



DOCUMENTING IN A BPM APPROACH TO IDENTIFY IC

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ABSTRACT

This document tries to be an approach to a method to identify (previous stage of valuation) the intellectual capital of an organization that has a business process repository mapped with a Business Process Modeling (BPM) developed methodology. This approach is based on several BPM methodologies, especially Dr. Scheer ARIS Methodology, the German FRODO architecture for business process oriented Knowledge Management, and the Human Capital Management (HCM) [9]. This approach does not need a revolutionary change in organizations. This approach is based in an evolution that was born with the creation of the Organization & Methods (O&M) department in Organizations after the middle of the XX century and continued into the modern Process-Oriented Organization.

PALABRAS CLAVES

BPM, ARIS, Business Process, Knowledge Management, Intellectual Capital



INTRODUCTION

Business Process Modeling is a methodology that enables enterprises to specify their business process as a series of activities and transactions that together achieve business objectives [8]. Business Process Management makes reference to a group of management tools which includes Business Process Modeling. This article references BPM as Business Process Modeling. Since both Business Process Modeling and Business Process Management share the same acronym (BPM), these activities can be confused with each other.

INTELLECTUAL CAPITAL AND THE PROCESS MANAGEMENT

Measuring intellectual capital is a growing area of interest in the knowledge management field [6]. Since this measure must be made over a consistent documented platform the BPM approach can be used to represent the whole company. BPM shows an evolution in documentation theories.

The O&M department in big organizations is becoming crucial. Almost every bank and government has one. O&M started before the introduction of computers in organizations. This department was in charge of regulating how to document procedures and templates to register information and "paper transactions". When big computers were introduced in organizations, this area became more important. O&M began to align data with the data processing tools like old Mainframes. In the '80 with the popularization of the interconnected offices, this department became more important. It started working with process concepts, especially when the concept of reengineering was incorporated into American big companies in order to be more efficient and to reduce costs, in fact producing a downsized organization.

In '90s, the Digital Nervous System [3] and the ERPs based process concepts were introduced in big organizations. The Business Processes turned into the core of the organizational systems, incorporating BPM concepts in the O&M departments. The result of this was the migration of the O&M to a Business Process Management Office (BPMO). In most organizations where there is not an O&M Department, the introduction of BPM is related with the ERP implementation, ISO or SOX certifications and other driven projects that have a BPM with their supporting BPMO (former O&M department).

O&M is one of the pillars of the Intellectual Capital (IC) documentation. Nowadays, IC is the most important value of the companies. It is particularly important in services, technological and information system companies. This intellectual capital is composed of marks and Internet domains, copyrights, patents and contracts and people's knowledge and skills. One of the most accepted taxonomy of the IC is the Skandia

Navigator (c), developed by the Sweden company Skandia [4], which classifies the Market Value in:

- a. Financial Capital
- b. Intellectual Capital
 1. Human Capital
 2. Structural Capital
 1. Customer Capital
 2. Organization Capital
 1. Innovation Capital
 2. Process Capital

The Key concepts in knowledge management are based in the two knowledge dimensions: explicit and tacit [8]:

- Tacit Knowledge: is highly personal and it's hard to be transferred or communicated. When it's possible to be transferred, it requires of joint activities between people. Experts networks and Practice Communities were born to help managing Tacit knowledge. Tacit knowledge is a very important part of the Organizational Memory. It has generally been recognized that Organizational Memory consists of mental and structural artifacts that have consequential effects on (organizational) performance [5].
- The Experts network has a weak entity. It is related with "know who", with members who support to other people of the organization with their expertise.
- The Practice Communities has a strong entity. Their objective is to formalize the implicit knowledge transfer process and empower-fulling other knowledge transfer channels withdrawing social networks and social groups, giving a formal structure that allows to manage and acquire more knowledge through the members and group's tools. This is very valuable in the companies because with the culture development that appreciate the knowledge creation can obtain differentiators things that empower the value generation.
- Explicit knowledge: It's easy to represent externally and to be formalized. It is produced with effort in converting the tacit knowledge. Explicit knowledge on organizations often becomes embedded in documents, repositories, organizational routines, processes, practices and norms [8].
- One of the director's most important objectives in companies is how to turn the tacit knowledge into explicit knowledge. Tacit knowledge mainly resides in people (Human Capital) in other type of capital like structural. On the other hand, explicit knowledge can resides in systems, documentation and other information carriers which can be easily sold in the market showing it's value to the company shareholders.

Business Processes are the main core of today's and tomorrow's competition. Organizations have concluded that efficiency should be available in the process as well

as quality service. Due to this tendency Business Process Management came to light as an attractive management solution for a variety of organizational problems [7]. BPM suites of software supports BPM. BPM suites of software should combine organization (people, positions, roles), data, products and services with the process perspective. It is a important subject of the management of the Organizational memory (OM) which "consists of mental and structural artifacts that have consequential effects on performance" [1] that resides into people, paper of data bases and can be represented in the BPM Suites.

The typical features of integrated BPM tool could be summarized in: data and organization modeling function. BPM suites like IDS ARIS are influenced by the System's Object Oriented theory, getting the concepts of classes (generic types of objects), objects and relation between them. This allows to think an organization like an ecosystem that interacts, allowing to study it's ontology and knowledge taxonomy.

IDENTIFY KNOWLEDGE IN THE ORGANIZATION

This approach considerate that the organizational entities can be represented in an object oriented model, taking into account that some of this entities are represented in other systems besides the BPM suite (we assume the BPM software is not transactional).

The first step is to define the scope dimensions which the organization should map, in order to identify the valuable Intellectual Capital. These dimensions can be static or dynamic. The proposed static dimensions are:

Static: Explain about the organization, where is the knowledge, copyrights, human resources and other valuable Intellectual Capital that is not involved with the transactions.

- Organizational: It represent how the organization is composed, who leads and collaborate, which are the skills and aptitudes of the people's organization.
- Systems: Represent a organization system map of a company, like which system are used, system taxonomy and system interfaces.
- Risks: Represent the operational risks and the organizational risk which should be controlled to comply with organizational rules or law, or to manage more effective the organization.
- Products & Services: Is the inventory of the product and services which the organization produces or consumes, with it taxonomy and attributes.
- Knowledge mapping: Is the formalized knowledge that the company has, like copyrights, patents and training or other valuable kind of knowledge documented or formalized.



Dynamic: Exist a dynamic dimension that has a thread of the execution process, and his relations with all static dimensions.

- Process: In this dimension are described the process and the events. This dimension is the most important to obtain value in this approach because is the dimension which related objects of a different dimensions. In the BPM approach the process or the activity is the center of a methodology, and for example System application, roles, positions, risks are related directly with the process or the activity.

The information value is not focused in the objects declared in a BPM model. The value resides in the relationship between this objects. For example if I have a list of the company's positions and a list of the people working in the organization, the value resides in the relationship between these objects: identifying who occupies each position. The BPM approach's richness consists in determining the relationship between objects in the same dimension and between objects in different dimensions. For example, if I have a list of application systems and a list of identified processes, the value will reside in the data of which application system support which process.

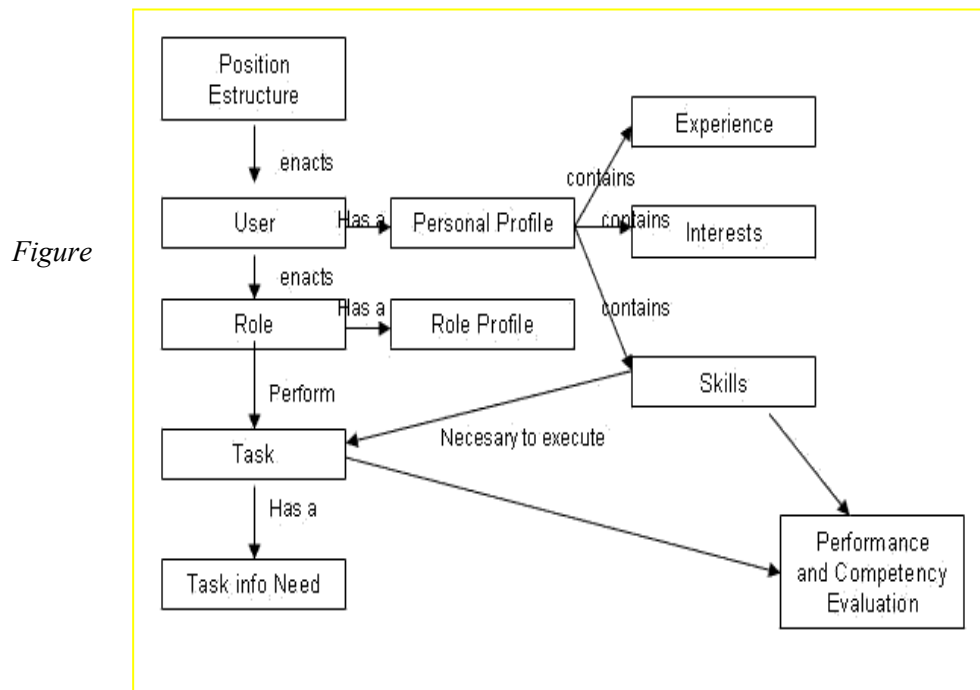
With a whole view the relationship between objects can be identified. The whole abstract representation can be seeing in the Figure A. The BPM tool usually represents an important part of this. Modeling tools like ARIS have an object oriented architecture for this entities (see Figure 2). The most important object classes in this approach are:

- Role: It's a business process abstraction of a consistent entity which do a related tasks.
- Position: It's the formal description of a title that one or more people and roles in the organization can receive. The functional dependency in an organizational chart is described with the relation between the positions.
- Position Type: It is a non-formalized position, but is not a role because it has a stronger dependency with it's authority. For many companies it is a common fact because the bureaucracy spends a lot of time formalizing it or the company has politics of non incrementing the number of employees and use sub-contracted people. In other companies with a lot of points or shops such as banks, it is used to represent a generic position as "manager" which should not necessary be related with the real position of manager, but the person who assumes this position has the role of a manager.
- Person: It is a real person, which has a name and other personal attributes.
- Process: It is the conceptualization of a business process, with the specifications of the corresponding level. Ofently this is the object with the largest requirement for attributes as it is the core of a BPM model.
- Event: It is the representation of an event it can be occur. The events can be divided in 3 types. Init Events: which are the shooter event. For example: "At 5 P.M.", "When a client answer about a product". Middle Events are a result of a activity or

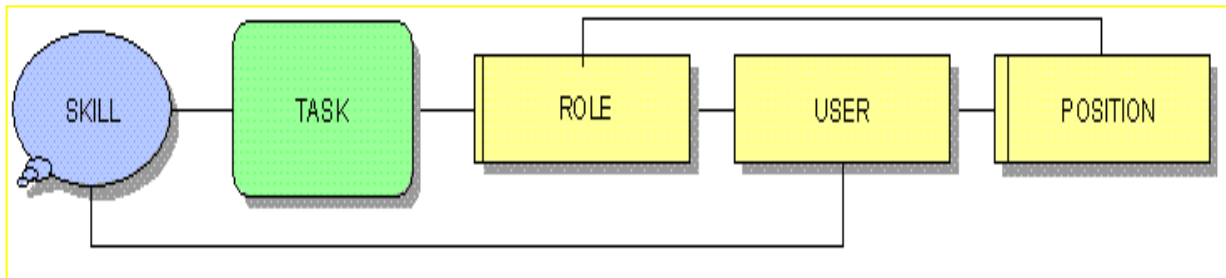
process. For example "Client answered". Finish Events which are used to finish the process. For example "File archived".

- Logic Operator: It represents how a path can be divided. It respond to the classic logic operators: AND, OR and XOR.
- Activity: It is the conceptualization of a process activity, with a similar kind of attributes like process object. It's always used in a process' explosion of details.
- System App: It is the representation of an IT system which is used in the organization to support a business process.
- System Modules: It's the representation of a System App's module.
- System Screen: It's the minimum representation of a sub-application System.
- Risk: It is the conceptualization of an organizational risk that has an impact on the organization.
- Risk category: Is the generalization of a Risk type.

Figure 1: Relation between entities of OM based in FRODO Project [REF 1]

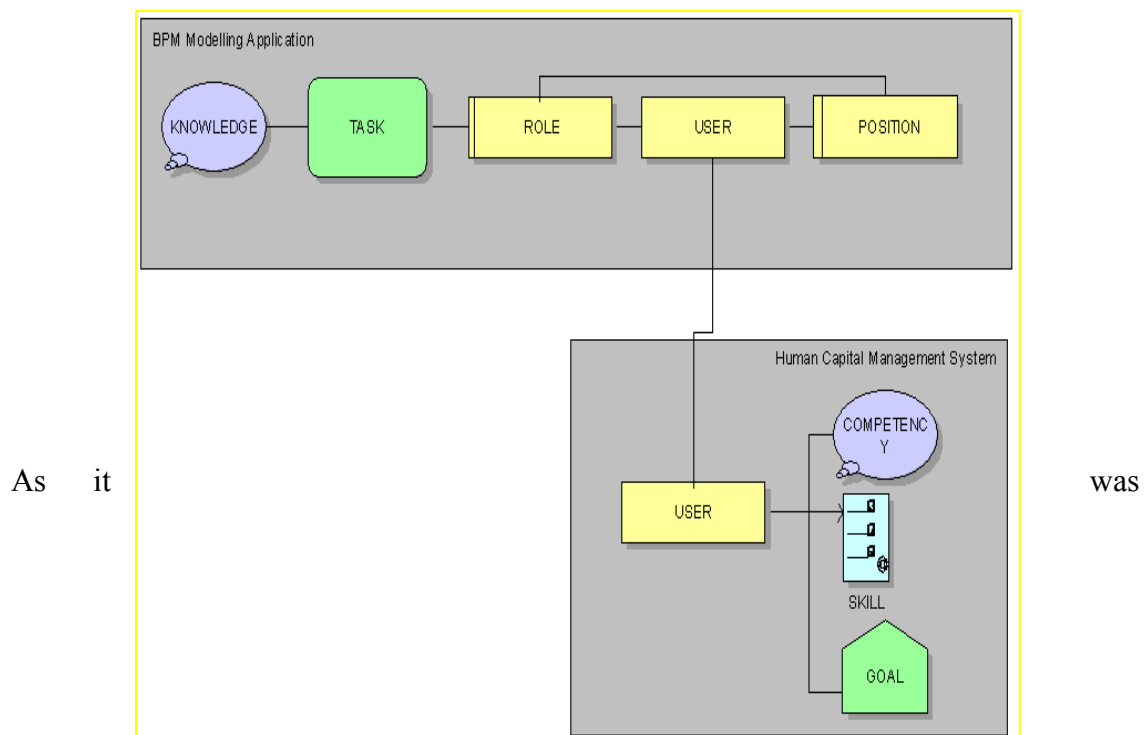


2: "Represent a part of Organization Dimension of modeling OM".



The best scenario would be to have a unique business process repository (BPR) where all the intellectual capital of the company was documented. But this scenario is rarely to obtain. One of the most difficult problems to get a holistic view of the intellectual capital of the company occurs when the entities are represented in different BPM Suites or other applications without native interfaces (see figure 3). It represents a real challenge to get a consistent report.

Figure 3 "This relation can be used to do a BSC of a complaining of the process needs required"



mentioned before, we talk about how the IC is represented in a BPM approach. But the importance in representing this resides in mining and reporting. This mining can be a



simple report of o complex analysis done by a specialized software application. For example, you can get a report of the skills needed for a role (because the BPM model has a relationship between Process and Role and a relationship between the process' "skills needed") and how many people have this skills and can be assigned to this role. Also in the case of a company's fusion you can analyze a more complex scenario like the organizational impact of a restructuring process. ARIS BPM suite of software contains a powerful development studio to do reporting over a Process Database allowing this kind of functionality.

CONCLUSIONS

With this approach an organization would create an appropriate foundation for the development of a platform, which can be easily valuable by a specialized consulting in the case of a company's fusion or take over. What is more, it has other benefits like:

- Effective training management aligned with the organization strategy.
- Ease to obtain or maintain ISO, SOX, CMMi and other certifications.
- Ease to make a reengineering or ERP implementation.

The BPM platform's benefits are growing with the integration with Balance Scorecards (BSC) and Process Simulation Tools. Nowadays, we see that BPM suites will consolidate an orchestration system which interacts with the ERP and other specific and legacy systems over the SOA platform.

REFERENCES

- [1]. "Knowledge in organization", Page 178. Laurence Prusak, Butterworth-Heinemann Press, 1997.
- [2]. "Exploiting User and Process Context for Knowledge Management Systems", Ludger van Elst, Andreas Abecker, Heiko Maus. German Research Center for Artificial Intelligence (DFKI), 2001.
- [3] "Business @ the Speed of Thought", Bill Gates. Grand Central Publishing, 1999.
- [4] "Transforming Knowledge: The 21 Century Wealth Driver", Charles M. Savage. Kee-inc.com, 1999.



[5] "Organizational Memory", James P. Walsh, Gerardo Rivera Ungson. The Academy of Management Review, Vol. 16, No. 1 (Jan., 1991), pp. 57-91. Publisher: Academy of Management. Stable URL: <http://www.jstor.org/stable/258607>

[6] "Developing knowledge management metrics for measuring intellectual capital", Jay Liebowitz, Ching Y. Suen. Journal of Intellectual Capital - Volume 1 Issue 1, 2000. Emerald Group Publishing Limited. Page 54 - 67.

[7] "The Process-Oriented Organisation: A Holistic View. Developing a Framework for Business Process Orientation Maturity", Peter Willaert, Joachim Van de Bergh, Jurgen Willems and Dirk Deschoolmeester. Vlerick Leuven Gent Management School, Belgium. 2007.

[8] "Business Process Modelling: A foundation for Knowledge Management", Vesna Bosilj-Vuksic. Faculty of Economics, Zagreb, Croatia.

[9] "Learning Reality: Narrowing Education's Mission", Max Meadow. July 2006. Stable URL: http://www.clomedia.com/content/templates/clo_article.asp?articleid=1429&zoneid=59

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