Strategic Alignment and IT Project Portfolio Management

Abstract

If structured around an appropriate combination of business processes, knowledge and technology, Information Systems can become a very powerful business strategic lever. With this holistic perspective in mind, we redesigned the dysfunctions of IT project portfolio management process of one of the FTSE 100 global companies. The new process aims at better identifying, evaluating and balancing projects in the light of business strategy. A complementary knowledge management system was conceived to achieve adequate integration of business processes and human capital. Linked together, they enable appropriate alignment between corporate business strategy, IT strategy and operations. We developed and implemented a support system showing the distribution of the projects according to retained performance indicators. The results obtained are well in line with the decision makers' needs and well tuned to their business strategy. To fully leverage the benefits of this approach, this framework should be extended to the complete organizational process.

Key-words:
Strategic alignment, Business IT alignment, IT project portfolio, knowledge management, project balancing, balanced scorecard

Introduction

We consider, following (Stacey, 1995 ; Anderson, 1999), that an enterprise is a complex system characterized by bounded instability, spontaneous self-organization and emergent order. The increased volatility observed in economy can be partially attributed to disruptions caused by Information Systems1 (IS) (Volle, 2008). Nevertheless, we claim with (Davern & Kauffman, 2000) that, if structured around an appropriate combination of business processes, knowledge and technology, IS can become a very powerful strategic lever. We advocate that this combination, coupled with well designed project portfolio management (McFarlan, 1981), can greatly ameliorate the situation.

With this in mind, and to validate our assumptions, we designed, for the Information Technology (IT) department of one of the global FTSE 100 companies, an IT project portfolio management (ITPPM) process complemented by a Knowledge Management (KM) system to achieve alignment between corporate business strategy, IT strategy and operations.

In this paper, we will explain why and describe how we redesigned the ITPPM process and briefly discuss its validation. Aspects related to the KM system are developed elsewhere. If our concept proves successful, we will extend it to other processes by contamination.

Context

Managing complexity is a challenge that increases exponentially when dealing with Multinational Corporations (Ghoshal & Bartlett, 1990). In our case-study the company’s growth was and is still made through acquisitions. In the case of high strategic business interdependence, the difficulties in integrating IS result in poor ex-post performance, a counterpart of rapidly gained market shares (McKiernan & Merali, 1995).

As business is a dynamic system, the complexity of its structure must be adapted to the complexity of its environment, requiring fit and flexibility (Ghoshal & Nohria, 1993). In our case, the multiplication of intricate procedures has become an obstacle to flexibility and agile adaptation of the business processes to the business needs. Not only do business units work in isolation but, as a consequence of adopting an organization too complex for its environmental demands (Ghoshal, op. cit.), some crucial processes appear to dysfunction. Furthermore, we have observed corporate amnesia as knowledge is not capitalized and turnover is relatively high. In particular, the ITPPM process presents the following symptoms (i) choice is often made to satisfy very local and specific requirements at functional department level without bearing in mind the end-to-end business process (ii) every project starts from scratch and IT teams depend upon external consultants for expertise and experience (iii) fuzzy and intuitive prioritization of projects resulting from the absence of business-related strategic criteria. This is critical because, for IT to deliver value beyond supporting daily operations, IT planning and execution must be done according to business strategies (Huang & Hu, 2007). As it stands, the IT function strives to serve different business units whose strategies are in most cases not clearly defined. Solutions are hence rarely aligned, considering strategic alignment as “the fit between the priorities and activities of the IS function and those of the business unit” (Chan, 2002).

1 “The Credit Crunch and the Digital Bite “, Computer, January 2009
In response to the above considerations, our global approach calls for redesigning the ITPPM process to better identify, evaluate and balance projects in the light of an appropriate business strategy. Reconciliation of the priorities of IT and business is not enough to achieve successful alignment. Structural alignment examines the degree of structural fit between IS and the business, specifically in the areas of IS decision-making rights, reporting relationships, (de)centralization of IS services and infrastructure, and the deployment of IS personnel (Chan, 2002). These aspects frame the degree to which the ITPPM redesign effort is absorbable by the organization and need to be properly taken into account in the change management effort.

**ITPPM process redesign**

The ITPPM process consists of a set of interrelated activities which are composed of tasks. As suggested by (Project Management Institute, 2006), the activities are organized in three sub-processes: (1) activities contributing to strategic alignment (2) activities belonging to the project itself and (3) activities needed to monitor and control the portfolio. The activities are described in the following table.

<table>
<thead>
<tr>
<th>Subprocesses</th>
<th>Activities</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aligning process group</td>
<td>Identification</td>
<td>Create an up-to-date list of ongoing and new components that will be managed through portfolio management.</td>
</tr>
<tr>
<td></td>
<td>Categorization</td>
<td>Group identified components into business relevant groups to which a common set of decision filters and criteria can be applied for evaluation, selection, prioritization and balancing.</td>
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<td></td>
<td>Evaluation</td>
<td>Gather all information to evaluate components, with the purpose of comparing them in order to facilitate the selection process.</td>
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<tr>
<td></td>
<td>Selection</td>
<td>Produce a short list of components based on the evaluation recommendations and the organization’s selection criteria.</td>
</tr>
<tr>
<td></td>
<td>Prioritization</td>
<td>Rank components within each strategic or funding category, investment time frame or risk versus returns profile according to established criteria.</td>
</tr>
<tr>
<td></td>
<td>Portfolio balancing</td>
<td>Develop the portfolio component mix with the greatest potential, to collectively support the organization’s strategic initiatives and achieve strategic objectives.</td>
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<tr>
<td></td>
<td>Authorization</td>
<td>Formally allocate financial and human resources required to either develop business cases or execute selected components and to formally communicate portfolio-balancing decisions.</td>
</tr>
<tr>
<td>Component processes</td>
<td>Project execution and reporting</td>
<td>Develop business case or execute selected components using a defined and structured multi-step project management methodology to enable selection and portfolio balancing at transition phases. Moreover, the project management approach should be adapted to the risk profile of the project (McFarlan, 1981).</td>
</tr>
<tr>
<td>Monitoring and controlling process group</td>
<td>Portfolio reporting and review</td>
<td>Gather performance indicators, provide reporting on them, and review the portfolio at an appropriate predetermined frequency, to ensure both alignment with the organizational strategy and effective resource utilization.</td>
</tr>
<tr>
<td></td>
<td>Strategic change</td>
<td>Enable the portfolio management process to respond to changes in strategy.</td>
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According to the principles for process generalization/specialization recommended by (Malone & al., 1999) we specialized this meta-process so as to take into account the specificities of the focus organization. Departing from the existing ITPPM process that we elicited according to information gathered in situ, we propose the model depicted in Figure 1, which represents the activities and involved knowledge assets according to the CommonKADS methodology (Schreiber, 2000). The adaptation of the generic PMI project portfolio management process to IT projects is based on conceptual frameworks, methods and best practices of (Applegate, 2005) and (Jeffery & Leliveld, 2004). To be noted: although activities are represented sequentially, the results of one phase can lead to another not necessarily adjacent phase, as factors identified by (Boonstra, 2003) can influence the IS decision making process.
Redesigned IT Project Portfolio Management Process

<table>
<thead>
<tr>
<th>Business Strategy Office</th>
<th>Customer</th>
<th>IT Center of Excellence</th>
<th>Responsible IT Team</th>
<th>Consultant</th>
</tr>
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</table>

**Figure 1: Redesigned ITPM process**
Activities contributing to strategic alignment

Identification and Categorization
The identification phase is triggered by the emergence of a business need, e.g. development of new services, integration of systems, replacement of legacy solutions, etc. This is formalized in a document named Change Request (CR) which is assigned to IT teams according to their expertise.

In order to align the portfolio with the business strategy, we propose to detect and evaluate potential projects using an approach based on the Balanced Scorecard (BSc) and Strategy Maps developed by (Kaplan & Norton, 2000). Strategy maps are built for each Strategic Business Unit (SBU) and utilized to screen potential projects depending on their contribution to the company’s strategic objectives. Comparing the actual state of the enterprise with strategic goals, performance gaps can be detected leading to a set of appropriate IT projects. As denoted by (Kaplan & Norton, 2001) this approach will allow linking corporate level strategy to the operations of decentralized organizational units.

As the identification implies a thorough understanding of the complementary assets that constitute potential value at business process level (Davern, op. cit.), this phase is very knowledge intensive and should be addressed properly during KM system design, as seen in (Rosselet & Wentland, 2009).

Evaluation
As it stands, the compliance of CRs to the Corporate Standards and Guidelines is verified. Costs estimates are produced based on the project risks and requirements. Furthermore, the criteria for project risk evaluation are not formally defined and risk evaluation competencies are not tackled.

Following (Milis & Mercken, 2004), we recommend computing the project score according to the BSc perspectives to assess value creation. As proper evaluation of risk and impact is critical for correct alignment, we developed a multi-item questionnaire to estimate project risk encompassing project size, technology, requirements volatility and organizational factors such as internal political pressures. Impacts and risk assessments are capitalized in the KM system to identify and share the required expertise and experience.

Defining expectations and measuring performance, ITPPM is a governance tool and the proposed approach reconfigures control in the process. At the company IT headquarters, the governance approach is based on trust more than control. According to this observation and discussions with the IT teams, it was decided not to ask customers to provide financial figures representing the value creation of a project but rather to assess the impact of the project in terms of business process changes, as suggested by (Applegate, 2005).

Selection and Prioritization
Currently, projects are selected based on a financial and "political" estimate of the importance of the client requests. Priority is assigned by comparison to other on-going and potential projects.

In the redesigned process, we aim at choosing the projects according to their global contribution in reaching business objectives along the BSc perspectives. The selection is hence made on the basis of the best possible fit between the set of identified projects and the scope of its contribution in terms of business critical success factors. We propose to prioritize projects based on their impact and risk. The project score is weighted according to criteria reflecting the strategic orientation of the SBU.

Portfolio balancing and authorization
Portfolio balancing focuses on the availability of resources (manpower, expertise, technical infrastructure) and workload optimization.

Portfolio balancing is a critical phase of the value creation (McFarlan, 1981). It requires understanding the risks at the individual project level as well as at the portfolio level. This can be achieved thank to a KM framework for positive and negative risk assessment that highlights the decomposition and relationships of portfolio risks (Rosselet & Wentland, 2009). As a result, proper synergies can be exploited facilitating risk mitigation.

To ensure portfolio alignment with a recurrently actualized strategy, the priorities are updated and the portfolio is rebalanced taking into consideration goals modifications, performance discrepancies and risk evolution. Formal attribution of resources is needed to ensure proper involvement of all stakeholders. This is made possible thanks to the integration of the IT resources scheduling and tracking system with the IT project portfolio and formal meetings with project stakeholders.

Activities belonging to the project itself
Describing in detail the project management methodology of the company reaches beyond the scope of this paper. However, we want to stress out that a multi-step formalized methodology which triggers decision mak-
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Monitoring and Controlling Activities

Portfolio reporting and review
As of now, key technical parameters of the project inventory are aggregated in a project dashboard, ignoring business-related aspects of projects. We suggest that, at each iteration of the portfolio management process and at each phase transition in the project management process, the objectives of the project be compared to current strategic goals to ensure relevant alignment of the portfolio. The retained indicators are based on impact and risk items along the BSc perspectives. The observations and conclusions of this analysis are used to re-balance the portfolio according to performance objectives.

Strategic change
This activity is currently done by cognitive adjustment of decision makers during the selection and prioritization of projects. To elicit the tacit knowledge embedded in this activity, we review and adapt the IT strategy underpinning project portfolio according to the evolution of the environment and the business strategy of the organization. This brings the advantage of iteratively revisiting strategic criteria opening the avenue to a real adaptive strategy.

Implementation
The existing inventory of projects is managed in a centralized repository which provided information regarding project management, budget and staffing. In order to make the portfolio approach possible, the data structure of the repository had to be extended to include the characteristics of each project in terms of expected business impacts and risks. To synthesize this information, we designed and implemented an ITPPM support system in the form of a dashboard. The different visual representations show the distribution of the projects according to indicators retained in our ITPPM process. Figure 2 shows two of the different views of the portfolio offered by the dashboard application.

This functional prototype, deployed as a daily working application on the IT department portal, supports decision makers in the areas of strategic focus, resources allocation, value creation and risk profile. So far, it appears that decision making is made easier and more efficient in terms of value creation. Moreover the gained visibility of the contribution of projects to business objectives seems to improve consistency with strategy. At this stage, the core of our framework seems robust enough to continue in this direction and extend it to other departments.

Conclusion
In this research we produced two viable artifacts (Hevner, 2004), the first being the redesigned ITPPM process integrating structural elements from PMI, strategic performance gap analysis methods inspired by Balanced

Figure 2: Examples of ITPPM visualizations provided by the dashboard
Scorecard and strategy maps, multi-criteria weighting method for project prioritization. The second artifact is the portfolio monitoring dashboard which is designed to support decision making at the portfolio level using state of the art visualization and which is tightly integrated in the company’s intranet portal. The integration of the ITPPM dashboard in the existing IT architecture of the company demonstrates the feasibility of our recommendations (Vaishnavi & Kuechler, 2007).

As observed by (O’Dell, 1998) and echoed in another context by (Jeffery & Leliveld, 2004), the system must improve the actors everyday activities to be adopted. The results obtained applying the new ITPPM process show improvement in so far identification, evaluation, selection and prioritization of the projects is concerned. Users are very satisfied with the look-and-feel of the web application and are utilizing it daily as a support for decision making.

Nonetheless, to enrich the ITPPM process we are contemplating the possibility of (i) taking uncertainty into account in our model (Jeffery, 2004) and (ii) as suggested by (Santhanam & Kyparisis, 1995) incorporating relevant projects interdependencies during selection and prioritization. Furthermore, as identification, evaluation of projects and portfolio balancing activities emerged as the most knowledge intensive phases of the ITPPM process, knowledge assets related to these phases and issues regarding the structure, type, physical form, place, time and quality of these assets need to be addressed thanks to an appropriate knowledge management system (Rosselet & Wentland, 2009).

Limiting the scope of our redesign effort to IT teams seems to have been a wise choice as it allowed to produce a first very interesting result. However to fully leverage the benefits of the portfolio approach and process redesign these modifications should be extended to the complete organizational system.

References


