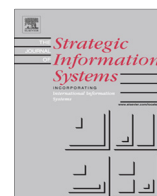




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## The interplay between evidence and judgment in the IT project prioritization process



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### ABSTRACT

Strategic decisions concerning IT investments are based on a project prioritization process designed to accommodate evidence-based management and rational decision-making. Our empirical study of IT project prioritization in a financial institution shows how managers reach decisions under norms of evidence-based management. We use a rich dataset derived from a longitudinal study. We analyze managers' decision-making practices and identify four tactics of supplementing, substituting, interpreting, and reframing the available evidence. The choice of tactic depends on how decision makers perceive the available evidence. All tactics involve the use of judgment. We also identify a number of devices employed to enable such judgments. Our study shows that although evidence is not playing its designated role in evidence-based management, it nevertheless plays a central role in the IT prioritization process.

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### Introduction

The proliferation of information technology in organizations, combined with the restructuring of work into projects, has brought IT project portfolio management to the attention of both academics and practitioners. More and more organizations have adopted IT portfolio management practices to manage effectively their limited financial and human resources for IT investments. Within such constraints, strategic decisions are made to choose proposals for IT projects and build a project portfolio (Archer and Ghazemzadeh, 1999). Popular IT project prioritization methods include the use of financial tools that claim to offer evidence-based comparisons for prioritization decisions (Dickinson et al., 2001; Kester et al., 2011). Respected scholars in the field have repeatedly called for information systems (IS) to provide data that can facilitate rational decision-making (Davenport, 2010; McAfee et al., 2012). Common to these studies is the understanding that managers are empowered when they have accurate information, in turn leading to less biased decisions and enhanced organizational performance. The financial tools and methods used for IS project prioritization are characterized by a rational, objective, and scientific approach based on the assumption that IT projects contribute to “specific ends, ends that can be articulated, are shared and are objective” (Howcroft and McDonald, 2007, p. 4).

Branded as ‘evidence-based management’, such ideas have gained prominence both in academia and among practitioners. Researchers describe evidence-based practice as “a paradigm for making decisions that integrates the best available

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research evidence with decision-maker expertise and client/customer preferences to guide practice toward more desirable results” (Rousseau, 2006a, p. 258). A growing number of researchers is calling for additional quantitative data to improve decision-making based on evidence (e.g. Tingling and Brydon, 2010) as well as empirical studies to demonstrate how evidence can “both advance management knowledge and address pressing practical questions” (George et al., 2014, p. 324). Despite the numerous conceptual arguments for evidence-based management, there are very few studies on the actual use of evidence in management practice.

Furthermore, research has shown that organizations exclusively basing prioritization decisions on financial methods may perform worse than organizations using a variety of methods (Dickinson et al., 2001). This is especially true for IT projects because a large proportion of their costs are hidden, and many of their benefits are intangible (Irani and Love, 2002). It is thus claimed that additional information to quantitative data is required to capture the full-range of benefits and costs since financial methods have only a limited ability to include the non-quantifiable intangible benefits and non-measurable hidden or indirect costs of IT projects (Farbey et al., 1999). According to Bannister and Remenyi (2000), the limitations of existing evaluation methods force decision makers to rely on ‘gut feeling’ in IT-related matters. Tallon and Kraemer (2007) claim that subjective assessments such as perceived IT impact, intuition, and insights may *de facto* yield more accurate and even richer assessments of IT projects than do the financial methods. Moreover, Frisk et al. (2014) propose an interpretive collaborative approach to IT investment decision-making. However, our knowledge of the actual use of financial methods and alternative assessment practices in IT prioritization processes is limited due to a lack of empirical studies.

In this paper, we use the concept of evidence to capture the use of financial methods in the IT project prioritization process. Evidence comes in the form of scientifically proven financial models, the use of which produces data such as measures of costs and benefits. Data on costs and benefits is thus expected to be the product of rigorous analysis derived from state-of-the-art information processing systems and hence to count as evidence. Addressing the calls from both IS and management scholars to study the role of evidence in strategic decisions and management, we set out to investigate these issues in the case of the IT project prioritization process. We study how decision makers use evidence alongside other sources of information in practice. We exploit a rich dataset derived from a longitudinal case study of the IT project prioritization process in a division of a large Scandinavian financial institution. Over a period of eight months, we observed the prioritization process with the following research question in mind:

- How do decision-makers use evidence and other sources of information in the IT project prioritization process?

Our findings show that, decision makers are by no means limited to the use of evidence during the prioritization process. We identify a set of tactics of substituting, supplementing, interpreting, and reframing evidence through the use of various judgment devices. According to Karpik (2010), such devices are used to make informed judgments of value in situations in which established evaluative standards are unavailable. In our case, the judgment devices enable decision makers to reach a prioritization decision when evidence is not enough. Decision makers deploy different tactics depending on how evidence is perceived (for instance, as poor or ambiguous).

Our study contributes to both research and practice. In the domain of IT project prioritization, we explain the adaptation of evidence-based management practices to reflect IT projects’ characteristics (Smithson and Hirschheim, 1998; Howcroft and McDonald, 2007) and how this adaptation facilitates decision-making. Decision makers adopt tactics appropriate to addressing the unstructured and complicated task of IT project prioritization. Our study shows that although evidence is not playing its designated role in evidence-based management, it nevertheless plays a central role in the IT prioritization process. In the domain of evidence-based management, we undertake an in-depth discussion of the relationships between evidence and other sources of information during the decision-making process, a topic highlighted by other researchers in the area (e.g. Rousseau, 2006b; Briner et al., 2009). Finally, for practitioners, we offer a process-oriented toolbox for IT project portfolio management.

The paper is structured as follows. The next section presents the theoretical background, covering IT project prioritization and evidence-based management as well as our research strategy. We then present the research method, followed by a description of the empirical setting. After this, we present our findings and discuss our contributions. The paper concludes by highlighting future research directions.

## IT project prioritization and evidence-based management

### *Prior research on IT project prioritization*

Since the 1960s, management science has produced extensive research on project prioritization. Numerous methods of project prioritization have been developed, but few have been successfully adopted by organizations (Martino, 1995). These studies are mainly prescriptive, with financial models dominating as the project prioritization tools (Cook and Green, 2000; Bardhan et al., 2004). The literature is predominantly characterized by a normative discourse that promotes a range of techniques and methods for providing solid information to decision makers. The downside to this discourse is a lack of emphasis on applying the proposed models to the complexities of a real-life context. These prescriptive studies

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