INFORMATION MANAGEMENT AS A COMPETITIVE INTELLIGENCE STRATEGY DRIVER

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ABSTRACT

In this work, we focus on the role of information management to create additional sources of competitive intelligence that can help to prepare the organizations for sustainable growth in the long term. First, we discuss the dynamics of Information Technology and the ability to generate innovations with a direct impact on business. Then we present the need for greater balance between goals of short and long term on IT projects. In the third part, we discuss how these new technologies have helped to increase the competitiveness as well as to enhance decision-making process and the satisfaction of the end customers and stockholders. To conclude, it is presented the main challenges that the organizations will have to face in relation to the management of their information technology infrastructure, consolidation and simplification of their processes within their computing environments, aiming to increase, productivity, competitiveness, and develop agile environments that allow the organizations to meet the demands of Information Technology Governance.

Keywords: Competitive Intelligence. Information Management. Information Technology Governance. Innovation.

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1 INTRODUCTION

IT governance is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategies and objectives.

For many organizations, the increasing availability of technologies has shown an ambiguity in their management. The management and support of these complex and heterogeneous environments - full of different PCs, desktops and laptops, mobile and wireless devices, printers, networks and applications - have demonstrably proven difficult and expensive for the departments of Information Technology.

According to OECD (2002), the Information and Communication Technologies (ICTs) play important and growing role in world economy, and companies, industries and governments are getting increasing benefits from their continuous investments in ICTs, as well as from a wider use of the Internet in a knowledge-based economy. ICTs have stimulated innovation in services, increased the efficiency of production and creation, and at the same time, facilitated the management of inventories and administrative costs. It was a catalyst of changes in companies, improving the organization of work, helping companies to reduce the cost of their routine transactions and streamlining their supply chains. So crucial, ICTs, especially when associated with the raise of the level of skills and organizational change, apparently seem to support the improvement of productivity within enterprises, both in new sectors and in traditional branches. Such benefits have long term effects and will continue to develop, despite the difficulties and challenges with which companies are facing today.

Many new applications of Information and Communication Technologies have a potential meaning and may have economical and social impacts, as well as a key role in the bonding and in the convergence of the various technologies. Among these emerging technologies are the ubiquitous networks, which enable monitoring of people and objects as well as tracing, storing and processing of information in real time. Applications such as radio frequency identification (RFID) and other technological sensors are being used in applications for commercial use. The technology of prevention and warning of natural disasters are becoming

more important for reducing the impacts of disasters which result in large economic losses. The participatory Web (Web 2.0) is the active participation of users on the Internet, creating contents, they adapt the Internet and develop applications for a wide variety of fields. The digital content represents an important factor in the ICT industry. Technological innovation and demand of new consumers are leading to new forms of creation, distribution and access to digital content. The convergence in applications such as convergence of nanotechnology, biotechnology, neurotechnology, robotics and information technology, probably, will provide more opportunity and challenges for companies operating in the sector (OECD, 2006).

Based on this scenario, this article proposes to examine the critical factors that should be considered by organizations in managing the information technology governance with a focus on organizational performance.

2 INFORMATION TECHNOLOGY AS A COMPETITIVE DRIVER

Digital content has become a major driver of the ICT industry. Technological innovation and new consumer demand are leading to new and direct ways of addressing the creativity, new methods of distribution and improvement in access. Research results, for example, are becoming more accessible, and digital content is invading various sectors, for applications that may be more significant than the others for entertainment (OECD, 2006).

Continuous improvements in technology, networking, software and hardware, including cellular and wireless service and protection of content and services, have made possible the development of advanced digital content. Greater cooperation is a major challenge, since the production of digital content requires agreements between content developers, equipment manufacturers and distributors.

This successful implementation requires efficient services and low cost in infrastructure and technologies to protect content. Issues of compatibility and interoperability must also be resolved (OECD, 2006).

Significant number of companies wants to provide resources so that customers can track the progress of their orders through the Internet (49.8%) over the next three years. That was one

of the trends revealed when the study of Csillag and Graeml (2005) investigated the future intention towards the use of technology. The e-procurement (41.8%), the extranet to suppliers (41.1%) and customers (44.4%), CRM (45.8%) and electronics recovery (41.2%) are areas where major changes are expected.

In a research of Day and Hubbard (2005), with 352 executives about the impact of the Internet towards the ability of managing customer relationships, the reduction of costs in acquiring new customers was the most important variable for managers. However, the fact that customers can enlarge the field of action, compare prices quickly and eliminate transaction costs using the Internet, does not mean that they will abandon their current supplier.

Only 3% of companies felt that a major factor threatening, while 14% saw it as an important opportunity. The possibility of reducing costs of customer service (self-service) was the second most important factor in the opinion of respondents, which reflects changes in the goals of CRM projects that fail to seek an increase in revenue in order to contain costs.

The responses to the 2005 OECD questionnaire (2006) about Policy on Information Technology indicate that government policies are mainly aiming at:

- The coordination and priority setting and general direction of policy in IT and its contribution to wider goals of economic policy;
- The promotion of innovation in the field of IT;
- The dissemination and use (with emphasis on electronic government - eGov);
- Jobs and expertise in ICT;
- Digital content;
- Business environment for ICT (with emphasis on intellectual property rights);
- Strengthening the infrastructure (particularly broadband).

The ability to leverage the potential of the technology is becoming increasingly critical to the success of organizations. The main tool to acquire this ability is to develop an effective organization of IT, focusing on three key areas:

- Definition of an organizational structure appropriate to the services and technological environments of the company;
- Development of processes and skills to centralize critical functions;
- Model of governance structured to facilitate the alignment of service with responsibility for IT personnel.

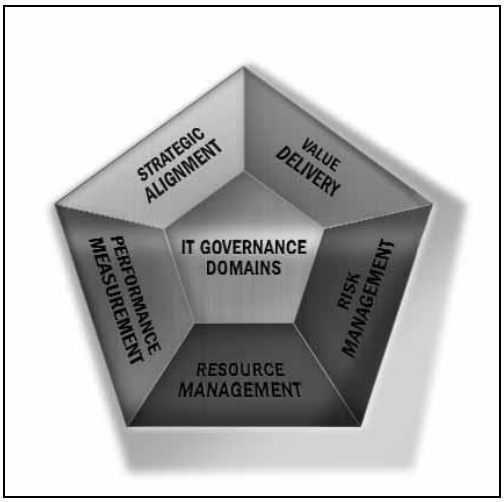
3 INFORMATION TECHNOLOGY GOVERNANCE

In many companies, over the last twenty years, IT has moved from providing largely back-office support to becoming the prime facilitator and enabler of the total business. Without proper alignment of IT, it is unlikely that any enterprise will achieve and sustain long-term success through the delivery of value to its stakeholders.

The alignment of IT with the overall strategy of the enterprise does not happen by accident. It requires full and active involvement from many levels and activities within the enterprise. It requires active and focused management. It is a continuous effort and requires world-class skills and expertise, either in house or outsourced. It requires risk taking, but with appropriate risk management. It also requires strong and demonstrable governance.

Strategic alignment is one of the five domains within IT governance, as shown in Figure 1 and as described by the IT Governance Institute in its Board Briefing on IT Governance.

Figure 1 - The Domains of IT Governance



Source: IT Governance Institute

The consolidated management of the working environment of IT requires that organizations adopt a holistic approach directed to people, processes and technology throughout the computing environment. It also requires that organizations work with suppliers of IT that can analyze their operational needs, assisting the implementation and ongoing management and support of the solutions implemented.

According COEX (2005), the basic challenges that organizations face in the computing environments include:

a) ***Reduction of costs*** – The environments for customer service are moving quickly to mobile search locations, virtual and global, culturally diverse, which are expensive to maintain and support. Through the consolidation of hardware, applications and support processes within their working environments, organizations can manage and reduce IT costs, while simultaneously improving the return on investment.

b) ***Increased productivity of professionals of information*** - To achieve this goal, organizations are seeking ways to improve collaboration and team work by creating a work environment without borders, reliable and secure, providing the connection and access to information anytime from anywhere.

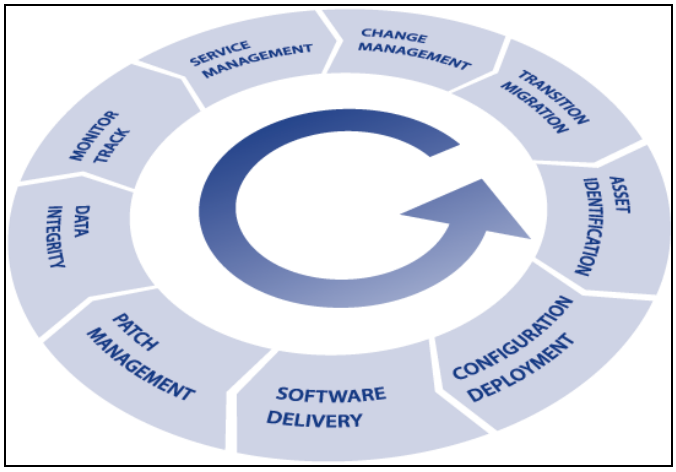
c) ***Reducing the complexity of IT*** - The lack of standardization within the computing environment can increase the time and cost required to manage and support this

environment. At the same time, as the computing environments become more complex, the level of knowledge and expertise needed to support them increases. The tools for managing the IT lifecycle allow the standardization of the hardware platform; reducing redundant devices; simplifies and automates the computational processes; besides managing the support functions and building flexibility and stability that allow the creation of a dynamic management of digital information.

The management of the IT infrastructure becomes increasingly expensive and complex. Studies indicate that more than 50% of all costs of IT are allocated to configure, upgrade, migrate and manage resources (O'BRIEN, 2002).

According to SILVER (2003), the largest expense of ownership of IT resources is not the initial purchase of hardware and software, but the complexity of implementing and maintaining these devices. To reduce these costs, organizations need to invest in management software systems to improve reliability and availability of hardware and software, through all phases of a resource lifecycle. Figure 2 shows the main stages of IT lifecycle management.

Figure 2 - Information Technology Lifecycle Management



Fonte: Source: Google Image

When evaluating a tool for IT lifecycle management, it is imperative to consider the

following relevant features of the solution (SILVER, 2003):

- Management of the lifecycle of IT assets via Web;
- Identification and physical location of assets;
- Physical and logical setting - hardware devices and software;
- Monitoring of the use of software and hardware;
- Management of maintenance contracts for HD (Hardware) and SW (Software);
- Increased productivity of users, IT professionals and network devices;
- Resolution of problems ensuring the availability of resources and services;
- Diagnostics and real-time information for decision-making;
- Modular structure with flexible deployment;
- Integration via Web with database and repositories of information;
- Technical Support and Training of the user.

As stated by BROWM (2005), best practices for managing IT should allow adequate treatment to the complexities associated with the management of IT resources. The systems must be modular, allowing the definition of a technological structure compatible with the computing needs of the organization.

The increasing complexity of the technological assets has encouraged IT managers to seek ways to improve efficiency in the operation to reduce costs, adhere to the regulatory aspects and meet the constant demands of organizations for a better response from the department of IT. These factors have been a booster so that IT managers seek efficient ways to take control of everything that exists in their network. According to ROCKART (1996), the eight requirements for an organization of IT to achieve operational excellence and maximize their performance are:

3.1 - Getting Strategic Alignment of "two hands" - between IT and "operation".

- ✓ To be an effective strategic alignment between IT and business, it should occur in "two hands": the staff of IT should have a greater understanding of the operation and, concomitantly, the company's executives must keep in mind the potential that IT has to "leverage" or even change the business.

3.2 - Develop effective relationships between IT and operation.

- ✓ As the line managers are key users of IT applications, there should be a close and continuous relationship between them and IT staff, at each level of the organization. Successful priority systems and close relationship leads to a better understanding of the operation and a cyclical process of progress and successes.

3.3 – Deliver and deploy new systems.

- ✓ Big change in the process of developing systems. The internal development of transactional systems for greater outsourcing, integrating information focused on re-engineered processes.
- ✓ Users less tolerant about long delays in development, inflexible interfaces and over-budgets.
- ✓ Placing of high-level line managers in the leadership of the projects, increasing the responsibility of future users with the system.
- ✓ External development and "packages" (for example, the "packages" ERP - Enterprise Resource Planning): faster and less expensive alternative of deployment.
- ✓ Manage this process is very different than in the case of external development.

3.4 - Build and Manage the infrastructure

- ✓ Need for an infrastructure (in terms of computers, telecommunications, software and data) that enables the provision and integration of information throughout the network and for the re-engineered processes.
- ✓ Important for a "globalized" operation.
- ✓ Basic points for this infrastructure:
    - architecture,
    - patterns,
    - team's ability to operate the IT infrastructure

3.5 - Re-train (Reskill) the IT Organization

- ✓ Need of IT staff be re-trained in new ways and methods of development, such as client-server architecture, new languages and communication protocols.

- ✓ Training in skills and knowledge of the business itself, since IT is increasingly important and ubiquitous in all organizations. How to promote this training is not consensus among businesses yet.

3.6 - Manage partnerships with suppliers

- ✓ Outsourcing: is the alternative to supply deficiencies of certain skills in IT, especially those that are not core competencies or competitive differentials.
- ✓ In addition to any economy, would allow high IT directors to focus their attention where is strategic.
- ✓ The implementation and administration of outsourcing demand skills that permit to distinguish when a strategic partnership is being done or simply a business transaction.

3.7 - Develop high-performance.

- ✓ The area of high-performance IT should: seek operational efficiency, either in development or in the internal outsourcing.
- ✓ In the search for efficiency, often IT follows trends in the area of manufacturing, such as TQM (add up to ISO9000 for software development).
- ✓ A concern in the area of IT should be the time for development: information systems should be deployed as soon as possible (today, delays of two or three years are no longer acceptable), so they are not obstacles to the deal.

3.8 - Re-design and administer an IT organization

- ✓ The question "centralization vs. decentralization" culminated in the organization.
- ✓ A central IT organization to do the planning, allocation of resources and shopping with economy of scale, some autonomy for local businesses to seek their specific solutions.
- ✓ With this structure, one can get the alignment with the business, economy of scale and integrity in systems architecture.

According to BROWN (2005), an integrated solution for the management of assets combines the disciplines of management resources and services of the digital company in a single architecture based on the WEB, repository and console, helping to unite various departments and processes. To actively manage the entire lifecycle of resources, the solution helps organizations to eliminate unnecessary costs for software and hardware, to proactively

manage contracts with suppliers and align the resources of services with ITIL (Information Technology Infrastructure Library), to ensure optimization of IT investments. The benefits include:

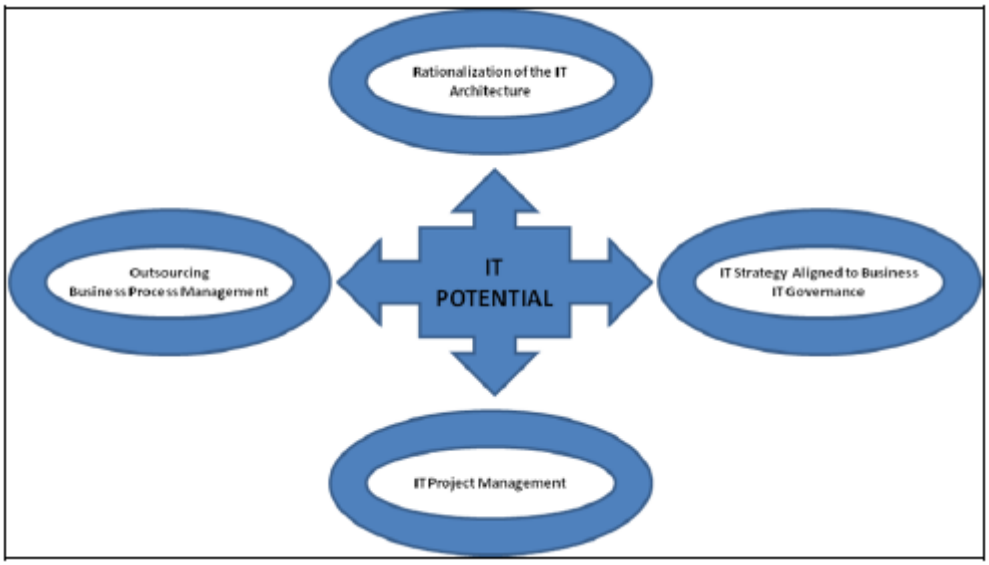
- Monitor the configuration, the implemented versions, the relationships and historical information of IT resources;
- Monitor the use of software and hardware for relocation and negotiation of contracts;
- Ensure the availability of resources through the management of incidents and problems.

The ability to leverage the potential of technology is becoming increasingly critical to the success of small and medium enterprises. The main tool to acquire this ability is to develop an effective IT organization, focusing on three key areas: the definition of an organizational structure appropriated to the business and technological environments of the company, the development of processes and skills to centralize some critical tasks, and a model of governance structured to facilitate the alignment of those responsible for service with the team of IT (BROWN, 2005).

To support these organizational changes, it also needs a strong cultural change: the information technology needs to be perceived as a competitive lever and managers should feel responsible, together with IT professionals, by incorporating the technology in the services strategy. The supports of high direction, as well as the recruitment of professionals with the appropriate profile, are essential elements for achieving the change (SCHWABER, 2007)

Figure 3 shows how information technology is involved with all operational procedures of the organization and, increasingly, is affecting the ability to offer services influencing the efficiency, quality of customer service and innovative capacity.

Figure 3 - IT Maximum Potential



Fonte: Source: Adaptado de Bain & Company

Developing the IT organization and structuring its relationship with the areas of services is the main instrument to build skills in IT. Analyzing the organizational models of companies that stand out in the use of technology, we point out best practices on three key aspects to an effective organization of IT: defining the most appropriate organizational structure, functions and the critical competencies that should be centralized and governance for investments in technology (RAMIREZ, 2003).

4 CONCLUSIONS

The IT managers need to align the company's digital strategies with the policies of deployment and use of Information Technology as essential considering the following items:

- What are the challenges faced and the paths followed by the organizations
- What are the services offered to customers with the implementation of the practice of managing the IT cycle
- How to manage purchasing decisions and processes of IT assets
- How to develop predictive information and a real-time view of IT assets to improve the level of service, security and the computational recourses
- How to keep a consistency and control of costs at a deeper level of user / department

- In what degree is your organization and what steps should it follow to optimize its practice of IT Asset Management

The use of digital technology is evolving toward comprehensive solutions to manage IT using a single repository and a single interface, dramatically reducing the costs and complexity of managing their resources, including desktops, thin clients, laptops, handheld devices and networks. It is essential to automate, simplify and integrate their functions to manage IT from a single console-based Web. Innovations in IT continue to emerge in a frenzied pace, driven by the rapid advancement of technology for semiconductors. Information is key assets of businesses in the post-industrial era. The correct investment in IT has been pressured for tangible and sustainable results and the management of IT resources is essential to corporate success (PALETTA, 2008).

The vision of management of IT assets, however, needs to be expanded at a higher level of functionality and processes, since administering assets throughout the lifecycle involves much more than counts them to reduce costs. And to manage the physical assets and software within an organization requires an approach from the technological point of view to business processes in order to establish the ground for a competitive intelligence strategy.

GESTÃO DA INFORMAÇÃO COMO AGENTE ESTRATÉGICO DA INTELIGÊNCIA COMPETITIVA

RESUMO

Neste artigo abordamos o papel de Gestão da Informação em criar fontes adicionais de inteligência competitiva com foco em preparar as organizações para o crescimento sustentável no longo prazo. Na primeira parte, discutimos a dinâmica da tecnologia da informação e a capacidade de gerar inovações com impacto direto nos negócios. Em seguida, apresenta-se a

necessidade de um maior equilíbrio entre os objetivos de curto e longo prazo em projetos de TI. Na terceira parte, discutimos como essas novas tecnologias têm contribuído para aumentar a competitividade, bem como auxiliar no processo de tomada de decisão e atender as demandas de mercado, clientes finais e acionistas. Para concluir, são apresentados os principais desafios que as organizações terão de enfrentar em relação à gestão da sua infra-estrutura de tecnologia da informação, consolidação e simplificação de seus processos dentro de seus ambientes de computação, com o objetivo de aumentar a produtividade, a competitividade e desenvolver ambientes ágeis que possam permitir atender as demandas de Governança de Tecnologia da Informação.

Palavra Chave: Inteligência Competitiva. Gestão da Informação. Governança da Tecnologia da Informação. Inovação.

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