# Proposal for the implementation of the ITIl methodology in the Center for Global Change and Sustainability

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**Resumen**

La metodología ITIL son las prácticas para realizar una gestión de manera más eficaz y eficientes en los servicios de tecnologías de información, esto permite un desarrollo en la administración que procesan las empresas, este artículo del Centro del Cambio Global y la Sustentabilidad se presenta la propuesta de implementación de esta metodología para la gestión de sus servicios de Tecnologías para brindar un mejor uso, administración a su base de datos, el acceso al servidor, seguridad de la información y protección, que beneficiara muchos de los aspectos de este centro de investigación que se encarga de ayudar con propuestas al medio ambiente en el sur-sureste de este país, México

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**Abstract**

The ITIL methodology is the practices to carry out a more effective and efficient management in information technology services, this allows a development in the administration that companies process, this article from the Center for Global Change and Sustainability presents the proposal implementation of this methodology for the management of its Technology services to provide better use, administration of its database, access to the server, information security and protection, which will benefit many of the aspects of this research center that is in charge of helping with proposals for the environment in the south-southeast of this country, Mexico.

**Palabras clave:** CCGS, ITIL, TI
**Keywords:** CCGS, ITIL, TI

## 1. INTRODUCTION

Today, companies handle all kinds of information from a computer, be it sales, profits, taxes, warehouse, etc. In addition to the fact that all companies face daily changes in the market, the demands, the competition and the expectations that customers may have, all these are data that the company receives or generates, which forces them to that they carry out their management processes and have to analyze their processes from within, since in a few words it is the monetary gain that they will receive from assets of this information, that is why today a good information management competes a lot and for this reason these services improve the quality of services, processes and optimize, an example of all this is a guide for the management of technology services with good practices, ITIL. The acronym ITIL stands for Information Technology Infrastructure Library, which we would literally translate as Information Technology Infrastructure Library.

ITIL is a guide to good practice for information technology (IT) service management. The ITIL guide has been prepared to cover all IT infrastructure, development and operations and manage it towards the improvement of service quality. (Solutions, 2022)

**"66% of companies have implemented the ITIL methodology, according to Dimension Data"** (Cabanillas, 2008)


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Dimension Data has revealed the results of a new study based on interviews with 370 CIOs from 14 countries on the state of deployment of best practice methodologies for IT service management. According to this research, two thirds of organizations choose ITIL over other alternatives. (Cabanillas, 2008)

This data is worldwide, in large companies in various countries, companies that have known how to implement this methodology to improve their services in multiple aspects and thus be positioned among the best in the world. Now, we go to Mexico, a website publishes the following:

In Mexico, only 5.9% of small and medium-sized companies use ICTs oriented to business management in the Cloud (ERP), making them more competitive and generating an annual increase of 40% in net profits. The level of penetration of information technology (IT) in terms of business management in Mexican small and medium-sized enterprises (SMEs) is 5.9%, one of the lowest figures in Latin America, where similar countries have an average of 30%, assured the company Acumática. (Notimex, 2013)

For this reason, a company like the Center for Global Change with the noble purpose it has, of supporting by making proposals about environmental impact, is very valuable since the information it collects from the different investigations it carries out in various fields such as those it manages must protect and organize your information, for this reason it is the proposal of this article, and to better understand why it is necessary to know the CCGS.

## 2. BACKGROUND

In the early 1950s, deforestation in the southeastern regions due to the discovery of oil fields, together with the degradation and loss of vegetation, seriously affected the existing ecosystems in the area. Deforestation also had effects on the development of diseases, on the potability of water, and on cultural aspects (aesthetic, spiritual, educational, and recreational). Deforestation is a factor that ended the cycle of the plantation economy and agricultural activities, resulting in rural unemployment and abandonment of the countryside. The Center for Global Change and Sustainability, A.C. It was formed on July 2, 2012 from the concern for the environmental problems that the south/southeast region of the Mexican Republic is going through, particularly the state of Tabasco. The CCGS seeks to contribute to the generation of sustainable proposals in response to the phenomenon of global change.

The coastal strip of the state of Tabasco, adjacent to the Gulf of Mexico, it runs between the mouth of the Coatzacoalcos River (Veracruz) and the Laguna de Términos (Campeche). Between the years of 1950 and 1980 a regional development project began in this area, consisting of:

- Exploitation of the area's natural resources, with particular interest in food production, mainly meat to be marketed in the Valley of Mexico.
- Exploitation of raw materials, minerals, construction of agrochemical, petrochemical industries and large port complexes to facilitate the development and economic strengthening of the region.

Without the sustainable management necessary to carry out these commercial activities, the deterioration and contamination of soils and water resources increased. In general, the serious environmental deterioration in the region of the south/southeast of Mexico increased. The Center for Global Change and Sustainability (CCGS), A.C. It was formed on July 2, 2012 from the concern for the environmental problems that the south/southeast region of the Mexican Republic is going through, particularly the state of Tabasco. The CCGS seeks to


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contribute to the generation of sustainable proposals in response to the phenomenon of global change. (Sustentabilidad., 2018)

## 3. JUSTIFICATION

Improving processes with ITIL V3 from the Center for Global Change and Sustainability (CCGS), integrating security standards and guidelines, will allow researchers to improve processes without having to enter the server so directly and thus set the standards and limitations that they will have students, staff and researchers who access the Internet through a data node in the center or from their workplace in the research center, improving the service and increasing security in computer equipment, facilitating access to the internal system and work operations that are carried out daily in the CCGS.

## 4. CONTEXT OF THE PROBLEM

At the Center for Global Change and Sustainability (CCGS), there have been problems in network traffic and other conflicts that affect the performance of the server, this is detected mainly when the internet bandwidth begins to be slow to perform the corresponding activities of the various areas of the research center; as we know, there is a time for delivery of reports every end of the month and it is when most people try to connect to the server for a longer time, there are researchers who require working with real data from the internet, as well as other areas that require file sharing with other areas, and network traffic is formed and the server has had problems, this is aggravated when researchers begin to accept interns/residents who still need to work with the server to do his thesis project, causing the network traffic to worsen at the end of the month.

## 5. OBJECTIVES OF THE PROPOSAL TO IMPLEMENT ITIL

- Identify the necessary information and requirements to carry out the work plan.
- Analyze and apply the current standards of ITIL V3.
- Develop the administration of Standards and guidelines.
- Carry out a quality, risk and work plan.
- Develop user manuals.
- Apply quality metrics for access control and network traffic on the server.

## 6. WHY ITIL V3 RATHER THAN V2?

The certification of ITIL v1 and v2 professionals is still valid, it DOES NOT EXPIRE. If they require updating, IT professionals who have their certificate at the Fundamentals V2 level must attend the Bridge course and take the corresponding exam, in order to obtain accreditation in ITIL v3. (Sánchez Gonzáles , 2015)

The most significant changes are the following from ITIL V3 over V2:

- Integrate IT with the Business.
- Focuses on customer and business value.
- It raises the IT Organization into a Strategic Business Unit.
- Alignment with the ISO/IEC 20000 standard.


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- Allows synergy with other best practices (Cobit, CMMI).
- Greater consistency is observed in the structure of the books and the processes.
- Provide more process maps
- Clearly defines the terms: Service, IT Service Management, Function, Process and Role
- Details the roles and responsibilities of key participants in process activities
- Includes Glossary and definitions consistent in all books
- Establish the metrics for each of the processes
- Evidence that IT Service Management, Service and Processes must be subject to the continuous improvement process (Plan-Do-Check-Act)
- Define and differentiate the following roles: Service Manager, Service Owner, Continuous Improvement Manager, and Service Level Manager (Sánchez Gonzáles , 2015)

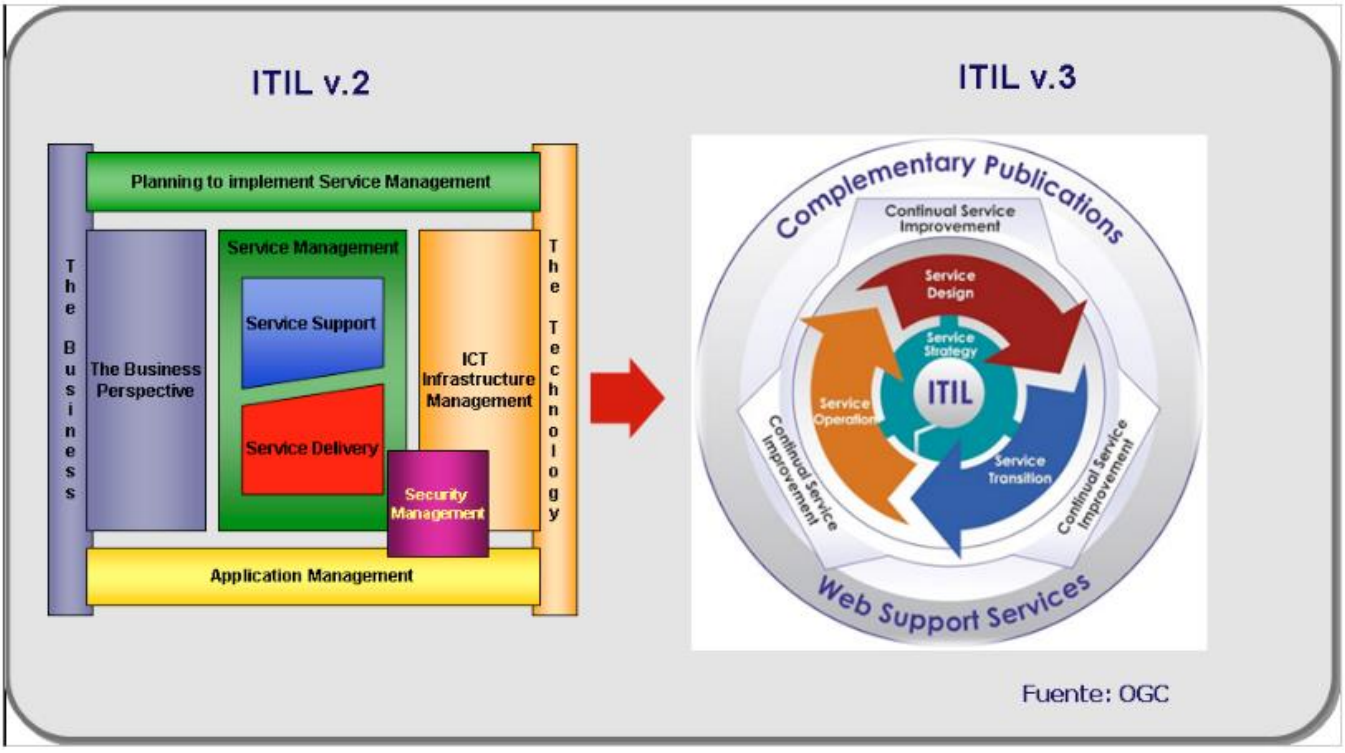


**Figure 1.** Difference between the ITIL V2 and ITIL V3 frameworks (Sánchez Gonzáles , 2015)

## 7. STANDARDS

This project is based on the International Standard ISO/IEC 27001:2005, which includes the Information Security Management System. The standard for information security ISO/IEC 27001 was approved and published as an international standard in October 2005 by the International 25 Organization for Standardization (ISO) and by the International Electrotechnical Commission (IEC). The security objectives can vary considerably depending on the sector in which the organization is located, but in general these objectives are directly linked to the security of organizational processes, production processes, the information life cycle and, obviously, compliance of current legislation (Guachi Aucapiña, 2012).

## 8. DEVELOPING

The proposal of the methodology to be used in this project will be ITIL V3, since it is where the processes required for the efficient and effective management of Information Technology Services within an organization are described. They are a set of best practices and process standards to make the design and management of data infrastructures within the organization more efficient.

This methodology is based on the quality of service and the effective and efficient development of processes that cover the most important activities of organizations. Thus guaranteeing the service levels established between the organization and its customers (Ríos Húercanos).

ITIL v3 presents 22 processes, not all of them are new, the vast majority were already defined in ITIL v2, but they were described in the other five books of the reference framework: Planning to Implement Service Management, Business Perspective, Application Management, Security Management and ICT. Infrastructure Management (Sánchez Gonzáles , 2015).

It is important to comment that the processes were updated and they were given consistency, since IT has evolved, they were not fully extracted. The most popular ITIL processes are those included in the Service Support and Service Delivery books; the processes of Incident, Problem, Configuration, Change, Release, Service Level, Continuity, Availability, Capacity, and Finance Management, as well as the Service Desk function (Sánchez Gonzáles , 2015).

Some of the processes described with greater emphasis and depth by ITIL V3 are: Service Portfolio Management, Service Catalog Management, Event Management, Service Request Management (Request Fulfillment), Service Validation and Testing, Support and Transition Planning, Knowledge Management (Sánchez Gonzáles , 2015).

The version describes terms and concepts that were only mentioned or referenced in ITIL® v2 such as Service Catalogue, Service Owner, Continual Improvement, etc. One of the fundamental differences is that ITIL v3 now makes it clear where each process intervenes in the Service Life Cycle.


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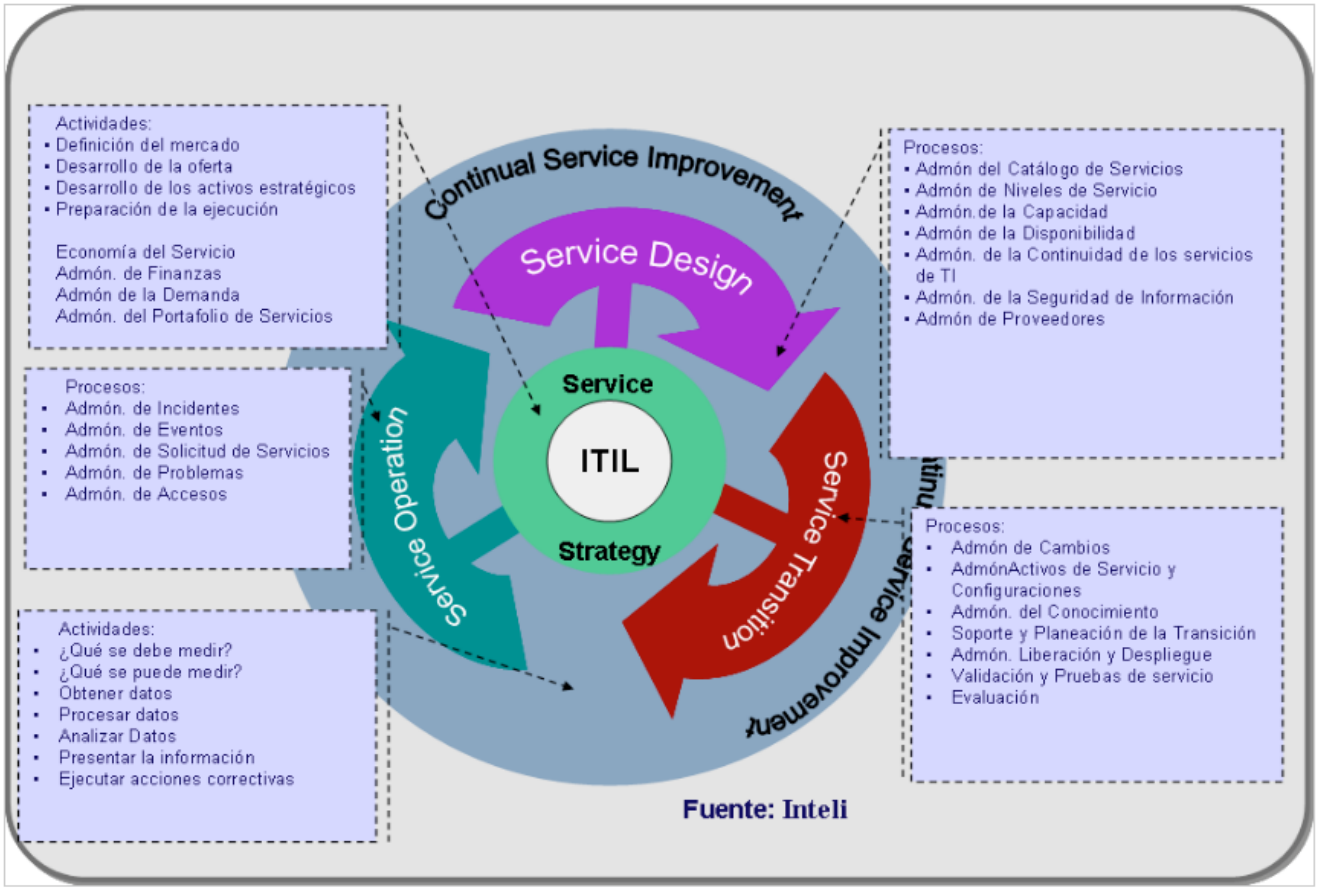


**Figure 2.** The ITIL V3 processes (Sánchez Gonzáles , 2015)

## 9. QUALITY

The importance of this project is to establish control parameters and technological monitoring, to ensure its proper functioning, as well as the achievement of the expected results; for this it is necessary to approach it from several angles; administrative management, coordination of resources, organization of work and the generation of obtainable resources; all this has to be done with the quality levels agreed between all participants and with the recipients of achievements. It is necessary to know how the agreements and reference documents are established, as well as to use the control tools that allow a shared vision in each phase.

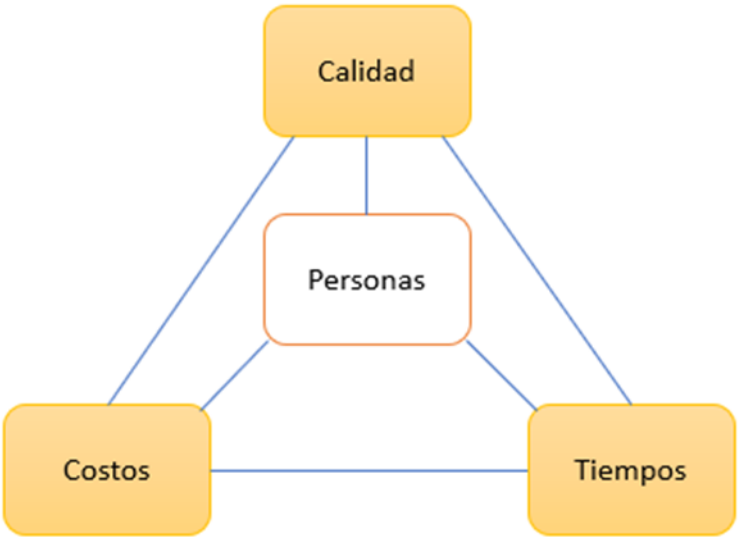


**Figure 3.** Basic dimensions of a project.

## 10. RISKS

It is understanding the importance of identifying and mitigating or controlling risks before and during the development of a technological project, in order to ensure its proper functioning, as well as the achievement of the expected results. The first thing is to understand what a risk is, and how to categorize it based on factors of influence, causes, impacts, etc. Then, once you are aware of the risks that can occur, of their relative importance, it is important to understand what actions can be planned to minimize these risks, reduce their impact or even avoid them.

It must be clarified that managing risk does not mean avoiding all risks, since they cannot be eliminated and all failures and bad results cannot be prevented. But you can minimize the chances of them happening, as well as reduce the impact they can have. It can also help the project to recover more quickly from unexpected problems. The key to dealing with risk is understanding it, anticipating it, and having a plan for how to deal with it. Simply put, risk management is a proactive process, not a reactive one. It is an integral part of the job of project management and has a significant impact on the potential for project success or failure.


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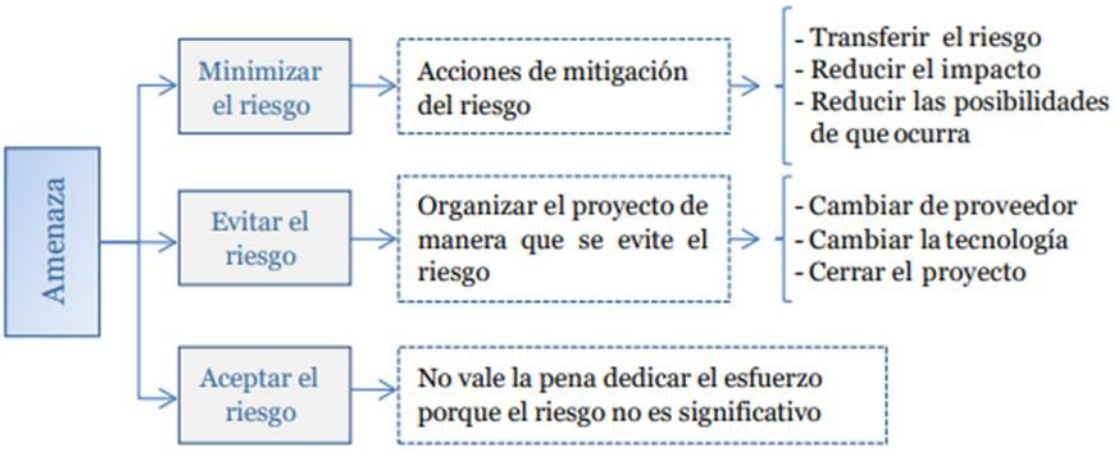


**Figure 4.** Possible responses to a threat.

## 11. ADVANTAGE

Here comes a series of advantages that this methodology has that favor its use in the CCGS, and for which it is the proposal of that article.

- It is flexible since its practices, although they are related to each other, do not function as an indivisible block. In other words, an organization can choose which practices to implement and which not to implement. (Freshservice, s.f.)
- Improve the service: ITIL not only promotes the delivery of better services, but also their continuous improvement.. (Freshservice, s.f.)
- Avoid stagnation: ITIL makes it easy to do so through continuous service improvement, a global vision of the IT infrastructure, the establishment of performance metrics and many other practices that allow you to adapt to changes and stand out from the competition. (Freshservice, s.f.)
- Customer Satisfaction: Better, more efficient and cheaper service means a happier customer. (Freshservice, s.f.)
- Leverage what already exists: ITIL doesn't require starting from scratch. On the contrary, one of its advantages is that it makes use of what you already have. That allows you to value the work your team has already done and make it more efficient.. (Freshservice, s.f.)
- The provision of information technology services is focused on the client, since it provides all the benefits in terms of product excellence guidelines, improving the relationship between the end user and the company. (Mancuzo, 2020)

For this reason, these advantages are the best of agile methodologies, especially ITIL, which is why it is recommended for your implementation proposal.

## 12. CONCLUSION

The ITIL V3 methodology is very successful worldwide, for companies that provide information management practices, this methodology will be very enriching, for the Center for Global Change and Sustainability, it will

benefit a lot, since its research processes using the IT Tools, as well as their results, you will have better processes and you will have a better quality and security of the information that is handled. Another reason for this proposal is to strengthen the company, give it better value for its development and for customers, this is more noticeable when you know the company's weaknesses and this is something that every company, business and change research center to aim at the satisfaction of everyone involved, customers, staff, etc.

It is also necessary to take into account that I did not deviate from the company's mission, in this case the CCGS, and direct them to the multiple benefits that the ITIL methodology offers, since this can be seen as a great guideline for all future projects that are to come, since this is reflected in the short, medium and long term, especially by the training of employees, since it may be new or not, since the roles are assigned together with the actions clearly.

In this way, the quality metrics can be carried out in an excellent way, the results obtained can also be evaluated, both for the security of the information, management and administration of the technologies that it manages and with this it will be agreed to recommend this type of future methodologies for all types of companies that want to improve all their services that they manage.

To conclude, it can be understood that carrying out the implementation of ITIL can be somewhat complicated since it requires certain economic resources, training and, above all, good planning, all this is to be able to adapt to possible changes that may occur in the world of technologies.

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