Chapter 3
Improving Project Management Decisions With Big Data Analytics

George Leal Jamil
Informações em Rede C e T Ltda., Brazil

Luiz Fernando Magalhães Carvalho
Banco Itaú, Brazil

ABSTRACT

A relationship between project management and knowledge management was observed with a detailed level of analysis in this chapter, as analytics tools and methods were presented to define new perspectives for these dynamics. After a theoretical review that advanced the level reached by a previous paper on the same topic a new theoretical background was completely worked, resulting in a base where a deeper way of analysis allowed, at the end, to study practical cases of rich association for PM and KM in practical, ready to apply situations. As a trend for next competitive cycles, tools, methods, and techniques that focus knowledge production for decision making are to be increasingly defined and applied, on one hand enabling organizations to propose new competitive structures and positioning, and on the other hand, presenting a more aggressive, faster, and demanding competitive environment.

BACKGROUND

This chapter was produced adopting Jamil and Carvalho (2015) as a base, producing a review of its findings, adding studies from big data and analytics perspectives.

Project management (PM) is a remarkably dynamic area, where data, information and knowledge are systematically and empirically produced and, as well, demanded, in fast-change scenarios. As projects are to be detailed, proposed, negotiated, executed and maintained, several contents of these fundamental assets are to be faced by the project manager and his associated team, users and other project stakeholders, as decisions need to be produced with precision every time. Poor decisions, taken from indefinite or problematic data and information, will lead to more risky and precarious implementations.

This chapter reviews the previous findings of Jamil and Carvalho (2015), detailing how big data and analytics, as a potential trend to produce more qualified and applicable knowledge, can result in better decisions, producing a challenging, but worthy picture for project management.

PROJECTS, STRATEGIC DECISIONS, AND DEMANDS FOR KNOWLEDGE

The basic definition of a project already motivates to think about knowledge and its strategic applications. It is possible to check, from PMBoK (2013), that projects are ways to achieve organizational strategic goals. By analyzing this initial concept, it is possible to understand that a view of the future for this organization was projected, configuring goals to be achieved. As this new situation is faced from organizations, knowledge can be one of the most critical assets to be applied to produce the design of this reachable description. But it is also relevant to understand the role of projects in this process, how its execution and implementation, as final results, were based on data, information and knowledge, as these contents were also generated during the project management phases. It is an important relationship, which defines the background of this research.

It is important to remind that strategy is a discipline oriented to coherently propose future positions for one organization in its social, business and competitive environment. One strategy is stated through a set of consistent decisions, expressed in a base that constitutes the organizational strategic plan, as a coherent path of subsequent decisions (Porter, 2008). In this context, strategic planning is a process that continuously study organizational resources, capabilities, perspectives and competencies, with addition of determination of internal and external factors, aiming to monitor and design implementable actions to reach established goals (Kotler & Keller, 2005; Porter, 2008; Mintzberg, Ahlstrand & Lampel, 2009).

Jamil *et al.* (2012) conceptualized strategic planning, as the main organizational process, as it is a "knowledge demanding" cohesive set of tasks, which needs, for its success, some factors, components and contents, such as:

- Studies of external business environment, considering data and information from competitors, suppliers, customers, legal aspects, business rules, market reactions to events, etc. (Porter, 2008).
- Internal business environment analysis, observing corporate resources, motivations and restrictions and its correlated control and management perspectives, competitive advantage positioning, etc. (Mintzberg, Ahlstrand & Lampel, 2009).
- Data and information about a market history, as a "knowledge base of best practices", which can be revoked for simulations, business models and dynamic studies for competitive design (Choo, 2005; Nonaka, 2008).
- Details of connected and interrelated projects, assuming they are data, information and knowledge producers, as the practices cited above and other productions, that will enable favorable conditions to plan and execute a new project.
- Definition of measurements and methods to measure, or "indicators", as financial quantitative demonstrations, reputation, performance and many other factors that can be set by strategy staff and followed through a plan execution for strategic monitoring that will allow its following and management in the workplace (Kaplan & Norton, 2007).

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