Design and modeling of processes through eTOM, ITIL and ISO 27001 for a telecommunications company

A Degree Thesis
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by
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TECHNOLOGIES AND SERVICES OF
TELECOMUNICATIONS ENGINEERING

Advisor: Olga Pons

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Abstract

This project deals with the design and modeling of the processes that make up a company in order to achieve the proposed objectives of quality improvement and organization, in the most efficient way possible, thus demonstrating the importance of carrying out this modeling.

Specifically, in this thesis we will analyze how this is carried out at AFR-IX telecom, a telecommunications company that offers data and advanced managed solutions to telecommunications companies and operators in Africa.

To achieve this objective, different theoretical frameworks that are relevant today in the business world have been studied, specifically BPMN, eTOM, ITIL and ISO 27001.

All modeling must be based on these concepts in order to implement the model obtained using different tools. In this project you will be able to see how some of the most used today have been used in a practical way, such as Signavio, Visio, Odoo and Service Desk Plus.

Resum

Aquest projecte tracta el disseny i el modelatge dels processos que formen una empresa per poder assolir els objectius proposats, de millora de qualitat i organització, de la forma més eficaç possible, demostrant així la importància de realitzar aquest modelatge.

Concretament, en aquest TFG analitzarem com es porta això a terme en AFR-IX telecom, una empresa de telecomunicacions que ofereix dades i solucions gestionades avançades a empreses i operadors de telecomunicacions a l'Àfrica.

Per assolir aquest objectiu, s'han estudiat diferents marcs teòrics que avui en dia són rellevants en el món empresarial, concretament BPMN, eTOM, ITIL i ISO 27001.

Tot modelatge s'ha de basar en aquests conceptes per arribar a implementar el model obtingut fent ús de diferents eines. En aquest projecte es podrà veure com s'han usat de forma pràctica algunes de les més utilitzades avui en dia com són Signavio, Visio, Odoo i Service Desk Plus.

Resumen

Este proyecto trata el diseño y el modelado de los procesos que forman a una empresa para poder alcanzar los objetivos propuestos, de mejora de calidad y organización, de la forma más eficaz posible, demostrando así la importancia de realizar este modelado.

Concretamente, en este TFG analizaremos como se lleva esto a cabo en AFR-IX telecom, una empresa de telecomunicaciones que ofrece datos y soluciones gestionadas avanzadas a empresas y operadores de telecomunicaciones en África.

Para alcanzar este objetivo, se han estudiado distintos marcos teóricos que hoy en día son relevantes en el mundo empresarial, concretamente BPMN, eTOM, ITIL e ISO 27001.

Todo modelado se debe basar en estos conceptos para llegar a implementar el modelo obtenido haciendo uso de distintas herramientas. En este proyecto se podrá ver como se han usado de forma práctica algunas de las más utilizadas hoy en día como son Signavio, Visio, Odoo y Service Desk Plus.

<u>Acknowledgements</u>

I would like to thank all the people I have met throughout my studies, the colleagues who have been by my side and with whom I have reached the end of a stage for the support. I would also like to thank my tutor within Afr-ix telecom, Brenda Ortega, who has guided me during this project with her knowledge, as well as Miguel Angel for his confidence in my abilities.

Finally, I would like to thank Olga Pons, my advisor, for accepting this Final Degree Thesis with me, for her quick responses and corrections.

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1.   <u>Introduction</u>

1.1.   <u>Objective, requirements and specifications</u>

The purpose of this project is to carry out an implementation of the processes in a telecommunications company and see the advantages of carrying out a process-oriented business management with improvements in productivity, efficiency and generating value for customers. To achieve this goal, the design and modeling of processes of at AFR-IX telecom have been done at the Processes and Systems department using the best reference frameworks adapted to the specific needs, taking the infrastructure of eTOM, ITIL and ISO27001 in the foreground.

The project main goals are:

- Analysis if the state of art of eTOM, ITIL and ISO27001.
- Define, document and implement business processes that will improve the performance in time, costs and quality.
- Participate in cross-sectional meetings and periodic analysis to detect opportunities for improved operations and business.
- Support in establishing key indicators to assess the quality of day-to-day operations.
- Manage the implementation of different business projects.
- Act as a transversal Process Analyst for the design, launch and consolidation of technological tools in the different business areas.
- Use the newest technologies to seek continuous improvement and maximum efficiency.

The project is the continuation of a previous project done in October, where the initial phases were completed. It has been performed in the framework of the department development project and the main project initial ideas have been provided by the supervisor.

Since the project started and until starting this new stage, some parts were started such as implementing the company's process model (templates, documentation, ...) and carrying out the narrative of the processes by the design of workflows. Also, the implementation of the software Odoo was finished and the training that the employees needed, so nowadays the project is in the support and customization phase.

The project requirements are:

- Company process model

- Process creation planning

- Ensuring compliance with the ISO27001 standard

1.2. Work Plan

During the time that I have been working at Afr-ix Telecom for mi TFG, any huge incidences have occurred, but some changes have been implemented and some things have been delayed. These has resulted in a modification of some of the work packages through the development of the thesis.

The final packages encompass all aspects that are relevant for the design and modelling of processes, such as modelling, support and incidence resolution. The only thing that has not been included is the optimization of these processes, since there has not been enough time.

1.2.1. Work Packages

Project: Process model	WP ref: (WP1)	
Major constituent: Signavio	Sheet 1 of 4	
Short description: This work package consists in implementing the company's process model based on the best market practices, using the best reference models adapted to the company's needs.	Planned start date: 3/05/2021 Planned end date: 30/06/2021	
	Start event: End event:	
Internal task T1: Review documents Internal task T2: Training Internal task T3: Meetings with the different departments Internal task T4: Process modelling using Signavio	Deliverables: TOBE Process model	Dates:

Project: Process modelling	WP ref: (WP2)	
Major constituent: BPMN	Sheet 2 of 4	
Short description: This work package consists in carrying out the narrative of the processes by the design of workflows, the raci matrix, the description of activities and the definition of process KPIs. While doing this BPMN will be necessary as a process diagramming tool.	Planned start date: 15/03/2021 Planned end date: 30/06/2021	
	Start event: End event:	
Internal task T1: Review documents	Deliverables:	Dates:

Internal task T2: Meetings with the different departments	Process Documents	

Project: ERP Level 1 Support	WP ref: (WP3)	
Major constituent: ERP	Sheet 3 of 4	
Short description: This work package consists in giving functional support of the ERP implemented, raising requirements and solving incidents.	Planned start date: 01/04/2021 Planned end date: 30/06/2021	
	Start event: End event:	
Internal task T1: Survey of requirements Internal task T2: Development of documentation for approval of changes Internal task T3: Incident resolution	Deliverables: User manuals	Dates:

Project: ISO27001	WP ref: (WP4)	
Major constituent: ISO27001	Sheet 4 of 4	
Short description: This work package consists in getting familiar with this normative so that it can be included in the process model (controls and risks).	Planned start date: 17/05/2021 Planned end date: 30/06/2021	
	Start event: End event:	
Internal task T1: Review documents Internal task T2: Training Internal task T3: Meetings with the different departments Internal task T4: Process modeling	Deliverables: TOBE Process model	Dates:

1.2.2. Gantt Diagram

1.3. <u>Structure of the document</u>

Following the work packages that have been explained, the information in this thesis document is structured as follows:

• Chapter 2: This chapter includes a review of the literature of the different standards and models in which this project is based.

• Chapter 3: This chapter includes the description of the different elements involved in the construction of the setup and the instruments utilized in order to take the different measurements. Also includes the different controls developed and applied.

• Chapter 4: This chapter includes some of the processes that have been modeled as well as an analysis of them.

• Chapter 5: This chapter includes a budget for the project.

• Chapter 6: This chapter includes the conclusions of the project.

2. State of the art of the technology used or applied in this thesis:

In order to acknowledge all the state of the art of the technology applied in this thesis, in this chapter the basics concepts of process modelling as well as the standards used to implement them will be explained.

2.1. State of the art of BPMN

2.1.1. Process definition

To be able to talk about Business Process Management (BPM), first it is necessary to understand what a process is.

A process is a structured sequence of activities that are applied to a database in order to achieve a specific objective and that, when related to the rest of the processes, form the basis of any company.

Knowing this, it is important to understand that the input of these processes is defined according to the available information and the needs that exist regarding it, while the output provides products or services that guarantee user satisfaction. The path that is carried out through one or more processes to get from one to another is called information flow.

Since these processes should meet the needs of the user in order to achieve the highest quality possible, they can be classified in three different categories based on their relevance to increase that quality: management, key and support processes.

Figure 2: Types of processes

Every company is based on a series of processes, even if these have not been identified, since almost all the activities that are carried out are part of a process.

Thanks to this identification, a process improvement can be made. It can be approached in various ways, for example based on key processes or results, but what is necessary is to define the objective, inputs, outputs, resources, procedures and specifications of each one.

2.1.2. Process implementation

Once the process identification has been completed, the next step is to implement those processes. Since the processes are not created but identified, the implementation could be compared to an improvement.

In order to achieve this enhancement two different approaches can be chosen. On one hand, it is important to improve one process independently by using techniques such as continuous process improvement, process simplification and process reengineering. On the other hand, the upturn can be done taking into account their relations which leads to the identification of critical processes and the map of processes.

2.1.3. Process documentation

There are two ways to document the processes: Process diagrams and Process sheets.

Process diagrams are a graphic representation of a process that uses a sequence of symbols in an understandable way to show its features and components and how it is related with the rest of the processes as well.

As the diagram represents a process, it must have a beginning and an end. During the course of the diagram, there are symbols which represents a task or activity in that process. These activities follow one another and between them decisions have to be made.

These diagrams are the perfect way to document a process since they describe it precisely allowing a global understanding of their functionality. Thanks to this method, with a standard language of easy understanding the process as a whole can be seen, which helps to detect the areas of improvement.
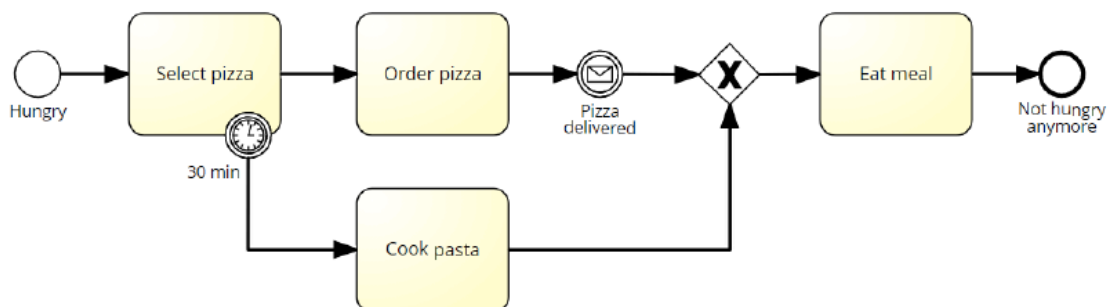
Figure 3: Diagram of a process

Just as the diagram is the best way to document a process, the process sheet is the simplest. A process sheet is a record that collects all the relevant information that define a process, as its title, version, number of pages, date of the last revision, purpose, owner and scope (start and end events).

2.1.4. Process mapping

As it has been mentioned before, a process mapping is useful to identify the interrelations existing between the processes.

A process mapping is a graphic scheme that represents the different processes that the organization uses and offers an overall view of the management system of the organization showing the interrelationships between the processes.

There needs to be a balance between how detailed a process mapping is and how difficult it is to understand the general structure.

To balance the level of detail that is shown, the process mapping can be done in first, second and third level. While the level increases also does the amount of detail and complexity. The design of a first level map will collect only the major processes of the Organization, a second level one will detail sub-processes and a third one will include the activities.
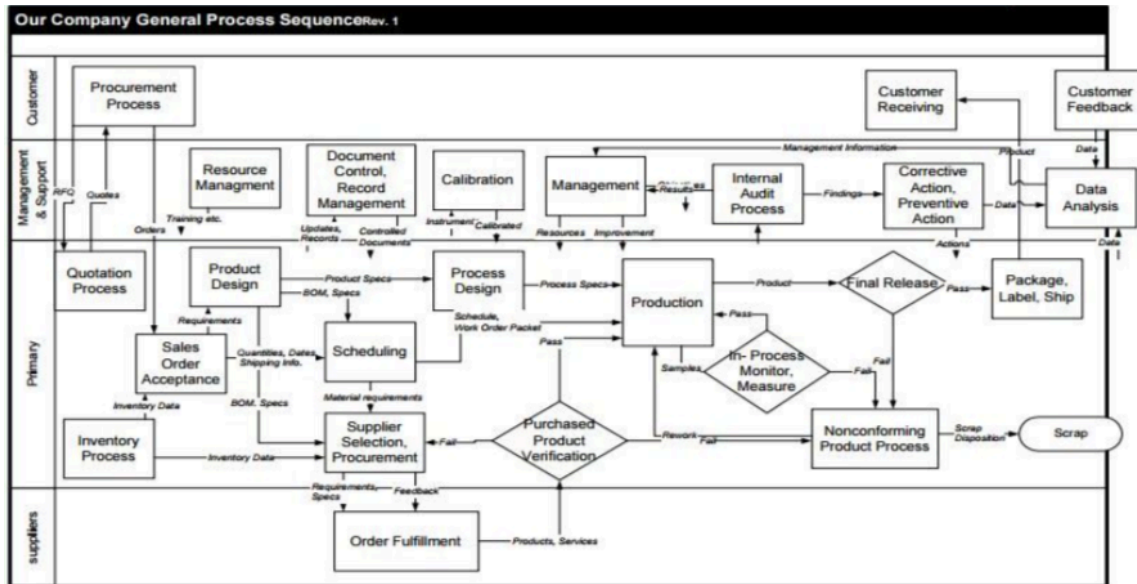
Figure 4: Process sequence

2.1.5. Business process management

Process Management is a management model that understands the organization as a set of global processes aimed at achieving a certain quality and the customer satisfaction. It is based on the modeling of systems as a set of processes interrelated which guarantee the coordination between all processes, improving the effectiveness and satisfaction.

In order to achieve these requirements, there needs to be a coherent structure of processes that represents the operation of the organization, a system of indicators that allows evaluating the effectiveness and efficiency and an appointment of process managers, who must oversee and improve the compliance with all the requirements and objectives of the assigned process.

Not only this has to be implemented, but also there needs to exist a continuous process of simplification and improvement. To reach this goal, all superfluous activities must be eliminated, the indicators will review the effectiveness and efficiency of the processes and the causes of problems are always attributable to the processes

The greatest usefulness of a business process modeling is to see how your organization works, to discover errors when designing as well as to understand the weak points of the company within the complex systems it manages. In this way, future predictions can be made with less uncertainty.

2.1.6. Standard BPMN 2.0

BPMN is a standard that is used to perform both business process analysis and modeling. It allows companies to view their internal business processes graphically thanks to a common notation for process communication. Its nomenclature encompasses concepts such as messages, conditionals, use of exceptions, states, parallel flows and events.
BPMN 2.0 is the latest specification to be developed by the OMG (Object Management Group).

In this standard there are three levels of analysis:

• Level 1: Descriptive BPMN, or basic process mapping.

Figure 5: Basic process mapping

• Level 2: Analytical BPMN, or detailed process mapping.
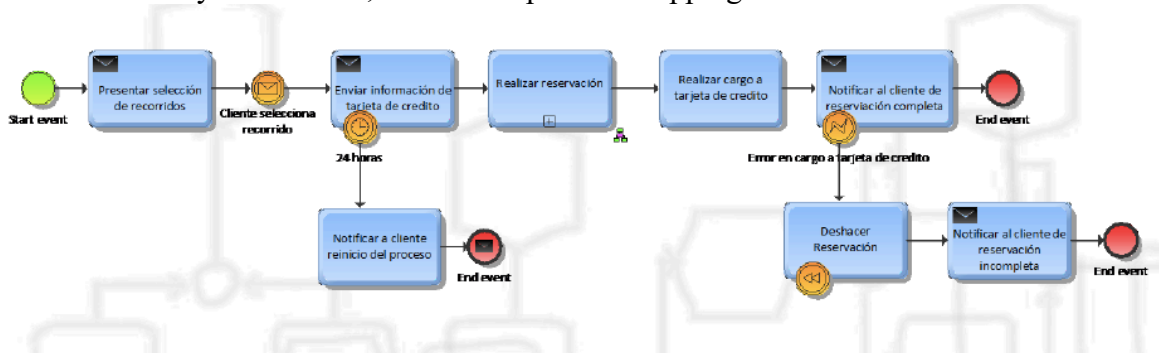
Figure 6: Detailed process mapping

• Level 3: BPMN executable, or deployment in a process engine.

2.2. State of the art of eTOM

2.2.1. Definition

eTOM (Enhanced Telecom Operations Map) is a business process framework that describes and analyzes different levels of enterprise processes according to their relevance and priority for the business. This framework is defined as generically as possible so that it remains independent.

The major process areas that form it are strategy, infrastructure, and product for planning and lifecycle management, operations for the core operational management and enterprise management for business support management.

2.2.2. Process mapping

As it has been explained before, the process mapping can be defined at different levels.

eTOM mapping at level 0 includes views of functionality as they span horizontally across the major process areas.
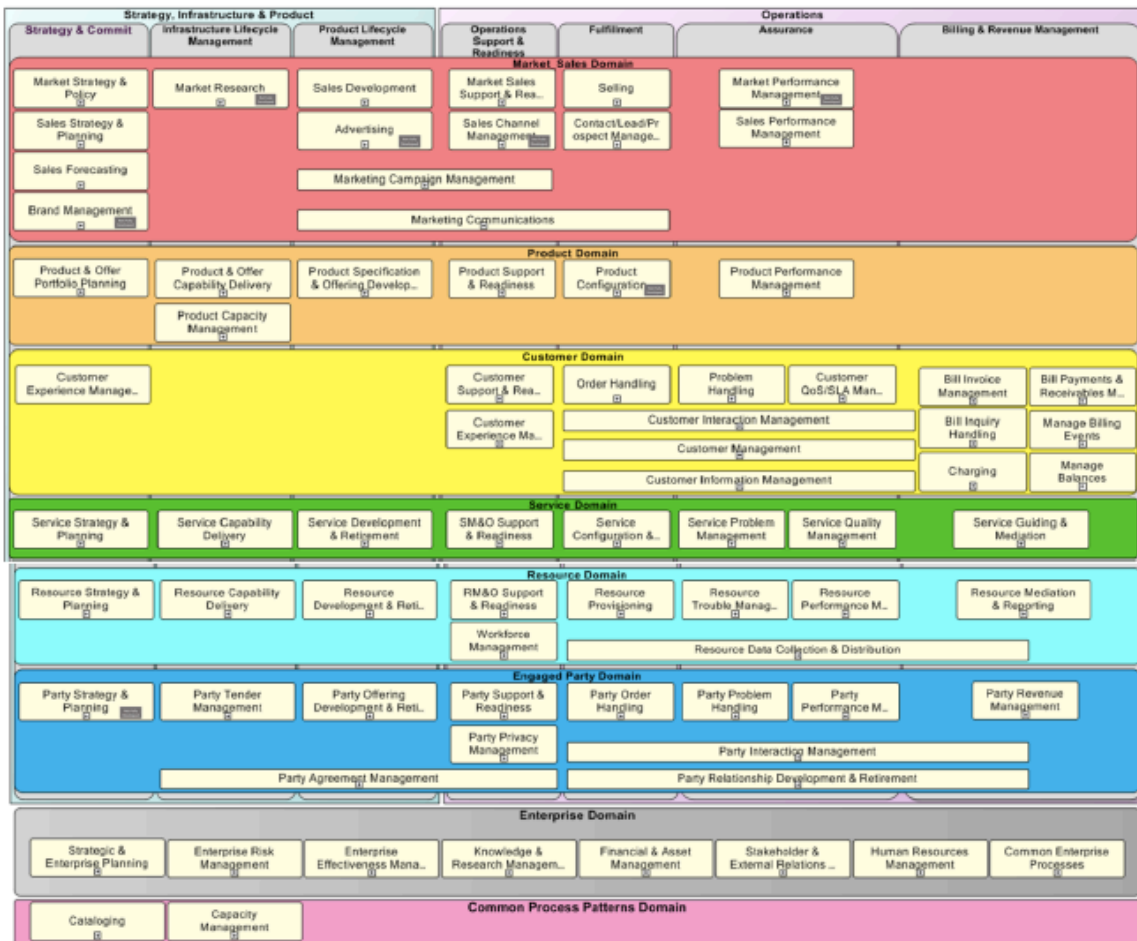
Figure 7: eTOM level 0

eTOM mapping at level 1 shows seven end-to-end vertical process groupings, divided between the strategy, infrastructure, and product and operations areas, required to support customers and manage the business.

1.1.1 Market Strategy & Policy

Figure 8: eTOM level 1

2.2.3. Benefits

Some of the benefits that eTOM has are that it provides a baseline standard structure that describes the business processes, through the whole company. Thanks to this end-to-end process flow it gives a basic understanding of IT applications. Also, this structure can be easily adapted and extended to a specific company, allowing to improve the quality, performance and cost of the existing processes.

2.3. **State of the art of ITIL**

2.3.1. Definition

ITIL (Information Technology Infrastructure Library) is a code of best practices for delivering IT services. It standardizes its selection, planning, delivery, and support to maximize efficiency and achieve a minimum level of quality that can be established, providing guidance on how businesses can use their IT services to support their goals and facilitate business growth so that the IT services are aligned to the needs of the business.

It describes the profile of service management organizations, taking it as the basis for a development that enlarges the model by defining processes that are not described in ITIL.

Its principles are to plan processes and define roles in order to optimize the resources when offering useful services and delivering them with the maximum value possible.

2.3.2. Structure

ITIL is structured into five core publications, that revolve around the service lifecycle: service strategy, design, transition, operation and continual improvement.

Figure 9: Service lifecycle

Service Strategy determines what services the IT organization should offer and what capabilities are needed to be developed in order to support business functions. It includes Service Desk, Incident, Problem, Configuration, Change Management and Broadcast Management.

Service Design includes the designing of new IT services and its change and improvement along with the existing ones. Service Transition implements those IT services, ensuring that changes to services and service management processes are carried out in an structured way.

Service Operation delivers IT services. It includes offering users adequate support, fulfilling customer requests, resolving service disappointments, fixing problems, and carrying out routine operational tasks so that it can be done efficiently.

Finally, Continual Service Improvement improves the quality of IT services iteratively in line with the concept of continual service improvement adopted in ISO.

2.3.3. Benefits

The benefits that ITIL provides can be either at short or long term, being the second ones the most relevant to a business.

Some of the benefits are that the processes implemented will be more specific to the business needs, which will help to understand the IT support. This provides greater flexibility and higher quality of service, leading to a higher customer satisfaction when providing a service by achieving the requirements. Also, the costs will decrease since it will require less effort to meet their necessities.

Figure 10: ITIL benefits

2.4. State of the art of ISO 27001

2.4.1. Definition

ISO 27001 is an international standard issued by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) which describes how managing information security in a company aims to ensure the confidentiality and integrity of that company's information and the systems and applications

that deal with it. The most recent revision of this standard was published in 2013 and now its full name is ISO / IEC 27001: 2013. This standard also allows a company to be certified.

The standard defines in a generic way, independently of the factors of the organization and the assets of the organization's processes, a methodology on how an Information Security Management System (ISMS) is planned, implemented, verified and controlled.

In order to achieve all of that it follows the guidelines for the risk management, starting from the realization of a risk analysis to know where is the problem and then planning and implementation for their response in order to mitigate them.

Figure 11: ISO 27001 framework

ISO 27001 is a system based on the continuous improvement cycle or PDCA cycle (Plan-Do-Check-Act).

Figure 12: PDCA cycle

- Plan: It is the initial design stage in which the identification of the risks is done.
- Do: It is the implementation and operation of the ISMS.
- Check: It is an evaluation of its effectiveness and efficiency.
- Act: It is a continuous improvement

It is important to have a certain knowledge, before starting the implementation of an ISMS, about the different documents and terms that form this normative as well as what is the scope and the context of the organization in order to have a better understanding about the needs and expectations. Also, there needs to be a management involvement with the system, through the establishment of policies, integrating the ISMS into the organization's processes, ensuring the necessary resources and assigning roles, responsibilities and authorities within it.

Figure 13: ISO 27001 phases

It is essential to detect, analyse and assess information security risks as well as planning response strategies for them. Once that is done, it is important to have guidelines for the monitoring, follow-up and control of its efficiency and effectiveness. Lastly, it is necessary to know the obligations that an organization will have when it finds a non-conformity and the importance of continuously improving the convenience, adequacy and effectiveness of the ISMS.

2.4.2. Implementation

When implementing an ISMS according to the ISO 27001 standard, we must take the risk assessment as the central concept, along with the appropriate methodology for it in the business.
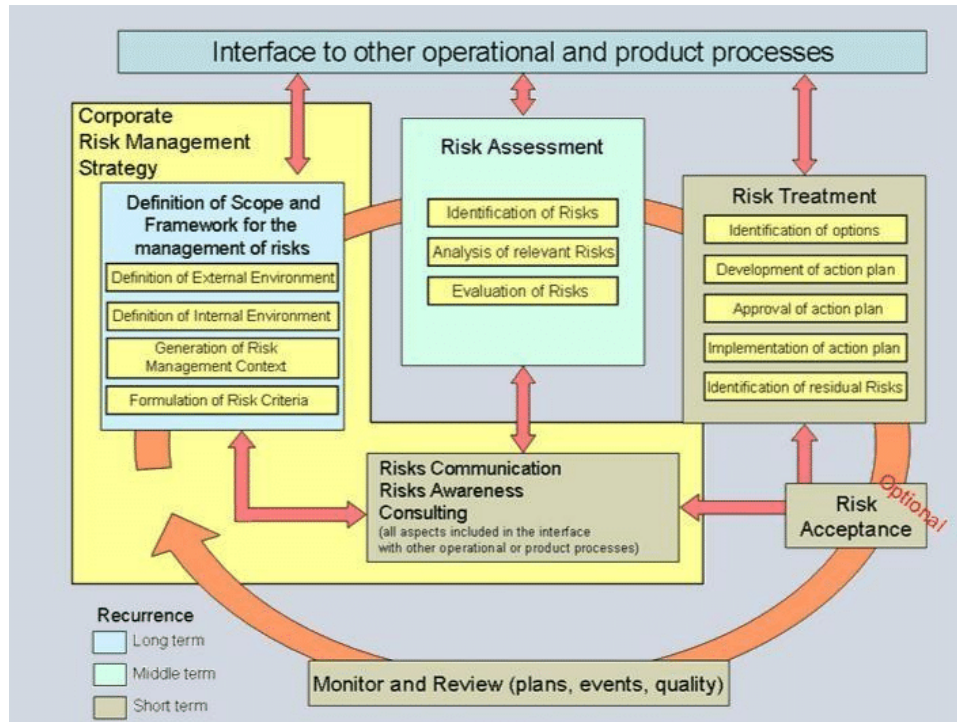
Figure 14: Risk management

First of all, there needs to be an identification of the information assets (understanding by asset all that has value for the organization.), vulnerabilities (weaknesses inherent to the asset that make it susceptible to attacks or damage.), threats (any event that may affect information assets), legal requirements and risks. The risk identification consists in defining, for each asset, the probability that threats or vulnerabilities may cause total or partial damage to the information asset.

Once the identification part is done, the next step is the risk calculation, which will help in prioritizing them. It is done based on the probability of occurrence of the risk and the impact it has on the organization. The risk can be either acceptable or residual. An acceptable risk will have reduced its possibility of occurrence and its consequences will be minimized. A residual risk is the one that remains even after having implemented the appropriate controls.

Finally, with all the previous information there needs to be a risk treatment plan which will try to either reduce, eliminate or transfer the risk. If the risk is critical to the point that it can endanger the very continuity of the organization, it must try to eliminate it. While that is the ideal, it is not always possible to achieve and the risks have to be accepted and monitored by implementing the necessary preventive or corrective measures in order to reduce its

possibility of occurrence or the impact. The last option consists in contracting some type of insurance that compensates the economic consequences of a loss or deterioration of the information.

2.4.3. Benefits

The benefits that Signavio provides are that it will improve the management of information security risks to organizations of all kinds and it will give customers and suppliers confidence that information security is taken seriously within the organization, being at the forefront in the application of the process technique to face information threats and security problems.

3. Methodology / project development:

3.1. Signavio

3.1.1. Definition

Signavio is a BPMN software. It is designed to facilitate the optimization of business process planning and management in a very intuitive way.

It is used to represent the process diagrams using different symbols that form a common language in order to ease their interpretation.

3.1.2. Notation

The standard notation that Signavio uses is formed by different symbols that can be classified in four types flow objects, connector objects, responsibilities and artifacts.

Flow objects are the basic units of the process.

- Task: It is an activity that is within a process, the work that a company does that cannot be broken down to a greater level of detail. A set of activities included within a process is a subprocess.
- Event: It is what happens while the business process is going on.
- Gateway: It is used to control the convergence or divergence of the flow sequence. They determine branches, combinations, mergers in the process.
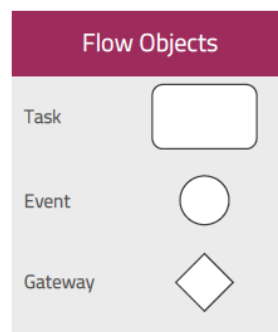
Figure 15: Flow objects

The connector objects link the flow objects.

- Sequence flow: It is an arrow that defines the order of execution of the activities.
- Message flow: It is a dashed line that indicates the flow of messages.
- Association: It is a dotted line that associates different artifacts with flow objects
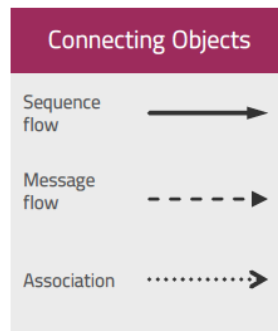
Figure 16: Connecting objects

Responsibilities organize the different activities by categories in order to show the different functional capacities.

- Lane: It represents a participant within a process, which contains the activities associated to their role.
- Pool: It represents the external actors with whom a process interacts.
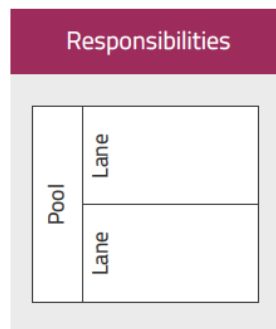
Figure 17: Responsabilities

Artifacts are graphic objects that provide additional information on the elements of a process.

- Data object: It provides the information that an activity needs.
- Group: It is used to group various activities
- Annotation: It is additional textual information.
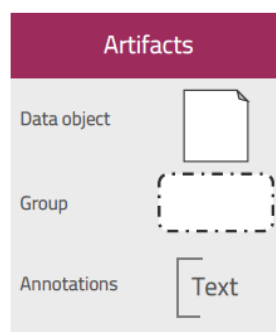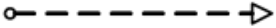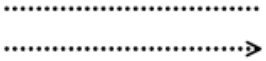
Figure 18: Artifacts

A larger description of each one of the basic symbols is included in the next figures.

Element	Description	Notation
Event	An Event is something that "happens" during the course of a Process (see page 238) or a Choreography (see page 339). These Events affect the flow of the model and usually have a cause (*trigger*) or an impact (*result*). Events are circles with open centers to allow internal markers to differentiate different *triggers* or *results*. There are three types of Events, based on when they affect the flow: Start, Intermediate, and End.	○
Activity	An Activity is a generic term for work that company performs (see page 151) in a Process. An Activity can be atomic or non-atomic (compound). The types of Activities that are a part of a Process Model are: Sub-Process and Task, which are rounded rectangles. Activities are used in both standard Processes and in Choreographies.	▢
Gateway	A Gateway is used to control the divergence and convergence of Sequence Flows in a Process (see page 145) and in a Choreography (see page 344). Thus, it will determine branching, forking, merging, and joining of paths. Internal markers will indicate the type of behavior control.	◇
Sequence Flow	A Sequence Flow is used to show the order that Activities will be performed in a Process (see page 97) and in a Choreography (see page 320).	⟶
Message Flow	A Message Flow is used to show the flow of Messages between two *Participants* that are prepared to send and receive them (see page 120). In BPMN, two separate Pools in a Collaboration Diagram will represent the two *Participants* (e.g., PartnerEntities and/or PartnerRoles).	o‑ ‑ ‑ ‑ ‑ ▷
Association	An Association is used to link information and Artifacts with BPMN graphical elements (see page 67). Text Annotations (see page 71) and other Artifacts (see page 66) can be Associated with the graphical elements. An arrowhead on the Association indicates a direction of flow (e.g., data), when appropriate.	·················· ················▷
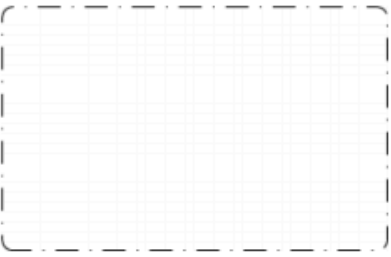
Pool	A Pool is the graphical representation of a *Participant* in a Collaboration (see page 112). It also acts as a "swimlane" and a graphical container for partitioning a set of Activities from other Pools, usually in the context of B2B situations. A Pool MAY have internal details, in the form of the Process that will be executed. Or a Pool MAY have no internal details, i.e., it can be a "black box."	
Lane	A Lane is a sub-partition within a Process, sometimes within a Pool, and will extend the entire length of the Process, either vertically or horizontally (see on page 305). Lanes are used to organize and categorize Activities.	
Data Object	Data Objects provide information about what Activities require to be performed and/or what they produce (see page 205), Data Objects can represent a singular object or a collection of objects. Data Input and Data Output provide the same information for Processes.	
Message	A Message is used to depict the contents of a communication between two *Participants* (as defined by a business PartnerRole or a business PartnerEntity—see on page 93).	
Group (a box around a group of objects within the same category)	A Group is a grouping of graphical elements that are within the same Category (see page 70). This type of grouping does not affect the Sequence Flows within the Group. The Category name appears on the diagram as the group label. Categories can be used for documentation or analysis purposes. Groups are one way in which Categories of objects can be visually displayed on the diagram.	
Text Annotation (attached with an Association)	Text Annotations are a mechanism for a modeler to provide additional text information for the reader of a BPMN Diagram (see page 71).	Descriptive Text Here

Figure 19: Basic Signavio symbols

By applying the basic BPMN structure with this notation a process diagram would look like the one in the next figure.

28
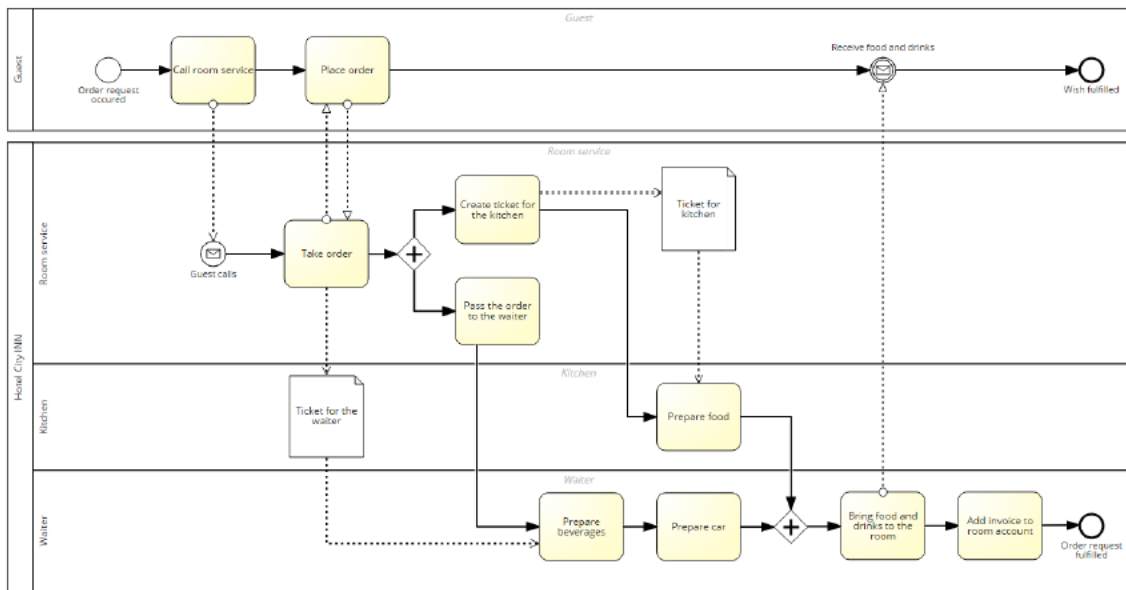
Figure 20: Signavio process diagram

3.1.3. Benefits

The benefits that Signavio provides are that it enables companies to easily automate workflows, optimize planning strategically by using the assets in an intelligent way and to provide transparency for the processes.

3.2. **Odoo**

3.2.1. Definition

Odoo is a free and open-source integrated business management system (ERP) that is capable of managing all areas of the company.

The ERP (Enterprise Resource Planning) are systems that centralize the data of the different departments of the company with the information from the different areas integrated. This allows a better management of business strategy and information analysis and a more effective management and optimization of its resources.

In Odoo, in order to achieve those requirements, there are multiple modules that are easily connected thanks to the document module. Also, the platform is multi-currency, multi-company and multi-accounting.

The basic modules that are commonly implemented are inventory, finances (accounting, expenses), RRHH (employees, timesheets, appraisal), CRM (Customer Relationship Management) and sales.
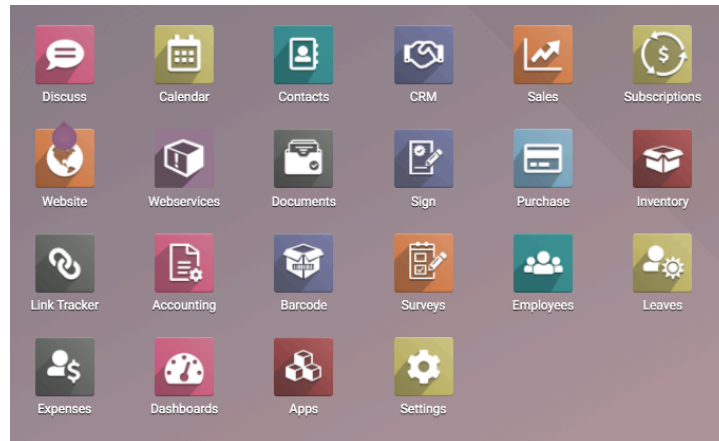
Figure 21: Odoo modules

3.2.2. Benefits

The benefits that Odoo provides are that it allows to efficiently manage the projects, products, clients and staff of a business while being flexible and adjusting to the needs since it allows to customize the user interface having the specific modules that are needed, adding or eliminating modules to adapt to the needs of the business and to configure them independently. Also, the software can be run via the web which is very convenient.

A preproduction Odoo can be implemented, so that the the different customizations do not affect the workflow while being tested.

3.3. <u>ServiceDesk</u>

3.3.1. Definition

Service Desk is an IT service management software that could be seen as the sole point of contact for customers and it provides a high-quality support service for both infrastructure and customers. It is considered the first level of technical support.

It registers and administrates all the incidents, problems and requests that affect the service delivered to businesses and their customers, making an initial assessment and referring them to a person who can attend them. It also takes care of closing and verification. Thanks to that it keeps clients informed about situations that may affect your ability to perform their daily activities and their requirements.

It manages its tasks using a ticket request system that are delivered by users when a problem arises. These can be categorized in different ways, depending on what is taken into account the tool or the department. By using those tickets, the support is given to the users as they require, optimizing the resources. Customers can view the current status of their ticket at any time through a self-service portal.

3.3.2. Benefits

The benefits that Service Desk provides are that it reduces the cost of ownership of supporting IT and support infrastructure thanks to the efficient allocation of resources and

the centralization of processes, which improves the management of information and communication. It also ensures customer satisfaction and long-term retention due to the fact that it is more customer oriented and gives better customer service with more quality and speed in the resolution of requests, which results in a higher degree of satisfaction.

4. Results

4.1. Process modelling

This process and sub-process modelling have been done by applying all the standards and normatives that have been explained among this thesis, taking into account the needs and priorities of Afr-ix telecom.
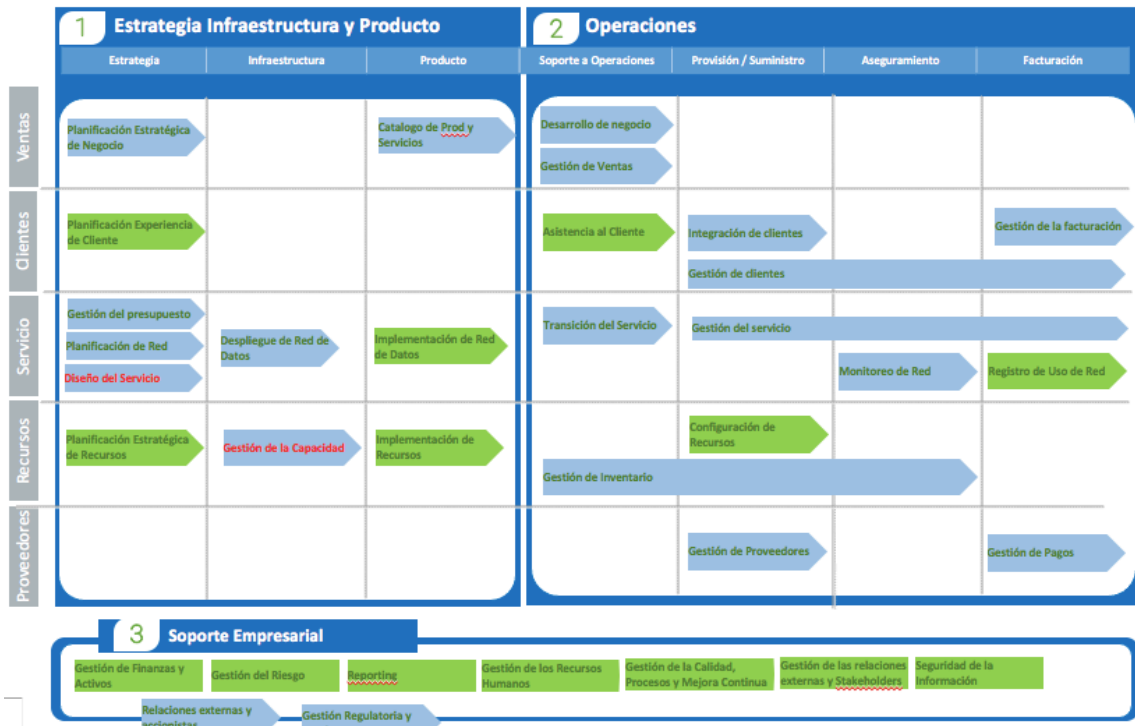
Figure 22: Process modelling
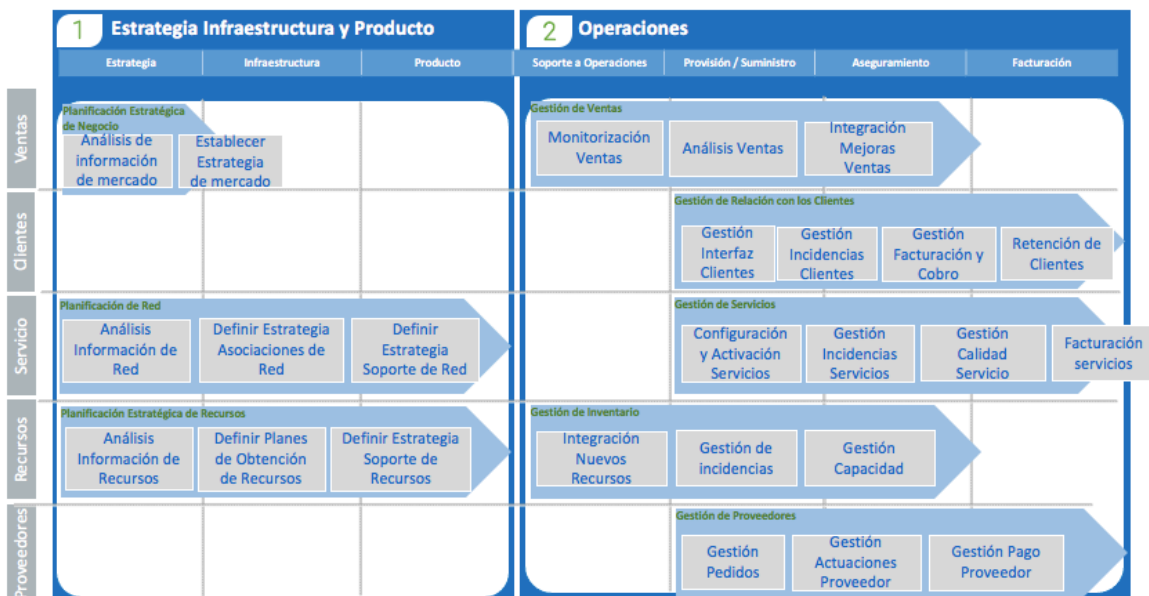
Figure 23: Sub-process modelling

4.2. Process prioritization

All the existing processes following the eTOM standard have been prioritized (with a priority equal to zero in case they do not apply), although the three more relevant categories for Afr-ix nowadays are Marketing and Sales, Service and Engaged Party.

- Marketing and Sales

Etom ID	ID Ma	Macroproceso	ID PR	Proceso	Id Sub	Subproceso	Prioridad
1	Marketing / S	2 Market Strategy & Policy	3	Gather & Analyze Market Information	4	Garther Market Information	5
						Analize Market Information	
				Establish Market Stategy		Establish Market Participation	
						Establish Market Strategy Objetives	
						Support Market Strategy	
						Identify Entresprise areas to meet market strategy objetives	
				Establish Market Segments		Identify Market Segments	
						Manage Market Segments outcome	
						Reporting - Specific Market Segments	
				Link Market Segments & Products		Link consumption profiles & available products families	
						identify potencial new product families for market segments	
						Analyze Market Segment purchase and issues	
				Gain Commitment to Marketing Strategy		Identify stakeholders to Market Strategy	
						Gain Market Strategy Stakeholder approval	
						Gain Entreprise Commitment to Market Strategy	
		Sales Strategy & Planning		Develop Sales Relationship			3
				Establish Sales Budget			
				Establish Sales Goals and Measures			
				Develop Sales Channel Strategy			
				Establish Revenue Converage Plan			
		Sales Forecasting		Set Sales Forecat Goal			3
				Gather Forecast Data		Gather Industry Forescat Data	
						Gather Environmental Forescat Data	
				Develop Sales Forecast		Choose Forecast Model	
						Analyse Forecast Data	
						Prepare Sales Forecast	
						Approve Sales Forecast	
				Distribute Sales Forecast			
				Evaluate Sales Forecast Outcomes			
		Brand Management		Child process(es) to be dertermined			1
		Market Research		Child process(es) to be dertermined			3
		Sales Development		Monitor Sales & Channel Best Practice		Develop Sales & Channel Requeriments	1
						Monitor Sales & Channel Practices	
				Develop Sales & Channel Proposals		Create Sales Proposals	
						Gain Sales Proposals Approval	
				Develop New Sales Channels & Processes		Develop External Relationships	
						Manage Process & Channel Coordination	
						Define Processes & Channels	
		Advertising		Child process(es) to be dertermined			0
		Marketing Campaign Managment		Plan Marketing Campaign			4
				Enseure Marketing Compaign Capability			
				Develop Marketing Campaign		Create Marketing Campaign	
						Define Marketing Campaign Criteria	
						Define Marketing Campaign Proposition	
						Design Marketing Campaign Workflow	
						Obtain Marketing Campaign Agreement	
				Launch Marketing Campaign		Manage Marketing Campaign Channel Capability	
						Manage Marketing Campaign Channel Resources	
						Complete Marketing Campaign Launch	
				Monitor Marketing Campaign Effectiveness		Develop Marketing Campaign Metrics	
						Gather Marketing Campaign Metrics	
						Analyze Marketing Campaign Metrics	
						Suggest Marketing Campaign Change	
				Modify Marketing Campaign			
				End Marketing Campaign			
				Undetake Marketing Campaigns Trend Analysis			
		Marketing Communications		Define Marketing Communications Strategy			2
				Ensure Marketing Communication Capability			
				Develop Marketing Communication		Develop Marketing Communication Message	
						Select Marketing Communication Delivery Channels	
						Produce Marketing Communication Collateral	
						Customize Marketing Communication Collateral	
				Deliver Marketing Communication Collateral		Manage Marketing Communication Channel Capability	
						Manage Marketing Communication Channel Resources	
						Issue Marketing Communication	
				Monitor Marketing Communication Effectiveness		Develop Marketing Communication Metrics	
						Gather Marketing Communication Metrics	
						Analyze Marketing Communication Metrics	
						Suggest Marketing Communication Change	
				Modify Marketing Communication			
				Archive Marketing Communication			
				Undertake Marketing Communications Trend Analysis			
		Market Sales Support & Readiness		Support Selling		Ensure Selling Capability	1
						Manage Sales Channels	
						Manage Sales Leads	
						Undertake Selling Trend Analysis	
				Manage Sales Inventory		Identify Relevant Sales Inventory Information	
						Ensure Sales Inventory Data Quality	
						Maintain Sales Inventory facilities	
						Track Sales Inventory Usage	
						Manage Sales Inventory Capture	
						Identify Sales Inventory Shortcomings	
						Control Sales Inventory Access	
		Sales Channel Management		Child process(es) to be dertermined			0

			Sales channel management	*...mic process(es) to be determined*		
			Selling	Quality Opportunity	Define Alternative/Customized Solutions	1
					Assess Potential Development & Risk	
					Assess Strategic Impacts	
				Manage Sales Accounts	Contact Customer (on regular basis)	
					Develop Contacts & Leads	
					Update Sales Repository	
				Negotiate Sales / Contract	Negotiate Standard Terms & Conditions	
					Develop & Negotiate Non-standard Terms & Conditions	
					Obtain Customer Agreement	
					Create Customer Order	
				Cross / UP Selling	Analyze Customer Trends	
					Recommend Appropriate Offerings	
				Acquire Customer Data	Determine Required Customer Data	
					Capture & Record Customer Data	
				Develop Sales Proposal	Ascertain Customer Requirements	
					Determine Support for Customer Requirements	
					Develop Proposal against Customer Requirements	
			Contact/Lead/Prospect Management	Manage Contract	Identify Contact	1
					Develop Contact	
					Maintain Contact Information	
				Track Lead	Track Marketing Lead	
					Evaluate Marketing Lead	
				Manage Prospect	Analyze Prospect Needs	
					Identify Potential Solutions	
					Assign Prospect to Sales Channel	
					Track & Report Prospect	
			Market Performance Management	Child process(es) to be determined		0
			Sales Performance Management	Set Sales Performance Goals		5
				Track/ Monitor Sales Performance		
				Analyse Sales Performance		
				Report On Sales Performance		
				Improve Sales Performance		

- ## Product

Inventario de Procesos — AFR-IX telecom

Etom ID		ID Ma	Macroproceso	ID PR	Proceso	Id Sub	Subproceso	Prioridad
2	Product	2	Product & Offer Portfolio Planning	3	Gather & Analyze Product Information	4	Gather Product Information	4
							Analyze Product Information	
					Establish Product Portfolio Strategy		Define Overall Product Portfolios Structure	
							Implement Product Portfolio Management Functions	
					Produce Product Portfolio Business Plans		Co-ordinate Product Business Plans	
							Develop Revenue/Cost Projections	
							Develop Product Portfolio Forecasts	
							Develop Product Performance Requirements	
							Negotiate Product Business Plan Resources	
							Develop Product Operational Requirements	
							Develop Outline Market Strategy	
							Gain Business Plan Commitment and Approval	
							Develop Product Pricing Strategy	
							Communicate Business Plans	
					Gain Commitment to Product Business Plans		Identify Stakeholders to Product Business plans	
							Gain Product Business Plans Stakeholders Approval	
							Gain Enterprise Commitment to Product Business plans	
			Product & Offer Capability Delivery		Define Product Capability Requirements		Capture Product Infrastructure Requirements	1
							Agree Product Infrastructure Requirements	
							Report Product Infrastructure Requirements	
					Manage Handover to Product Operations		Co-ordinate Product Operational Handover	
							Validate Product Infrastructure Design	
							Ensure Product Handover Support	
					Capture Product Capability Shortfalls		Capture Product Capacity Shortfalls	
							Capture Product Performance Shortfalls	
							Capture Product Operational Support Shortfalls	
					Approve Product Business Case		Develop Product Business Case	
							Gain Product Business Case Approval	
					Manage Product Capability Delivery Methodology		Define Product Capability Delivery Methodology	
							Maintain Product Capability Delivery Repository	
					Deliver Product Capability		Co-ordinate Product Capability Delivery	
							Track Product Capability Business Case Costs	
							Ensure Product Capability Benefits & Operational Costs	
			Product Capacity Management		Develop Product Capacity			5
					Develop Product Capacity Demand			
					Develop Product Capacity Demand			
			Product Specification & Offering Development & Retirement		Product Specification Development & Retirement		Gather & Analyze New Product Specification Ideas	4
							Develop New Product Specification Business Proposal	
							Develop Detailed Product Specification	
							Manage Product Specification Development	
							Remove Product Specification	
					Product Offering Development & Retirement		Product Offering Lifecycle Management	

		Macroproceso		Proceso		Subproceso	Prioridad
						Product Offering Pricing	
						Product Offering Cataloging	
						Product Offering Agreement Management	
						Product Offering Prototyping	
						Product Offering Promotion Development	
		Product Support & Readiness		Support Customer QoS/SLA		Ensure Customer QoS/SLA Capability	4
				Manage Product Offering Inventory		Identify Relevant Product Offering Inventory Information	
						Ensure Product Offering Inventory Data Quality	
						Maintain Product Offering Inventory facilities	
						Track Product Offering Inventory Usage	
						Manage Product Offering Inventory Capture	
						Identify Product Offering Inventory Shortcomings	
						Control Product Offering Inventory Access	
		Product Configuration Management					0
		Product Performance Management		Log Product Offering Analysis Results			2
				Monitor Product Offerings			
				Agree Service Outages			
				Monitoring Product Offering Performance Analyses			
				Track Customer QoS/SLA Management Process Capability			
				Aggregate QoS Performance Analysis			
				Manage Customer QoS/SLA Management Notification			
				Assist Trend Analysis Development			
				Undertake QoS/SLA Performance Trend Analysis			

- Customer

AFR-IX telecom — Inventario de Procesos

Etom ID		ID Ma	Macroproceso	ID PR	Proceso	Id Sub	Subproceso	Prioridad
3	Customer	2	Customer Experience Management Strategy and Plann	3		4		0
			Customer Support & Readiness		Support Retention & Loyalty		Ensure Retention & Loyalty Capability	2
							Undertake Retention & Loyalty Trend Analysis	
					Support Customer Interface Management		Ensure Customer Interface Capability	
							Undertake Customer Contacts Trend Analysis	
					Support Bill Payments & Receivables Management		Determine Bill Payments & Receivables Management Capability	
							Analyze Customer Payment Trend	
							Administer Customer Payment Processes	
					Support Order Handling		Roll-out Order Handling Infrastructure	
							Ensure Order Handling Capability	
							Detect Order Handling infrastructure Shortfalls	
							Forecast Order Handling Requirements	
							Rebalance Order Handling Infrastructure Utilization	
							Capacity Plan Order Handling Infrastructure	
							Remove Order Handling Infrastructure	
							Manage Order Handling Organizational Changes	
							Report Order Handling Infrastructure Capacity	
							Support Order Handling Infrastructure Deployment	
							Track Third-Party Order Handling Infrastructure Deployment	
							Approve Order Handling Procedures	
							Report Order Handling Infrastructure Deployment Process Capability	
							Accept Order Handling Infrastructure	
							Manage Order Handling Notification	
							Address Order Handling infrastructure Issues	
							Undertake Order Handling Trend Analysis	
					Support Bill Inquiry Handling		Determine Bill Inquiry Handling Capability	
							Manage Billing Policy	
							Analyze Bill Inquiry Trend	
					Support Problem Handling		Ensure Product Offering Operation	
							Request Provisioning Intervention	
							Undertake Product Offering Trend Analysis	
							Report Product Offering Trend Analysis	
							Request Product Offering Data Collection	
							Track Problem Handling Process Capability	
							Request Product Offering Performance Testing	
							Manage Problem Handling Notification	
							Manage Product Offering Maintenance Programs	
							Undertake Problem Handling Trend Analysis	
					Support Charging			

			Level 3	Level 4	Score
			Manage Customer Inventory	Identify Relevant Customer Inventory Information	
				Maintain Customer Inventory facilities	
				Manage Customer Inventory Capture	
				Control Customer Inventory Access	
				Ensure Customer Inventory Data Quality	
				Track Customer Inventory Usage	
				Identify Customer Inventory Shortcomings	
			Support Manage Billing Events		
			Support Bill Invoice Management	Determine Bill Invoice Management Capability	
				Establish & Maintain Bill Invoice Format	
				Maintain Bill Customers List	
				Define Billing Cycle	
				Analyze Billing Trend	
				Design & Develop Invoicing Process	
			Support Manage Balance		
		Customer Experience Management	Customer Experience Maturity Assessment		0
			Mapping and Analysis of Experience Lifecycles	Select Journey	
				Record Journey	
				Analyze Journey	
				Measure Customer Experience Improvements	
		Order Handling	Determine Customer Order Feasibility	Perform Impact Analysis	1
			Issue Customer Orders	Assess Customer Order	
				Issue Customer Order	
			Authorize Credit		
			Report Customer Order Handling	Monitor Customer Order Status	
				Manage Customer Order Status Notification	
				Report Customer Order Status	
			Track & Manage Customer Order Handling	Manage Customer Order	
				Track Customer Order	
				Update Order Repository	
			Close Customer Order		
			Complete Customer Order		
		Customer Interaction Management	Notify Customer		2
			Create Customer Interaction		
			Track and Manage Customer Interaction		
			Update Customer Interaction		
			Report Customer interaction		
			Close Customer Interaction		
			Authenticate User		
			Log Customer Interaction		
			Customer Interface Management	Manage Request (Including Self Service)	
				Analyze & Report on Customer	
				Mediate & Orchestrate Customer Interactions	
		Customer Management	Enable Retention & Loyalty	Build Customer Insight	2
				Analyze & Manage Customer Risk	
				Personalize Customer Profile for Retention & Loyalty	
				Validate Customer Satisfaction	
			Establish Customer Relationship	Verify Customer	
				Issue Unique Customer ID	
				Establish New Customer Identity	
				Clean-up & Archive Customer Identifying Information	
				Gather Authentication Information	
				De-duplicate Customer Identity	
			Re-establish Customer Relationship		
			Terminate Customer Relationship		
		Customer Information Management	Create Customer Record		1
			Update Customer Data		
			Notify Customer Data Change		
			Archive Customer Data		
			Build a unified customer view		
		Problem Handling	Create Customer Problem Report		2
			Isolate Customer Problem		
			Report Customer Problem		
			Track & Manage Customer Problem		
			Close Customer Problem Report		
			Correct & Recover Customer Problem		

	Customer QoS/SLA Management	Assess Customer QoS/SLA Performance	Collect QoS Information		1
			Convert QoS Information		
			Check QoS Thresholds Met		
			Maintain Overview of Product Offering Quality		
			Prepare/Follow-up for Performance Reviews		
			Carry Out Performance Reviews		
		Track & Manage Customer QoS Performance Resolution	Update Customer QoS Report with Analysis Results		
			Cancel Customer QoS Report		
			Co-ordinate Customer QoS Analysis, Restoration & Repair		
			Escalate/End Customer QoS Report		
			Engage External Product Suppliers		
			Modify Customer QoS Report Information		
			Clear Customer QoS Report Status		
			Modify Customer QoS Report Status		
		Manage QoS/SLA Violation	Analyze QoS Violation		
			Take QoS Violation Action		
			Follow-up QoS Violation Action		
			Inform Customer on QoS Impacts		
		Report Customer QoS Performance	Monitor Customer QoS Report Status		
			Notify Changes on Customer QoS Report Status		
			Distribute Customer QoS/SLA Management Reports & Summaries		
		Close Customer QoS Performance Degradation Report			
		Create Customer QoS Performance Degradation Report	Create Customer QoS Report		
			Modify Customer QoS Report		
			Request Cancellation of Customer QoS Report		
	Bill Invoice Management	Apply Pricing, Discounting, Adjustments & Rebates	Obtain Billing Events		1
			Apply Pricing, Discounting, Adjustments & Rebates to Customer Account		
			Apply Agreed Customer Bill Adjustment		
		Create Customer Bill Invoice	Render & Format Invoice		
			Deliver Electronic Invoice		
			Verify Invoice Quality		
			Manage Customer Invoice Archive		
		Produce & Distribute Bill	Co-ordinate Billing Insertion		
			Establish & Manage Bill Production Cycle		
			Deliver Invoice Information		
			Administer Commercial Arrangement for Production and Distribution Capability		
			Manage Paper and Envelope Availability		
			Manage Production Run to Create Bill		
			Manage Physical Production & Distribution Quality		
	Bill Inquiry Handling	Create Customer Bill Inquiry Report	Generate Customer Bill Inquiry		1
			Convert Customer Bill Inquiry		
			Request Additional Bill Inquiry Information		
		Assess Customer Bill Inquiry Report	Verify Customer Bill Inquiry		
			Assess and Investigate Customer Bill Inquiry		
			Identify Customer Bill Inquiry Root Cause		
			Complete Customer Bill Inquiry Assessment		
		Authorize Customer Bill Invoice Adjustment	Determine Automated Bill Adjustment		
			Analyze Detailed Bill Inquiry		
			Record Customer Bill Invoice Adjustment		
		Track & Manage Customer Bill Inquiry Resolution	Schedule Customer Bill Inquiry Analysis and Adjustment Activities		
			Assign Customer Bill Inquiry Analysis and Adjustment Activities		
			Modify Customer Bill Inquiry		
			Coordinate Customer Bill Inquiry Analysis and Adjustment Activities		
			Cancel Customer Bill Inquiry		
			Monitor Customer Bill Inquiry Jeopardy Status		
			Initiate S/P Customer Bill Inquiry Resolution Request		
		Report Customer Bill Inquiry	Monitor Customer Bill Inquiries		
			Provide Customer Bill Inquiry Change Notification		
			Provide Management Reports		
		Close Customer Bill Inquiry Report			
	Charging	Perform Rating			1
		Apply Rate Level Discounts			
		Aggregate Items For Charging			
		Manage Customer Charging Hierarchy			
		Provide Advice of Charge/Rate			
	Bill Payments & Receivables Management	Manage Customer Billing			1
		Manage Customer Payments	Manage Customer Payment Plan		
			Collect Customer Payment		
			Reconcile Customer Payment		
			Manage Back-End Bank Account		
			Administer Commercial Arrangement for Third Party Supplier		
		Manage Customer Debt Collection	Initiate Customer Debt Recovery Activities		
			Identify Overdue Invoice		
			Manage Aged Customer Debt Portfolio		
			Administer Overdue Invoice Follow-Up		
			Establish & Manage Customer Debt Profiles		
			Manage Overdue Invoice Payment		
	Manage Billing Events	Enrich Billing Events	Add Billing Event Data		1
			Assign Billing Event Price		
		Guide Billing Events	Ensure Billing Event Usage		
			Distribute Billing Event		
		Mediate Billing Events	Edit Billing Event		
			Reformat Billing Event		
		Report Billing Event Records	Generate Billing Event Report		
			Investigate Billing Event Related Problem		
			Support Billing Event Related Process		
	Manage Balances	Manage Balance Containers			1
		Manage Balance Policies			
		Manage Balance Operations			
		Authorize Transaction Based on Balance			

- Service

AFR-IX telecom

Inventario de Procesos

Etom ID		ID Ma	Macroproceso	ID PR	Proceso	Id Sub	Subproceso	Prioridad
4	Service	2	Service Strategy & Planning	3	Gather & Analyze Service Information	4	Gather Service Information	3
							Analyze new service directions/enhance existing service	
							Analyze to develop new service requirements	
							Analyze service growth	
						Produce Service Business Plans	Develop & Deliver annual/multi year service business plans	
							Forecast service demand & capture new opportunities	
							Asses impact of service business plan	
							Identify timetables for new service capability introduction	
							Identify logistics for new service capability introduction	
						Manage Service Research	Manage service research investigations	
							Manage administration of service research	
							Define service research assessment methodologies	
						Develop Service Partnership Requirements	Identify the requirements for service aspects	
							Recommend Service Partnership	
							Determine extent of service aspect sourcing	
						Establish Service Strategy & Goals	Establish service strategy	
							Formulate Strategic Position	
							Develop Service Strategy	
							Produce Service Strategic Plan	
							Establish Service goals	
							Determine Actionable Patterns	
							Determine Service Strategy Perspective	
						Gain Enterprise Commitment to Service Strategies	Identify Stakeholders to service strategy and service plans	
							Gain service strategy and service plans Stakeholders approval	
							Gain Enterprise Commitment to service strategy and service plans	
						Define Service Support Strategies	Define service support Principles	
							Define service support Policies	
							Define Service Support performance standards	
			Service Capability Delivery		Map & Analyze Service Requirements		Capture Service Demand & Performance Requirements	3
							Agree Service Infrastructure Requirements	
							Report Service Infrastructure Requirements	
						Capture Service Capability Shortfalls	Capture Service Capacity Shortfalls	
							Capture Service Performance Shortfalls	
							Capture Service Operational Support Shortfalls	
						Gain Service Capability Investment Approval	Develop Service Capability Investment Proposals	
							Approve Service Capability Investment	
						Design Service Capabilities	Define Service Capability Requirements	
							Specify Service Capability Infrastructure	
							Select Service Capability At Parties	
						Enable Service Support & Operations	Design Service Operational Support Process Improvements	
							Identify Service Support Groups, Skills & Training	
							Identify Service Support Requirements	
						Manage Service Capability Delivery	Co-ordinate Service Capability Delivery	
							Track and Report Service Capability Delivery	
							Ensure Service Capability Quality	
							Establish Service Capability Sourcing	
							Ensure Service Capability Costs	
							Develop Service Capability Timetables	
						Manage Handover to Service Operations	Co-ordinate Service Operational Handover	
							Validate Service Infrastructure Design	
							Ensure Service Handover Support	
			Service Development & Retirement		Gather & Analyze New Service Ideas		Gather Service Information	3
							Analyze Service Classes	
							Develop Service Classes	
						Manage Service Development	Identify Required Processes & Procedures for Services	
							Develop Required Processes & Procedures for Services	
							Develop Service & Operational Agreements for Services	
							Gain Service & Operational Agreements Approval for Services	
							Produce Supporting Documentation & Training Packages for Services	
						Assess Performance of Existing Services		
						Manage Service Deployment	Manage Service Process & Procedure Implementation	
							Manage Service Operational Staff Training	
							Develop Service Party Operational Support	
							Manage Service Acceptance Testing	
						Develop New Service Business Proposal	Develop Service Business Proposal	
							Gain Service Business Proposal Approval	
						Manage Service Exit		
						Develop Detailed Service Specifications	Develop Detailed Service Technical Specifications	
							Develop Detailed Service Support Specifications	
							Develop Detailed Service Operational Specifications	
							Develop Detailed Service Customer Manuals	
			SM&O Support & Readiness		Manage Service Inventory		Manage Service Inventory Database and Processes	4
							Perform Service Inventory Audit Tests	
							Track and Monitor Service Inventory Capabilities	
							Identify Service Inventory Issues and Provide Reports and Warnings	
						Enable Service Configuration & Activation	Plan & Forecast Service Infrastructure Requirements and Manage Capacity Planning	
							Monitor, Report and Release Mgmt. of Service Infrastructure and Capacity Utilization	
							Establish, Manage, and Develop Service Infrastructure Organization, Tools and Processes	
							Optimize Existing Service Infrastructure Utilization	
							Develop and Implement Service Infrastructure Capacity and Operational Rules and Procedures	
							Perform Service Infrastructure Acceptance Test and Address & Monitor the Change	
							Update Service Inventory Record	
						Support Service Problem Management	Manage Service Problem & Performance Data Collection	
							Manage Service Infrastructure, Provisioning and Preventive Maintenance Schedules	
							Report Service Problem Trends	
							Track, Monitor and Manage Service Problem Processes	
							Provide Support for Service Problem Processes	
						Enable Service Quality Management	Manage Service Performance Data Collection	
							Establish and Maintain Service Performance Threshold Standards	
							Assess and Report Service Quality Management Processes	
							Monitor and Analyze Service Performance Reports, and Identify Issues	
							Correlate the Service Performance Problem Reports & Manage Inventory Repository	
						Support Service & Specific Instance Rating		

The first table (Service section, columns: Macroproceso, Proceso, Subproceso, Prioridad):

Macroproceso	Proceso	Subproceso	Prioridad
	Support Service & Specific Instance Rating		
Service Configuration & Activation	Design Solution	Develop Overall Service Design	2
		Develop Service Implementation Plan	
		Develop Detailed Service Design	
	Issue Service Orders	Assess Service Request	
		Create Service Orders	
		Mark Service Order for Special Handling	
	Allocate Specific Service Parameters to Services	Determine Service Parameter Availability	
		Reserve Service Parameters	
		Release Service Parameter	
		Allocate Service Parameters	
	Report Service Provisioning	Monitor Service Order Status	
		Distribute Service Order Notification	
		Distribute Service Provisioning Reports	
	Track & Manage Service Provisioning	Assign Service Provisioning Activity	
		Track Service Provisioning Activity	
		Manage Service Provisioning Activity	
	Close Service Order		
	Implement, Configure & Activate Service	Configure Service	
		Implement Service	
		Activate Service	
	Recover Service	Develop Service Recovery Plan	
		Provide Service Recovery Proposal Notification	
		Request Service Recovery Authorization	
		Commence Service Recovery	
		Complete Service Recovery	
	Test Service End-to-End	Test Service	
		Develop Service Test Plans	
		Capture Service Test Results	
Service Problem Management	Create Service Trouble Report		2
	Report Service Problem		
	Diagnose Service Problem		
	Close Service Trouble Report		
	Correct & Resolve Service Problem		
	Survey & Analyze Service Problem		
	Track & Manage Service Problem		
Service Quality Management	Monitor Service Quality	Manage Service Performance Quality Data	3
		Record Service Performance Quality Data	
		Correlate Service Performance Event Notifications	
	Create Service Performance Degradation Report	Generate Service Performance Degradation Problem	
		Convert Report To Service Performance Degradation Report Format	
	Analyze Service Quality	Perform Specific Service Performance Diagnostics	
		Manage Service Performance Data Collection Schedules	
	Track & Manage Service Quality Performance Resolution	Coordinate Service Quality	
		Clear Service Performance Degradation Report Status	
		Request Service Performance Degradation Report Creation and Update	
		Update First in Service Testing Results	
		Cancel Service Performance Degradation Report	
		Engage External Service Suppliers	
		Escalate/End Service Performance Degradation Report	
	Improve Service Quality	Reassign / Reconfigure Service or Service Parameters	
		Manage Service Improvement Notification and Authorization	
		Develop Service Improvement Plans	
	Close Service Performance Degradation Report		
	Report Service Quality Performance	Monitor Service Performance Degradation Report	
		Report Constraints to Other Processes	
		Distribute Service Quality Management Reports & Summaries	
Service Guiding & Mediation	Mediate Service Usage Records	Validate Service Usage Record	4
		Normalize Service Usage Record	
		Convert Service Usage Record	
		Correlate Service Usage Record	
		Remove Duplicate Service Usage Record	
	Report Service Usage Records		
	Guide Resource Usage Records		

- Resource

Etom ID	ID Ma	Macroproceso	ID PR	Proceso	Id Sub	Subproceso	Prioridad
5 Resource	2	Resource Strategy & Planning	3	Gather & Analyze Resource Information	4	Gather Resource Information	5
						Analyze new resource requirements	
						Analyze to develop new/enhance resource requirements	
				Manage Resource Research		Manage resource research investigations	
						Manage administration of resource research	
						Define Resource research assessment methodologies	
				Establish Resource Strategy & Architecture		Establish Resource strategy	
						Develop Resource Strategy	
						Establish Resource delivery goals	
						Establish resource implementation policies	
				Define Resource Support Strategies		Define Resource support Principles	
						Define Resource support Policies	
						Define Resource Support performance standards	
				Produce Resource Business Plans		Develop & Deliver annual/multi year resource business plans	
						Identify logistics for new resource capability introduction	
						Forecast high level resource demand & capture new opportunities	
						Asses impact of Resource Business plans	
						Identify timetables for new resource capability introduction	
				Develop Resource Partnership Requirements		Identify the requirements for resource capabilities	
						Recommend Resource partnership	
						Determine extent of resource capabilities sourcing	
				Gain Enterprise Commitment to Resource Plans		Identify Stakeholders to Resource strategy and resource plans	
						Gain resource strategy and resource plans Stakeholders approval	
						Gain Enterprise Commitment to resource strategy and resource plans	

Category	Process Group	Process	Sub-process	Value
Resource Capability Delivery	Map & Analyze Resource Requirements	Capture Resource Demand & Performance Requirements		5
		Agree Resource Infrastructure Requirements		
	Enable Resource Support & Operations	Design Resource Operational Support Process Improvements		
		Identify Resource Support Groups, Skills & Training		
		Identify Resource Support Requirements		
	Capture Resource Capability Shortfalls	Capture Resource Capacity Shortfalls		
		Capture Resource Performance Shortfalls		
		Capture Resource Operational Support Shortfalls		
	Manage Resource Capability Delivery	Co-ordinate Resource Capability Delivery		
		Ensure Resource Capability Quality		
		Manage Commissioning of New Resource Infrastructure		
		Establish Resource Capability Sourcing		
	Gain Resource Capability Investment Approval	Develop Resource Capability Investment Proposals		
		Approve Resource Capability Investment		
	Manage Handover to Resource Operations	Co-ordinate Resource Operational Handover		
		Validate Resource Infrastructure Design		
		Ensure Resource Handover Support		
	Resource Capability Delivery	Map & Analyze Resource Requirements		
		Enable Resource Support & Operations		
		Capture Resource Capability Shortfalls		
		Manage Resource Capability Delivery		
		Gain Resource Capability Investment Approval		
		Manage Handover to Resource Operations		
		Design Resource Capabilities		
Resource Development & Retirement	Gather & Analyze New Resource Ideas	Gather Resource Information		5
		Analyze Resource Classes		
		Develop Resource Classes		
	Manage Resource Development	Identify Required Processes & Procedures for Resources		
		Develop Required Processes & Procedures for Resources		
		Develop Service & Operational Agreements for Resources		
		Gain Service & Operational Agreements Approval for Resources		
		Produce Supporting Documentation & Training Packages for Resource		
	Assess Performance of Existing Resources			
	Manage Resource Deployment	Manage Resource Process & Procedure Implementation		
		Manage Resource Operational Staff Training		
		Develop Resource Supplier/Partner Operational Support		
		Manage Resource Acceptance Testing		
	Develop New Resource Business Proposal	Develop Resource Business Proposal		
		Gain Resource Business Proposal Approval		
	Manage Resource Exit	Identify Unviable Resources		
		Identify Impacted Resource Customers		
		Develop Resource Transition Strategies		
		Manage Resource Exit Process		
	Develop Detailed Resource Specifications	Develop Detailed Resource Technical Specifications		
		Develop Detailed Resource Support Specifications		
		Develop Detailed Resource Operational Specifications		
		Develop Detailed Resource Manuals		
RM&O Support & Readiness	Enable Resource Provisioning	Plan & Forecast Resource Infrastructure Requirements and Manage C		1
		Monitor, Report and Release Mgmt. of Resource Infrastructure and Capacity Utilization		
		Establish, Manage, and Develop Organization, Tools and Processes		
		Optimize Existing Resource Infrastructure Utilization		
		Develop and Implement Capacity and Operational Rules and Procedures		
		Track, Monitor and Report Resource Provisioning		
		Perform Acceptance Test and Address & Monitor the Change		
		Update Inventory Record		
		Track & Supervise the Rollout of new and/or Modified Infrastructure		
	Manage Resource Inventory	Manage Resource Inventory Database and Processes		
		Track and Monitor Resource Repository Capabilities		
		Identify Repository Issues and Provide Reports and Warnings		
	Enable Resource Performance Management	Monitor & Manage Regulatory Issues		
		Manage Resource Performance Data Collection		
		Establish and Maintain Performance Threshold Standards		
		Establish, Maintain and Manage the Support Plans		
		Undertake Performance Trend Analysis		
		Assess and Report Resource Performance Management Processes		
		Monitor and Analyze Resource Performance Reports, and Identify Issues		
		Provide Supporting Procedures and Quality Management Support		
		Correlate the Performance Problem Reports & Manage Inventory Repository		
	Support Resource Trouble Management	Manage Resource Trouble & Performance Data Collection		
		Manage Resource Infrastructure, Provisioning and Preventive Maintenance Schedules		
		Create Report		
		Establish Warehouse and Manage Spares Including other Parties		
		Track, Monitor and Manage RTM Processes Including other Parties		
		Provide Support for RTM and SPM Processes		
	Manage Logistics	Manage Warehousing		
		Manage Orders		
		Track and Monitor Logistics and Manage Resource Inventory		
		Identify Logistic Issues and Provide Reports		
	Enable Resource Data Collection & Distribution	Manage and Administer Resource Data Collection and Distribution		
		Manage Resource Data Storage Facilities and Associated Processes		
		Track, Monitor and Report Resource Data Collection Processes and Capabilities		
		Identify Data Collection Issues and Report		

		Process	Process	Process	#
		Workforce Management	Manage Schedules & Appointments	Workforce Management Schedule	3
				Determine Work Schedule	
				Manage Reservations	
				Manage Appointments	
			Plan and Forecast Workforce Management	Forecast Demand	
				Forecast Workforce Availability	
				Adjust Durations	
			Administer and Configure Workforce Management	Configure Skill Catalog	
				Configure Work Catalog	
				Configure Schedules	
				Administer Human Resources Catalog	
				Administer Registration and Access	
				Administer Organizations Catalog	
				Configure Logging and Audit	
				Administer Tools and Materials Catalog	
			Report Workforce Management		
			Manage Work Order Lifecycle	Issue Work Order	
				Track and Manage Work Order	
				Analyze and Decompose Work Order	
				Close Work Order	
				Assign Task	
				Report on Work Order	
				Dispatch Task	
		Resource Provisioning	Allocate & Install Resource	Determine Resource Availability	2
				Reserve Resource	
				Release Resource	
				Allocate Resource	
				Install and Commission Resource	
			Report Resource Provisioning	Monitor Resource Order Status	
				Distribute Resource Order Notification	
				Distribute Resource Provisioning Reports	
			Configure & Activate Resource	Configure Resource	
				Implement Resource	
				Activate Resource	
			Close Resource Order		
			Test Resource	Test Specific Resources	
				Develop Test Plans	
				Capture Test Results	
			Issue Resource Orders	Assess Resource Request	
				Create Resource Orders	
				Mark Resource Order for Special Handling	
			Track & Manage Resource Provisioning	Coordinate Resource Provisioning Activity	
				Track Resource Provisioning Activity	
				Manage Resource Provisioning Activity	
				Update Resource Repository	
			Recover Resource	Develop Resource Recovery Plan	
				Complete Resource Recovery	
				Provide Resource Recovery Proposal Notification	
				Request Resource Recovery Authorization	
				Recover Specific Resource	
				Commence Resource Recovery	
		Resource Data Collection & Distribution	Collect Management Information & Data	Intercept Events/Information	3
				Deliver Management Information	
			Process Management Information & Data	Determine Recipients for Information/Data	
				Filter Information/Data	
				Aggregate Information/Data	
				Format Information/Data	
			Distribute Management Information & Data	Distribute Information/Data	
				Manage Distribution	
				Confirm Distribution and Clean-up	
			Audit Management and Security Data Collection & Distribution		
		Resource Trouble Management	Survey & Analyze Resource Trouble		2
			Report Resource Trouble		
			Localize Resource Trouble		
			Close Resource Trouble Report		
			Correct & Resolve Resource Trouble		
			Create Resource Trouble Report		
			Track & Manage Resource Trouble		
		Resource Performance Management	Monitor Resource Performance	Manage Resource Performance Data	4
				Record Resource Performance Data	
				Correlate Resource Performance Event Notifications	
			Create Resource Performance Degradation Report	Generate Resource Performance Degradation Problem	
				Convert Report To Resource Performance Degradation Report Format	
			Analyze Resource Performance	Perform Specific Resource Performance Diagnostics	
				Manage Resource Performance Data Collection Schedules	
			Track & Manage Resource Performance Resolution	Coordinate Resource Performance	
				Escalate/End Resource Performance Degradation Report	
				Request Other Parties Performance Degradation Report Creation and Update	
				Clear Resource Performance Degradation Report Status	
				Update First in Resource Testing Results	
				Engage External Party Resource	
				Cancel Resource Performance Degradation Report	
			Control Resource Performance	Instantiate Resource Performance Controls	
				Instantiate Resource Trouble Controls	
			Close Resource Performance Degradation Report		
			Report Resource Performance	Monitor Resource Performance Degradation Report	
				Distribute Resource Quality Management Reports & Summaries	
		Resource Mediation & Reporting	Mediate Resource Usage Records	Validate Resource Usage Records	4
				Normalize Resource Usage Records	
				Convert Resource Usage Records	
				Correlate Resource Usage Records	
				Remove Duplicate Resource Usage Records	
			Report Resource Usage Records		

- Engaged Party

AFR-IX telecom

Inventario de Procesos

Etom ID	ID Ma	Macroproceso	ID PR	Proceso	Id Sub	Subproceso	Prioridad
6	Engaged Part	2 Party Strategy & Planning	3		4		5
		Party Tender Management		Determine the Sourcing Requirements		Capture Sourcing Requirements	
						Finalize Sourcing Requirements	
						Prepare Tender Document	
				Determine Potential Parties		Analyze Potential Parties	
						Short List Potential Parties	
						Identify Potential Parties	
						Issue Tender Document	
						Receive Tender Document Response	
						Select Short-listed Party	
				Manage the Tender Process		Specify the Tender Process	
						Administer the Tender Process	
				Gain Tender Decision Approval		Provide Management Oversight on Tenders	
						Approve Tender Decisions	
		Party Agreement Management		Prepare Party Agreement		Begin Party Agreement Preparation	3
						Specify Party Agreement Terms and Conditions	
						Specify Agreement Items	
						Specify Type Specific Agreement Component	
				Manage Party Agreement Commercial Negotiations		Establish Commercial Negotiating Strategy	
						Manage Commercial Negotiations	
				Gain Approval for Party Agreement		Report to Party Agreement Stakeholders	
						Commit & Approve Party Agreement	
				Manage Party Agreement Variation			
				Terminate Party Agreement			
		Party Offering Development & Retirement		On-board Party Product Specification & Offering		Define Party Product Specification Involvement	4
						Define Party Product Offering Involvement	
				Off-Board Party Offering & Specification		Off-Board Party Product Offering	
						Off-Board Party Product Specification	
		Party Support & Readiness		Support Party Requisition Management		Arrange and Manage Access from external parties to Service Provider P	3
						Analyzing Party Requisition Processes Performance	
						Supervise Party Rollout & and Report Party Capacity	
						Monitoring Party Requested Infrastructure Deployment	
						Detect impact on Party Inventory Infrastructure and Update	
						Reporting Party Deployment Capability	
				Support Party Problem Reporting & Management		Arrange and Manage Access for Party to Service Provider Problem Mgnt. Tools and Processes	
						Arrange and Manage Access to Party Tools and Processes	
						Monitor, Report for Party Performance and Provide Recommendations	
						Analyzing Party Problem Processes Performance	
				Support Party Performance Management		Arrange and Manage Access for Party to Service Performance Mgmt. Tools and Processes	
						Arrange and Manage Access to Party Service Performance Mgmt. Tools and Processes	
						Monitor and Report Party Performance Issues and Provide Recommendations	
						Detect Change on Party Inventory Infrastructure and Update	
						Analyzing Party Performance Processes' Performance	
				Support Party Settlements & Payments Management		Arrange Facilities, Tools and Systems to Support Processes	
						Analyze Party Settlements & Payments Process Performance	
				Support Party Interface Management		Check Interface List, Status and Availability	
						Identify Contact Changes and Update	
						Assess Party Interface Performance	
				Manage Party Inventory		Manage S/P Inventory Repository	
						Manage and Administer Party Inventory	
						Perform Audit Tests	
						Track and Monitor Party Inventory	
						Identify Issues and Provide Reports	
		Party Privacy Management		Party Privacy Management Definition		Define Party Privacy Location, Jurisdiction and Regulation	4
						Define Party PII Privacy Standards	
				Party Privacy Profile Type Development		Define Default Privacy Information	
						Define Default Privacy Profile Rules	
						Define Privacy Policy Rules Values	
				Party Privacy Profile Management		Send Party Privacy Profile	
						Enforce Party Privacy Profile	
						Request Party Privacy Profile Extension	
						Receive Party Privacy Profile	
						Modify Party Privacy Policy	
						Erase Party Privacy Profile Information	
						Import Data Subject Party Privacy Profile	
				Party Privacy Profile Agreement			
		Party Order Handling		Select External Party for Party Order		Identify External Party for Order	2
						Select Most Appropriate Party	
				Determine Party Pre-Order Feasibility		Assess Party Delivery Capabilities	
						Verify Party Inventory Availability	
						Evaluate Party Against Business Needs	
				Track & Manage Party Orders		Modify Party Order	
						Cancel Party Order	
						Escalate Party Order	
						Manage Party Orders	
						Monitor Jeopardy Status	
						Track Party Orders	
						Complete Party Order	
				Receive & Accept Party Order		Receive Party Order	
						Accept Party Order	
						Negotiate Party Order Problem	
						Facilitate Party Product Configuration	
				Issue Party Order			
				Report Party Orders		Monitor Party Orders Status	
						Manage Party Order Status Notification	
						Report Party Orders Status	
				Close Party Order			
		Party Interaction Management		Log Party Interaction		Create Party Interaction Log	3
						Update Party Interaction	
				Handle Party Interaction (Including Self Service)		Handle Interaction	
						Monitor Interaction Status	
						Close Interaction	
				Notify Party			
				Analyze & Report Party Interactions		Analyze Party Interactions	
						Report Party Interaction	
				Track and Manage Party Interaction			
				Mediate & Orchestrate Party Interactions		Identify Party Interactions Data Formats	
						Orchestrate Party Interactions	
						Mediate Party Interactions	

				Number
		Party Relationship Development & Retirement	Party Relationship Management	Establish Party Relationship	4
				Collect Party Data	
				Manage Party Relationship	
				Re-establish Party Relationship	
				Terminate Party Relationship	
			Party Demographic Collection	Specify Party Demographic Defintion	
				Specify Party Demographic Definition Group	
				Remove Party Demographic Definition	
				Collect Party Demographic	
				Remove Party Demographic	
			Party Profiling	Define Party Profile Type	
				Define Party Profile Type Attribute Group	
				Remove Party Profile Type	
				Collect Party Profile	
				Remove Party Profile	
		Party Problem Handling	Initiate Party Problem	Generate Party Problem	3
				Communicate Party Problem	
			Receive Party Problem	Receive Party Problem Notification	
				Forward Party Problem Notification	
			Track & Manage Party Problem Resolution	Modify Party Problem	
				Cancel Party Problem	
				Escalate Party Problem Resolution	
				Manage Party Problem Resolution	
				Monitor Party Problem Jeopardy Status	
				Clear Party Problem	
			Report Party Problem Resolution	Monitor Party Problem	
				Provide Party Problem Management Summaries	
				Provide Party Problem Management Reports	
				Provide Party Problem Status Change Notification	
			Close Party Problem		
		Party Performance Management	Monitor & Control Party Performance	Collect Party Performance Data	2
				Analyze Party Performance Data	
				Initiate Party Performance Corrective Actions	
			Track & Manage Party Performance Resolution	Modify Party Performance Degradation Report	
				Cancel Party Performance Degradation Report	
				Escalate Party Performance Degradation Report	
				Manage Party Performance Degradation Report	
				Monitor Party Performance Jeopardy Status	
				Modify Party Performance Degradation Report Status	
			Report Party Performance	Monitor Party Performance	
				Distribute Party Performance Management Summaries	
				Distribute Party Performance Management Reports	
			Close Party Performance Degradation Report	Monitor Party Performance Degradation Report	
				Close Cleared Party Performance Degradation Report	
			Initiate Party Performance Degradation Report	Create Party Performance Degradation Report	
				Issue Party Performance Degradation Report	
		Party Revenue Management	Party Billing and Settlements	Party Records, Billing Events, Notification, Notes Receive, Aggregate &	1
				Party Revenue Split or Sharing	
				Party Settlement	
				Settlement Reconciliation	
				Party Bill & Invoice Generation	
				Party Bill/Invoice Distribution Management	
			Control Party Settlements	Apply Route Optimization	
				Handle Wholesale Audit & Dispute	
				Handle Government Wholesale Financial Information Request	
				Perform Wholesale Embargo	
				Perform Wholesale Write-off	
				Perform Wholesale Recovery	
				Party Revenue Sharing Model Development	
				Party Debt Collection	
			Party Partner Payments	Party Payment Wire transfer	

											Apply Temporary "No Treat"	
											Apply Payment LBX Reconciliation	
											Apply Payments Fallout	
											Apply Payment investigation	
											Apply Payment Overpayment Handling	
											Apply Payment Remittance Handling	
											Party Payment Method Management	
											Party Payment Plan Administration	
											Party Bill Inquiry Handling	

- Enterprise

Inventario de Procesos

Etom ID		ID Ma	Macroproceso	ID PR	Proceso	Id Sub	Subproceso	Prioridad
7	Enterprise	2	Strategic & Enterprise Planning	3	Strategic Business Planning	4	Provide Strategic Business Direction	5
							Create Actionable Strategy	
							Program-manage Strategy Implementation	
					ITIL Release and Deployment Management			
					Business Development		Develop Concepts for Revenue Streams	
							Focus or Broaden Customer Base	
							Identify Outsourcing Opportunities	
							Investigate Potential Mergers & Acquisitions	
							Facilitate Negotiation & Implementation of Potential Mergers & Acquisitions	
					Enterprise Architecture Management		Manage Enterprise Architecture Methodology	
							Co-ordinate Enterprise Architecture	
							Manage Enterprise Architecture Toolsets and Associated Standards	
							Manage & Administer Architecture Repositories	
							Manage Architecture Skillsets	
							Provide Reference Source for Standard Operating Environment	
							Co-ordinate Architecture Review	
					ITIL Change Management			
					Group Enterprise Management		Plan & Implement Cross-Business Unit Operation	
							Harmonize Processes & Communication Systems across Business Units	
							Manage Funding & Cross-Subsidies across Business Units	
							Manage Investment for Business Development	
							Co-ordinate Business Activities	
			Enterprise Risk Management		Business Continuity Management		Co-ordinate Business Continuity	5
							Plan Business Continuity	
							Plan Infrastructure Recovery	
							Plan Serious Incident Management	
							Manage Business Continuity Methodologies	
					Integrity Management			
					Security Management		Manage Proactive Security Management	
							Define Security Management Prevention	
							Monitor Industry Trends for Security Management	
							Define Monitoring to Facilitate Security Management	
							Define Security Management Policies & Procedures	
							Define Security Management Analysis	
							Assist with Security Management Deployment	
							Define Security Management policies & procedures to facilitate detection incidents	
							Manage Reactive Security Management	
							Define Incident Management policies and procedures	
							Detect Potential Security Threats & Violations	
							Investigate Potential Security Threats & Violations	
					ITIL IT Service Continuity Management			
					Fraud Management		Fraud Policy Management	
							Fraud Operations Support	
							Fraud Operations Management	
					ITIL Information Security Management			
					Audit Management		Define Audit Policy	
							Define Audit Mechanism	
							Assess Operational Activities	
							Evaluate Operational Activities	
							Report Audits	
							Apply Audit Mechanisms Proactively	
					ITIL Problem Management			
					Insurance Management		Identify Insurable Risks	
							Analyze Insurance Cost/Benefits	
							Provide Insurance Advice	
							Manage Insurance Portfolio	
					Revenue Assurance Management		Manage Revenue Assurance Policy Framework	
							Manage Revenue Assurance Operations	
							Support Revenue Assurance Operations	

Category	Process	Sub-process	Priority
		Support Revenue Assurance Operations	
Enterprise Effectiveness Management	ITIL Service Catalogue Management		3
	Process Management & Support		
	ITIL Incident Management		
	Enterprise Quality Management	Verify Consistency of Information	
	ITIL Service Level Management		
	Program & Project Management	Deliver Program/Project Methodologies & Support	
		Select Program/Project Management Support Tools	
		Manage Program/Project Management Skill Sets	
		Manage Program/Project Management Repository	
		Manage Program/Project Management Metrics	
	ITIL Capacity Management		
	Enterprise Performance Assessment	Define Enterprise Performance Measures	
		Manage Enterprise Performance Data	
		Manage External Survey Companies	
		Report Balanced Scorecard, etc.	
		Metric Management	
	ITIL Availability Management		
	Facilities Management & Support		
	ITIL Request Fulfillment		
	ITIL Service Asset and Configuration Management		
	ITIL Continual Service Improvement		
	ITIL Event Management		
Knowledge & Research Management	Knowledge Management		4
	Research Management	Evaluate R&D Business Value	
		Manage R&D Investment	
		Manage R&D Program Activities	
	Technology Scanning	Evaluate External Technology	
		Determine Business Value of Potential Technology	
		Assess Technology Acquisition	
Financial & Asset Management	Financial Management		2
	Asset Management		
	Procurement Management	Manage Corporate Procurement & Logistics Policies	
		Define Warehousing Policies	
		Develop Logistics/Transport Policies	
		Develop Stock/Inventory Management Policies	
		Manage Goods Acceptance & Handling	
Stakeholder & External Relations Management	Corporate Communications & Image Management	Promote Desired Corporate Image	0
		Manage Spokespeople	
		Manage Messaging	
	Legal Management	Ensure Legal Compliance	
		Carry out Legal requests	
		Provide Legal Advice	
		Notify Legal Environment Changes	
		Manage Legal Actions	
	Community Relations Management	Ensure Community Visibility	
		Communicate Community Messaging	
		Handle Community Contacts	
	Shareholder Relations Management	Manage Shareholder Relations	
		Manage Employee Share Plans	
	Board & Shares/Securities Management	Manage Board Related Activities	
		Manage Shares/Securities	
		Manage Capital/Equity Activities	
		Manage Share/Stock Registry	
	Regulatory Management	Ensure Regulatory Compliance	
		Handle Pending Regulations	
		File Tariffs	
Human Resources Management	HR Policies & Practices	Facilitate Performance Appraisal	2
		Facilitate Code of Conduct	
		Facilitate Allowances & Benefits	
		Facilitate Hiring & Termination Guidelines	
		Facilitate Occupational Health & Safety	
		Facilitate Employee Satisfaction Measurement & Management	
		Facilitate Equal Employment Opportunity	
		Facilitate Remuneration Policies & Levels	
		Facilitate Compensation Guidelines	
	Organization Development		
	Workforce Strategy	Define Workforce Strategy Requirements	
		Create Workforce Strategy	
		Manage Workforce Change	
	Workforce Development	Apply Competency Modeling	
		Apply Training	
		Apply Skills Assessment	
		Apply Career Development	
		Apply Strength Profiling	
		Apply Work Design	
		Apply Succession Planning	
		Apply Employee Recruitment	
	Employee & Labor Relations Management	Manage Employee Relations	
		Manage Labor Relations	
Common Enterprise Processes	Data Analytics	Data Ingestion	5
		Data Management	
		Data Analysis	
		Analytics Consumer & Distribution Management	
		Data Governance	
	Maturity Assessment	Prepare Maturity Assessment	
		Collect Information for Maturity Assessment	
		Identify Pain Points per Maturity Dimension	
		Identifying and Analyzing Maturity Level Gaps	
		Produce Consolidated Maturity Level Assessment Report	
		Determine Maturity Level per Dimension	

Figure 24: Process prioritazing

5. Budget

This chapter contains all the software licenses that have been needed in order to achieve the goals of this project. It also includes the hours that have been dedicated to the thesis, evaluated at cost of a junior engineer.

List of licenses:

	Pricing	Amortization cost for 4 months
Signavio	19,283.75€/year	6,427.92€
Odoo	155€/month	620€
ManageEngine ServiceDesk Plus	0€	0€

Total= 7,247.92€

For a junior engineer who is working 8h a day, the salary is around 2,500 €/month. As I have been working in this project for 4 months, the budget destined to pay a junior engineer to do this work should be around 10,000 €.

6. Conclusions and future development:

Throughout this thesis it has been explained how an implementation of processes is carried out within Afr-ix telecom taking into account its needs, thanks to different methodologies that complement each other to achieve the best possible result such as eTOM, ITIL and ISO 27001, by analyzing and optimizing those processes that already existed.

Although this process implementation has not been completed, many of the benefits that this approach brings can be appreciated within the company such as providing a better understanding of the company, improving the quality and of the services that each department provides to its customer, an increase in their productivity and efficiency, which results in reducing risks and costs and a more standardized work organization that has delimited better the responsibilities of each department.

This analysis and modeling with Signavio have been accompanied by the management of requirements and incidents which has been focused on customer service, applied internally, thanks to Service Desk and Odoo, in which it has been possible to observe and understand the operation of these processes in a virtual environment for optimal modeling.

For future development of this process implementation, some other softwares for the creation of the diagrams may be a better option instead of Signavio, for Afr-ix in particular, like Bizagi since their benefits are very similar but this one has a free license.

In conclusion, in this project it has been possible to realize a study of some of the most relevant standards nowadays and how they are applied in a real company like Afr-ix telecom through some popular softwares, showing their benefits in a real case studio.

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Glossary

- IP: Internet Protocol
- ISO: International Standards Organization
- IT: Information Technology
- ITIL: Information Technology Infrastructure Library
- eTOM: Enhanced Telecom Operations Map
- BPM: Business Process Management
- OMG: Object Management Group
- ISO: International Organization for Standardization
- IEC: International Electrotechnical Commission
- ISMS: Information Security Management System
- PDCA: Plan-Do-Check-Act
- ERP: Enterprise Resource Planning
- CRM: Customer Relationship Management