

Towards an Intelligent Project Based Organization Business Model

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Abstract

Global economy is undergoing a recession phase that had made competition tougher and imposed new business framework. Businesses have to shift from the classical management approaches to an Intelligent Project Based Organization Model (IPBOM) that provides flexibility and agility. IPBOM is intended to reinforce the proven advantages of Project Based Organization (PBO) by the use of suitable Enterprise Intelligence (EI) Systems. The goal of this paper is to propose an IPBOM that combines benefits of PBO and EI and helps overcoming their pitfalls.

Keywords: *Intelligent Project Based Organization (IPBO), Enterprise Intelligence (EI), Project Based Organization (PBO), Project Management (PM)*

1. Introduction

Fundamental changes in global and regional economies are driving the need for high quality information and knowledge [1, 2], on one hand, and flexible organizational structures on the other hand [3]. Businesses have to prepare their structures and their management styles to sustain differentiating competitive advantages. They are urged to readapt the way they think, make decisions and operate to the new economic framework characterized by a shift to Intelligent Project Based Organization Model (IPBOM). This model is intended to reinforce the proven advantages of PBO [4, 5] by the use of suitable (EI) Systems [6]. PBO and EI had been extensively but separately discussed in literature and many advantages had been used to support the idea that both approaches are necessary [6, 7, 8]. However we still need to analyze in depth the conjunction of the two aspects and to propose a model that combines their benefits, overcomes their pitfalls and helps

executives assimilate the relevance of IPBOM in nowadays turbulent environment.

2. Enterprise Intelligence (EI) Systems

2.1 Concept and definition

EI is the ability to transform and value business information with regard to its currency and relevance [6]. It is a broad category of systems, applications and technologies for gathering, providing access to, and analyzing data for the purpose of increasing the organization intelligence and therefore helping enterprise users make better business decisions [6]. The term EI was chosen instead of the “strategic intelligence” used by [Liebowitz6] because the latter seems to be limited to strategic issues while the first covers tactical, operational and strategic intelligence.

In EI system CI, BI and KM are utilized in conjunction to feed organization intelligence, with each other.

2.2 Business Intelligence (BI)

2.2.1 Concept and definition

Brought up by Gartner group since 1996 [9], BI is defined as a set of tools and processes that gather internal data from several sources, organize them, process, store and present them to end users in order to improve the decision making in the organization and generate value through information and knowledge [6].

2.2.2 BI System

A BI system is generally composed of three major phases (Figure 1)

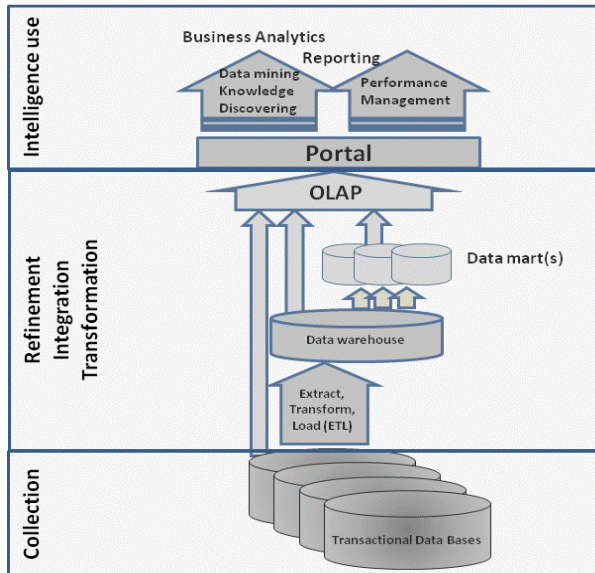


Fig. 1: BI system (source: Adapted by authors from [10, 11, 6])

Collection phase

Data is collected from different data sources (operational databases, historical data, or information from the already existing data warehouse environment) within organization.

Refinement, integration and transformation

ETL: The extraction transformation and load process of required data from specific data sources in the organization [10].

The data warehouse (DW) Subject oriented and integrated, DW supports the physical propagation of data by handling the numerous enterprise records for integration, cleansing, aggregation and query tasks.

Data mart: A data mart as described by [11] is a collection of subject areas organized for decision support based on the needs of a given department.

Intelligence phase

In this phase intelligence user can use the basic retrieval level through reporting or go further to the next and very high value added levels such as advanced analytics or corporate performance management [10].

2.2.3 BI and data Architecture

Business intelligence goal of transforming internal data into actionable information is only achievable if it is built on data of a guaranteed quality, which is relevant to the business. In order to enable this, a successful data architecture framework is vital.

Data architecture covers the provision of a structured framework for an organization's data, enabling that organization to develop and evolve its systems and processes in order to support its current business activity

and, most importantly, allowing it to change in order to achieve its strategic goals in a cost-effective manner [12].

2.2.4 Information quality improvement

The following information gap can easily be fulfilled thanks to a BI system [13]:

- Data required for analysis is located in different sources that are hard to integrate.
- Data sources are inconsistent.
- Management gets extensive reports that are rarely used or inappropriate.
- Data within operational databases is not properly arranged to support management's decision.

2.3 Competitive Intelligence

2.3.1 Concept and definition

Competitive Intelligence consists of the analysis of information gathered from the market place, in contrast with BI dealing internal data [6,14] and the generation of recommendations for decision makers, done in an ethical and legal manner. It is involved with the development of a systematic program for capturing, analyzing, and managing external information and knowledge to improve organizational decision-making capabilities [6, 15, 16].

2.3.2 Benefits of CI

To achieve CI goal, organizations need to create a competitiveness corporate culture, allowing for the exchanging of knowledge and ideas among individuals and departments [17].

CI serves the following primary purposes [15]:

- Market, industry, political, customer, supplier, and technological profiling, benchmarking, and assessment;
- Early warning of opportunities and threats;
- Support for strategic planning and implementation; and
- Support of strategic decision making.

2.3.3 CI system

An adapted model of CI 4C-cycle proposed by A. Weiss [17,18] is presented in Figure 2

2.3.4 CI analysis

Analysis is essential and should explore the entire external environment, including the general and task environment, and not be limited to competitors only. A complete analysis will assist in shaping the appropriate strategy for the organization by detecting trends that should be monitored and assessed [19,20].

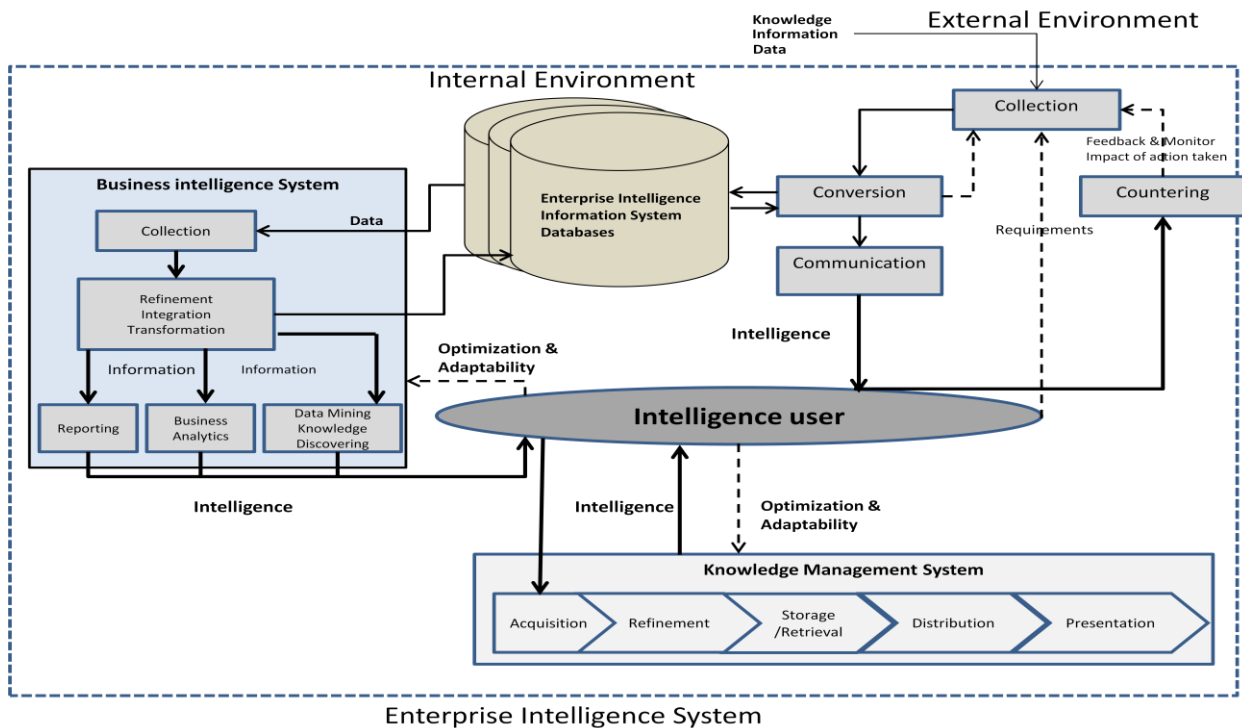


Fig. 2: EI system (source: adapted by authors from [10, 11, 6, 17, 22])

2.4 Knowledge management

2.4.1 Concept and definition

Knowledge is present in ideas, judgments, talents, root causes, relationships, perspectives and concepts. Knowledge is stored in the individual brain or encoded in organizational processes, documents, products, services, facilities and systems. Knowledge is action, focused innovation, pooled expertise, special relationships and alliances. Knowledge is value-added behavior and activities [21].

KM can be defined as the collection of processes that govern the creation, dissemination, and utilization of knowledge.

2.4.2 Knowledge transformation

Knowledge encompasses both tacit and explicit knowledge. It is not static; instead, it changes and evolves] during the life of an organization[22].

2.4.3 KM system

KM process model that could be used for knowledge capture, creation, and distribution and sharing is shown in Figure 2.

2.5 Enterprise Intelligence (EI)

2.5.1 EI system

As conjunction of the BI, CI and KM systems, EI system can be approached through the following scheme (see Figure 2)

This architecture relies on the crucial role of the intelligence user that should:

- Identify the strategic, tactical and operational need of information
- Define the quality and the scope of required information
- Be able to utilize the gathered information in its various forms
- Adapt and optimize BI, CI and KM systems according to, but not limited to:
 - ✓ The new external environmental factors: new market trends, new competitor's new regulations etc.
 - ✓ Information technology Immersion degree: to what extent is the organization familiar with advances in information technology
 - ✓ The strategic orientations

2.5.2EI success criteria

To successfully handle EI initiatives three relevant issues must be considered:

- The central role of intelligence-user in the whole Intelligence cycle and, in particular, in direction and use phases;
- The importance of suitable EI processes that consider specificities of the company
- The effective and efficient EI infrastructure that is necessary to achieve expected EI results

3. Project Based Organizations (PBOs)

3.1 Definitions

Project

A project is a temporary organization to which resources are assigned to undertake a unique, novel and transient endeavor that involves managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of change [4].

Project Based Organization (PBO)

PBOs are organizations in which the majority of products are made against bespoke design for customers. These types of organizations may be stand-alone, making products for external customers, or subsidiaries of larger firms, producing for internal or external customers. They may also be consortiums of organizations that collaborate in order to serve third parties [5] Project-based companies are often involved in several projects simultaneously.

Definitions of PBO vary, but a key point is that PBOs possess all internal and external resources, as well as individual functions such as development, production established organizations are structured to and ,and sales execute business as individual projects .

The structure of PBOs has come to be applied to a range of industries, especially construction, IT, communications, automobiles, the media and consulting and professional services [4].

PBO can refer either to the entire company or to a department within a company.

In a PBO structure, a company's departments and personnel are organized around each particular project. For example, many PBOs have project managers that run teams of employees. These employees are often from different departments and have different job titles, but all are needed to get the project done. Typically, there are many teams operating at once, but they have no need to interact with each other because each team is focused on completing its project [5].

Project Management

In competitive environment businesses in general find themselves in search of disciplined approach to gaining market share or even surviving. Project management (PM)

as management discipline involving, planning, organizing, and managing the resources needed to bring about a successful conclusion is the ultimate solution. For non PBOs, this approach simply helps getting better organized [8]. But there are other specific reasons to use PM [23]:

- It establishes a single point of contact and accountability for the overall success of the project.
- It focuses on meeting customer needs and expectations.
- It improves performance in time, cost, and technical areas
- It obtains consistent results through the definition and application of a process across the business unit. It focuses on managing project scope and controlling change.
- It helps avoiding disasters by managing risk.
- It strengthens project teams and improves morale.

3.2 Benefits of PBO model

In PM literature many benefits of PBO are pointed out:

- In the current knowledge-based economy, PBO model allows management to integrate advanced knowledge from multiple viewpoints dispersed within and outside the organization[3].
- PBOs are flexible and autonomous enough to be optimal and to generate business models for new products and services [4].
- PBO is suitable organization structure for large companies to implement the most important themes, such as projects to enhance management efficiency or develop new products[4].
- Research into inter firm alliances has emphasized the importance of PBO in collaborative ventures [3].
- PBO represents an important complement to formal organizational structures, dedicated .ge departments[3].
- PBOs are very beneficial for inward and outward knowledge transfer [3].
- Projects most likely contribute to a firm's proficiency in conducting the critical tasks throughout] transfer process the knowledge[3].

3.3 Knowledge challenges for PBOs

The discretion required to manage every project with regard to its own objective and constrains can be a serious obstacle facing knowledge sharing effort between interrelated projects. The PBO tend to suffer from weaknesses in company-wide development and learning, and difficulties in linking projects to firm-level business processes. Furthermore, projects typically comprise a mix of individuals with highly specialized competences, belonging to functionally differentiated worldviews

making it difficult to establish shared understandings and common knowledge base [5].

Also relevant pieces of knowledge are distributed into a multitude of local settings and a great amount of knowledge resides in individual members [5]. Finally, the time and money limits of individual projects may cause problems when it comes to knowledge sharing [5].

3.4 Limitations of PBO model

Despite the fact PBOs operate through projects, not all projects have a well-defined objectives and sufficient resources to carry out all the required tasks [5].

PBOs tend to be not only strongly decentralized, but also quite loosely coupled, and the division between functional and PBOs is not at all clear-cut. The functional organizations appear to be growing more project-based and the PBOs growing more routinized [5].

3.4 Success criteria for PBOs

PBO model can be beneficial and bring all the benefits cited above in terms of flexibility and knowledge transfer if projects are consistently managed following effective PM processes. Such processes are meant, in addition to increase projects success probability by implementing the best practices, to preserve and capitalize project knowledge to avoid wasting time in reinventing the wheel and losing the main advantage brought by PBO model with regard to knowledge transfer.

Meanwhile PM adds value-but only when applied in the proper dosage [7]. It is much wiser to apply a little, measure the success, then build up where needed into more sophisticated approaches than to drown your best and brightest in paperwork. Adopting PM processes should take into consideration the organization ability and the relevance of gradual organizational. That is the goal of maturity models in general and those dealing with project governance in particular.

4. IPBO Business Model

4.1 Model description

PBOs use projects to execute their strategies therefore they have to:

- Identify and undertake adequate projects portfolio with regards to its strategy or in other words strategic management -doing the right things
- Succeed these projects through effective project management processes or doing things right-performance management

EI system will impact both strategy and performance as :shows 3the Figure

- portfolio identification and selection through CI tools

- Performance Management through BI tools
- PM and project knowledge capitalization through KM tools
- Broken lines highlight the complementary role of adaptive and restructuring feedbacks to ensure the required agility.

4.2 Business value of IPBO for PBOs

4.2 .1 Managing project information

PM is an information-intensive activity, and information or knowledge generated during the project is either archived or by default often destroyed, or at best it becomes difficult to retrieve tacit information locked away in a silo [21].

Two relevant types of information are valued thanks to EI system [24]:

- External information to project but internal to organization.
- External information to the project, referred to as environmental factors

Information management during the project life cycle is extremely important. But information is not knowledge unless that information is organized and processed in a meaningful way.

4.2 .2 Managing project knowledge

While technology facilitates generating and organizing information, nowadays information overload can also impede efficiency and affect productivity if not properly managed through an adequate EI system [8]. To be successful, the manager will be required to “deploy” the knowledge resource (knowledge worker) where that worker’s specialized knowledge can make the greatest contribution.

In PBOs, the task of managing knowledge is even harder because of typically discrete nature of projects and their lack of continuity. One of the main benefits of EI to PM is the project knowledge gradual master it allows.

Indeed without EI contributions it will be difficult to take advantage of tremendous amounts of data resulting from project activities.

4.2 .3 Benefits of EI for Project Managers

EI provides Project Managers with decision support in three dimensions:

- Structural dimension: enhance its ability to define relationships of organizations & people (stakeholders) so decisions can be implemented

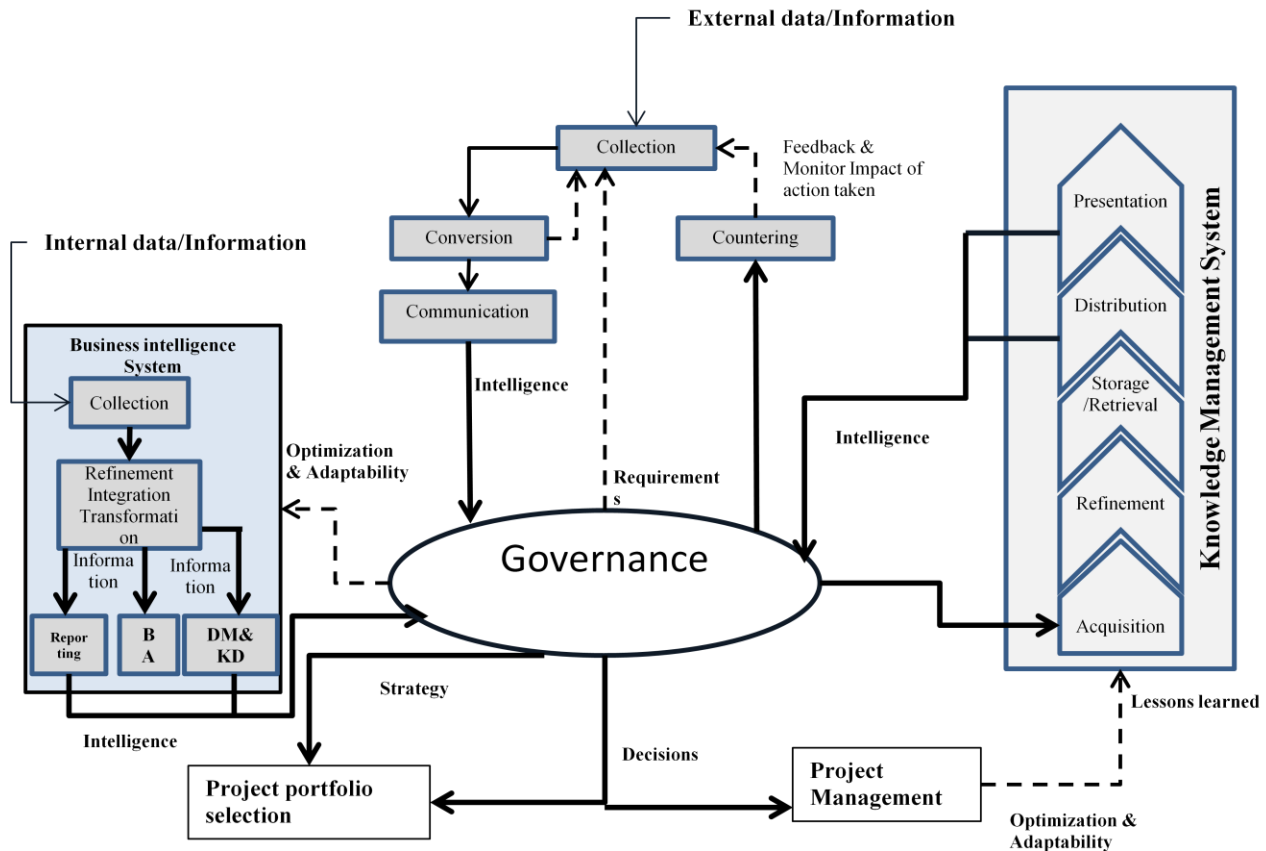


Fig. 3: Intelligent Project Based Organization Model (IPBO) (source: Authors)

- Operational dimension: develop its competency to respond to disruptive events
- Strategic dimension: provides analytic approach to deal with and to respond to trends and significant changes

4.2 .4 Benefits for Stakeholders

Stakeholders' management is a key factor to succeed a project and good project governance should consider the importance of their adhesion and support. In this perspective EI is proven to [24] :

- Keep sponsors motivated and thus more support
- Help satisfying customers thus bring more business
- Motivate and value employees' contribution so it ensures higher morale and productivity for team and employees
- Keep suppliers aware of the real need of the company so they are able to propose adequate services with lower prices

5. Conclusion

Businesses need more than ever business models that provide them with agility and flexibility required for survival and growth in such tougher economic framework. This paper confirms that a combination of Project Based Organization Model and Enterprise Intelligence System will help companies sustain differentiating competitive advantages by a strategic use of projects and project management through the transformation of valuable internal and external data into actionable information and a methodologically capitalized knowledge. This Paper also proposes a practical and useful Intelligent Project Based Organization Model (IPBOM) that can reinforces benefits of PBOs and EI systems and help overcoming their Pitfalls.

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