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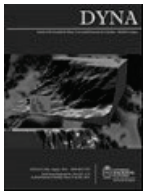

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Service quality management based on the application of the ITIL standard

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Abstract

The modern world has led companies to become increasingly competitive, highlighting the customer as the core element of commercialization processes, and also recognizing the need to treat all internal activities as customers in the delivery of products/services to final consumers. An important element to ensure an adequate level of customer satisfaction is the need to properly manage the required services inside business processes, where the management of technology services becomes an imperative in almost every company. This paper presents the ITIL standard, which is a framework that allows the delivery of technology services to be efficiently managed, in order to improve internal business processes and obtain other benefits such as better internal communication. After that, the use of ITIL as a frame of reference for enhancing quality is proposed, focused not only on IT but on any type of service in general.

Keywords: Services; Information Technology (IT); Systems; ITIL; Customer

Gestión de la calidad de servicios apoyados en la aplicación del estándar ITIL

Resumen

El mundo moderno ha llevado a las empresas a ser cada vez más competitivas, volviendo al cliente el eje central de los procesos de comercialización, pero evidenciando la necesidad de tratar todas las actividades internas como clientes parciales en el proceso de entrega del producto o servicio a los consumidores finales. Un elemento necesario para asegurar un adecuado nivel de satisfacción a los clientes radica en la necesidad de gestionar adecuadamente los servicios requeridos en los procesos empresariales, donde la gestión de los servicios de tecnología se vuelve un imperativo en casi todas las empresas. Este artículo presenta el estándar ITIL, el cual es un marco de referencia que permite administrar de manera eficiente la prestación de servicios de tecnología, de cara a mejorar los procesos internos de las empresas y obtener otros beneficios, como potencializar la comunicación interna. Tras ello, se propone el uso de ITIL como marco de referencia para la mejora de la calidad, no solo centrado en las TI, sino de cualquier tipo de servicio en general.

Palabras clave: Servicios; Tecnologías de la Información (TI); Sistemas; ITIL; Cliente.

1. Introduction

In the current environment, in which companies must seek maximum competitiveness, services are becoming increasingly important as a means to provide customer value and competitive advantage.

Therefore, the quality of service as perceived by customers, and their evaluation, in order to seek continual improvement in a strategy of continuous quality improvement, is one of the priorities for organizations.

In the search for competitiveness and customer value delivery, managing different areas of organizations relies heavily on information technology (IT), which is essential to properly manage the business processes of companies.

It is for this reason that in every organization, an IT organization exists (either internal or external) that generates and provides IT services. Those services are provided to a group of customers of that IT organization, a group that demands services with value, and expects their timely delivery with quality.

In this exchange, the relations and communications between the IT service provider and IT customers must be

channeled through a system that ensures the optimization of the processes of service delivery and support of IT. It is in this environment where the discipline of "IT Service Management" appears.

In this paper, the authors present the IT Service Management and ITIL standard as a framework for the management of all the processes needed in the lifecycle of IT services. The use of this framework ensures that these IT services and the organizations that provide them are aligned all the time with the business processes they support, and with their objectives.

However, this is not only applicable to IT service management but to any type of service in general. For this reason, the use of ITIL good practices could serve as a reference frame for enhancing service quality.

2. State of the art

In the society of the 21st century, services throughout the entire set of exchange processes that occur between the different agents that make up the market are increasingly critical and vital. In this sense, the quality of service and its assessment are some of the priorities that organizations should consider in order to adapt their management, and respond effectively and efficiently to the demands of the market. This circumstance makes it necessary for a better understanding of the concept of quality of service, its extent and the implications arising from studying it [1].

Quality of service received a strong boost for its application in the management of organizations from the work developed since the middle of the 80's by Parasuraman et al. [2-5]. These authors proposed a conceptual model which defines quality of service as a global judgement concerning its superiority, which is obtained from the comparison between the expectations about the service to be received and the perceptions of performance of the service provider organizations (paradigm unconfirmed).

These authors developed a measuring instrument identified as SERVQUAL (SERViceQUALity) for its evaluation [3-6]. Specifically, assuming the multidimensional nature of the construct, these authors propose that service quality can be estimated from five dimensions, identified as tangible elements, reliability, responsiveness, security and empathy.

Further studies [5-7] focused research of quality of service especially on the attitude of the consumer towards the service provided, i.e. from an attitude that is generated from the perception of the consumer with respect to the provision of the service. This fact allows the quality of service to be studied from a prominently psychological approach.

Quality of service has been defined both from an objective approach as well as from a subjective one. While the objective quality of service relates to fitting service to the specifications defined by the providers [8], the subjective quality of service moves towards the client, being defined as a "global judgment or attitude, relative to the superiority of the service" [3].

Mentzer et al. [9] focus on the logistics of quality of service and identify its critical components such as the amount of orders placed, the quality of the information, the procedure, accuracy, conditions, and quality of the order, management of discrepancies with the order, punctuality and personal contact quality.

On the other hand, McDougall and Lévesque [10] and Brady et al. [11] deal with these more complex classifications by simplifying the components of the quality of service based on two dimensions; the technical capacity or reliability and personal relationship.

In the literature of service marketing, quality of service has been linked to satisfaction. Customer satisfaction has been defined as an attitude (loyalty), which has been linked with buying behaviour [12], as well as with the probability that the consumer returns to the establishment and provides good references and publicity to his acquaintances [13].

Different studies have pointed out the influence of technology on the components of the quality of service [14-16]. In particular, it has been observed that the higher the level of progress and the adaptation of the technology to the needs of the client, the greater the efficiency perceived in distribution activities [17].

The concept of service is considered in different areas of the organization to refer to different things, such as marketing, operations management, software engineering and information systems [18]. For example, in the discipline of marketing, services refer to the provision of intangible assets which are valued and traded on the market. In software engineering, this term designates a useful abstraction for deploying software for open environments, productively and scalably [19]. In Information Systems this concept can be found in different contexts, either to refer to electronic or digital services, or to the infrastructure layer of organizations providing computing capabilities that help organizations achieve their goals [18].

Many authors agree that services have been the core of economic activity in recent years [20-23]. This phenomenon certainly requires the support and consideration of Information Technology and Communications (ICT) and its evolution in recent years.

The recognition of the growing importance of services in the world today and the interdisciplinary and complex nature of today's services led to the emergence of a new discipline: Service Management Science and Engineering - SMSE [22]. This new research discipline aims to address emerging issues in services with an interdisciplinary approach, and is expected to grow as a meeting place and forum for discussion of issues related to service, regardless of the original field of study of researchers and practitioners [18].

Organizations and businesses are changing, largely due to the impact of IT. In particular, the Internet, known as "the great vehicle of service" [24], is altering the ways to provide and manage products and services, and the relationships between organizations and customers, which is leading to a redefinition of their value chains.

In the service field, significant changes have occurred due to the rapid increase of communication networks and the Internet. ICT offer significant opportunities for service innovation in customer service and efficiency improvements.

Although technology transforms the interaction between organization and customer, expectations for the quality of service received are immutable. In many cases,

customers and employees are not always receptive to what technology has to offer, nor do they recognize its associated value. Self-help technologies (self-help) allow customers to get the service independently and participate in the process of acquiring goods. The challenges of introducing IT to provide online services (on-line) are also very important [24].

The rapid evolution of ICT and e-business has created a situation in which services can evolve in their access strategy, and organizations see the increased value of offering services through the Internet. These services through Internet and other IT services are based on the knowledge provided by experts in information technologies and systems, who offer these services to their customers [25].

The process of IT service delivery involves deep knowledge sharing between service providers and customers. Therefore, communication between customers and IT experts is a critical component of the quality of IT services.

However, in many cases, due to lack of expertise in ICT customers, IT service is one of the professional services that demand high credibility; therefore, it is not easy for customers to evaluate the quality of service, even after it has been delivered [26].

Different studies of IT services identify quality of service as a critical factor in the effectiveness of communication and trust between the parties [27, 28].

Jia and Reich [29] conducted an investigation whose objective was to reduce the gap between the perceptions of customer service and management actions. In this research they introduced the concept of IT service climate and a survey instrument that can be used to evaluate it.

Jia and Reich [29] define "IT Service Climate" as a shared perception of IT employees, practices and behaviours in the workplace that support the provision of IT services to business customers. These authors show that the climate of service is closely related to customer satisfaction and quality of service.

There are three main components of the IT Service Climate [29], as shown in Table 1:

- Service Leadership
- Service Vision
- Service Evaluation

The urgent need to create an enabling environment to improve service, its quality and customer satisfaction is pointed out.

Furthermore Lepmets et al. [30] assess the impact of process improvement in the quality of IT services by performing a series of studies of the IT service industry.

From a business perspective, the shift to process-oriented organizations, the growing importance of business processes cut across the organization, as well as the increased focus on the quality of IT services perceived by end users, emphasize the need for information systems to provide an effective and versatile support for business processes and to meet the needs of the organization [31, 32].

IT services are increasingly complex, their regulatory levels are increased, there are frequent deviations in time or costs in their life cycle, there are continuous technological advances, etc.; all of which makes their management more necessary so they continue to be efficient, but at the same time more complex [33].

Table1.

Main components of IT service climate [29]

Dimension	Definition	Items
Service Leadership	The extent to which IT managers take actions to guide the delivery of service.	Our unit manager regularly discusses work performance goals with us. Our unit manager frequently talks to us about how our service contributes to better performance of our clients. Our unit manager regularly discusses with us the best approaches to serve our clients.
Service Vision	The extent to which meeting client needs, demonstrating flexibility, and establishing communication are emphasized.	In my unit's daily work, there is an emphasis on providing excellent service to our business clients. There has been true effort in our unit to establish ourselves as a respected partner of our clients. People in my unit are flexible when dealing with clients' perspectives. My unit frequently shares information with clients.
Service Evaluation	The extent to which the evaluation of IT professionals is linked with service performance.	We receive recognition and reward for providing excellent service to our clients. In my most recent performance review, I was evaluated on how well I served the clients. Customer service is an important criterion of our formal performance evaluation.

Source [29]

If their management is effective, changes are achieved which proactively adapt to the business strategy [41].

3. ITIL standard application approach on service management (SM)

Information Technology Service Management (ITSM) deals with the management of IT services through the use and coordination of people, workflows and information technology [34]. These three components are the core business processes in IT management.

Business processes can be classified as: strategic business processes, main business processes and business support processes. IT processes are included in the support process category, providing outputs in terms of the business' required services [34].

ITSM seeks to support the implementation and management of high quality IT services, and this is carried out by IT service providers. ITSM mainly differs from traditional IT management with regard to the fact that it does not focus on technology but rather looks at IT and its services from a business perspective.

This article proposes the use of the best practices in IT Service Management through the ITIL standard (Information Technology Infrastructure Library) for service management, not only of IT services but also of all types of service.

ITIL "is a framework that describes the best practices for service management in information technology" and it has an approach based on a set of processes that are grouped in five phases of the service life cycle [35=39]. In fact, ITIL is the most used standard in the ITSM environment [34].

Table 2 provides a brief description of ITIL cycle phases

presented in its latest version (v3).

ITIL offers organizations a set of strategies for continuous process monitoring, providing an organizational culture that generates greater benefits in service quality [40]. This approach can be applied to any organization, regardless of size, sector or service. The result should be a reliable, safe and consistent service with the expected costs [41].

However, even though originally ITIL is conceived for service management only, it is clear that any other type of service, either IT or non-IT, can obtain a benefit from the focus by processes and from the phases and processes presented by it. It can be argued that the five phases of the ITIL life cycle, which are shown in Table 2 (Strategy, Design, Transition, Operation, and Continuous Improvement), are common in any service type, whether IT, Marketing, Logistics, Consulting or any other kind of service. Accordingly, the use of ITIL standard as a reference frame for the management of any service type is proposed.

4. The Service Desk: The key in service management using TIL

Service Desk is an ITIL function located in the service operation phase. Service Desk is "the main contact point when users face a service interruption, when there is a request, or even when some changes are required. The Service Desk provides a communication point with users, and a coordination point for several IT groups and processes" [38].

The implementation of an appropriate Service Desk is crucial in organizations because many companies consider it as the first step to achieve ITSM [42].

Service Desk generates the following benefits [38]:

- Improves customer service, perception and satisfaction.
- Increases accessibility, communication and information through a single contact point.
- Increases quality and response time to customer or user requests.
- Provides better teamwork and communication.

Table 2.
The five ITIL v3 Phases.

Phase	Purpose
Service Strategy	To provide guidance on how to design, develop and implement service management, whilst providing direction for growth, not only as an organizational capability, but as a strategic asset.
Service Design	To provide guidance on service design and development of service management processes to define design principles and methods for converting strategic objectives into portfolios of services and service assets of existing and new services.
Service Transition	To provide guidance on how to develop and improve capabilities for transitioning new and changed services into operations and ensure requirements of Service Strategy defined in Service Design are effectively carried out in Service Operation.
Service Operation	To provide guidance on how to achieve effectiveness and efficiency in the delivery and support of services to ensure value for the customer and the service provider.
Continual Service Improvement	To provide guidance on how to create and maintain value for customers through better design, introduction, and operation of services and establish principles, practices, and methods from quality management and capability improvement.

Source: Adapted from Cabinet Office [35-39].

- Increases the focus and proactive approaches to service delivery.
- Reduces the negative impact of business.
- Offers a better management and control of infrastructure.
- Gives a better use of IT support resources and increased productivity of business people.
- Improves the information management process and supports decision making.

To do this, the Service Desk must assume some responsibilities, such as the following:

- Register all relevant incident / requested service details, assigning codes to prioritization and categorization
- Provide investigation and diagnosis
- Resolve incidents / customers' requests
- Escalate incidents / service requests that cannot be resolved within the agreed deadlines
- Keep users informed about the process's progress
- Close all resolved incidents, requests and other calls
- Apply surveys or calls to customers/users to verify satisfaction
- Communicate with the users, continuously, updating them about the process's progress, changes, commitments, etc.
- Update the Configuration Management System (CMS) under the direction and approval of the Service Desk management, if it is agreed.

A Service Desk has helped many companies to improve their processes, and its implementation is a high priority objective when an organization wants to follow ITIL best practices.

For this reason, the authors propose that in order for an IT or non-IT organization to be able to introduce a service management based on the ITIL standard, one of the critical points will be the implementation of a Service Desk.

The primary but not only objective of Service Desk is to serve as a contact point between users and service management. This relationship is depicted in Fig. 1.

A Service Desk is the central hub in the management of incidents and therefore it is (more or less) directly related with other processes such as problem management and change and configuration management. Thus, a suitable Service Desk, and a proper management of it, will manage the related processes more efficiently.

By having centralized and controlled information, it is possible to extract critical information from any event and

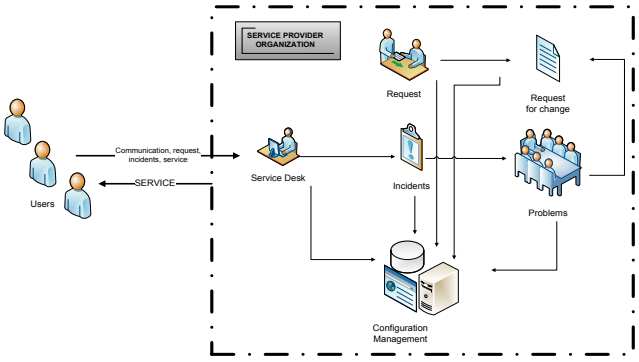

Figure 1. Information through a unique Service Desk between users and supplier (Service Provider Organization). Own Source

use the knowledge of previous incidents, creating a

continuous improvement dynamic.

As a consequence, an organization that implements a Service Desk based on ITIL will generate an added value in the following aspects:

- Efficient maintenance management of services by improving troubleshooting time response and the completion of client requests
- Efficient relationship management with the customers and users, and their satisfaction
- Efficient service delivery management, from the point of view of availability, continuity and process capability, as well as improvement of the changing management process

The latter allows service managers to offer higher service quality to customers and/or users.

5. Conclusions

The changes in the way companies offer their products and/or services, driven by technological changes, have led to the need of developing new processes to ensure the proper management of activities within firms, aiming to provide the highest possible customer satisfaction level.

IT services must be managed properly since they bring a good number of benefits that improve businesses and provide higher levels of customer satisfaction, which leads to improved companies' competitiveness. This management process can be efficiently developed by using the ITIL standard, which is one of the most widely used frameworks for this purpose.

But the ITIL approach can also be used for any kind of services, not only for the IT service management, its original objective. Any type of service can be managed in function of the five phases of the life cycle proposed by ITIL (Strategy, Design, Transition, Operation, and Continuous Improvement).

In the service provision, it is imperative to have a Service Desk, which is an outstanding mechanism that allows communication between users and coordination points for groups and IT processes. Therefore, it is vital to allocate resources for the operation of this Service Desk, due to its relevance in improving communication and the other benefits that it can generate for organizations.

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