



Facultad de Ciencias Económicas y Empresariales

**TRABAJO FIN DE GRADO
GRADO EN ADE INTERNACIONAL**

**“SUGGESTION SYSTEM IN VOLKSWAGEN NAVARRA AND THE
SYSTEMATIZATION OF INNOVATION”**

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ABSTRACT

This Project explains in detail what a suggestion system is and which is the structure and operation of it in Volkswagen Navarra S.A. It is also explained in a more general context how and why suggestion systems were created and its benefits, and what does it suppose for car manufacturers as businesses (cost savings, efficiency, and productivity) and for people as employees (motivation, engagement, self-actualization). It is also described the requirements for a good suggestion system.

In the second part the systematization of innovation within Volkswagen Navarra is detailed. It is explained the course to follow towards that systematization and how would be the management of those innovative ideas. It will be also described the role played by the Suggestion System and other entities in this new phase for Volkswagen Navarra.

KEY WORDS

Volkswagen

Continuous improvement (Kaizen)

Employee Suggestion system

Automobile industry

Systematization of Innovation

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1. INTRODUCTION/SUMMARY

The argument of this project revolves around 2 concepts: suggestion system or employee suggestion system and innovation. However in order to understand the relevance of these two concepts or ideas, few things need to be understood.

The project is divided in three major parts:

The first part of the project is divided in another two parts: firstly there is a general introduction to the history of the automobile and to the history of Volkswagen group and Volkswagen Navarra. A short introduction to automobile's industry and the most important changes are explained basically since late 19th century beginning 20th century. Later on, the origins of Volkswagen and Volkswagen Navarra will be explained and the evolution of the group. Secondly the strategic objectives (Mach 18) of Volkswagen group for 2018 and Volkswagen's production system are extensively explained.

The production system is the most important tool the consortium possesses to achieve those objectives because it provides the methods and systems that dictate how workers should do their work. They are explained only some of the different principles and methods the consortium applies and which are the advantages of a production system for the company.

Following production system there is a general description of global automobile industry: its characteristics and its relevance in modern economies; the competitive environment and competitors, industry trends etc. This description will help to understand why a company needs a suggestion system and innovation.

In the second part, the core part of the project, it is described what is a suggestion system and in particular the operation and characteristics of the suggestion system in Volkswagen Navarra. It is explained how the system is regulated; how the suggestions are managed and rewarded within the factory; the importance of suggestion systems for companies and specifically for Volkswagen Navarra; how should a suggestion system be implemented and what is required to have an efficient system, etc. It is also explained what does suppose for a factory like Volkswagen Navarra to have this system in economic and human terms.

The last part of the project deals with the systematization of innovation in Volkswagen Navarra. One of those strategic objectives for the consortium is to have factories that introduce innovations every year. Up to now everything related to innovation, research and development was centralized in Wolfsburg. Now senior management in Germany wants to have some people and/or departments in each factory focused and working in topics

related to innovation. The plan is to have the suggestion office in the initial phase of the management of innovations. In the suggestion office there will be a first selection process to separate innovative ideas from the rest so that innovative ideas take another path. It will be detailed how the innovation is going to spread across the factory and which is the plan to create an innovative culture in VW Navarra.

2. THE HISTORY OF THE AUTOMOBILE

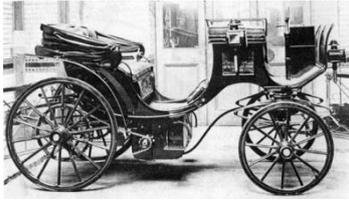
It was the end of 19th century when first cars appeared in Paris. Those cars were built by craftspeople that hand built a few of them in request of clients. The production costs were high and didn't decrease with volume growth. Therefore those drawbacks entailed that rich people were the only possible customers. On top of that the development of new technologies was inexistent because craftsmen had not the resources to do so.

In that scenario, Henry Ford came upon a new production system called *mass production* to overcome the problems of craft production. In 1908 Ford's Model T revolutionized the automobile industry. Henry Ford achieved to build a car in an easy and fast way. The interchangeability of parts and the simplicity to assemble them along with the introduction of the assembly line, gave to the company a competitive advantage. However, the Model T was a standardized product and when the car began to expand around U.S. and Europe the product was no longer suitable for everybody. For Americans the Model T was small and for Europeans quite large.

In 1950 Eiji Toyoda visited Ford's plant in Detroit. Back in Japan Eiji Toyoda and Taiichi Ohno realized that mass production could never be introduced because Japanese workforce was not willing to be treated as a variable cost. Thus, they had to change the way Toyota used its human resources. As employees would be a very important pillar in Toyota, Ohno had to develop a system that could benefit from the workers' skill and acquisition of knowledge. Ohno achieved a good organizational structure by giving to teams of employees more and more responsibilities.

Ohno neither like how the defects were treated in Detroit. His idea was to reduce the manufacturing defects to the minimum to assemble automobiles of premium quality such that the amount of rework was insignificant at the end of the line.

These changes among others were the consequence of what it is known today as Lean Production, a production system used in automobile industry and also by Volkswagen Group.



First cars in 19th century



Ford T model



1st Toyota Corolla

3. VOLKSWAGEN'S HISTORY

Volkswagen (people's car) was founded in 1937 by the German Labour front with the purpose of manufacturing a cheap yet speedy car for every German. Adolf Hitler was the main supporter of the project. Hitler called an Austrian automotive engineer, Ferdinand Porsche, to design the car. Politically, it was a good strategy to win the public support he needed for his military purposes. No expense was spared in building Volkswagen factory in Wolfsburg. He used Nazi financing to build the plant and the town near the factory to support it.

The full production of the "Kdf-Wagen" was to start in Wolfsburg in September 1939 but unfortunately the war broke out that month. Then, the factory was used to meet the war demand. After the war ended the plant was in the British zone of occupation. The



company survived by producing cars for the British Army. None of other automobile companies in the world wanted the ownership of VW. In 1948 the British Government handed the firm back over to the German state. In the 60s, the German government sold 60 % of Volkswagen's shares to the public, effectively denationalizing it. Twelve years

later, the Beetle surpassed the production record of 15 million vehicles, set by the legendary Model T.

During the 60s, 70s and 80s VW made some acquisitions and signed some agreements with other car producers. In the 60s, VW acquired Daimler-Benz's subsidiary Auto Union GmbH by purchasing 75, 3% of its shares. Another German manufacturer NSU Motorenwerke AG was merged into Auto Union in 1969 creating Audi NSU Auto Union AG. The new subsidiary went on to produce Audi after a complete organizational change was made to redirect the course of the subsidiary. In the 80s VW signed a cooperation

agreement with Spanish car manufacturer SEAT. In 1985 the company name was changed to Volkswagen *Aktiengesellschaft* (*Volkswagen AG*).

In the 90s after entirely merging with SEAT in 1990, VW signed a joint venture with SKODA. Between 1991 and 1995 VW acquired a 70% of Skoda's shares in three different purchases in 1991, 1994 and 1995 respectively. Three more brands were added to the group in 1998: Bentley, Bugatti and Lamborghini. Nowadays, the model range of Volkswagen Group is composed by 7 car brands Volkswagen, Audi, SEAT, Skoda, Porsche, Bentley, Bugatti and Lamborghini; 2 truck brands Scania and Man; and 1 motorcycle brand Ducati.

4. VW NAVARRA S.A.

The actual factory dates back to 1965 when the company "Nueva Montaña Quijano" started a partnership with British Motor Corporation. In this way "Automóviles de Turismo" Hispano Ingleses (AUTHI) was born in Pamplona. At the end of 1966 the production in line started.

During 1965 and 1975 nine different models were built in Pamplona: two Morris, four Minis, one MG and two Austins, making a total of 131.744 cars built.

In 1975 AUTHI's situation was increasingly difficult because the owner of AUTHI, British Leyland, had difficulties in domestic market to sell the cars. The British Government helped British factories but the Spanish one was adrift. Finally on July 22nd, 1975, SEAT bought AUTHI by 1.100 million of pesetas.

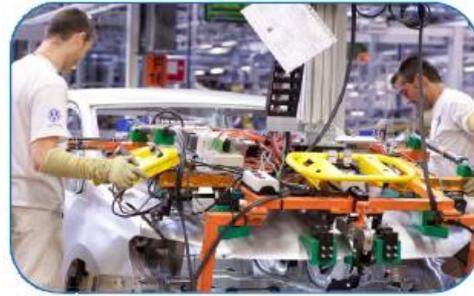
The 22nd January, 1976, the first SEAT went out of the plant in Landaben. It was a SEAT 124D. Over the period SEAT was in Pamplona 131.603 units of those cars were built plus 2.750 Lancia and 149.872 Panda. The latter caused the presence of SEAT in compact cars segment to grow from a 2 % to an impressive 70%.

In September 1982 an agreement was signed between VW and SEAT in which they agree to produce 90.000 units of Polo Derby in Pamplona. Between May 1983 and January 1984 the factory was remodelled to produce the Polo. In February, the production of Polos started. In 1986 VW acquired 75% of SEAT stocks. Four years later VW bought the remaining capital.

Since 1984 eight different models have been produced in Landaben, in total more than 6 million cars. Nowadays VW Navarra is the leader factory in building Polos all over the world and here it is produced the World Rally Car.



Volkswagen Navarra in 1960s.



Volkswagen Navarra nowadays

5. MACH 18

Mach 18 focuses on positioning the Volkswagen Group as a global economic and environmental leader among automobile manufacturers. It was in December 2007 when it was first presented in the management conference in Dresden. The company defined four goals which intend to make Volkswagen group the most successful and fascinating automaker in the world by 2018 (see Annex 1).

- Volkswagen intends to deploy intelligent innovations and technologies to become a world leader in customer satisfaction and quality. The group sees high customer satisfaction as one of the key requirements for the Company's long-term success.
- The goal is to increase unit sales to more than 10 million vehicles a year; in particular, Volkswagen intends to capture an above-average share of the development of the major growth markets.
- Volkswagen's aim is a long-term return on sales before tax of at least 8% so as to ensure that the Group's solid financial position and ability to act are guaranteed even in difficult market periods.
- Volkswagen aims to be the most attractive employer in the automotive industry by 2018. To build the best vehicles, the best team in the sector is needed; highly qualified, fit and, above all, motivated.

The Volkswagen Group is focusing in particular on environmentally friendly practices and profitability of vehicle projects so that the Volkswagen Group has the right products for success even in more difficult economic conditions. At the same time, this will mean that capital expenditure remains at manageable levels. Attractive and environmentally friendly range of vehicles and the strong position enjoyed by individual brands in the markets

worldwide are key factors allowing the consortium to leverage the strengths and to systematically increase competitive advantages. Group's activities are primarily oriented on setting new ecological standards in the areas of vehicles, drivetrains and lightweight construction. The modular toolkit system, which is being enhanced on an ongoing basis, allows to constantly improving production efficiency and flexibility, thus increasing the Group's profitability. In addition, Volkswagen Group wants to continually expand the customer base by further increasing satisfaction among existing customers and acquiring new satisfied customers around the world, particularly in the growth markets (China, Russia, U.S., India and Brazil). In order to ensure this, the group is increasingly adapting its products to meet local requirements and focusing on the specific features of individual markets. The group shall continue the measures are currently taking to improve our productivity and quality. These include regional development teams and cooperation with local suppliers, among other things. Other key elements include standardizing processes in both the direct and indirect areas of the Group and reducing production throughput times. Along with disciplined cost and investment management, these measures play a major role in ensuring that the group fulfills our long-term profitability targets and safeguard solid long-term liquidity. Today and tomorrow challenges will be only successfully met if all employees consistently deliver excellence so as to ensure the quality of the Volkswagen Group's innovations and products for the long term and at the highest level. Outstanding performance, the success that comes from it and participation in its rewards are at the heart of our human resources strategy.

6. PRODUCTION SYSTEM

It is more important than ever to optimize production processes, increase efficacy, decrease costs and enhance quality and fulfilment of delivery times towards a synchronous added value oriented company. These are the objectives of Volkswagen Group's production strategy for the future.

In this setting the production system is established. It provides the company with the methods and tools to achieve the strategic goals. In other words it is a system that tells us basically how to work in order to fulfil strategic objectives (see Annex 2).

The demands of the company with regard to design, quality and innovative technology are very high. Offering everything to our customers at a competitive price against an increasingly competition is a major challenge. Volkswagen group needs a system that takes

root throughout the workforce the ongoing improvement thinking to enhance production processes as a crucial foundation. The production system represents a change in productive thinking, based on ongoing improvement of our manufacturing processes. It is the essential part of the production strategy, the response to our objectives. The production system guides the company towards the fulfilment of strategic targets.

The production system is common for the whole group, which means that, the same methodologies and identical procedures are applied for the whole consortium.

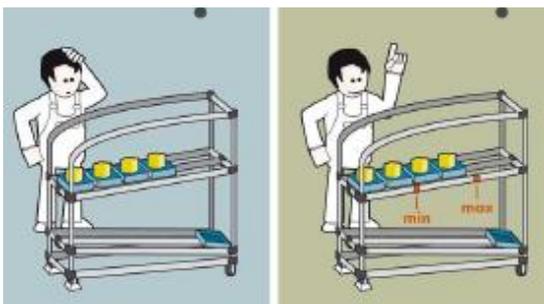
6.1 The bases form the foundations

A work organization oriented towards people, in which, group work and continuous training are priority is the basis of a successful production system. Volkswagen's production system bases form the foundation for the pillars. There are four bases:

The first one is a "leveled and smooth production". It leads the company to high productivity as a result of a constant production over the time. The more times you do something the more you know about it and if it done always in the same way the result is an increase in productivity.

Secondly it is "standardization". Working with standards and supported by visual management, transparency in all processes is achieved, allowing us to detect deviations from the standard to fix them as quick as possible. It is indispensable to guarantee quality and encourage continuous improvement.

Illustration 1. Visual management: practical example



Anyone can see at a glance how many pieces have produced or how many pieces are needed to supply to the line. Everything out of the standard attracts the attention because it is wrong and to the eyes of everybody. Because of that wrong situations are rapidly repaired.

Source: Sistema de producción de Volkswagen

Thirdly it is a "relentless elimination of wastes". By means of a relentless elimination of wastes is possible to get rid of things which originate losses and increase production costs. Waste is everything that does not add value to the production process. There are 9 types:

overproduction, stocks, queue time, unnecessary movements and processes, no ergonomic work procedures, transport, insufficient communication and reworks.

The fourth and fifth bases are “work organization” and “environmental protection” respectively. Every activity is designed, studied and organized taking into account every possible risk and seeking the higher productivity and at the same time protecting the environment. In this way safe processes and jobs are designed.

6.2 The pillars

The production process of Volkswagen group has four pillars that are backed up by the foundations.

6.2.1 Tact

The customer sets the production pace; it is the heartbeat of the company. Factories try to produce at the same rate as the buying requests arrive to the company. The “Single Tact” method is the base of a cyclical and standardized job sequence. This means that the workloads in a single tact are predetermined and studied and that they “oblige” the worker to do his/her duties in a specific physical space and time. In this way any deviation from the standard are discovered and wastes are eliminate.

6.2.2 Flow

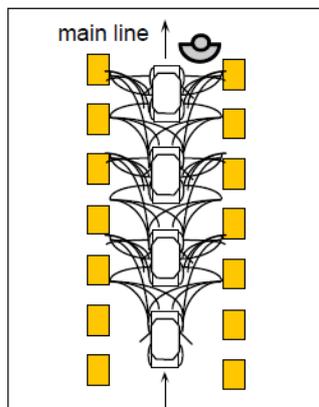
With the flow principle a smooth and continuous supply is achieved and to the point of use and in build order at the same time cutting lead time down and reducing inventories in line. By this way, the material supply area is reduced turning it into a one-piece-flow material supply. To ease the activity of the assembly line employee, the logistics related activities are owned by the line support, freeing up the line employee from logistics activities.

6.2.3 Pull

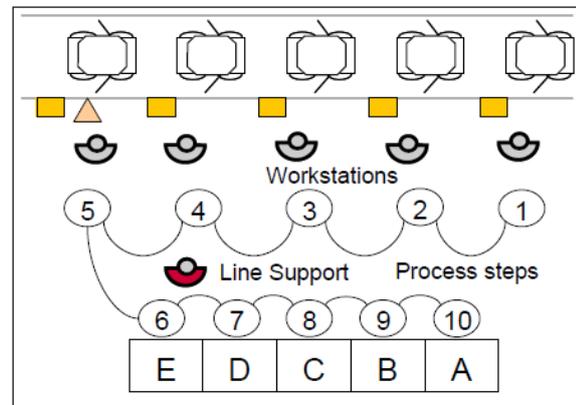
The pull system uses three methods: KANBAN, Standardized Buffers and supermarkets near production.

The KANBAN is a method used to apply the pull principle (demand principle); a demand controlled pulling call off method. This means that the pull system only pulls the material

Traditional Material supply



Line Support and Kitting



Source: 1 Los métodos del sistema de producción Volkswagen.

needed when it is needed and in the quantity that is needed to run the system with the least work-in-progress stock. In this way, the downstream process (customer) pulls from the upstream process (supplier) only the information or material that it needs.

Standardized buffers are the defined stock level needed to keep the production flow between two workstations in order. Standardized buffers allow visualizing waste like overproduction, stock or reworks.

The supermarket near production minimizes transport routes and reduces non value added activities. It ensures that the right quantities of right parts are at the right point of use and time.

6.2.4 Perfection

Through the production system it is ensured that a mistake is made only once. The longer it takes to detect an error, the more work will be necessary to solve it. The aim is to try to achieve an organization of the processes that prevents errors. In case there would be, they would be detected and immediately fixed, wherever they occur. The principle of perfection provides methods for this to be possible and therefore leads to the stabilization and improvement of processes. The objective is to supply 100% perfect parts to the following processes.

6.3 Advantages of the production system for the company

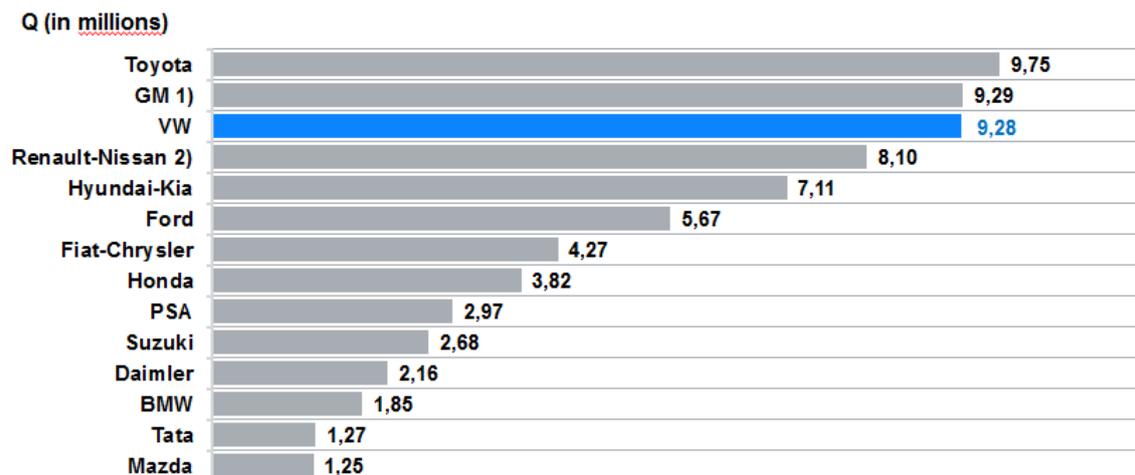
- There is greater transparency in the procedures which makes easier to identify wastes and increase productivity.

- Faults free production and stable processes results in high quality products.
- Costs reduction due to less stock and reworks.
- Shorter delivery times and greater reliability.
- Reduction of wastes.
- The satisfaction of the customer increases.
- The company evolves thanks to an organization that improves continuously.

7. GLOBAL AUTOMOBILE INDUSTRY

Nowadays global automobile industry is led by a Japanese producer, Toyota, an American manufacturer (General Motors) and a German one (Volkswagen AG). As the graph shows Ford, the company that invented the car as it is known today, is no longer a competitor to be afraid of. Since Ford started producing cars in a large scale at the beginning of 20th

Illustration 5. World biggest car manufacturers



Source: Declaraciones del fabricante, VGC, IHS Global Insight

century, the automobile industry has been and it is still one of the most attractive and important industries in the world. It has suffered many changes and faced many challenges throughout these years, and Ford has not been able to adapt to them. The production system changed from mass production to a customer based production that met markets' real needs and placed emphasis on quality rather than quantity. Since the day Toyota invented Lean Production Ford lost the first position and never got it back.

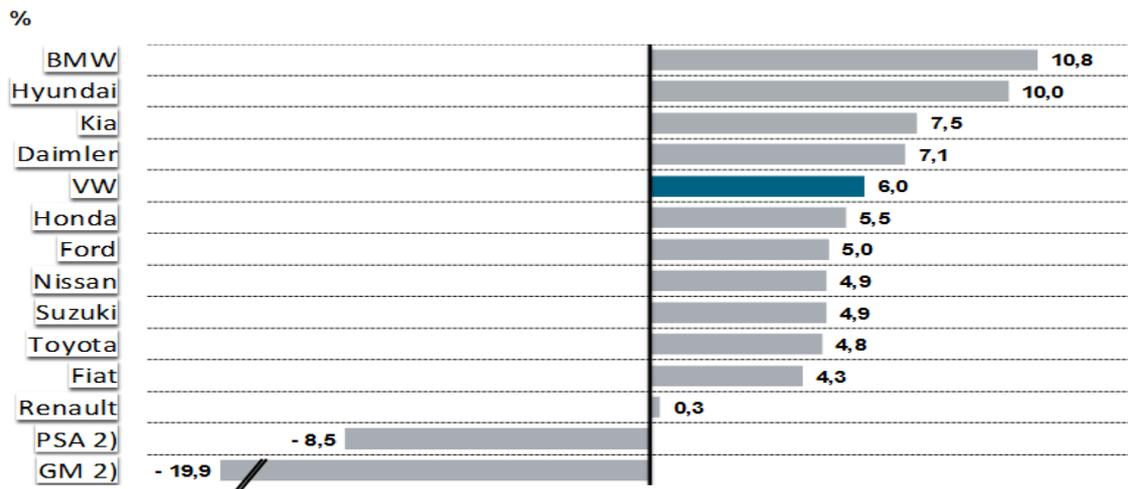
The industry in general has managed to overcome these challenges and nowadays is one of the fundamental pillars of the industry sector in countries like Spain or Germany. Automobile industry is important because it is capable to involve many other important industries and institutions itself. Institutions and companies like governments, insurance companies and financial institutions. Governments collect a lot of money in taxes (VAT, fuel taxes, car registration taxes...) and also give economic grants (PIVE plan) to foster the purchase of cars. Insurance companies are also very interested in this market because a big part of their business depends on car insurances and banks because they provide financing services. Regarding industries the outsourcing process has made automakers to be primarily assemblers of vehicles and therefore, they have focused their activities in designing and engineering tasks, creating this way a vast industry of equipment and components manufacturing, such as, electronics, textile industry, steel industry, glass industry, chemical industry... This outsourcing process has another consequence: there is an employment reduction trend because there are more pieces and parts that come preassembled to factories, so less people is required to build the car.

Automobile industry is also one of the most sophisticated and advanced sectors regarding production techniques and processes. Synchronized and levelled production or modern purchase techniques are examples of processes that were born in the scope of automobile industry, and which afterwards, were transferred to other industries improving their productivity, reducing costs and in short, increasing competitiveness.

Future trends in the automobile industry are another important aspect to be mentioned. The delocalization is nowadays an incessant threat for car factories that observe how new factories are built in developing countries where costs are much lower. The future of existing factories will depend on their ability to attract the attention of the HQ so that the production of new models would be assigned to them. The unique way to achieve that purpose is to improve productivity, the qualification of employees and to have a leading management. A special characteristic of automobile industry is that the dynamics of car manufacturers entails to replace completely a model every five or seven years. Each new model implies huge investments for the companies because a lot of facilities are no longer usable and therefore have to be changed. That is why factories fight each other to achieve the launch of the new model.

Despite being an attractive market the automobile industry is characterized as being a market with narrow selling margins. Commercial networks are those who get the biggest margin. Two big important car manufacturers such as GM and PSA (Citroen & Peugeot) are selling cars below production costs in order not to lose market share. They survive

Illustration 6. Profits variation (in %) between 2011 and 2012

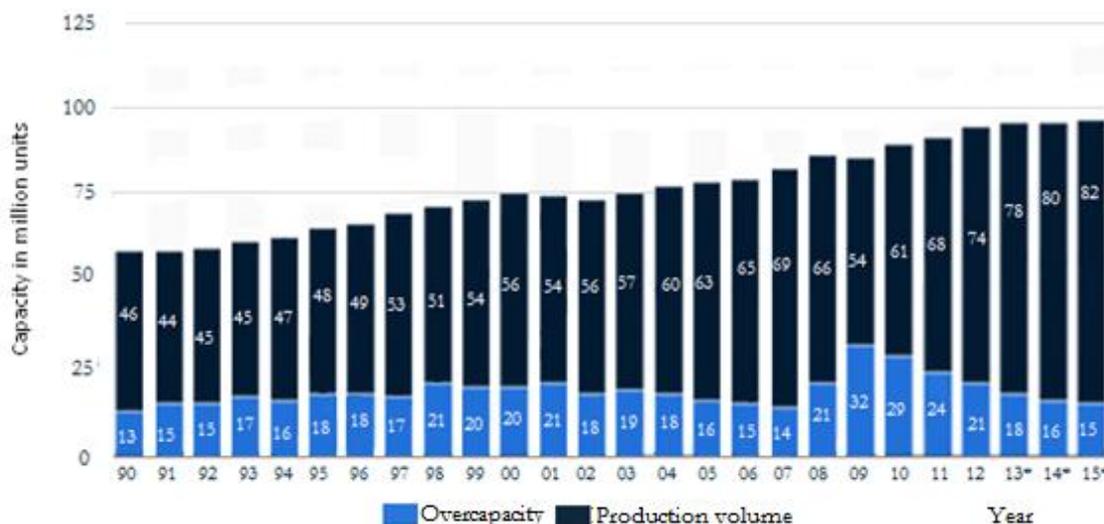


thanks to governments' economic help because as the graph shows, their profits are diminishing at a dramatic rate, 8.5 % for PSA and 20% for GM. Furthermore, this graph helps us to realize that there are some car manufacturers such as Kia and Hyundai that are working quite well and earning a lot of money. Despite South Korea is a small country (it has the size of Castilla y Leon) its car manufacturers have been able to produce and sell a large quantity of cars with an acceptable quality and design; a very competitive price and on top of that, five to seven years of warranty. This makes us to think that this two car manufacturers might be the next rivals in the near future to beat and that Volkswagen Group needs to keep working hard in order to become the first car manufacturer in the world for 2018.

So far we dealt with car manufacturers, meaning "Supply". On the other side there is the customer, the "Demand".

The world automobile demand is not large enough to absorb the total capacity of the car industry, which it is estimated in 100 million cars per year. The graph below represents this situation.

Illustration 7. Capacity of the global automobile industry 1990-2015



Source: Worldwide PricewaterhouseCoopers Automotive institute

There is an overcapacity not used by car manufacturers. For instance, in 2013, it was about 18 million cars. The demand was nearly 80 million in the world, so brands have to compete fiercely to attract most of it. Narrow margins together with an insufficient demand entail hard competition between industry leaders (Toyota, Volkswagen AG and General Motors) and those brands that are challenging big manufacturers (Hyundai and Kia). To survive in that competitiveness, car brands must offer what the clients' require: quality, a well-design, fuel efficient and a fully equipped car, and all of it, as cheap as possible. Car manufacturers struggle to design a car that is cheap and easy to manufacture or inventing new systems to build a car. The objective is to build that car quickly, cheaply, and with the best quality possible with the less resources (time, money, employees...). For doing that, a car manufacturer needs a sort of things among others: an efficient production system that guarantees a quick production, high quality materials, a motivated workforce... They are also needed, for example, a qualified workforce and a fast and well-coordinated supply chain.

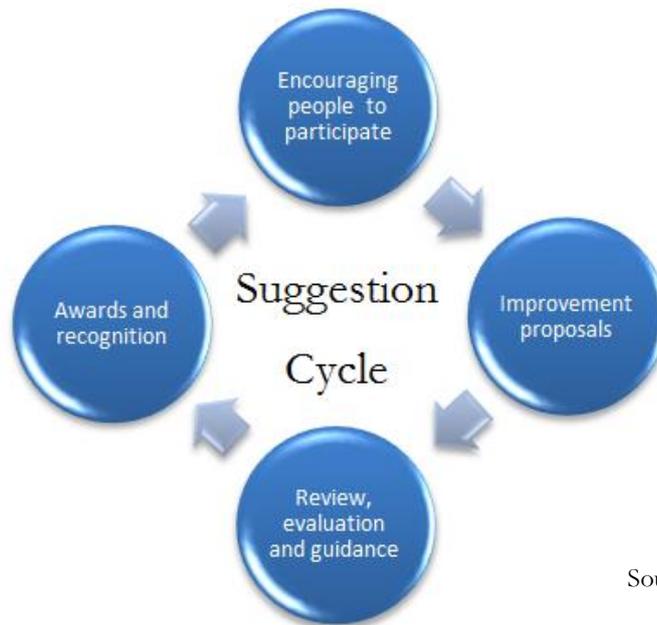
What is clear now is that the automobile industry is a hostile environment and that continues improvement of every activity or process is crucial. "There's no denying that the real expert is the person who does the job; therefore, that's the best place to go when improvements are sought". He /she knows perfectly the production process and the way to enhance it.

The motivation to improve, knowledge, experience and professionalism of employees are what differentiate mainly one automaker from the other. They are the most valuable resource for a company. Toyota was not surprisingly the first to realize about that aspect in mid-20th century when the company signed a legendary agreement with its employees. Toyota realized its employees were a very valuable source of continuous improvement to the company, a key element of Kaizen, which means improvement. It refers to the philosophy of constant improvement by all entities or organizations involved in a company. In the business world, the Kaizen method is characterized because it creates a business culture and promotes employees' involvement. It is crucial to understand that the method or Kaizen philosophy requires a complete acceptance and involvement by every single person that keeps in touch with the company, from the CEO to a line worker and also beyond the factory, like suppliers. Under the idea of Kaizen we can find diverse tools and methods that are interrelated such as Total Quality Management (TQM), Just in Time (JIT), Suggestion system... Among all of them, the latter, is the most unknown and less used by big companies in the world. Below I am going to explain in detail the suggestion system of Volkswagen Navarra.

8. SUGGESTION SYSTEM

8.1 What is it a suggestion system?

Illustration 8. Suggestion cycle



Source: kaizen teian 1

A **suggestion system** is a regulated and formalized mechanism which encourages employees to contribute constructive ideas for improving the organization or workplace in which they work. The overall objective is to gather, evaluate and implement ideas in order to create results that have positive impact on the company and consequently translate those benefits to the customer, for instance, in the form of more affordable products. The most important thing is that the suggestion system should be designed so that it encourages people to participate, people willing to improve the company. The system must make possible for employees to monitor the process of his or her suggestion with regard to its implementation and evaluation. If employees view the cycle as clear, open and above-board, any suspicion about how ideas are reviewed and rewarded disappears.

To do so, the best way is to have a computerized system accessible with the employee identification number. Volkswagen Group has that kind of system called e-Idea. It is the SAP Enterprise Resource planning application adapted to the suggestion system.

Once the suggestion is implemented it is time to reward and recognize the effort of the “suggestor”.

8.2 What is it a suggestion?

In order to understand how the suggestion system works, firstly it is indispensable to know what a suggestion is. According to the definition of Volkswagen Navarra a suggestion basically is “an original and exact, individual or collective proposal, whose implementation resolves a problem or improves a situation efficiently, generating economic benefits or other advantages for the company or its stakeholders”.

There exists also the concept of complaint. A complaint is a proposal whose solution is the logical result of the problem itself and does not provide an original idea, but its implementation originates savings or advantages for the company.

8.2.1 Content of a suggestion

In the definition of a suggestion it is clear that accuracy is very important. Everything must be well explained: location of the problem (number of installation, number of column...), activity number, codes of affected parts... The “suggestor” has to explain in detail which is the actual situation or problem and, if possible, its frequency; the solution to the problem and the expected improvements. In general, the content of a suggestion is very technical and difficult to understand for any person. (See Annex 3)

8.3 The origin of the suggestion system

First time something similar to a suggestion system came into practice was in 1936. Toyota had 27.000 suggestions made by employees to change the name of the company because the founding family name “Toyoda” (means abundant rice) was not appropriate for marketing considerations, so a new name was required. A contest between employees was carried out and the employee who proposed “Toyota” won. In 1951 Toyota launched their Creative Idea Suggestion System. It was basically a modified copy of the suggestion system that was in place in Ford Motor Company.

Most of the car manufactures in the world have copied Toyota and therefore introduce this suggestion system within their factories. However since fifties, Toyota has been every year the company which presented more suggestions and achieved more savings among all car manufacturers.

Volkswagen group introduced this system somewhat later and it was not until 1989 when the system, was fully implemented in Volkswagen Navarra. Before that, in Volkswagen Navarra there were quality circles which were a reduced number of expert teams that proposed, discuss and manage ideas. The difference with the suggestion system is that with

the old system the whole factory was not involved, meanwhile the suggestion system requires a complete involvement.

8.4 How does the suggestion system work in Volkswagen Group?

8.4.1 Rules

First of all it should be clear stated that the system is regulated and that the rules are determined differently in each factory of the group. The rules explain what is considered a suggestion, how a suggestion must be presented, which suggestions can be accepted...

These are two examples of rules:

For the introduction of a suggestion it must be ensured that the resulting gross profit in the next 12 months must be larger than the investments or expenses needed to implement the suggestion. If it is not the case the suggestion is not admitted.

Suggestions about an issue that at the moment are studying in a workshop will not be accepted until it is not finished. Later on, ideas not studied in the workshop will be admitted. If in the development of a workshop the improvements proposed by a suggestion are taken into account, and finally introduced, the “suggestor” will be rewarded.

8.4.2 Suggestion system. Flowchart

The flowchart visual representation is in annex 4. When a suggestion arrives to the Suggestion Office an arrival date is written down. That is the first step. Thereafter, the Suggestion Office will check if all requirements are met. If the idea complies with the regulation, an identification number is assigned to the suggestion. It would be classified either as a suggestion or complaint. Next, the computer application automatically notifies the “suggestor” and his or her superior.

The next step after the idea is accepted is to read it carefully and classify. The responsible for the Suggestion Office will classify the idea according to the improvements it would entail: security, environmental or ergonomic improvements; logistic improvements; rework improvements... Thereafter, he sends the ideas to the corresponding departments.

The responsible of the Suggestion Office has a general knowledge of every area of the factory. It should be enough to know to which area belongs the suggestion. In the following step the suggestion is read in the corresponding department by a team of experts in a weekly meeting.

The team is consisted of three or four people, no more. A larger team would slow down the decision making process, for it is more difficult to reach agreement. These people should be quick witted, decisive and experienced, so that the management of suggestions is fast. They decide if their area is benefited from the suggestion or not. If it is not the case the suggestion is redirected to the corresponding area through the Suggestion Office.

Once the suggestion is in the right area, a manager is assigned to the suggestion. The team of experts decides in that meeting who will be the manager. He/she has the duty to study and evaluate it, and consequently, takes the decision to approve or reject it. There are a variety of motives for which a suggestion can be rejected:

- Technically not possible to realize.
- The investment needed does not justify the possible savings.
- The suggestion is being studied in a workshop before it came to the system.
- The suggestion implies changes in areas that are not responsibility of the factory.
- The suggestion is not original.
- Etc.

If the suggestion is denied, the “suggestor” has always the right to complain. He/she certainly has to explain the motives for the complaint. Then, the team will analyse the situation again.

In a positive case, the suggestion is implemented and the person who made the suggestion is rewarded.

8.4.3 Rewards

There are two types of prizes: quantifiable or no quantifiable. If the improvement can be valued in money it will be quantifiable and no quantifiable otherwise. There are two different procedures to calculate how much will be the prize depending on if it is quantifiable or no quantifiable.

When the prize is quantifiable an expert is consulted once the suggestion has passed through the hands of the manager and it is implemented. It must be someone specialized in the area. He or she will calculate the money saved by the suggestion. Once the expert has evaluated that economic valuation, it is transferred to controlling for his approval. The controller is the person who has the last word. If the valuation made by the expert is incorrect the new valuation prevails. When the controller approves the valuation, the prize is calculated as follows:



To calculate the prize the 30 % of annual savings is calculated, not the total amount of savings. It would be senseless to pay in prize all the money the company saved. There are expenses in the implementation process too that should be taken into account that.

Responsibility coefficient: it is a coefficient that connects the topic of the suggestion with the job position of the “suggestor”.

If the employee is direct labour the responsibility coefficient is always 1.

If the employee is indirect labour there are three cases:

0,9 when the topic discussed in the suggestion is not responsibility of the management neither the “suggestor’s”.

0,6 when the topic is responsibility of the management but not of the “suggestor’s”.

Between 0 and 0,3 when the topic is responsibility of the management and the “suggestor”.

Recovery coefficient: it is a coefficient that depends on the time period needed to get back the money invested. When it is less than 12 months the coefficient is 0,3.

Normally, suggestions with a recovery period greater than 12 months are not accepted by regulation. However, they can be introduced for other reasons, for instance security or environment issues. In that case the coefficient is 0,2.

The coefficients are determined by the team of experts once the savings are calculated and validated by the controller. There exists a maximum prize that varies among the factories.

In Volkswagen Navarra for instance an employee can win a Polo.

When the prize is not quantifiable the manager of the suggestion has the authority to determine the prize. However depending on the prize money some departments act in a different way. There are 5 levels: very low, low, medium, high and very high.

Very low prize is 25 euros, low prize is 50 euros, medium prize is 150 euros, high prize is 300 euros and very high prize is 600 euros.

The “suggestor” has the right to complain too, if he/she thinks the prize is unfair. A formal complaint is required to discuss within the team. If there is a complaint, this time the team will decide the prize.

Depending on the prize money, there are two ways to give it: either by means of a gift card or it is added to the payroll.

This usage of rewards is not done by chance.

The rewards need to be used in such a manner that the intrinsic motivation is not undermined by too strong emphasis on extrinsic motivators (Christiaan van Dijk and Jan van den Ende, 2002). Using only financial rewards motivates extrinsically because the unique goal of the employee is to obtain the reward. He/she will not share an idea with the company if he/she thinks is not worthwhile, that is, a considerable financial reward for him/her.

It should be pointed out that top managers and non-union managers cannot receive a prize greater than 100€.

In case the idea is classified as a complaint the procedure is exactly the same as for no quantifiable suggestions. However, a complaint would never have the same value as a suggestion for the company. An idea will be a complaint when for instance a worker reports an anomalous situation that would normally be correct, but for whatever reason, the situation is not adequate. Another example would be when a worker reports to put something that already is in another installation. Obviously, the added value of a complaint is small and so they are the rewards. Hence, the prizes for complaints are half or smaller than for no quantifiable suggestions with five levels too

8.4.4 Participation and profile of “suggestor”

The objective with this kind of rewards is rather different. The primary objective is participation. All ideas are welcomed even though the benefit is not very important. The aim is to increase the participation rate. In Toyota for instance almost 100 % of the employees participate in the suggestion system. VW group, though, is far behind them in this aspect. This is why the teams always try to be generous and reward the effort of the employee by means of non-financial rewards like gift cards or diplomas. These examples help to understand that the use of non-financial rewards is crucial, especially when it comes to workers' participation.

To clarify this idea I am going to give an example. An employee who is rewarded with let's say 50€, if that money is given in the payroll, he/she may not be aware of it. If instead, he/she receives a gift card to buy something, the situation changes because he/she realizes the effort has been of any use.

About the profile of the “suggestor” it could be said that he/she is a committed employee who wants to contribute with ideas to improve his/her work environment and of his colleagues, the production processes and the quality of the product for the benefit of the

company. The “suggestor” is a hard-working and smart person who possesses different kind of skills.

8.4.5 How are the suggestions valued?

There is another way of approaching the valuation of a suggestion. The suggestion system rewards more generously those suggestions that improve the capacity and speed of production facilities. I am going to give an example.

The production capacity of the whole factory here in Pamplona depends on the production capacity of the body shop. Body shop it is a bottleneck because its capacity is smaller than other shops within the factory. Within the body shop itself there are some facilities that slow down the production process more than others. In each facility there are some activities that are bottlenecks. The standard prize (for a non-bottleneck activity) is multiplied by two, five or eight if the improvement affects a bottleneck activity. For instance facilities in red colour (see annex 5). Those red facilities are so saturated that any idea that saves 1 second per car in a bottleneck would have a prize of 10,400 € for the “suggestor”.

8.4.6 Suggestion campaigns

Suggestions campaigns are made to guide suggestions towards a certain strategic policies such as environment. The management in Germany informs all the factories to make the campaign. Campaigns are done worldwide and simultaneously. The results are sent to Germany when the campaign is finished.

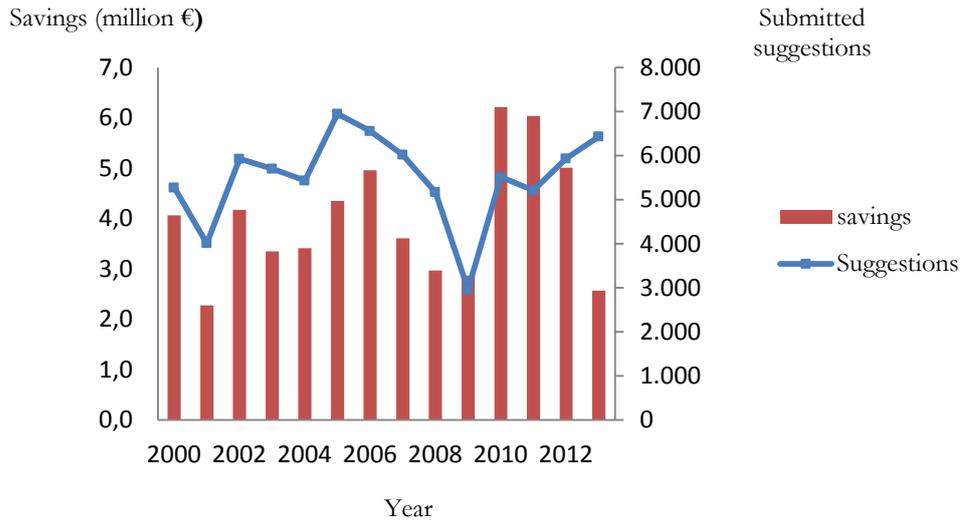
The last campaign was “Think Blue”. The consortium aimed to achieve certain environmental objectives. Workers were requested to present ideas related to the reduction of water or energy consumption, reduction of gas consumption, reduction of carbon dioxide emissions or the reduction of non-returnable waste so as to achieve those objectives fixed by Germany.

Employees were rewarded two times. There was the ordinary prize for a suggestion and also an extra prize for presenting environmental suggestions. Bike and travel drawings were also made for all the participants. In a period of 6 months 447 suggestions were presented and it supposed 147,758€ of savings.

8.5 But really, is the suggestion system so important?

So far, we have talked about good things of the suggestion system. However how important are the suggestions for a company like Volkswagen Navarra? First of all we are going to take a look to data in VW Navarra between 2000- 2013. See also annex 6.

Illustration 3. Evolution of suggestion between 2000 and 2013



Source: VW Navarra Suggestion office

the graph shows that the number of suggestions is positively correlated with the launch of a new model. In 2001 the Polo A04 was launched and the next 4 years, the number of suggestions submitted increased. Once the major improvements are introduced, the scope for enhancement diminishes, and so they do the savings.

This phenomenon is again repeated for the next model, the Polo A05 in 2009. In 2009 the last year of Polo A04 2,964 suggestions were presented making a total of 2.864 million euros in savings and in 2010 with the new model 5,511, making a total of 6.213 million euros, which means suggestions almost doubled in number and savings increased to more than twice the savings in 2009. It is not daring to say that when the big investments are made for the new model, the suggestion system helps to recover some of the money invested.

8.5.1 Objectives

Every factory of the consortium has a number of objectives: production level objectives, quality objectives, delivery time objectives, etc. One of those is related to suggestions.

Suggestions' objective is as relevant as production or quality objectives. We can observe its relevancy because it takes part of the strategy in all factories.

At the beginning of the year the Director of the factory establishes a common objective for the Suggestion Office. These are the items and the figures to be achieved for 2014:

- Presentation (N° of suggestions/person/year) → 1.58 suggestions
- N° of suggestions/year → 6,500 suggestions
- Participation rate → 40%
- Savings → 2,500,000 €
- Implementation → 50%
- Suggestion average processing time → 50 days
- Suggestions in circulation less than → 750 suggestions

The results of the previous year were the following: 40% of employees participated and 2,568,168 € were saved. Moreover, 425,000 € were given in prizes.

The 12 areas within the factory (body shop, paint shop, assembly...) together must accomplish these objectives at the end of the year. There is a monthly report for each of the 12 areas, which provides information about the evolution towards these annual figures and which is sent to the whole factory. The annual report is sent to Germany to make the "Konzern-Ideen-Liga".

8.5.2 Suggestion objectives are part of the salary of the managers

The bonuses that receive the managers of the company are associated to the fulfilment of above mentioned goals. If the suggestion objective is not accomplished that bonus is not paid. Suggestion office as a whole and the manager of each area put pressure on subordinates to try to achieve the objectives monthly and yearly.

8.5.3 Individual performance pay

The employees of the factory have also the chance to earn a pay thanks to suggestions. Employees receive an extra pay if the factory meets those objectives mentioned before. If an employee does not present any suggestion he/she will not receive the corresponding part of the suggestions of that extra pay. If one suggestion is presented 2 point are achieved; if two are presented 3 points and if he/she presents 3 or more suggestions you (5 points) earn the whole part corresponding to suggestions points.

8.6 Konzern-Ideen-Liga

The consortium has a suggestion league called “Konzern-Ideen-Liga” in which all companies of the consortium participate. It is measure some relevant data regarding the suggestions year by year. Data is shared over the whole group

- Participation rate
- Percentage of implemented suggestions with respect to presented ones
- Number of ideas with respect to number of permanent workers
- Savings
- Savings per worker
- Processing time (in days) from submission to implementation
- Processing time (in days) from submission to conclusion

However, this information should be carefully analysed in order not to get a wrong picture. New factories usually have more suggestions presented than old ones, because there is much more room for improvement than in old ones. In new factories 99% of the suggestions are introduced meanwhile a 1% is only rejected.

Big factories always present more suggestions but the quality in terms of savings or innovation degree is lower.

The majority of suggestions are no quantifiable, around 93%. Those suggestions improve security conditions, ergonomics, improve order and cleanliness; protect the environment... Bear in mind that security and working conditions, environmental issues, etc. vary between factories in different countries. For instance we take the example of an environmental suggestion. Meanwhile a suggestion that reduces in 1% the emission of greenhouse gasses might be seen as a major improvement in Germany or Spain, it may be seen in a different way in China, where environmental rules are more permissive. So when these data is analysed we should be cautious.

It should be taken into account too that these suggestions do not provide economic benefits in a direct way, in other words, they do not save money). On top of that implementing these suggestions requires an expense or investment, which afterwards, is not compensated with an inflow of money.

8.7 What does it suppose having a suggestion system?

Having a suggestion system means that the company believes in the creativity, the willingness to collaborate and capacity of employees to improve the company as a whole.

Having a suggestion system means creating a win-win situation: involvement, commitment and input for employees and improved efficiency and cost-savings for the company.

In addition, a suggestion system helps to promote self-development because employees begin to think more like managers, looking beyond their own jobs. Suggestion systems are considered as important support for the entrepreneurial spirit in innovative firms (Hamel, 1999,2000, pp 253-256). In short, we give them a role and a word in determining company policies and operating procedures, like if they were the owners of the company.

It also means a huge effort to coordinate the large amount of ideas that arrived to the Suggestion office. It means the duty to deal with employees behind a suggestion. The Suggestion Office deals with ideas but behind them there are people that may have worked very hard to present a suggestion. If you ever have to give bad news you ought to be careful and respectful. Obviously, that is more difficult to deal with than having to fix a robot.

If we talk about figures the Suggestion System is a tool that allows saving thousands of euros to the company. Below, we can observe some remarkable data. The years in which new models are launched earnings after tax were very small because a lot of money is invested and there are many expenses. Therefore, the percentage of savings with respect to earnings after tax increases. We can observe too that earnings after the launch increase significantly and consequently the percentage decreases. Whatever the case may be, the suggestion system is an important source of savings.

Table 1: VW Navarra profits and suggestion savings

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Earnings after tax (mill. €)	18,3	43,4	69,69	48,96	13,22	49,55	58,02	44,24	50,17
Suggestion savings (mill.€)	4,351	4,959	3,609	2,965	2,864	6,213	6,038	5,007	2,568
Savings/ EAT	23,78%	11,43%	5,18%	6,06%	21,66%	12,54%	10,41%	11,32%	5,12%

Source: VW Navarra Finance department

8.8 How would be the ideal suggestion system?

It seems that until now the system is a good thing. However, if we want to maximize the utility of this system, there are few things we should do.

The system should be trustful. Employees must trust in the system and believe that those participating in the decision making take seriously their job, that is, properly analyse the ideas and do not make decisions casually. If the system becomes vague and slow, the confidence vanishes. Precisely for this reason it is very important that the process is quick. The more time it takes to reply and the more simple and inconclusive is the answer, the less will the employee rely on the system and therefore, he/she will not be motivated to submit ideas in the future. To ensure this trustful relationship between employee and system it is crucial that the system is well designed and organized to guarantee quickness.

A too demanding expert team does help neither. Excessive rejections discourage the employee since he/she observes the effort is not worth. At least, the two shop foreman (maintenance and processes) are always in the meeting together with the coordinator of suggestions of each area, since they are who better know the workshop. A representative of the suggestion office is also present. All of them, together, should apply the same criteria, as far as possible.

The rules must be clear and concise so that there is no room for ambiguity. The rewards offered for suggestions should be consistent and predictable and the responses quick and thoughtful. This way the employee trusts the system and as a result the number of complaints decreases. Furthermore, this helps the teams to take decisions correctly and quickly because they stick to what is written in the rules and apply criteria objectively.

People must be involved with the suggestion system. This means that employees want and can provide good ideas for the company; they feel part of the company. If they do not feel part, they will be reluctant to share their ideas with the company and therefore the system becomes useless. This is what makes Toyota so special and the explanation why 99.9% of employees participate in the system.

8.9 Shortcomings of suggestion system

Every system has its drawbacks and this is not an exception. Everyday VW Group tries to improve the process of the suggestion system to improve submission and participation rates. Here there are some problems explained.

One of the problems that could arise is that employees may make suggestions about their duties trying to cheat the system or due to ignorance. The truth is that it is quite frequent. This can cause slowness and lack of motivation from part of the team of experts, who may feel they are wasting their time discussing something that is not their job.

Another typical issue is that people take advantage of the definition of complaint. Some people use the suggestion system to report defects massively. There is another tool to deal with these little defects (i.e. a tap is leaking) called “unique contact point” which is linked with the department in charge of the repairs. People do not use this tool to report anomalies. Instead, they use the suggestion system trying to win a prize. The result leads to slowness, making the system inefficient.

Another issue is that when a suggestion is presented by many people (20 or more) and it turns out that the prize is small, as there is a minimum prize, it happens that the sum of those minimum prizes is bigger than the prize itself, so the system fails to deal with this issue. The company encourages team spirit but the intentions with this kind of attitudes are rather different.

It happens sometimes too that employees implement their ideas without noticing their superiors. Consequently, they present the suggestion arguing the solution he/she has proposed works perfectly and asking for a prize. The truth is that it is not a correct attitude. It is not allowed to implement an idea without the approval of the team of experts and without doing a study.

In general we could say that a suggestion system is a tool that works perfectly when the workforce is motivated to participate. Nevertheless it is very easy to discourage a group of employees if mistakes are made and truly difficult to motivate them afterwards.

8.10 Company's image

Volkswagen brand is among the 100 most valuable brands in the world, exactly in the 62th position. Volkswagen is a prestigious brand that sells. Volkswagen differentiates from its competitors because offers quality, reliability, security and environment-friendly cars. Volkswagen cars are targeted to customers that seek exclusivity. Customers who buy VW are educated nonconformists people with values that respect the environment; people that have a stable job and money. They seek a car with certain level and with which they can identify and at the same time differentiate from the rest of the people. Volkswagen's customers know Volkswagen cars are built with the collaboration, enthusiasm and good deeds of all its workers. Customers also know that employees participate actively in the

production process and that they gladly do their job. The customer perceives his/her product has been made lovingly and giving care to the smallest details. Seen that way it seems like another marketing strategy.

9. BEST PRACTICES

Ideas that come from other factories in the world are called best practices. Volkswagen Group wants to share the ideas of the factories so that benefits are shared. The implementation of best practices is quite complicated because each factory has a different situation. For instance, ideas that come from factories where car models are different to ours, are very tricky to apply here and usually they require big changes so that they can be adopted and finally implemented. In the end, it is not applicable or economically profitable. Something similar happens with factories that are new or are in a developing phase. Many of their ideas are not applicable in developed factories because they already have implemented those ideas.

9.1 Maßnahmenweb

The worldwide management of good ideas or suggestions between all factories of the Volkswagen Group is done through computer software called Maßnahmenweb, which means, web of measures. It is the central point of all ideas of the Group that are meant to be shared. The ideas are gathered and once that job is completed, they are sorted, identified and forwarded to people responsible for the good ideas or suggestions in each factory of the consortium. The responsible channels the ideas to different areas of the factory (logistics, quality, HRM...). Once they are analysed in the suggestions teams, a decision is taken. The result of the decision is communicated again through the Maßnahmenweb. The feedback is always compulsory.

10. SUGGESTION SYSTEM AND INNOVATION:

10.1 What is innovation?

Innovation is an effective value generating act which is essential for the competitive sustainability of the company. It is based on the search for creative and new ideas that allow to satisfy certain needs of the market as well as the completion of true business opportunities.



The definition states one clear thing. Creativity and innovation are not the same thing. Creativity refers to the generation of ideas and solutions, and innovation to the successful application of those ideas. Not all creative ideas become innovations.

It is known that innovation allows companies to create continuously value for its clients, foreseeing customers needs and offering them new and better products. Nevertheless, it is not straightforward to change a company, in this case, Volkswagen Navarra, from a mere manufacturing factory to an innovative plant.

As a matter of interest and reflection, in Germany, 30 % of the money spent in Research and Development comes from the automobile industry becoming one of the most important driving force of innovation. Volkswagen HQ want to introduce innovation in all factories. Firstly the management should be involved and later on the rest of the plant.

Twiss, 1992 and Voorendonk, 1998 point out that:

Most companies underline innovation in their strategy but, inconsistent with that strategy, fail to fully utilise the creativity of their employees. This incompetence undermines their power to innovate, for it is the creativity of employees that forms a source of new ideas, which in turn create the starting point for innovations.

As Twiss and Voorendonk said the creativity of employees is the first step towards innovation. For that motive it is fundamental to stress the importance of innovation to employees. To carry it out, it is basic to develop an organizational culture in which innovation and risk taking are the main characteristics; a dynamic workplace with leaders that stimulate innovation. The senior management should define how much room the business and its environment allow for innovation and risk taking and as mentioned before they should be the firsts interested in innovation.

Promoting an innovative culture would give members an organizational identity or sense of belonging and would promote social system stability.

10.2 Mach 18 Factory

Mach 18 Factory are 6 objectives factories of the VW group had to accomplish so that Mach 18 is a success (see Annex 6).One of the objectives of “Mach 18 factory” is innovation. “Mach 18 factory” is a strategy for the Volkswagen Group and expects to reach ambitious objectives in each of the six pillars. Regarding innovation the objective is to implement 30 innovative ideas in each factory, from 2012 to 2018, that is, 5 ideas per year.

The business world environment is rapidly changing and these phenomenon obliges companies to have a better ability to adapt to changes. The central planification agencies of VW have seen innovation as a valuable adaptation tool to confront these changing times and thus, the innovation becomes something essential within the strategy of the VW group. The truth is that VW has a long way to go and much more, in factories where only cars are assembled, like in Pamplona. Until now, VW Navarra and the rest of factories had restricted innovation in their facilities and the Suggestion System was designed to satisfy this requirement. The innovation was centralized in the headquarters, in Wolsburg.

10.3 Barriers to innovation

There are general barriers which affect any kind of proyect and specific barriers which are related to automobile industry and in particular to VW Navarra.

10.3.1 General barriers

- Fear to fail
- Lack of time
- Lack of resources
- Resilience to change

10.3.2 Specific barriers

- No achivement of immediate profitability.
- Lack of structure to manage innovation
- Operational culture, just doing assigned tasks and duties and no wondering or questioning

10.4 How do we know what is or is not an innovation?

In order to define an idea or a thought as an innovation it is advisable to elaborate a checklist for the different steps in the process of managing innovation (see Annex 8). This tool must ensure full compliance with the fundamental points applied in the definition of innovation.

From a functional point of view, the validation of an idea as innovation is made in a two-step process. Firstly, there are the Suggestion and Innovation groups and secondly, the Innovation Committee. The last OK is responsible of the SK.

10.5 Innovation pyramid

These are the major participants of Volkswagen Navarra in the innovation process.



Innovation circles: Innovative circles are going to be formed with brilliant employees that are keen on innovation. These small groups of freely organized employees would generate innovative ideas and send them to Suggestions and Innovation group or to the innovation coordinator, depending on whether ideas are specific for the areas or more cross curricular topics.

Suggestion office: they gather up suggestions from the areas and those with innovative nature are sent to the Suggestion & Innovation group.

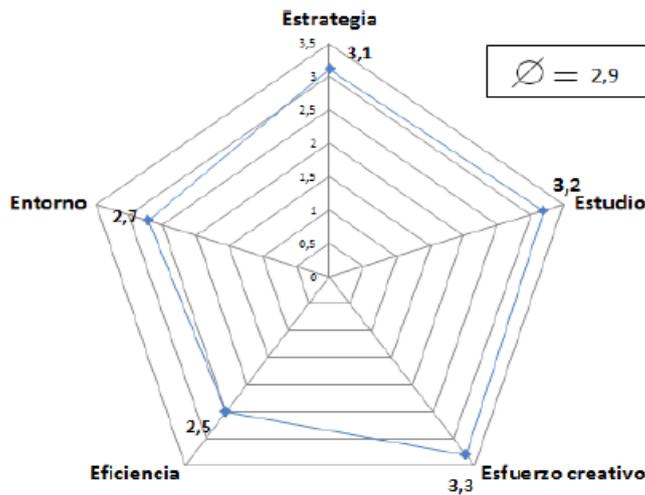
Suggestion and Innovation group: it is a multidisciplinary team established in each of the 12 areas that deals with Innovation. This team generates ideas but also draws on suggestions and ideas from the Innovation Circles. It analyzes and selects ideas and it sends them to the Coordinator of Innovation.

Innovation committee: it is a multidisciplinary team which seeks to cover all areas both horizontally and vertically. Members of the committee are the guardians of innovation in the plant.

10.6 Development of the implementation process of innovation

The development of the implementation process of innovation consists of four different steps (see Annex 9). In the case of Volkswagen Navarra the objective is to reach the last step of the process, systematization of innovation. At present, Volkswagen Navarra is between the second and third step. VW Navarra plans to establish a new process to generate and implement innovations and also change the mentality of the whole company, so that an innovative cultural atmosphere is created. In the systematization process it is a good idea to join the Suggestion System and innovation, as the suggestion system is an instrument for channeling creativity and later on, the source of innovations.

Illustration 4. Innovation degree



Source: CEIN for Volkswagen Navarra

CEIN made a research to evaluate the innovation degree of Volkswagen Navarra. The strong points are strategy, study and creative effort. The weak points are environment and resources. The reasons why environment and resources are a problem can be explained by some barriers that are present in the society and also inside the firm: resistance to change, fear to fail, limited resources, an operational culture (just doing, no wondering or questioning), lack of culture of innovation, etc.

10.7 Innovation management process

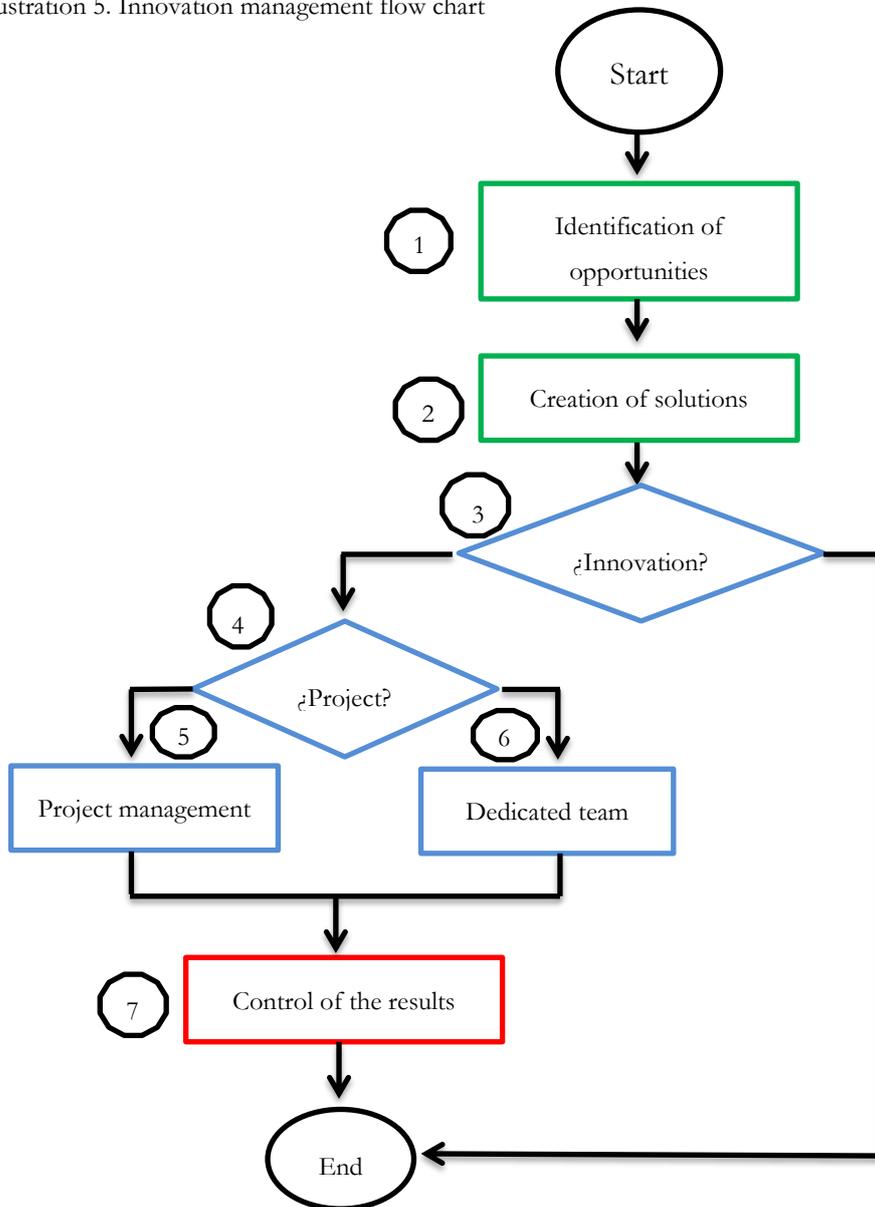
The flow chart below is the abbreviated version of the Annex 10.

The management process of an innovative idea is similar to a normal suggestion. The first step is taken in the Suggestion Office once the idea is arrived. The responsible decides if the idea could be a innovation based on a checklist. If it is not an innovation the idea follows the normal course.

If the idea is a potential innovation it is discussed in the Suggestion and Innovation group. If the group confirms that it is an innovation the idea is presented to the Innovation Committee by the Innovation Coordinator.

This is the last checkpoint before the S.K.. Thereafter, the Innovation Committee discusses whether the idea will be carried out through project management or not. If a project is not needed the idea goes back to the Suggestion Office and the manager will implement it with the recommendation of the Innovation Committee.

Illustration 5. Innovation management flow chart



Source: VW Navarra Suggestion office

If the idea continues ahead a workshop is convened to analyze in detail the characteristics of the project and to generate a project charter.

The final step is the S.K. The general director and the other six directors (Finance, Production, H.R, Technical Area, Quality, Logistics) meet to decide whether to undertake the project through Project House or return it to Innovation Committee in order to give a recommendation to the Suggestion Office.

If eventually the innovation prospers the company should study the possibility of registering patents or the allocation of grants due to exploiting patents or receiving grants would be an important injection of funds.

There are two crucial elements in innovation management process. The first one is to verify if we are facing a real innovation and the second one, the decision to address it through Project management or a dedicated team.

For an idea to be addressed through project management an idea must be valuable. Only ideas with great potential are managed through project management. Taking this path would imply the participation of many areas of the factory, a process lasting more than 4 months and expenses and/or investments over 0.5 million euros

Despite the innovation management process is similar to the suggestion system management, it is a new practice and new bodies such as the Innovation Committee or Innovation circles are created. Since it is a new system, the connection between the existing processes and structures such as the Suggestion Office, Project house and concept analysis area of Technical Area and the new bodies, are considered as key points of this proposal.

The integration of innovation management requires in certain situations to adapt existing processes (green rectangles) and/or the development of non-existing ones (red rectangle).

According to a study made by CEIN for VW the weak points are the environment and the efficiency.

10.8 Computer tools

In the management of innovative ideas Volkswagen Navarra has planned to use e-Idea already in use for the suggestion system and Maßnahmen@web for the whole group.

10.8.1 E-Idea

It will be also used to channel the presentation of innovative ideas once the system is adopted with a concrete and specific application specifically designed for the management

of innovative ideas. Once the innovative idea is studied by the Innovation Committee is transferred to the Maßnahmen@web whether it is rejected or accepted by the Committee

10.8.2 Maßnahmen@web

We already mentioned that Maßnahmen@web is used to manage Best practices. Maßnahmen@web also will be used to keep information about successful and/or failed ideas and projects, to share the knowledge over the whole consortium.

11. CONCLUSIONS

Let me conclude by saying that I would have never imagined the advantages of a suggestion system before I started in this department. It is a very useful system because when it is fully entrenched together with other structures of the company, fosters employees' engagement and motivation. It creates a relationship of trust and commitment between the employee and the company, in short, it creates a situation of mutual benefit.

However it is not easy to reach this idyllic scenario. What makes it difficult is to involve the employees to participate, the human factor. How can it be achieved? As I previously mentioned it is very easy to demotivate employees when things are not well done and difficult to motivate.

The employees should believe the management supports new ideas and ways of doing things and that the company trusts employees as a source of new ideas in order to improve the company. The employee should feel valuable and a very important asset for the firm. In order to do so, the senior management should disseminate a message to praise the importance of employees for the future of the company. It must be clear stated that Suggestion System cannot exist without the collaboration of employees because collaboration of employees goes hand in hand with the Suggestion System. It would be senseless otherwise.

Regarding the systematization of innovation it should be mentioned that the change towards an innovative factory will be complex. The factory needs to train and change the mind of employees from an operational thinking to an innovative one. VW Navarra is an old and narrow minded production plant and the change will be tough. The culture of innovation and the progress in this matter must be transmitted to the workforce by the senior management of the company through the existing channels such as Intranet, Polo Zoom, A-punto, Polo league...

The introduction of the MQB platform in the next years will suppose a revolution in the automobile industry according to experts. Production costs will plummet and the flexibility of factories will increase enormously because they will have the resources and technology to produce many different models to meet customers' demand. The introduction of this innovation will probably position VW consortium at the top of the market and its factories as the most productive and flexible factories in the world.

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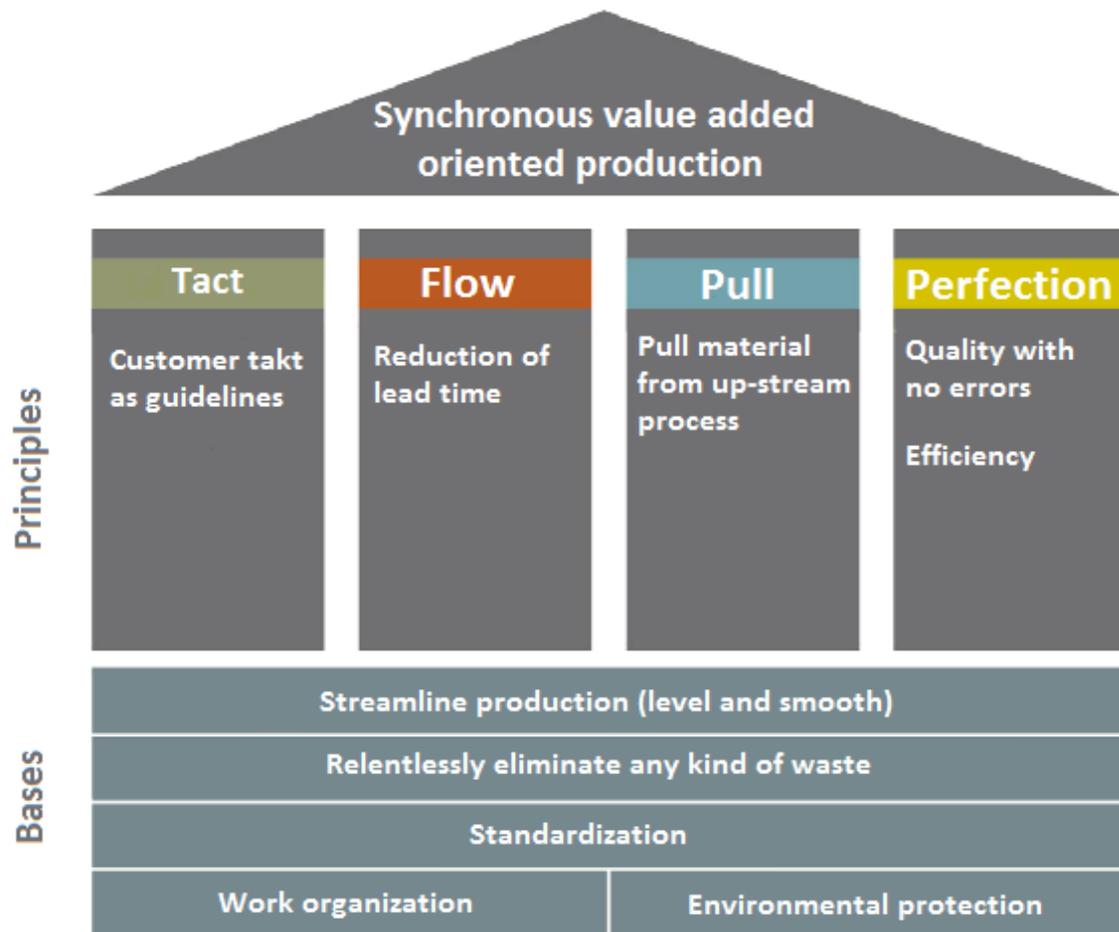
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Source: Volkswagen Intranet

Annex 2. Volkswagen Production System



Source: Volkswagen Intranet

Annex 3. Example of a suggestion

INGEN. PROTESA



VOLKSWAGEN
Navarra, S.A.

Planificación Industrial

LAS BUENAS IDEAS TIENEN PREMIO



Dependencia gestora: Proceso Pintura

Tipo de Sugerencia: A

Comunicación de Sugerencias

Número	Nombre y Apellido	N.I.E.	Dependencia	Grupo	Turno	Teléfono	Fecha de entrega inmediata	Fecha entrega
1	Fernán GARCIA ESAIN	42524	757	02	C		<u>Av. Igualda</u>	<u>30-11-06</u>
2	José GONZALEZ ELLCO	54267	"	02	C			
3								
4								
5								

Descripción: Protección anticorros.

Problema, situación, método o condiciones actuales (Si la idea afecta a productos con símbolos o claves, por favor, incluirlos).

ACTUALMENTE PROTEGENOS 4 TUCKERS EN PARQUEADAS DELANTERAS CON LAS PROTECCIONES 7944611300

Solución propuesta (Usar hojas adicionales o troquel si es preciso para ampliar su idea). Más importante: indique dónde está aplicado

SUGERIMOS ELIMINAR LAS PROTECCIONES DE LOS 4 TUCKERS, SÓLO PROTEGEN EL PVC QUE APLICA EL ROBOT, Y ESTO EN MONTAJE NO MOLESTA YA QUE PUENEN LA GRAPA CON HARTILLO.

NOTAS: El reglamento y los impresos de comunicación y reclamación de su gobierno se encuentran a disposición de todo el personal en Irunport. Para facilitar la lectura de la sugerencia después de ser analizada, por favor, presionen fuerte el escáner. Si necesitan ayuda, llámanos al tno 4252

Utilice los ventajas de enviar sus sugerencias por Internet!

FORM. 001

PL 001 - 001

Annex 4. Flow chart

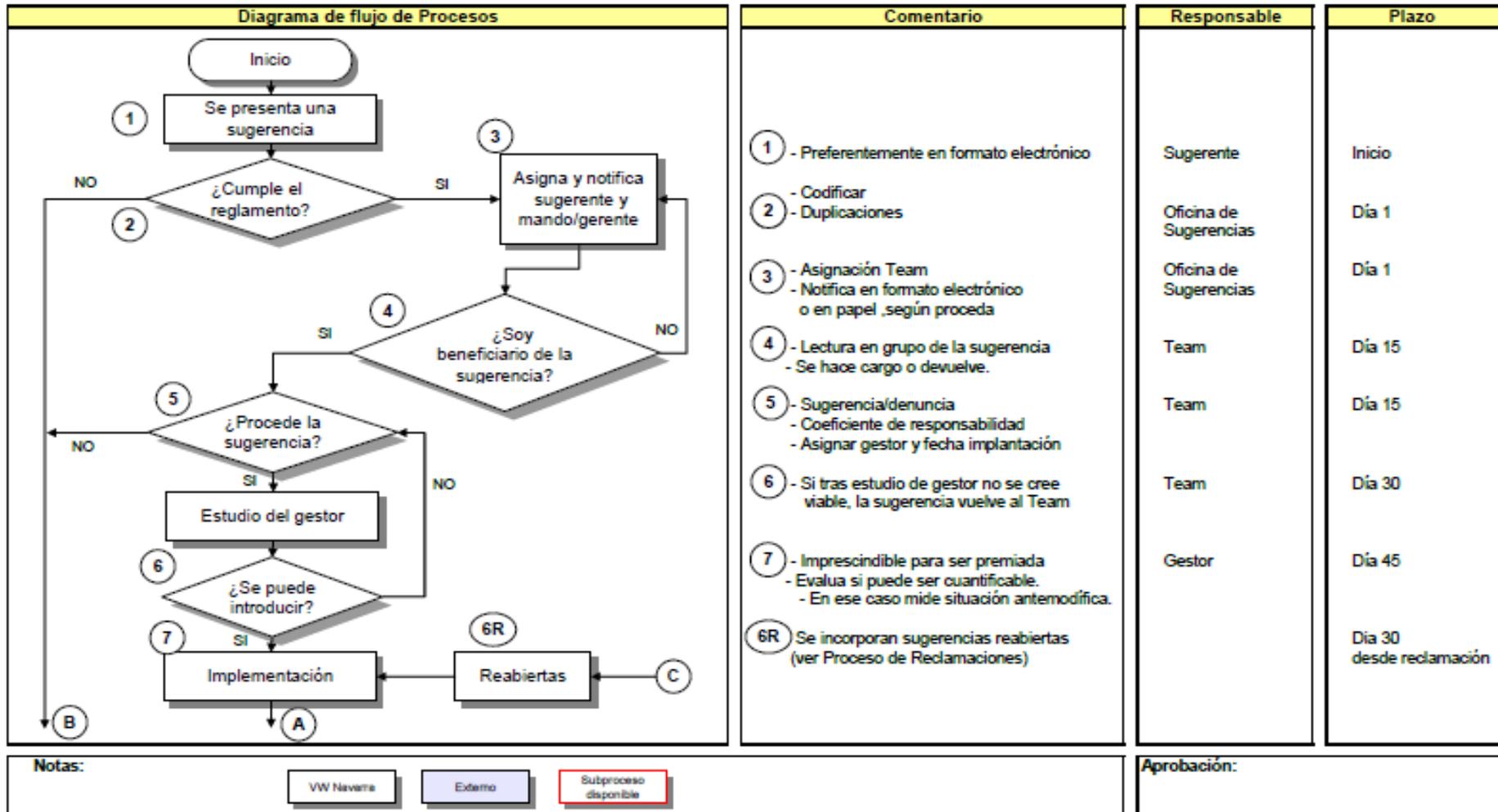
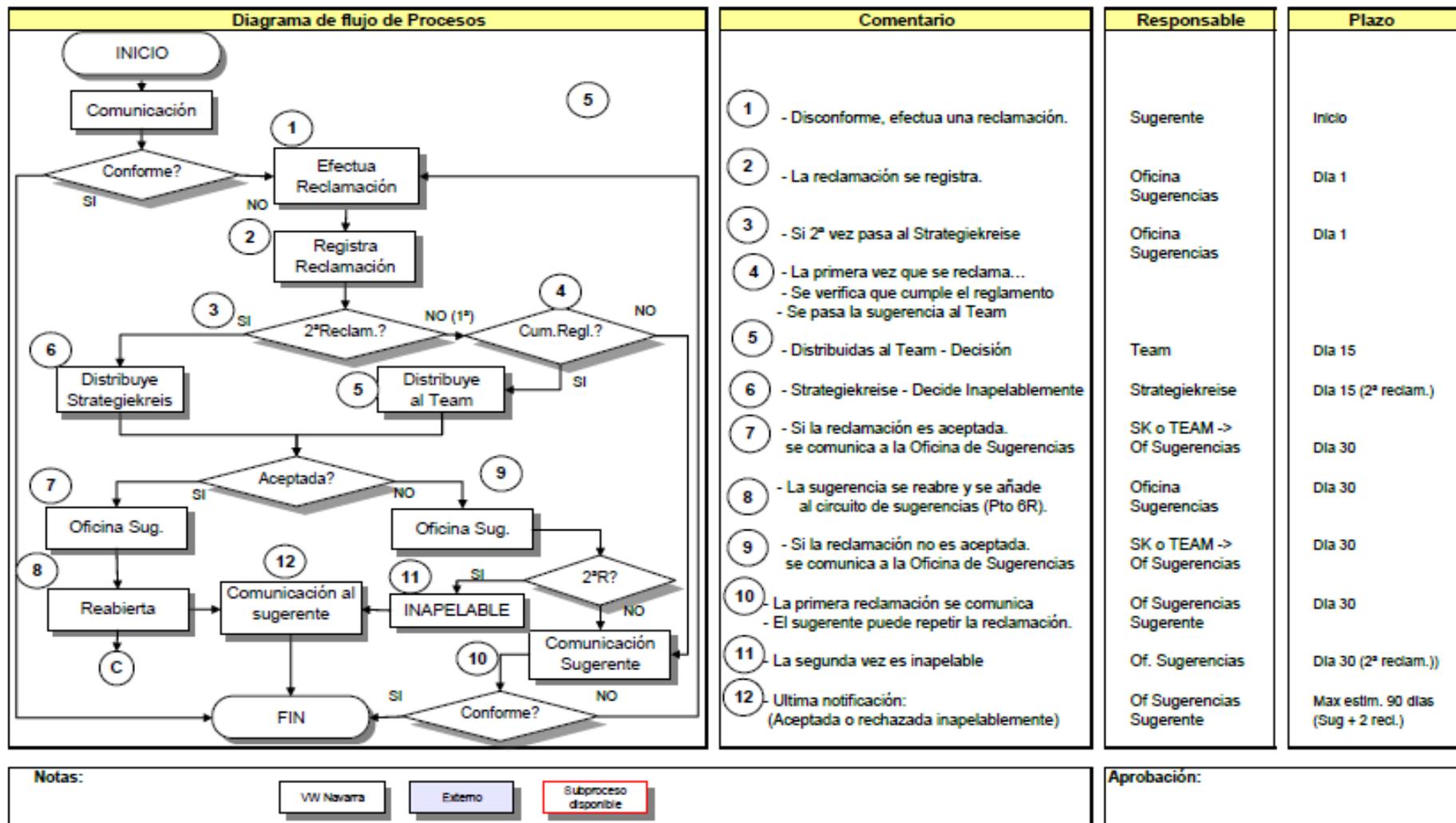


Diagrama de flujo de Procesos	Comentario	Responsable	Plazo
<pre> graph TD A((A)) --> B{¿Es cuantificable?} B -- SI --> C[Peritaje en caso necesario] C --> D[Valoración económica] B -- NO --> E[Premio Bonos] E --> F{¿El premio es alto?} F -- SI --> G[Oficina de Sugerencias] G --> H[Comunicación a nóminas] F -- NO --> H H --> I[Comunicación al sugerente] I -- SI --> B I --> J([FIN]) </pre>	<p>8 -Lectura en el Team del informe del gestor</p> <p>9 -Asignación de premio en bonos</p> <p>10 -Peritaje si afectan a Tiempo Cido, consumos energéticos y tiempo de fabricación</p> <p>11 -Informe ahorro obtenido</p> <p>12 -Lectura informe Controlling</p> <p>13 -Si premio mayor o igual que 350 € -Validación del proceso</p> <p>14 -Envío del listado mensual de premios - Todos los tipos de premio.</p> <p>15 -Copia al mando/gerente</p>	<p>Team</p> <p>Team</p> <p>PI, infraestructuras Compras</p> <p>Controlling</p> <p>Team</p> <p>Oficina de Sugerencias</p> <p>Oficina de Sugerencias</p> <p>Oficina de Sugerencias</p>	<p>Día 50</p> <p>Día 50</p> <p>Día 60</p> <p>Día 60</p> <p>Día 65</p> <p>Día 65</p> <p>Día 70</p> <p>Día 70</p>
<p>Notas:</p> <p>VW Navarra</p> <p>Externo</p> <p>Subproceso disponible</p>	<p>Aprobación:</p>		



Annex 5. Body shop facilities assessment

Denominación	LOSS OF PRODUCTION		INCREASE IN CAPACITY		Por
	€ Pieza	€ Pieza año	Seg. NCB - € año	Seg. CB - € año	
PISO ANTERIOR	1,35	300	1.100	2.200	2
PISO POSTERIOR	1,68	400	700	1.400	2
PASORRUEDAS ANTERIOR DERECHO	1,48	300	600	1.200	2
PASORRUEDAS ANTERIOR IZQUIERDO	1,53	300	600	1.200	2
PUERTA TRASERA IZQUIERDA	0,83	200	700	1.400	2
PUERTA TRASERA DERECHA	0,83	200	700	1.400	2
PUERTA DELANTERA IZQUIERDA	0,77	200	1.300	2.600	2
PUERTA DELANTERA DERECHA	0,77	200	1.300	2.600	2
CAPÓ	0,82	200	1.400	2.800	2
PORTÓN	0,75	200	1.300	2.600	2
MASCARÓN III	4,29	1.000	1.800	9.000	5
COMPLETACIÓN AUTOBASTIDOR I	2,79	600	1.200	6.000	5
GEO I	2,79	600	1.200	6.000	5
COMPLETACIÓN AUTOBASTIDOR II	4,29	1.000	1.800	9.000	5
GEO II	4,8	1.100	2.000	10.000	5
FALDÓN	1,5	300	600	3.000	5
MASCARÓN I	6,03	1.400	2.600	13.000	5
MASCARÓN II	0,93	200	1.600	8.000	5
ELEMENTOS MÓVILES	0,82	200	400	2.000	5
SALPICADERO	1,83	400	800	6.400	8
LATERAL IZQUIERDO	2,99	700	1.300	10.400	8
LATERAL DERECHO	2,98	700	1.300	10.400	8

Source: Volkswagen Navarra S.A.

Annex 6. Evolution of suggestion between 2000 and 2013

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Savings (million €)	4.067	2.276	4.174	3.345	3.409	4.351	4.959	3.609	2.965	2.864	6.213	6.038	5.007	2.568
Submitted suggestions	5,272	4,008	5,925	5,700	5,433	6,948	6,554	6,014	5,169	2,964	5,511	5,207	5,934	6,428

Annex 7. Mach 18 Factory

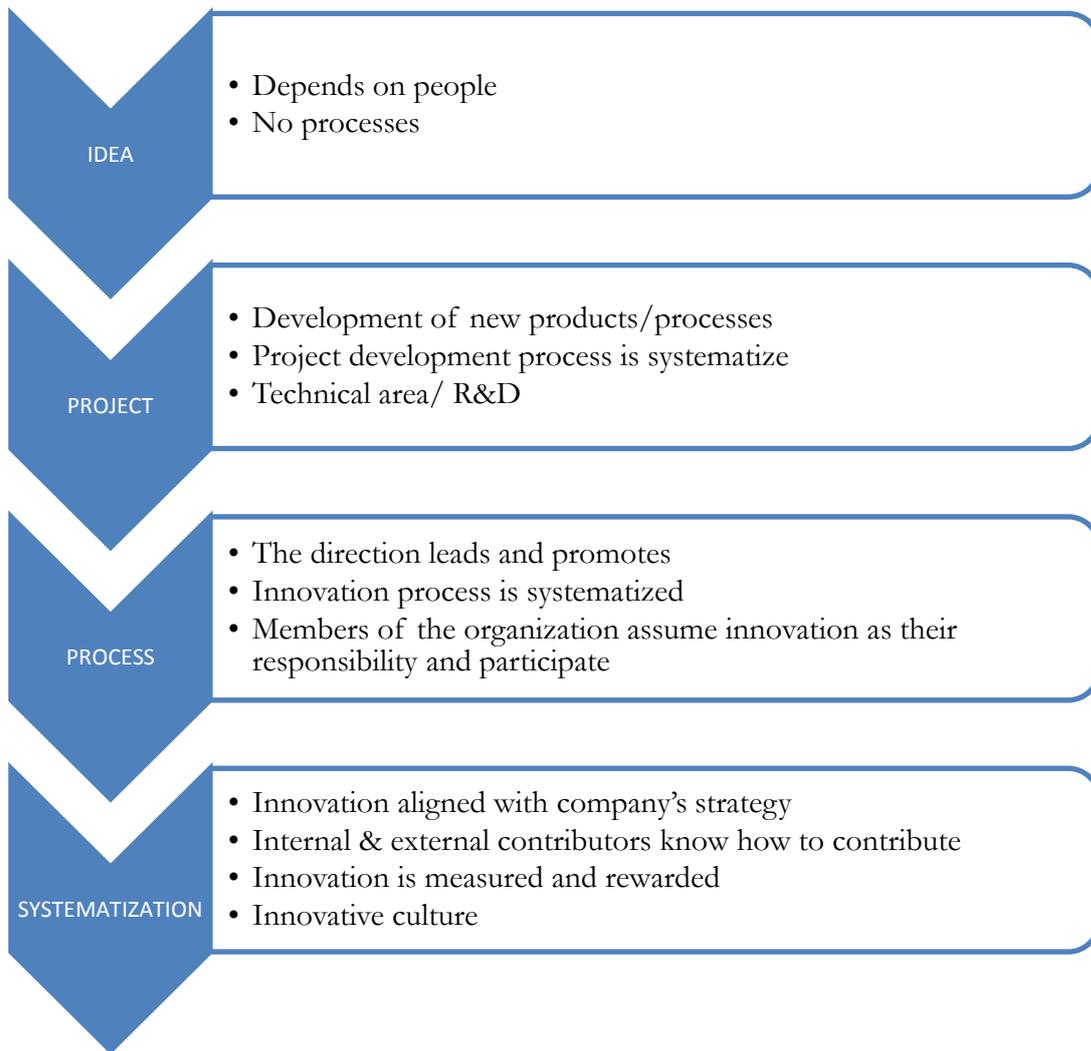


Source: Volkswagen AG corporate website

Annex 8. Innovation checklist

		"KAIZEN"	"KAKUSHIN"	QUESTIONS
	INNOVATION	NO	YES	Is it an innovation?
	KIND OF IMPROVEMENT	Incremental improvement	Significant and groundbreaking improvement	What kind of improvement is?
	X= F(VALUE)	YES	YES	Does it contribute to the generation of value? (profitability, utility, service, quality)
	CREATIVITY	YES	YES	Is it a creative idea*?
	PROBLEM SOLVING/CHALLENGE	YES	YES	Does it solve a problem? Is it a challenge?
EXCLUSIVO CSQN**	NOVELTY/ORIGINALITY	NO	YES	The idea is new in its concept and / or in its application?
		New in the factory/new in the group		
EXCLUSIVO CSQN	A TRANSFERABLE FUTURE COMPETITIVE ADVANTAGE	NO	YES	Does it create differentiating competitive advantages and preferably sustainable?
		Improvement of economic KPI and viability in the factory, brand and group		
EXCLUSIVO CSQN	POTENTIAL REPLACEMENT OF PREVIOUS CONCEPT	NO	YES	Does it replace previous technology?
		Partial or total replacement of previous practices		
NO EXCLUSIVO NO CSQN	IT HAS POTENTIAL TO OBTAIN A GRANT AND/OR TO BE PATENTED AS INNOVATION	NO	YES	Does it permit obtaining grants ? Does it permit the registration and operation of licensing and / or patents?
		Approximation to an invention		

Annex 9. Development of the implementation process of innovation



Source: VW Navarra innovation group

Annex 10. Flow chart of an innovative idea

Nombre Proceso Integración Oficina Sugerencias y Casa Proyectos en el proceso de Innovación

*El proceso representa el tratamiento de una sugerencia con carácter innovador

