

# E-Learning as a Shared Service in Shared Services Centers

Agostinho Sousa Pinto

**Abstract.** An organization is an entity of systemic nature, consisting of one or more people interacting with each other to achieve common goals, being one of its greatest challenges the attempt to follow the evolution of their environment.

Adoption of Technologies and Information Systems enables organizations to improve their information flow and, when used strategically positively differentiates, providing competitive advantages, for the dissemination and updating of organizational knowledge. This dissemination in a global world requires the adoption of distance communication procedures, e-learning.

Shared Services an organizational management model, continue to be implemented in Economic Groups and Public Administration, with the aim to provision of services appropriate to each Internal Customer or Organizational Unit, collaborative and virtual, supported by a single technology platform and enterprise architecture service-oriented. The implementation model of shared services proposed here, three-layer model, adds e-learning as a shared service.

**Keywords:** Shared Services, E-learning, Management and Organizational Knowledge.

## 1 Introduction

Organization success depends on their ability to interact with the environment, i.e., its ability to operate globally. If this new reality represents, on one hand, a constraint on their activities and even on their own survival, leading to new challenges and threats may, moreover, provide new business opportunities to avail of.

An organization is an entity capable of producing goods and services better than competition and whose goods and services and the activity itself are in the interests of third parties such as customers, employees, or to affected entities, positively and negatively, by the work on organization. [Sousa, 1990]

An organization can be identified as an open system. The open systems exchange matter, energy and information regularly with the environment and are fundamentally adaptive because, to survive, they need to adjust, continually to the changing conditions of the environment. That adaptability is a continuous process of learning and self-organizing of the open system. System is a set of elements dynamically interrelated, developing an activity or function to achieve one or more objectives or assumptions. Speaking, generally, in systemic nature, is intended to refer to the

overall operation, total and integrated, in which the whole is greater [or different] than the sum of its parts. [Chiavenato, 1992]

E-learning is education just-in-time integrated with value chains of an organization. It is the individualized and detailed delivery of dynamic learning content in real time, aiding the development of knowledge communities, linking students and professional experts. [Drucker, 2000]

The underlying principle for e-learning is that the tools and knowledge necessary to perform a job are promoted by the workers, wherever they are. The focus of learning revolves around the people. This contrasts with traditional education, which usually brings together a group of people around the learning, i. e., a typical school environment.

E-learning has its origins in computer-based training [Computer-Based Training CBT], which was an attempt to automate education, relief from the instructor and enhance rates of learning appropriate to each learner.

The focus of e-learning extends and improves the CBT picture by an approach of learning that removes time barriers and distance and customizes learning to the user and business needs. [Barker, 2000] The key to success is the ability to reduce cycle time to learn and adapt the learning content to the learner and their environment.

Shared Services Centers have emerged in order to maximize effectiveness and efficiency of organizations. Shared Services concepts are based on three principles: standardization, consolidation and reengineering, in which the transaction processing and other services may be performed centrally or in different locations.

If the adoption of technology e-learning by Shared Services Centers, does not represent much difficulty, the definition of e-learning model and its acceptance by the Client Organizations, including their human resources, has setbacks that justify a planning and change strategy, only possible with a real framework of e-learning in shared services.

This article presents a simple structure, starting with the summary that presents the outline of the work. Then, in Chapter 1 is presented the introduction, that contextualizes the work, presented the motivations for the study. Next is the review of literature, where, in Chapter 2 are presented the studies on shared services and in Chapter 3 are presented the studies on e-learning. Chapter 4 is devoted to the intended contribution of this article. Finally, in Chapter 5 is presented the conclusions which indicate future work, finishing with the bibliography used.

## **2 Shared Services**

Shared services are a collaborative approach aimed at optimizing human resources, capital and other corporate resources, focusing on a new business unit (Shared Services Center) (semi)-autonomous designed to promote efficiency, create value, reduce costs and provide excellent services to the entire Organization. According to Quinn [2000] there are four models of Shared Services, Basic Model, Marketplace, Marketplace Advanced and Enterprise Independent.

The adoption of information technology allows companies to improve with technology, their information flow and, when used strategically, serving as facilitator of organizational processes, positively differentiate organizations by providing them with competitive advantages. [Janssen & Joha, 2008]

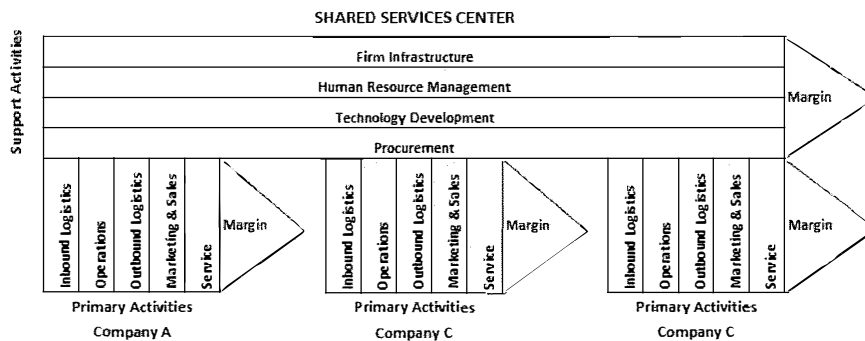


Fig. 1. Shared Services and Porter Model

The role of IT in organizations has changed significantly, evolving from administrative support to a strategic role, supporting and defining business strategies. [Henderson & Venkatraman, 1993]

The definition of strategic alignment differs among authors, depending on the focus of your quest. However, some definitions which are considered as the most significant, put the focus on the alignment between the Strategic Planning of Information Systems and Strategic Planning of the Organization. (Mendoza, 2009)

The alignment between the Strategic Planning of Information Systems and Strategic Planning of the Organization may be conclusive for the development of business competitiveness. Thus, one should seek to identify the factors that influence its implementation. These factors deserve special attention from organizational managers [Teo & Ang, 1999] to increase the effectiveness of that alignment.

The context in which the push factors of strategic alignment between the Strategic Plan for Information Systems and Strategic Business Plan, need to be clear. That is, identify the Critical Success Factors that favor the alignment between the Planning of Information Technology and the Strategic Organizational Planning. [Löbl, Bobsin, & Visentini, 2008]

The development of e-learning as a service in a Shared Services Center, is justified by the convenience to provide simultaneously a set of information, in heterogeneous environments, characterized by cultures, customs and different languages, social organizations and different time zones.

There is an economy of scale when the expansion of production capacity of one company or industry results in an increase in total production costs less than, proportionally, to the product. As a result, the average production costs fall in the long term. For a given cost function, the existence of economies of scale can be checked using the concept of elasticity of cost, which is determined by the ratio between the relative change in average production costs and the relative variation of the quantities produced [Looty & Szapiro, 2002].

Associated with the concept of economy of scale is associated the concept of economy of scope or of diversification. The economies of scope are derived from the share of tangible and intangible resources in the production of multiple business units, resulting in reduction of global joint costs of production, with impacts on

reducing unit costs of each product line. The economies of scope and diversification occur, as we have seen, when the production of various products by the same firm is superior to that produced by several companies, each producing a single product.

Globalization and Technology and Information Systems lead to strategic changes a fundamental aspect nowadays [Bradley, Hausman, & Richard, 1993]. In fact, globalization, technology and Information Systems have reinforced each other, since globalization calls for innovation in Information Technologies. Organizations need to coordinate their global operations through the Technology Information Systems, while the actual development in information technology has boosted the organizations to be more global in their business.

The strategy of globalization has been accompanied by a number of important changes in technology and information systems, since they have suffered not only the impacts of strong growth and diversification, but also had to be a support to the whole transformation process.

## **2.1 Models of Shared Services**

The basic difference of shared services when compared with centralization of services is the strategy to focus on internal customer - the business units. [Quinn, Cooke & Kris, 2000]

Shared services are not in any way the centralization, as awry can be mentioned. The concept of centralized brings with it a "corporate" mentality. [Schulman, Lusk, Harmer, Dunleavy, & Schulman, 1999]. Schulman clarifies the difference between the centralized model and shared services, defining shared services as the concentration of organization resources instead of centralization of the organization's resources.

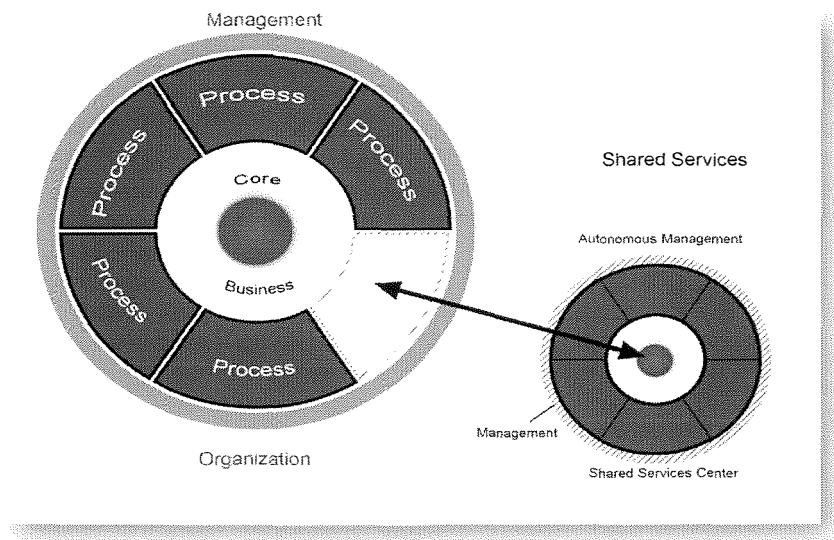
The approaches adopted to focus on internal customer involve reduced costs from economies of scale and attention to quality level required to support services.

Second [Quinn, et al., 2000] there are four models of shared services that have evolved from the basic model, resulting from the consolidation of support activities into one unit:

Basic model-It has as main characteristics the concentration of activities and transactions of support in a single location and the compulsory use of services by business units. The main objective of this model is the use of economies of scale to reduce costs and standardization.

Marketplace model - With the evolution of the basic model comes the marketplace model. The use of services by business units is not obligatory. Skilled professionals and consultants are recruited. The range of services offered is expanded in order to satisfy all the needs of business units.

Advanced marketplace model - In the evolution of the models, consolidates the marketplace advanced. With it, opens the possibility of purchasing services in both the CSP and by the business units. In this environment, only the services that prove to be competitive with the market still operating internally. The expertise gained in developing the model provides the delivery of some services with high quality and competitive costs.



**Fig. 2. Model of Shared Services**

**Independent Company Model** - The last step in the evolution of shared services is its structure as an independent business using the skills acquired in the evolution of the organization from a basic model. Services are provided to multiple clients with the aim of the new company to generate revenue and profits for its maintenance in the market.

## 2.2 Enterprise Architecture

Organizations are unique and complex realities. In its characterization is usual to consider such diverse topics as the chain of custody and reporting, business processes, information required for business management, systems and information technology, among others. The representation of all those aspects in an integrated and consistent way is far more demanding than their individual representation.

The ability to change of the organization is heavily dependent on how the various aspects of the organizations cited above, are aligned and are known by the organization. In this sense, shared and understood representations by all are essential, because they allow detecting differences between the reality that it is and what should be. The enterprise architecture is reflected in the representation of organizations that, through continued practice, allows aligning its various constituent aspects in an integrated environment. Taking the convergence all aspects as its central goal, eliminating the so-called misalignments.

The concept of Enterprise Architecture has been developed and enriched over the past decades, being in genesis a work tool called as "Zachman Framework for Enterprise Architecture". The "Framework" is a semantic structure which is a form of descriptive representation of any object that crosses two aspects: the key

questions - "what," "how, where," "who," when" and "why" - with the prospects of those who make these issues: the owner, the designer, the builder [Zachman, 2004].

Rarely this framework displays a consistent architecture and is part of an overall strategy for management. However, any change in operation or structure of the organization is conditioned by a reengineering effort in IT's. The restructuring of the IT architecture is the main barrier for the transformation of old enterprises and can result in frustration and expense due to IT projects that failed's becoming a great source of organizational inertia. [Nolan & Croson, 1995]

### 3 E-Learning

The implementation of e-learning technology or b-learning [blended learning], a combination of methods of teaching / learning classroom and distance, found a turbulent journey of adoption, experiencing moments of euphoria but also dismay.

Learning based in the Emitter is called first Wave [teacher, trainer, teaching materials of distance learning and self-study on and off line, etc..], the learning that takes place via the b-learning, defined as second vague and, finally, the one that involves all systems of teaching and learning [Distributed Technologies, Interactive Technologies and Collaborative Technologies], defined as the third wave. [Fernandes, 2005]

The application of new paradigms of distance training or combined training with a classroom component and another component at a distance using information technology and communications have not evolved according to expected. Observing the evolution of Education and Vocational Training schemes or distance leads to the conclusion that is unparalleled progress of other technical and scientific with the Teaching and Education. [Fernandes, 2005]

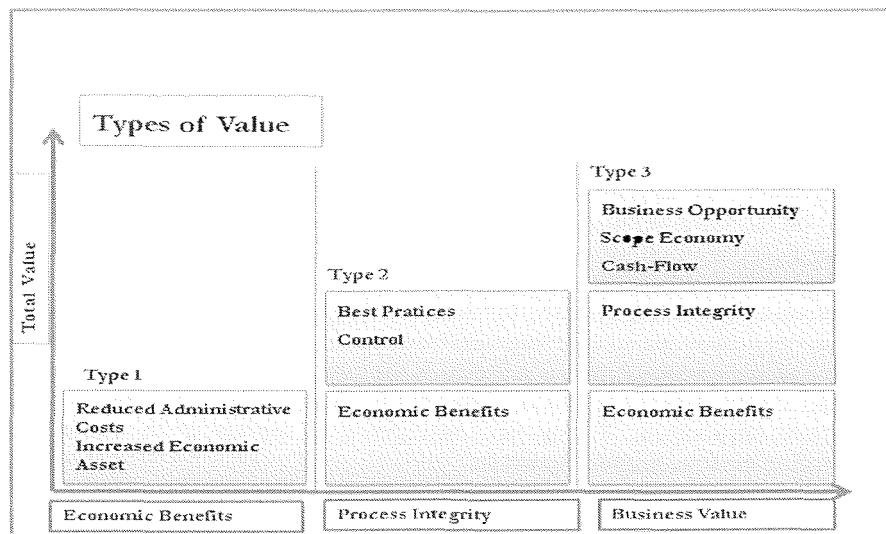


Fig. 3. Technologies for e-learning

The evolution of societies is dependent on lifelong learning, recognizing that everyone, regardless of age or social status, remain able to dominate and profit from the development of personal and professional level.

Is widespread belief that the success of this new paradigm of lifelong learning is dependent on new forms of technology to support the teaching / learning process.

### **3.1 Basics of e-Learning**

#### **3.1.1 Ontologies for e-Learning**

Ontology is part of metaphysics that studies being in itself, its properties and methods by which it manifests. [Dictionary Online Porto Editora] In philosophy, ontology is a theory about the nature of existence, about what kinds of things exist; ontology as a discipline studies such theories. Researchers of artificial intelligence and Web used ontology as the description of a formal concept and shared, in a particular field of interest. Ontologies are specifications of the concept and corresponding vocabulary used to describe a domain [Gruber, 1993].

By defining shared theories, of common domain, ontologies help people and machines to communicate concisely, supporting the exchange of semantics and not just syntax. It is therefore important that any semantics for the Web is based on an ontology explicitly specified. Thus, consumers and producers can reach a shared understanding by exchanging ontologies that provide the vocabulary needed for discussion.

#### **3.1.2 Semantic Web and e-Learning**

The fundamental property of the architecture of the Semantic Web enabled by a set of appropriate agents, provides a powerful approach to meet the e-learning demands: efficient, just-in-time and learning task relevant. Learning material is semantically annotated, which, for a new need can be easily combined in a new way of learning. [Aroyo & Dichev, 2004]

In fact, the Semantic Web could be exploited as a very suitable platform for implementing a system of e-learning, because it provides all means of e-learning: ontology development, ontology-based annotation of learning materials, their composition in training courses and delivery of assets of learning materials through portals of e-learning. [Anderson & Whitelock, 2004]

#### **3.1.3 E-Learning and Metadata**

Compared with traditional teaching where the teacher plays the role of intermediary between the student and learning material, the learning scenario in e-learning is completely different: instructors no longer control the supply of material and students are able to combine learning material according to their preferences. Thus, the management of the learning material should be on their own. However, regardless of the time spent to create training material, this may be useless unless it can be searched and indexed easily. What becomes critical with the increase of content and types of learning. A solution to monetize the content is produced using metadata. At a more basic level, metadata can be understood as a set of tags that can be applied to any resource, regardless of who created them, what tools they used or where they are stored. Tags are, in essence, data that describes data. Tagging metadata enables

organizations to describe, index and search their resources being essential to reuse them.

### **3.2 Technologies of Support to e-Learning**

Technologies can be Distributed, Interactive and Collaborative. Distributed Technologies represent the formal and traditional pedagogy. Grounded in secular practices, such as the Distance Learning building, the e-learning from the 1st wave. About Interactive Technologies must be said that in a scientific perspective, they are also in the behavioral area, because we learn by repetition, imitation and trial/error. That is, through simulations and training it is possible to develop the acquisition of skills and capabilities. There are in these technologies a qualitative leap, which comes to move on transmission of information, pure and simple, the performance focusing on action by the student / trainee, hoping some of this initiative. The enterprise technologies, used since the e-learning of the 2nd wave, reach the fullness with the 3rd wave, by boosting the student / trainee to assimilate new concepts and accommodation, within established parameters, in perfect interaction with the group it belongs to. Here, the collaborative or cooperative is not only an asset, but also the engine of the process itself. [Fernandes, 2005]

## **4 Conclusion**

Organizations that want to achieve and sustain competitive advantage need to improve the knowledge and skills of their workers. E-learning and knowledge management are separate disciplines but with the same objective of achieving the purpose of increasing organizational knowledge. [Mallinson & Vos, 2008]

If the goal is the adoption of e-learning by the Shared Services Centers, technology does not present any difficulty, the definition of the type of e-learning and its acceptance by the client organizations, including human resources, has setbacks that justify a planning and change in strategy, only possible with a real framework of e-learning in shared services.

The first Shared Services Centers installed, were inspired by the centralized model, which led to the implementation of the basic model, differing on self-governance, value for money and the vision of customer service, using, however, a "pricing" distribution costs incurred. In the difficulty of demonstrating the nature of costs, it add the need to invest and increase productivity on the part of managers of the centers, and thus counter the dissatisfaction of some customers forced the emergence of more open models, using a market logic. The diversity of business, the different states of technology use and the different sensitivities of managers, determine the level of service to contract, causing mismatches between what is needed and what Shared Services Center has to offer.

In this context where shared services have proven to be a good solution for many organizations and e-learning has established itself as an inescapable reality in organizations, we intend to define the framework for e-learning in shared services, taking into account all its specificity. It is necessary to define, among other things, in what context it makes sense to use e-learning, identify the positive and negative



aspects of shared services that are inherited by e-learning, which recommended the technological solution and what type of e-learning to be taken in each context, what strategy to follow to promote the services, how to measure the impact of e-learning in the acceptance of shared services, until the cost of e-learning is behavioral.

The introduction of a new service with the features of e-learning for a Shared Services Centers, means knowing which is the impact of that adoption in the organizational architecture and what is the influence of the new service on existing services.

Organizations, as complex systems, interdependent, want to reach a stable state, believing it to be possible by adapting to changes in the external environment. Yet what modern science has shown, such as the theory of chaos, this balance is the exception rather than the rule. In this context the Shared Services Centers, as providers of services, need to maintain sufficient stability to ensure the level of service, but the ability to innovate and respond to different levels of service requested. E-learning is a process based on technology that allows today's update of organizational knowledge. The Shared Services Centers, defining enterprise architecture, adopting ontologies that define e-learning and rules for the Semantic Web, are able to provide a quality service to all its partners seeking for the constant stability, supported by the theories of science organization. The adoption of e-learning services and the Shared Services Centers requires a strategy and framework that becomes a value for the entire organization.

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