



Toward a genealogy of project management: Sidewinder and the management of exploratory projects

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Abstract

This paper deals with the management of exploratory projects, i.e. projects where neither the goals nor the means to attain them can be defined at the beginning. It relies on the historical case study of the Sidewinder Air-to-Air missile, designed by the US Navy between 1947 and 1957. The case is interesting because it violated all the best practices of PM, yet involved a short and cheap development process that resulted in a best-seller in missile history. This case thus helps to analyze the inner working of an understudied skunkworks (project-level) and to discuss the governance of exploratory projects (firm-level), more specifically the limits of Stage-Gate processes for radical innovations.

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“I think that a lot of the most interesting and novel solutions come when you don’t have a definite specification”.

Dr William McLean, Sidewinder project director, Hearings before the Committee on Armed Services, US Senate, December 1971, p. 233.

1. Introduction. History and the relevance of project management research

There is a growing concern in the project management (PM) research community about the relevance of the existing body of knowledge. Hällgren et al. (2012) thus argue that *“the [relevance] problem occurs when simplified, rationalistic and deterministic models (or ontologies) are mistakenly considered to be accurate views of reality. (...) It could be argued, therefore, that PM research is not only an immature field of research, it is also unsubstantial in terms of understanding what is going on in projects”* (p. 462). Such comments reflect a larger research stream which, in various disciplines (accounting, strategy, etc.),

emphasizes the need to study the actor’s practices in detail in order to build relevant management theories. In the PM field, for example, Cicmil et al. (2006) plead for research on the “actuality” of projects, arguing for a bottom-up, grounded approach to PM theory building. This has led to new understandings of PM (Cicmil et al., 2006; Winter et al., 2006).

The present paper is in line with such renewal of PM research. It will focus on the management of exploratory projects, i.e. projects where neither the goals nor the means to attain them can be defined at the beginning. Recent research demonstrates that exploratory projects are strategic in today’s innovation-based competition (Brady and Davies, 2004; Lenfle, 2008a; Loch et al., 2006). The landmark contribution of C. Loch et al. (2006) underlines the need to invent new ways to manage exploratory projects, and demonstrates the irrelevance of traditional risk management techniques in projects confronted to what they called “unforeseeable uncertainties.” They thus proposed “learning” and “selectionism” (i.e. the simultaneous pursuit of different solutions) as two generic managerial strategies for exploratory projects, and discussed their managerial implications. However, we still lack a practice perspective that could further our understanding of the organization and management of such projects. Indeed, the PM literature mainly emphasizes the need to set up a dedicated and autonomous project team to manage

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radical innovation, the famous Skunkworks© invented by Lockheed during World War II. But the literature on Skunkworks is very sparse, to say the least (Rich and Janos, 1994), and more information is needed on their inner working and governance.

In this paper we propose to go back to history to better understand the organization and management of exploratory projects. We believe that historical analysis is a powerful tool to complement project management research. Until now, it has not been used to learn about practices. We therefore disagree with Hällgren et al. when they affirm that “*the general story of the rise of PM as a management methodology is well known. The use of structured PM (planning and scheduling) approaches was heavily supported within major US defence projects such as the Manhattan Project and the development of Polaris missile system, as well as other mega projects during the Cold War era, such as the US space program*” (p. 462). Recent research on the history of project management demonstrates that such a statement is inaccurate, particularly for the Manhattan Case (Lenfle and Loch, 2010). Thus we believe that the lack of history of project management is part of the relevance problem.

Our paper is organized as follows: Section 2 discusses the role that history could play in PM research by relying on the work of the French philosopher Michel Foucault, and considers the data we used. Section 3 presents the Sidewinder case that is analyzed in Section 4. Section 5 concludes by discussing questions for further research.

2. History and project management: Foucault’s genealogy

The lack of a history of project management should come as no surprise. Indeed, most of management research and teaching is ahistorical (Chandler et al., 1984; Cummings and Bridgman, 2011; Kieser, 1994). The same can be said of the field of project management (Soderlünd and Lenfle, 2013), with the exception of P. Morris’s *The management of project*. The most famous case studies, for example Sapolsky (1972) on the Polaris project, proceed from other disciplines, such as business history or political science. This situation raises two concerns: that existing history is oriented mainly to the United States, and that there is weak understanding of the roots and evolution of project management.

Therefore we believe that A. Chandler should not remain an exception. As Kieser (1994, p. 619) pointed, “*historical analyses can serve to reflect on existing organizational designs and to criticize existing organizations theories. Historical analyses do not replace existing organization theory; they enrich our understanding of present-day organizations by reconstructing the human acts which created them in the course of history and by urging organization theories to stand the test of a confrontation with historical developments*”. This should also be true for project management research (Morris, 1997; Soderlünd and Lenfle, 2013). Like Cummings and Bridgman (2011), we are convinced that doing the history of management is critical for improving both theory and practices, and making management a more “reflective” discipline (Schön, 1983).

However, which type of historical method is most appropriate? It is not enough to claim that we need a history of project management. We must avoid two classical pitfalls in historical

analysis: presentism and finalism. In presentism, “*the historian takes a model, or a concept, an institution, a feeling, or a symbol from his present, and attempts – almost by definition unwittingly – to find that it had a parallel meaning in the past (...) for example if we attempted to interpret Medieval Christianity or a primitive rite entirely in terms of individual psychology, neglecting the hierarchical and cosmological reality, we would be writing the history of the past in terms of the present*” (Dreyfus and Rabinow, 1983, p. 118). The risk here would consist of looking for traces of the present (e.g. PM best practices) in past projects.

In the perspective of finalism, one tries to find the foundations of the present in some distant times, and analyze history as a teleological process that necessarily leads from that point to the present. Here “*everything that happened in between is taken up by this march forward, or else left in the backwash as the world historical spirit differentiates and individuates what is central from what is peripheral. Everything has a meaning, a place; everything is situated by the final goal history will attain*” (Dreyfus and Rabinow, 1983, p. 118). In such a determinist perspective, which was famously criticized by K. Popper in his classic *The poverty of historicism* (1957), the history of project management would seem to converge toward the current body of knowledge.

Michel Foucault’s approach to history could help avoid the pitfalls of presentism and finalism. Building on Nietzsche’s concept of genealogy, Foucault explained how concepts, theories and practices that are now considered evident are, in fact, socially and historically situated and constructed. He insisted on making explicit the conditions of the emergence of objects, knowledge and concepts, as well as their insertion in society. Thus, “*the task of the genealogist is to destroy the primacy of origins, of unchanging truth*” (Dreyfus and Rabinow, 1983, p. 108–109). By carefully analyzing discourses, institutions, tools, and socio-economic contexts, Foucault brought to light the production of knowledge and its associated “*technologies of power*” (Foucault, 1975), and described “*how a field’s foundations are actually formed in a piecemeal fashion but then solidify to produce a sense of the development of knowledge while at the same time marginalizing other possibilities*” (Cummings and Bridgman, 2011, p. 81). As explained by Gutting (2013), “*The point of a genealogical analysis is to show that a given system of thought (...) was the result of contingent turns of history, not the outcome of rationally inevitable trends*”. He thus elaborated a “*counter memory*” (Foucault, 1971) aimed at reviving forgotten knowledge and reinterpreting shared concepts. Foucault’s landmark contributions on the birth of prisons (Foucault, 1975) illustrate the fruitfulness of the genealogical approach (see Gutting, 2013 for a synthesis). In this book Foucault analyzes the transition from old (torture and execution) to modern, gentler, ways of punishing criminals. He emphasizes that this evolution leads to more effective modes of control that, progressively, becomes the model in different settings like factories, schools or hospitals. As Gutting (2013) explained “*At the core of Foucault’s picture of modern “disciplinary” society are three primary techniques of control: hierarchical observation, normalizing judgment, and the examination*”. However he warns that “*we should not think that the deployment of this model was due to the explicit decisions of*

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