IT GOVERNANCE IN SMEs: IT GOVERNANCE CURRENT STATE IN PRIVATE SECURITY ENTERPRISES IN BOGOTA

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Abstract - in Colombia, over 96% of companies are sorted as SMEs, this percentage stands them as the main generators of employment and resources for the country. The management of information technologies - IT-is very important today to achieve competitive advantage in the markets. However, a recent study by Cisco shows that Colombian SMEs have difficulties in implementing IT as a strategy to reduce costs, differentiate and leverage them business.

However studies have shown that SMEs do not make IT decisions formally. The biggest drawback found is the difficulty to convince managers of organizations trying to implement IT governance policies. By not perform this work, companies often lose resources and market opportunities, squandering approximately 20% of benefits versus its direct competitors that if implemented these policies.

In this research seeks to observe how the private security sector, manage their technology, since, for private security, technology is the most important part. To accomplish this, three private companies providing security services currently Bogotá were interviewed and analyzed. Additionally, this work will leave a sample that may be used to go on the investigation.

Key words: SMEs, IT, technology, information, communication, IT governance.

Resumen- En Colombia, más del 96% de las empresas están catalogadas como Pymes, dicho porcentaje las coloca como las principales generadoras de empleo y recursos para el país. La gestión de las tecnologías de información y comunicación – TIC- es muy importante en la actualidad por lograr ventaja competitiva en los mercados. Sin embargo un estudio reciente realizado por CISCO muestra que las PYMES Colombianas tienen dificultades en implementar las TIC como estrategia para disminuir costos, diferenciarse y apalancarlos negocios. [1]

Estudios previos han demostrado que las Pymes no toman decisiones de TI utilizando marcos de referencia formales [2]. El mayor inconveniente encontrado es el desconocimiento la dificultad de convencer a los directivos de las organizaciones para tratar de implementar las políticas de gobierno de TI. Según el MIT, al no realizar esta labor, las empresas muchas veces pierden recursos y oportunidades en el mercado, dilapidando aproximadamente un 20% de beneficios frente a sus competidores directos que si implementen estas políticas. [3]

En este artículo se describe cómo tres (3) empresas del sector privado de seguridad toman decisiones de TI. Para lograr esto se entrevistaron y analizaron tres empresas privadas que prestan servicios de seguridad actualmente en la ciudad de Bogotá. Adicionalmente, los resultados de este trabajo podrán ser usados como base para futuras investigaciones.

Palabras claves: Pymes, TIC, tecnología, información, comunicación, gobierno de TI.
I. INTRODUCTION

Information Technologies –IT- represent a fundamental element for the development and competitiveness of any sector of the industry, where IT governance is a key to maximizing the benefits a business is able to get. This term defines a strategic model that helps businesses to analyze and make decisions in the area of information technology within the organization.

Due to the concept of IT governance is relatively new. It is necessary to inform Colombian SMEs about strategies that can be implemented for obtaining profit as organization, allowing the country to experience economic evolution. This is one of the reasons that can be observed in the justification of this work which is presented as one of the main items to be discussed in this article.

This study seeks to expand the sample of IT governance research in the field of private security companies.

II. ANTECEDENTS

IT governance is a new concept, which currently in Colombia has been investigated generally.

A highlight is the research conducted by the research group TION from Andes University called “IT Governance in Nonprofit Institutions: Case of College Private Institutions of College Education in Bogota” [4].

Likewise, we have as a basis the sample of ITGovernances in SMEs: Case of private security companies in Bogotá made by students of the Catholic University of Colombia. [2]

Additionally, "SMEs: A look from academic experience of the MBA” researches the behavior of SMEs in corporate strategy and technological innovation, issues related to IT governance, which gives us an overview of the several situation in Colombian companies. [6]

III. IT GOVERNANCE

IT Governance is defined as the decision rights specification and accountability framework designed to guide the desirable behavior in the use of IT in an organization. [7]

According to the IT Governance Institute, IT Governance has four fundamental principles:

- Manage and control
- Responsibility
- Accountability
- Activities

As well as good corporate governance is fundamental to securing and aligning key business decisions, with the vision and strategy of the company, good governance is critical to ensure that IT decisions are aligned to company objectives.

a. IT Archetypes

Government archetypes describe the combination of people who have rights to make decisions or provide input information to make such decisions [7]. IT archetypes are: Monarchy business, IT monarchy, feudal, federal, Duopoly and Anarchy.

b. Operating Model of IT Governance

The operating model is defined as “the necessary integration and standardization level of business processes to deliver goods and services to customers.” The operating model supports the strategy and describes how the company wants to grow, business initiatives must be fully consistent with the operating model [4]. An operating model has two (2) key dimensions, which are the standardization and integration of business processes.

c. IT Governance IT Engagement Model

An IT Engagement Model is defined as a governance mechanisms system designed to bring together key stakeholders of a project, in order to ensure compliance with local and company-level objectives that belong to a project. This model consists of the following components.

![Figure 1. IT Engagement Model components.](image)

d. IT Portfolio

The IT portfolio is divided into four different management objectives for investment, leaving four different asset classes, which are: Strategic, Informational, Transactional and Infrastructural. Each one of these asset classes has a different objective and risk-return profile. Just like any other investment portfolio, the IT portfolio must be balanced to achieve alignment with the business strategy. [8]

IV. PROJECT IMPLEMENTATION

a. Company 1

1) History

Company 1 is a private security company with experience over 30 years in the national market. It was founded on May 21, 1984 in Bogota city, Colombia. This company in October 2013 got to become the first Advanced Security Company in the country.

This new "advanced security” scheme combines the best of physical security with the most advanced security technology,
backed by a great technological and human infrastructure that ensures their efficiency and security protection services.

Company 1 consists of 13 branches located throughout the country, establishing itself as one of the most important companies in the security sector in Colombia, providing over 3,000 jobs nationwide.

Throughout his business career, Company 1 has been certified on numerous occasions, gaining recognition for offering their services with high quality. [9]

2) Services

The main services offered by the Company 1 are: Vigilance, Executive protection, corporate security projects, Information Security, Research and IT Governance Study [10].

3) IT Governance

3.1) IT Archetypes

Research shows that the decision IT organization takes place in the following way - see Figure 2.

![Figure 2. Company 1 - IT Governance archetypes.](image)

In IT principles, the input is through IT monarchy, while decisions are taken by business monarchy; usually the decision is taken by the General Manager. For the IT Architecture domain, both the input and the decision taken by IT Duopoly; involved the Systems Manager and the General Manager. For the IT Infrastructure domain, the input is given through IT monarchy, while the decision is resorted to archetype Business Monarchy, being the company management responsible for making decisions about which services applications and information must be shared and enabled for each business area. Finally, it was found that for the needs of business applications and investment and prioritizing IT, the input is given through Monarchy IT, while management is responsible for making decisions about which processes should be automated in Company 1, setting the business monarchy archetype.

3.2) Operating Model

![Figure 3. Company 1 – Operating model.](image)

All business units' processes of Company 1 are connected, so Company 1 has high integration processes; in fact, they use the same ERP as a technology platform. Furthermore, the internal processes of Company 1 are standardized, it means, they are realized equally in all business units. However, the business units have further developed some processes to perform specific tasks, these are handled internally.

3.3) IT Engagement Model

![Figure 4. Company 1 – IT Engagement Model.](image)

Watching the business links it was found that the IT department prioritizes projects to be performed according to current business needs, in the second instance projects are prioritized according to the principles and company guidelines. Projects are chosen to be run by management, with the support of the IT department. Once approved for this project is managed by the Project Management Office (PMO). Stakeholders' opinions are also included following the mechanism of early involvement.

Company 1 has developed an Institutional Strategic Plan, by which have been developed and implemented most of its projects with a high level of communication and coordination between the various departments of the organization.

Company 1 connects the IT department interests with other departments' interests or business units through alignment mechanisms, as the establishment of executive committees, implementing a management role Business-IT relationship. Manager also highlights the connection IT department with a specific part of the business area of the organization, trying to improve the integration of information between the two areas.
3.4) IT Portfolio.

Company 1 distributes its investment in this way: Infrastructure 20%, transactional systems 30%, strategic systems 25% and informational systems 25%. It is observed that infrastructure investment is not very high due to the maturity and history of the company. The largest investment takes place in transactional systems represented in the ERP Company.

4) Company 1 Results

The Company 1 main benefits were optimizing IT investment, a high performance of the company in the sector, position 14 nationally. Among the losses are lack of incentives, limiting innovation and added value not obtained in projects. On the other hand, the stimulating factors are: Insofar as the company has matured, it can target IT governance both technical and managerial issues, There is predisposition to innovation and development. In the inhibiting factors are: knowledge of IT is widespread and there is a deep ignorance on the concept of IT governance.

b. Company 2.

1) History

Founded in 2000, which gives Company 2, 14 years of experience in the private security sector. Along its route have been implementing new services until be qualified as specialists in 23 different security services in order to meet the demand of security. In addition, Company 2 obtained two new licenses including the certificate of ISO 9001:2008 [11]. In 2011 the company gets expanded with the opening of its offices in Tunja-Boyacá and Pereira-Risaralda, which meant a significant investment.

2) Services

The main services offered by the Company 2 are: Vehicles and Merchandise Escort, persons Escort and fixed and mobile vigilance.

3) IT Governance

3.1) IT Governance archetypes

Research shows that the decision IT organization takes place in the following way - see Figure 6.

Figure 6. Company 2- IT Governance archetypes.

In IT Principles, the input is through IT monarchy, while decisions are taken by Monarchy of Business; usually the decision is taken by the General Manager. For IT Architecture and IT Infrastructure domains, only it is considered the management decision in inputs and in the final decision, applying the Business Monarchy archetype. Finally, it was found that for business applications needs and IT investment and prioritization, the input is given through Monarchy IT, while management is responsible for making decisions about which processes should be automated in Company 2, using Business Monarchy Archetype.

3.2) Operating Model

Figure 7. Company 2 – Operating model.

The Company 2 business units handled the same technology platform so that its processes are standardized. However, the integration of processes is low since they don’t need to share information. Therefore, the operating model set out in the Company 2 is a replicated model type, it means the processes across business units have a high standardization and low integration with each other.
3.3) IT Engagement Model

**Business Model**
- Prioritization according to business needs
- Project objectives achievement
- Approval of projects by the manager of the business unit and the relationship manager
- Alignment of project results with the overall objectives
- Responsibility of project results from a corporate standpoint
- Business sponsors for projects are the executives
- Regular reviews of company projects by the CIO
- Post-implementation survey by the CIO
- Incentives linked to project goals and milestones such as bonds.

**Alignment Links**
- Executive Committee
- CIO and executive committee member
- Strategic or decision-making authorities of the CIO and their subordinates
- Role management/Business IT relationship
- Service level agreements between the CIO and suppliers
- Outsourcing Management

**Architecture Links**
- Strategic Process Infrastructure
- Early interaction with Enterprise Architecture
- Approval process of enterprise architecture

**Figure 8. Company 2 – IT Engagement Model.**

Watching the Company 2 business links. It is found that management prioritizes projects according to business needs. Therefore, all projects are selected by management, when additional knowledge is needed, department involved manager support is requested. Once the project is approved, the responsibility is transferred to the department involved manager who should make deliverables to the CIO and monitor it.

In the Alignment links, the company makes decisions according to the needs that arise, which are taken by the CIO, who is responsible for defining service agreements. Company 2 acquires applications through outsourcing and the role that IT-related business is run by the IT Manager.

In the Architecture links, management is who inspects the proper operation of all equipment and applications, then makes the decision about whether to acquire new software or hardware. As for projects, management monitors at an early stage of the life cycle to ensure that the results support the business architecture, and also performs reviews to avoid violation of the principles of architecture Company.

3.4) IT Portfolio

The Company distributes its investment in this way: Infrastructure 59.79%, transactional systems 39.86%, strategic systems 0%, and informational systems 0.35%. It sees a clear investment in infrastructure since it is still a growing company. Also, they invest in purchasing and implementing INFOTECH [11], a communication technology platform between departments and business units – it hasn’t yet been implemented. In informational systems is the annual maintenance of their website.

4) Company 2 Results

The Company 2 benefit was the interest from some executives to invest in transactional platforms. Among the losses is that knowledge about IT is only present in some executives thanks to its professionalism and the fact that Company 2 is focused to provide physical security service, wasting opportunities in other market segments. On the other hand, its stimulating factors: motivation of some executives to invest in IT, use of incentives as business alignment mechanism. In the inhibiting factors are: IT projects generally don’t meet the implementation time expectations. For this reason, many managers are losing interest in this type of investment.

c. Company 3

1) History

Company 3 is a family business founded in 1983. After ten years operand, the administrative headquarters was opened in a strategic location which has easy access for all users. Thanks to its quality and professional services, the Company has earned three certifications like ISO 9001:2008 [12] granted by the standard, demonstrating technical and professional competence. Today this company is consolidated in the executive branch, to provide security in office towers, control rooms with cutting edge technology.

2) Services

Through the risks and threats diagnosis, Company 3 design and promotes integrated security solutions for the services of: Risk Analysis, Safety Audits, Training, Reliability Studies, Research, electronic security systems, human vigilance with and without weapons and operational support [13].

3) IT Governance

3.1) IT Governance Archetypes

The IT decisions corresponding to the different domains of Company 3 is performed as follows:

**Figure 9. Company 2 – IT Portfolio.**

Concerning the IT Principles, they use the Business Monarchy archetype. It means the company management makes the final
decision on this decision domain. For IT Architecture, both the input and the decision, they resort to using IT duopoly archetype, the final decision is made jointly between management and IT staff of the company. In Infrastructure, both the input and the decision taken by the Business Monarchy archetype, which decided only by management. Business Applications Needs, are evaluated by IT personnel, providing the input necessary for management to make the final decision, it means the Business Monarchy archetype is used. Finally for the IT Investment and Prioritization domain, the Business Monarchy archetype is used, being the manager who gives the input and makes the final decision.

3.2) Operating Model

<table>
<thead>
<tr>
<th>Business Processes Standardization</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination</td>
<td>Unification</td>
<td>Diversification</td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

3.3) IT Engagement Model

3.4) IT Portfolio

Figure 11. Company 3 – Operating model.

Business 3 just have only one business unit with unique functionality, fitting to the Unified business model. This means that all processes within the organization have no choice but to be highly standardized and integrated.

3.3) IT Engagement Model

3.4) IT Portfolio

Figure 12. Company 3 – IT Engagement Model.

In business links, it appears that the manager prioritizes projects that want to perform depending on the earnings generated, however, he/she checks that the project’s objectives are consistent with those of the company. Once the project is approved, it passed into the hands of an executive to take responsibility for the project and switch it on, it should be noted that general manager makes periodic reviews of all ongoing projects to ensure they are carried out as they were planned. On the other hand, Stakeholders have an early involvement. When a project is successful, the general manager checks that the results align with the overall organization objectives and rewards involved people with monetary incentives.

Moreover, on the Alignment links, Company 3 has established executive committees that are responsible for assigning responsibilities and decision-making mechanisms for projects of the organization. Subsequently service level agreements with suppliers and/or subcontractors are set, which is coordinated by a relationship manager who devotes his full time to the activity.

4) Company 3 Results

Among the benefits found in Company 3, it highlight the use of incentives for each of the company projects and making significant investments in infrastructure, allowing future investments of a strategic type. Within the losses should mention the lack of links in the architecture in IT Engagement Model and lack of knowledge about IT management may have when making IT decisions in the company; a reflection of this is that they make strategic investments. On the other hand, Inhibitory factors found are: the lack of knowledge of the concept of IT governance and being a family company, enabling the domain of Business Monarchy archetype causing investments that are often not optimal and doesn’t improve internal processes of the company.
V. CONCLUSIONS

- The IT governance concept and its potential benefits it can bring to an organization, are not widely known by managers.
- Implementing IT Governance enables a company to maintain a competitive advantage in the marketplace. Evidence of this is the Company 1, which is among the 15 private security companies with the highest incomes over the country.
- The dominant archetype in the companies studied in the Monarchy of Business. This is consistent with other studies indicating that SMEs make IT decisions in this way.
- The IT budget of the companies studied tend to be allocated in IT infrastructure and transaction systems.
- The operational model most used in the companies is the Unified Model, standardizing and integrating processes between business units of the organization.
- For IT Engagement Models to the companies studied. It was found high implementing in business links, since executives prefer to keep relations between the strategies of the business units of the organization.
- The main stimulating factor found is the IT concept is present in some executives, but in a general way. On the other hand, the concept is not easily applicable because no one has the necessary maturity or depends on management.
- The main result found is the market advantage is acquired by applying the concept of IT governance in the company, as seen in the results of the Company 1.

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