

Synergy between Project Management and Business Process Management

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Abstract

Project management (PM) is lead by an engineering approach, well summarized in PM-BOK. But a project is also a process. Business Process Management (BPM) is known as a way to put together innovation and productivity and to be a challenge for enterprises with high work force cost. Since the 90's, much work has been done to define methods and models to develop and implement BPM (methods and tools). PM and BPM have developed various approaches and concepts, which can improve mutually. A synergy is possible. The paper aims at defining a global approach, based on concepts of PM and BPM. Will be developed more precisely, as the result of European projects, the major problems of knowledge management and return on experience, decision making using risk as the main indicator, and the design of processes based on and integrating strategic decision making. The results can be used in engineering methods, management methods, and information systems design. In PM, the approach provides a specific way of organizing early phases of the project life-cycle; a more complete and more precise definition of project communications management (chapter 10 of PM-BOK as a reference), and a method to develop it ; improvement in project risk management (chapter 11) : risk definition, risk memory, risk reasoning.

Keywords

Decision Making, Risk Analysis, Information Systems, Project Risk Management, Work Organisation

1. Introduction

Two domains are presently the conceptual foundation for projectised organisations : Project Management (PM) and Business Process Management (BPM). These two domains, while developed separately by different communities, are complementary : PM has been developed as an engineering methodology - cf. Duncan (1996) and Turner (1992) ; BPM is a work organisation approach – cf. Hammer and Champy (1993) and Davenport (1993). A synergy arises, based on considerations articulating their main strong points – and so combine their advantages-, their methodologies - and so articulate their innovative ideas-, and their modelling technologies - and therefore improve the transition to the executable -.

The objective of the proposed approach is to undertake and generalise *management by projects*, which is necessary nowadays in the context of world-wide competition – see Davenport (1993).

First the strong points of PM and BPM (concepts, methodologies, modelling and tools) will be presented. In following, a global approach to projectised organisations will be summarised, in conjunction with specific information technologies and processing. This approach has been validated and finalised through the PRIMA project (2000), which will be used here as an illustration.

This presentation is specifically aimed at the community of project management, highlighting the contributions of BPM to PM (for the BPM community, it should be developed the fact that PM is the most powerful model of work organisation for processes).

2. PM versus BPM

To take only the definitions is quite sufficient to show that a project in PM and a process in BPM are quite identical. Both communities should approve the following definition :

A xx (project or process) is :

- a structured, measured set of activities across time and space resulting in a specified output for a particular customer or market
- a structure for action, a temporary organization
- a dynamic view of how the company delivers value
- under considerations of scope, schedule, resources, costs, organisation, culture and context
- with measures of cost, time, quality and customer's satisfaction
- with customer's point of view
- with horizontal view
- cutting across the organisation and existing boundaries of units
- large.

BPM complements by : "there are no more than around 20 major key generic processes for companies, even very large and complex".

The challenge of **Business Process Management** (BPM) is to put together innovation and productivity, notably for enterprises with high work force cost.

Since the beginning of 1990s, the organization by process (called previously matrix organisations or adhocracy defined by Mintzberg (1982) is considered as a new theory of work organization by Hammer and Champy (1993). A process is the basis of the work organization in the company.

The organization by process is a structure of the work oriented by processes as well as a vision process of the business. The company is focused on the point of view of the customer, its requirements and its satisfaction. It is thus driven by the customer requirements and the way it supplies value. The organization by process is a horizontal organisation of the company, which crosses the existing borders between organizational units and the organization of the tasks. It is a matrix organization of the work that recovers and encroaches on the unit skills, functions or work procedures. It provides a radical change of the functional and hierarchical organization. Its results are a fundamental improvement of the organization and results of the company – cf. Hammer and Champy (2001), the best response to the demands of innovation and efficiency – see Harrington (1991), - which were till now considered as inconsistent together -, with visible and radical improvements on :

- production: costs, delays, quality, utility, coherence, variability...,

- management: better confrontation with the uncertainties of the market and with the competition, faster adaptation to changes in the environment, better innovation capabilities, decisive competitive advantages,...
- customers: significant benefits on quality, life cycle cost,...

Management by process is the highest level of BPM: it is both the development of a management view of the processes, and a view of the enterprise by processes but at the level of management. It combines and connect the efficiency of the company and the efficiency of its processes, which aims at uniting the strategy of the company and the organization of the tasks. It is implemented by a specific organization, with attribution of key processes responsibility to process managers as a new chain of command. Presently, methods are to be developed, both :

- for process managerial control (efficiency measures of processes, directed at managers) ;
- for control of management by process (efficiency measures of the enterprise).

In BPM, to focus on the bid process (upstream phases of projects), as it is proposed here, is a very effective way:

- to transform quickly and effectively into organization by process ;
- to organize and make converge concurrently process management and management by process.

Davenport (1993) shows that BPM implementation is based on the design of specific information systems as the highest enablers of process implementation and innovation.

Since the 90's, much work has been done to define methods / models / tools to develop and implement these information systems adapted to BPM. "The challenge of BPM is to unify under one tool all these visions, to provide the company with the opportunity to define its processes at the business level and to involve users and business application as a stakeholder in these processes – see Vernadat (2004). The objective is to enable policy makers, analysts trades, teams functional and technical teams to collaborate in the definition and evolution of business processes via a single tool aggregating different visions" says Crusson (2003). For example, can be emphasized for the design of the executable process:

- the concept of Service Oriented Architecture (SOA - IBM and Gartner), defined to allow flexible architecture and design of information systems (generic problem for the urbanization of information systems).
- standards of modeling languages as BPMN etc.,
- the use of ERP, groupware, workflow,...

3. The foundations of the approach

PM organises projects activities through requirements of decision and control. PM organises project activities to improve decision making, indicator by indicator: time, cost, resources, risk,... (Key Performance Indicators or KIP).

Project management tools provide structured support for these activities.

The strong point of BPM is to conceptualise, design and organise the support of cooperative activities by information technologies and processing's. Its weak point is the oblivion or the minimisation of decision making, considered as posterior or

secondary. But decision making is the most important, the highest level and the first activity to be organised in a process.

PM has a strong point with decision making, but information technologies and processing's are insufficient. But process information management is a vital key aspect – cf. Davenport (1993). Management of information, and especially process-oriented information management provides the most powerful tool to shape and enable radical change of process, in synergy with organisational and human resource.

Therefore the hypothesis of the proposed approach is to merge the strong points of both PM and BPM, integrating decision making and information processing on the way to design or redesign a process. The approach:

- is based on the decision model of PM-BOK (and notably its KIP), nevertheless formalised over again,
- designs the bid process as a process with its work organisation (activities of the project manager and of the work team as well as the product design activities).

The information system includes: knowledge management, a pivot language for cooperation, cognitive cooperation organisation, decision making and risk management.

The PRIMA method – cf. Alquier and Tignol (2007) is an instance of the above approach regarding a specific process : the bid process or conceptual phase of projects. It has been developed, validated and implemented in two European projects : DECIDE (1996) and PRIMA (2000).

The bid process has been chosen for several reasons: it is one of the 20 major processes of an organisation, it is generic and is present in almost all organisations, it performs strategic business decisions, and improvements implementation can be fast and with a quick return on investment.

The result is a referential of the conceptual phase of projects described by Alquier and Tignol (2007), with possible benchmarking – see Camp (1995).

4. The Prima method

The PRIMA method, as any information system of a process, includes at the basis a process memory and its knowledge management; the conceptual structure of the memory is a pivot language supporting and organising cognitive cooperation at a highest degree; all these elements are the resources necessary for decision making and risk management.

5. Knowledge management

Corporate knowledge management is the intentional creation and exploitation of corporate knowledge.

PRIMA organizes the corporate knowledge management necessary for the bidding process:

- Business memory:

BPM defines the level of knowledge, which is knowledge for business level, a specific high-level knowledge. The corporate memory is specifically business oriented.

PM defines the KPI for decision making, and so the domains of knowledge to be included in the corporate memory. The corporate memory is composed of

specialised repositories. Knowledge domains are : performances, product decomposition, costs, prices, risk and their links.

In PRIMA, risk is the key knowledge, following the general idea that manage an enterprise is to take risks.

– Knowledge acquisition:

It is the first and main step of business knowledge management ; it is completed through specialized procedures, mainly during but also apart from the bidding process.

– Memory use:

The main use of the memory is high level business decision making. It allows also technical solutions assembly, by re-use of existing components or elaboration of new components, to answer calls for proposal.

– Memory reorganization:

The memory grows in time, by addition of new information stemming from every bidding process. Knowledge managers have to organize it globally, regarding the needs of the company: global learning procedure about risk management, evolution of the maturity level inside the company. The memory becomes an instrument of continuous improvement for the enterprise.

Knowledge management requires a knowledge manager. PRIMA defines the knowledge manager role: advanced conceptualization of the memory and of the related management procedures, knowledge capitalization,...

6. Cognitive cooperation

In PRIMA the memory is in fact a pivot language for high-level co-operation and knowledge co-construction inside the company.

The memory helps to produce and share diversified and heterogeneous knowledge, as developed originally by Davenport and Prusak (1998) and Nonaka and Takeuchi (1995).

The various actors create and structure aggregated knowledge. Business knowledge is communicated and shared between knowledge workers. The cooperation is made by reuse of knowledge on old process or during the bidding process by means of a direct cooperation inside the bidding team.

Corporate memory is the organisation and systematisation of return on experience. It facilitates knowledge creation, which is new knowledge or combinations of existing knowledge. It supports the sharing of knowledge between individuals (some who supply and others who use), allowing individual learning or expertise transmission.

Cognitive cooperation is orchestrated at a high level by a risk manager and a knowledge manager, and on a daily basis by project managers.

Knowledge cooperative building and sharing is a change of behaviour: giving/giving against taking/taking.

7. Decision making

Corporate knowledge management is the basis for very high level business decisions.

The first level of decision support systems to be built is to be used directly during the bid process: bid / no bid decision, choice of the last and final offer. PRIMA organises the building of the KPI adapted to the variety and to the variability of the various decision-makers during a bid process (technical engineers, project team,

commercial, managers). The reasoning of decision-makers is driven in a way adapted to the diversified and evolutionary cognitive processes (varied maturity and complexity levels).

But PRIMA provides also decision-making support for the company managers (technical or commercial managers,...), using risk as the main indicator. It is the management by risk. The decision supports developed allows easily and directly a control at the level of the bidding process management and can be integrated into a more general control of management by process.

8. Risk management

Risk is considered as the main indicator, the highest level KPI, integrating all other competitive factors: performances / quality, cost and time. It is the underlying parameter which impacts and contains all the others.

The decision making using risk implements in fact risk management and management by risk in a company.

The effective risk management at business level is concerned:

- at least as much by opportunities than threats, which gives a specific definition of risk in the corporate knowledge management.
- at least as much by external risk (related to the environment : market, competitors,...) than internal (related to the company: its products, processes, employee,...).

9. Conclusion

The results of the PRIMA method can be used in engineering methods, management methods, and information systems design.

In PM, the approach provides:

- a specific way of organizing early phases of the project life-cycle ;
- a more complete and more precise definition of project communications management (cf. chapter 10 of PM-BOK as a reference), and a method to develop it;
- improvement in project risk management (cf. chapter 11 of PM-BOK as a reference) : risk definition, risk memory, risk reasoning.

In BPM, the approach provides:

- a process model oriented by and on decision making. Based on concepts of PM, it includes PM in BPM.
- a risk oriented management, to be included more generally in a business intelligence approach. Management by risk is considered presently as a major challenge for business as defined by Gilad (2001), as risk knowledge is fuzzy, unstructured, insufficient, tacit or even secretive, forgotten, transformed afterwards, insufficiently organised, underestimated, registered in heterogeneous information systems in a company, and is held by risk experts who are rare.

Alquier and Tignol (2007) provides support for benchmarking the management by risk adapted to a company, choosing among Camp (1995) referenced methods depending on the context.

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