Macrothink Institute™

Journal of Management Research
ISSN 1941-899X
2012, Vol. 4, No. 4

Inducing Service Innovations through the Governance of IT-enabled Projects

Dieter De Smet (Corresponding author)

Innovation Economics and Service Valuation Unit

Public Research Centre Henri Tudor

29, Avenue John F. Kennedy, L-1855 Luxembourg, Grand-Duchy of Luxembourg

E-mail: dieter.desmet@tudor.lu

Dr. Anne-Laure Mention

Innovation Economics and Service Valuation Unit

Public Research Centre Henri Tudor

29, Avenue John F. Kennedy, L-1855 Luxembourg, Grand-Duchy of Luxembourg

E-mail: anne-laure.mention@tudor.lu

Received: July 5, 2012 Accepted: July 15, 2012 Published: October 1, 2012

doi:10.5296/jmr.v4i4.2056 URL: http://dx.doi.org/10.5296/jmr.v4i4.2056

Abstract

We report on the development of a toolbox to assist decision-makers during the selection and governance of IT-enabled service innovation projects. The toolbox is based on the integration of the balanced scorecard and the Val IT™ framework. This action research was done through an in-depth case study, composed of several semi-structured interviews and documentary reviews. To ensure an adequate consideration of the multidisciplinary nature of service innovations, decision-makers' attention will not only be drawn to the financial aspects, but also to the intangible and multidimensional aspects of service innovation projects. The toolbox backs the company's value creation processes and provides a tested methodology. Therefore, to the best of our knowledge, it fills a gap within the existing set of tools and methods to foster service innovations within a financial services company.

Keywords: Project and Portfolio Management; Managing Innovation; Financial Services

JEL Classification: G20, M15, M19, O31, O32

1. Introduction

Whether an organization is growing or mature, it will always be faced with the challenge to manage an increasing number of projects. Possible reasons are product expansions, introductions into new markets or internal pressures to handle an increased workload (Holtsnider & Jaffe, 2006; Ruiz-Mercader, Merono-Cerdan & Sabater-Sanchez, 2006; Urli & Terrien, 2010; Ward & Peppard, 2003). These evolutions make it increasingly difficult to determine how an organization's performance will be influenced by IT-enabled projects, yet these are essential for a company's growth and service innovation (Ordanini & Rubera, 2010; Ostrom et al., 2010; Rezania & Lingham, 2009; Tseng, 2008). These projects are undertaken because they are expected to enhance the value creating abilities of the organization. The various IT-enabled projects that an organization initiates can contribute to an improvement of organizational performance (Melville, Kraemer & Gurbaxani, 2004).

The organizations' management can hence be confronted with an objectivity issue when trying to compare these projects with each other, in order to determine their potential (or actual) value creation for the company.

A possible solution is the decomposition of the organization's strategy into areas of attention. These can be used to group projects, often referred to as a portfolio of projects (Archer & Ghasemzadeh, 1999). The fundamental objective of the related portfolio management is to determine the optimal mix and sequencing of projects to best achieve the organization's strategic goals while honouring constraints imposed by internal (e.g. available resources) or external factors (e.g. market evolutions). This facilitates a linkage between the chosen strategy and the projects. However this also helps to narrow down the possible strategic orientations of projects and clarify their strategic alignment and expected value creation (Henderson, Venkatraman & Oldach, 1993; Luftman, 2003). The latter will be made more concrete by adding selection criteria for each portfolio. This approach should ensure an alignment between the company's strategy and its accepted projects, in order to facilitate the creation of an internal benchmark for the different projects in a corresponding portfolio. However this needs to be complemented with a commonly accepted method to formulate the selection criteria and link them to the strategy.

This research's contributions are threefold.

(1) We stimulate the research stream of "Service Science", considered to be in its infancy (Ostrom et al., 2010), by offering a feedback on a formal method to evaluate IT-enabled projects for service innovation and its corresponding project governance.

(2) The application of this "project governance" is rather unexplored. The presence of governance in projects is not often discussed (Ruuska, Ahola, Artto, Locatelli & Mancini, 2011) and reported results on its application can be found in the public sector (Crawford & Helm, 2009; Williams, Klakegg, Magnussen & Glasspool, 2010). We offer first insights on its application in the financial services sector and how it can induce service innovations. We developed a "value toolbox" (comprising a diagnostic tool, interview guide and project selection/governance tool) inspired on the Val IT™ Framework 2.0 (IT Governance Institute, 2008a), integrated with a balanced scorecard (Kaplan & Norton, 1996).

(3) Finally there is an increased interest in the use of the balanced scorecard (BSC) in various management fields (Asosheh, Nalchigar & Jamporazmey, 2010) and we report on a case study in a financial services company.

2. Literature Review

2.1 Service Innovations and IT-enabled Projects

Today the value creating potential of organizations is driven by their services rather than by its products. Possible innovations through IT can be broadly categorized as base innovation, system development and service innovation (Ordanini & Rubera, 2010). The concept of service innovation was defined by Ostrom et al. (2010):

> …we suggest that service innovation creates value for customers, employees, business owners, alliance partners, and communities through new and/or improved service offerings, service processes, and service business models. (p. 5)

This definition of service innovation indicates two shifts, (1) the type of actors or stakeholders and (2) the type of projects that companies are executing. The evolution towards an enhanced involvement of stakeholders corresponds to the promotion of a multidisciplinary focus due to the complexity of services and the embedding of IT is essential to leverage service innovations (Ostrom et al., 2010). Most companies are expanding from a focus on projects with suppliers/customers (i.e. external environment) towards multiple projects for internal customers (Urli & Terrien, 2010). IT-enabled projects are evolving from a mere support to the company's operations towards a facilitator of change for the company's strategy (Holtsnider & Jaffe, 2006), growth (Rezania & Lingham, 2009), competitive advantage (Ruiz-Mercader et al., 2006) and innovation (Tseng, 2008). This is reinforced by the observation that the main differentiating factors between successful and unsuccessful companies' deployment of IT, was managements' capacity to evaluate (i.e. *a priori* and *a posteriori*) IT-enabled service innovations (Ward & Peppard, 2003).

Despite the considerable profits that can be generated from successful implementations of IT-enabled projects, plenty of them fail, have difficulties to finish on time, on budget or deliver the expected business value (Schwalbe, 2010).

The reasons for IT-enabled project failures can be numerous but literature reported, (1) an insufficient understanding of the possible relationships between the used business performance metrics and the implementation of IT-enabled projects (Irani & Love, 2002), (2) the importance of organizational and management issues (Fitzgerald, 1998) and (3) misalignments with the company's strategy (Bensaou & Earl, 1998).

The existing work habits and business' preferences might not be considered during the elaboration of an IT-enabled solution. Often the anticipated value of the IT-enabled project cannot be adequately measured or demonstrated (Remenyi, Money & Bannister, 2007). Effective service innovations are constrained by the latter, impeding the company's growth (Ostrom et al., 2010).

We assert that the underestimation of multidisciplinarity as an integral part of value creation to be contingent on the success of service innovations. The potential failure of an IT-enabled project aimed at fostering service innovation, can be avoided by creating a proper "project governance", an essential element for their achievement (Schwalbe, 2010).

2.2 The Emergence of Project Governance

Research on project governance has been focused on the public sector and is considered to be a new area with few publications (Crawford & Helm, 2009; Williams et al., 2010). The terminology "project governance" and "project management governance" might be used as synonyms (Marnewick & Labuschagne, 2010). However we view them separately because project governance determines the strategic objectives (and follow-up mechanism) to be achieved (Ruuska et al., 2011) while project management governance looks at operational decisions to be made within a project (Turner, 2006). Therefore we focus on the project portfolio level and it's also a valid approach to align it with the company's strategy and ensure continuous value creation (Luftman & Brier, 1999). The actual selection of IT-enabled projects and their related governance processes should not be done in isolation (Henderson et al., 1993) because there are various interrelations and synergies between them (Graves & Ringuest, 1999).

In practice, decisions are often based (to a greater or lesser extent) on acts of faith (Farbey, Land & Targett, 1992), instinct (Powel, 1992), blind faith (Weill, 1990) and the definition of "value" (Bannister & Remenyi, 2003). The latter is abstract and multidimensional by nature (Kwon, Watts-Sussman & Collopy, 2002). Therefore Melville et al. (2004) chose to define it as:

> …the organizational performance impacts of information technology at both the intermediate process level and the organization-wide level, and comprising efficiency impacts and competitive impacts. (p. 287)

A multidisciplinary approach is therefore needed to foster these service innovations (Ostrom et al., 2010).

2.3 Measuring IT-enabled Value Creation

The extant project management literature offers insights regarding the selection of projects with a portfolio approach. For example the actual decision for selecting a project happen in committee meetings where multiple criteria should be used (Urli & Terrien, 2010) during the "stage gate evaluation" of a project (Cooper & Kleinschmidt, 2007).

The actual appraisal of these projects can be subdivided into two approaches: qualitative and financial (Bannister & Remenyi, 2000; Urli & Terrien, 2010). Often the qualitative approach will prevail over the financial one because not all the required data is available or it cannot be obtained at the time of decision (Rosacker & Olson, 2008) due to coordination issues (Omitaomu & Badiru, 2007) and because IT-enabled projects are not considered to be regular investments (Ballatine & Stray, 1998). The intangible benefits form IT-enabled projects to the overall company's strategy can be left outside the decision process when using exclusively

these financial measures and techniques. Service innovations are not always quantifiable in monetary profits and quantitative appraisal methods can be contingent on the estimates that lead to a score for each IT-enabled project (Bacon, 1992). Examples of qualitative criteria were reported by Rosacker and Olson (2008) and include the probability of completion or mandatory requirements resulting from the external environment like for example changes in legislation. A mixture of techniques is needed (e.g. financial and non-financial), balancing their respective merits and drawbacks (Ballatine & Stray, 1998).

However little methodology exists for the evaluation of value creation through IT-enabled projects (Archer & Ghasemzadeh, 1999; De Reyck, Grushka-Cockayne, Lockett, Calderini, Moura & Sloper, 2005). Building upon these arguments, we propose and apply a project governance framework that encompasses both financial and intangible metrics. In doing so, we contribute to the scarce stream of research that concentrates on project governance, and report on a case in financial services, which has been hitherto neglected (to the best of our knowledge).

3. Research Methodology

We aimed at developing a tool which supports service innovations through the governance of projects. By adopting action research, we produce actionable knowledge, i.e. knowledge that can be put into practice by managers when dealing with operational issues. In order to do so, we develop a set of tools aimed at assessing the alignment of projects to the strategy of the organization and consisting of a diagnostic tool, an interview guide and an extensive dashboard (based on the BSC) that serves as a project governance tool. Action research is also an approach to organizational development and change (Coghlan & Rashford, 2006), specifically applicable in the context of this article. Additionally, it's relatively uncommon in information technology settings, yet valuable for exploring new grounds (Dick, 2009), like the financial service sector.

Correspondingly, we aimed to understand "how" and "why" project governance works (Pettigrew, 1992). Accordingly, we relied on a case study design, which is appropriate to tackle such research questions and which fits into our approach. According to Yin (2003):

> The case study research method is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. (p. 13)

Our methodology can be described in three phases. The first phase was done through 7 semi-structured interviews, coupled with an external documentary review and literature review (i.e. preparation of our data collection). This led to the creation of a diagnostic tool and a more detailed interview guide. The second phase involved an experimentation of the interview guide through several semi-structured interviews, coupled with an internal documentary review (i.e. data collection). The final phase concerned the analysis and presentation of our observations (i.e. evaluation of the data). This led to the creation of a dashboard for project governance.

Semi-structured interviews are recognized as a verbal research technique to collect information with a specific purpose mind (Pinto & Grawitz, 1967). These interviews were not tape recorded to ensure confidentiality on a sensitive issue and stimulate information exchange (Nicholson & Kiel, 2007). There were always two interviewers (moderator/assistant) and condensed reports of each interview were made by the assistant. The moderator added his observations and comments to these reports in order to cover as much information as possible.

These three phases also led to the creation and validation (through experimentation) of our "value toolbox". We created a first version of a toolbox that supports managers in their governance activities related to the various projects in the company. The tool is inspired upon the existing Val IT™ framework. The methodological triangulation (i.e. use of multiple semi-structured interviews with internal and external documentary reviews) warrants the validity of the tool (Denzin, 1978).

At the end of the case study, a full written report was made with all the observations regarding validity, completeness, applicability and integration of the observations from the documentary review. This report was presented to the interviewees for a final feedback, as suggested by Yin (2003).

4. Toolbox for the Governance of IT-enabled Projects

4.1 Description of the Case Study

Our case study firm offers both industrialized, mass services and highly customized, interactive services to customers of the financial sector. The company has known a significant growth over the past decade and was interested in a review of their current project governance practices.

It was founded in the mid-90s and currently employs more than 600 employees, realized a turnover of more than €61m (2008) and its customers are located more than 30 countries. The evolutions that have affected this company are relevant for our research because it has been characterized with a significant growth over the past 15 years through the introduction of various new products and related services. This led to corresponding needs to change their project governance activities.

4.2 Quick Overview of Val IT™

To the best of our knowledge, there has not yet been a publication on the use of the Val IT™ framework (IT Governance Institute, 2008a) as a basis for project governance in a company to enhance service innovation practices. In order to maximize the company's value creation, we claim that there must be a sound alignment between the chosen strategy of a company and the IT- based projects it undertakes (our assumption is that IT projects lead to value creation and corporate performance, provided that they are aligned to the strategy of the organization).

The Val IT™ framework is one answer to the problems organizations face in optimizing the realization of added value from their IT projects. The goal of this framework is to have IT projects accepted which have an affordable cost, with a predetermined and permissible level

of risk, aimed at creating value for the organization. This framework uses the strategic necessity hypothesis (Ordanini & Rubera, 2010) since it argues that the possible investments in IT are available to every company and hence the leverage of business resources through IT, indicating its performance enhancing role without a direct effect on the company's performance. Value for the business units is enhanced by the ability to leverage or invent processes, procedures and organizational structures (Brynjolfsson & Hitt, 2000). Figure 1 represents the content of the Val IT™ Framework 2.0 itself.

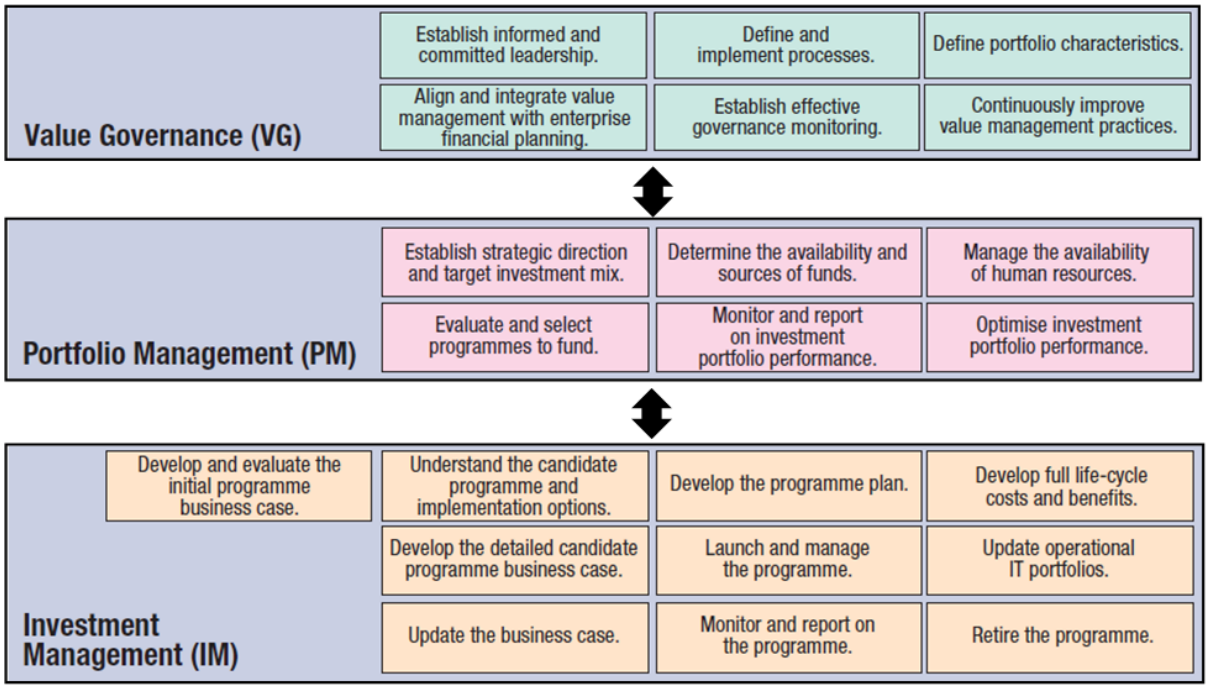

Figure 1. The Val IT™ Framework 2.0

Source: IT Governance Institute, 2008b. Enterprise Value: Governance of IT Investments, The Val IT Framework 2.0, page 15.

There are three groups of processes in the Val IT™ framework: Value Governance (VG), Portfolio Management (PM) and Investment Management (IM). The VG process deals with the control and strategic direction of the underlying portfolio of IT-enabled investments.

The alignment between the organization's strategy and the IT-enabled projects is covered by the PM process. Finally the IM process is primarily focusing on the elaboration of a business case for every IT-enabled project. This document will be used when deciding on the acceptance of IT projects in a specific portfolio and also contains e.g. a risk analysis and a cost-benefit analysis.

Val IT™ is closely linked to the COBIT® framework (IT Governance Institute, 2004). Both are complementary since the Val IT™ framework will direct the funding and monitoring of the IT projects, whilst COBIT® will deal with the actual implementation of the IT projects.

However we consider that the Val IT™ framework remains quite high-level and needs to be complemented, in order to actually use the principles and processes it proposes. The high

number of underlying processes and management practices could also be a disadvantage, hence a pragmatic selection and application of them is needed.

4.3 Diagnostic Tool

We began with a first categorization of information (i.e. existing literature, professional standards and practices). This is a crucial result of any qualitative analysis (Dey, 1993) but categorisation is a creative process that requires careful judgments about what is significant and meaningful (Patton, 1990). Therefore we opted to inspire us on the basic elements of the Val IT™ framework, which we complemented with eternal sources and literature (Bannister & Remenyi, 2003; Bennington & Baccarini, 2004; Bensaou & Earl, 1998; Fitzgerald, 1998; GIGREF & McKinsey&Company, 2008; GIGREF & McKinsey&Company, 2004; Irani & Love, 2002; Remenyi et al., 2007; Shank & Govindarajan, 1992; Whittaker, 1999).

We developed a diagnostic tool for the company's value practices. A list of 24 questions related to value creation problems was extracted from the literature. These questions were redistributed around the proposed list of symptoms of poor value management within the Val IT™ framework (IT Governance Institute, 2008a, p. 15). The list contains 7 symptoms but does not offer corresponding assessment criteria to conduct a more detailed analysis of the company's current situation and identify the most impacted symptom.

In order to realize this, we analysed the description of the 22 underlying processes of the Val IT™ framework. This led to more assessment questions which could also be linked to the proposed symptoms of poor value management. The result was a more detailed decomposition of the proposed symptoms within the Val IT™ framework and a pragmatic diagnostic tool. This diagnostic tool was experimented through a semi-structured interview, to get an understanding of the company's actual problems and direct our next steps. The enriched list of symptoms made it possible to perform an adequate assessment of those symptoms, something which is not readily made available in the Val IT™ framework. Hence we facilitated a structured approach towards the reported issues.

Examples of alignment criteria between the IT-enabled projects and the strategy of the company are: What is the role of the IT department in the prioritization of IT-enabled projects for the business? Are attributed budgets sometimes cancelled, resulting in a considerable impact for the business? Is the company capable of quickly adapting its strategy in accordance to changes in the market?

The result from this initial semi-structured interview was used to contribute to the development of our more extensive semi-structured interview guide. The likely symptoms were identified and allowed us to formulate the themes of our interview guide. We further enriched the themes with questions concerning the company's culture, strategy, current decision process for selecting IT-projects and their related review processes.

4.3 Experimentation of the Interview Guide

Seven semi-structured interviews with key representatives of the company's business, IT, sales, marketing and product development were conducted. The wide spectrum of

interviewees allowed us to cover the multidisciplinarity of service innovations (Ostrom et al., 2010) and acquire rich qualitative data on the organizational dynamics within the company, its project governance practices and improvements/evolutions needed. Meeting reports were made after every interview and submitted for validation. Modifications were made when the interviewees had comments. The reports were organized in a coherent structure which allowed a comparative analysis of each interview.

4.4 Project Governance Dashboard

A governance tool was needed for the company's executives (i.e. to direct by selecting projects and to facilitate monitoring). In order to better capture the expected benefits of IT-enabled projects, we further analysed the content of the interviews by using the Balanced Scorecard (BSC) four dimensions: financial, customer, internal and learning perspective (Kaplan & Norton, 1996). These dimensions are generic and applicable to any sector but we add the regulatory and compliance perspective, given the importance of this domain to the financial company.

A BSC approach is strongly suggested as an appraisal method for IT-enabled projects (Milis & Mercken, 2004) because it can be used to implement strategies (Kaplan & Norton, 1996), help identify areas for improvement within organizations (Eilat, Golany & Shtub, 2006) or supports the formulation of business opportunities through IT (Luftman, 2003). The BSC does not only focus on the financial performance indicators for the company's current strategy realization but also includes a future oriented aspect (Rickards, 2007) like service innovation.

The use of the BSC supports managers in their decision making by offering them a wider view on the company's strategy and operations (Kaplan & Norton, 1992; Wong-On-Wing, Guo, Li & Yang, 2007; Maltz, Shenhar & Reilly, 2003).

Using a BSC approach is a change medium that increases the company's effectiveness and competitive advantage which should foster service innovation. Figure 2 provides the application of the BSC principles in this case study, also serving as a dashboard for project governance.

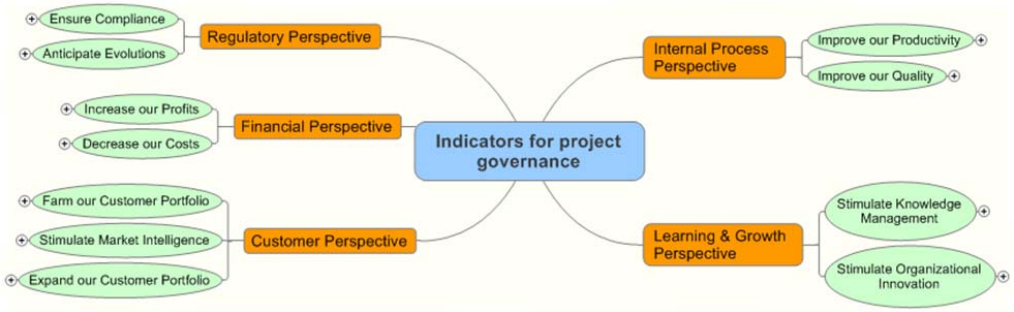

Figure 2. Balanced Scorecard for Project Governance

The dashboard provided a clearer linkage between the strategy of a company and the selection (funding) of IT-enabled projects. This combination should lead to an improvement

of a company's capability to select suitable IT-enabled projects and the actual measurement of the results will be facilitated by using operational criteria (of which some already exist) to facilitate an actual measurement of the generated value. This in turn is expected to lead to an increase of the company's organizational performance (Melville et al., 2004) and leverage IT as the pervasive force for service innovation (Ostrom et al., 2010). A list with possible indicators and existing indicators of the company was made to facilitate the appropriation of the modified BSC by the executives as a medium to orient the selection of projects in project portfolios that are aligned to the business strategy by using the five dimensions of the new BSC. Several recommendations were formulated through this structured analysis and a final consolidation report was made.

4.6 Results of the Case Study

We discovered several topics of concern, some which were related to the observations from Shank and Govindarajan (1992), Bensaou and Earl (1998), Fitzgerald (1998), Whittaker (1999), Irani and Love (2002), Bannister and Remenyi (2003) and Remenyi et al. (2007).

There were four main observations. (1) The internal and external communication regarding projects is insufficient. (2) There is a predominant focus on efficiency improvements, which is certainly to the detriment of growth initiatives, when selecting IT projects to be funded. (3) The company is essentially focused on reducing costs and is not at all interested in innovation oriented projects. (4) The criteria used for the selection of IT projects mainly have a tangible nature, gains in reputation or other intangible benefits are not considered.

The internal communication problems concern a lack of common understanding regarding the company's strategy. Every interviewee had his own definition of what is "the strategy" of the company and there were no mid or short term targets that clarify the chosen strategy. Concerning external communication, customers are not or insufficiently involved in the development of projects. This has already resulted in the delivery of the "wrong product" or negative externalities for the involved customer. Decisions regarding the non-acceptance of projects are not deemed transparent by the business and IT representatives.

The culture of the company is characterized by conservative approaches and a rather strong resistance to change. This is reflected by its reluctance to sponsor projects aimed at creating new and innovative products or ways of working. The relations between business representatives and the IT project teams are also reported as being poor.

There seems to be a lack of common understanding. Another possible reason is the trend that projects are managed by the IT department and not by the business director. The consolidated report showed several other practices contingent on service innovation and an optimal value creation through the governance of IT-enabled projects.

5. Conclusions and Implications

To facilitate a more objective selection of the company's IT-enabled projects and to better assess their potential to the creation of value, by taking into consideration the perspectives of the BSC (to which we added the regulatory perspective), we proposed a standard document in

which the project must be defended (i.e. business case). The structure allowed comparing projects and we proposed several financial and non-financial criteria to assess the relevance and alignment of the project. The criteria for motivating a project are also structured around the dimensions of our contextualized BSC to capture the various opportunities for service innovation through IT-enabled projects (Ostrom et al., 2010) and support the organizational performance of the company (Melville et al., 2004).

Our framework and developed tools assist the managers during the selection of projects and ensure that they consider the multidisciplinarity of service innovations, by relying on the dimensions of the BSC, to which we add a regulatory and compliance perspective. This allows for example the focus on intangible aspects in projects and not only the financial aspects when selecting a project. This in turn is expected to lead to a greater company performance because value creation is not only seen as a short term target.

The toolbox we developed allows managers to quickly identify the areas of concern regarding their actual governance of the value creation through IT projects and to facilitate the alignment between the strategy and the IT projects. The Val IT™ framework offers many directions to improving this value creation. However it doesn't offer formal methods to put into practice the underlying principles and processes. Our toolbox helps applying the Val IT™ principles and processes in a pragmatic way.

Despite these positive results, we must turn our attention to some possible biases and limitations in our research. The applicability of the toolbox could be enhanced by using more financial firms. This would allow a larger validation of the advantages the toolbox offers and identify areas that could be improved (e.g. creation of other indicators for strategic alignment). This would further enrich the use of a contextualized BSC for this sector. Potentially this could create a reference for linking a company's specific strategy to a proven tool to facilitate an actual measurement of the project's value creation.

Another possible outcome could be the collection of "sample metrics" for specific subgroups of financial service providers. This could be used to help contextualize the toolbox and enhance its acceptance.

The existence of sensitivity bias, due to the amount of confidential information disclosed about internal practices, cannot be ruled out. Similarly, the results, the inputs from the interviews and documentary reviews may be affected by an error bias. However this should be negligible since the results were formally presented and documented at the end of the case study. Next to that the interviewees were always asked if they would like a second interview to clarify more certain aspects of the information they provided, after they have read the condensed report. This was never an expression of the need for such an additional interview after having commented/validate the condensed reports. We also believe to have informed all the participants of interviews in a correct and professional manner, aware that our advocacy for the model could not turn into a bias (Stoecker, 1991).

References

Archer, N.P., & Ghasemzadeh, F. (1999). An integrated framework for project portfolio selection. *International Journal of Project Management*, *17*(4), 207-216. http://dx.doi.org/10.1016/S0263-7863(98)00032-5

Asosheh, A., Nalchigar, S., & Jamporazmey, M. (2010). Information technology project evaluation: An integrated data development analysis and balanced scorecard approach. *Expert Systems with Applications*, *37*(8), 5931-5938. http://dx.doi.org/10.1016/j.eswa.2010.02.012

Bacon, C.J. (1992). The use of decision criteria in selecting information systems/technology investments. *MIS Quarterly 16*(3), 335-353. http://dx.doi.org/10.2307/249532

Ballatine, J., & Stray, S. (1998). Financial appraisal and the IS/IT investment decision making process. *Journal of Information Technology*, *13*(1), 3-14. http://dx.doi.org/10.1080/026839698344927

Bannister, F., & Remenyi, D. (2000). Acts of faith: Instinct, value and IT investment decisions. *Journal of Information Technology*, *15*(3), 231-241. http://dx.doi.org/10.1080/02683960050153183

Bannister, F., & Remenyi, D. (2003). The societal value of ICT: First steps towards an evaluation framework. *Electronic Journal of Information Systems Evaluation*, *6*(2), 197-206

Bennington, P., & Baccarini, D. (2004). Project benefits management in IT projects: An Australian perspective. *Project Management Journal*, *35*(2), 20-30.

Bensaou, M., & Earl, M. (1998). The right mindset for managing information technology. *Harvard Business Review*, *76*(5), 118-128.

Brynjolfsson, E., & Hitt, L.M. (2000). Beyond computation: Information technology, organizational transformation and business performance. *Journal of Economic Perspectives*, *14*(4), 23-48. http://dx.doi.org/10.1257/jep.14.4.23

CIGREF, & McKinsey&Company, (2004). Relational dynamics around information systems within management teams of major French companies. [Online] Available: http://cigref.typepad.fr/cigref_publications/RapportsContainer/Parus2004/2004_Relational_Dynamics_around_Information_Systems_within_Management_Teams_of_Major_French_Companies_McKinsey-CIGREF_english_web.pdf (November 20, 2011).

CIGREF, & McKinsey&Company, (2008). The dynamics of information-system-driven value creation: A responsibility shared by the senior management of corporations. [Online] Available: http://cigref.typepad.fr/cigref_publications/RapportsContainer/Parus2008/Dynamics_of_information-system-driven_value_creation_CIGREF_McKinsey_2008.PDF (November 20, 2011).

Coghlan, D., & Rashford, N.S. (2006). *Organizational Change and Strategy: An Interlevel Dynamics Approach.* Abingdon: Routledge.

Cooper, R.G., & Kleinschmidt, E.J. (2007). Winning businesses in product development: The

critical success factors. *Research Technology Management, 50*(3), 52–66.

Crawford, L.H., & Helm, J. (2009). Government and governance: The value of project management in the public sector. *Project Management Journal*, *40*(1), 73-87. http://dx.doi.org/10.1002/pmj.20107

De Reyck, B., Grushka-Cockayne, Y., Lockett, M., Calderini, S.R., Moura, M., & Sloper, A. (2005). The impact of project portfolio management on information technology projects. *International Journal of Project Management*, *23*(7), 524-537. http://dx.doi.org/10.1016/j.ijproman.2005.02.003

Denzin, N.K. (1978). *The Research Act: A Theoretical Introduction to Sociological Method*. (2nd ed.). New York: McGraw-Hill.

Dey, I. (1993). *Qualitative Data Analysis: A User-friendly Guide for Social Scientists*. London: Routledge. http://dx.doi.org/10.4324/9780203412497

Dick, B. (2009). Action research literature 2006-2008: Themes and trends. *Action Research*, *7*(4), 423-441. http://dx.doi.org/10.1177/1476750309350701

Eilat, H., Golany, B., & Shtub, A. (2006). R&D project evaluation: An integrated DEA and balanced scorecard approach. *Omega*, *36*(5), 895-912. http://dx.doi.org/10.1016/j.omega.2006.05.002

Farbey, B., Land, F., & Targett, D. (1992). Evaluating investments in IT. *Journal of Information Technology*, *7*(2), 109-122. http://dx.doi.org/10.1057/jit.1992.16

Fitzgerald, G. (1998). Evaluating information systems projects: A multidimensional approach. *Journal of Information Technology*, *13*(1), 15-27. http://dx.doi.org/10.1080/026839698344936

Graves, S., & Ringuest J. (1999). Formulating R&D portfolios that account for risk. *Research Technology Management*, *42*(6), 40-43.

Henderson, J.C., Venkatraman, N., & Oldach, S. (1993). Continuous strategic alignment: Exploiting information technology capabilities for competitive success. *European Management Journal*, *11*(2), 139-149. http://dx.doi.org/10.1016/0263-2373(93)90037-I

Holtsnider, B., & Jaffe, B.D. (2006). *IT Manager's Handbook: Getting Your New Job Done.* (2nd ed.). San Francisco: Morgan Kaufman Publishers.

Irani, Z., & Love, P.E.D. (2002). Developing a frame of reference for ex-ante IT/IS investment evaluation. *European Journal of Information Systems*, *11*(1), 74-82. http://dx.doi.org/10.1057/palgrave.ejis.3000411

IT Governance Institute, (2007). *COBIT® 4.1: Framework, Control Objectives, Management Guidelines, Maturity Models.* Illinois: Rolling Meadows.

IT Governance Institute, (2008a). *Enterprise Value: Governance of IT Investments, Getting Started with Value Management.* Illinois: Rolling Meadows.

IT Governance Institute, (2008b). *Enterprise Value: Governance of IT Investments, The Val IT Framework 2.0.* Illinois: Rolling Meadows.

Kaplan, R.S., & Norton, D.P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, *74*(1), 75-85.

Kwon, D., Watts-Sussman, S., & Collopy, F. (2002). Value frame, paradox and change: The constructive nature of information technology business values. *Sprouts: Working Papers on Information Systems*, *2*(4), 196-220.

Luftman, J., & Brier, T. (1999). Achieving and sustaining business-IT alignment. *California Management Review*, *42*(1), 109-122.

Luftman, J. (2003). Assessing IT/Business alignment. *Information Strategy: The Executive's Journal*, *20*(1), 7-14.

Maltz, A., Shenhar, A., & Reilly, R. (2003). Beyond the balanced scorecard: Refining the search for organizational success measures. *Long Range Planning*, *36*(2), 187-204. http://dx.doi.org/10.1016/S0024-6301(02)00165-6

Marnewick, C., & Labuschagne, L. (2010). An investigation into the governance of information technology projects in South Africa. *International Journal of Project Management*, *29*(6), 661-670. http://dx.doi.org/10.1016/j.ijproman.2010.07.004

Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Information technology and organizational performance: An integrative model of IT business value. *MIS Quarterly*, *28*(2), 283-322.

Milis, K., & Mercken, R. (2004). The use of the balanced scorecard for the evaluation of information and communication technology projects. *International Journal of Project Management*, *22*(2), 87-97. http://dx.doi.org/10.1016/S0263-7863(03)00060-7

Nicholson, G.J., & Kiel, G.C. (2007). Can directors impact performance? A case-based test of three theories of corporate governance. *Corporate Governance: An International Review*, *15*(4), 585-608. http://dx.doi.org/10.1111/j.1467-8683.2007.00590.x

Omitaomu, O.A., & Badiru, A.B. (2007). Fuzzy present value analysis model for evaluating information system projects. *The Engineering Economist*, *52*(2), 157-178. http://dx.doi.org/10.1080/00137910701328912

Ordanini, A., & Rubera, G. (2010). How does the application of an IT service innovation affect firm performance? A theoretical framework and empirical analysis on e-commerce. *Information and Management*, *47*(1), 60-67. http://dx.doi.org/10.1016/j.im.2009.10.003

Ostrom, A.L., Bitner, M.J., Brown, S.W., Burkhard, K.A., Goul, M., Smith-Daniels, V., Demirkan, H., & Rabinovich, E. (2010). Moving forward and making a difference: Research priorities for the science of service. *Journal of Service Research*, *13*(1), 4-36. http://dx.doi.org/10.1177/1094670509357611

Patton, M.Q. (1990). *Qualitative Evaluation and Research Methods.* (2nd ed.). Newbury Park:

Sage Publications.

Pettigrew, A.M. (1992). On studying managerial elites. *Strategic Management Journal*, *13*(S2), 163-182. http://dx.doi.org/10.1002/smj.4250130911

Pinto, R., & Grawitz, M. (1967). *Méthodes des Sciences Sociales*. (2nd ed.). Paris: Dalloz.

Powell, P. (1992). Information technology evaluation: Is it different?. *Journal of the Operational Research Society*, *43*(1), 29-42.

Remenyi, D., Money, A., & Bannister, F. (2007). *The Effective Measurement and Management of ICT Costs and Benefits*. Burlington: CIMA Publishing.

Rezania, D., & Lingham, T. (2009). Coaching IT project teams: A design toolkit. *International Journal of Managing Projects in Business*, *2*(4), 577-590. http://dx.doi.org/10.1108/17538370910991151

Rickards, R.C. (2007). BSC and benchmark development for an e-commerce SME. *Benchmarking: An International Journal*, *14*(2), 222-250.

Rosacker, K.M., & Olson, D.L. (2008). An empirical assessment of IT project selection and evaluation methods in state government. *Project Management Journal*, *39*(1), 49-58. http://dx.doi.org/10.1002/pmj.20036

Ruiz-Mercader, J., Merono-Cerdan, A.L., & Sabater-Sanchez, R. (2006). Information technology and learning: Their relationship and impact on organizational performance in small businesses. *International Journal of Information Management*, *26*(1), 16-29. http://dx.doi.org/10.1016/j.ijinfomgt.2005.10.003

Ruuska, I., Ahola, T., Artto, K., Locatelli, G., & Mancini, M. (2011). A new governance approach for multi-firm projects: Lessons from Olkiluoto 3 and Flamanville 3 nuclear power plants projects. International Journal of Project Management, *29*(6), 647-660. http://dx.doi.org/10.1016/j.ijproman.2010.10.001

Schwalbe, K. (2010). *Managing information technology projects*. (6th ed.). Boston: Course Technology.

Shank, J.K., & Govindarajan, V. (1992). Strategic cost analysis of technological investments. *Sloan Management Review*, *34*(1), 39–51.

Stoecker, R. (1991). Evaluating and rethinking the case study. *Sociological Review*, *39*(1), 88-112. http://dx.doi.org/10.1111/j.1467-954X.1991.tb02970.x

Tseng, S.M. (2008). The effects of information technology on knowledge management systems. *Expert Systems with Applications*, *35*(1-2), 150-160. http://dx.doi.org/10.1016/j.eswa.2007.06.011

Turner, J.R. (2006). Towards a theory of project management: the nature of the project governance and project management. *International Journal of Project Management*, *24*(2), 93-95. http://dx.doi.org/10.1016/j.ijproman.2005.11.008

Urli, B., & Terrien, F. (2010). Project portfolio selection model, a realistic approach. *International Transactions in Operational Research*, *17*(6), 809-826. http://dx.doi.org/10.1111/j.1475-3995.2010.00762.x

Ward, J., & Peppard, J. (2003). *Strategic planning for information systems.* (3rd ed.). Chichester: John Wiley & Sons.

Weill, P. (1990). Strategic investment in information technology: An empirical investigation. *Information Age*, *12*(3), 143-147.

Whittaker, B. (1999). What went wrong? Unsuccessful information technology projects. *Information Management & Computer Security*, *7*(1), 23–30. http://dx.doi.org/10.1108/09685229910255160

Williams, T., Klakegg, O.J., Magnussen, O.M., & Glasspool, H. (2010). An investigation of governance frameworks for public projects in Norway and the UK. *International Journal of Project Management*, *28*(1), 40-50. http://dx.doi.org/10.1016/j.ijproman.2009.04.001

Wong-On-Wing, B., Guo, L., Li, W., & Yang, D. (2007). Reducing conflict in balanced scorecard evaluations. *Accounting, Organizations and Society*, *32*(4-5), 363-377. http://dx.doi.org/10.1016/j.aos.2006.05.001

Yin, R. (2003). *Case Study Research, Design and Methods*. (3rd ed.). Beverly Hills: Sage Publishing.

Glossary

BSC: Balanced Scorecard

IT: Information Technology

Copyright Disclaimer