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## **An application of Voice of the Customer Methodology for Enel Distribution Chile**



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## **Abstract**

The thesis focuses on the realization of a Voice of the Customer model for the company Enel Distribution Chile. It is the result of a four months of internship in the company located in Santiago del Chile, more specifically in the Customer Care area.

Enel Distribution Chile with its 1.9 million clients has a complex system to manage. The quantity of data they get and storage are huge; the number of interactions they realize every day is not irrelevant. The service they provide is primary and its activity establishes a natural monopoly, so they do not have the problem of losing client. However, the corporate image remains a very important variable in the definition and correction of processes. The company is in fact subject of criticism by the national media.

The best way to understand how to improve a service, and therefore the corporate image, is to ask the customer himself. Hence, the project stems from the need of the company to define a specific methodology that allows defining all the stages that must be developed from the capture of the perception of quality of the client, to the incorporation of this in a process of improvement of the services, ensuring the follow-up of all the projects involved. In the specific one, it aims to define a methodology for listening to the customer's voice to improve their experience.

The first chapter allows to illustrate the reasons why this project was implemented, introducing the Company and in particular the problems encountered in relation to the work organization and the data management. The chapter concludes by listing the general objective of the thesis and its specific objectives.

The following chapter reviews the literature, therefore models already adopted by other companies which are the starting point in the definition of a model to be adopted in Enel Distribution Chile. It allows to fully understand the functioning of some theories required for the development of the methodology, such as The Voice of the Customer, for the definition of the data that have to be captured and elaborated; Data Analysis and Visualization, for the realization of dashboards necessary to show the information previously collected; and SAFe (Agile) framework, to organize the work and monitoring the people involved.

The third chapter describes in detail the project carried out during the internship, therefore the methodology proposed to solve the problems encountered in the Company. In addition to a general definition of the methodology, there is an explanation of the different phases that compose it.

Below, there is a partial practical application of the methodology, the first Minimum Viable Product (MVP), by way of example. The MVP wants to demonstrate, even if in a small way,

the functionality of the methodology. Indeed, it is the development of a specific phase of the methodology applied to a single indicator of customers quality perception.

Chapters five and six want to sum up this thesis project results: the economics improvements; a clarification about how the methodology aims to respond to the thesis specific objectives. At the same time, there are illustrated the limits reported by the application implemented and what should be, consequently, the steps to be taken.

*to every single person who contributed to  
making my period in Chile incredible*

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## **1. Introduction**

### **1.1. Motivation**

This thesis was written during my internship at Enel Distribution Chile in Santiago, while I was working in the Customer Care department from August to December 2019. With this experience, I got insights about the structure of their work, the channels they use to communicate with customers and their approach to the monitoring the data. Working with them I also have the possibility to learn a different way of organized the work and how they relate with themselves, so different from the Italian one. In the same period I was working for Enel Distribution Chile, the country entered into a social crisis that hit the company hard. I believe that this tested me making the experience, in Chile and especially in the company, even more complete and intense.

During my internship I collaborated whit them but at the same time I focus my work on a specific project.

The idea for my project came from the need of the company to define a specific methodology that allows to define all the stages that must be developed from the client initial perception of quality, to its incorporation in a process of improvement of the services, ensuring the follow-up of all the projects involved.

The current approach of the company allows to capture the preferences of the client, without any detailed monitoring system of this information. Preferences are captured and presented to different areas of interest, often without achieving any improvement. Although the presence of a break in the system is recognized, there is no process that encourages people to work to define corrective processes to these problems. In addition, there are no work control systems.

Another issue I noticed during my period as an intern is the realization of numerous meeting to evaluate the quality of the services delivered by the company. The thing is that all these meetings are focused on the analysis of the same data and the people involved are always the same. In the end, these workers always find themselves repeating the same conclusions and do not have the correct motivation to respect the main objective. Instead, they should carefully analyse, without wasting time and repetitions, correctly identifying the errors present in the service and defining corrective solutions.

An intervention to improve the existing system of incorporating opinions, requires a precise definition of all the information studied, to identify and analyse more in details the needs of

customers. This kind of information needs proper management and organization to be then used to evaluate the quality of the services delivered.

## **1.2. About Enel**

Enel Chile S.A., formerly called “Enersis Chile S.A.”, was created as a result of a corporate restructuring that began in April 2015 in the then Enersis S.A. what controlled the generation, transmission and distribution businesses in Chile and four other countries in the region (Argentina, Brazil, Colombia and Peru).

On December 18, 2015, in Extraordinary Meeting of shareholders of Enersis S.A. was approved the first part of the restructuring plan, "The Division". In that moment it was created Enersis Chile S.A. as the sole vehicle of control of generation and distribution assets that the group has in Chile, and then Enersis S.A. it was renamed Enersis Américas S.A. controlling business in the other countries of the region. The Division consists of a public deed of 8 January 2016, granted at the Santiago Notary Office of Mr. Iván Torrealba Acevedo.

Subsequently, on October 4, 2016, the shareholders of Enersis Chile S.A., approved the change of name and company name of “Enel Chile S.A.”, agreement that was reduced to public deed of October 18 2016, granted at the Santiago de Don Notary Iván Torrealba Acevedo.

Finally, on December 20, 2017 the shareholders of the Company approved to modify its statutes, in order to reflect the agreements regarding merger by incorporation from Enel Green Power Latin America S.A. in Enel Chile, its capital increase and other agreements adopted at said meeting, replacing the items for that purpose referring to its capital, corporate purpose in order to incorporate activities in the area of information technology and communications, among other modifications, remembering a consolidated and updated text of the bylaws, subject to the terms and conditions approved at the meeting. The act of the said meeting were reduced to a public deed dated December 28, 2017, granted at the Notary from Santiago by Don Iván Torrealba Acevedo.

Its capital social was (CLP) \$ 3,954,491,478,786 thousands dated December 31, 2018, represented by 70,134,077,818 shares. These securities are listed on the Santiago and New York Stock Exchanges, in the form of American Depositary Receipts (ADR).

Its total assets amount to \$ 7,488,020,164 thousands as of December 31, 2018. Enel Chile controls and manages a group of companies that operate in the Chilean electricity market. In 2018, the net result attributable to the company dominant reached \$ 361,709,937 thousands and the operating result was \$ 670,604,721 thousands. At the end of 2018, it gave direct occupation to 2,062 people, through its subsidiaries present in Chile.

In the Chilean electricity industry, three activities are distinguished: Generation, Transmission and Distribution. The electrical installations associated with these three activities are required to operate in an interconnected and coordinated manner, with the main objective of providing electric power to the market at minimum cost and within the standards of quality and security of service required by the electrical regulation.

Due to its essential characteristics, the activities of Transmission and Distribution constitute natural monopolies, which is why they are regulated segments as such by electrical regulations, requiring free access to networks and the definition of regulated rates.

### **1.2.1. Enel Distribution Chile**

Enel Distribution Chile S.A. is part of the Enel Group, energy company global with presence in 35 countries of the 5 continents that supplies energy to more than 73 million consumers late and has a net capacity installed of around 89 GW.

In the Distribution, it has its parent company in Santiago and is currently positioned as one of the electric distributors largest in Chile, counting with 1,924,984 customers and more than 17 thousand kilometres of high, average line and low voltage (at the end of 2018). Its networks comprise more than 40% of the total sales of the local industry, which is regulated by the State, and its concession area – which includes subsidiaries *Empresa Eléctrica de Colina Ltda.* and *Luz Andes Ltda.* – reaches the 2,105 km<sup>2</sup> extension.

Enel Distribución Chile S.A is controlled by Enel Chile, a Company that holds 99.09% of the shares. In turn, Enel Chile is dependent of Enel SpA, which holds 61.93% of the company's shares. The remaining 38.07% is distributed in 6,302 shareholders.

#### **Client**

Enel Distribution Chile has two different types of customers: regulated customers and free customers.

#### ***Regulated customers***

They are customers whose connected power is less than or equal to 5,000 kW and who are subject to price regulation according to the General Law of Electric Services. Among them, residential clients are distinguished, the majority group in the concession area of Enel Distribution, and industrial customers.

#### ***Free customers***

Those customers who have a connected power exceeding 5.000 kW, who by law can negotiate the price of the energy directly with Enel Distribution and additionally they have the possibility of providing electricity through self-generation.

Together with the above, Law 20.805 allows customers with a power exceeding 500 kW to opt for any of the tariffs regimes, with the obligation to remain a minimum of 4 years.

### **1.3. Description of the problem to solve**

As I previously explain, Enel Distribution Chile with its 1.9 million clients has a complex system to manage. The quantity of data they get and storage are huge; the number of interactions they realize every day is not irrelevant. The service they provide is primary and its activity establishes a natural monopoly, so they do not have the problem of losing client. However, the corporate image remains a very important variable in the definition and correction of processes.

The importance of guarantee a good customer experience with the need of the company to collect continuously improvement in the indicator of corporate image, it allows me to identify some aspect in the structure of the customer care management that could be improved. In each step of the work system, the customer experience and satisfaction should be the most important thing to reach. It is for this reason that each activity, from the data collection to the service provision, should be performed with a customer focus.

Analysing some aspect of the work organization, I had the possibility to identify some problems. Those problems allow me to define the objectives of my project and to propose a solution. Its development is illustrated in the methodology that I will explain in the following chapter.

The first element to analyse are the data that Enel collect in his interaction with the customers. Enel had the possibility to record a huge quantity of data that came from all its customer service channels, from the surveys and so on. But sometimes, some important data are undervalued and forgotten. To evaluate the customer experience is necessary to get *Voice of Customer* data representatives. Focus all the analysis on the satisfaction rate got from the surveys is not enough. They need to open the analysis to other sources. The principle problem of the surveys they provide is the information reliability: the majority of the questionnaires are administered many days after the client received the assistance, when they have already forgot the experience or focus the memory on the worst part of the assistance; and the dimension of the sample is too small compared with the numerosity of customers that monthly received the service.

Enel already brought its attention to data that are not only surveys. They are studying the Salesforce data that are created during each customer assistance. On Salesforce they are collecting some data that could be transformed in relevant information. The problem is that right now they are focusing the analysis on the data that define the numerosity of claims, ignoring everything else. But these are the data that Enel already collect. There are others that

are not even stored. Significant data could be obtained from each action or movement that the customer carries out using automated services.

Another problem I want to evidence is the way they analyse those data. The surveys are analysed, and they realize reports to explain the evolution of each indicator. Afterwards, those reports are sent to each area responsible of the specific service. The problem is that it is not established a specific tracing. They don't have the monitoring of these reports or some detailed steps that defines how to reach some correcting process.

In general, it is not defined a way to trace all the information collected to recognize the presence of some problems in the process of service provision. They realized numerous meeting to evaluate the quality of the services delivered by the company. The issue is that all of these meetings are focused on the analysis of the same data and the people involved are always the same. In the end, these workers always find themselves repeating the same conclusions and do not have the correct motivation to respect the main objective. Instead, they should carefully analyse, without wasting time and repetitions, correctly identifying the errors present in the service and defining corrective solutions.

The only standard process they defined to analyse the evolution of some data is the meeting called "*Comité de experiencia de clientes*" (User Experience Committee). That committee meets every two months to discuss the level of different indicators coming from the Salesforce data. Especially they focus their analysis on the values of the claims and every time on a different media case. In this way they leave out any other data that could allow the recognition of a possible problem. The idea behind this committee could give a great support to the service improvement. The issue is that they should bring this method to more indicators, to get a full view of the systems. During these meetings, the committee members analyse the value illustrated, looking for some problems to solve. Many system fractures are encountered, but as results no solution is taken. They lack a specific protocol to advance later, to solve the problems raised and improve the user experience.

Finally, a specific problem arises from what we said before. They miss a protocol that define each step they have to respect from the data collection to the correcting process. The presence of some detailed rules to respect could help the achievement of an improvement, especially reducing the time needed to detect problems, involving and encouraging workers to achieve the set work objectives. In this way it would succeed to respond in time to the client's needs.

The following chapter aims to define the general objectives and specific objectives of the project, questioning and analysing the issues previously mentioned.

## 1.4. Objectives

### General objective

Define a methodology to capture and incorporate customers quality perception in the service delivery process to improve the customer experience.

### Specific objectives:

- *How to listen to the client?*  
Evaluate the sensors to capture everything customers say about services and how they act when they use them.
- *How does a problem arise?*  
Redesign the process of data collection, analysis and visualization of information. Establish criteria to detect when an indicator defines the presence of a fault.
- *How to improve the service?*  
Define a reporting system of the problems encountered. Specify the stages that the team has to respect to reach a service improvement.



## **2. Literature Review**

To identify a method for Enel Distribution Chile that allows to solve the problems previously illustrated, it is necessary to understand what is already explained in the literature and how other companies act. It is important to define a standard from which to start to develop an ad hoc model that could work on Enel. As first we will analyse the Voice of the Customer model, that means the process of capturing customers' requirement. Next, the way companies analysed data and which are the rules that define a good visualization. In particular it is required to figure out an efficient way to organize the work, and manage people involved in the process of service and customer experience improvement. For this reason, we will talk about the Agile framework.

### **2.1. Voice of The Customer**

#### **2.1.1. Definition**

*The Voice of the Customer (VOC) is a term used in business to describe the process of capturing customers' requirements. The VOC is a product-development technique that produces a detailed set of customer wants and needs, which are organized into a hierarchical structure, and then prioritized in terms of relative importance and satisfaction with current alternatives. The VOC process has important outputs and benefits for product developers.*

(GRIFFIN & HAUSER, 1991)

Since 1991, in marketing, comes to be common the term "The Voice of the Customer". How Abbie Griffin and John Hauser explain in their article (Griffin & Hauser, 1991), VOC allows to understand which are the requirements of the customers to define a set of point that a new (or an existing one) product or service should respect. Basically, the VOC requires to study the customers throw qualitative and quantitative market-research steps. It is possible to make use of different instrument that marketing offers, all of them can give the company a different information. The moment the company capture the wants or needs of the customer is also relevant. It is important to continuously listen to the customer. The VOC studies take a relevant importance at the launch of a new product, at the starting of a new process or when a new service is provided. Listen to the customer in this moment of product, process or service life, allows to understand if the innovation was well received by the customers. Obviously, to

obtain these results, it makes sense to get the customer requirements already before the innovative project development. The development team should know a list of key features to include in the product design.

Griffin and Hauser specify four aspect of the Voice of the Customer: customer needs, a hierarchical structure of the needs, priorities, and customer perceptions of performance.

*A customer need is a description, in the customer's own words, of the benefit to be fulfilled by the product or service*

(GRIFFIN & HAUSER, 1991)

With this definition of a *customer need*, Griffin and Hauser explain that the customer has his idea of the product or service he wants, that means he knows how the product should appear or what the service should provide. But obviously, he doesn't have any ideas of how the product or service should be designed to provide what he wants. He didn't express the product-design features, like the physical measurement, the material required and so on. Basically, the customer knows what his necessity is, but not which is the solution to satisfy it. So, it's the task of the company to create the ideal product or service to satisfy the customer and to make him prefer his own solution to that of his competitors. The achievement of preference can therefore be benefited by listening to the customer correctly to capture his needs.

Listen to the customers to get their needs is the key activity of this process. The company should ensure that the record of these needs respect the specifics words the customers use. Transform them voices in company jargon means lose relevant information. So, the primarily way to identify customer needs are the qualitative researches. With an interview, the client talks about his own experience using the product or receiving the service. This is clearly the better solution to understand the customer needs. Since it is difficult for a client to talk freely about his needs, it results easier to tell about their experiences. The interview turns out to be the ideal tool to listen to the client. But clearly this cannot be applied to all customers. For this reason, usually this is only one of a set of VoC tools.

The second aspect Griffin and Hauser talk about is the *Hierarchical structure*. It is common for VOC tools to allow a large number of customers' needs to be collected. These could be very similar to each other or represent completely different needs. To comply with each of the requests reported by customers, the company could almost have to create a specific product or service for each customer. In some cases, it may be possible, but it would be a make to order job. Where you want to create a unique product or service, working with all these needs is thus not possible. Therefore, it is the task of the company to know how to analyse and filter needs.

The "Voice of the Customer" organise customer needs into a hierarchy where are collected primary, secondary and tertiary needs. The first ones are defined strategic needs. They are the most important one that are used to set the strategic direction for marketing. Then, each of

them is decomposed into some secondary needs (or tactical needs), that define more specifically how to satisfy the primary need. The last ones are called operational or detailed needs and provide greater detail to allow the definition of the product characteristics (according with primary and secondary needs).

The next step defined by Griffin and Hauser is the identification of *Priorities*.

*The marketing manager uses these priorities to make decisions that balance the cost of fulfilling a customer need with the desirability (to the customer) of fulfilling that need.*

(GRIFFIN & HAUSER, 1991)

In a product design, a team must focus on the customer needs. But this is not the only relevant aspect. They should put their attention also on the cost of realizing the features identified in the rendering of the customer needs. Usually there are limits defined by the budget or the difficulty accessing some resources. Therefore, it is needful to prioritize the customers' requirements. It is common to ask directly to the customer to define a scale of the needs from the most to the least important.

Griffin and Hauser conclude talking about the *Customer perceptions of performance*. It was explained before that the most important tool a company can use to get the customers' needs are the qualitative research like the interview. In the case of customer perceptions, it is common to use quantitative market research. A survey allows the company to get information about the customers' opinion on a competitor product. In this way it is possible to gather information on which products are best able to satisfy the needs of the clients, to what extent they are able to satisfy them and above all allow to measure the gap existing between these products and those offered by your company. By doing so, you can get marketing decision input.

The importance of a Voice of the Customer program was expressed in 2008 by Kai Yang.

*If you had some magic power and were able to discover exactly what customers are craving, and if you also knew how to produce their dream product at a low price, then you would be guaranteed to get rich! Therefore, capturing the exact voice of the customer is like striking gold.*

(YANG, 2008)

The voice of the customer represents an extraordinary tool in the work of designing a product or service. But clearly it is necessary to know the best way to use it. The voice of the customer is not always clear and well-defined. It is the task of the company to know how to identify the most suitable tool capable of grasping the real customers' needs. Of course, traditional data collection tools can be used, but they are not always the most appropriate. It is necessary to know how to identify the moment and the ideal tool, to be able to listen to the

customer even when he is not trying to talk to us intentionally, but through his actions he communicates something to us.

Yang also defines some scenarios in which the acquisition and analysis of the voice of the customer may be required (Yang, 2008):

- the voice of the customer is required to define the product design and manufacturing process;
- information is also required to identify the main value factors that the customer wants to encounter in the product (e.g. Price, functions);
- in the decision-making process to move the customer's current value proposal towards a new product in order to innovate and stand out from the competition;
- the customer's opinion may also be required not so much to launch a new product, but to improve existing products.

### **2.1.2. Voice of The Customer Program implementation**

When a company decide to implement a Voice of the Customer program, some specifics steps should be respected to avoid losing the principal goal. Usually a company thinks it knows how to receive feedbacks and opinions by customers. But at this point of the study, it is clear that capture the customer needs is not such a simple process.

In his article in the web site *CRM search*, *How to Succeed with a Voice of the Customer Program* (Schaeffer), Chuck Schaeffer report his ten step approach to develop a successful voice of the customer program.

1. **Assess Culture.** The first fundamental activity required to implement a VOC program is to set up a corporate culture that sees the customer at the centre. A company policy focused on the product reports behaviours and attitudes that would not allow the realization of a correct VOC. But obviously it is not just about declaring yourself customer-centred, it is necessary to change the corporate culture by correctly evaluating the figure of the customer and recognizing the importance of good customer experiences in obtaining positive results for the company.
2. **Assign Champion.** The definition of an executive sponsorship is required, supported by a resource (like a business analyst) in charge of designing the VoC tools, the organization of data and business processes.
3. **Set Objectives.** As it had already been said with Griffin and Hauser, also Schaeffer considers the identification of needs and preferences necessary, but above all the

requirement of organize, coordinate and give hierarchy to these needs. This would allow the company to carry out processes that also give added value to related objectives.

4. **Design Processes.** To obtain the voice of the customer it is necessary to design a process capable of adapting to the context. In some cases, the manual solutions are the best as they allow to carry out ethnographic researches focused on the client offering a good qualitative analysis. Instead, if you want to have constantly updated assessments relating to a larger sample of clients, the technology could help.
5. **Segment Customers.** To capture appropriate assessments, it is good to understand which clients you are referring to. It is therefore necessary to distinguish whether it is a B2B or B2C organization. Depending on the type of customer, they will be grouped using appropriate filters. A category of clients that should not be underestimated during segmentation are those who have left the company: they allow us to understand the main aspects that have made their experience negative.
6. **Data Governance.** A good VoC program requires access to a wide variety of data capable of representing client needs. In order that the results obtained are correct, it is advisable to ensure that all these data are grouped together to be able to correctly define the relationships between them and not to lose important information. It is therefore essential to involve the IT area in the development of a VoC program.
7. **VoC Tools.** It is required the definition of some tools to capture the customer's voice capable of reaching different moments of the customer journey and with different instruments. Among these there are: email or online surveys, web self-service, website analytics, chat, Quality Monitoring, EFM (Enterprise Feedback Management), text mining, speech analytics, case management insights and NLP (Natural Language Processing) Knowledge Management.
8. **CRM integration.** A very important step not to be overlooked is the integration of VoC software with the system that collects client data (CRM - Customer Relationship Management). This allows not only to use tools suitable for the client's characteristics, but also to find feedback on the client's assessments directly in his profile. In this way it is possible to give a more correct interpretation to the data collected.
9. **Engage Customers.** Defined the tools to collect the voice of the customer, it is necessary to understand how to act in order to reach the customer in the best way. We must consider every single point of contact between the company and the customer and find ways to make them express their opinion as freely as possible.
10. **Measure Results.** To ensure that the company supports the VoC program, it is important to show some results that prove the benefits of the intervention. It can be found first in the customers' evaluations of the company: a good listening of needs should allow growth in terms of customer satisfaction. Then the results should also appear in monetary terms: a well-defined program avoids the dispersion of resources behind

unnecessary processes; and customer satisfaction should also result in increased purchases.

### **2.1.3. Customer value**

*To find success in this competitive reality, your business needs to take the high ground in value creation. Value is a measure of how much the customer really appreciates a product or service, and how much customers are willing to purchase this product or service.*

(YANG, 2008)

In a Voice of the Customer program, it takes a relevant importance the customer value. Each action should be directed to the value creation, and to evaluate the customer experience we can measure the value the customer recognises to the product or service. Indeed, Kai Yang (Yang, 2008) explain that the key for success is to produce an exceptional value to customers. The customer value allows the increment of the market share, the customers satisfaction, the reasonable price as well as the increment of the profit margin and the company image.

Customer values is the result of a set of key factors that determinates how a customer evaluate a product or service. It results needful to investigate and analyse to get which are these factors and so what makes the customer experience better. It is precisely here that the importance of developing a VoC program is acknowledged. If the data collected is not sufficiently accurate, if the variety of information is not high, it is impossible to design products or services that meet the customer's needs. This would lead to the risk of designing solutions that do not correspond to the customer's requests or even worse that are the result of assumptions.

In his book, *"Voice of the customer capture and analysis"*, K. Yang achieves the following assumptions: (Yang, 2008)

- Importance of VOC data. The customer value defines the position of the product or service. Value information can only be enclosed in the customer's voice. This represents the main source of information for the creation of value through the products and services offered.
- Accuracy of VOC data. Since the information collected is so important, the quality and reliability must be up to par. It is therefore required that the client target to be addressed is identified; a manager must be defined to collect the data in question; but above all we need to understand what data is necessary and how it should be organized.

- Completeness of VOC data capturing. The data collected must not only be accurate, but also quite numerous to be reliable. This data should therefore come from a large number of clients and at the same time have been collected at different times in order to be reliable and not the result of a random event.

#### **2.1.4. Customer experience**

An overview of consumer experiences has been carefully reviewed and described by Pine and Gilmore in "*The Experience Economy: Work is Theatre and Every Business a Stage*" (Pine & Gilmore, 1999).

Pine and Gilmore define experience as the fourth economic offer, different from services as services are from goods, but until now largely unknown. The experiences have always existed, but consumers, businesses and economists have included them in the service sector as well as a medical examination, transport by public transport and the telephone service. When a person purchases a service, they buy a series of intangible assets carried out on their behalf. But when he buys an experience, he pays to spend time enjoying a series of memorable events that a company stages as if in a theatrical game to involve the user in a completely personal way.

The importance of the customer experience is recognized in the fact that a person is willing to invest more in those products or services that allow him to live a positive experience during its consumption or administration. The customer experience therefore represents the form in which the consumer lives and enhances what has been received by the company. As part of a voice of the customer program, the evaluation of the customer experience allows to better understand the customer's needs.

In the article "*Enabling Voice of the Customer Excellence*" (Fritz, 2018), Trosten Fritz explains the relevance of the customer experience.

*VoC programmes are seen as inspiring change to improve the customer experience, and as such, where employed appropriately, they are a source of continuous change driven by customers.*

(FRITZ, 2018)

Fritz explains how customer experience is the key to defining future strategies. For this reason, every company that focuses on the customer and therefore on its experience motivates a VoC program.

## 2.2. Data analysis and visualization

In a project that is destined to work with a huge number of data, the use of some theoretical systems to administrate all this information results to be necessary. Therefore, in the following chapter we will talk about the systems to analyse data and visualize information.

### 2.2.1. Data analysis

In the book “*Voice of the customer: Capture and Analysis*” (Yang, 2008), Yang introduces the concept of Six Sigma and explains that statistics is necessary in the analysis of the data.

*Six Sigma is a data-driven management system. Data-driven means that in Six Sigma, the real data collected in the process under study is the only source for measuring the current performance, analyzing the root causes of the problem, and deriving improvement strategies. Near-perfect-performance objectives means that in Six Sigma, the process will be continuously improved until it achieves very low levels of defects and very high levels of performance. Clearly, it also needs real data from the process to verify that the desired performance requirements are met.*

(YANG, 2008)

Data analysis is a very important part of Six Sigma and the theoretical basis for modern data analysis is statistics. In Six Sigma applications, there are several probability distributions models that are frequently used as the basis for data-driven decision making. They are the normal distribution, exponential distribution, binomial distribution, and Poisson distribution.

We will focus the study on the normal distribution, that represent also the most popular distribution in quality engineering and Six Sigma. For a normal distribution there are:

$$f(y) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{1}{2}\left(\frac{y-\mu}{\sigma}\right)^2}$$

$$E(y) = \mu$$

$$Var(y) = \sigma^2$$

A normal random variable  $y$  is denoted by  $N(\mu, \sigma^2)$ . The distribution is centred at  $\mu$ , and a smaller  $\sigma$  will result in a tighter curve, and vice versa.



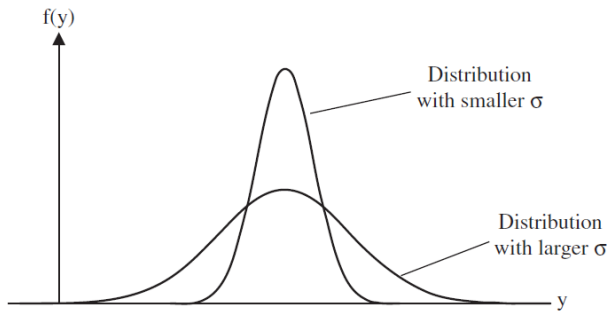


Figure 2-1 Normal probability density curve (Yang, 2008)

An important special case of the normal distribution is the standard normal distribution. In the standard normal distribution,  $\mu = 0$  and  $\sigma^2 = 1$ . The standard normal random variable is often denoted by  $z \sim N(0, 1)$ . The standard normal distribution table is mainly used to calculate probability for all kinds of normal distribution. The shape and percentage distribution properties of the standard normal distribution are illustrated in Figure 2-2.

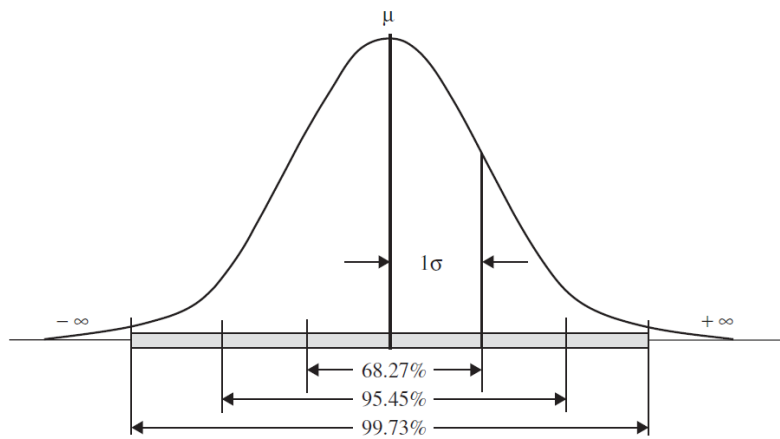


Figure 2-2 Percentage distribution properties of normal random variable (Yang, 2008)

Figure 2-2 shows that if  $y \sim N(\mu, \sigma^2)$ , then  $P(\mu - \sigma \leq y \leq \mu + \sigma) = P(-1 \leq z \leq 1) = 0.6826 = 68.27\%$ , that is, 68.27% of observations from a normal population will locate within one standard deviation distance from the mean. Similarly,  $P(\mu - 2\sigma \leq y \leq \mu + 2\sigma) = P(-2 \leq z \leq 2) = 0.9545 = 95.45\%$ , that is, 95.45% of observations from a normal population will locate within two standard deviations' distance from the mean.  $P(\mu - 3\sigma \leq y \leq \mu + 3\sigma) = P(-3 \leq z \leq 3) = 0.9973 = 99.73\%$ , that is, 99.73% of observations from a normal population will locate within three standard deviations' distance from the mean.

### Statistical control chart

To complete what has been said, we introduce the concept of statistical control graphics. In the book "*Analisis de la produccion y las operaciones*" – "*Production and Operations Analysis*" (Nahmias, 2007), the author explains the importance of the control charts in the evaluation of a process quality.

*Las gráficas de control proporcionan un medio gráfico simple para controlar un proceso en tiempo real.*

*Control charts provide a simple graphical means to control a process in real time.*

(Nahmias, 2007)

Nahmias explain that a control chart describes the output of a production process related to time and indicates when a change in the probability distribution that generates the observations may have occurred. To construct a control chart, information about the probability distribution of the process variation and the fundamental results of the probability theory is used. A result that forms the basis of a class of control graphs is known as the *central limit theorem*. This theorem says that the distribution of the sums of the independent random variables with identical distribution tends to the normal distribution as the number of terms in the sum increases. In general, the distribution of the sum converges very quickly with a normal distribution.

In quality control, the central limit theorem justifies the hypothesis that the distribution of  $\bar{X}$ , the average of the sample, has an approximately normal distribution. Remember the definition of the sample mean: if  $(X_1, X_2, \dots, X_n)$  is a random sample, then the mean of the sample  $\bar{X}$  is defined as

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n X_i$$

Taking up what was said before about the 3sigma control limit and defining the variable  $\bar{X}$  as  $\bar{X} \sim N\left(\mu, \frac{\sigma}{\sqrt{n}}\right)$ , it is possible to get the following results:

$$P\{-3 \leq z \leq 3\} = 0.9973$$

$$Z = \frac{\bar{X} - \mu}{\sigma/\sqrt{n}}$$

$$P\left\{-3 \leq \frac{\bar{X} - \mu}{\sigma/\sqrt{n}} \leq 3\right\} = 0.9973$$

$$P\left\{\mu - \frac{3\sigma}{\sqrt{n}} \leq \bar{X} \leq \mu + \frac{3\sigma}{\sqrt{n}}\right\} = 0.9973$$

That is, the possibility of observing a value of  $\bar{X}$  greater than  $\mu + 3\sigma/\sqrt{n}$  or less than  $\mu - 3\sigma/\sqrt{n}$  it's 0.0026. An event of this type is rare enough that if it happened, it would probably have been caused by a deviation from the population mean, rather than having resulted from chance. This is the basis of the theory of control charts.

Nahmias suggests the utilization of statistical control graphs in the context of the hypothesis tests of classical statistics. The null hypothesis is that the underlying process is under control. Accordingly, we have two different hipótesis:

$H_0$ : the process is under control.

$H_1$ : the process is out of control.

We interpret the word *control* with the meaning that the random underlying mechanism that generates the observations is stable over time. For the graphs  $\bar{X}$ , we test if the average of the process has experienced some deviation. There are two ways to reach the wrong conclusion: reject the null hypothesis when it is true (conclude that the process is out of control when it is under control) and reject the alternative hypothesis when it is true (conclude that the process is under control when it is out of control). These are called, respectively, Type 1 and Type 2 errors. We use the  $\alpha$  symbol to represent the probability of a type 1 error and  $\beta$ , to represent the probability of a type 2 error. A test is a rule that indicates when to reject to  $H_0$  based on the sample values. A test requires the specification of an acceptable value of  $\alpha$ . Conceptually, we are doing the same when we use control charts.

The hypothesis that the process is under control is rejected if an observed value of  $\bar{X}$  It is outside the control limits. We can set the values of the upper control limit (UCL) and the lower control limit (LCL) based on the specification of any  $\alpha$  value.

$$\alpha = P\{\text{type 1 error}\}$$

$$\alpha = P\{\text{an out of control signal is observed} \mid \text{this process is under control}\}$$

$$\alpha = P\{\bar{X} < LCL \text{ or } \bar{X} > UCL \mid \text{the true mean is } \mu\}$$

$$\alpha = P\left\{\frac{\bar{X} - \mu}{\sigma/\sqrt{n}} < \frac{LCL - \mu}{\sigma/\sqrt{n}}\right\} + P\left\{\frac{\bar{X} - \mu}{\sigma/\sqrt{n}} > \frac{UCL - \mu}{\sigma/\sqrt{n}}\right\}$$

$$\alpha = P\left\{Z < \frac{LCL - \mu}{\sigma/\sqrt{n}}\right\} + P\left\{Z > \frac{UCL - \mu}{\sigma/\sqrt{n}}\right\}$$

$$\frac{LCL - \mu}{\sigma/\sqrt{n}} = -Z_{\alpha/2}$$

$$\frac{UCL - \mu}{\sigma/\sqrt{n}} = Z_{\alpha/2}$$

Therefore, the statistics control limits are:

$$UCL = \mu + \frac{\sigma Z_{\alpha/2}}{\sqrt{n}}$$

$$LCL = \mu - \frac{\sigma Z_{\alpha/2}}{\sqrt{n}}$$

By making  $z_{\alpha/2} = 3$ , we get the popular three sigma control limits. This is equivalent to selecting a value of  $\alpha = 0.0026$ . This specific value of  $\alpha$  is the one that is traditionally used; it is not necessarily the only one that makes sense. In some applications, you might want to increase the possibility of recognizing when the process goes out of control.

In the chapter “Aseguramiento de la calidad” – “Quality assurance” (Nahmias, 2007), the author illustrates also how should the data be represented in a chart. He basically reports the values of each sample, the upper and lower control limits. In the case reported in figure 2-3 all the sample seems to respect the statistics control limits.

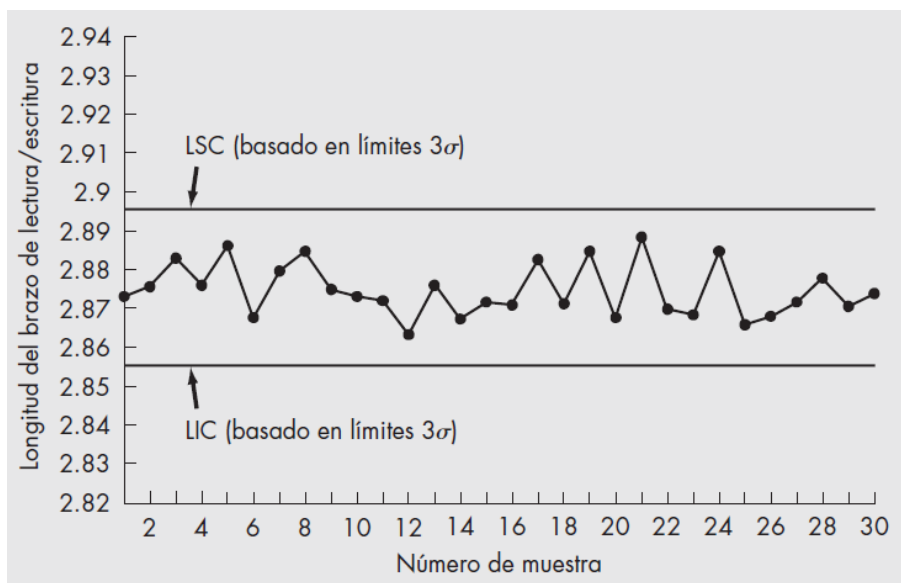


Figure 2-3 Example of  $\bar{X}$  chart (Nahmias, 2007)

### 2.2.2. Information visualization

*But if you don't present your data to readers so they can see it, read it, explore it, and analyze it, why would they trust you?*

(CAIRO, 2013)

Alberto Cairo, in his book “*The functional art: an introduction to information graphics and visualization*” (Cairo, 2013), explains exactly the reason why it is essential treating the information visualization in this thesis project. We talked about the importance of the voice of customers, how we can gather their needs and then analyse what has been collected to obtain results. Now it is necessary to know how transmit this information to those who will have to make decisions. To do this, therefore, we need to understand how to communicate effectively.

Other authors also recognise the importance of data visualization:

*Data visualization is an important tool for data exploration; however, it is also critical for communicating results from analysis and recommendations from analytical studies.*

(Camm, Fry, & Shaffer, 2017)

The authors of the article “A Practitioner’s Guide to Best Practices in Data Visualization” (Camm, Fry, & Shaffer, 2017) reiterate the difficulty of visualizing the data. There are different data visualization software on the market, but despite the great support they provide, they cannot relieve the user of the responsibility for the choices made. It is precisely those that define the ability of the visualization to communicate.

They defines the data visualization as “*the process of visualizing data through tables, charts, graphs, maps, and other visual aids.*” (Camm, Fry, & Shaffer, 2017). While the goal of this process is to communicate a specifics message to the audience. To achieve this, they recommend respecting three general principles. These principles can be applicated to descriptive, predictive and prescriptive analytics. To each one of them there is a chart that results to be more useful and a better choice. However, what should drive the most is the empathy for the audience.

The three general principles Camm, Fry and Shaffer define are the followings:

- *Design and layout matter.* The choice of the type of graph or table used affects the ability to draw attention to the important aspects that enclose the goal of the visualization. The layout significance is explained for example in the arrangement of the contents, therefore where a title, label or legend is positioned.

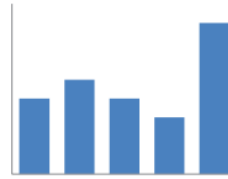
The type of comparison being made is critical when determining the type of data visualization or chart type. In a categorical comparison, there are different solutions, but the best one is the bar chart (vertical or horizontal). In a part to whole comparison it is preferred a bar chart or also a stacked bar chart. But clearly it should be better avoiding pie chart. With times-series data it is requested a line charts or a bar charts. The grades in a data-visualization class can be visualized throw a dot plot chart, with or without jitter, that allows the reader to more easily observe differences in values that would otherwise be plotted on top of each other. Correlated variables are well visualized using scatter diagram with two box plot. While if we have multiple correlated variable it’s good to use a scatter matrix. The histogram can be used to compare frequencies across bins of ranges. Another type of comparison measure is rank order that can be visualized with a slope graph.

# 91%

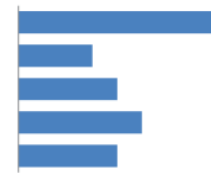
Simple text



Scatterplot



Vertical bar



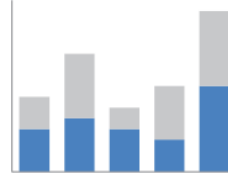
Horizontal bar

	A	B	C
Category 1	15%	22%	42%
Category 2	40%	36%	20%
Category 3	35%	17%	34%
Category 4	30%	29%	26%
Category 5	55%	30%	58%
Category 6	11%	25%	49%

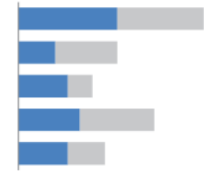
Table



Line



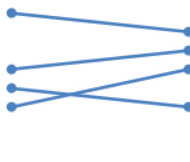
Stacked vertical bar



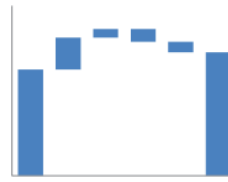
Stacked horizontal bar

	A	B	C
Category 1	15%	22%	42%
Category 2	40%	36%	20%
Category 3	35%	17%	34%
Category 4	30%	29%	26%
Category 5	55%	30%	58%
Category 6	11%	25%	49%

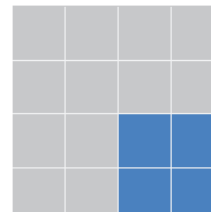
Heatmap



Slopegraph



Waterfall



Square area

Figure 2-4 Some common visuals (Knafllic, 2015)

- **Avoid clutter.** In order for the visualization to communicate exactly the defined message, it is necessary to avoid inserting contents that could distract the reader. All that data, words or images that do not bring information should be avoided.

Knafllic (2015) discusses the Gestalt Principles of Visual Perception and how they can aid in eliminating clutter. These six principles, which allow us to create order from visual stimuli are:

- Proximity: We place objects that are close together in a group;
- Similarity: We place objects with the same shape and (or) colour in a group;
- Enclosure: We place objects that are enclosed in a group;
- Closure: If enough of a shape is shown, we map the shape to something familiar to us;
- Continuity: We expect objects that follow a path or curve to be more related than those that do not;
- Connection: We place objects that are connected in a group.

- *To use color purposely and effectively.* Like words, colour can also carry information. However, it is important to avoid weighing down the display. The colour should be entered only where strictly necessary if capable of helping to convey the message.

Colours can be used basically for three main reasons: categorical (different colours for different categories), sequential (using light to dark shades you can add the intensity of a measure), and diverging (has a central point where two sequential colours diverge).

### 2.3. Agile

Finding to design a methodology for Enel Distribution Chile, it seems to be necessary understand how to manage people involved and a system that allows developing solutions. An interesting framework present in literature is Agile. Another good point that sustains the introduction of Agile is the intent by Enel Distribution Chile to adapt Agile in all his project development. Clearly a framework like this requires first a change in the company culture. But let we see how does Agile works.

Agile born from the company need of lighter weight along with faster and nimbler software development processes. This necessity is explained in the growing and volatile internet software industry. Therefore, a company wants to adopt a system that allows a faster development of solution with the possibility of adapting with the customers need that constantly changes. It doesn't want to define a process that have to respect till the end and launch of the product or service.

The *Agile Manifesto* (Manifesto for Agile Software Development, 2001) is the best way to understand the idea that define this framework. The focal values honored by the agilists are presented in the following:

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

In the book *"Agile Software Development Methods: Review and Analysis"* (Abrahamsson, Salo, Ronkainen, & Warsta, 2002), the authors explain the four agile values:

- The agile movement emphasizes the relationship and communality of software developers and the human role reflected in the contracts, as opposed to institutionalized processes and development tools. It recognises the importance of the team spirit and working environment.
- The objective of the software team is to continuously turn out tested working software. They want the possibility of continuously launch new product and to make this possible they need simple code easy to change and basic documentation.
- The relationship and cooperation between the developers and the clients is given the preference over strict contracts. Agile developments is focused on delivering business value immediately as the project starts. This reduces the risks of non-fulfilment regarding the contract.



- The team should be able to adapt his work to customer needs changes. They should be competent and authorized to adjustment during the process life-cycle. The same contract has to be formed with tools that support and allow alterations.

Agile defines also twelve principles that stand behind its manifesto (Principles behind the Agile Manifesto, 2001):

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Business people and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity—the art of maximizing the amount of work not done—is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams.
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly.

There are different types of existing agile methods. Among these we find what turns out to be the most interesting and commonly used. Its operation will be illustrated later.

### **2.3.1. Scrum**

*When a system is simple, it's not so hard to know in advance what to do.  
But when we are dealing with a market economy that changes all the time*

*and with technology that won't stand still, learning through short cycles of discovery is the tried-and-true problem-solving approach.*

(SCHWABER, 2004)

In “*Agile project Management with Scrum*”, Schwaber explain the reason why Scrum is so important and works. Basically, Scrum is a process for managing complex projects.

Schwaber (SCRUM Development Process) explains us the relations that occurs between complexity and probability of success in a project development, using Waterfall Spiral or Iterative processes. As the complexity of the variables increase even to a moderate level, the probability of a “successful” project quickly diminishes (a successful project is defined as a system that is useful when delivered).

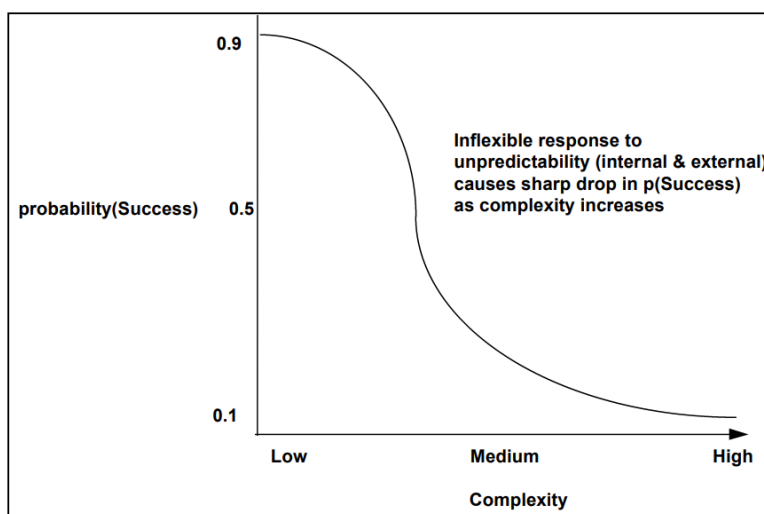


Figure 2-5 Defined Process Risk/Complexity Graph (Schwaber, SCRUM Development Process)

However, a different result is obtained if we graph the relationship between environmental complexity and probability of success with a flexible methodology that incorporates controls and risk management, the tolerance for change is more durable.

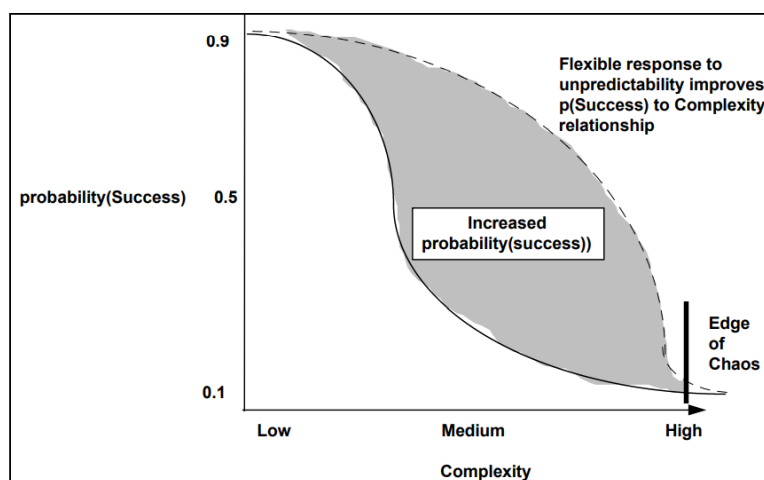


Figure 2-6 Risk/Complexity Comparison Graph (Schwaber, SCRUM Development Process)

Those graphs should help us to understand why the implementation of a Scrum Methodology results to be so important. Schwaber reports the following explanation of the difference between the different approaches:

*The primary difference between the defined (waterfall, spiral and iterative) and empirical (SCRUM) approach is that The SCRUM approach assumes that the analysis, design, and development processes in the Sprint phase are unpredictable. A control mechanism is used to manage the unpredictability and control the risk. Flexibility, responsiveness, and reliability are the results.*

(SCHWABER, SCRUM DEVELOPMENT PROCESS)

Therefore, the SCRUM methodology is characterized as follows:

- The planning and closure phases consist of defined processes. The flow is linear, with some iterations in the planning phase.
- The Sprint phase is an empirical process, composed by unidentified or uncontrolled processes. The flexibility is maximized.
- Sprints are nonlinear and flexible. They allow to evolve the final product.
- The project is open to the environment until the closure phase.
- The deliverable is determined during the project based on the environment.

Process

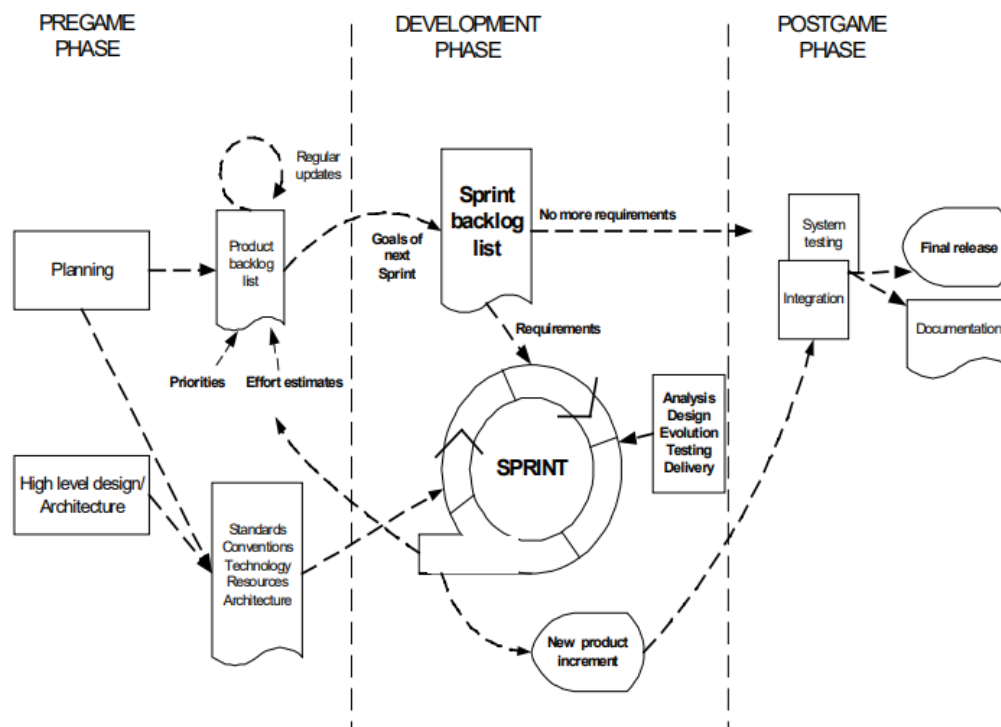


Figure 2-7 Scrum Process (Abrahamsson, Salo, Ronkainen, & Warsta, 2002)

Abrahamsson, Salo, Ronkainen and Warsta (Agile Software Development Methods: Review and Analysis, 2002), illustrates the structure of the Scrum Methodology (Figure 3-7). Scrum process includes three phases: pre-game (Planning and Architecture/High level design), development (the Game phase, where the sprints are realized) and post-game (contains the closure of the release).

#### Roles and responsibilities

There are six identifiable roles in Scrum that have different tasks and purposes during the process and its practices: Scrum Master, Product Owner, Scrum Team, Customer, User and Management.

The **Scrum Master** is a methodological expert acting as a facilitator between the Product Owner and the team. It is the person responsible for guiding the team in the methodology and ensuring that they are focused on the objectives of each cycle. It is a critical figure in the transformational process that must be able to understand the context where the team operates.

The **Product Owner** (PO) is responsible for maximizing the value of the product for the customer. It acts as a bridge between the client, the sponsor and the team. It gathers the needs of the client, communicates their expectations to the team and gives voice to the team in front of the client to achieve an optimal balance between need and reachable reality.

The **Scrum Team** is a multidisciplinary and self-organized team that possesses the necessary skills to generate the product that the customer demands. Among these skills there are experts in the development of solutions and user experience, IT referents, knowledgeable process or system around the product and business connoisseurs among others.

The **Customer** participates in the tasks related to product Backlog items for the system being developed or enhanced.

The **Management** is in charge of final decision making. He also participates in the setting of goals and requirements.

#### Practices

There is a list of practices a company that implements Scrum should perform:

- **Product Backlog:** complete and prioritized list of work pending in the entire project. It is managed by the Product Owner and will prioritize it based on customer needs.
- **Effort estimation:** is an iterative process in which the estimation of the backlog items are focused on a more accurate level when more information is available.
- **Sprint:** it is the time you spend between each product increase. It is a cycle that is repeated and whose purpose is to add value to the product in an incremental and progressive way to meet the expectations and needs of the client. The “time box” of

the sprints is defined at the beginning of the project under a consensus scheme within the squad, and although it can last from 1 to 4 weeks once set it must be maintained in each sprint of the project..

- **Sprint planning meeting:** It is the initial Sprint meeting, the PO discusses the objective of the Sprint with Team and Scrum Master. It is composed by two phases: the first requires to decide upon the goals and the functionality of the next Sprint; the second is held by the Scrum Master and Scrum Team that define how the product increment is implanted during the sprint.
- **Sprint Backlog:** it is the set of PBIs (Product Backlog items) that the team undertakes to complete throughout the next sprint. The Sprint Backlog is formed during the Sprint Planning ceremony between the team and the Product Owner, aided by the Scrum master. In other words, to compose the Sprint Backlog, the team will select the Product Backlog items, maintaining the priority that the Product Owner has defined for each of the PBIs.
- **Daily scrum meeting:** is the meeting that allows coordinate and share ideas about how complete PBIs. It identifies what has been done since the last meeting and what is to be done before the next one.
- **Sprint Review meeting:** is the realized at the end of each sprint. Scrum Team and Scrum Master present the results (product increment) of the Sprint to the other people involved. This meeting may bring out new PBIs and even change the direction of the system being built.

### 2.3.2. SFAFe

*SFAFe is a scalable and configurable framework that helps organizations deliver new products, services, and solutions in the shortest sustainable lead time. It's a system that guides the roles, responsibilities, and activities necessary to achieve a sustained, competitive technological advantage.*

(SCALED AGILE, 2018)

Scaled Agile Framework (SFAFe) is a framework designed by Dean Leffingwell to organize large companies. It aims to implement agility at the organizational level, and not only at the team level (which would work in Scrum). You could say that it's like doing a Scrum of Scrum to scale the rest of the company.

The SAFe Lean-Agile mindset is the combination of beliefs, assumptions, and actions of leaders and practitioners who embrace the concepts in the Agile Manifesto (*Embracing Agility*) and the SAFe House of Lean (*Thinking Lean*).

The SAFe House of Lean illustrates the various aspects of Lean thinking.



Figure 2-8 The SAFe House of Lean (Scaled Agile)

The roof represents the goal of delivering value, while the pillars embody respect for people and culture, flow, innovation, and relentless improvement to support the goal.

SAFe is based on nine immutable, underlying Lean and Agile principles. These are the fundamental tenets, basic truths and economic underpinnings that drive the roles and practices that make SAFe effective. (SAFe Lean-Agile Principles)

1. *Take an economic view.* An understanding of economics drives decisions. Economic variables such as development cost, production cost, delivery lead time, and value directly inform decision-making.
2. *Apply systems thinking.* Everyone understands and commits to the common goals of the larger system. The whole is optimized, instead of the parts.
3. *Assume variability; preserve opinions.* Decisions are delayed until the last responsible moment; alternatives are constantly and aggressively explored.
4. *Build incrementally with fast, integrated learning cycles.* Cadence-based learning cycles are used to gain knowledge, evaluate alternatives and inform decision-making.
5. *Base milestones on objective evaluation of working systems.* Progress is measured by objectives measures, rather than traditional phase-gates.
6. *Visualize and limit WIP, reduce batch sizes, and manage queue lengths.* Small batches of work, controlled Work in Progress (WIP), and small queues ensures fast flow of value and learning.
7. *Apply cadence, synchronize with cross-domain planning.* Regular synchronization continually aligns all system builders and ensure all perspectives are understood and resolved.
8. *Unlock the intrinsic motivation of knowledge workers.* Knowledge workers exhibit curiosity and have fundamentally different motivations. Leaders are responsible for creating an environment in which these workers can thrive.
9. *Decentralize decision-making.* Autonomy empowers individuals and enhances motivation. Leaders support decentralized decision-making by equipping teams and individuals with the knowledge and judgement needed to make good decisions.

#### SAFe 4.6 configuration

The version 4.6 of SAFe defines four different types of configuration. The difference between these is the amount of organizational levels implemented. That allows SAFe supports solutions requiring a small number of practitioners, as well as complex systems that require hundreds—and even thousands—of people to build and deliver.

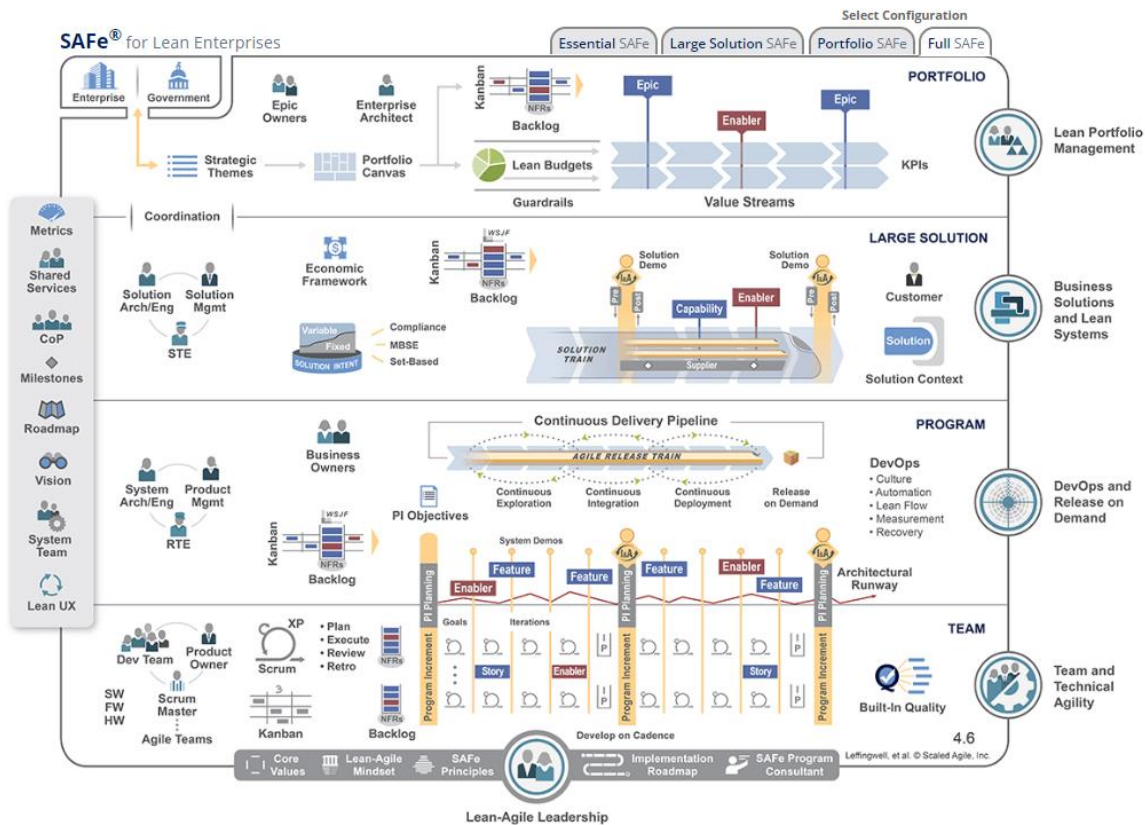


Figure 2-9 The Full SAFe configuration (Scaled Agile, s.d.)

- **Essential SAFe** is the basic building block for all other SAFe configurations and is the simplest starting point for implementation. It brings the core competencies of Lean-Agile Leadership, Team and Technical Agility, and DevOps and Release on Demand to the enterprise.
- **Large Solution SAFe** brings the Business Solutions and Lean Systems Engineering competency to those building the largest and most complex solutions. This configuration supports multiple Agile Release Trains (ARTs) and suppliers.
- **Portfolio SAFe** applies the Lean Portfolio Management competency to align portfolio execution to the enterprise strategy, and organizes development around the flow of value through one or more value streams.
- **Full SAFe** is the most comprehensive version that integrates all five core competencies to support enterprises that build and maintain a portfolio of large, integrated solutions.

Let's now analyze the different levels that can make up the SAFe structure: Team level, Program level, Large Solution Level, Portfolio Level.

The **Team level** it's organized like a classic agile team. It contains the roles, activities, events, and processes which Agile Teams build and deliver value in the context of the Agile Release Train (ART). At this level, the only role that varies is the Scrum Master, which apart from the



basic functions of Scrum, communicates and coordinates with the Scrum Masters of other teams and participates in the “Program Increment (PI) planning”.

At the **Program level** they work on Agile Release Train (ART), a set of long-term aligned teams that develop and deliver solutions incrementally. To do this, they use iterative cycles of fixed length within a longer time interval, the Program Increment (PI). In an ART they work together between 5 and 10 teams, synchronizing their iterations and releases and with a common business and technological mission.

There is a person in charge of all the design at this level who works with the teams making sure that the non-functional requirements are met. There is a "Program Backlog", which is a prioritized list of features. The features can originate at the Program Level or derive from epics defined at the portfolio level. And these features are broken down into user stories, which are what teams work on.

At this level you need to have a global vision about what you want to achieve in each ART, to coordinate all the teams that work on it and have the same common goals. For this, the roadmap (which is defined at the Portfolio Level) and which normally includes the releases that will be made in the next 3 to 6 months are usually helpful.

This level requires two important ceremonies: the *Program Increment Planning*, a face to face event able to take the pulse of the state of the art by aligning all teams towards a shared mission and vision; and the *Inspect & Adapt*, it is an important event held at the end of each Program Increase (PI) that demonstrates the current state of the solution evaluates by the ART.

The **Large Solution Level** contains the roles, artifacts, and processes needed to build large and complex solutions. This level includes a stronger focus on capturing requirements in Solution Intent, the coordination of multiple Agile Release Trains (ARTs) and Suppliers, and the need to ensure compliance with regulations and standards.

The Solution Train is the organizational vehicle that is used to coordinate the efforts of multiple ARTs and suppliers to deliver the world’s largest and most complex systems. They align and coordinate ARTs and suppliers to collaborate like a single team, but have all the advantages inherent in organizing using small teams and ARTs in order to scale.

The higher level is the **Portfolio Level**. At the business level, high-level epics are planned, aligning the business objectives and system architecture. At this level broadly defined is what gives more value to the organization and Lean principles are used, in addition to using Kanban boards to organize the tasks of this level. Different metrics are also carried out and controlled, such as the satisfaction of the company's employees, customers, the quality of the software / solution that is launched on the market and the number of releases a year the company makes.

### 3. Methodology: The Voice of the Customer Model for Enel

#### 3.1. Methodology structure

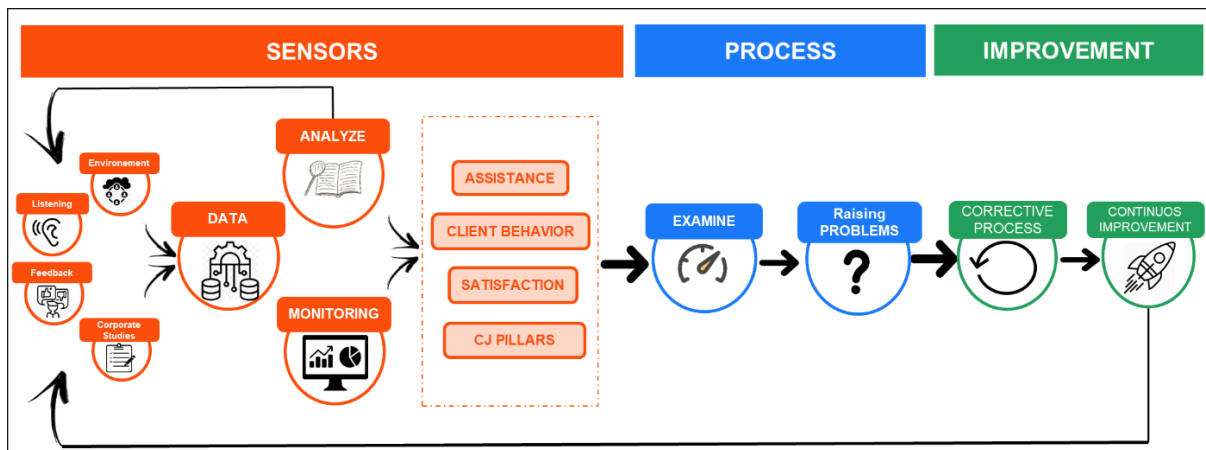


Figure 3-1 Methodology structure

Regarding the different objectives indicated, it was produced the Voice of the Customer methodology for Enel Chile, explained in Figure 4-1. The methodology requires the application of different theories, such as The Voice of the Customer, for the definition of the data that have to be captured and elaborated; Data Analysis and Visualization, for the realization of dashboards necessary to show the information previously collected; and the SAFe (Agile) framework, to organize the work and the monitoring the people involved.

The Voice of the Customer methodology consists of three different stages, which are considered necessary to achieve his objective: capturing and incorporating the opinion of the customer in the service delivery process, in order to improve the experience of the client.

The first stage, *Sensors*, defines what data have to be captured to correctly listen to customers, everything they say about services, how they act when they use them and how to handle this data to reach the definition of Sensors. Sensors are macro groups of information that allow the analysis of the opinion of the client. Rules are required to collect data in one storage, analyse and translate them into information.

The next stage, *Process*, consists of two activities: *Examine* and *Raising Problems*; It defines how information are studied to recognise the presence of a problem in the customer experience.

In the end, the *Improvement* focuses on the definition of the actions needed to achieve a correction of the service in which the client highlights the presence of a problem. It ensures that people involved in the services management have knowledge of the problems

encountered in the previous step. This stage sets the steps that the team will have to respect to reach the improvement of the service, and defines how to verify the efficiency of the changes implemented.

### 3.2. Sensors

This stage of the methodology aims to define the sensors, that are the main information studied to understand the needs of the client. The sensors are the result of integration, analysis and transformation of the captured data. They are macro groups of information that communicate the main voices of customers.

We now define more specifically how the sensors are reached.

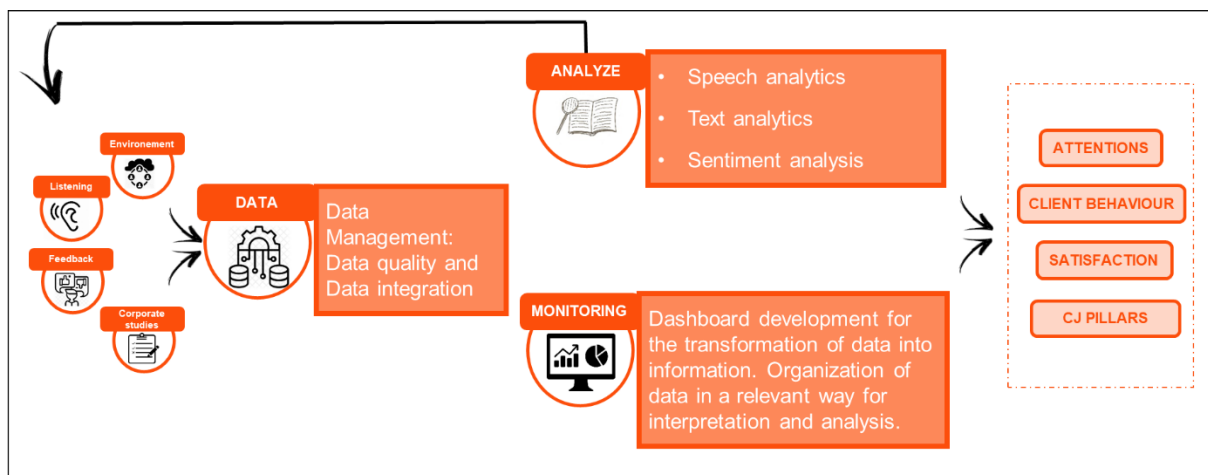


Figure 3-2 Structure of the Sensors

#### 3.2.1. Voice of the Customer instruments

The realization of this methodology requires at first the identification of the data that can be captured to be able to listen to all those who interact with the company, capturing accurate and timely information.

The objective of step is to identify all the attributes that allow a detailed definition of the requirements, parameters and variables required by the client in the services.

Enel Distribution Chile has access to different tools available to listen to customers, such as surveys and data related to interactions with customers. Regarding what is already developed in the company and the new tools that could be introduced, four categories were defined that could regroup the clients' voices:

- *Environment*: defines all the data that the company can capture from its interactions with customers or from interactions between them. Data from social networks, mass media and customer service channels are parts of the environment. This category also includes all the data that define the customer profile. Specifically, Enel has the following data sources:
  - Salesforce: Customer Relationship Management (CRM) used by Enel to manage all customer data and supplies. The existing relationships between each supply and its customers, the customers identification data and the supply are recorded. In addition, each time the client requires Enel's assistance, a case is opened, and becomes a record of care. The CRM then allows the following data to be obtained: customer profile, customer contact data, number of cases per customer, by type of case (classified by Motive and Submotive) and customer service channel. The methodology suggests improving contact data, in particular, having information on the client's age (date of birth), which is essential for the development of a project that requires segmenting customers by age and contact channel.
  - Social Studio: the Social Relationship Management that allows monitoring of social networks, such as the publications of Enel, other users who write about Enel, and those who request assistance via chat. Then among others you can obtain data on the amount of assistance provided (by customer and type of care). In addition, it is suggested to record all personal interactions that do not generate a case.
  - National and international press.
  - Mass media (e.g. Reclamo.cl).
  - AppStore; capture comments and evaluations that the client leaves on the Enel app.
- *Corporate studies*: data collection through ad hoc surveys conducted by the company to question customers about aspects related to the value offer or regarding deepen specific issues (e.g. recent improvements). The tools available are:
  - Satisfaction survey of residential clients: they allow to obtain information such as NPS, satisfaction level (initial and final); and more specific ones on: Sale of product, quality of supply, customer service channel used, service ticket, payment methods, confidence in reading, corporate image, problem rate.
  - Exit survey on customer service channels; use of different surveys for each customer service channel according to its characteristics, but with common objectives: quality of infrastructure or service, reason for the assistance,

evaluation of the executive (if available), response / resolution capacity. One aspect that turns out being very important in the application of the survey is the opportunity. It is very high the risk that the interviewee forgets the sensations perceived at the time of the care, or that his agreement focuses only on the negative aspects. For these reasons and to have a continuous feedback, it is necessary to administer the surveys so they can be carried out no longer than few days after the customer care service is provided. In addition, the process of applying surveys can be streamlined with the introduction of online surveys.

- *Listening*: the company can make “implicit listening” through the data that the client leaves in their interactions with the company, minimizing the need for additional contacts to learn about topics that can be inferred. Data can be extracted by studying the following:
  - Website Behaviour, App Behaviour; With the use of appropriate systems, you can monitor the actions that the user complies with on the Enel website and app. These data allow us to understand which are the self-service and / or self-care operations that generate more uncertainties and difficulties in the clients, as well as to understand which are the most used, and at what times they are used. For example, the following data can be captured: link opening rate, information search rate, process abandonment rate (e.g. online payment), function reuse rate, date and time of using the online service.
  - Follow up events on customer service channel; the methodology suggests the introduction of follow-up systems for assistance events in automated channels (IVR, self-service in commercial offices). Useful data that can be captured are duration of care, assistance abandonment rate.
- *Feedback*: The methodology makes a permanent evaluation of the “moments of truth” that the client has experienced in their different Journeys, asking valuable questions at the right time, without involving an effort for the client. These questions do not want to replace the classic survey instrument, but instead seek to complement it by obtaining opinions in reference to specific events, at the same time in which the event is verified without receiving influences from the environment or the image of the company. The following are ways to ask in the "moments of truth":
  - Online Customer Survey; Perform online instruments that allow the customer to leave a quick evaluation of the service: at the end of an online process, at a time of uncertainty (detectable thanks to the Website Behaviour). The survey has to be very simple so as not to discourage the user in answering it and to allow a quick response. In case of a negative response, a text field can be added that allows the user to explain their reasons by leaving a comment.

- EPA (*Encuesta Post Atención* - Post Assistance Survey); At the end of the telephone service, it is given to the client the possibility of leaving their Feedback on the service received. As well as for the online Customer Survey, the EPA requires a quick and timely survey, followed, if required, by the possibility of explaining the evaluation left.

VoC	Instruments
Environment	<ul style="list-style-type: none"> <li>- Salesforce</li> <li>- Social Studio</li> <li>- National and international press</li> <li>- Mass media</li> <li>- AppStore</li> </ul>
Corporate Studies	<ul style="list-style-type: none"> <li>- Satisfaction survey of residential clients</li> <li>- Exit survey on customer service channels</li> </ul>
Listening	<ul style="list-style-type: none"> <li>- Website Behaviour, App Behaviour</li> <li>- Follow up events on customer service channel</li> </ul>
Feedback	<ul style="list-style-type: none"> <li>- Online Customer Survey</li> <li>- EPA</li> </ul>

*Table 3-1 VoC instruments*

It is always important to capture the voice of the client in each of these categories in order to achieve a correct listening in all the moments and interactions of the Customer's Journey, thus being able to complement the different information between themselves.

For example, it is very common that a client does not answer a survey due to lack of time or availability. But more likely the same client leaves his opinion in different contexts, such as in a comment on Facebook, making a request to a customer service channel or operating through the website.

### **3.2.2. Data**

Once the client's voice has been captured, the next phase consists in carrying out actions aiming to manage the available data. It is necessary to organise the data set collected, to correctly define the key needs of customers.

It is required a Data Management that allows the implementation of Data Quality and Data Integration. Data Quality is responsible for the cleaning of the entire database, the exclusion of data that cannot be translated into useful information. It allows to evaluate the conformity

of the value with the working objectives. Likewise, the realization of Data Integration allows to gather all the captured data in the different channels.

From the development of a correct Data Integration online, also the customer support service benefits. It allows to communicate through different channels, without the need to explain the situation every time. An integrated system, for example, enable to contact the call centre, to make the first communication with the IVR introducing a personal profile, and to follow the care with an executive of the call centre without needing to communicate personal data again. In a second moment it would be possible to require assistance in the commercial office, without presenting the case again.

To facilitate the development of the following actions required by the methodology, Data Management should allow the different managers of each sensor to obtain the data quickly. A responsible person who looks for data should be able to find them ready, without needing to elaborate them.

### **3.2.3. Analyse**

An important stage in the process of data elaboration is the analysis of unstructured data. Among these we must consider all the data that derive from the open questions in the surveys, the call centre (and IVR) assistance, and what the client says through the mass media, social networks. In these data you can find many information that express the voice of the client.

The analyses to develop are the following:

- Speech Analytics
- Text Analytics
- Sentimental Analysis

Speech Analytics allows you to analyse the data collected from the register of the recorded calls of the call centre to collect information about customers, interpret their needs and improve communication and future interaction. In addition, this instrument allows you to evaluate the quality level of this customer service channel. Speech Analytics has a fundamental application in the case of IVR (Interactive Voice Response). Analyse the way in which the client expresses himself, the words he uses, allow the IVR interpreter to be adapted and structured in a timely manner in order to increase his interaction skills.

With Text Analytics it would be possible to find and summarize the trend and behaviour of customers. In the comments that the client leaves us, directly or indirectly, there is a lot of information that, if correctly analysed, can communicate a lot to the company. However, the timely analysis of each comment made manually, requires a lot of work. For this same reason

it is important to implement an automated and online analytics system of the data present in unstructured textual format. The voice of the client could be monitored more quickly and simply in relation to a specific open question of a survey; it could be possible to track everything that the users comment on the different social networks and media, without the risk of losing relevant information.

Another instrument required is the Sentimental Analysis. The objectives of this analysis are to obtain the opinion that customers have about the company, determine the approval or disapproval of a specific product/service. It requires the definition of a score (negative/positive) depending on the type of comment left by the client. A list of key words is defined, where each word has a score: +1 if positive, -1 if negative. Analysing the comments, the system assigns its score to each word that has correspondence in the list and gets to define a final score. In this way it is possible to obtain a trend of what customers think about the company. In addition, an online Sentimental Analysis allows to quickly intervene in the customers' negative comments that could further attack the image of the company. The data to which Sentimental Analysis should be applied are those deriving from social networks, that means all the comments left by customers directly in the company profiles, company tagged post.

Performing these analyses, it would be possible to collect many information in an orderly manner, starting with a flow of unstructured data from which normally it would be more complex to obtain information to be monitored. In addition, the correct development of these analyses allows obtaining useful information to be introduced in the realization of instruments for capturing the client's voice. Analysing the open questions of a survey could, for example, recognize the recurrence of an answer that could be added as an option in a question with multiple answers or as a new question.

#### **3.2.4. Monitoring**

At the time that reach to have data managed and integrated between them, it is required the transformation of data into information. Monitoring then focuses on the development of dashboards that organise data in a relevant way for interpretation and analysis.

The idea is to develop visualizations of all the data collected with the different voice listening instruments of the client in a simple way. To allow a quick interpretation of the information and achieve the recognition of a break in the system, the information regrouped in the different Sensors must be presented, focusing on the most relevant ones.

To correctly develop monitoring, some work rules are needed. As stated before, the realization of a dashboard for each Sensor is required. The responsible for monitoring these dashboards and the frequency of updating need to be defined. That frequency in some cases



could be online, while in other cases it requires periodic delivery of the data (it is assumed that not all surveys are performed steadily, but monthly). Data management should facilitate this process.

To begin with, it is necessary to define what data is required for each Sensor, where each one comes from and how they should be organized and regrouped. Depending on the nature of the data and the focus of the Sensor, it is necessary to define how to analyse the data, that means, how to relate the values between them to obtain relevant information. Finally, it is required the definition of how to graphically visualize the data in a simple way.

The following table represents the responsible of each Sensor, the frequencies (minimum) with which the dashboard must be developed and what data is needed.

Dashboard		Responsible	Frequency	Data
Assistance	Claims	UX Master	Bimonthly	● Salesforce cases
	Queries and Requirements	UX Master	Bimonthly	● Salesforce cases
Satisfaction	Residential	UX Master	Bimonthly	● Satisfaction survey of residential clients ● Social Network monitor ● Medias monitor
	Customer Service Channel	Customer service channel responsible	Monthly	● Exit survey on customer service channels ● Online customer Survey ● EPA ● Satisfaction survey of residential clients.
Client Behaviour		UX Master	Bimonthly	● Website Behaviour ● App Behaviour ● Follow up events on customer service channel
CJ Pillars		UX Master	Bimonthly	VoC

*Table 3-2 Dashboards*

The result, that means the visualization of the data, requires the creation of graphs capable of respecting some rules that allow to show clear and precise information, facilitating the reading by who should analyse them. It is then sought to avoid a complex visualization. For example, choosing the correct graph based on the data you want to represent.

### 3.2.5. The sensors

All the previous stages would allow the definition of macro groups of information necessary to perform a correct listening and follow-up.

The sensors to work with are the following:

- Assistance
- Client behaviour
- Satisfaction
- Customer Journey Pillars

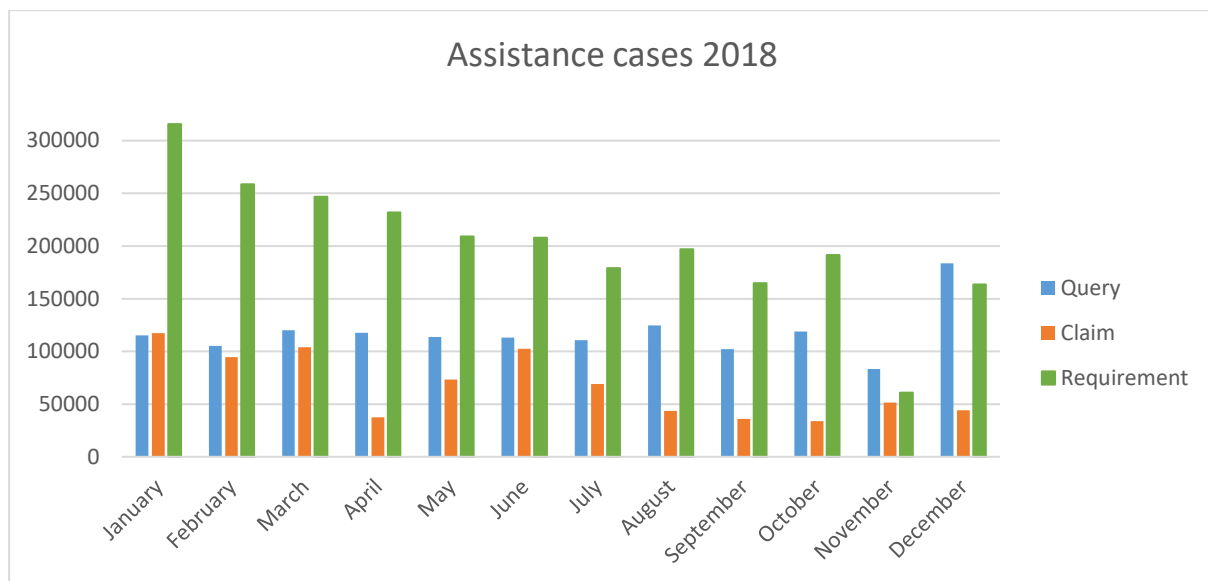
These sensors were defined by evaluating the impact of all the information collected and studying the importance that each one has in the client's perception of the services delivered, and how their voice can help in the improvement process.

The *Assistance* is defined as the set of all the information that derives from the cases of customer care, created by the executives as a result of the interaction with a client. It is considered necessary to analyse in detail these data, since they directly explain what the client usually questions, asks or regrets.

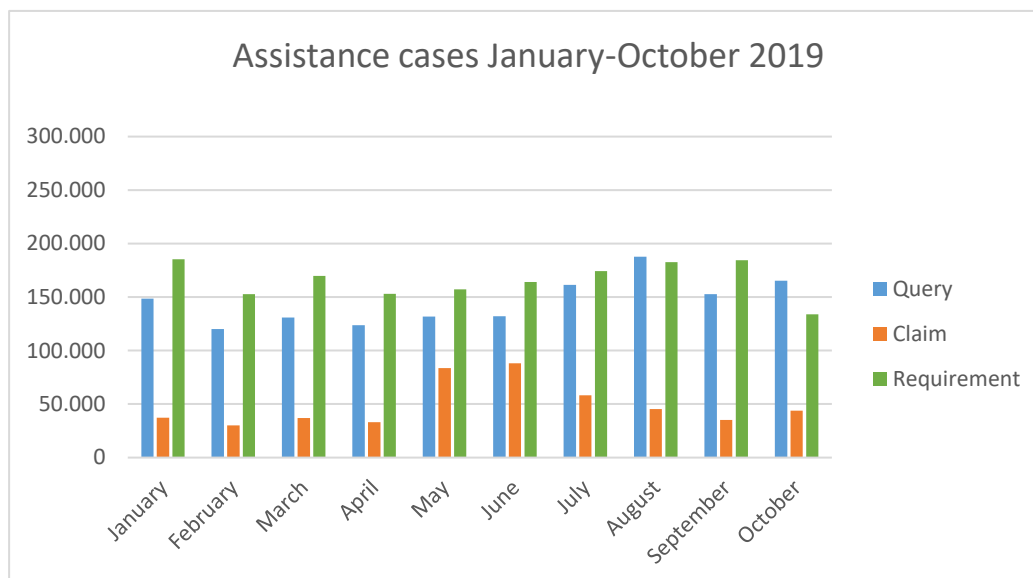
The following table shows the amounts of cases for care created by Enel in the last two years in Salesforce, considering the types of internal care: Query, Requirement, Claim; and the types of case records: Authority Assistance, Commercial Assistance, Emergency. In all of 2018, more than 4.5 million cases were created for care, while in the first 10 months of 2019, almost 3.6 million cases were created. This data allows us to understand the amount of information that can be obtained with the data stored in Salesforce.

Cases	2018	2019 Jan.-Oct.
Query	1.408.683	1.453.879
Claim	807.315	491.533
Requirement	2.426.375	1.657.388
<b>Total</b>	<b>4.642.373</b>	<b>3.602.800</b>

Table 3-3 Number of cases 2018, Jan.-Oct. 2019



Graphic 3-1 Number of cases by type of internal assistance (2018)



Graphic 3-2 Number of cases by type of internal assistance (January-October 2019)

The following table explains the distribution of cases for the year 2019 in the different types of case records: Authority Assistance, Commercial Assistance, Emergency. Clearly, commercial assistance is those that represent the largest percentage, equivalent to 75%. It is important to note the number of Emergency cases (25%, not negligible).

Type of case record	Number of cases	% cases
Authority Assistance	5.538	0%
Commercial Assistance	2.709.781	75%
Emergency	891.761	25%
Total	3.607.080	100%

Table 3-4 Number of cases by type of case record (January-October 2019)

Because of the complexity of this sensor, it is divided into two groups:

- Claims,
- Queries and Requirements.

Type of internal assistance	Number of cases	% cases
Query	1.453.879	40%
Claim	491.533	14%
Requirement	1.657.388	46%
Total	3.602.800	100%

Table 3-5 Number of cases by type of internal assistance (January-October 2019)

A focus on *Claims* is required to detect which are the main problems the client raised. Although they constitute a low percentage of all cases (14%), they are an indispensable source of information on the clients' opinion.

*Queries* and *Requirements* define the main needs of customers. They represent 40% and 46% of the total cases that occurred in the first five months of 2019. They allow to evaluate the efficiency of the self-service - self-care services offered. In addition, they allow the follow-up of cases with insistence and repetition. Their analyses are necessary since they are the main reasons why customers try to contact the company.

Another sensor is defined as *Customer Behaviour*. With this term we want to refer to the behaviour assumed in the automated channels. It seeks to ensure that the automated services offered to the client work correctly and adequately to satisfy their needs. Then study the client's behaviour to detect for example in which operations it stops and which elements it occupies most. In this way you can recognize the processes that could present failures, or simply too long times to end, and discover the resources to strengthen to ensure the functioning of the most required processes. In addition to ensuring a good customer experience, it seeks to achieve an internal objective: to direct the client to use digital services (which clearly represent the least expensive channels), detecting breaks to improve the service and increase its use. The data that allow to define this sensor are captured by studies of Website Behaviour, App Behaviour and follow-up of events (duration of operation, operation abandonment rate).

To improve the experience, an element that cannot be ignored is *Customer Satisfaction*. The customer can express their satisfaction in two ways:

- General Satisfaction;
- Customer service channel Satisfaction.

The first seeks to improve the overall level of quality of service offered to customers. That in terms of the company's internal objective, it translates as an improvement of the company's image. Its sources are customer surveys and monitoring of social networks and medias.

On the other hand, the *Customer service channel Satisfaction* wants to improve the service offered in each of the customer service channels. It is an analysis more focused on the quality of service that executives perform in each care. This information derives from the satisfaction surveys of each channel and from the Online Customer Survey, if available.

The distinction in the two forms of surveys is explained in the specificity of the Customer service Channel Satisfaction survey. It is necessary that the analysis of the specific survey be carried out through the same customer service channel, given the knowledge of the service and the timeliness of the intervention. While the information obtained by the general satisfaction survey can be left to a Committee with transversal knowledge in all the customer service channels.

In the end, we have the *Customer Journeys Pillars*. To evaluate the customer experience, it is not enough to limit yourself to satisfaction. It cannot be considered as a reliable measure, since it takes data from a sample of customers and does not ensure its accuracy. A client could express a very low level of satisfaction for a service that was delivered the previous month. It is common he only remembers the negative aspects or perhaps he has no memory either. Therefore, Satisfaction needs to be integrated. For this reason, it is necessary to focus the study on what are the direct expressions of the customer experience.

The study of the client's voice requires a focus on the Customer Journeys, the set of activities that the client must fulfil in order to achieve its objectives and that need direct or indirect interaction with the company. Specifically, the study of the customer experience is required by looking directly at its main focuses expressed in the Customer Journeys.

Enel Distribution Chile defines 5 Pillars of the Customer Journey that allow to evaluate the different areas of interaction with the client, as well as the customer experience. The following table illustrates the objective and the data collected by each pillar.

CJ Pillars	Objective	Data collection
<i>I want to be known</i>	Provide personalized assistance to each client and have their contact information.	<ul style="list-style-type: none"> <li>• # Actualized contacts</li> <li>• Cases (Modification of data)</li> <li>• Client behaviour</li> </ul>
<i>I have to pay my bill</i>	Improve customer payment experience. Increase the use of digital channels and reduce claims volumes. Understand causes and requirements with higher volumes.	<ul style="list-style-type: none"> <li>• Cases. E.g.: <ul style="list-style-type: none"> <li>• <i>Facturación</i></li> <li>• <i>Lectura</i></li> <li>• <i>Recaudación</i></li> <li>• <i>Medición telemática</i></li> </ul> </li> <li>• Client behaviour: payment in automatic channels (abandonment rate, busy time)</li> <li>• Satisfaction</li> </ul>

<i>I am interested in your offer</i>	[Enel X] It seeks to cover the needs of products and services of the client related to the world of energy.	<ul style="list-style-type: none"> <li>• Cases. Ej: <ul style="list-style-type: none"> <li>• <i>Climatización</i></li> <li>• <i>Asistencia</i></li> <li>• <i>Alumbrado publico</i></li> </ul> </li> <li>• Client behaviour (EnelX online purchase operations)</li> <li>• Satisfaction (Sale of product in General Satisfaction Surveys)</li> </ul>
<i>There is no power</i>	[Emergency due to power outage] Facilitate communication in emergency situations. Communicate with the customer in advance. Ability to solve emergency problems quickly.	<ul style="list-style-type: none"> <li>• Emergency cases</li> </ul>
<i>Info on my billing</i>	Provide and provide customers with information on their energy consumption on the payment receipt.	<ul style="list-style-type: none"> <li>• Query cases. E.g.: <ul style="list-style-type: none"> <li>• <i>Facturación</i></li> <li>• <i>Lectura</i></li> <li>• <i>Medición telemedida</i></li> <li>• <i>Recaudación</i></li> </ul> </li> <li>• Satisfaction</li> </ul>

Table 3-6 Customer Journey Pillars

### 3.3. Process

Once the sensors have been defined, the next stage requires the detailed study of these to be able to correctly detect a break, which in some cases can identify the presence of a problem in the service delivery system.

To solve this stage, two specific actions must be fulfilled:

- Examine
- Raising Problems

The first requires a detailed study of all the results obtained by monitoring, that is, by the Dashboard analysis; to examine the indicators that define each Sensor and to look for the presence of anomalies. In order to fulfil this operation, some criteria must be defined for each Sensor to detect the presence of an anomaly. In this way the breaks present in the system are defined. Therefore, a more detailed study by each one of them is carried out, seeking to find the true reason that leads to show the anomalous value.

Once the break is identified, it must be translated into a problem. It means to study the situation in detail, to look for its causes and for what are its stakeholders. The next action is

to prepare the problem so that it can be delegated to another team to achieve the development of a corrective process and the definition of an improvement.

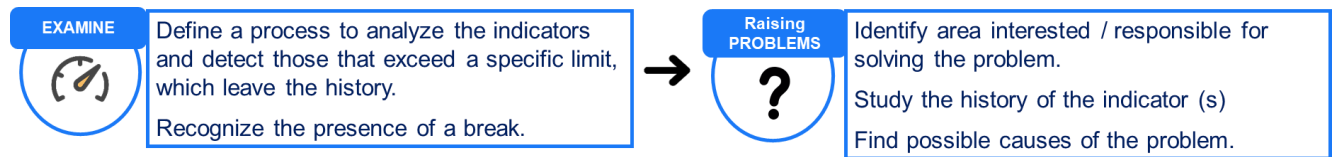


Figure 3-3 Process structure

### Structure of the organization

One aspect that must be addressed, in order to correctly develop these last two stages of the methodology, is the structure of the organization.

The methodology proposes the implementation of a people management system inspired by SAFe (Scaled Agile Framework). SAFe is a framework that allows large companies to be organized with the aim of implementing agility at the organizational level, not just at the team level. You can actually talk about a Scrum of Scrum.

Next, we will explain the reasons for implementing SAFe in this methodology:

- SAFe occupies Agile: Agile is the work methodology in Enel and allows the rapid development of solutions with incremental improvements, the people organization and the incentive to move forward with their tasks.
- SAFe defines different levels of involved teams: the methodology proposes a process, structured in different levels of detail that, from the identification of the problem, allow to reach the improvement. A form of parallelism is then made between improvement flow and organizational levels.
- SAFe distributes the work and needs to be delegated. The main problem is the difficulty of monitoring, incentive and control of people. This framework seeks to achieve change.

Three different organizational levels are defined: Large Solution, Program and Team. Each of them acts in different stages, clearly needing constant interaction and the exchange of information and progress. In the *Process* stage the intervention of the Large Solution level is required. While in the *Improvement* the other two organizational levels work in parallel: Program and Team.

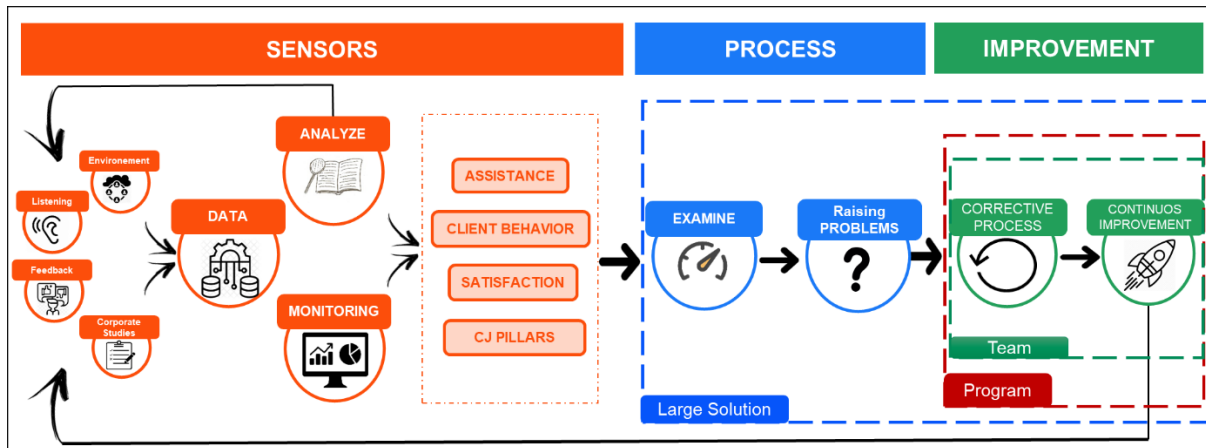


Figure 3-4 SAFe methodology

### People involved

At this stage of the methodology, people at the level of Large Solution are then involved. They have to track solutions at a higher level. The methodology defines that they take care of studying the sensors and from them find the problems present in the system.

The work in Large Solution is organized with the Kanban work methodology. However, periodic organizational and evaluative meetings are required. Specifically, it was decided to organize the work in 6-month cycles where the Committees (Large Solution Teams) meet on average every two months; a Large Solution Planning and a Large Solution Review are defined. The first requires that the objectives that the Committee wants to achieve be defined and shared in a clear and timely manner. The latter allows the evaluation of the way of working within the Committee and the search for possible organizational and dynamical changes.



Figure 3-5 Work structure in Large Solution

The committees required to develop this stage and their compositions are explained in the following table.

Committee	Members	Team
User experience	<ul style="list-style-type: none"> <li>UX Management</li> <li>UX Master</li> <li>UX team</li> </ul>	Managers and assistant managers of the entire company
VoC	<ul style="list-style-type: none"> <li>UX Management</li> <li>UX Master</li> </ul>	Responsible for each area of Customer Care.



	• VoC team	
Customer service channel		Specific customer service channel team.

Table 3-7 Large Solution

Three different Committees are defined to face different aspects. The User Experience Committee allows for a broader vision of the company. It is composed by the managers and assistant managers of the entire company. The aspects analysed are less specific, and a less frequent meeting frequency is required because the members' difficulty to get together. But at the same time the heterogeneity of the committee allows a good capacity to solve the problems, the identification of interconnections between the management, taking advantage of the different knowledge of each one.

On the other hand, a Voice of the Customer Committee is required. It is composed by the responsible for each area involved in Customer Care. That composition allows to analyse the *Sensors* in greater detail, with a higher meeting frequency. Thanks to the proximity with those responsible for the processes and knowledge of the services, they have the ability to study the problem and start corrective process faster.

In addition to these two main committees, the intervention of a committee for each of the customer service channels is needed, so that they can directly study the information that indicates in a timely manner the functioning of their own channel. In particular, the channels are required to respect the following *Process* and *Improvement* stages correctly, not to incur the risk of loss of useful information.

Each of the committees requires, among its members, a Manager, a Master and a work team. These profiles are necessary for proper work management. The Manager has content authority for the Solution Backlog. He works with customers to understand their needs, prioritize capabilities, create vision and roadmap, define requirements, and guide work through the Kanban Solution. The Master is responsible for managing the work at each committee meeting, preparing the material with which to go to work and mediating the relationships between the committee members and their Manager.

The different sensors are distributed among the committees to guarantee a correct analysis of the information. Each assignment is made based on the powers of the committee, its capacity and availability of work. For these reasons this type of distribution is adopted:

- The teams in each Customer service Channel oversee monitoring their own Satisfaction.
- The Customer Experience Committee monitors the Customer Journey Pillars. The subject of the CJ Pillars is very wide and refers to many departments of the company, which is why it is decided to monitor by a Committee that is also very transversal over the entire company. At the same time, a two-month follow-up is enough, since it is analysing elements that are otherwise subject to the monitoring of another

Committee. The risk of detecting errors is not incurred; and allows a study with a different focus.

- The Voice of The Customer committee is responsible for monitoring the following sensors: Assistances, Customer Behaviour and Satisfaction (Residential). To guarantee the correct follow-up, different meetings are defined by Queries and Requirements, Claims, and a single one for Customer Behaviour and Satisfaction (Residential). Meetings are held every two weeks, except for the week in which the Customer Experience Committee meets (which turns out to be at the end of a cycle of all its meetings).

### Calendar activities

With reference to what just explained, the following calendar is defined to organize the monitoring stage.

Sensor		Committee	Month 1				Month 2			
			Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
Assistance	Queries and Requirements	VoC committee								
	Claims	VoC committee								
Clients behaviour		VoC committee								
Satisfaction	Residential	VoC committee								
	Customer service channel	Customer service channel								
CJ pillars		UX committee								

Table 3-8 Calendar activities Large Solution

### 3.3.1. Examine

Precedents review	Sensor analysis	Problems recognition
Review of active corrective processes	<ol style="list-style-type: none"> <li>1. Sensor analysis</li> <li>2. To detect anomalies</li> <li>3. To recognize the specific causes</li> <li>4. To identify the connections between the different</li> </ol>	<ol style="list-style-type: none"> <li>1. To recognize the presence of a problem</li> <li>2. To sort failures by importance</li> <li>3. To define which of these require actions.</li> </ol>

Figure 3-6 Meeting structure Examine

*Examine* consists of the first action that the different Committees must accomplish at each meeting. It requires the analysis of the specific Sensor Dashboards and the detection of a break in the service delivery system. As explained in Figure 4-6, the UX Master has to direct three different moments. A first where all the active corrective projects are reviewed, created as a result of the work of the same Committee or born by different procedures but that in any case is connected with the Sensor examined. This review allows the Committee to know what projects are being developed and at which stage of their progress they are. Then the sensor analysis is performed. With the dashboard carried out in the previous stage, each of the indicators, or information, that defines the sensor are studied.

In order to continue with the sensor exam, a criterion definition is required to recognize the presence of an anomaly in the system. The ways to detect an anomaly can be different, subjective or not. In this methodology it is suggested to apply a statistical control. The objective is to recognize the presence of a break in the system in the most objective way possible, in order to reduce the risk of losing important information due to human errors or the presence of anomalies that by their entity attract the attention of those who are studying the information elaborated.

An example of statistical control charts could occupy the normal distribution. The normal distribution has the property that the average plus or minus two standard deviations ( $\mu \pm 2\sigma$ ) contains approximately 95 percent of the population, and the average plus and minus three standard deviations ( $\mu \pm 3\sigma$ ) contains more than 99 per percent of the population. These properties form the basis of the statistical control graphs.

For each variable, then the study of its history is required to be able to define its distribution and the relative graph that can represent it in a more appropriate way. At the same time a level of quality is required to be respected (e.g. 95%) in order to recognize values that do not respect this quality limit and then represent the presence of an anomaly.

The Committee in charge must study the graphs proposed in the Dashboard, recognize the anomalies and analyse them: decomposing the indicator to look for the specific causes (an indicator could for example define the number of assistances collected by a Motive, but the explanation of an anomaly could be find in one of its Submotives); and identifying the connections between the different indicators (different indicators can be found with common cause or that find explanation in each other).

The last moment requires recognizing the problems. With the study done before it is necessary to define the problems that explain the presence of one or more anomalies in the indicators (a single problem could be related to different indicators). The Committee is then required to order failures by importance, in relation to the impact they have in terms of costs, of perception of service quality and in productive terms. Thanks to an impact prioritization, the UX Master guides the Committee to determine which of the problems require corrective actions, and which otherwise can be discarded and forwarded to the next committee that will study the updated history.

### 3.3.2. Raising problem

*Raising problem* is the second action that each committee has to accomplish in its meetings. The objective is to reach the launch of a corrective action with the definition of those responsible and a framework to respect.

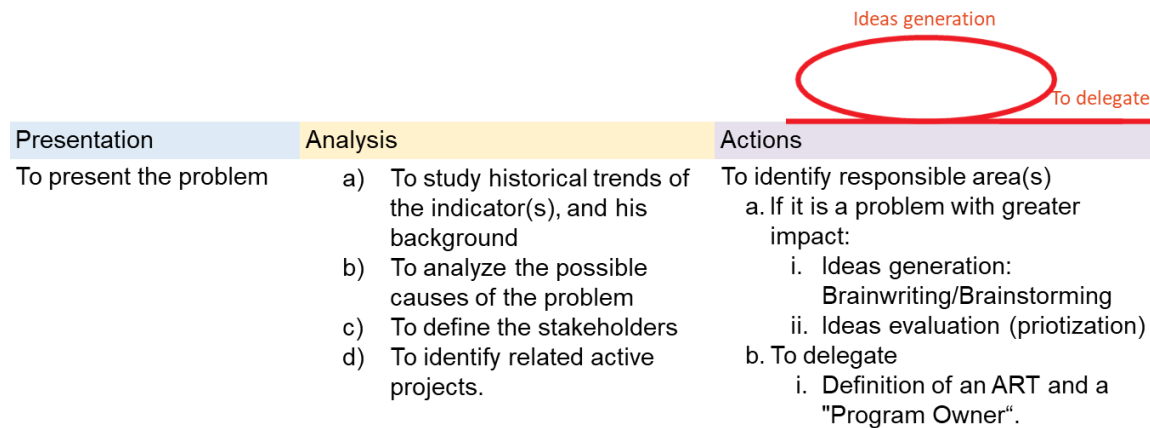


Figure 3-7 Structure of the Raising Problem meeting

For each problem encountered in the previous action, three moments must be respected: Presentation, Analysis and Actions. The UX Master is responsible to summarize to the Committee the problem encountered by examining the dashboards, signalling the indicators that explain it with the values found and the relationships between them. The Committee then analyses the problem in detail:

- a. It is required the study of the historical trends of the indicators (one or more) that explain the problem and what is the background of the case; if there are related phenomena that have already been resolved or that their lack of resolution could have defined the new problem.
- b. The possible causes of the problem are analysed (external or internal, analysing the entire company in a transversal way, without limiting the study to the area in which the problem was presented).
- c. The stakeholders are defined, which means the clients involved, those who manifested the problem most.
- d. To look for active projects related to the problem raised that somehow could already allow the resolution of the problem when the launch arrives.

When the detailed analysis of the problem is completed, action is required by the Committee. First, the identification of one or more areas responsible for the problem is required. If the problem turns out to be with greater impact, the UX Master may request that activities of generation and evaluation of ideas be carried out. It is suggested to control the generation of ideas using Brainwriting: it is a brainstorm of written ideas. It starts from a sheet

where each participant writes an X number of ideas. Once the time is up, the sheet is passed to the participant next door and more ideas are written based on those proposed by the partner. The process can be repeated as many times as necessary. An alternative activity is Brainstorming: activity from which it is intended to generate the most ideas. Quantity is prioritized over quality. To achieve this, you can mark a number of ideas that we want to reach and a time. It is important that all participants contribute, that co-creation be used and that it be built on the ideas of others. When all ideas are defined, the evaluation is carried out by prioritizing: it is about voting the ideas according to their impact and viability. Each participant will have n votes (equal for all) to vote individually on the feasibility and impact of all their ideas. Then they are put in common and the ones with the most votes are chosen.

To conclude, the Committee has to delegate the problem. The definition of an ART (Agile Release Train) and a Program Owner is then required. With the delegation, the responsibility for solving the problem by developing a corrective project will be transferred to the Program Owner, who, together with his team, is the protagonist of the last stage. A UX Master's task is to make a report that indicates all the problems raised, the indicators that explain it and the new ones responsible for the progress. In addition, you will need to contact the designated Program Owner.

### **3.4. Improvement**

The last stage of the methodology turns out to be the most important. This is the moment to seek to obtain a change in the process, improving the services in order to achieve a better perception of the customer experience. The beginning of the *Improvement* is also the most complex moment, since it is very likely that the risk associated with a detected problem will be neglected and no corrective project will be developed.

The actions to be fulfilled are:

- *Corrective process.* These are all the activities necessary to take a problem and transform it into a project.
- *Continuous improvement.* The results obtained by the project in development must allow an improvement in terms of User Experience, Services delivered and Processes.

The structure of this stage takes a working methodology proposed by Enel that requires the integration of the Agile framework. Enel Agile represents a new way of thinking and working; a new mentality that changes the way of approaching projects. Enel Agile proposes a new framework for project management that combines rigor with the application of various agile tools and methodologies and continuous adaptation based on business challenges.

The framework is structured with 5 phases, 8 subphases and at the end of each phase, 4 validation milestones; where the first 4 phases belong to the *Corrective Process* action, while the last is *Continuous Improvement*.

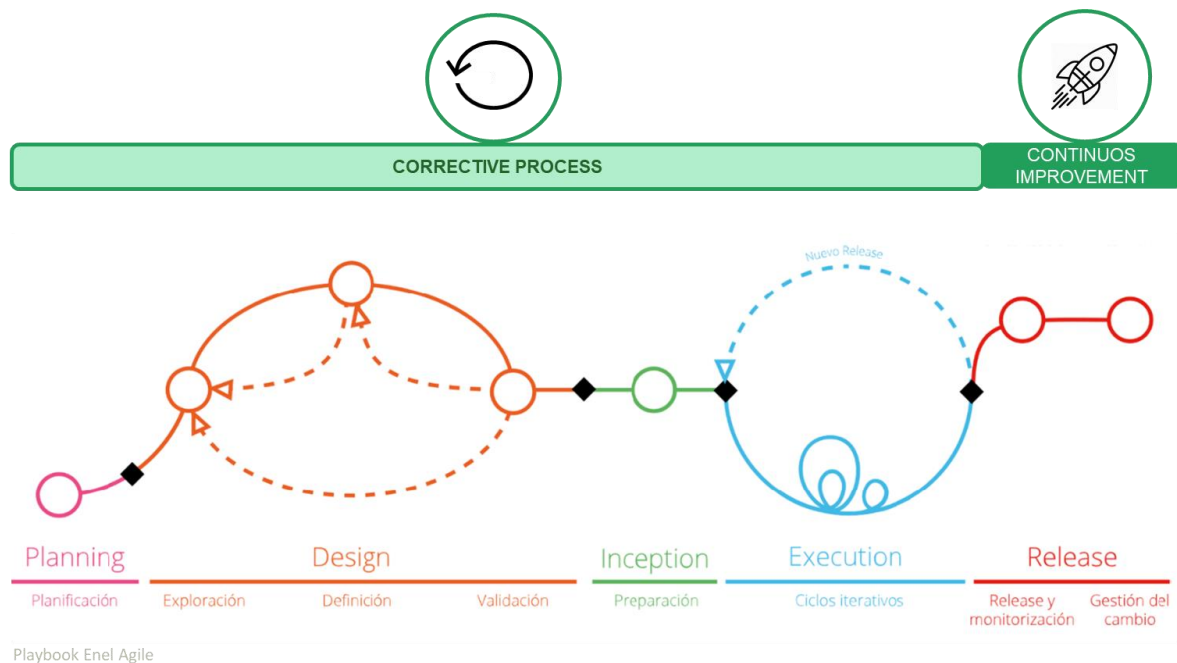


Figure 3-8 Structure "Improvement"

0. **Planning:** this is a previous phase where the general configuration of the project is defined: objectives, scope, implicated, etc. A configuration that once validated constitutes the authorization to start working on the project.
1. **Design:** phase in which the squad starts its activity. In this phase, the challenge and the current context are analysed to define a solution that responds to the needs of the end user, to the business objectives and ensures its viability. Throughout the phase, everything that is considered necessary is validated so that, at any time, in case of needing improvements, you can iterate and go back to design what best suits the needs of the client and the business.
2. **Inception:** once the necessary solution has been defined, the team creates a list of requirements that the solution must have, as well as a roadmap of how the solution is built.
3. **Execution:** it is the construction phase, in which, iteratively, through work cycles, it is designed and checked if what is being produced responds to the real needs of the client and users. The objective is to create versions of the product that are validated before they are launched to the market.
4. **Release:** once the first version of the product is validated, it can be launched to the market. Following the philosophy of continuous improvement, the team continues to work on more versions of the product while the market version is monitored, in order

to add improvements to that version. On the other hand, it is possible that the equipment needs to be formed in the product or even, that it is required to incorporate new profiles to the equipment.

The people involved and the SAFe level change. The intervention of the Committees is still required, but only with the function of supervising the activities carried out by the Program and Team levels. Next, it is explained how the work is divided.

### SAFe structure

After delegation by the Committee, the designated Program Owners are the ones responsible for moving forward with the resolution of the problem detected. Together with its team, the Program Owner deals with the first part of this stage, focused on the detailed study of the problem, without reaching the development of the problem and improving the service. To move forward with the next part, an additional delegation to the last level defined by SAFe is needed. The organization of work in relation to the SAFe structure is as follows:

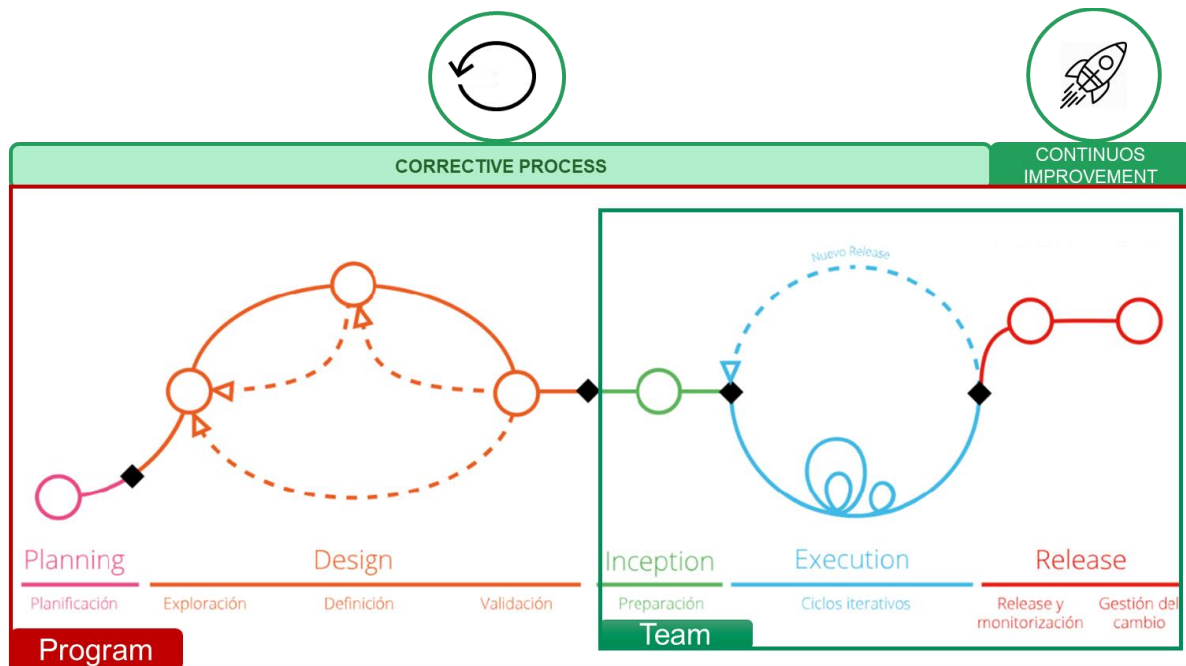


Figure 3-9 Structure "Improvement" SAFe

### People involved

We are now explaining more in detail how the methodology structures the working method and which people are involved. As we have seen, at the highest level, Large Solution, three different Committees are required, each responsible for one or more sensors. The process carried out by the Committees could reach the constitution of new work entities, ARTs. An ART is responsible for solving a problem raised by the Committee who gave it the delegation, that means the responsibility for a Program. Clearly the same ART can at the same time be responsible for different Programs and in turn must report their progress to different

Committees depending on who delegated them. The results obtained by an ART are the solutions designed to solve the break present in the service.

At the end, the Teams arrive. They are the entities that really have to deal with the development of the corrective project that allows for improvement. When at the Program level, solutions (or projects) are defined, their development is delegated to different Teams. A Team, like an ART, can be responsible at the same time for different projects.

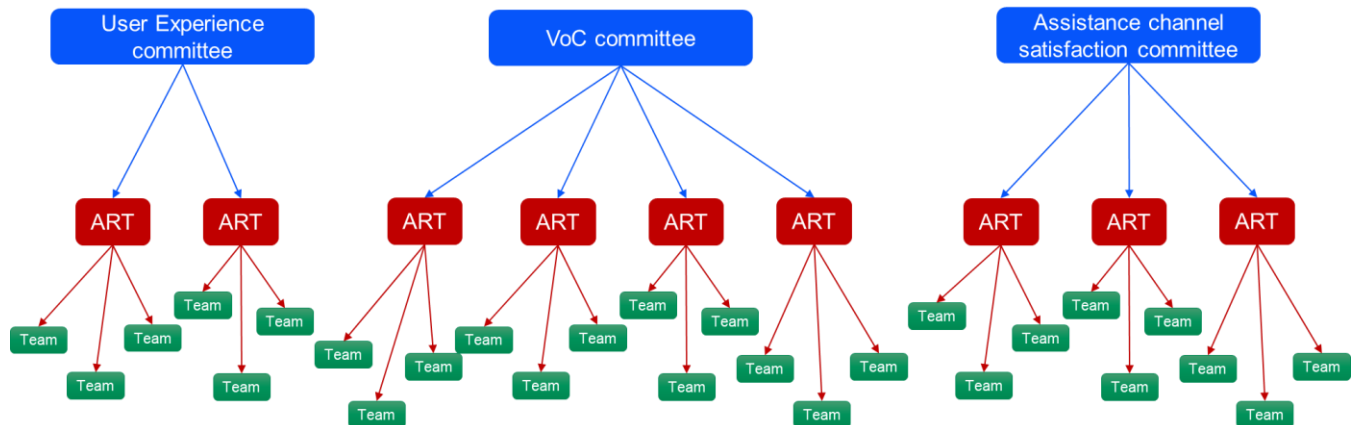


Figure 3-10 People involved SAFe

### Program Level

At the Program level, the main entity is the ART: Agile Release Train, where Train is the interaction at the program level. An ART is the main vehicle for delivering value at this level, a set of durable Agile teams. In addition to agile teams, the following program level roles help ensure the successful execution of ART:

- Program Owner. He is the person defined by the Committee, responsible for the project and has to define the Vision, the Roadmap and the new projects in the Backlog Program. He works with the Product Owners to convey the needs and the correct objectives of each project.
- Program Master. He is nominated by the Program Owner and is responsible for communication with and between the different teams. He ensures the correct development of the projects and monitors their progress.

The work is organized in Program Increments (PIs) that have the duration of a bimester. Each PI is a set of interactions at the team level (Sprint) and allows the development and delivery of a significant increase in value. Each PI requires the following events:

- Program increment planning. It is a face-to-face event necessary to align ART teams to the common mission. The Program Master explains the Program Backlog and the planning of the activities to be carried out in the following IP.



- Inspect and Adapt (I&A). At the end of a PI, a moment is required to reflect, solve problems and take necessary actions to increase the speed, quality and reliability of the next PI.

As mentioned, it is necessary to define a Program Backlog: the container of all the activities (projects) to be carried out to solve the main problem. Another required action is the Kanban management that works with the Backlog Program. Each project must occupy a place in the Kanban.

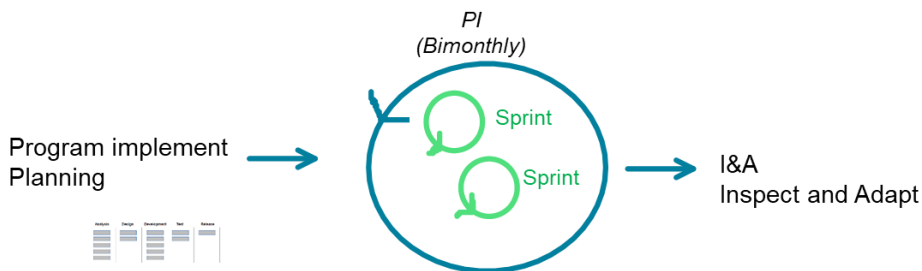


Figure 3-11 Work structure Program Level

Figure 4-11 explains how work is structured at the Program level, that is, the presence of a Program Increment for the duration of 2 months (corresponding to 2 or more Sprints), an initial PI planning and an Inspect & Adapt at the end of the cycle. In addition, it indicates the need to manage a Kanban that illustrates the progress of problem solving.

### Team level

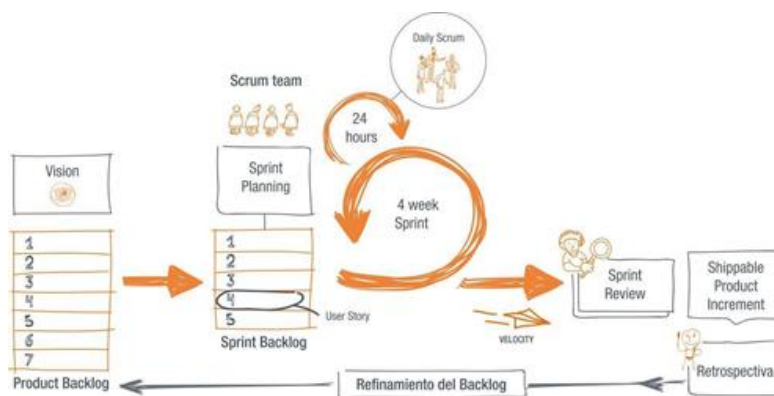


Figure 3-12 Work structure Scrum

At the Team level, the work organization respects the classic rules of the Agile framework. In this methodology, the Team is asked to develop a project identified by the Program level. In fact, the Team has to send advances to the Master Program and participate in the PI planning and review meetings.

The entire project revolves around squad, or main project team, where we can identify the following roles:

- Team: multidisciplinary and self-organized team that possesses the necessary skills to generate the product demanded by ART. Among these skills we can find experts in the development of solutions and user experience, IT referents, knowledgeable process or system around the product and business connoisseurs among others.
- Product Owner: responsible for maximizing the value of the product for the customer. It acts as a bridge between the program level and the equipment. It gathers the client's needs, communicates their expectations to the team and gives voice to the team in front of the ART to achieve an optimal balance between need and attainable reality.
- Scrum Master: a methodological expert acting as a facilitator between the Product Owner and the team. It is the person responsible for guiding the team in the methodology and ensuring that they are focused on the objectives of each cycle. It is a critical figure in the transformational process that must be able to understand the context where the team operates.

In addition, out of the team, but equally important are:

- Sponsor: Customer Experience Committee / VoC.
- Stakeholders: Customers.

The organization of work used is based on the key foundations of Enel Agile: iterative and progressive development.

Every two months the team has to inform the ART about the progress and its contribution to the Program Increment. In each PI two or more Sprint can be defined. This cycle is repeated, and its purpose is to add value to the product incrementally and progressively to meet customer expectations and needs. The duration of the sprint is defined at the beginning of the project under a consensus scheme within the team and, although it can last from 1 to 4 weeks, once set it must be maintained in each project sprint.

At the beginning of its activities the team has to define a Product Backlog. It is required that you define a complete and prioritized list of work to be done throughout the project. During the whole life of the project its update is required so that the elements that appear are the pending ones. It is managed by the Product Owner and will prioritize it based on customer needs.

In addition, a Sprint Backlog is defined in each sprint: the set of PBIs (Product Backlog Items) that the team undertakes to complete throughout the next Sprint. The Sprint Backlog is formed during the Sprint Planning ceremony between the team and the Product Owner, aided by the Scrum master. In other words, to compose the Sprint Backlog, the team selects the Product Backlog PBIs, maintaining the priority that the Product Owner has defined for each of the PBIs.

At the end of each Sprint the team has an MVP (minimum viable product). The validation of the MVP by the client and the ART allows frequent feedback to be able to correct errors and add improvements to the product, without having to wait for the product to be fully finished.

Defining the work in Scrum (Figure 4-12), it is necessary to carry out specific events that allow progress to be controlled and encouraged:

- Sprint Planning Meeting
- Daily Scrum
- Product Backlog Refinement
- Sprint Review
- Sprint Retrospective

### 3.4.1. Corrective process

The first action required in the *Improvement* stage is the *Corrective Process*. A *Corrective Process* is necessary for each problem raised by the Committee. It is requested at the ART to comply with the activities necessary to analyse the problem, study the market and develop ideas to solve it. The responsibility for starting the work rests with the Program Owner.

Throughout the project, not all roles have the same dedication, some roles such as the Product Owner must be fully dedicated to the project, but others, such as the Sponsor, only appear at specific times.

Next, we show the participation required by each role in the different phases of the *Corrective Process*, starting with the first ones involved in the Program Level.

Phases	Subphases	Activities	Actors				
			Program owner	Program Master	Program Team	UX Master	LS committee
Phase 0: Planning	Planification	<ul style="list-style-type: none"> <li>• Problem presentation</li> </ul>	Problem presentation			Problem presentation	
		<ul style="list-style-type: none"> <li>• Project Charter generation</li> </ul>	Project Charter generation				
		<ul style="list-style-type: none"> <li>• Sprint 0</li> </ul>	Sprint 0	Sprint 0	Sprint 0		
Milestone 1		<ul style="list-style-type: none"> <li>• Project Charter presentation</li> </ul>	Project Charter presentation			Project Charter presentation	Project Charter presentation
Phase 1: Design	Exploration	<ul style="list-style-type: none"> <li>• Investigation</li> </ul>	Investigation	Investigation	Investigation		
	Definition	<ul style="list-style-type: none"> <li>• Ideas generation</li> </ul>	Ideas generation	Ideas generation	Ideas generation		

		● Idea analysis	Idea analysis	Idea analysis	Idea analysis		
		● Idea verification			Idea verification		
	Validation	● Viability evaluation of the solution	Viability evaluation of the solution	Viability evaluation of the solution	Viability evaluation of the solution		
		● Generation of the viability data report	Generation of the viability data report				
Milestone 2		● Solution(s) presentation	Solution(s) presentation			Solution(s) presentation	Solution(s) presentation
		● Teams generation	Teams generation	Teams generation			




Table 3-9 Corrective process - Program level

## Phase 0: Planning

This pre-project phase is mainly dedicated to the Program Owner, who will have to prepare everything necessary to start the project.

The Program Owner must start by creating a Project Charter, a document that indicates that the project exists and what are its fundamental aspects. When this document is validated you have the written authorization to start work. The purpose of this document is to present it to the Sponsor for approval and then to start the new agile project.

### Planning

The objective of this first subphase is to create the general configuration of the project, define the fundamental aspects of the project, and align the objectives of the people who will be involved in it. The Program Owner is in charge of it, but he may not be able to assemble everything himself. A first moment of work of the Program Owner is required, followed by a meeting with the ART to share the project and define the progress.

The activities required for planning are:

- *Presentation problem*; It is the first moment that allows the Program Owner to learn about the problem raised by the Committee. Requires a meeting between the Program Owner and the UX Master. The key points of this meeting are:
  - to present the problem detected by the Committee;
  - to present the possible ideas generated by the Committee;
  - to define the benefits of solving the problem;
  - to illustrate the work method (Improvement development).

- *Project Charter generation*; once the delegation has been received by the Committee, the Program Owner is in charge of writing the Project Charter of the project. It has to detail:
  - team and Program Master selection;
  - roles definition;
  - business objective: to solve the problem detected by the committee;
  - estimated scope: date Sprint 0, deadline Design;
  - working method: duration PI (2 months);
  - Estimated resources.
- *Sprint 0*; The idea of this meeting is to align the entire team to follow the same goal, share and complete the Project Charter thanks to the help of the entire ART. The key points of this meeting are:
  - to present the problem detected by the Committee;
  - to present the possible ideas generated by the Committee;
  - to define benefits of solving the problem;
  - to present all the people involved: members of the Team and Program Master;
  - to explain progress and dimension of the project;
  - to present the Project Charter.

### **Milestone 1**

Once the Project Charter is completed, the Program Owner must have a validation with the sponsor Committee to approve the project and start it.

- *Present the Project Charter*; a meeting where the two SAFe levels discuss the content of the Project Charter. If the Committee does not approve the Project Charter, it returns to “Generation”. On the contrary, ART receives authorization to move forward with the work.

### **Phase 1: Design**

Once the Project Charter has been approved, the project can begin. In this phase of *Design*, the objective is to end up defining one or more solutions that respond to the needs of the final user, the business objectives and ensure their viability.

#### **Exploration**

The objective of this subphase is to understand in depth the challenge and the context in which it is located. For this, the team must explore the situation of the challenge and make observations to the users to know and identify their real needs.

- *Research*; a research activity is then required, and involves the entire ART. It has as its output the development of a Customer Journey Map. Following the approval of the Project Charter, the owner summons the entire ART in a meeting where address the following points:
  - to analyse the sensors that have detected the presence of a break;
  - to analyse the current situation;
  - 5 Whys Tool;
  - to analyse related projects in development;
  - to conduct a market investigation (Benchmark);
  - to make observations of the users or stakeholder to identify their needs;
  - to define the current experience: Customer Journey and Empathy Map (to identify what might not work in this process);
  - prioritization of pain points.

#### Definition

The objective of this subphase is to generate as many ideas as possible to solve every pain point that has been detected in the exploration. After this, we must work on landing those prioritized ideas to define them in detail and create the corresponding business methodology.

- *Idea generation*; the participation of the entire ART is required for the definition of ideas. The key points of the meeting called by the owner are:
  - analysis of possible ideas of the Committee;
  - generation of ideas (Brainwriting);
  - evaluation ideas (Prioritization);
  - selection of better ideas;
  - definition Program Backlog.

The following activities, until the end of phase 2, must be carried out for each idea generated in the previous activity.

- *Idea analysis*; the participation of the entire ART is required in the following key points:
  - to study the idea;
  - to define your value proposition;
  - to define Business Model Canvas.
- *Verify idea*; in addition to analysing the idea, the team has to develop a Validation Panel. This is a tool that can be used to collect the results of the experiments. It is important to define minimum metrics and thresholds that you want to reach, but you cannot know if the experiment has been successful. If the initial hypotheses can be validated, the idea can be approved.

## Validation

The objective of this subphase is to evaluate the feasibility and impact of each solution, to detect which points of the solution must be rethought to create a final solution that can be carried out.

- *Viability evaluation of the solution:*
  - to evaluate the costs and benefits of the solution;
  - to evaluate the feasibility of the solution at the legal and regulatory level;
  - to evaluate the impact on the organization of the solution;
  - to evaluate the technical feasibility of the solution.
- *Generation of the viability data report.*

### Milestone 2

When the solution or solutions are validated with a value proposition and business model, and the feasibility report is made, it is time to present it to the Committee. It's the same Committee that delegated them to define what solutions can be carried out.

- Solution(s) presentation; the Program Owner has to present all the solutions found to the Committee. It is the same Committee that defines which ones to approve.
- Team(s) generation; for each approved solution, Program Owner and Program Master have to define the new teams responsible for developing the ideas. In particular they have to:
  - update the Program Backlog;
  - define Kanban board;
  - define a Product Owner for each solution.

The following phases see the Team Level as responsible. In particular, the following table indicates which roles are needed for each activity.

Phases	Subphases	Activities	Actor					
			Product owner	Scrum Master	Team	Program owner	Program Master	ART
Phase 2: Inception	Preparation	● Program Planning				Program Planning	Program Planning	Program Planning
		● Project Charter generation	Project Charter generation					
		● Project Planning Meeting	Project Planning Meeting	Project Planning Meeting	Project Planning Meeting			
Milestone 3		● Construction presentation	Construction presentation			Construction presentation		



Phase 3: Execution	Iterative Cycles	● PI						
		● Program increment planning				Program increment planning	Program increment planning	Program increment planning
		● Sprint						
		● Sprint planning Meeting	Sprint planning Meeting	Sprint planning Meeting	Sprint planning Meeting			
		● Daily scrum		Daily scrum	Daily scrum			
		● Sprint Review	Sprint Review	Sprint Review	Sprint Review			
		● Retrospective	Retrospective	Retrospective	Retrospective			
Milestone 4		● MVP presentation	MVP presentation			MVP presentation	MVP presentation	MVP presentation
		● Inspect&Adapt				Inspect&Adapt	Inspect&Adapt	Inspect&Adapt

Table 3-10 Corrective process - team level

## Phase 2: Inception

Phase in which to start thinking about how the product should be built, defining its functionalities, prioritizing them based on customer needs and creating a road map. Only the ideas approved by the Committee can reach this phase.

It is the responsibility of each team to develop these phases of the methodology for their specific product (solution). The moments of confrontation with the higher levels are still present to continue working.

### Preparation

- *Program Planning*; at first, the activity of the Program Level is still needed. A meeting is defined to integrate new members into the ART. The designated Product Owners become part of the ART and receive all indications of the following advances:
  - to share the Program Backlog;
  - to present Product Owner;
  - to explain work method.
- *Project Charter generation*; once the delegation has been assigned by the Committee, the Product Owner is responsible for writing the Project Charter. It has to detail:
  - squad selection: team, Scrum Master;
  - roles definition;
  - business objective: develop the idea defined by the committee;
  - estimated scope: deadline Milestone 3, first release date;
  - working method: sprint duration: 1 to 4 weeks;



- estimated resources.
- *Project Planning Meeting*; the Product Owner communicates with the designated squad members and a meeting is called to define the tools to start the work. The key points are:
  - creation of the Product Backlog;
  - definition of the PBIs;
  - definition of priority and relationships of PBI dependencies;
  - creation of a road map with dates, where the following is defined: MVPs, Releases and delivery dates;
  - definition of the rules DoR (Definition of Ready), DoD (Definition of Done) and the acceptance criteria for user stories;
  - definition of the Sprint Backlog for the first Sprint, extracting the PBIs from the top of the Product Backlog.

### **Milestone 3**

Once the Project Charter of the solution has been defined, and the team in charge of developing the product is called, the Product Owner can present everything defined to the ART.

- *Presentation of the construction*; meeting to present and discuss the defined construction. It ends with the approval of the Project Charter and the work method, defined in the planning meeting.

### **Phase 3: Execution**

With the approbation of the work planning of all teams by the Program Owner, the construction phase can begin. In this phase, a PI begins, a Program Increment, which lasts for two months, and requires the participation of all the teams that contribute the MVPs developed in the sprints made within the same PI. The PI ends at the end of Milestone 4.

In each PI the work is monitored with a Kanban, where all the projects in development are positioned according to their progress status.

#### **Iterative cycles**

The objective of this subphase is to create and test functional product increments (MVP and PI) iteratively, until a final test in which the product will be tested for launch.

- *Program Increment Planning*; it is the first activity necessary to start the IP. It requires the participation of the Program Owner and the ART, and allows defining the Program Increment Backlog by answering the following key questions:
  - "What": identify what the ART will do during the IP;
  - "How": determine how the work will be carried out

Sprint begins with the next activity, a period between 1 and 4 weeks in which work to create a minimum viable product (MVP). In each iterative cycle, a list of PBIs must be respected, to which the team undertakes to build, and which is guided by the Scrum Master.

These iterative cycles last until the date indicated as Milestone 4, in which a final product test must be performed. Once the MVP is finished, the team will continue working on the rest of the Product Backlog to continue increasing the product. Starting this way with a new sprint or ending the PI.

- *Sprint planning meeting*; it is the initial Sprint meeting, in which the Product Owner discusses the objective of the Sprint with Team and Scrum Master. The main output is the Sprint Backlog that is defined by answering two questions:
  - "What": identify what the team will do during the sprint (Discuss the objective of the Sprint);
  - "How": determine how the work will be carried out (Definition Sprint Backlog and PBIs: user stories, specific tasks, expected time).

In addition, the meeting allows to review the Product Backlog and also, it is reviewed where it is necessary to add new items.

- *Daily scrum*; it is a session to coordinate and share ideas on how to complete PBIs and resolve impediments. It involves the Scrum Master and the team. In addition, it allows modifications to the Sprint Backlog. Normally it is done daily, but different systems can be defined, provided that they allow control and encourage progress. Each team member answers three questions:
  - *What did I do yesterday that helped meet the Sprint goal?*
  - *What will I do today to help meet the Sprint goal?*
  - *Do I see impediments for us to meet the Sprint objective?*
- *Sprint Review*; conclusive sprint meeting in which the owner, the Scrum Master and the entire team participate. The "what" is evaluated. Scrum and Stakeholders review the result of the sprint (MVP) and provide feedback based on the changes in the functionality built and will be entered as product backlog PBIs.
- *Retrospective*; it is done immediately after the Sprint Review. It allows the continuous improvement of teamwork, which reflects on the way in which he performed his work, delving into the "how". It allows to define improvements for the next sprint. One way to perform retrospective is to use the starfish tool.

#### **Milestone 4**

At the end of each Sprint, when a minimum viable product is ready, it is required to pass to a final test before launch. In this validation, the approbation is given to release the MVP, or

necessary changes can be detected in the product to be incorporated before retesting and finally launching it. In some cases, the term of a Sprint may coincide with those of a PI.

- *MVP presentation*; the Product Owner meets with the ART to present the minimum viable product made so far and share the team's progress. It is the responsibility of the ART to define approving the MVP launch. In positive case the next stage is the *Continuous Improvement*. Anyway, the team has to start again a new Sprint until the PBIs are over.
- *Inspect & Adapt*; at the time of completion of an PI, which could coincide with 2 or more Sprint, a meeting of all ART members is required to assess and share general progress. In particular, the key points are:
  - PI Evaluation;
  - Program Backlog Update, Kanban Board Update.

Once the review is finished, the Program Owner must send the progress to the Committee.

At the end of a Program Increment, if the Program Backlog has not yet been completed, it begins again with Phase 3, from the Execution of the iterative cycle.

### **3.4.2. Continuous improvement**

The second action required in the last stage of the methodology is *Continuous Improvement*. Now different roles are involved. The main role would be the team responsible for the launch. However, there are other figures necessary to perform the launch correctly and to create tools for monitoring.

It is defined "*Continuous*" *improvement* for two reasons:

- The Improvement action (the release) can be reached at numerous times during the development of the project. MVPs, if approved, can be launched at the end of each Sprint. Each of them allows to achieve an increasingly better result, thanks to the Feedback received by the stakeholders.
- The constant performance of the methodology allows us to perceive breaks also at successive times after the launch of an MVP or Product. The Committees are evaluating the MVP through the Sensors.

It is important to specify that the improvement can have different connotations:

- Improvement of Customer Experience: it is the main objective of the methodology. Knowing how to listen correctly to the client in order to improve the experience they live at the time of service delivery.

- **Service Improvement delivered:** the project developed seeks to correct a service, with the link to improve the customer experience. Clearly the changes made will be directed to improve the service.
- **Process Improvement:** the change in a service also requires a change in the processes. A modification of the ways of delivering the service, of managing people, of capturing the client's voice and monitoring of the related indicator, are required.

The roles required in the different activities are illustrated below.

Phases	Subphases	Activities	Actor			
			Product owner	Scrum Master	Team	Committee
Phase 4: Release	Release and monitorization	● Release	Release			
		● Monitoring	Monitoring		Monitoring	Monitoring
	Change management	● Action plan generation	Action plan generation			

Table 3-11 Improvement

#### Phase 4: Release

Products that reach this stage are approved and can work. What is necessary now is to evaluate the market reaction to the product. Clearly, they could be simple MVPs intended for only a small part of the market. But anyway, they would allow a first evaluation of their functionalities and their acceptance by the market. The market response allows confirming or modifying the progress of the project to the definition of the final product.

##### Release and Monitoring

The objective of this subphase is to launch the product to the market and monitor it. To do this, we must define the monitoring systems and incorporate improvements and incorporate them into the Product Backlog. Two activities are then required:

- **Release;** the person responsible for launching the product (or MVP) in the market is the Product Owner. It requires a change in terms of services and processes.
- **Monitoring;** operations are required to control the launch of the product and to capture useful information to update the PB.
  - The team defines KPIs to monitor the product launch.
  - The team defines new instruments to capture the clients' voice (update surveys, listen, ask, ...).
  - The Committee includes the new KPIs in the monitoring and review system.
  - The Product Owner incorporates improvements to the Product Backlog (as a result of the committee's examination or detected by the same Team that analyses the defined KPIs).

## Change management

It is the responsibility of the Product Owner to manage all the necessary actions to allow the correct and transversal launch of the product.

- *Action Plan generation*; definition of all actions for the correct launch of the product: possible creation of new positions, people who have to change positions, people who need training to use the new product, etc.

## 4. Empirical Application

At the level of practical development of the methodology, it was decided to make a minimum viable product (MVP) that allows to demonstrate, although in a small part, its operation. Given the complexity and transversality of the methodology, the MVP focuses on solving one of the problems detected in the study of the current situation of Enel: the difficulty of reading the information and the lack of statistical control to recognize the presence of a problem in a process.

The MVP seeks to perform the analysis of the data and the visualization of the information, focusing on a single specific indicator. The objective is to carry out a detailed study of an indicator in order to identify a statistical criteria that allows recognizing the presence of a problem and, subsequently, the visualization of the information in a clear, easy interpretation and that allows the immediate identification of the presence of a break. Two very important characteristics of this work would be the repeatability of the analysis and the possibility of updating the visualization with the new data.

The benefit of this application is in the possibility of performing the same work for all the data that defines a Sensor, with the possibility of carrying out an effective and efficient examination and survey of problems. The committee should simply focus on the indicators that the visualization represents with failures.

### Data

The data used in the MVP defines the client's need to request information about the balance of his account. In the classification of the assistance cases, "Report account balance" ("*Informa saldo cuenta*") represents a Submotive and can be indicated at the time a new case is opened. This data originates from the Enel's CRM, Salesforce.

It was decided to work with this indicator for different reasons:

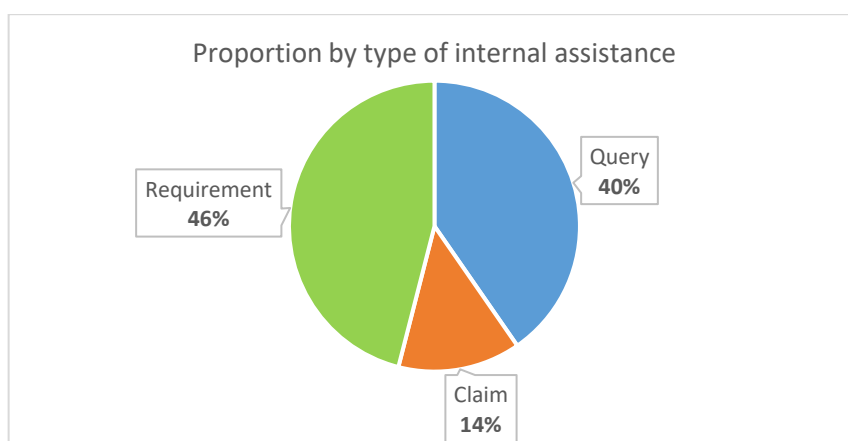
- It is classified in the sensor *Assistance*; it is one of the main sources of listening for Enel customers. It can easily be demonstrated with the number of cases opened in the first ten months of 2019. From January to October 2019, 3.602.800 cases of assistance were opened in Salesforce, on average 360.000 cases per month, with 1.95 million supplies.

Type of internal assistance	January	February	March	April	May
Query	148.411	120.143	130.792	123.692	131.899
Claim	37.348	29.952	36.827	33.014	83.671
Requirement	185.474	152.830	169.895	153.067	157.168
Total	371.233	302.925	337.514	309.773	372.738

Type of internal assistance	June	July	August	September	October	Total
Query	131.950	161.297	187.750	152.782	165.163	1.453.879
Claim	87.977	58.223	45.486	35.188	43.847	491.533
Requirement	163.979	174.171	182.592	184.346	133.866	1.657.388
<b>Total</b>	<b>383.906</b>	<b>393.691</b>	<b>415.828</b>	<b>372.316</b>	<b>342.876</b>	<b>3.602.800</b>

Table 4-1 Number of cases each month in 2019

- It is classified as a "Query" assistance; considering all types of case registration, it is the type of internal care that records one of the highest percentages of cases created between January and October 2019. Queries are 40%, few less than the requirements that register 46%, while the claims are 14%. In addition to the numbers registered, the importance of Query is also defined in its definition: "Request that a person, whether Customer or not, makes a Distributor Company so that it provides information or clarifies concerns related to the provision of electricity distribution.". It indicates then the probable lack or not adequate delivery of information to the client.

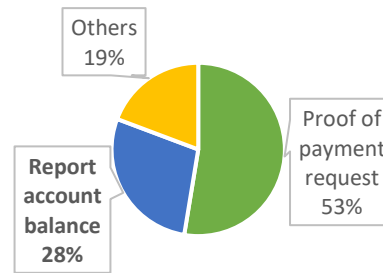


Graphic 4-1 Proportion by type of internal assistance (cases from January to October 2019)

- The number of cases opened by this submotive. Compared to all submotives for which a case can be opened, "Report account balance" represents 21% of all cases and 28% of cases opened for commercial assistance. We work with this submotive, although it is not main cause of assistance. Compared to all cases, it occupies the second place, even if we remove the types of registration authority assistance and Emergency. The study focuses only on cases of commercial assistance since they represent the easiest intervention to improve the service delivery processes.

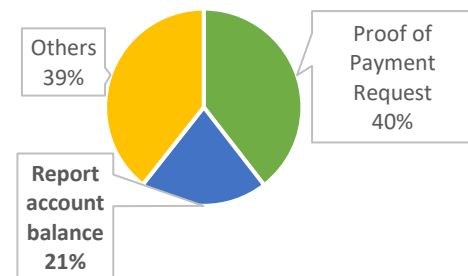
Submotive	Cases
Proof of Payment Request	1.423.081
<b>Report account balance</b>	<b>761.052</b>
Others	1.418.667
Total	3.602.800

Table 4-2 Number of cases open by submotive (January – October 2019)



Submotive	Cases
Proof of Payment Request	1.423.079
<b>Report account balance</b>	<b>761.028</b>
Others	521.576
Total	2.705.683

Table 4-3 Number of cases opened by submotive with type record case "Commercial Assistance" (January-October 2019)



- Importance of information; this point allows you to explain why "Report Account Balance" ("Informa Saldo cuenta") is preferred to "Request for Proof of Payment" ("Solicitud de Comprobante de pago"). The information that is delivered with this assistance, such as the payment receipt, is very important. But it also represents very simple information that the client should already have (it is present on the bill, it can be found on the Enel website by accessing with personal data). It is important to analyse the behaviour of this query, which logically should not report very high case values.

The MVP allows monitoring of data with the following characteristics:

- Source: Salesforce Enel Distribution Chile.
- Cases of assistance.
- Reason: Information consultation.
- Submotive: Report Account Balance.
- Source channel: all.
- Dates: last 12 months (November 2018 - October 2019).

#### 4.1. Data analysis

The analysis work allows the realization of a graph of statistical control, which allows the identification of the values that do not turn out to be under statistical control.

The analysis begins with the Salesforce data of all the cases carried out in the last 12 months (from November 2018 to October 2019) classified by the sub-reason "Report Account



Balance". It was decided to focus only in the last 12 months since the system analysed is constantly evolving in the time and it could not be reliable to consider data older than one year. At the same time, it is not possible to obtain more datapoints in the specified period, like using daily or weekly data. The data analysed is related to an information that change monthly. A customer should not require more than once for month, even if sometimes it occurs.

The following table shows the values found. The "Number of cases" represents the account of all the cases opened per month, in any source channel, with the submotive under analysis. On the other hand, "Number of supplies" is the account of all supplies that opened at least one case in the specific month for this sub-reason.

The quantity of supplies that were contacted with the Enel customer service channels by the sub-reason "Report account balance", represent the number of "defects" in the delivery of the service per month. We can look at the delivery of account balance information as the service under analysis. The fact that the client needs to contact the company to request their balance can be interpreted as a defect in the service. So, it is decided to focus the analysis on the quantity of supplies that each month require contact to request this information.

Month	Number of cases	Number of supplies
Nov-18	77.699	56.025
Dic-18	71.148	52.707
Jan-19	77.948	55.607
Feb-19	65.810	46.784
Mar-19	72.121	52.168
Apr-19	76.559	56.110
May-19	70.230	52.028
Jun-19	68.237	50.356
Jul-19	81.815	59.472
Aug-19	87.404	63.937
Sep-19	74.501	54.758
Oct-19	86.427	59.895

*Table 4-4 Number of cases and supplies by month*

### **Supplies**

The first part of the analysis focuses on the quantities of supplies that opened cases in the last 12 months (until October 2019). The statistical control graph is considered in the context of the hypothesis tests of classical statistics.

$H_0$ : the process is under control.

$H_1$ : the process is out of control.

We interpret the word control with the meaning that the random underlying mechanism that generates the observations is stable over time. The hypothesis that the process is under

control is rejected if an observed value falls outside the control limits. The definition of the upper control limits (UCL) and lower control limits (LCL) is then required.

$$LCL = \mu - 2\sigma$$

$$UCL = \mu + 2\sigma$$

$$P(\mu - 2\sigma \leq y \leq \mu + 2\sigma) = P(-2 \leq z \leq 2) = 95.45\%$$

The last equation explains that 95.45% of the observations are located within two standard deviations of distance from the mean.

The calculation of the limits then requires the definition of mean and variance of the distribution of the values. It is assumed that the values follow a normal distribution with mean  $\mu$  and variance  $\sigma^2$ . We can assume that the values respect a normal distribution thanks to the *Central Limit Theorem*. It establishes that when independent random variables are added, their properly normalized sum tends toward a normal distribution even if the original variables themselves are not normally distributed. This is possible when the number of terms in the sum increases. If we consider as an element of the sum the variable that defines the opening of at least one case during the month for a specific supply, the quantity of supplies under analysis corresponds to the sum of all these variables. Being the supplies equal to 1.95 million, we can consider valid the central limit theorem which approximates this distribution to a normal one.

The values in table 5-5 are those obtained in relation to the data of the last 12 months.

Mean	54.987,25
Variance	21.610.710,39
Standard deviation	4.648,73

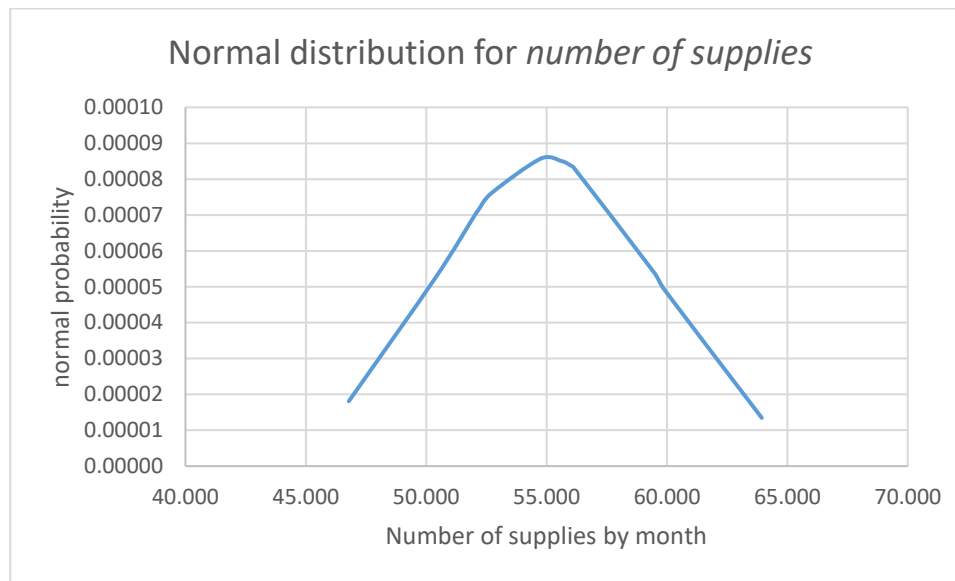
Table 4-5 Normal distribution values for the supplies

In relation to the calculated distribution values, the values of the normal probability function and its graph are defined.

Month	Number of supplies	Normal distribution
Nov-18	56.025	0,00008371
Dic-18	52.707	0,00007609
Jan-19	55.607	0,00008506
Feb-19	46.784	0,00001809
Mar-19	52.168	0,00007140
Apr-19	56.110	0,00008335
May-19	52.028	0,00007008
Jun-19	50.356	0,00005225
Jul-19	59.472	0,00005389
Aug-19	63.937	0,00001345
Sep-19	54.758	0,00008571

Oct-19	59.895	0,00004915
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Table 4-6 Normal distribution values



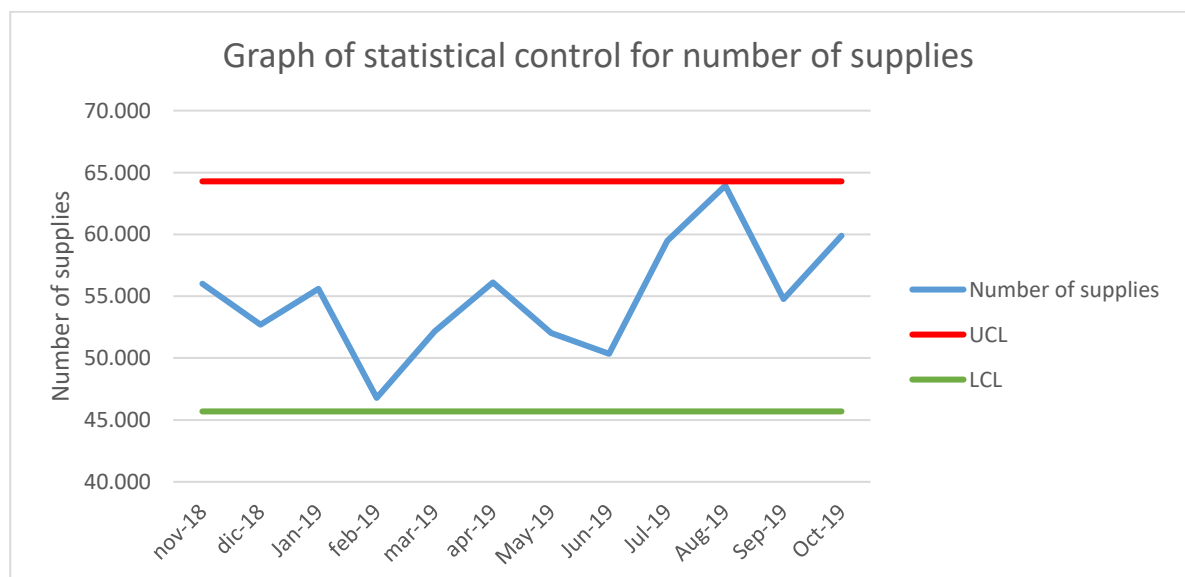
Graphic 4-2 Normal distribution for number of supplies

For the values analysed, the lower and upper limits of statistical control are as follows:

$$LCL = \mu - 2\sigma = 45.690$$

$$UCL = \mu + 2\sigma = 64.285$$

The following graph reports the values of the last 12 months and the control limits. Every month they turn out to be within the control limits. The opposite hypothesis ( $H_1$ ) that the process is out of control can then be rejected.



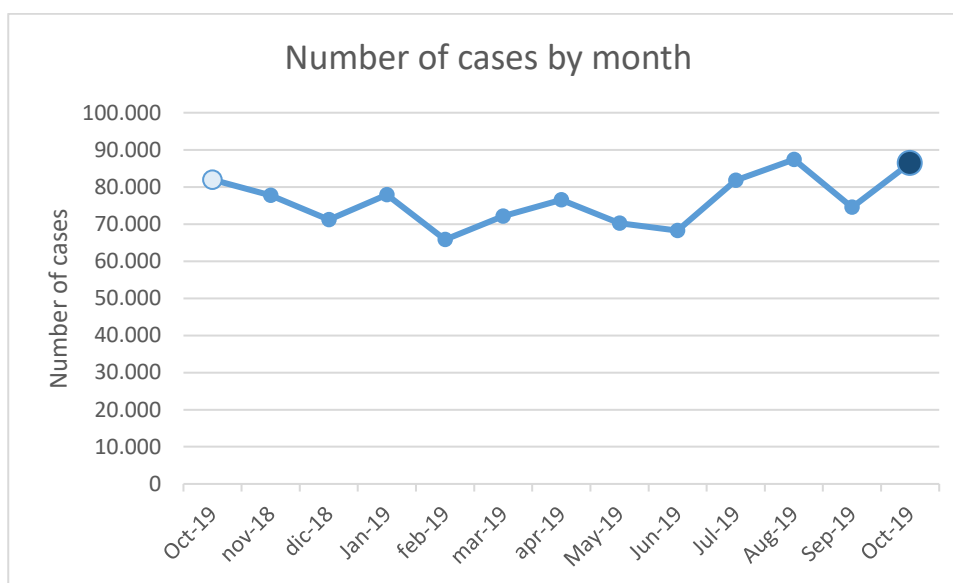
Graphic 4-3 Graph of statistical control for number of supplies

In addition to the lower and upper control limits of statistical control, the last three months average is also looked at the last. The company requires that the last month respect especially

the values of the last three months, that seem to be the most representatives of the clients' behaviour. The objective is that the last month does not exceed this limit. The average turns out to be 58.492 supplies. With a number of supplies of 59.895 in the last month, the limit is not respected.

### Cases

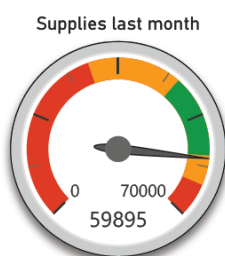
In addition to the study of supplies by month, a case analysis is performed to see the history of this indicator. The following table explains the distribution, showing the difference between the last month (October 2019) and the same month of the previous year (October 2018). You can see how the value is among the highest in the last 12 months and higher than the same month of the previous year.



Graphic 4-4 Number of cases by month

## 4.2. Information display

The visualization carried out in the Appendix 1 has the objective of allowing its user to immediately recognize the presence of a problem in the service. The Dial gauge reported in the central part shows the situation in which the indicator is in the last month, defining three different states in which it could be found:



Graphic 4-5 Dial gauge

- Green area: security area that is between the lower control limit and the average of the previous three months.
- Orange area: indicates a situation that requires the service to be verified. The first part is under the lower control limit but still exceeds a reasonable supply limit (30.000). The fact that the value can be placed under the LCL is not

considered a risk, but it could be if it turns out to be too low: it could refer to a system error, or an anomalous period. The second orange part is within the control limits but allows the user to be alarmed if the average of the previous three months is exceeded.

- Red area: defines a dangerous situation. The indicator is in this state when the value of the month is less than the reasonable limit of supplies that were contacted in the month, or greater than the UCL limit. In both situations it is not under statistical control, but while the first one defines a situation of system error or characterized by a particular social circumstance, the second has to alarm the user: it indicates a serious problem in the delivery of the service.

Thanks to the dial gauge graph, the user should be able to recognize the need for an intervention to improve the service. In addition to the gauge dial, the critical values that define the areas and allow a complete reading of the graph are displayed: the statistical control limits, the average of the last three months, the value of the month under analysis. The other information allows to complete the reading of the indicator: the average values of cases and supplies of the last twelve months; the graphs of the quantities of cases and supplies.

The purpose of the graphics is to complete the reading of the visualization, allowing the user to obtain more information in case the dial gauge graph indicates the presence of a problem (red area) or a more detailed analysis (orange area). The first is the graph of statistical control of the quantities of supplies that were contacted in each month to request the balance of your account. It also displays the upper and lower statistical control limits. This chart allows you to understand the history of this indicator and recognize the months that are not under statistical control.

The second graph displays the history of the numbers of cases opened in the last thirteen months. It allows to analyse the behaviour of the last month in comparison with the same month of the previous year and the maximum, minimum and average values of the months under analysis. In this case it was decided to add the value of the same month of the previous year to compare exactly the clients' behaviour in the same period in which people should act similarly, because different factor as holidays, expenses, weather.

### **4.3. Conclusions**

This MVP wants to define a guiding scheme that can be followed in the *Monitoring* stage. The realization of an analysis of the distribution of the data and its correct visualization should improve the stage of *Examination* of the sensor, allowing its user to focus on the indicators that require an intervention.

The visualization made for the submotive “Report account balance” allows to recognize the presence of a problem. The indicator for the last month is in the orange area: it is under statistical control but with a value higher than the average of the previous three months. This should get the user’s attention, requiring that the graphics reported in the same visualization be analysed as well. Looking at the supplies, you can see that in all the last twelve months the limits of statistical control are respected, although the month of August 2019 is very close to the UCL.

The other graph, with the values of cases created for each of the last thirteen months, allows to analyse the position of the last one in comparison with its history. It can be deduced how the month under analysis (October 2019) has a very high number of cases. It is higher than the same month of the previous year, higher than average and very close to the maximum value. This situation should then alarm the display reader.

It can be concluded that the situation of the indicator under analysis is critical and requires an intervention to correct its operation and improve the experience of the service delivered to the client. In case of examining these values by the Committee, the decision would be to nominate an ART responsible for its study for the definition of solutions, always if there are no other direct projects to improve this same service.

## 5. Limitations and Future Work

In the previous chapters we have already explained and analysed all the benefits and reasons why it is important to implement this methodology. Now we should change the focus of this analysis and recognize all the improvements the methodology allows in terms of economics results.

First of all, we should focus on the time required to recognize the presence of a problem. In the first scenario (without the VoC methodology) Enel doesn't have a clear schema of all the instruments they could use to evaluate the customer experience. There are many sources that could allow the evaluation of the customer experience, but not all of them are correctly used. Even the information that the company gets from some specific tools are not well analysed. For example, the information of the evaluation that the clients leave about the company in the questionnaire are sent to each area but there isn't a procedure that ensure this information to be analysed by the responsible. Probably all those reports are received, read and archived immediately. There is no reason to believe that all customer assessment information is properly taken charge by the person concerned. Therefore, probably many service problems are not encountered, at least not within reasonable time. A good point for Enel is the realization of the User Experience Committee. In this meeting they analysed some data and look for problems in the customer experience. But as we already know, this meeting has a bimonthly frequency and it is focused on the analysis of all the data that concern the "claims". Its frequency makes it more difficult to find out a problem in time. It only ensures the discovery of some problems related to a specific source of information and sometimes after a long period of time, even two or more month.

On the other hand, the implementation of this methodology could change some of these points. First of all, the clarification of which are the Voice of the Customers instruments that Enel should capture, allows to get, storage and manage the information required. Then the methodology demand to respect a specific procedure to follow and analyse all the data captured. The creation of an automatic and standard systems of data monitoring with dashboards reduce the time of work spent in organizing this information. Furthermore, the methodology introduces more committee to analyse all the dashboards realised. The presence of different committee dedicated to one or more areas of analysis allows a better focus on the data and a more frequent study of the situation.

The results obtained with these changes are the reduction of the time required to detect a problem and the faster satisfaction of the clients. While nowadays workers could spend at least two months to detect a problem, implementing the methodology it could be possible to recognise the presence of a problem even in one day. The actual work in Enel allows to analyse the customer experience during the UX Committee that take place bimonthly, so it's easy that a problem will be detected two month later. Moreover, not all the significant data are

analysed during this meeting, so it doesn't ensure the detection of all the issue in the customer experience. On the other hand, with the implementation of an automatic monitoring of the data collected, it could be possible to detect a problem immediately after it take place. Of course, the implementation of a daily dashboard could not be possible in the case of the surveys that are submitted monthly since the list of clients to contact is released at the end of the month. Anyhow, the methodology ensures the detection of an issue during the meetings of the committee. Since the committees meeting take place to analyse a specific sensor every month (for the customer service channel satisfaction) or every two months, it makes sure that at most within two months a problem is raised.

Accordingly, it is possible to recognize a saving in terms of time required to monitor each sensor. In addition, savings could be made on the indirect consequences generated by customer dissatisfaction. The first saving takes place since with the methodology the monitoring is automatic, it doesn't require the creation of a dashboard for each meeting of the committees. On the other hand, the period of customer dissatisfaction is reduced thanks to the speed of detecting a problem.

Thanks the application of the methodology, another improvement could be identified. It is about the time required to develop an improvement project. The actual way of work doesn't provide some rules to follows and control all the projects that are in develop. So, if a problem is recognised, it is possible that some teams take responsibility for developing an improvement project. But nothing ensures the team achieves the set goals about improve the customer experience, since the responsible of recognising the problem aren't following all the development process. Furthermore, the project development doesn't expect people works respecting the Agile framework. With the application of the illustrated methodology something could change. It requires the respect of a schema that define exactly how to work and the communication between different levels of the system. But the most important aspect is the development of project using the Agile framework. The results obtained with or without the implementation of this methodology can be significantly. Actually, without using the Agile framework, on average, a project requires seven months to be developed and launched on the market. The company forecast for the Agile projects is about three months. If we consider the decisions and communications the methodology requires to reach the development phase, it turns out to be more correct to consider an additional month in the Agile case.

Accordingly with the company's estimates, it is easy to recognise the reduction of time requires to develop a project: the difference is between seven and four months (three plus one), so it isn't trifling. It doesn't only allow a faster development, but also ensure the development of the project thanks to the detailed rules about communication and feedback. So, it is possible to quantify an estimated saving given by the salary of the team involved in the development of the project. Accordingly with the company standards, the following data can be used to calculate the saving:

- average monthly salary (of the team members): CLP 1.800.000;



- average size of a team: 6 people.

Defining the saving in terms of time equal to 3 months, the average savings would be CLP 32.400.000 per project.

This measurement clearly focuses only on the process of agile project development, without evaluating the possible expenses that would come from the implementation of the methodology and the following management of all the people involved. But it allows to make a first simple evaluation to understand the benefits for the company, in addition to the advantages given by the development of projects that seek to improve the customer experience (clear benefit for the company).

One of the principal elements of VoC is to include many sources of information. But the analysis realized in this thesis focuses in just one. The reason is related to the need to realize a first sample of this methodology. It was not possible to implement a more complex system of analysis that clearly required more time and resources. Obviously, the first improvement in a future work will be the implementation of a system able to combine different sources. Applying this methodology, the company will clearly be able to get a great number of data. Many of this will be related to the same information. Especially it is possible that some data explains others. For example, if we are analysing the online process to pay the bill, the first relevant data is the evaluation the client gives in the online survey, a short evaluation required to the user immediately after the service supply. Then more information can be received from the website (or app) behaviour. This should demonstrate the same problem: some delay in the user compilation or execution of the payment process. Using this system it could be possible to recognize the exact step that generates problems. Another example is in the satisfaction of a customer service channel. How it was explained, there are different sources of data used in the evaluation of a customer service channel: from the satisfaction survey of residential clients to the EPA. In this case it is important to give a correlate the different information but at the same time to recognize a different importance of them. The EPA has a great importance due to the moment in which it is administrated. It is able to get the exact evaluation of the service, without distortions. Another point is that it expresses the satisfaction of client that certainly received the assistance. A similar information is obtained from the evaluation released from the client who fill in the general satisfaction survey. The company asks him to express his evaluation about a specific channel without the guarantee that he actually used the service and especially at what time. In this case it is clearly essential the definition of different weight to each data involved in the definition of the voice of the customer information. So if we imagine to focus the analysis of a customer service channel satisfaction only in this two data, we could introduce a ponderation like a 0.3 weight to the data obtained from the satisfaction survey of residential clients and a 0.7 weight to the EPA, due to the reasons explained before. Obviously the introduction of more sources requires a different ponderation.

## 6. Conclusions

This thesis work allowed to understand in detail how a large company manages all relationships with its customers and is committed to improving the experience. The Voice of the Customer methodology designed, also seeks to improve this system by having the customer experience as the only focus. In a company like Enel the consumer should be at the centre of everything.

The thesis project tries to change and correct all those aspects that in an initial analysis phase were identified as problems present in the data management system and the service offered to Enel's customers. Specifically, what the thesis work has tried to do is to respond to the specific objectives identified at the beginning. Let's now go over each point and identify how the Voice of the Customer methodology tries to respond to the set objectives and bring an improvement to the company. The same structure of the methodology allows to identify how the different specific objectives of the thesis are developed. The VoC methodology is composed by three different phases that correspond to each of the specific objectives.

- *Sensors – “How to listen to the client”*
- *Process – “How does a problem arise?”*
- *Improvement – “How to improve the service?”*

First of all, the methodology tries to respond to the first specific objective, whose question is: *“How to listen to the client?”*. The first phase of the methodology defines which are the instruments the company should use to get the real voice of the customer. It makes clear which data is important to get and storage, in which moments it's better to listen the client (moments of truth) and how to organise the information in the different sensors. The definition of these sensors allows a clear management of the information, avoiding duplicates and putting together related information. This solution allows to lose relevant data and focus in the relevant one.

The second phase of the methodology respond to the question *“How does a problem arise?”*. The most important result obtainable with the implementation of this part of the methodology is the possibility to recognize a problem in the service delivery quality thanks to a system of data analysis using repeatable statistical control chart and a simple visualization of the information analysed. In a world where the quantity of relevant information and data to manage is huge, an automatic and default systems to organize and visualise information is the first step to implement to get some important decision and avoid losing relevant issues. It is necessary to develop a system of data analysis and visualization of information automatic and clear to read, to allows the immediately focus of the responsible in the most relevant information. It means that working with a big number of indicators, it isn't possible to bring

the committee analysis on each of them. The committee should focus only on which requires a detailed study. The methodology makes this possible defining the necessity of design a visualization that at first sight allows recognise a problem, more or less serious. Another important result obtained with the methodology is the use of a statistical method to detect the presence of a problem in the system. The actual use of subjective criteria alone cannot be considered reliable, especially in a company so large that has to manage a large number of indicators.

The most significant change proposed in terms of human resource management is related to the last stage of the methodology and so to the last specific objective. *“How to improve the service?”*. One of the principal problems recognises in the first diagnosis was the not clear organization of the human resources involved in all the process of customer experience improvement. They miss some detailed rules to respect that define the responsible of each activity, the deadline and so on. The methodology defines a protocol with a series of steps they must respect from the identification of a problem, to the launch of the service improvement. In this way it could be possible to involving and encouraging workers to achieve the set work objectives. Therefore, all the detailed activities related to this stage of the methodology will allow a better organization of all the people involved and especially the development of a project that respect the original objective of the committee, since the first input comes from the large solution level and in different steps the team has to sent a feedback and an updating to them.

Summarizing, the most important result Enel could obtain implementing the proposed methodology is the possibility to improve the customer experience focusing all the system on the customer care, looking for all the solution that could make his experience better. The Enel's purpose is not to avoid losing customers, since it is a monopoly, but clearly it's important to provide a good experience to improve the company image.

Another not insignificant aspect that characterizes this methodology is the possibility of continuous improvements. At the basis of the Agile frameworks is in fact the idea of a project that responds to changes and not to a pre-established plan. While the SAFe House of Lean speaks of a relentless improvement. Clearly the strategy of making continuous improvements that adapt to the customer's needs and responses to change, is the ideal solution to face a constantly changing market where customer needs vary according to the technologies and social situations that arise in his around. Obviously, this could be possible only understanding the perfect way to listen the customer.

The purpose of this thesis is to become a simple guideline to Enel Distribution Chile to reorganize and manage all the data that concern the clients and can became a useful information to improve the customer experience. The thesis tries to find a solution to every single problem previously identify. The complex system behind the simple interaction that the customer realizes by communicating with the company, certainly cannot be totally redesigned with this work. However, an attempt is made to define a common thread and there will still

be a lot of work to do. As it has been confirmed for the projects that could be developed with this methodology, we cannot expect to arrive immediately at the optimal solution. It is necessary to start from the definition of a general structure and then gradually go into more and more detail. This thesis work aims to define the skeleton of a much more complex process. For each individual activity listed in the methodology, a well-detailed definition and redesign work could be carried out. From the redesign of VoC tools, such as questionnaires and their frequency of administration; to the definition of an optimal data management; and to the creation of automated analysis and visualization tools for each individual indicator (following the idea of what has been achieved in the MVP).

First of all, I hope that what is reported in this thesis project, the methodology, will be implemented in the company. After that, I hope that a person will take charge of the project and continue to refine it, going to deepen every single item and request indicated in the methodology. All this should be done without ever losing the main objective of all this work that wants to have the customer at its centre and to improve his experience as a goal.

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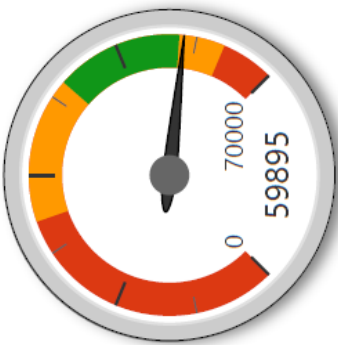
**Appendices**

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Submotive: Report account balance

Supplies last month



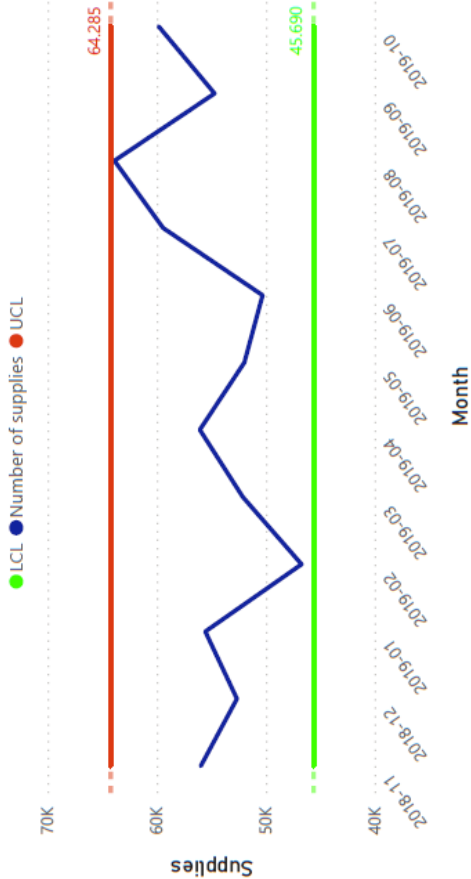
54,99K  
Average of Number of supplies

76,30K  
Average of Number of cases

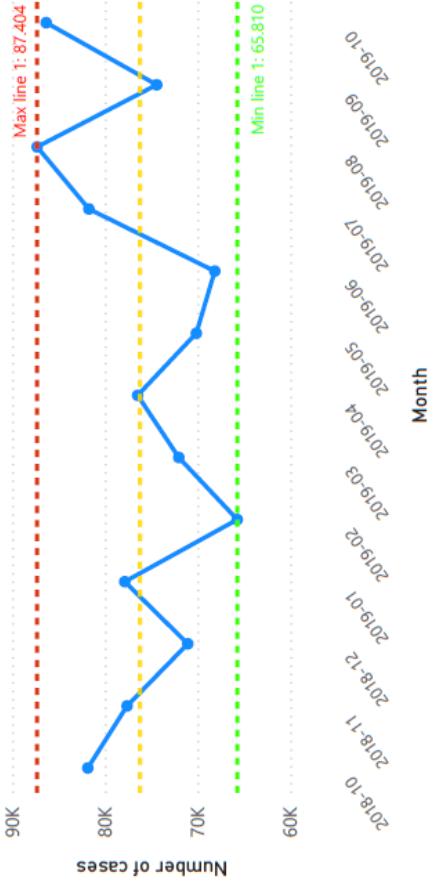
Supplies

Supplies last month	LCL	UCL	Average last three months
59.895	45.690	64.285	59.389

Supplies with statistical control chart



Number of cases by month







## **I. Enel Chile**

### **Social object**

The corporate purpose of the Company is amended by statute approved at the Extraordinary Shareholders Meeting dated December 20, 2017, formalized by deed public of December 28, 2017, granted in the Notary of Santiago of Don Iván Torrealba Acevedo, whose Extract was registered in the Registry of Commerce of the Conservative of Santiago Real Estate corresponding to the year 2018 and published in the Journal Official dated January 5, 2018.

The Company will have as its objective the exploration, development, operation, generation, distribution, transmission, transformation and/or sale of energy in Chile, in any of its forms or nature, directly or through from other companies, as well as activities of research, development, operation, marketing, purchase, sale, import and maintenance of any type of goods related to information technologies and of telecommunications, such as software, hardware, licenses, computer developments and, in general, of any type of goods related to activities previous; and advice in all the subjects indicated before it will also aim to invest and manage your investment in subsidiaries and affiliated companies, that are generators, transmitters, distributors or traders of electrical energy or whose turn corresponds to any of the following: (i) energy in any form or nature, (ii) to the supply of public services or whose main input energy, (iii) telecommunications and information technology, and (iv) intermediation business over the Internet. In the accomplishment of its main purpose the Company will develop the following functions:

a) Promote, organize, constitute, modify, dissolve or liquidate companies of any nature, whose purpose social be related to those of the Company.

b) Propose investment policies to its subsidiaries, financing and commercial as well as accounting systems and criteria to which they should stick.

c) Supervise the management of its subsidiaries.

d) Lend to its related companies, subsidiaries and affiliates the financial resources necessary for the development of their business and also lend to their subsidiaries management services; of advice financial, commercial, technical and legal; audit and, in general, services of any kind that appear as necessary for your best performance.

## The vision

For more than 50 years Enel has brought progress to people around the world. Since the day Enel was founded, in 1962, they have worked hard to help people, businesses and nations thrive by connecting to electricity, gas and services suited to their needs.

Therefore, they have constantly adopted new technologies to make energy more reliable, more affordable and more sustainable - from the introduction of the first smart meter to becoming the world's largest producer of renewable energy.

Now they are starting a new, exciting one, it was for energy; an open era of participation, where everyone is connected and has the opportunity to participate and face the great challenges of the world.

## Open power

In today's complex and changing world, they can have a concrete effect on the great global challenges only by multiplying the advantages that their presence offers and opening up.

That is why they guarantee the services to more and more people in a large number of countries, boosting local economies and expanding access to energy.

For this reason, their strategy is based on openness as a key element of the Group's strategic and operational approach. Enel is Open Power to face some of the biggest challenges in the world through an approach that associates sustainability with maximum innovation.

Sustainability cannot be developed without continuous innovation, and for them innovation makes no sense if it is not aimed at sustainability.

And in the same way that sustainability is not only environmental, innovation is not only technological. Inspiration and innovation can come from anywhere. That's why Enel constantly look outside the company: it looks for ideas, inspiration and know-how. They are carrying out modern collaboration platforms that allow everyone to contribute: a university student, an energy start-up, a global multinational industrial partner.

Only if they rethink the way Enel innovates, they can really revolutionize the industry and develop technologies and solutions that can shake old markets and create completely new ones.

## The mission

Open Power wants to open access to energy to a greater number of people, open the world of energy to new technologies, open energy management to people, open the possibility of new uses of energy, open up to a greater number of alliances.

Enel Chile (Enel.cl) define his mission as follows:

### *01. Open access to energy to a greater number of people*

We expand our dimensions to reach and connect a greater number of people to safe and sustainable energy, especially in South America and Africa.

### *02. Open the world of energy to new technologies*

We direct the development and application of new technologies to generate and distribute energy in a more sustainable way, especially through renewable sources and smart grids.

### *03. Open up to new methods of managing energy for people*

We develop new methods that meet the effective needs of people, to help them use and manage energy more efficiently, especially by using smart meters and digitalization.

### *04. Open ourselves to the possibility of new uses of energy*

We develop new services that use energy to meet global challenges by devoting special attention to connectivity and electric mobility.

### *05. Open to new alliances*

We join a network of collaborators in research, in technology and in the design of new products as well as in marketing, to develop new solutions together.

## **II. Culture**

Enel directs its industrial plans towards a sustainable business model that enhances the links between the different lines of business and the outside world, with the aim of finding market solutions that at the same time generate value for the environment and society. The Enel model aims to create value in the long term taking into account the acceleration of current cultural, social and economic changes. To be a proactive part of this scenario and lead the energy industry, Enel resorts to innovation and collaboration with other partners, considering the priorities of their stakeholders as fundamental inputs and turning society's needs into business opportunities.

Enel Distribution's sustainability model integrates environmental, social and governance objectives with the goals of Industrial plan of the Company, seeking to generate long-term value.

The 2019-2021 sustainability plan is based on 5 pillars that support the Enel Distribution Chile business model: health and job security, solid governance, environmental sustainability, sustainable supply chain, and economic and financial value creation. The pillars simultaneously support the Company's strategic priorities: asset optimization and innovation, growth through low carbon services and technologies, involvement of the communities in

which the company operates and involves the people with whom it works. Both the pillars and the strategic priorities have as transversal enablers the focus on the client and digitalization. The sustainability plan guides the management of Enel Distribution Chile by integrating the goals and objectives of the industrial plan with the Company's priorities in the environmental fields, social and governance.

Enel recognizes the importance of the people who participate and collaborate for the proper functioning of all its services. The Enel group has expressed its commitment to the principles disclosed by the United Nations with its Human Rights policy.

Enel's Human Rights policy (Enel Distribution Chile, 2018) addresses eight relevant Principles and is structured based on two main areas:

1) Labour practices: Rejection of forced or compulsory labour and child labour; Respect for diversity and non-discrimination; Freedom of association and negotiation collective Occupational Health & Safety; and Fair and favourable working conditions.

2) Relations with communities: Respecting the rights of communities; Zero tolerance with corruption; and Privacy and communication.

The implementation of the principles is reinforced by procedures applicable to community relationship, which establish instructions and criteria to follow in the dialogues, negotiations and community worktables.

The policy is extended to internal and external employees of the Company, such as contractors and suppliers.

### Involving people

Under the Open Power vision, People and Organization Management promotes the prominence and the development of people, promoting their professional growth and balance of personal-work life under an open and inclusive internal culture, capable to contribute to business competitiveness, progress and work towards the future more sustainable.

### Agile

The Enel Group has decided to promote Agile to support the transformations that is currently experiencing the industry. It is a model distinct from collaboration based on the openness and flexibility as well as a way of experiencing values and Open Power principles along with their companions.

Agile practices are done in teams interdisciplinary and self-organized, through iterative development and growing throughout a project, including continuous participation and direct from the client from the first Project phases. The model combines the methodological rigor in the application daily of principles (see, for example, the values highlighted in the Agile Manifesto) and common methodologies (such as the Method Scrum) and continuous

adaptation to changing customer needs and product development contexts or services, from conception to its marketing.

Additionally, this model enables and facilitates the modification and improvement of solutions, processes or systems that already exist or are present in the market to adapt them to new requirements.

The Mindset Enel Agile is the basis to transform the company, but to value this way of thinking it is important to translate it into concrete actions that will change the way we work. A change that requires all people to get involved in it and that is why they have defined the Enel Agile Work Method based on five work foundations that revolve around people (Enel Distribution Chile, 2019):

1. *Multidisciplinary and self-organized teams.* Teams or (“Squad”) of between 4 and 10 people are created with the necessary skills to solve the challenge. Inside the team, information is shared through face-to-face communication. A very important aspect for the correct functioning is that the objective is shared, and the work is joint. It seeks to promote collaboration, trust, motivation and proactivity among team members. In addition, each member of the team is asked to fulfil their commitments, make decisions with determination and assume their responsibility.
2. *Iterative and progressive development.* In agile projects, the team makes partial deliveries of functional product, which are called “product increase”. The time you spend (time-box) between each product increase, it is called “sprint”. It is a cycle that is repeated and whose purpose is to add value to the product incrementally and progressively to meet the expectations and needs of the customer. Flexibility to change is key since it is possible that in the validations with the client the needs of the same or the business change or alter in order of priority.
3. *Focus on customer value delivery.* It is necessary to create a relationship with the client involving it and taking it into account throughout the entire project. The client transmits his needs to the owner of the product and this in turn to the team, so that the client does not interfere in the performance of the equipment. Customer satisfaction must be ensured through early and continuous delivery of value. It requires a prioritization of the objectives according to the value for the client and the business.
4. *Continuous equipment improvement.* It is very important to recognize the merit of the team members and offer constant feedback. It is required to reflect on how to constantly improve the process. It is necessary to increase the effectiveness and efficiency showing a great tolerance to failure. Furthermore, you have to give stability to the equipment, to increase its speed and capacity.
5. *Transformational leadership.* Motivating leaders are required by inviting to participate in the projects, which enhance the commitment and involvement of

employees in the projects. In addition, it must be able to adapt effectively and continuously to the changes and needs of the market, promoting the strategic development of the company, promoting that it adopts a more open mentality and operability, and generating an optimal working environment.

### **III. Customer Care**

#### **Customer Focus**

The 1.9 million customers present in the concession area are downtown of the management of Enel Chile, which favours an active and constant listening of their requirements through channels of communication and dedicated studies.

A close and effective relationship allows understand customer needs and respond to your requirements of the best way. Therefore, the Company has out a program that permanently analyses the satisfaction of their customers with the service and quality of each customer service channel, in order to elaborate continuous improvement plans from the results.

#### **Customer journey**

Related to what is established in the sustainability report (Enel Distribution Chile, 2018), Enel Chile, through its subsidiary Enel Distribution Chile, defines the five pillars that make up the Customer Journey project. These will align with the company's Customer Centric culture, which puts the customer at the centre of the business. As explained previously, the pillars comprise and address the different areas of customer interaction with the Company:

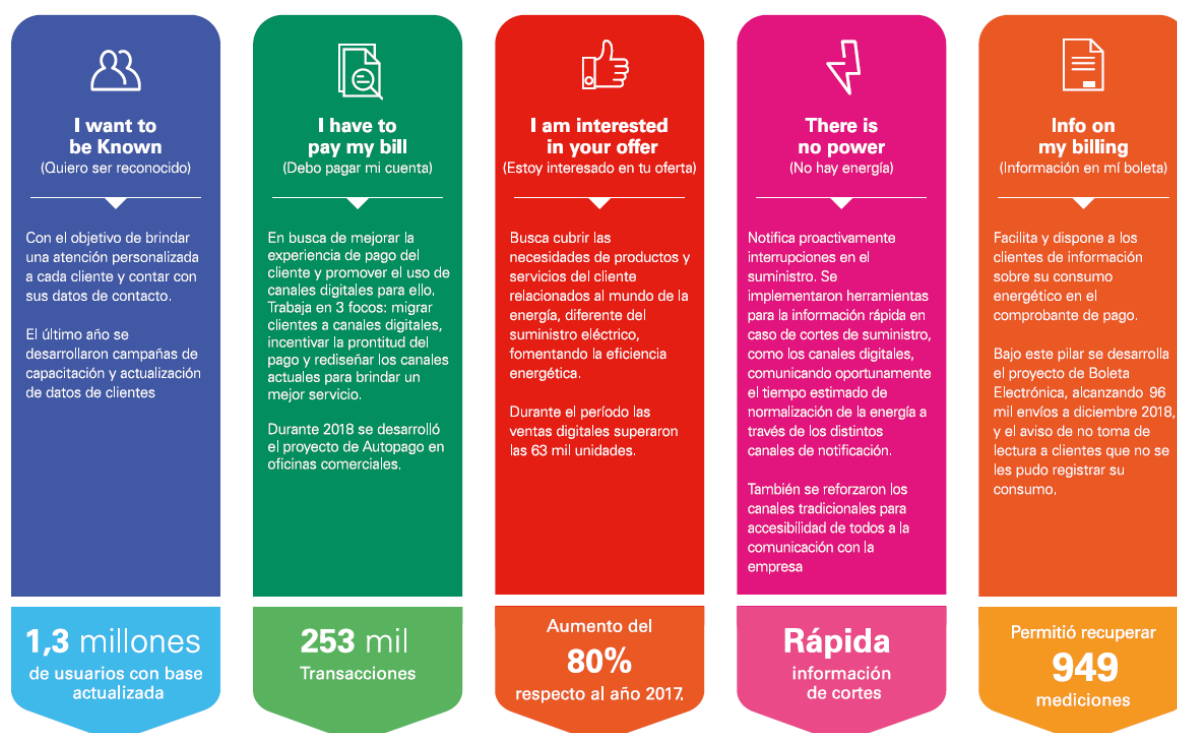


Figure B-1 Results of the CJ Pillars achieved in 2018 (Enel Distribution Chile, 2018)

- ***I want to be Known.*** With the aim of providing personalized assistance to each client and having their contact information. Training campaigns and client data update campaigns were developed last year. It was possible to obtain 1.3 million users with updated base.
- ***I have to pay my bill.*** In search of improving the customer payment experience and promoting the use of digital channels for it. Work with 3 focuses: migrate clients to digital channels, incentivize to provide a better service. During 2018 the Autopayment project in commercial offices was developed (253 thousand transactions).
- ***I am interested in your offer.*** It seeks to cover the needs of products and services of the client related to the world of energy, different from the electricity supply, promoting energy efficiency. They achieve an increase of 80% compared to 2017.
- ***There is no power.*** Proactively notify supply interruptions. Tools for rapid information were implemented in case of power outages, such as digital channels, communicating in a timely manner the estimated time of normalization of energy through the different notification channels. Traditional channels for everyone's accessibility to communication with the company were also reinforced. Result: quick information of cuts.
- ***Info on my billing.*** Facilitates and provides customers with information on their energy consumption in the payment receipt. Under this pillar the Electronic Ticket project is being developed, reaching 96 thousand shipments as of December 2018,

and the notice of no reading to customers that their consumption could not be registered.

#### Quality plan of assistance in Channels

The success of a strategy focused on the customer as the one adopted by Enel Distribution Chile requires the commitment and involvement of all its collaborators. In order to strengthen the guidelines of the different channels around to the common goal of better service, it was developed the Quality Plan of assistance in Channels.

In 2018 were implemented the first stages of the plan, beginning with the review and update of the Service Policy and Customer Relationship. In addition, it was developed a program of communication to spread the new policy of service and it was elaborated a matrix of expected behaviours, which serves as a basis for training courses developed.

To deepen the processes of assistance and improve the skills of customer service, courses were run training internal and external workers. The courses cover the review of tools customer service effective communication and active listening, customer management tips with different personality, claims treatment, among others. All incorporate analysis of real cases and evaluation activities.

#### Omnichannel Strategy

The importance of electricity supply in people's daily lives generates higher requirements, which implies that customers expect answers accurate and in the shortest time possible. Therefore, Enel offers an omnichannel service whose focus is to integrate and align your customer service channels to offer an experience of homogeneous assistance in all its platforms.

Enel Distribution Chile's commitment with quality care has materialized with the implementation of digital platforms, including Salesforce CRM. This tool allows to the customer service channels deliver the same information and level of assistance regardless of whether the customer chooses to be attended in person, by telephone or digital.

Salesforce is a CRM software "customer relationship management". It helps companies connect with their customers and get more information about them. Salesforce services allow companies to use cloud technology to track customer activities, optimize marketing strategies and coordinate service sales.

Enel registers three different identities in Salesforce: contacts, supplies and accounts. Each contact is a person related to one or more supplies. It can be the intestate person of the supply, a family member, a neighbour, a legal representative or others. The supply identifies the physical location that receives the light distribution service. As for contacts, each supply is related to one or more contacts. The account is the relationship between supply and contact: it is the item that records the issue of billing; the commercial entity of the supply.



Each time the client contacts the company, a case is created and registered in the Enel CRM.

It is possible to classify 4 different types of channels offered to customers to communicate with the company:

- Face-to-face channels (*canales presenciales*); there are 9 commercial offices distributed in the metropolitan region plus a mobile office that runs through different communes of the concession area according to calendar. The results obtained in 2018 were the following:
  - the commercial offices made 410 thousand assistances;
  - deployment of 32 modules of self-payments in 9 commercial offices, which added to the modules of self-consultation already implemented a total of 1.8 million self-service;
  - the mobile office made a total of 229 visits to different commons, specifying more than 17 thousand commercial services and payments.
- Digital channels (*Canales digitales*); allow you to access the company's services and information in real time 24/7: website, Twitter, Facebook, mobile app "Enel Clientes" for iOS and Android. The results obtained in 2018 were the following:
  - 8.94 million visits to the website;
  - 73.5 thousand assistances made by social networks (Twitter and Facebook). The Social Studio tool implemented in 2018 allows online monitoring of social media activity and the automation of early alerts to reported situations;
  - 69 thousand downloads and more than 600 thousand services made through the app *Enel Clientes*.
- Remote channels (*Canales remotos*); there is a first line of customer service through IVR (Interactive Voice Response), which gives the customer options for self-service or, if necessary, refer the call to an executive. The Call centre service is operated by two contractor companies for telephone service through executives, with a total of approximately 200 executives in the normal period. The results obtained in 2018 were the following:
  - 1.3 million self-service services through IVR;
  - 1.8 million assistances through executives.
- Email, post-sale and authority; post-sales team dedicated to receiving requirements from the different channels to manage cases of damaged devices, guarantees or returns; authority team responsible for communicating with SEC, SERNAC and claims management that customers scale through these institutions. The results obtained in 2018 were the following:

- 66 thousand emails received;
- 5 thousand letters answered;
- receipt of 16.8 claims notifications from the SEC and 3 thousand claims through SERNAC.

	Face channels ( <i>canales presenciales</i> )	Digital channels ( <i>Canales digitales</i> )	Remote channels ( <i>Canales remotos</i> )	Email, post-sale and authority
Description	<ul style="list-style-type: none"> <li>• 9 commercial offices</li> <li>• 1 mobile office</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://www.eneldistribucion.cl">www.eneldistribucion.cl</a></li> <li>• <a href="https://www.twitter.com/EnelClientesCL">www.Twitter.com/EnelClientesCL</a></li> <li>• <a href="https://www.facebook.com/EnelDistribucion">www.Facebook.com/EnelDistribucion</a></li> <li>• App “Enel Clientes”</li> </ul>	<ul style="list-style-type: none"> <li>• IVR</li> <li>• Two call centre companies.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="mailto:clientes@enel.com">clientes@enel.com</a></li> <li>• <a href="https://www.eneldistribucion.cl/contacto">https://www.eneldistribucion.cl/contacto</a> (Web form)</li> <li>• <a href="http://servicios.enel.com/formulario/FormularioReclamo.aspx?emp=CH">http://servicios.enel.com/formulario/FormularioReclamo.aspx?emp=CH</a> (Formal claims)</li> </ul>
2018 results	<ul style="list-style-type: none"> <li>• 410 thousand assistances in of. commercial</li> <li>• Display of 32 modules</li> <li>• 229 mobile office visits with 17 thousand assistances.</li> </ul>	<ul style="list-style-type: none"> <li>• 8.94 million website visits</li> <li>• 73.5 thousand assistances in social networks</li> <li>• 69 thousand downloads of the App</li> </ul>	<ul style="list-style-type: none"> <li>• 1.3 million IVR services</li> <li>• 1.8 million assistances with executives.</li> </ul>	<ul style="list-style-type: none"> <li>• 66 thousand emails received</li> <li>• 5 thousand letters answered</li> <li>• 16.8 thousand claims in SEC, 3 thousand in SERNAC</li> </ul>

Table B-1 Customer service channels (Enel Distribution Chile, 2018)

### Customer care regulation

The market of the electricity distribution sector in Chile is supervised through 3 entities that are responsible for its administration, operation, development and compliance with the requirements in the country. Each of these entities have their own responsibilities in the electricity market. Below are these organisms and a brief description of their activities:

- Ministry of energy: it is the government institution responsible for preparing and coordinating the different plans, policies and standards for the development of the country's energy sector.
- National Energy Commission (*Comisión Nacional de Energía* - CNE): it is the technical body responsible for analysing prices, tariffs and technical standards to which the energy distribution companies must adhere.

- Superintendence of Electricity and Fuels (*Superintendencia de Electricidad y Combustibles* - SEC): this body supervises and monitors compliance with laws, regulations and technical standards on electricity.

One of the oversight responsibilities of the SEC is to verify the commercial quality of the services provided by the distribution companies. To carry out its activities, the SEC relies on the following regulations:

- Oficio Circular N 436 | Ene-2015 | - Document issued by the SEC that indicates the general instructions for the identification and management of claims, complaints, requests and user queries.
- Normas Técnica de Calidad de Servicio para Sistemas de Distribución | dic-2017 | - This standard was issued by the CNE and its main objective is to establish the requirements and standards of service quality (including commercial claims) for electric power distribution systems.

The 2017 Technical Standard is the document with the highest rank and relevance for the definition of the standards for identification and treatment of claims. Below are the main deaths related to customer service according to the Technical Standard (CNE, 2017):

- Claim: "It is the manifestation of disagreement that is made against a Distributor Company, in which the reasons for that are specified, the infractions it considers to be committed, and the requirement of a solution to its Claim. Notices generated by unscheduled supply interruptions will be considered, for all intents and purposes, Claims."
- Request: "Petition that a person, whether Customer or not, makes a Distributor Company, in order to perform some diligence or, in general, execute actions related to the provision of electric power distribution service."
- Query: "Request that a person, whether Customer or not, makes a Distributor Company so that it provides information or clarify concerns related to the provision of distribution of electricity."

It should be noted that in case the client does not agree with the response or if it takes more than 30 days to answer, the client has the right to make the corresponding claim before the SEC. Claims submitted directly to the SEC, without having previously managed with the distributor, are transferred to it, granting a period of 30 days.

#### Process flow

The requests for care received in the various customer service channels (standard case) are entered into the Salesforce system as cases with a **motive** and a **submotive** according to a classification made by the attention executives. The classification is assigned according to agreed guidelines of care with the contractors and on which they are trained periodically.

On this classification of the object of the case, the cases are classified as queries, requests or claims which have a maximum legal response period of 30 calendar days. In case of disagreement (SEC case) the client can go to the Prosecutor to file a claim, with which, it may require additional information at the distributor, granting a period of 8 calendar days and can be extended by 2 additional days.



Figure B-2 Customer care process (Enel Distribution Chile, 2018)

Figure B-2 explains the customer service process. The standard case is verified when the client contacts one of Enel's customer service channels. The process begins with the customer's request for attention. The executive who receives the request records the case indicating the type of attention with the specifics of the motive and submotive. Then, if the executive can solve the request, the case is closed. Otherwise the request is referred to the back office. An internal case management is carried out: the case is analysed and managed with the areas involved. Each type of request corresponds to a different "buzón". When the response is ready, it is delivered to the client according to the requested channel.

The presence of a prosecutor requires a further classification of cases depending on the type of case registration. It is defined an *authority assistance* when the consumer communicates with the authorities SEC (*Superintendencia de Electricidad y Combustibles* - Superintendence of Electricity and Fuels) or SERNAC (*Servicio Nacional del Consumidor* - National Consumer Service). These cases are opened only if the client had already contacted Enel's traditional channels and had not received a response. In the other situations, cases of *commercial assistance* are also distinguished from those of *emergency*. The latter are created when there is a risk situation (e.g. power outage).

### Customer care quality

Enel Distribution Chile has a contract with the company DIGITEX which provides the service of "Evaluation of Customer Service and Internal Processes". This company is responsible for evaluating the customer care of cases entered in Call Centre, Written Response (letter, email, SEC/SERNAC), Commercial Offices and Digital Channels.

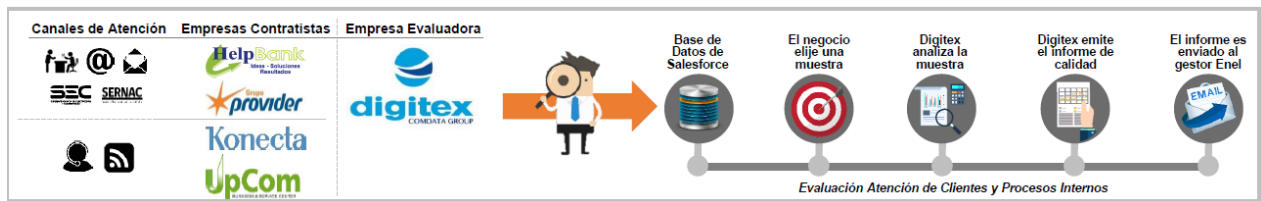


Figure B-3 Process flow of the evaluation of the customer care quality (Enel Distribution Chile, 2018)

Figure B-3 explains how starting with the salesforce database, the business chooses a sample of supplies and sends it to the Digitex evaluation company. Digitex analyses the sample and supplies the survey to the identified clients. With the results obtained, it issues the quality report that will be sent to the Enel manager.

Enel gets to have different information about its services thanks to two different types of customer satisfaction evaluations: residential customer satisfaction surveys and customer service channels surveys. The residential customer satisfaction survey assesses the perception of residential customers with the different aspects that influence their experience with the company and corporate image, based on ECSE (*Encuesta de Calidad de Servicio Eléctrico* - Survey of Quality of Electric Service conducted by the regulator). It is a structured questionnaire that is applied monthly in person to a sample of 300 people, for a total of 3600 people annually. Evaluate different aspects that influence the customer experience with their electricity supply: initial satisfaction, collection of the amount, bill, meter reading, supply, customer service channels, final satisfaction and corporate image.

The satisfaction surveys of the customer service channels are different for each one:

- Satisfaction of commercial offices: it is a structured questionnaire that is applied monthly in person to a sample of 130 people after having been served in a commercial office (for a total of 1560 people annually). Evaluate the different aspects that influence the attention experience in commercial offices: initial satisfaction, infrastructure, executive, host, self-payment and self-consultation machine, boxes, resolution, final satisfaction.
- Call centre satisfaction: two different surveys are carried out for commercial attention and for emergency ones. They are structured questionnaires that are applied by telephone and monthly to a sample of 90 people the day after receiving the telephone attention (for a total of 1080 people annually). In both the surveys are evaluated: the ease of getting in touch with the executive, the waiting time, the friendliness of the executive, the interest shown, the ability to resolve.
- IVR (Interactive Voice Response) Satisfaction: it is a structured questionnaire that is applied monthly to a sample of 30 people the day after receiving telephone attention (for a total of 360 people annually). Different aspects that influence the automated attention experience are evaluated: ease of contact, clarity of menu options, ease of

use of the menu, resolution of the reason for contact, speed of resolution, general satisfaction IVR.

- Web page satisfaction: it is a structured monthly questionnaire that is made to 30 people who have used the web during the month to make their payment (for a total of 360 people annually). Evaluate the different aspects that influence the web service experience: clarity of the content of the site, clarity of the information about the account, ease of browsing, usefulness of the information and services of the site, possibility of carrying out procedures without visiting the commercial office, security level, ease of account payment.
- Twitter and Facebook satisfaction: it is a questionnaire that is supplied online the following month the use of these channels.

All these instruments for evaluating the quality of services allow the collection of monthly data that will be reported to the areas responsible for the specific services.

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Paola Barberis