

# IMPLEMENTATION OF THE QUALITY MANAGEMENT SYSTEM AT THE BOLSA ELETRÔNICA DE COMPRAS DO ESTADO DE SÃO PAULO - BEC/SP: A CASE STUDY APPROACHING DIAGNOSIS, EVALUATION AND RESULT

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*The theme Total Quality Management is a lot disseminated into the private companies in Brazil and it is seen as a north to a management of excellence and a competitive advantage. At the Brazilian Public Administration the theme is also approached, but, it is still implemented in a discrete way especially at the Direct Administration. The search for quality at the Brazilian Management Public Administration is not focused in reaching the competitive advantage, but on the pursuit in relation to the satisfaction of its customers, which are in general the society as a whole. So, the Bolsa Eletronica de Compras - BEC/SP of the Treasury Secretariat of the State of Sao Paulo, Brazil, aiming the quality on the heeding of its customers desires, implemented the Quality System Management, based under the ISO 9001:2008, in 2009. The goal of this paper is to demonstrate the creation process of the Quality System Management at the BEC/SP, its implementation phases, and demonstrates the efficiency and efficacy gain of its processes management. To the realization of this paper, it will be presented a case study at the Bolsa Eletrônica de Compras BEC/SP.*

*Palavras-chaves: Quality System Management, Public Administration, BEC/SP, Process Management.*

## 1. Introduction

Numerous quality standards have been developed and adopted along the years, with the ISO family – International Organization for standardization representing an international consensus in good managerial practices, with the objective of assuring that an organization can deliver products and services that satisfy the quality requirements of the customers.

The series ISO9000 patterns are quality managerial and application patterns. Such patterns are applicable to any kind of organization, in so far as in products or services and also they do not defer in its application to private or public organization. (Aggelogiannopoulos et. al, 2006).

According to studies published in the Quality and Participation Program in the Public Administration (MARE, 1997), although it has had, since the beginning in 1990 the preoccupation with the internalization of the quality principles in the public area, the effort did not get the same dynamism and intensity that were gotten into the industrial sector.

However, even considered the debility of the performance in the public sector facing the results of the private sector, the reached balance by the efforts of sensitizing the public organizations was positive.

Nowadays there are several public institutions in different spheres that have already implemented the practices of quality programs, receiving hence, favorable manifestation from the society.

Even though the implementation of a quality system management based on the ISO 9000 standard be applicable in any kind of organization, the Public Administration shows some specificities resulting from the public activities, absentee in the private sector, which does not advise the simple reproduction to the public sector, of the guidelines and actions adopted in the absorption of the methodology in the private sector. (MARE, 1997). The main differences are:

- the main purposes of the activities of the private area are the profit and the survival in a high competitiveness environment, while the goals of the public activity are imbued with the democratic ideal of delivering services to the society, in the benefit of the common well being;
- the concerning in satisfying the customer in the private sector is based on the interest, while in the public sector this concerning must be based on duty;
- the heeded customer in the private sector remunerates directly to the organization, paying by the delivered service or by the acquired product; in the public sector, the heeded customer pays indirectly, by the taxes via, without any symmetry between the quantity and the quality of the service received and the value of the tax that pays.
- the policies directed to quality in the private sector refer to the goals of competitiveness in the sense of the obtainment, maintenance, and expansion of the market; while in the public sector the goal is the search of the excellence in the heeding of the all citizens, with the less possible cost ;
- The different contingencies that are exposed the two sectors, as an example, limits of the autonomy established by the legislation and the profile of the customers.

Thus, the Public Administration of the State of São Paulo, aiming to improve the quality in its delivered services, determines that be implemented the Quality Management System and as a consequence the certification by the ISO 9001:2008 standard at the “Bolsa Eletronica de Compras - BEC/SP”, a department of the Treasure Secretariat of the State of Sao Paulo in the 2009 year.

This article has as a main goal to report the stages of the implementation of the Quality Management System based on the ISO 9001:2008 standard in a department of a Brazilian Public Administration trough a case study of the BEC/SP. The challenge was to demonstrate that would be possible the implementation in its totality, even considering the peculiarities of the Public Administration.

To the accomplishment of this article will be presented a case study at the Bolsa Eletronica de Compras BEC/SP, and a bibliographic revision about the theme Quality Management System.

## **2. Bolsa Eletrônica de Compras – BEC/SP: main historical aspects and implementation of a Quality Management System (QMS).**

The acquisition of products and services by the Public Administration needs more and more the transparency and agility in the processes; therefore it has been observed a broad utilization of the information systems supporting the realization of the purchase electronic quotation.

The BEC/SP, aims the negotiation of prices of products and services acquired by the Public Administration of the State of Sao Paulo, via electronic procedures, allowing a broad competitiveness and equal conditions of participation for all its participants and, still with the commitment of doing the payment by 30 days, after all the receiving conditions has been satisfied. ([www.bec.sp.gov.br](http://www.bec.sp.gov.br), 2010)

The utilization of the BEC/SP system brings more transparency with the disclosure of all the acts practiced through the system, as well with the possibility of its tracing via internet.

The BEC/SP started its operations in September, 2000 and follows growing its operations among the modalities of public purchase, and increasing the number of purchase units involving many public entities.

With the utilization of the BEC/SP system, the Sao Paulo state gained agility and economy, increasing the number of participants in the purchase processes, attracting suppliers which had never participated in conventional public tender processes. As a result, beyond of the tendency on prices decrease, the public administration started to give a guarantee of payments to suppliers by the right date, with no delay, acquiring more credibility of the suppliers.

The BEC/SP system has as customers all the purchase units from the Sao Paulo state and the cities that belong to Sao Paulo state that joined by contract to it. On February, 2010, the number of purchase units summed up o 1,245. (SIGEO- Sistemas de Informações Gerenciais da Execução Orçamentária, 2010), totalizing the negotiated values of R\$ 5,275 billion (around US\$2,6 billion).([www.bec.sp.gov.br](http://www.bec.sp.gov.br)).

The first treatment requisite to the BEC/SP system be efficient is to be totally loyal to the pertinent legislation. The others two fundamental requisites are: to keep a materials and services catalogue which contains all items that the purchase units need to their operations, as well as to keep a suppliers catalogue capable to supply the purchase orders with velocity and quality.

The BEC/SP system has as a communication channel with its customers (“Fale Conosco” in its web site [www.bec.sp.gov.br](http://www.bec.sp.gov.br), telephones, e-mail, and rarely in person. Through these channels of communication, it was perceived that the whole system should be understood and organized in a systemic way to the better flow of information and treatment of the necessities of its customers.

The treatment of the necessity of the customers can be satisfied by a implementation of a Total Quality Management System. However, this is difficult to be gotten with isolated efforts, so it is needed to adopt a new management philosophy expressed by the total quality management (ISHIKAWA, 1993).

So, it was realized that an urgent necessity of a clear and objective identification of the processes and its algorithms and its interactions, because without the understanding of the processes there is no way how to control them, and, in consequence, there is no way how to enrich them. In this way, the creation of a Quality Management System (QMS) and the search for the ISO 9001:2008 standard certification were understood as the best way of getting the continuous improvement of the business.

The objective of a creation of a QMS is the reach for the continuous improvement, looking for the customers’ satisfaction, answering their expectations and necessities.

### **3- Method of leading the case study at BEC/SP**

The implementation of the QMS started in 2009 January with the hiring of a specialized consulting which became available the development of the 11 stages demonstrated at the Table 1.

#### **Stage 1 – Elaboration and Initial Diagnostic**

For setting up the initial diagnostic, there were meetings and interviews with the Directory of the Coordination which is inserted the Bolsa Eletronica de Compras, as well as with all the managers of the BEC/SP system and with the Direction Representative (DR) defined by the High Administration. The objective of this stage was to define the job processes, procedures and document existent at BEC/SP, the adherence related to the requisites of ISO 9001:2008 standard, as well as with the objective of definition of the Certification Scope.

#### **Stage 2 – Preparation to QMS construction**

In order to the employees who would be a part of the Quality Committee be aware about the methodology of managing by processes, in which it is based upon the management to the total quality, it was done a workshop. So, it starts the preparatory phase to a construction of a QMS.

#### **Stage 3 – Planning to the QMS development**

With the gaps analyses done and the processes drawn, it was defined by the high direction the Quality Committee and defined the managers of each process.

The Quality Committee is responsible by the planning, implementation, evaluation, and feedback of the QMS of BEC/SP, in planned intervals, in order to assure its continuous efficacy and efficiency. This critical analysis must include the opportunities evaluation to the improvement and necessity of changes at the QMS, including the Quality Policy and its objectives.

In consensus, the Quality Committee defines the scope of the job, in other words, the area which will be submitted to the ISO 9001:2008 standard. The big challenge of this phase it was the clear definition of the customers. After the definition, it is clear that the customers are all the purchases units that utilize the BEC/SP system, and not the suppliers which negotiate at the portal.

Training was offered to the all members of the Quality Committee regarding the understanding of the rule ISO 9001:2008 standard.

<i>STAGE</i>	<i>ACTIONS</i>
01 – Initial Diagnostic	Initial evaluation of the system (gaps analysis)
02 – Preparation	<i>Workshop – Processes Approach</i>
03 – Planning	Quality Committee Definition (process managers) Committee Training – ISO 9000 Certification Scope Definition Identification of the legal requirements applied to the services
04 – Policy and Objectives	Quality Policy Definition Objectives and Goals definition Lecture for awareness about ISO 9001:2008
05 – Interactions and Indicators	Analysis of the interactions among the processes Definitions of the indicators of the processes Start of the measurement and monitoring of the processes Analysis of the indicators and due action taking
06 – Processes of Support	Building of the Processes of Support Maps and its Procedures
07 – Processes oriented to Customers	Building of the Processes oriented to Customers Maps and Procedures
08 – Processes of Management	Building of the Processes of Management Maps and its Procedures
09 – Communication and occurrences	Internal Communication – Disclosure plan of the system. Building of the Corrective and Preventive Procedures Training about Corrective and Preventive Actions
10 – Close	Internal Auditors Training Execution of the Internal Auditing Critical Analysis by the Direction Elaboration of the Quality Manual
11 – Certification Follow up	Follow up of the Phases 1 and 2 of the ISO 9001:2008 certification

Source: Quality Management System – QMS

**Table 1 – Proposed Stages in ISO 9001:2008 Certification**

#### Stage 4 – Definition of the Policy and Quality Objectives

At this stage, it was defined the Quality Policy and its objectives and goals. The Quality Policy is the strength which gives movement the whole QMS, and allows that the organization be committed with the search of the continuous improvement, as well as attending all the ISO 9001:2008 standard requirements. The objectives and goals support the effective application to the Quality Policy, and start the implementation of an action plan.

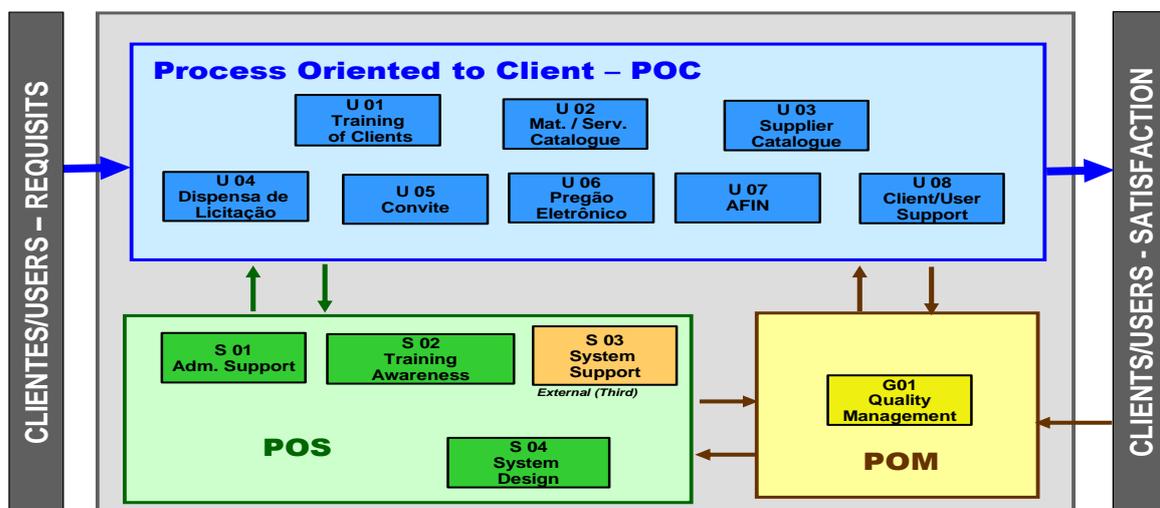
### Stage 5 – Interactions and Performance Indicators to the processes improvement

The process approach emphasizes the improvement of how the job is done. Once adopted this approach, the point of view of the customer must be adopted. So, it must be worked the aggregation of value ways of each process aiming the treatment of the expectation of the customer. Consequently, the processes should be measured in dimensions that evaluate the aggregated value to the customer (BIAZZI et. al., 2006). In this way, the role of indicators arises.

From the Quality Objectives Declaration on and its indicators, each process manager, discussed and designed the first indicators for each process previously defined. From this discussion, it was resulted a Process Indicator Map document, which started the analysis of the indicator and the beginning of the decision making resultant from this analysis.

### Stages 6, 7 and 8 – Processes maps design

In order to work in an effective way, the organization has to identify and manage several interconnected activities. An activity which utilizes resources and that is managed in order to allow the transformation of inputs and outputs can be considered a process. The interaction map process is illustrated at the Figure 1.



The interactions among the processes are identified into the Process Maps which belongs to the management system. Into these maps, the activities, extries and exits can be seen in details.

Figure 1. Process Interaction Map

An advantage of the process approach is the continuous control, which permits over a connection among the individual processes inside the system of the processes, as well as its combination and interaction.

The process approach is the foundation of ISO 9001:2008. From this approach, were defined the processes of Support, Oriented to Customer, and Quality Management, and interaction that can be seen in the document Correlation Matrix: Objectives and Processes with the

objective of evidencing the correlation grade among the processes as can be observed in the Figure 2.

The unification of processes aiming to simplify and to improve the way of processes management of Support, Oriented to Customer, and Management, and to improve the way of QMS management as well.

The participation and the commitment of the Top Management in the company are fundamental, but in many occasions they are not aware of all details of each process has. (BIAZZI, et. al., 2006). So, in the construction of the processes maps, the manager of each process was interviewed, as well as all the employees who were doing the activities, and not only the hierarchical superiors. Example of Process Map can be seen at the Figure 3.

Matrix of Correlation: "Objectives X Processes"											
		01	02	03	04	05	06	07	08	09	
		<b>Indicators</b>									
		Volume of negotiated items	Volume of the clients/users form the State	Volume of clients/users Indirect Administratio + Municipals	Number supplier/purchase order	Volume of the suppliers base	Time of processing	Volume of resources applied	Result of the specialized research	Result of the internal research	
		<b>Macro-objectives</b>									
		Performance 1	Performance 2	Performance 3	Competitiveness 1	Competitiveness 2	agility	Efficiency	Transparency	Employees' satisfaction	
Manager	Process										
<b>Processes Oriented to Clients - POC</b>											
	U01	Training of the Clients/Users	1	1	1	0	0	2	0	2	0
	U02	Material/Service Catalogue	3	3	3	2	2	1	1	3	1
	U03	Supplier Catalogue	3	3	3	3	3	3	3	3	3
	U04	Dispensa de licitação	2	3	3	2	2	3	3	1	0
	U05	Convite	2	2	0	2	2	3	3	1	0
	U06	Pregão eletrônico	3	3	0	3	3	3	3	1	0
	U07	AFIN	3	3	3	0	0	3	3	3	0
	U08	Client/User Support	2	2	2	2	2	3	3	2	0
<b>Process of Support - POS</b>											
	S01	Administrative Support	0	0	0	0	0	0	2	0	2
	S02	Training and Awareness	0	0	0	0	0	0	3	3	3
	S03	System Support (Thrd)	3	3	3	1	1	3	1	3	1
	S04	Systems Design	3	3	3	1	1	3	3	3	2
<b>Processes of Management - POM</b>											
	G1	Quality Management	2	2	2	2	2	2	2	2	2
<b>Grade Relation: Strong: 3 points, Medium: 2 points and Weak: 1 point</b>											

Source: Quality Management System BEC/SP

Figure 2. Correlation Matrix: Objectives and Processes identified in the researched organization

### Stage 9 – Planning and disclosure of the system and creation of the Procedure of Corrective and Preventive Action

Searching the involvement of the employees with the QMS, it was developed an internal communication plan that consisted in a first moment, in lectures about the theme.

There was a creation of the Procedure of Corrective and Preventive Action and Improvement Opportunity, in other words, in what way the actions would be treated to feedback the QMS, and consequent treatment to the customers. In order to keep the standardization of the register and treatment of the non conformities and of the corrective and preventive actions, the managers were submitted to training.

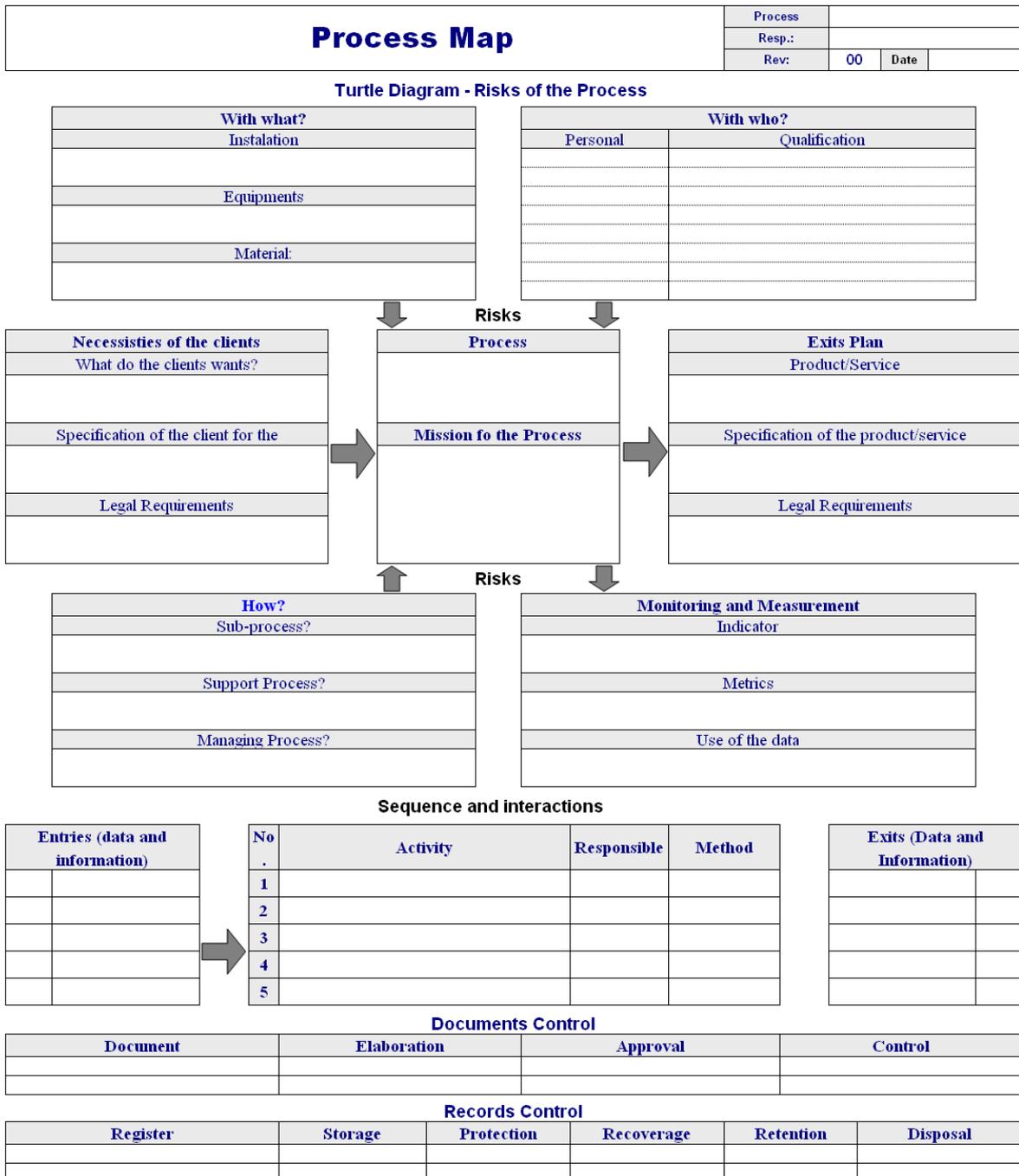


Figure3. Process Map Sheet

### Stage 10 – Preparation and achievement of internal audit

The penultimate phase of the project consisted in training and forming an internal auditors team in order to conduct the internal audit. The performing of the first quality management audit consists in collect the most possible information, in a significant sample, and evaluates it against the ISO 9001:2008 criteria. The application of the rule of audit, based on ISO 19011 standard, was applied as a complement of an audit criteria. (SOUZA, et. al. 2009)

The next step would be the analysis of the results by the Top Management of BEC/SP, answering a pre requisite of the rule. After all these phases implemented, the work culminated into an elaboration of the Quality Management Manual.

#### Stage 11 – Certification

The Quality Management System is implemented at this stage, and it is ready to receive the auditing from a accredited company, which will be responsible to emit o it is called “the total quality stamp”, in other words, the ISO 9001:2008 certificate.

#### **4. Analysis of the main results reached at the moment**

Related with learning and innovation approaches, it can be considered that the QMS construction and all its application as a innovative process in a public organization, as well as a milestone to the professionalization of the business, and it has total adherence in all the processes of the Treasury Secretariat of the State of Sao Paulo.

The ISO 9001:2008 standard shows itself adherent to all the products and services business, being all of them managed into the private or public sector, even the Direct or Indirect Administration.

Following the precepts of process, systematic management and factual approaches the BEC/SP since the implementation of a QMS, has been managed based in its processes and indicators and goals, and with that, capable to use and understand the evidences to decision making.

The scope of ISO 9001:2008 certification at the BEC/SP, aims its customers satisfaction being considered customers all the purchase units from the State of Sao Paulo and the Municipal administrations of the State of São Paulo which celebrated a contract. Nowadays, there are more than 1,000 purchase units.

To achieve the customers’ expectations and necessities it was necessary the implementation of a Quality Management System which is based in mapping and management of the processes; construction of indicators and their analysis, as well as the creation and maintenance of an efficient and effective action plan in the search for the continuous improvement of the business.

In order to measure the customer satisfaction of the BEC/SP system, was launched a research by fulfillment of a form for 476 purchase units, which was obtained around of 10% of answers. The form consisted in evaluate 10 questions and there was a blank space to comments.

As a first analysis of this customer satisfaction research, it was evidenced that the most important factor on the average, referred to the first affirmation – “The purchase electronic system has all the functionalities necessary to a good realization of the event”, for the majority of the respondents reaching 88% of the total of points possible to be reached.

The second most important factor on the average referred to the affirmation 5 – “The purchase electronic system enjoy of credibility as a tool to avoid fraud and manipulations of the process of hiring products and services”, to the majority of the respondents reaching 92% of the total of the points to be reached.

Then, having done a total analysis of the research, and considering all the comments, critics, and suggestions, it will be possible to evidence possible failures subject to correction, to

verify internal failures to the prevention of the problem, as well as identify opportunities of improvement to the BEC/SP system from a construction of a model of action plan.

Still considering the innovation theme, two important points were the design of the processes and their interactions, where it was possible to prioritize the actions according with their order of importance and their impact on the business.

Also by the simplicity of application of the Processes Maps, this makes possible to visualize all the inputs and outputs, the algorithms of the activities (sequences and interactions); the risks of the business; the monitoring and measurement of their indicators; the control of the documents; and of the records. Each process, for itself, has already its Quality System Management.

Regarding some important results, the process called Training and Awareness has as objective to provide the necessary competence to the management and improvement of the quality system and its processes, and has as an indicator the percentage of satisfaction of the competencies for a specific job. Such initiative has as a premise the key practices of management foreseen in ISO 9001:2008, requisite 6.2 Human Resources and ISO 9001:2000, requisite 4.3 (c) People Involvement, which deals with the capability of the employees.

The process was built from a matrix of jobs/functions and the necessary competencies to the investiture in the job. The objective is to verify the gaps between the necessary competencies and the present competencies of each employee in his job and in his area of performance, and create a plan of training to fulfillment of the jobs. The matrixes were validated by the managers and such initiative can point a new way of feeding of the planning process of training to the department in question and maybe to the whole organization.

For all the other processes it must be mentioned a very important aspect regarding the management of the BEC/SP system is the relation with the partners to the development of the business. Every and any change into the BEC/SP system must be proposed to PRODESP, which is a governmental company of technology, and possesses the technological development of the system, by contract. For such, the requests of development must be well designed, followed and approved by the employees involved in this process. Then, it was created a process called Design of Systems which has as an objective the evaluation and management of theses demands of development of the system creating an interface with PRODESP. Its indicator is follow and measures the quantity of the demands.

Since the design of this process, it was possible to manage of the innovations of the system in a more effective and efficient way, and also the creation of a new culture of partnership between contractor/contracted has been developed with the partner (or the third), in this case the PRODESP.

## 5. Conclusion and final considerations

The task of implementation of a Quality Management System – QMS based on the process approach can be considered an innovation and a challenge for a public administration, mainly because, in general, the quality management of the service is not very well structured and many processes which do not aggregate value are over controlled. Also the process approach brought a character non intuitive to the management, since that from this point on, the actions are based on factual evidences. In this manner, the creation of the QMS of the BEC/SP, besides of considering the expectancy of the customers, becomes adherent to the strategic planning of the Treasury Secretariat of the State of Sao Paulo being aligned with the mission of the institution. This alignment must be the focus of the strategy (MENESES, MÜLLER,

2006). From the project of implementation of ISO 9001:2008 at BEC/SP, it was evidenced the importance in the treatment and development of the competencies of its employees to the realization of a job done with safety, efficacy and efficiency. Considering the safety and the risk of the job, it must be reflected with attention the relation of the BEC/SP system and the its contracted, the PRODESP, which develops the whole system through the demands originated from the BEC/SP administration. Finally, in order to be continuously improved the performance organization, the satisfaction of the customers and the stakeholders must be reputed the guidelines that consider both as efficacy and efficiency of the QMS.

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