; Engwall, 1992; Morris and Hough, 1987; Pinto and Kharbanda, 1995b; Pinto and Prescott, 1990; Shenhar and Dvir, 1996), projects have been discussed as integrating mechanisms enabling cross-functional integration (Ancona and Caldwell, 1990; Ford and Randolph, 1992; Galbraith, 1973), as contractual arrangements between markets and hierarchies (Stinchcombe, 1985), as time-limited teams working towards stipulated deadlines (Gersick, 1988, 1989), as temporary organizations with distinctive

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characteristics compared to permanent organizations (Lundin and Söderholm, 1995), as effective tools in organizing product development (Clark and Wheelwright, 1992; Eisenhardt and Tabrizi, 1995; Lindkvist et al., 1998), as the natural work form in modern IT-companies (Barley and Kunda, 2000), and as the core units of analysis for understanding the production of high cost, complex products and systems, so called "CoPS" (Davies and Brady, 2000; Hobday, 1998).

With few exceptions (e.g. Brown and Eisenhardt, 1997; Eskeröd, 1998; Hobday, 2000), this research has been dominated by a perspective based on "the lonely project". The primary interest has been in the structures and dynamics of individual projects, typically discussed from the individual project manager's (PM's) perspective. As an outcome, the project has been conceptualized as a lonely phenomenon, independent of history, contemporary context and future (Kreiner, 1995). Earlier experience, simultaneous events, and future intentions are seldom included in the analysis. In this dominating ontology, procedures employed in one project are considered to be unique (Gustafsson, 1998; Löwendahl, 1995) and factors determining project success are considered to be due to the individual project in question (Morris and Hough, 1987; Pinto and Kharbanda, 1995a; Pinto and Prescott, 1990).

In organizational theory, the environmental impact on organizations is a classical issue. There are probably few organizational theorists today who would challenge the idea that external factors strongly influence the inner life of an organization. Many scholars have shown how environmental contingencies, such as uncertainty (Galbraith, 1973; Thompson, 1967), complexity (Woodward, 1965), rate of change (Burns and Stalker, 1961; Lawrence and Lorsch, 1967), and the allocation of authority and the availability of resources (Pfeffer and Salancik, 1978) have an impact on the internal behavior of an organization. In addition, more recent research has supplemented the picture of external influences by emphasizing different institutional aspects of the environment, such as traditions, norms, values, and procedures taken-for-granted in the organization (Scott and Meyer, 1994). Other scholars have stressed the concept of embeddedness to describe that the "environment" is not exclusively on the outside of the organization, but that organizational actions always take place within a complex societal web of structures, resources, values, and players (compare Granovetter, 1985).

In project management, however, similar theories are rare. The small, but growing, body of studies challenging the predominant universalistic approach to project management tends to address the relationship between project management behavior and qualities that are intrinsic to the project's technical content, such as differences between projects in R&D and construction (Pinto and Covin, 1989) or between projects of varying degrees of complexity (Shenhar and Dvir, 1996). Studies with a more open systems approach to projects are rare. Even though some scholars have pointed out the importance of the character of the linkages between, for instance, a project and its parent system (Blomquist and Packendorff, 1998; Löwendahl, 1995; Mähring, 2002), between a project and its principal (Söderlund, 2000), and between a project and its prehistory (Engwall, 1995; Mähring, 2002), limited attention has been paid to the consequences for the interior project dynamics that these connections produce.

The purpose of this paper is to address the importance of analyzing the interior processes of a project in relation to its historical and organizational context, i.e. the project's environment. The paper examines how structures and procedures employed in a project have to be analyzed in relation to previous and simultaneous courses of activity, to future plans, and to standard operating procedures, traditions, and norms of its organizational context. Since a project inherits such qualities from its surrounding organization, it is argued here that a project needs to be conceptualized as a history-dependent and organizationally-embedded unit of analysis. Thus, this calls for an ontological change; instead of lonely and closed systems, projects have to be conceptualized as contextually-embedded open systems, open in time as well as in "space".

The fact that projects are issued and executed within a larger organizational setting has being known among scholars of the innovation for a long time (cf. Allen, 1977; Myers and Marquis, 1969) and within the recently emerging discourses on project-based organizations (Gann and Salter, 2000; Hobday, 2000) and multi-project management (Cooper et al., 1999; Cusumano and Nobeoka, 1998; De Maio et al., 1994) as well. Most of this literature departure, however

from the level of analysis of the firm (the organizational level) dealing with issues concerning project selection, portfolio strategy, and portfolio coordination. There are only a small number of studies on how the inner life of an individual project is affected by factors determined and designed at the organizational level (one example is Eskeröd, 1998). Actually, when individual projects are discussed within these discourses, the discussion is dominated by a treatment of projects as well-defined, solitary units, detached from both history and context (cf. Eisenhardt and Tabrizi, 1995; Katz and Allen, 1982). As stated by Gann and Salter (2000); little research has been completed on the links between the operations at project level, the portfolios of projects at the organizational level, and central routine activities of the firm as a whole.

This is where this paper fits in. While past research on projects has emphasized the links between the project organizational behavior and the technical content of the project objectives, this paper adds the institutional aspects of the project environment to the analysis. Methods applied, measures taken, occurring problems and organizational behavior within an individual project have—of cause—to be analyzed in relation to the task at hand. But in order to understand the inner life of a project in depth, it also needs to be analyzed in relation to (1) experiences from past activities; (2) politics during the pre-project phases; (3) parallel courses of events happening during project execution; (4) ideas about the post-project future; and (5) institutionalized norms, values and routines of the project's organizational context.

The paper is based on serendipitous findings from qualitative case studies of project management in the execution of two complex, major engineering projects (compare Genus, 1997; Hobday, 1998; Nightingale, 2000). It is structured in three major parts. Section 2 outlines the theoretical background of the lonely project perspective, discussing its effects and limitations. Sections 3 and 4 describe the research approach, methodology, and observations, first from the traditional lonely project perspective and subsequently from an extended perspective, where the two observed projects are analyzed in their historical and organizational contexts. Sections 5 and 6 discuss the possible effects of bringing history and context into project management research, summarizing the implications of current findings for theory and practice.

2. Theoretical background

2.1. Normative project management theory

The present body of knowledge on project management (Morris, 2001; PMI, 1996) is primarily a result of its own specific line of development, exogenous to the hemispheres of academic organizational research. Except for some mathematical research, addressing algorithms and techniques for project planning (Goldrat, 1997; Gordon and Tulip, 1997; Leach, 1999; Wiley et al., 1998), current project management knowledge is a practitioner-driven theory that has emerged from practical problems in coordinating and implementing huge and complex undertakings, such as high-tech weapon systems programs or major infrastructure projects (Engwall, 1995; Hughes, 1998; Morris, 1994). It provides a management theory for practical PMs (Engwall, 1995; Packendorff, 1995). It deals with two principal problems: (1) how to structure and plan project activities in order to meet the stipulated objectives, and (2) how to ensure that project activities decided upon are executed according to the stipulated plan. The proposed solutions to these problems usually revolve around administrative methods and formal procedures concerning, e.g. project structuring, planning, performance measurement, quality management, and coordination. Usually, the literature describes the application of these methods as a basic, necessary condition for successful project management. Some typical contributions within this discourse are Archibald (1976); Cleland and King (1968); Meredith and Mantel (1995); PMI (1996); Turner (1999).

The starting point of this literature is the conception of the project as a time-limited, unique assignment with a PM in charge of its execution. The underlying message is that success or failure primarily depends on the skills of the PM in the systematic planning, the appropriate selection of team members, and the application of project management techniques and procedures (Packendorff, 1995). In the literature, the role of PM is described as difficult and complex, usually equipped with little formal authority (Gaddis, 1959; Gobeli and Larsson, 1986; Pinto and Kharbanda, 1995b). There is a common conception of the PM as acting as a non-legitimate change agent in a conservative, or sometimes even hostile, organizational environment (Kimmons and Loweree, 1989). Thus, employing

formal project management procedures is described as a basic, necessary condition for gaining legitimacy and administrative control within the organization (Johns, 1995; Middleton, 1967; Pinto and Kharbanda, 1995a).

2.2. Descriptive research on project management

Most descriptive research on the management of projects is relatively young and suffers from a weak theoretical basis (Shenhar and Dvir, 1996). It is strongly influenced by the normative project management theory. So far, one major issue has dominated the research: the quest for project management efficiency and project success (Shenhar et al., 1997). In empirical research, there are several studies on best practices and critical success factors in project management (Morris, 1983; Morris and Hough, 1987; Norrgren et al., 1997; Pinto and Prescott, 1990). Even though the very concept of project success has been called into question as ambiguous (Baccarini, 1999; de Wit, 1988), a similar quest for critical success factors can also be seen in research on specific kinds of projects, e.g. in IT and new product development (Brown and Eisenhardt, 1995; Cooper, 1994; Tatikonda and Rosenthal, 2000) or in construction (Winch, 1998). Altogether, this research has resulted in the identification of sets of factors contributing to project success, e.g. project mission, top management support, client consultation, planning and control, staffing, and leadership skills. All these factors are non-historical and directly connected to the studied, individual project.

In comparison, organizational research on projects and project management has been less influenced by the desire for identifying the list of critical success factors. Within this discourse, projects are basically discussed in two different ways. In many studies, the project has constituted central parts of the empirical background to the phenomenon or factor under study, i.e. communication patterns (Allen, 1977; Ancona and Caldwell, 1990); innovative capacity (Katz and Allen, 1982), cross-functional structures (Ford and Randolph, 1992), group dynamics (Ekwall, 1993), knowledge creation (Nonaka and Takeuchi, s1995), and team processes (Gersick, 1989; Hoegl and Gemueden, 2001).

Other studies, however, have addressed the project as an organizational phenomenon in itself. The principal foci have thus been on different organizational aspects of projects, such as the temporary nature of project organizations (Lundin and Söderholm, 1995), the hierarchical relations in major projects (Stinchcombe, 1985), the process dynamics within project organizations (Lindkvist et al., 1998; Löwendahl, 1995), the organizational design of the relationship between projects and their parent organizations (Clark and Wheelwright, 1992; Larson and Gobeli, 1987), how major projects functions as time-limited networks (Hellgren and Stjernberg, 1995), the project as a natural organizational form for the production of CoPS (Hobday, 2000), and the many different connotations of the project concept (Engwall, 1998).

2.3. Similar but unique

One tendency in past research is to treat projects as fundamentally similar to each other. Consequently, project management has been conceptualized as a universal phenomenon. Even though several classifications of different types of projects have been suggested, they have had limited theoretical impact. However, the universal approach has recently been called into question by comparative studies across different types of empirical projects, such as R&D projects and construction projects (Pinto and Covin, 1989), projects of varying technological uncertainty and level of system scope (Shenhar and Dvir, 1996) or projects of different size (Shenhar, 2001), or different proportions of hardware and software (Dvir et al., 1998). Findings from this research have revealed that "project management has a wide range of variations and projects have less characteristics in common than previously considered" (op. cit., 931). Consequently, there has been a desire for a more diverse picture, where the successful management of a project has to be contingent upon the project content.

Another tendency in past research is to treat all projects as fundamentally different from all non-project activities. The unique and extraordinary qualities of projects, stipulated in the normative textbook definitions of the project concept (PMI, 1996; Turner, 1999), are thus treated as empirical facts. In the literature, there are some references to project embeddedness (Blomquist and Packendorff, 1998), inter-project learning (Nobeoka, 1995) and the coordination of multiple simultaneous projects (Cusumano

and Nobeoka, 1998), but in mainstream thinking, there is a predominant view of the project as a lonely phenomenon in time (Kreiner, 1995). The project is thus understood as "being done for the first time or with procedures that are being altered" (Graham, 1985, p. 2). Consequently, limited attention has been paid to structures and procedures spanning over successive projects. The project as a unit of analysis has been conceptualized as a lonely phenomenon, with neither history nor future.

Furthermore, since projects are viewed as different from non-project activities, procedures and techniques applied in empirical projects are seldom discussed in relation to surrounding organizational structures and routines. In fact, several authors claim that the best way of promoting project management success is to execute the project autonomously; under the authority of a powerful PM (Clark and Wheelwright, 1992; Eisenhardt and Tabrizi, 1995; Karlsson and Nellore, 1998), and with only loose connections to its organizational environment (Hobday, 2000; Larson and Gobeli, 1987).

2.4. The lonely project perspective and its limitations

Contemporary thinking on project management is thus grounded in a lonely project perspective. Both textbooks and research literature primarily discuss individual projects. The perspective is from the inside (Danielsson, 1983). The dominant unit of analysis is one project at a time, the timeframe is, at maximum, the lifecycle of one individual project, and the dominant level of analysis is the individual project and sometimes the individual PM. In this perspective, the players and actions of the environment do not appear in their own right, rather through their relationship with the project in question. The historical and organizational contexts of the project are taken for granted, or simply not included in the analysis.

There are two significant shortcomings with this perspective. First, its organizational scope is too narrow. During the last decade, some research studies have shed light on how the implementation of an individual project is closely coupled to its organizational environment (Blomquist and Packendorff, 1998; Engwall, 1992; Eskeröd, 1996). As pointed out by Eskeröd (1998), for example, the appointment of team members to a project is usually a negotiation process between the PM and different players in the project environment, which continues throughout the entire project. Thus, the success or failure of an individual project might, on many occasions, be caused more by the result of these negotiations than by any specific project management skills or techniques.

Secondly, the timeframe of the lonely project perspective is too short. If we focus on one project at a time, every project seems like a unique undertaking. But one project organization cannot be understood deeply without taking its history into account (Engwall, 1995; Karlson, 1994). If we expand the timeframe, we find that some projects really are unique undertakings, representing a completely new experience for the parent organization. However, we also find that a large number of the project assignments are of a repetitive nature, with little deviation in relation to preceding projects within the organization (Kadefors, 1995; Obeng, 1995; Turner and Cochrane, 1993). Thus, the success or failure of an individual project might be more dependent on the experience of the key project team members than on specific project management skills and techniques.

3. Research approach and methodology

3.1. Background and sample

The managing and organizing of projects at one of the principal power utilities in Scandinavia was studied for more than 2 years. The original purpose was to examine critical factors for effective project management. The study was carried out from a traditional project management perspective. Since only a limited number of studies had been reported with this focus at this point in time, we chose an inductive, qualitative case study approach based on the in-depth analysis of two cases (Yin, 1994).[1] This approach combined the chance of discovering the unanticipated with the possibility of comparing the findings of the cases with each other (Eisenhardt, 1989). The study was a pilot. Its purpose was to gain experience and raise issues for further research.

[1] Most significant contributions to research on project management success factors were reported after the fieldwork of this study had been completed.

Table 1
The studied projects

	The Hydropower Project	The Transmission Project
Objective	Major extension and refurbishment of an old hydropower plant	Design, engineering, and construction of an HVDC power transmission link across the Baltic Sea
Scope	Process design, civil engineering, erection and construction	Process design, civil engineering, electrical installations and construction
Budget (US$)	250 million	250 million
Duration	1985–1992	1985–1990

The first project studied—here called the Hydropower Project—was a major extension to an old hydropower plant in central Scandinavia, while the second—here called the Transmission Project—encompassed the design and construction of an international power transmission link, connecting the power systems of two nations across the Baltic Sea. These two projects were among the biggest capital investment projects carried out in Scandinavia during the late 1980s. They had a budget of approximately US$ 250 million each and were both complex undertakings, employing a large network of engineers, departments, contractors, and suppliers over several years. In this way, they had several of the significant characteristics in common with projects producing CoPS (compare Barlow, 2000; Hobday, 1998) (Table 1).

3.1.1. The Hydropower Project

The Hydropower Project was a major extension to, and the total refurbishment of, one of the oldest, major hydropower plants in the country. The project was carried out over an 8-year period (1985–1992). It encompassed several measures to improve the productivity of the plant and increase the safety of the old dams. The project included the plant's electrical equipment, excavations of the downstream river channel and the total destruction and reconstruction of the power station's three dams.

The project had two major constraints. First, the site was a national historic landmark, with its waterfalls, old plant, and old village located beneath the installation. Thus, the works had to be carried out with great care and an environmental conservation program for the vicinity of the plant was included in the project. Second, because of the plant's role in the energy system, all the construction work had to be undertaken while the existing power plant was working at full scale production.

3.1.2. The Transmission Project

The Transmission Project comprised all the engineering activities, including the planning, design, procurement, construction, installation, and commissioning, of a power transmission link across the Baltic Sea. In order to cross the sea, the transmission of power was based on an advanced application of power transmission technology called high voltage direct current (HVDC). At that time, these transmission systems were technically complex and extremely expensive to build, and consequently very rare. In operation, these HVDC transmissions usually have a strong impact on the overall power system.[2]

The project was implemented over 6 years (1985–1990). The transmission system was a joint venture between the two leading power utilities of the countries involved. Consequently, the project was structured between the utilities in two equal parts. The studied utility broke its share down further into two separate project assignments, a Cable Project and a Converter Station Project, each with its own PM.

The following discussion concentrates specifically on the latter project, the Station Project. This project

[2] A typical HVDC power transmission link consists of two converter stations connected to each other by a direct current cable. When power is transmitted, one of the converter stations is fed with alternating current from the connected power grid; the current is transformed to an extremely high voltage and converted into direct current. Then the high voltage direct current is transmitted along the cable to the station on the other side, where it is converted back to alternating current, transformed down to normal voltage and exported to the power grid on this side of the transmission link. In the late 1980s, there were only about 35 HVDC systems in commercial operation in the whole world.

had a budget of approximately US$ 60 million and included the entire core HVDC technology of the transmission link. It was dominated by one major contract executed by an external systems supplier.

3.2. Research design, data collection and analysis

The empirical studies were carried out using an ethnographic approach (Fetterman, 1989). For practical reasons, the studies were done sequentially. The author spent approximately 3 days per week at the organization, first at the Hydropower Project (August 1987–July 1988), then at the Transmission Project (December 1988–April 1989). In both cases, the author had an office at the same department as the PM.

The author had a tutor who did not participate directly in the fieldwork but who handled formal contact with the company. The author and the tutor met approximately every other week to discuss methodological issues and interpretations of emerging findings. Through this design, one researcher acted as the "insider", with a close relationship to the organization under study, while the other researcher acted as the "outsider" who could reflect upon findings from a distance (Bartunek and Louis, 1996). In addition, each one of the case studies had a reference committee comprising the two researchers and key personnel at the parent organization of the projects. The reference committee of the first project met eight times during the study, while the committee of the second project met three times.

As with most qualitative case studies, the study combined different data collection methods, such as archives, interviews, questionnaires, and direct observations at formal and informal meetings (Eisenhardt, 1989). Having been trained as an engineer (M.Sc.), the author had a common language with the engineers and a basic understanding of the tasks at hand. The author also spent several days at the construction sites of the two projects. The primary source of information was, however, in-depth interviews with individual respondents. Concerning the Hydropower Project, 24 persons were interviewed, while 35 persons were interviewed concerning the Transmission Project. The interviews were semi-structured. The longest interview was 4 h and the shortest 1 h, the average length being approximately 2 h. All interviews were documented using manual notes, which were transcribed into complete manuscripts within a week of the interview. In order to get an in-depth understanding of the projects, most respondents were interviewed several times on different occasions.

One central activity was generating a description which captured vital aspects of the projects. This description was based on categories generated from the data and given a meaning through the data constituting it. The goal was that the categories should be close to the empirical material in the sense that they should be recognizable and meaningful for the practitioners under study (Werr, 1999). Thus, one important part of the research process was to feed back and test the research findings with the participants of the two projects.

Since the studies were explorative, the collected data was analyzed in gradual stages during the entire fieldwork. To provide corrective input to this subjective stream of interpretation, interview data was constantly compared and triangulated with "real time" observations and written archival evidence, and tentative findings were presented and discussed in gradual stages within the reference committees. However, the production of knowledge was anything but linear. On the contrary, insights and understandings were produced by several iterations, where new data from interviews and observations was compared in gradual stages with the mental picture constructed by data collected previously (Alvesson and Sköldberg, 2000).

Using these sources, two case studies were written, one for each project. These manuscripts were sent back to the persons in question at the company for their comments and remarks twice during the process. However, the author wrote the final texts of the reports himself, taking full responsibility for their content. The full cases studies are reported in Engwall and Selin (1989) and Engwall (1990).

4. The case studies visited and revisited

The two studied projects had several features in common. They were the two biggest undertakings by the same company. Both were internal projects initiated because the utility intended to own and operate the finished results in the future. They were both major engineering projects, organized on the same basic matrix principle, i.e. work packages conducted at engineering departments which were cross-functionally

coordinated by a PM. The two PMs were both around 60 years old. They both had extensive engineering backgrounds from several major projects within the utility.

4.1. First round of data: the lonely project perspective

The Hydropower Project was implemented by the power utility's Hydropower Division, one of seven engineering and construction divisions. This division had an almost 100-year-old tradition of engineering, construction, and maintenance projects at hydropower plants. During the 1980s, it employed approximately 150 persons, organized into seven specialized engineering departments. The division had a balanced matrix structure (Larson and Gobeli, 1987), where different time-limited projects were cross-functionally coordinated by five PMs answering directly to the general manager of the division.

The PM "purchased" the defined work packages of the project from the different engineering departments of the utility. Most of the engineering and construction was conducted in-house. The department heads were then responsible for the staffing and execution of these packages on time and on budget as stipulated. Several engineering consultants were contracted into the project, but primarily as reinforcements to the departments. At the construction site, the utility's internal Contracting Division managed all construction works and physical installations of equipment.

The PM of the Hydropower Project held an M.Sc. in civil engineering. He was a strong and dynamic leader. Even though he did not have any staff of his own, he answered directly to the general manager of the division. He personified the project assignment and made himself its key player, from the beginning to the very end. The PM was well aware of the message in project management literature and had the explicit intention of employing its concepts and techniques in his project. He put a strong emphasis on structuring, planning, scheduling, and cost control. He produced a project management handbook, defining guidelines and checklists for the project. He formally defined the roles and procedures of the project organization. He initiated start-up meetings, workshops, and seminars for key engineers, and assembled his project team for coordination meetings once a month. He felt responsible for all kinds of issues concerning the design and engineering of the hydropower plant. The structure of the project organization was built around a project management team consisting of the PM, six sub-PMs, representing the most involved engineering departments, and staff functions for project planning, cost engineering, procurement, and quality assurance. While all the sub-PMs were engaged in the project on a part time basis, the PM was working full time. In many ways, his management approach resembled the role model of the project management textbooks.

The Transmission Project was implemented by the utility's Transmission Division. This division had a similar history and structure to the Hydropower Division. Within the utility, it was responsible for the implementation of all investments and reinvestments in systems and equipment for transmission, transformation, and power distribution. At that time, it had approximately 500 employees, organized into five specialized engineering departments, and one department for physical installation works.

The division had a functional matrix structure (Larson and Gobeli, 1987). When the division received a project assignment, the responsibility for the assignment was allocated to one of its engineering departments. An engineer at this department was appointed as PM in order to coordinate the work and, if the assignment required collaboration with experts from other departments, it was his duty to engage and coordinate these activities as well.

The responsibility for the Transmission Project was consequently allocated to a team leader at one of the engineering departments. The technical core of the project—the HVDC system—was procured via one major contract from a major engineering company. Besides this contract, most additional engineering work was conducted in-house in a similar manner to the Hydropower Project. The PM "purchased" defined work packages from different engineering departments. As in the Hydropower Project, the utility's Contracting Division managed the construction and installation works on site. Engineering consultants handled only a minor share of the project.

This PM coordinated the Transmission Project in collaboration with one of the members of his team at the engineering department as deputy PM (the three other engineers of his team were not involved in the project). In relation to the Hydropower Project, this PM had a lower formal rank within the company's

hierarchy. In his position as PM, he had no formal authority at all. He held a degree in electrical engineering from a junior college. He was very humble, had a very low personal profile and was often silent during meetings.[3] He, and his deputy, coordinated the project without an explicit management approach. Neither of them had any formalized training in project management and they had limited theoretical knowledge of project management methods and techniques. During the interviews, they often excused themselves for their lack of knowledge in project management theory.

The management structure of the Transmission Project differed significantly from that of the Hydropower Project. All key personnel involved were engaged on a part time basis. There was no explicit, or formalized, project team and there were no appointed sub-PMs. Instead, the PM and his deputy communicated directly with representatives of each of the 12 engineering departments engaged. However, the core of the project—the HVDC contract—was coordinated at meetings in an informal small group consisting of the PM and five experts from key technical areas. This group functioned on a collegial basis.

There were no instructions or manuals for the management of the project at all. There was no written organizational chart for the project. The closest one came to such a document was a list of telephone numbers of importance to the project (including the phone numbers of approximately 25 persons). When asked directly, most respondents had difficulties in describing the organizational structure of the project they were participating in.

Periodically, the PM convened project coordination meetings with representatives of all the departments involved. However, it was each department's free choice whether to send a representative or not. Attendance at the meetings fluctuated considerably. Project coordination was instead executed primarily through informal direct contacts with individual engineers. Furthermore, there were very few project plans and schedules. Instead, the overall project schedule was defined by deadlines stipulated in the HVDC contract. Starting out from this, each of the involved engineering departments planned and controlled the activities within its own field of engineering. Thus, in relation to the Hydropower Project, this project was much more dependent on the initiatives of the participating engineering departments, each one managing its own share with full formal discretion.

4.2. First analysis: the success/failure paradox

Compared to the Hydropower Project, the management of the Transmission Project was diffuse. In fact, the management of the Transmission Project deviated from several of the most basic principles of project management, e.g. the PM's lack of formal authority, the lack of an explicit and structured project organization, the lack of explicit procedures for project coordination and control, and the minor emphasis put on planning and scheduling.

The PM of the Hydropower Project encountered several difficulties when he tried to coordinate the activities of his project. Many of the participating engineers did not follow his instructions and decisions. The project was constantly delayed because the engineering departments were not paying enough attention to it. Furthermore, many of the engineering departments tried to perform their parts of the project independently of the other departments, and without the involvement of the PM. On many occasions, the PM found it impossible to gain control of the project, which he was formally in charge of. Time schedules and milestones were not taken seriously, costs were recorded without consideration to budget, and different departments were planning and engineering their technical power plant subsystems without sufficient coordination with the other players. In other words, the PM of the Hydropower Project was fighting against the typical problems addressed in project management theory. Consequently, his solution was to push the implementation of project management procedures and techniques even further in his project.

In contrast, the project management approach of the Transmission Project was diffuse. However, this project was a tremendous success. The project was commonly regarded as one of the most successful project assignments ever undertaken by the division. It was executed and completed without any major disruptions at all. None of the interviewed respondents

[3] One example of this low profile: when several top management representatives from the international power industry visited the (almost) finished transmission link during a 2-day seminar during the spring of 1990, he and his deputy were the only key persons of the project who did not participate.

claimed to have had any negative experiences during the project. The technical specifications were met, there were no cost overruns, all the technical tests were passed during the first test runs, and the HVDC transmission link went into commercial operation several days earlier than stipulated in the original schedule. In fact, the project work was so effective that the construction and installation workers were able to leave for their summer vacation only a couple of weeks before the date of completion, and the date was still met. In addition, the project was completed without any major disruptions to the other operations of the utility.

This seemed like a paradox. The PM with his formal authority, explicit management approach, and who deliberately applied state-of-the-art methods of project management was having significant problems, while the PM who lacked both formal authority and an explicit management approach, and who deviated substantially from the textbooks, was being significantly successful. How come?

There are two possible answers to this question. First, established theory might be generally false, i.e. that the concepts, procedures, and techniques taught in textbooks actually decrease the possibility of success in project management, rather than increase it (Blomberg, 1998). Second, the theory might have bounded validity, i.e. there might be factors influencing project execution that are not included in established theory. This latter point will be pursued here. As will be shown; if the scope of research is expanded beyond the temporal and spatial demarcation lines of each of the individual projects, the success/failure paradox receives a plausible explanation.

4.3. Second round data: expanding the scope in history and context

By expanding the scope, the inner life of the two projects will be analyzed in relation to other simultaneous and successive undertakings carried out by the utility. As an example of the explanatory power of this perspective, three aspects of the projects will be discussed in this section: (1) the prestige of the projects, (2) the legitimacy of the project management approaches, and (3) the uniqueness of the project contents. Each one of these three factors is due to the positions of the two projects in the historical development of their surrounding organizational context, and thus not included in the ontology of the lonely project.

4.3.1. The Hydropower Project

The Hydropower Project was the biggest ongoing undertaking by the Hydropower Division. In spite of this, most engineers regarded it as “one project among many others”. Earlier in its history, the division had undertaken several much bigger investments in new hydropower plants. Even if the existing power plant was one of the oldest and most famous in the country, it was small in relation to more modern plants in the power system. Many engineers within the utility were also critical to the whole undertaking per se. In respect of power production, the most effective project had been to tear down the old power station completely and construct a new, modern plant on the same site. For many engineers, it was hard to accept the fact that top management had decided to preserve the old plant due to its historical values, rather than to create the best conditions for efficient energy production. In addition, the undertaking was based on existing technology and did not include any spectacular innovations in power production.

Superficially, the Hydropower Project was considered to be “fairly ordinary”. In relation to the other projects of the division, however, its content had several unique features. Actually, it was the first time the utility was carrying out the total refurbishment and extension of an existing hydropower plant in one major project. Previous upgrading and maintenance projects had always been carried out as many minor, continuously ongoing, undertakings. However, the utility was facing a situation where a large number of its existing hydropower plants would soon be in need of similar upgrading; the Hydropower Project was the first in a long series of similar reinvestments. Second, the Hydropower Project was the first time ever that the division had undertaken such a major project at a power plant, which was simultaneously producing power at full scale. This production of power made the planning of the project extremely complex and none of those involved had any experiences from similar situations. Finally, the management approach of the project broke with the old, established management procedures at the division. Thus, in many ways, the project was functioning as a training ground for administrative

innovations, as well as new engineering procedures to be implemented at full scale in the future.

The PM's management approach challenged many of the old established norms and structures of this parent organization. While the other PMs at the division were passively coordinating approximately ten smaller projects simultaneously, the PM of the Hydropower Project actively managed only one single project on a full time basis. However, his appointment as PM was, in itself, controversial. The PM had been personally handpicked for the assignment by the project's client, the utility's Marketing Division, against the wishes of the head of the Hydropower Division.

This was the first hydropower project for the PM. During the previous decades, he had been engaged in the utility's construction of new nuclear power plants. Consequently, his project management style was heavily influenced by experience from these projects, which were executed in another division. In the nuclear power projects, the PMs had a much stronger position than they have traditionally had at the Hydropower Division. In practice, the nuclear power PMs usually functioned as superiors vis-a-vis the heads of the engineering departments, and this was the approach he tried to implement within his Hydropower Project as well.

The client's way of handpicking him for this project can also be interpreted as a deliberate attempt to reform the management procedures of the Hydropower Division (which in comparison to the Nuclear Power Division was perceived as old-fashioned by top management). Accordingly, the PM implemented several procedures that challenged the traditional domains of the engineering departments. One of his first decisions was to create a stronger and more structured project organization than in other hydropower projects. Instead of appointing, as was the tradition, team leaders as sub-PMs, he chose department heads for his project management team (one level up in the hierarchy). Furthermore, he structured the subprojects in a different way: several work packages that had traditionally been coordinated between the departments independently of the PM, were defined in this project as subprojects in their own right and consequently elevated to the project management level. He also engaged a project planner on a full time basis (a unique position in the history of the division), he created a project handbook, forced the departments to follow the same rigorous planning methodology as the utility's nuclear power projects, and he wanted to control all major project procurement, an issue that had traditionally been under the full discretion of the engineering departments. For the first time, engineers and department heads, who were used to working almost autonomously, encountered a PM who was deliberately trying to control the project process by actively getting involved in their day-to-day work. The management problems of the project were, in this sense, the result of a collision between two philosophies: the traditional procedures of the Hydropower Division, and the "modern" management style of the nuclear power projects. The hidden agenda behind the client's appointment of this specific PM for this specific project was as follows: to force the Hydropower Division to change its management procedures from within.

4.3.2. The Transmission Project

The Transmission Project was of strategic importance to the entire utility. When in operation, the completed power transmission link was expected to have a crucial impact on the entire Scandinavian power system. The top management announced this importance publicly. Consequently, the project was given the highest priority. Among the engineers, it was considered to be an attractive project to be working in. In interviews, the participating engineers described the technical content of the project as "interesting" and "exciting". Due to its complexity, HVDC technology was considered to be highly prestigious among the electrical engineers. The project's international dimension also implied features that "distinguished it from all the other everyday projects" at the utility.

At first glance, the Transmission Project also seemed to be unique. For most power utilities, an HVDC project like this is a very extraordinary undertaking. With regard to HVDC technology, however, the studied company had an exclusive position among the power utilities of the world. While most other utilities had no, or limited, experience of HVDC technology working at full scale, the Transmission Project was the utility's sixth HVDC project, and in all of these projects, the technical core—the HVDC system—was delivered by the very same contractor. These two companies, the principal power utility and the principal electrical engineering company in the country, have had a mutual commercial relationship

since the early 20th century. In fact, development of the HVDC technology is often said to be one of the most successful technical outcomes of this collaboration (Fridlund, 1994). In the Transmission Project, this long-term relationship meant that both parties had confidence in each other's engineering skills and production abilities, enabling very efficient communication.

Furthermore, the Transmission Project was the third project in a row of three similar, successive projects between the utility and the HVDC contractor, executed within a period of 3 years. This was a unique situation, without precedence in the history of HVDC projects anywhere in the world. While HVDC projects are usually exclusive one-off commissions, where most project participants have no experience at all from similar projects, many of the key members of the Transmission Project had held identical positions in one or both of the preceding HVDC projects.

Each one of these three projects had its own background. They were planned independently, the HVDC systems were procured independently, and they had three different PMs. The Transmission Project was the largest of these three. However, since the two previous projects had been extensions of already existing transmission links, these two were regarded as technically more complex.

Since they were initiated successively, both the utility and the HVDC contractor were able to make use of experience from earlier projects in the management of subsequent projects. One example is the formation of the team of key engineers which managed the HVDC contract. This was a direct result of coordination problems with the contractor during the first project. The team found its form during the second project and functioned very efficiently during the third project (studied here). Except for the PM, who was new, all the other team members had had the same function during the previous, second project. There were several examples like this, where the costs and errors of the two previous projects were transformed into benefits for the management of the third project.[4]

Finally, the PM's fuzzy way of coordinating the Transmission Project followed the traditional procedures of its surrounding organization. The PM had been working at the division in over 30 years; he was a well-respected engineer and had an in-depth understanding of the inner life of the division. He manifested trust in his engineering colleagues and had no interest in challenging the traditions of his division. He did not fight for any formal power or official recognition as a PM. Once the HVDC contract was signed, he left most of the responsibility for its execution to the informal team of key engineers. Instead, he assigned his interest to the additional, supporting activities of the project. In some cases, he used his formal position as team leader to allocate important procurement to his unit in the line organization (i.e. under his direct discretion), but in most cases, he allowed the other engineering departments to take full responsibility for the work packages of their specialist fields. By acting in this way, the PM did not challenge the permanent engineering departments by fighting for more formalized procedures or methods in accordance with project management textbooks. On the contrary, his humble and informal way of coordination harmonized the existing norms and structures perfectly.

4.4. Secondary round analysis: historical and contextual linkages

When relating each of the projects to its historical and organizational context, the success/failure paradox receives an explanation. First, the prestige of the project assignments varied. One effect of the great prestige of the Transmission Project was that it easily gained organizational support (Thompson, 1967). The fact that it had top management support, a challenging technical content and an interesting international dimension made it attractive among the engineers and gave it priority within the organization (compare Allen and Katz, 1995). In this way, the PM of the Transmission Project was spared many of the troubles that characterized the Hydropower Project, which was

[4] Two other examples: (1) Due to the problems during the first project with the HVDC contract (an extensive document of several hundreds of pages); great effort was put into developing the contract for the second project. Between the second and third projects, however, only minor modifications were made in order to make it even better. (2) Since the utility deliberately specified the third HVDC transmission link as similarly as possible to the second, the HVDC contractor in the third project was able to copy key software programs developed during the second project, subsequently only implementing minor adaptations in order to make them work.

considered to be one project among many others. Neither the content nor the form of the Hydropower Project had especially great prestige within its parent organization. Consequently, there was little interest among the engineers to give it priority over other simultaneous activities.

Second, the uniqueness of the project contents varied. While the Transmission Project comprised almost the same activities as the two previous projects and exploited this experience, the scope of the Hydropower Project comprised several unique features that had not been tested in this way before. Even if the Transmission Project was a complicated and complex undertaking, the repetitiveness made its project process less uncertain and more predictable (Davies and Brady, 2000) than in the Hydropower Project. Consequently, the need for coordination between the players in the Transmission Project was significantly reduced (March and Simon, 1958). Since the Hydropower Project, on the other hand, manifested a break with the history of its parent organization, many of its participants had to explore new roles and new ways of coordination (March, 1991).

Third, the legitimacy of the employed project management approaches varied. The Transmission Project was managed in accordance with the institutionalized structures of its environment (Scott and Meyer, 1994). Consequently, most participants allocated more attention to this project than to more common undertakings that were simultaneously competing for their time and attention. The management of the Hydropower Project, on the other hand, challenged radically some of the core institutional structures of its environment (Buchanan and Boddy, 1992). Since the PM's approach called into question established roles and behaviors, he continuously had to defend his project against critics from his environment. The result was mutual distrust and, as a consequence, the PM had difficulties with the allocation of resources to his project.

To sum up: analyzed within each historical and organizational context, the paradoxical observations made in the lonely project perspective receive a plausible explanation. However, the identification of contingency factors, such as prestige, uniqueness, and legitimacy, requires an ontological change. In order to identify them, the projects needed to be conceptualized as interconnected with their history and future, as well as embedded in their surrounding organizational contexts. Thus, the three contingency factors discussed here are just taken as examples in order to illustrate the ontological effects of such an extended perspective. By focusing, as has traditionally been the case, on one project at a time and treating it as an island on its own, there is an obvious risk of the produced understanding of the interior dynamics of project organizations becoming too narrow (and sometimes even false).

5. Discussion

This study argues for the necessity to understand projects in their organizational and historical contexts. As illustrated, the lonely perspective, which has dominated past research, has produced a limited understanding of project management in practice. By adding history and organizational context, the study illustrates the explanatory power of a broader perspective on project management.

5.1. Alternative explanations?

Are there any other possible explanations to the success/failure paradox? One might argue that the Hydropower PM was doomed to failure due to too little authority. This might be true; the imbalance between too much responsibility and too little authority is a classical issue in project management literature (Gaddis, 1959; Kimmons and Loweree, 1989; Middleton, 1967). In comparison, however, the hydropower PM had more formal authority than the PM at the Transmission Project. He held a higher position in the formal hierarchy and he had more freedom to design his project the way he wanted. However, the transmission PM who had almost no formal power at all in his position was much more successful. Consequently, the explanation could not be the lack of authority in itself.

Hence, this leads to a second possibility: the success/failure paradox might be due to leadership style. In retrospect, this seems like a plausible explanation; the leadership style of the Hydropower PM was obviously dysfunctional, compared to the PM of the Transmission Project. However, the choice of PM was in each of the two projects a result of the contextual situation. While the appointment of the Transmission PM was uncontroversial, he had long technical experience

and a good reputation within the Transmission Division; the appointment of the Hydropower PM was a highly political act, very much dependent on the history and context of the Hydropower Division. By handpicking a PM with a background in nuclear power projects and assigning him full time, the Marketing Division (and indirectly top management of the utility) clearly manifested their opinion about a need for change at the Hydropower Division. Thus, the leadership style of the Hydropower PM, challenging many of the deeply ingrained institutions of the parent organization, was very much a product of the project's context.

Consequently, the failure of Hydropower PM is consistent with Leonard-Barton's (1992) observation that radically new projects might challenge the existing capabilities, knowledge bases, and institutional structures of an organization. The values and managerial system at the Hydropower Division had evolved over almost 90 years of investments in new hydropower plants under a functionally oriented management. The Hydropower Project studied here represented, however, a coming new era of reinvestments and more project-based management. Thus, in the context of this first project of the new era, the traditional core capabilities, which earlier had made the division very successful, turned into core rigidities, hampering rather than supporting project management success.

5.2. Institutional theory and project management

In relation to earlier empirical work, this study provides a complementary picture to the empirical work of Morris and Hough (1987) and Pinto and colleagues (Pinto and Covin, 1989; Pinto and Prescott, 1990, etc.) who generated sets of success factors which were supposed to be universally applicable to project management. Instead, current findings suggest that project management success is to a large extent due to context-specific circumstances. Thus, a project management approach or technique that is successful in one project, under certain circumstances, might be a failure in a different project, or under different circumstances. Consequently, this study supports the small, but growing, line of research arguing for a non-universal, contingency approach to project management.

However, this study identifies contingency factors of another kind than during previous work in this line of research. While past research has suggested classifications of projects, based on the intrinsic qualities of the project's content, such as size, system scope, complexity, or technological uncertainty (Dvir et al., 1998; Shenhar, 2001; Shenhar and Dvir, 1996; Turner and Cochrane, 1993), current findings emphasize societal factors related to the players and organizations involved in the projects. Thus, these factors have little to do with the technical content of a project per se, but rather with how different stakeholders interpret a project in relation to the procedures and traditions of its surrounding context. The findings suggest, for instance, that important aspects of a project's inner life are dependent on the level of deviation between the practices applied within the project and the knowledge base and institutional structure of its organizational context.

Furthermore, while past research has emphasized different contingencies of an absolute nature that would help to create a typology of projects (Shenhar and Dvir, 1996), the current study emphasizes contingency factors of a relative nature. The findings suggest that a significant share of the process dynamics of a project is closely related to the experience and knowledge base of the players involved. If the project mission is radically new to the involved players, current findings suggest that there would be a significant amount of exploration activities in order to learn about the task at hand and, consequently, a high probability of unpredicted discoveries emerging during project execution (Kreiner, 1995; Obeng, 1995). If, on the other hand, the project aligns itself with the missions of previous projects (Nobeoka, 1995), current findings suggest that the exploitation of existing knowledge and repetitions of existing procedures would produce predictability, both in behavioral patterns and in the outcomes based on these patterns. Consequently, there would be less unpredicted discoveries emerging and procedures would be applied efficiently due to the "economics of repetition" (Davies and Brady, 2000).

Thus, the current study does not question the significance of a project's technical content. It rather adds an extra layer of contingency factors that need to be taking into account when analyzing process dynamics of project organizations. To paraphrase Scott and Meyer (1991), a project team is affected by both technical and institutional aspects of its environment.

5.3. The seductive image of uniqueness

Furthermore, the current study calls into question the popular notion of projects as unique and solid units with distinctive demarcations to their organizational environment. The traditional emphasis on extraordinary and time-limited characteristics has produced a conception of the project as a unique phenomenon in every aspect. Current findings suggest, however, a more diverse picture. By linking projects to history and context, the management approach employed in a project seems to appear as a conglomerate of procedures and practices with different origins and of a different age. While some procedures are applied for the first time, other procedures have been exploited previously, and while some procedures are tailored specifically to the project, other procedures are well in line with the standard routines of the surrounding organizational context. Thus, this study aligns itself with, for instance, Kadefors (1995) and Pipan and Porsander (2000) who have shown that even radically unique project missions can consist of several non-unique technical components, as well as highly standardized administrative procedures. Thus, in order to get an in-depth understanding of the dynamics of project work, we need to bring these microstructures into the analysis.

Finally, it has to be noted that the three contingency factors discussed in this study—prestige, legitimacy, and uniqueness—should be seen as examples. Their primary role was to illustrate the potential explanatory power of applying an extended historical and organizational perspective to project management research. As already indicated, they are probably not mutually independent of each other. For example, the level of uniqueness might influence the qualities of prestige and the legitimacy of a project. On the other hand, as shown by Sahlin-Andersson (1989), a highly prestigious project will often acquire an image of being unique and extraordinary. However, the systematic application of an extended perspective in future project management research will probably identify many other contextual contingencies as well.

5.4. Limitations and implications for research

The current study provides tentative directions for future examinations of how the process dynamics of project organizations can be explained by factors which have traditionally been excluded from the analysis. Nevertheless, based on two cases concerning major capital investment projects in one company, the validity of the findings is limited. Before any generalizations can be made, more research is required into project management with an extended scope in history and organizational context. However, there are little reasons why the principal findings would not be valid. No project neither takes off from, nor is executed in, an organizational vacuum. The impact from history and context might be of different kinds and of different magnitudes in different projects and in different situations, but that there would be no influence seems implausible. Rather than ignoring these influences, the challenge is to acknowledge them and analyze them further. Hence, assuming that the reported findings are generally valid, they have implications for research on project management and project organizations.

By *extending the timeframe* applied in project management research beyond the two project end-points of initiation and conclusion, the analysis will capture how, and to what extent, the studied projects import knowledge, procedures, structures, experience, values, and ideas from their organizational context, as well as how they export similar features to the context again (compare Miles, 1964). Such temporal interconnections can be of different types: technical, e.g. the reuse of an old technical design (Karlson, 1994; Nobeoka, 1995), administrative, e.g. the reuse of an established documentation system (Lindqvist, 2001) or organizational, e.g. the movement of key engineers from one project to another (Björkegren, 1999).

One implication of such an extension lies in including the *input* in a project in the analysis. Every project takes off from a specific set of organizational preconditions, e.g. the available resources, personal experience from previous projects and existing technological solutions. Thus, as discussed previously, many observed patterns of behavior within a project will probably receive their explanation through an analysis of the ex ante level of knowledge and experience among key players in the project. In the same way might an analysis of the pre-project activities during the initiation phase also shed light on observed behavioral patterns during project execution. As emphasized by Miller and Lessard (2000) in their study of large engineering

projects, it is often during the pre-project phase, the most important political basis for project success is settled. A second implication lies in analyzing the *output* from a project. Even though this was not explicitly discussed in the analysis, one plausible hypothesis is that ideas about how the project outcomes are going to be used after project completion will influence the execution of the project (compare Gessler, 2002). For instance, there are probably stronger incentives for the exploration and development of new techniques in a project, if these techniques are planned to be used in subsequent projects as well, than in a project which is considered to be the last of its kind in the organization.

By *extending the organizational scope* of project management research beyond the formal demarcation lines of the individual project, the observed behaviors in an individual project will be analyzed in relation to other projects and non-project activities which happen to be executed simultaneously (De Maio et al., 1994; Engwall and Sjögren-Källqvist, 2001; March, 1999), in relation to the core business of its parent organization (Cusumano and Nobeoka, 1998; Wheelwright and Clark, 1992), as well as in relation to the institutional structures (Powell and DiMaggio, 1991) of organizational environment.

A third implication for research, thus, lies in examining how a project is dependent on the progress of other, *simultaneous projects* in its environment. Such dependencies might affect the project dynamics in different ways, e.g. through resources which are not available when scheduled due to being occupied by other delayed projects; technical problems which are not solved due to problems in other projects having a higher priority; or unplanned technical changes that need to be implemented in order to adapt to changes made in other projects.

A fourth implication lies in examining the inner life of a project in relation to the project's *role and function vis-a-vis its parent organization*. As already indicated, a project perceived as important and urgent will probably attract interest and get easier access to the necessary resources than a project conceptualized as having little importance to the organization. Furthermore, the timing of a project in relation to the business of its parent organization needs to be analyzed. For instance, a project can suffer severely from a constant lack of resources if it is initiated during a period of organizational over-commitment, while the same project could benefit from a surplus of available resources, if initiated during a period of under-commitment.

Finally, a fifth research implication lies in examining how the project fits into the established *norms and values of its environment*. As indicated by the findings, if the purpose behind the project, and the mixture of practices applied within the project, aligns itself with the ideas, structures and behavioral patterns of key players within the surrounding organizations, there would seem to be a great probability of an efficient and smooth project execution. On the other hand, if it challenges these institutionalized patterns, there will be a great probability of a project suffering from inefficiency, delays, and conflicts of interest. In fact, as shown by Saplosky (1972) in his famous analysis of the management of the Polaris Systems Development; one of the most significant functions of the project management techniques applied in that project was as "window dressing". By using impressive management techniques harmonizing the values of the late 1950s, the Polaris project gained legitimacy, politicians became confident in its management, and its project team could concentrate on technical problem solving instead of dealing with its highly political environment.

The simple model in Fig. 1 summarizes these implications. In order to understand the process dynamics of a project, we need to ask not just about the technical content of the project assignment, but also: Where do the methods, structures, processes and technical solutions applied in the project come from? What pre-project politics resulted in its definition and initiation? Which experiences do the involved actors have from earlier assignments? How does the project affect each actor's post-project future? What are the parallel courses of events competing with the project? And how are the project and its project management related to the institutional norms, values and routines of its organizational context? By inquiring the answers to these questions, we will develop new insight into the complex pattern of project management in practice.

5.5. Implications for project management practice

The current findings have practical implications for project management as well. The suggestion that there

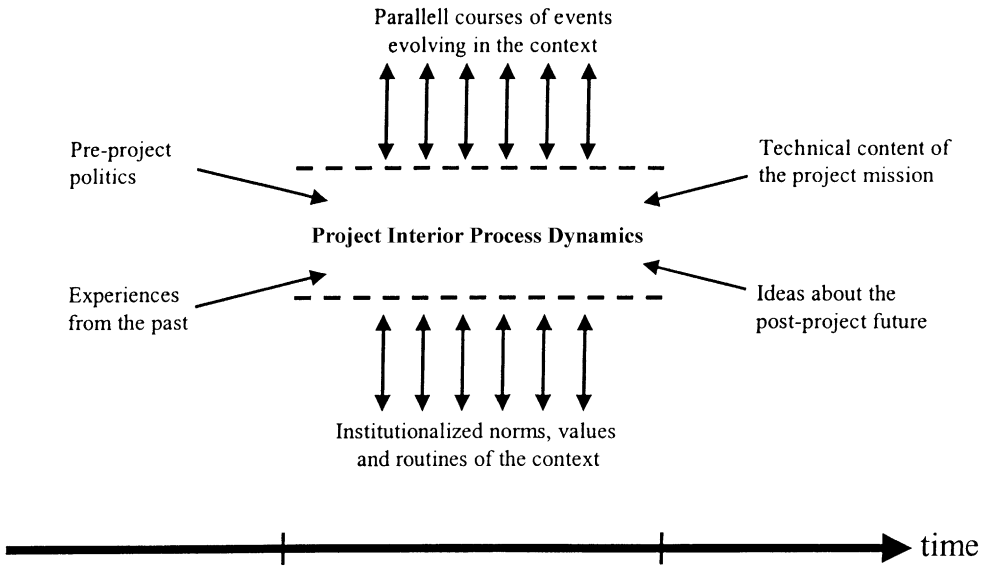

Fig. 1. Contingencies influencing the interior process dynamics of a project.

is a great probability of success in projects with a high level of prestige, repetitive content, and management procedures which are legitimate among the key players of the organization (and a great probability of failure in projects with a low level of prestige, unique content, and management procedures with a low degree of legitimacy) addresses the political dimension of project management. Since prestige and legitimacy are socially constructed features, an effective PM tries to influence how the project is perceived in its environment. Thus, one implication for a PM lies in creating a sense of urgency around his/her project and to construct an image of the project as technically interesting and strategically important to its parent organization.

Another practical implication for PMs lies in choosing their battles. A strategic PM does not challenge the existing authorities and structures more than necessary. Thus, instead of pursuing the implementation of project management textbook procedures, the actions of an effective PM strike a balance between what measures would instrumentally be the most rational for the individual project and what measures would be legitimate to undertake, given the interests of the key players of the environment and the project's historical and organizational context.

6. Conclusions

This paper has compared the traditional lonely project perspective in project management research with an extended perspective in time and organizational context. By acknowledging projects as history-dependent and organizationally-embedded, the paper has illustrated how our understanding of the practices of project work would benefit from a perspective which, for instance, takes into account historical trajectories over successive projects, and cross-section comparisons over simultaneous projects. Projects are open systems and the paper emphasizes the fruitfulness of a contingency approach to project management. Students of project management must bear in mind that every studied individual project only constitutes one of many different projects, activities, ventures, undertakings, problems, issues, decisions, and solutions that gradually pass through the history of its organizational context.

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