Organizational Management Model based on Knowledge Management, Talent Management and Technology Management Framework "Gomak"

Nieto Bernal W., and Luna Amaya C.

Abstract—This paper aims to present a framework for the organizational knowledge management, which seeks to deploy a standardized structure for the integrated management of knowledge is a common language based on domains, processes and global indicators inspired by the COBIT framework 5 (ISACA, 2012), which supports the integration of three technologies, enterprise information architecture (EIA), the business process modeling (BPM) and service-oriented architecture (SOA). The Gomak Framework is a management platform that seeks to integrate the information technology infrastructure, the structure of applications, information infrastructure, and business logic and business model to support a sound strategy of organizational knowledge management, low process-based approach and concurrent engineering. Concurrent engineering (CE) is a systematic approach to integrated product development that respond to customer expectations, involving all perspectives in parallel, from the beginning of the product life cycle. (European Space Agency, 2000).

Keywords—Business Process Modeling, Enterprise Information Architecture, Government and Knowledge Management, Service Oriented Architecture, Process Management.

I. INTRODUCTION

ORGANIZATIONS are complex systems composed that consist of regularly technologies, processes, information, people, applications and infrastructure in that in an integrated manner, carry out tasks to meet missionary purposes. As a system, it can be represented with a business architecture model, where the components interact within an environment. In this sense, the data, information and knowledge are key assets to be to create value, to generate competitive advantage and conduct their business intelligence processes, , from the moment in which you create information and knowledge to time values becomes. The organizational structures, technologies, processes and services play an important role [1].

Today, technologies are often used to model the enterprise information architecture, which attempts to describe the organization from different perspectives in this case: data, function, network, people, time and motivation (The Zachman Framework™, 2008), (TOGAF ®, an Open Group Standard, 2010), Zachman and TOGAF frameworks are more accepted

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in the industry to model the organization. Additionally you will find the BPMn technologies, a standard that provides an easy and understandable notation for all users in the organization, from the business analysts that create the initial drafts of the processes, to the technical developers responsible for technology applications that execution these processes and, finally, people and workers who manage and monitor processes. Thus, BPMN creates a standardized environment for modeling business processes and facilitate the implementation and continuous improvement of processes. Moreover, service-oriented architecture is seen as a paradigm for the design and implementation of information technology solutions, which seeks to integrate business processes and the application architecture in a standardized model.

However organizations today need to develop capabilities and innovations, which require some form, more entrepreneurship, need to maintain a high quality of information and knowledge to support strategic decision making, create value, perform some operational excellence, managing risk, maintaining traceability between business strategy and technological units and measuring performance [2]. In response to these challenges, this paper seeks to provide a comprehensive framework to help organizations achieve their goals for the government and knowledge management.

The proposed framework is a model that is structured in two disciplines: governance and management, which cover different types of activities, require different organizational structures and have different objectives. Additionally they comprehensively support the BPM, and SOA IEA. The Government of knowledge is seen as the discipline that seeks to ensure that the needs of stakeholders can be evaluated in order to establish the right direction and prioritization of knowledge assets of the organization, as well as carry out follow-up and performance measures for meeting the mission objectives [3].

II. GOVERNMENT AND MANAGEMENT OF ORGANIZATIONAL KNOWLEDGE

Government of Knowledge: The government seeks to ensure that the requirements of organizational knowledge (users, stakeholders, staff and external agents) be evaluated in order to address and establish goals and strategies, which can carry out a proper assessment of strategic management knowledge, facilitating decision making and performance monitoring of organizational knowledge management.

Knowledge Management: Management practices are to be applied in the framework GoMaK in this case they are defined in four major domains associated with the Planning and organization of knowledge (POK), Development and Acquisition of Knowledge (DAK), Delivery and support of knowledge (DSK) and Monitoring and Evaluation of Knowledge (MEK).

The Articulation between Knowledge Government and Management: The government and knowledge management should not be viewed as two isolated management practices, on the contrary, they should be seen as a systemic model, in which the processes of government knowledge and integrate knowledge management lifecycle by creating a harmonious, which are linked from the process and setting Objectives Addressing the domain knowledge management of the planning and organization of knowledge (POK), verging on a course of action that reaches the domain of monitoring and evaluation processes (MEK), and closes cycle in the field of government in the Monitor process performance of knowledge management, as shown in Fig. 1 represents articulation between Government and Knowledge Management.
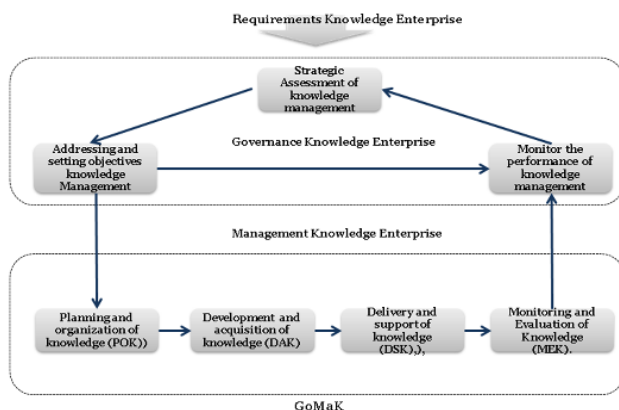

Fig. 1 Articulation between Government and Knowledge Management

The framework can be implemented depending on the nature and composition of the organization, [4], [5] you can organize your domains, processes and technologies as you see fit, provided that all necessary and objectives of management are covered. Smaller companies may have fewer processes, larger companies and more complex framework can be deployed to cover all the same objectives.

The framework seeks to deploy a common language for organizations to carry out the activities of government and knowledge management; it also provides a framework for setting corporate objectives for knowledge management, as well as the strategic assessment and monitoring corporate performance based on the knowledge management. The proposed framework for the government and knowledge management provides two major domains of management; organizational knowledge government contains three processes which are:

Domain GOK

- Addressing and setting objectives knowledge management
- Strategic Assessment of knowledge management
- Monitor the performance of knowledge management

And the domain of knowledge management: which contains 24 structured processes based on the Deming cycle PDVA, which has led to the definition of four major domains.

Domain Planning and organization of knowledge (POK)

- Management Framework Gomak
- Management Knowledge Strategy
- Management Knowledge Enterprise Architecture
- Management Knowledge Workers
- Management Knowledge Community
- Management Knowledge Services
- Management Knowledge Security
- Management Knowledge Quality

Domain DAK

- Management Knowledge Projects
- Management Knowledge Requirement
- Management Knowledge Environment
- Management Knowledge IT Tools
- Management Knowledge Platforms
- Management Knowledge Apps
- Management Knowledge Database
- Management Knowledge Data warehouse

Domain DSK

- Management Knowledge Resolutions
- Management Knowledge Incidents
- Management Knowledge Problems
- Management Knowledge Continuity

Domain MEK

- Monitor, Evaluate Performance KM
- Perform Feedback KM
- Management Corrective Actions
- Redesign of Objectives and strategies

III. THE AIE, BPM AND SOA AS SUPPORT TO THE GOVERNMENT AND KNOWLEDGE MANAGEMENT

Organizations need to govern and manage knowledge, to meet the requirements of the various stakeholders, it is key to redesign business processes to knowledge management which can be structured under a BPM-KM approach, once structured driving development of service-oriented architectures SOA-KM, these in turn are implemented on the enterprise information architecture AIE-KM, which contains layers of business, business logic, data, applications and IT infrastructure , and go on to generate as output business knowledge that stakeholders require. This cycle is monitored within the spectrum of government and knowledge management. Fig. 2 displays the interaction between the AIE, BPM, SOA and Gomak [6], [11].
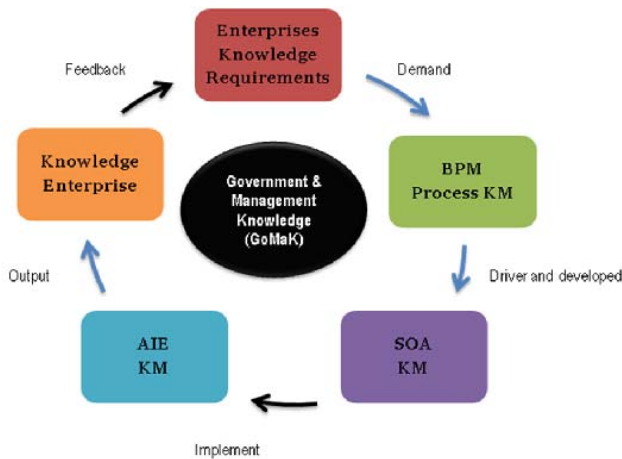
Fig. 2 Interactions between the AIE, BPM, SOA and GOMAK

In addition to satisfying the objectives of government and enterprise knowledge management, knowledge must conform to certain quality criteria such as efficiency, effectiveness, confidentiality, integrity, availability, compliance, reliability, accuracy and coverage.

Lifecycle Organizational Knowledge: Knowledge as a product may be the result of interactions that occur in a context called lifecycle knowledge, the origin point is given by the business processes that represent the dynamics of the organization (core processes, strategic processes, support processes and control), whatever their nature is: services, manufacturing, etc. published. Business processes regularly generate and process data, these data being stored in information infrastructure (database, repositories) are then transformed into information (reports, documents, agreements and files), and then transformed into knowledge (models, maps , ontology's, rules) that regularly create value to the organization and drive improved business processes. Therefore proper management and governance life cycle of knowledge is part of the proposed framework in the context of GoMaK. In Fig. 3 shows the life cycle of knowledge.
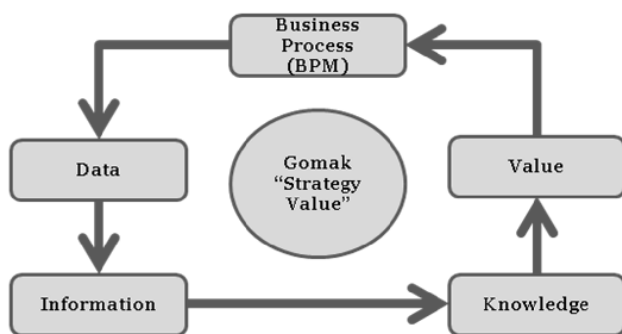

Fig. 3 The life cycle of knowledge.

IV. PRINCIPLES OF KNOWLEDGE MANAGEMENT FRAMEWORK AND GOVERNMENT (GOMAK)

A. Gomak is based on Seven Principles:

Principle 1: Knowledge Management Requirements: Organizations need to create value[8]; therefore the processes of innovation and development play a key role in generating competitive advantages that allow you to move in a market where the only constant is uncertainty. Knowledge becomes the cornerstone for developing active permanent innovation processes, goods and services. Therefore it is necessary to establish clear procedures to identify, monitor and audit knowledge which is key to the organization needs, create, adapt, integrate, validate and intermediate. For this case, the actors become agents that can identify those needs for knowledge that can be sediment implicitly or explicitly within the organization.

Principle 2: Organizational Coverage: A Framework for the Government and Knowledge Management should cover end to end across the organization, in this case the knowledge management processes to be deployed in the organization, so that management activities make an active knowledge of organizational procedures, in this case, is expected to generate a framework that facilitates the flow of information and knowledge, and from organizational knowledge repositories and accessing them have appropriate interfaces to access sources across platforms.

Principle 3: Application of an Integrated Framework: The Framework should be a simple application to apply, it is a display of organizational processes for the management and governance of knowledge, in this case, it is possible to document each of the processes through BPM, these models to visualize the behavior associated with organizational knowledge management.

Principle 4: Holistic Approach: The effectiveness, efficiency of a model of knowledge management requires a holistic approach, taking into account the different components that interact, in this case the IEA, BPM, and SOA[9] are the technological pieces, but also needs a set of organizational resources including: principles, policies and standards, organizational processes, organizational structure, individual and corporate culture, information, infrastructure, individuals, workgroups, business units with their skills and competencies.

Principle 5: Modeling the Organization: This section seeks to understand the organization as a system, structured by people, customers, suppliers, stakeholders, organizational units with their skills and competencies, technological infrastructure, logical infrastructure (data, information and knowledge), processes, procedure and standards. As a model system is key interactions of different actors, tools like process maps, strategy maps, balance score card, geographical distribution models and organizational structures are often the mechanisms facilitating organizational modeling to understand the current state of the organization (mission), as well as modeling the ideal state of the same (vision) which allow effective deployment of a framework of government and knowledge management.

Principle 6: Provide Enterprise Information Architecture: The Architecture of Business Information, (Godinez, Hechler,

Koenig, 2010) can be viewed as a multilayer model composed of five layers as follows:

Business Strategy Layer: This layer models the organization, answering questions he does and how it does, its composition is given by the relevant units of business information, business processes, model geographic locations where the business operates, the organizational structure, business cycles and business objectives and strategies[10].

Business Layer: Its purpose is to visualize business processes that support organizational strategy and business operation, this layer can be represented through the conceptual data model, the business process model, the model of logistics business the scheduler of the business and the business plan.

Application Layer: Supports the operations and functions of the business through information technology systems, information systems, systems for decision-making, business intelligence systems, which are developed on: software environments, hardware and communications.

Information layer: This layer has the data, information, data warehouses, is the most important strategic asset of organizations, and interacts with the application layer through the repository or database.

Infrastructure Layer: consists of hardware components, servers, workstations, firewalls, routers, cabling, network type for LAN, MAN, WAN, VPN and WiFi, along with active and passive devices in the network data communications and organizations, which allow you to perform the processes of transmission of data, voice and content between different users both internal and external to the organization.

Principle 7: The Differentiation between Government and Knowledge Management: The Framework Gomak, makes a clear distinction between government and knowledge management, these two disciplines encompass different types of processes, activities, require different organizational structures and have different objectives.

The government is more focused on the implementation of strategic processes that allow address, assess and monitor organizational knowledge management led by CEO Staff and personnel management. While *management* focuses more on the implementation of operational processes for planning, implementing, evaluating and verifying knowledge management, ie, substantially functions, executive management, led by an organizational CKO.

V. THE FRAMEWORK GOMAK, THEIR DOMAINS, PROCESSES AND GLOBAL INDICATORS

The framework presented in this publication, part of the articulation of two disciplines, the first corporate governance knowledge management, which aims to take actions addressing, evaluation and monitoring. The second corporate knowledge management focuses on the management functions associated with the planning, implementation, support and control. In this way a structure is designed to process high level in Fig. 4 Is displayed Gomak process framework.
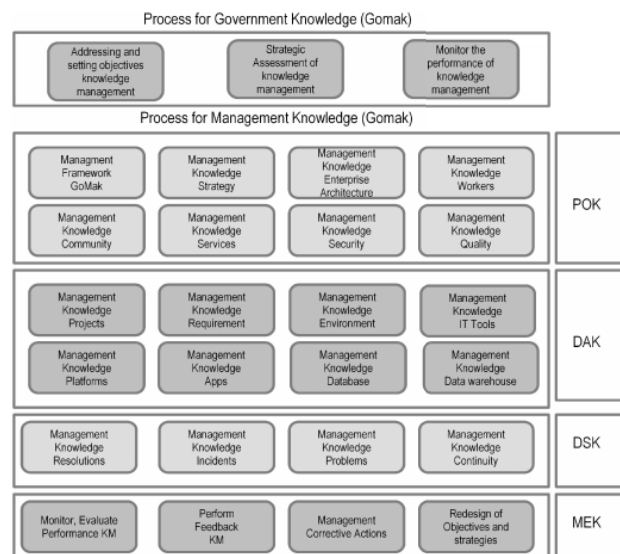

Fig. 4 Framework of process the Government and Management Knowledge (GoMaK)

Balance Score Card –Gomak-: To monitor the performance of partners Gomak process, the tool is used Balanced Scorecard (Kaplan and Norton, 1991), in this case defined 19 global indicators, which have been divided into four generic perspectives: financial, customer, processes and organizational learning, facing each presents a set of generic objectives that can be adapted to any organization in the process of deploying Gomak, in Fig. 5 you can view the BSC-Gomak proposed.

BSC-Dimension	-GOMAK- Goal
Financial	Stakeholder value of business investments Portfolio of competitive knowledge, products and services Managed business knowledge risk Compliance with external laws and regulations Financial transparency from knowledge Government and Management. Alignment of Knowledge and business strategy
Customer	Customer-oriented service culture Business service continuity and availability Agile responses to a changing business environment Knowledge based strategic decision making Optimization of service delivery costs.
Internal	Optimization of Gomak process functionality Optimization of Gomak process costs Management of Gomak change programs Compliance with internal policies Security of information, knowledge, processing infrastructure and applications.
Learning and Growth	Skilled and motivated people Product and business innovation culture Knowledge, expertise and initiatives for business innovation

Fig. 5 BSC-Gomak

VI. THE IMPLEMENTATION OF THE FRAMEWORK OF GOMAK

To achieve a successful implementation of the governance and management of organizational knowledge, we should depend primarily on the individual and corporate commitment,

that is, the interest of each of the stakeholders, employees, managers and stakeholders that make up the structure of knowledge workers, as well as organizational culture, ie the level of maturity to understand the importance of governing and managing knowledge, and response to change to address a new type of knowledge management infrastructure and of course the basis of the information architecture business, the business model and a service-oriented approach. However, it is necessary to develop a systemic method of implementation allowing the proposed framework. This is taken as a reference model developed by John Kotter (Kotter, 2000), referenced by ISACA, 2012, [2], [7] which has been used in the implementation of several world-class standards, the author establishes a set of principles to guide whatever adaptation or change process well:

- Establish a sense of urgency.
- Form a powerful guiding coalition.
- Create a clear vision that is expressed simply.
- Communicate the vision.
- Empower others to act on the vision.
- Plan for and create short-term wins.
- Consolidate improvements and produce more change.
- Institutionalize new approaches.

Thus, the approach proposed by Kotler and Gomak adapted for implementation, thereby establishing:

- Knowledge management requirements
- Business modeling (BPM-SOA)
- Design information architecture (EIA)
- Diagnosis of government and knowledge management
- Deployment Process of Organizational Knowledge Governance
- Deployment Process Organizational Knowledge Management
- Consolidation and improvement Gomak
- Institutionalization Gomak.

In Fig. 6 you can visualize framework implementation cycle Gomak, The key issues for implementing the Framework include:

- Understand the importance of governance and knowledge management.
- Understand the proposed framework.
- Understand the business.
- Obtain commitment from senior management to implement the initiative.
- Identify, understand and structure KM requirements of stakeholders.
- Ensure communication and facilitate deployment of the changes in a timely manner.
- Ensure integration framework that provides value to the organization.
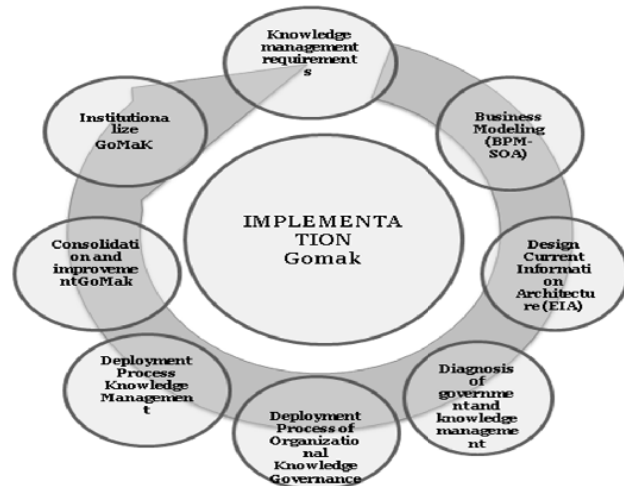- Undertake continuous improvement actions from a maturity model.

Fig. 6 Gomak Framework implementation life cycle

Implementing Gomak also involves harmonizing the architecture of enterprise information, it must provide services of information and knowledge management from the perspective of information technology, using the capabilities associated with: information integration services (metadata, Master Data Services, data Services, Operational data, data and Analytical data Unstructures), delivery channels and presentation services (external data suppliers, web services, business lines, business applications, enterprise portals, mobile applications, collaborative environments, enterprise search and information "mashup") and components associated with security and privacy of information, connectivity and interoperability (local networks, networks man, WAN networks) and finally supporting the orchestration and business process collaboration. In Fig. 7 represents the articulation between the AIE and the proposed framework.
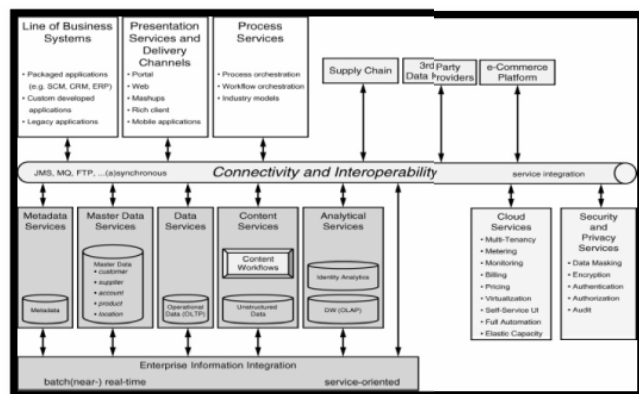

Fig. 7 The articulation between the AIE and the proposed framework

VII. CONCLUSION

The dynamics of today's organizations demand better governance capabilities and knowledge management, these activities further strategic and executive, do not develop outside the external and internal conditions of the

organization, Gomak framework proposed provides a methodological guide composed of domains, processes and indicators, and supported by three technologies that support the implementation of the framework in this case IEA, SOA and BPM.

Effective implementation of the proposed framework should recognize the ethical and cultural standards, policies and laws that apply to the organization's mission, vision and values, policies and practices of government, the business plan, the model operational and maturity level, management style, resources and industry standards. The proposed model draws on a process of continuous improvement, based on a life cycle management of organizational knowledge, the starting point for knowledge management is given by four domains namely: planning and organization of knowledge (POK), the development and acquisition of knowledge (DAK), the delivery and support of knowledge (DSK) and monitoring and evaluation of knowledge (MEK), which are integrated into governance processes of corporate knowledge from addressing setting objectives and knowledge management, monitoring and knowledge management performance evaluation of knowledge management.

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