

# Quality control and nissan

[Technology](#), [Cars](#)



Milennia Atlantic University Operations Management Juan Hernandez Adriana Rosales NISSAN Introduction Nissan was the sixth largest automaker in the world behind General Motors, Volkswagen Group, Toyota, Hyundai Motor Group, and Ford in 2011. It formerly marketed vehicles under the " Datsun" brand name. As of 2011, the company's global headquarters is located in Nishi-ku, Yokohama. In 1999, Nissan entered a two way alliance with Renault S. A. of France, which owns 43. 4% of Nissan while Nissan holds 15% of Renault shares, as of 2008.

Along with its normal range of models, Nissan also produces a range of luxury models branded as Infiniti. Jidosha-Seizo Kabushiki-Kaisha had been established in December 1933. The company's new name, adopted in June 1934, was an abbreviation for Nippon Sangyo, a " zaibatsu" (or holding company) belonging to Tobata's founder, Yoshisuke Aikawa. Nissan produced its first Datsun (a descendant of the Dat Car, a small, boxy passenger vehicle designed by Japanese automotive pioneer Masujiro Hashimoto that was first produced in 1914) at its Yokohama plant in April 1935. The company began exporting cars to Australia that same year.

Beginning in 1938 and lasting throughout World War II, Nissan converted entirely from producing small passenger cars to producing trucks and military vehicles. Allied occupation forces seized much of Nissan's production operations in 1945 and didn't return full control to Nissan until a decade later. In 1960, Nissan became the first Japanese automaker to win the Deming Prize for engineering excellence. New Datsun models like the Bluebird (1959), the Cedric (1960) and the Sunny (1966) helped spur Nissan

sales in Japan and abroad, and the company experienced phenomenal growth over the course of the 1960s.

Nissan has a broad variety of teams focused on building strategies for almost every aspect of Operations Management study, this research shows once more the outstanding performance of this company on every aspect of its management. Product and Services 1. Automotive Components Business. Supplies domestic Nissan plants and affiliated component makers with parts and materials from overseas and also exports components to Nissan's overseas facilities. From product development to final delivery, the business' diverse management capabilities enable it to provide invaluable support to the range of clients it proudly serves.

The more the global sourcing of automotive components progresses, the more important the logistics efficiency becomes. Nissan's branches and affiliated companies spread worldwide have warehouses which store inventory of auto parts in order to drastically shorten the lead-time of logistics, as if the foreign parts were purchased domestically, and they have solutions that will fit customer' various needs including emergency orders by utilizing their production control system and know-how as to how to supply the vehicle production lines with the minimum inventory. . Machinery Business. Nissan's machinery business is focused on improving domestic, export, import and intermediary trade to meet customer needs and increasing global demand, while continuing to strengthen the relationship with customers and partners. This involves a wide range of categories, such as various kinds of machinery facility, tooling die, plant exportation, MRO

(maintenance, repair & operations) parts, jig fixtures, pallets, cutting tools and various consumer goods for automotive distributors.

The services offered by Nissan provide a high level of support, including planning support for all kinds of production, optimum purchase in the most suitable country, export & import, delivery & installation, full-turn key services up to the commencement of production and supply spare parts, etc.

3. Chemicals Business. This business handles a diverse range of products including organic and inorganic chemicals, petrochemicals, high performance and new materials and alloys for the aerospace industry, tailored to customer requirements through sales consultations and customized proposals.

In addition, Chemical Business endeavors to develop and supply materials that meet the individual specifications of customers. In addition to dealing with raw materials for resin components used in automobiles, such as general purpose resin, engineering plastic, coatings, adhesives and automotive chemicals, raw materials and seats, instrument panels, leather for door trims, and fabrics are also sold. The purchasing and selling of resin cast components, etc. is done globally. The company is also involved in resin colorization and the outsourcing of logistics alongside our existing business of buying and selling raw and prepared materials. We have gained high marks both from our distributors and suppliers that manufacture the materials for both manufacturing functions and stock logistics. Not only do we focus on expanding domestically, but also on expanding into the global market.

Nissan is strongly committed towards environmental conservation by recycling resin components, such as automobile bumpers, and associating its business operation with vendors that also recycle resin. In recent years, Nissan has expanded towards third-country trading with the aim of building a framework that will offer the best materials and prices globally in order to streamline the buying and selling of materials through global SCM, along with the manufacturing of products. 4.

Energy and Materials Business. Since the company was established in 1979, it has been involved with the buying and selling of various fuels and lubricants for vessels. In addition to the components that Nissan Trading currently supplies for vessels to various regions of the world, our company has expanded to supplying fuel and lubricants to the key industries that began with Nissan Motor, offering retail services such as gas cards, as well as importing and exporting various materials for automobiles.

The company has also taken steps towards environmental conservation during automobile production by handling biomass fuel. The energy and materials business supports distribution and manufacturing industries through the supply of fuel to factories in Japan and to cargo ships and tankers at major ports worldwide. Also manages a gasoline card system that allows the purchase fuel and have the cost deducted from their monthly salary. Materials such as coke and raw iron are sold to Nissan Motors, foundries and manufacturers of precious metals, etc.

In order to collectively increase the corporate awareness of environmental conservation and promote the importance of recycling, they reuse scrap generated from the manufacturing of automobiles and reuse precious metals

that are extracted from production waste resulting from the manufacture of stainless steel. 5. Steel Business. Established in 1981 with the aim of providing steel and steel products necessary for automotive production by Nissan Motor, steel business started by delivering steel sheets to Nissan Motor's Kyushu Plant and Nissan's component suppliers. Currently, their main steel operation is to supply steel sheets to all of Nissan's domestic plants. At Kyushu area, they operate advanced SCM to support our customers through our logistics company. Their overseas business started in 1988 by exporting steel from Japan to Nissan Motor Manufacturing (UK). Nowadays, these operations cover many countries where Nissan has plants and these plants are served through imports, exports and third-country trading.

Through offering a wide variety of materials besides steel sheets, such as special steel alloy for engine components, steel bars, steel pipes, and aluminum sheet essential for light-weight cars, a vast amount of expertise in materials procurements has been accumulated. Nissan is also taking an important role to provide experimental steel materials for new development of cars. Nissan Trading's steel businesses will continue to grow and progress to meet rising demand from Nissan Motor's global expansion. 6. Vehicles Group.

The vehicle group is expanding the sales of Nissan vehicles in South and Central America, Asia, Africa, and the rest of the world. The group also imports vehicles and accessories and oversees the shipment of non-Japanese-made vehicles to other countries. The Vehicles Group began its operation in 1978 with the purpose of supporting Nissan Motor's export

businesses. Based on unique experience and expertise, Nissan is now providing solution to the vehicles demand of the United Nations and taking care at the same time of marketing and sales to certain individual countries in Asia, Oceania and Africa.

For all these customers, their service is not limited to just selling cars, but providing marketing, logistic and financial solution as well. This function is unique but established as an integral part of Nissan Motor's overseas operation. 7. Non-Ferrous Metals Business. This business handles both Light and Precious Metals. With Light Metal operation, it strives to offer a steady supply of materials to customers, such as aluminum bullion for raw materials, aluminum alloy bullion, aluminum base metal, including aluminum scrap to Nissan Motor, aluminum component manufacturers and aluminum alloy manufacturers within its global network.

In an increasingly demanding market, Nissan offers more fuel-efficient automobiles with the help of miniaturization and improved reusability of aluminum. The Precious Metals operation also imports precious metals at an optimal price domestically and internationally, and then offers a steady supply of these materials, such as platinum, palladium and rhodium, in response to the growing demand for automobile catalysts brought upon legislation that continues to tighten vehicle emissions. Aluminum alloys are increasingly gaining importance in vehicle manufacturing.

This business supplies these products in the form of panels, rods and ingots, and also handles a variety of precious metal. The automotive industry is making greater efforts to use and recycle these metals and other raw materials, reflecting the community's concern for the world's limited

resources. As the trend of " Producing Eco-Friendly Vehicles" h continues to gain momentum worldwide, the role of our Precious Metals operation will continue to grow in importance. Design and product development process

Nissan uses an automatic cutting machine. With the better accuracy afforded by evolving CAD systems, data reproduction once done entirely by hand was automated using this machine. A machine for automated measurement of vehicles is also used. In this way, the conventional clay model-based designing formerly used by Nissan has now shifted to digital data-centered design development. Usually, design development is done three to four years prior to the launch, so it is difficult as designers need to forecast the future social trends and customer needs.

Recently, the study and design of Human-Machine Interfaces (HMI) based on ergonomics (the study of how a workplace or equipment can best be designed for comfort, safety, efficiency and productivity) is a well-established practice for this company. Nissan has been actively researching human-vehicle interfaces since the 1990s. Watanabe, for example, handled instrument panel design for the Infiniti J30 (Leopard J-Ferry), Laurel and Cefiro, and proposed applying " universal design" in concept cars in the late '90s.

Over the past decade, the concept of " universal design" has come into general parlance for products that are easy for anyone to use, regardless of physical limitations. Nissan took the universal-design concept a step further in 2005, embracing the concept of " Interaction Design" so that customers will feel that every part of a car works smoothly and attractively. And while



creating HMIs is usually Research and Development territory, at Nissan it's a priority of the Design Department as well. The involvement of both the Design and R; D Divisions in developing universal design is unique to Nissan. Interaction Design," can be divided into three areas: - Interfaces: Instruments and graphical user interfaces, like navigation systems, door handles, switches, lighting, etc. - Interior colors and materials - Perceived quality: Individual part textures, joints between parts, etc. The R&D and Design departments pay close attention to these factors in the design of every Nissan vehicle. In 2005, Nissan started a project to create revolutionary car interiors that are easier to use, leading to the BUI (Best Usability Interior) concept car.

Furthermore, in the development stage, Nissan designs their products to avoid using environmentally harmful substances in their construction and make them easier to recycle. Additionally, to reduce the use of nonrenewable resources, they give consideration to the use of recycled plastics, other recycled materials, and renewable bio-materials. However, Nissan is also examining the possibility of recycling plastic parts from end-of-life products and using this material for new products, searching for ways to overcome the technical challenge of maintaining quality.

At the present moment digital data is now mainly used in design development and the role of the clay model is to verify the data. However, no matter how advanced the digital technology, such as virtual reality, may be in the future, cars will continue to be used in the real world. It will not change. Digital data is reproduced three-dimensionally and designers and modelers form attractive shapes and designs with their senses of eyes and

hands. Human sensibility continues to be essential to producing emotional designs. Competitive Priorities

In operations management one of the most important aspects when evaluating a business strategy or the productivity of a business process are the competitive priorities of the company. In 1984 Hayes and Wheelwright suggested that companies compete in the marketplace by virtue of cost, quality, flexibility, and lead-time (Institute for manufacturing. University of Cambridge). Cost: Some of the aspects that are involved in this classification are:

- Manufacturing cost.
- Value added.
- Selling price.
- Running cost - cost of keeping the product running.
- Service cost - cost of servicing the product.
- Profit.

Nissan approach cost control in Japan utilizing target costing principles that shares some of the elements of just such a strategic approach, but its transplant operations create distinctive problems for cost control. To explain briefly this point we can quote Nissan Motor Company U. K, which was case in study by Chris Carr and Julia Ng about “ Total cost control: Nissan and its U. K supplier partnerships”.

This case, in order to analyze the major capital budgeting decisions, the Director of the U. K Finance clarified that Nissan likewise emphasized “ strategic rather than economic factors”, and that this had also been the case in the parent company’s original decision to invest in the U. K. The following chart show how Nissan Motor Manufacturing U. K controlling their costs from the raw material is gotten. Mission and Strategy The mission of Nissan Motor Company to enrich lives with measurable value begins with a Customer Promise that guides employee actions and decisions.

Nissan provides unique and innovative automotive products and services that deliver superior measurable values to all stakeholders\* in alliance with Renault. Nissan Power 88 identifies six strategies as levers we will use to achieve results according to plan. Pillar 1: Brand power To strengthen Nissan's brand power, we will expand our strengths in engineering and production to the sales, marketing and ownership experience. We will also raise the level of interaction with our customers to create a world-class standard of service that will help us build lasting relationships with every Nissan and Infiniti vehicle customer. We recognize that having a stronger brand will help close gaps with our top competitors in every measurable area, from revenue generation to overall opinion and purchase intention. Pillar 2: Sales power Sales power in the mid-term plan refers to fully grasping the needs of customers in each market and drastically raising sales volume and market share. Nissan currently has 6, 000 major points of sales globally. We will expand our retail network to 7, 500 outlets in the mid-term plan period.

Nissan is now the leading Japanese brand in China, Russia and Mexico and is on track to become the largest volume Asian brand in Europe by fiscal 2016. We are focusing our efforts to boost sales power in Japan and the United States, as well as in the ASEAN region. Pillar 3: Enhancing quality Nissan aims to make steady progress in improving product quality. During Nissan Power 88, our aim is to raise Nissan into the top group of global automakers in product quality and to elevate Infiniti to leadership status among peer luxury products by fiscal 2016. Pillar 4: Zero-emission leadership

No other global automaker is as engaged in comprehensive activities to advance the entire system needed to make sustainable mobility a reality. Nissan is taking a leadership role in every aspect, from the development of batteries, chargers and a vehicle lineup to electric grid studies, battery recycling and the use of batteries for energy storage. In 2011, Nissan will take the lead as the all-time volume leader in dedicated electric vehicle sales. The Renault-Nissan Alliance is bringing seven more all-electric models to follow the successful launch of the Nissan LEAF. The

Alliance intends to put 1.5 million electric vehicles on roads worldwide by 2016. Nissan's emphasis on sustainable mobility also encompasses the range of low-carbon and lowemission technologies that support PURE DRIVE. For example, our proprietary hybrid technology will be tailored to future Nissan and Infiniti models, and our next-generation Xtronic Continuously Variable Transmission (CVT) will increase fuel efficiency in future Nissan vehicles and maintain our status as the global leader in CVT technology.

Pillar 5: Business expansion In 1999, Nissan's global market share was 4.%. In 2010, Nissan achieved a record 5.8%. For fiscal 2016, we are targeting a global share of 8%, supported by a steady tempo of a new product launch on average every six weeks, a continued focus on growth markets, and the expansion of our Infiniti and light commercial vehicle businesses. We will concentrate on increasing our presence in Brazil, India and Russia, as well as in the next wave of emerging markets, including the ASEAN 5-Indonesia, Thailand, Malaysia, the Philippines and Vietnam. Nissan is the top Japanese car maker in China with a 6. % market share, and China will continue to be Nissan's largest single global market into the plan. In 2012, we will have

nearly doubled our production capacity, to 1.2 million units, and we will further increase our capacity to be in line with our goal of 10% market share. With our partner Dong Feng, we will continue to invest in more products and dealers and together build our new local brand, Venucia. In North America, we will invest to expand our manufacturing capacity and retain our number-one position in Mexico, where Nissan leads the market with a 23.1% share.

In Brazil, where we have 1.2% market share, we target a minimum of 5% market share. We will build a new plant in Brazil, with a capacity of 200,000 units as a first step. In Europe, Nissan will become the largest volume Asian brand. In Russia, we aim to increase Nissan's market share to 7% by 2016. In India, we will add five new models to be built in the new Alliance plant in Chennai, and we will continue to expand our dealer network. In ASEAN, Nissan Motor Thailand now serves as a strategic industrial base and export hub, and we are concentrating on growth in Indonesia.

We are increasing the annual production capacity of our plant near Jakarta from 50,000 to 100,000 units to meet local demand. We aim to increase our share in the ASEAN 5 from 5% today to 15% by 2016. Pillar 6: Cost leadership Since we implemented the Nissan Revival Plan, we have been successful in reducing costs by 5% annually, due mainly to cross-functional monozukuri activities involving our supplier base. As our production footprint is increasingly global, we will maintain this pace by enhancing and deepening these activities in every Nissan production base across the regions, particularly in North America, China, India and Russia.

By increasing the use of carry-over/carry-across parts and systems, we will further boost overall platform efficiency. Platform and product synergies will

be developed with all our partners, especially in small and medium vehicle segments. And with the additional growth in volume, we expect to realize greater cost efficiency. Evaluating not only purchased parts but also logistics and in-house costs, we have set an objective to reduce the total cost by 5% each year. In Japan, we will raise our yen revenue through increased vehicle sales and reduce our yen-based costs through greater localization of parts supply to overseas plants.

Enhancing our monozukuri activities in Japan and across the regions is key to our cost-reduction efforts. Through these activities, we will maintain our commitment to produce 1 million vehicles per year in Japan. Leveraging Partner Strengths Nissan's performance will be enhanced by leveraging 12 years of successful collaboration within the Renault-Nissan Alliance and its five established and productive partnerships. Through the Alliance's strategic cooperation with Daimler, Nissan will benefit from diesel engine and power train technologies, including a supply of Mercedes-Benz engines for Infiniti vehicles.

With AvtoVAZ in Russia, the Alliance will take a 40% share in the Russian market, with investments in products and localized manufacturing and sourcing. Our partnership with Dong Feng is critical to our reaching 10% market share in China. With Ashok-Leyland in India, Nissan has a partner in the development and manufacture of light commercial vehicles. And with Mitsubishi, we expanded the scope of our cooperation to develop a new mini car joint venture. The Right Plan for Nissan's Future

In the global automotive industry, Nissan leads in zero-emission mobility, we lead in many emerging markets and we lead in the number of stable,  
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productive partnerships we have established to improve our competitive position. Going forward, our aim is to enhance our brand power, sales power and the quality of our products and services and to continue to lead the way in advancing sustainable mobility and mobility for all. This is what Nissan Power 88 is about, and we are eager to get started and to deliver the full potential of this company. Global operation Strategy

Nissan Motors global strategy involves its aim to become an industry leader in zero-emission vehicles and to cultivate developing markets with low-cost global cars. As part of zero-emission environmental friendly vehicles, it would be beginning with the launching of the new electric vehicles (EVs) which would be powered by advanced lithium-ion batteries to be jointly developed with electronic maker NEC Corp. The EV to be introduced will have a unique body style on an all-new vehicle platform which would be compact for the city, yet big enough to carry five adults.

Importantly, it will be thoroughly usable with brisk performance and a range of 160 kms. It will have the performance of a typical 1.6-litre petrol-engine car while recharging from a high voltage source will restore 80 per cent of the battery capacity in around 30 minutes. The company with its alliance partner Renault, which holds 44% stake in it, has been developing partnerships with various governments and specialist companies to build a sustainable mobility network and create public awareness towards EVs as its preparing for marketing them on a mass scale.

Various understanding has been signed with electricity companies, charging station suppliers and governments to promote the concept of zero emission mobility and provide infrastructure support, craft legislation or offer

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incentives such as tax relief, parking or toll rebates for EV buyers (Source: The Japan Times online, May 14, 2008). Cultivating developing markets with low-cost global cars, Nissan is globally launching its new small car on a fresh global platform.

The common global platform strategy is part of Nissan's endeavour to produce a host of cars, be it hatchbacks or sedans, across five countries in which thus far India, China and Thailand have been identified as key manufacturing locations. The new small car, touted as a replacement for the Micra, will first go into production in Thailand with shipping out key components from India and then later on the production would be from India. Planning and Management Project We set out to first help Nissan define meaningful and measurable objectives for the project.

The rollout's objectives were to: 1 Deliver a consistent Nissan brand image at all dealerships 2 implement a cost effective program that supports improvement in the business operations of Nissan and the dealer 3 continually improve the program of work being delivered 4 proactively manage each project to ensure completed schemes complied with defined standards Build a high performing team The project entailed working with and managing 600 individual teams - thousands of stakeholders including dealers, local architects, general contractors, subcontractors and materials suppliers.

A central Core Team and a Programme Management Office inside Nissan headquarters supported Regional Project Managers in the field. We then implemented communications systems to capture learning and build a team of informed, committed stakeholders. Actively manage communications

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Although communication management was complex due to the geographic diversity and numerous stakeholders, actively collecting and disseminating consistent data ensured that stakeholders had the detail they needed to make quick and informed decisions, whenever the situation required.

We opened a digital listening center in Chennai to listen for all the Internet chatter about Nissan or Infiniti, sorting it into categories, and allowing us to react to the real and instantaneous voice of the customer. If someone tweets something about Nissan, we're listening, and hopefully we'll react to that. The quicker the reaction, the more you can reinforce that the Brand is very trustful. Balance flexibility and control Due to the varying locations, codes and construction practices, Nissan's rebrand had to be flexible but consistent.

A customised programme infrastructure incorporated the initiative into Nissan's other business processes, significantly improving scope control - ultimately we reduced the number of change requests and variances by nearly 20 percent. Use information and innovation to reduce costs To keep the utmost control of costs we developed tools and strategies to tailor our knowledge to this specific programme. For example, an NREDI facility cost calculator was developed to provide a way for people without a cost estimating background to produce quick and reliable NREDI cost estimates, while a bespoke system was developed to capture projected and actual costs from the construction industry and individual projects. Active value engineering enabled us to reduce the cost of construction from the original prototype design by 20 percent without compromising the brand appearance, and we maintained a net construction cost at 2002 price levels

for over five years despite inflationary pressures of around 20 percent in that time. Workshops with team members also generated over 100 ideas to improve the value and quality of the programme.

These insights contributed to an additional \$40 million real cost savings over the life of the programme. In fiscal year 2012, the firm will introduce 15 new technologies. Examples of new technologies are as following.

- Multi-Sensing System which is built on the Around View Monitor image processing technology is now advanced to detect moving objects and notify the driver.
- Next generation XTRONIC CVT. Nissan is the recognized global leader in CVTs and this latest generation provides a fuel-economy benefit of up to 10% compared to the current model.

We are introducing a large number of innovative technologies. Actively manage quality The NREDI design contained a number of complex components and new products. Through the development of benchmarking documents and active quality control checks we had very few issues with the facility branded products. Not to have had recalls or other serious product issues on a programme of this size and duration was an unusual accomplishment. We also developed a range of benchmarking guidance documents which rapidly educated contractors on quality standards and know-how for new products, to further mitigate quality problems.

Keep a close eye on the entire supply chain A particular issue for this programme was the maintenance of a robust supply chain. We developed a three tier supply chain system, using separate contracting strategies and tools to deliver a flexible solution. The system was tested in 2009, when Nissan's signage supplier (with a portfolio of around 200 active projects) filed

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for bankruptcy. Activating our contingency plan, the team worked with Nissan's procurement and legal teams to respond to the emergency without major cost implications, delays or adverse effect on individual deals.

**Quality of Products** Product quality is what allows customers to drive their cars in comfort and with peace of mind over a long period. To enable real improvements in product quality, not only design phase and production phase, but also through robust partnership with suppliers, Nissan is improving its quality component by component. Nissan conducts follow-up inspections on vehicles that have been in the market for several years to gauge their durability. Reinforce both design and production to cut the number of defects occurring within three months of purchase.

**Upgrading design quality** Cars have a vast number of parts. About 65 percent of them have zero defects in the past, and from remaining 35 percent have caused problems. Enhancing design quality before production begins is one crucial way to increase the percentage of products without problems to the maximum level. Increasing the precision of components in the design diagram raises the quality of those that go into mass production. Nissan uses a method called design review (DR) to develop higher-quality parts.

During the DR process, design experts work together to review the potential risks for each parts, and devise ways to prevent problems proactively. Nissan has adopted a new DR method that allows quicker and more accurate design inspections. This has extensively expanded the DR area, and bolstered the development of more problem-free parts. Certified personnel conduct these quick DR sessions. The number of people with this certification has been

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gradually increasing worldwide, so we are better able to apply DR to numerous parts. Pushing production quality higher

Precision testing equipment is an integral part of the production process at every Nissan plant and production line. Digital technology, such as laser measurement, is used to verify precision assembly and paint condition, which are then evaluated through road testing. Our environmental test chambers can accurately reproduce subtle regional differences in temperature extremes of and road conditions. This enables us to scrupulously safeguard against problems flowing out of the factory. To produce problem-free parts, we carry out inspections at the design diagram stage.

So that we never overlook even the slightest vibration, every parts used in every model undergoes immediate testing. The Weatherproof vibrator can be calibrated to simulate various temperature and road surface conditions. By testing here, we can proactively prevent road noise and other problems different driving environments can create. Cutting the defect rate with these preferred suppliers Nissan's network of parts suppliers is expanding throughout the world. To ensure that we always receive quality parts from them, we apply rankings to each supplier and deal only with the ones that maintain a certain ranking.

Nissan is working with these preferred suppliers to cut the defect rate. \* How Nissan ensures quality assurance together with our suppliers. Using rapid response to cut the breakdown ratio A breakdown is a malfunction serious enough to persuade the driver to stop and call for road service assistance. In many cases the car cannot be driven at all. In other instances, the car may

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be drivable but doing so would be unwise, such as having a window that will not close properly when the weather is extremely cold. The breakdown ratio in Japan is low, and it is also declining worldwide.

In Europe, however, where many people drive for long distances or keep cars for a long time, breakdowns are a serious problem. In 2008, Nissan set up Shift Quality Teams in Germany, France, the U. K. , Spain and Russia to monitor these breakdowns. Within twenty minutes of receiving a report of a breakdown, the Nissan team in the country is dispatched to the site to deal with the problem. The causes and remedies of breakdowns that occur in Europe are immediately incorporated into Nissan car designs worldwide, further reducing the breakdown ratio of Nissan vehicles.

Quick response has cut the countermeasure time for defect parts. When a Nissan customer's car has to undergo repairs or needs parts replaced, we probe the cause to prevent similar problems. In addition to using improved parts at the factory, we also have to supply the market with replacement parts. We established a system to radically reduce the time from preparing the defect parts to collecting them. Even when the defect rate is low or the causes are difficult to probe, this allows us to resolve problems at an early stage.

Nissan's Field Quality Centers operate flat-out to deal with the following: \* Defects that occur within three months after a car is purchased \* Defect ratio of components obtained from suppliers \* Breakdown ratio \* The time between when a defect occurs in the field until replacement parts are developed. The above all have one thing in common: they are handled by our Field Quality Centers (FQCs). Three of these centers were established in <https://assignbuster.com/quality-control-and-nissan/>

2007 in Japan, the U. S. and Europe to respond more rapidly to problems occurring in the field, and FQCs are expanding more and more In other regions.

Defect parts are collected from the market quickly and in quantities as large as possible. Nissan design and production staff work with representatives from our suppliers to probe the cause of the problems and come up with solutions. We plan to expand this type of joint analysis into defect parts. \* Field Quality Centers-the mecca of quality improvement At a Field Quality Center, Nissan design and production staff and supplier representatives investigate the cause together and work out countermeasures. Just in Time (JIT)

There are 3 principles of JIT systems that involve a manufacturing process, which are waste minimization and elimination, total quality control and involvement of people. Under this concept, Nissan decided implement a new system to fabric the products (in this case vehicles) in a plant in Smyrna, TN. This system was designed to synchronize output, establish a standardized work pace and monitor equipment conditions while continuously storing production data because Nissan had as main objective synchronizing flow, JIT manufacturing and optimizing production.

With a just-in-time approach, specific vehicles and their components are produced just-in-time to meet the demand for them. Sub-assemblies move into the final assembly plant just as final assemblers are ready to work on them, components arrive just in time to be installed, and so on. In this way, the amount of cash tied up in stocks and in work-in-progress is kept to a minimum, as is the amount of space devoted to costly warehousing rather

than to revenue-generating production. Nissan's just-in-time process depends not on human frailty but on machine precision. Every vehicle is monitored automatically throughout each stage of production.

A transponder attached to the chassis leg contains all of a vehicle's production data e. g. its required colour, specification and trim. This triggers sensors at various points along the production line thus updating the records. When, for example, the transponder sends a message to the production system at a supplying company to produce a seat in a particular colour and trim, this triggers the relevant response and a seat to the required specification is produced. Further along the production line the specifically produced seat arrives to meet the vehicle to which it belongs - just in time.

Supply Chain Design and Control Supply Chain is highly dynamic department that deals with complex supply chains and responds to volatile demand patterns. The role of SCM is key for Nissan in securing supply to support demand, and ensuring we can deliver on our aim of having the " RIGHT car, at the RIGHT time, in the RIGHT place" for every customer... and of course, " at the RIGHT cost". SCM sits in between Manufacturing and Sales, and plays a pivotal role in balancing the often-conflicting drivers of Supply and Demand. Life in SCM is never dull.

The roles include leading the supply planning for specific production sources, managing our inventory control processes, developing mid-term strategic progression of the supply chain, planning and implementing system and process developments, or dealing with the complexities of an increasingly complex parts supply chain. Nissan realized the benefits of an integrated

supply chain and wanted a system to: \* Reduce excess stock in the pipeline \* Improve customer service by: \* Reducing the lead time between placing an order for a vehicle to its delivery \* Tracking an order from placement to delivery Provide direct access to manufacturing systems for dealers and distributors, enabling the provision of more accurate information Inventory control Nissan as a company that import and export products and services around the world needs to be prepared to the demand that they drive. The inventory control is a vital tool to supply the whole chain of market because it meet demand, keep operations running, lead time (such as Nissan in Smyrna, Tennessee, that maintain low levels of inventory), hedge, quantity discount, and smoothing requirements. In Nissan there are no raw materials or works in progress stored as inventory.

The only inventory that is kept is finished goods. One example of this can be the inventory for cars because they take a list of all the new and used cars that are in the system is printed out while a list from the Nissan Corporation is printed out as well. Both print outs are compared and at the end, any adjustments are made in order to match the statement from the corporation means, Nissan bases its production on demand showing the company's annual reports, and uses storages to facilitate the access to the inventory in each one of the plants of the corporation. Forecast We expect our global sales to reach 5, 350, 000 units, an increase of 10. %, which is another record level for Nissan. With a TIV assumption of 79, 700, 000 units, a 5. 3 % increase year-on-year, our global market share is expected to grow from 6. 4% to 6. 7%. During fiscal 2012, we will completely renew three of our large volume global models. The first was the new Altima which had been revealed



at the New York International Auto Show in April 2012. In total, we will launch ten all-new vehicles in fiscal 2012 including the Pathfinder, Sylphy/Sentra, NV350 and a long wheelbase version of the Infiniti M sedan. In Japan, Nissan plans to sell 690, 000 units in fiscal 2012, which will be increase of 5. % from fiscal 2011. Fifth generation Cima was launched in April. In China, Nissan will get 1, 350, 000 units sales, 8. 3% sales volume growth in fiscal 2012. In addition to all-new Sylphy and our new Chinese local brand model, Venucia D50 were launched. Another Venucia model will be launched. In North America, Nissan assume 1, 520, 000 units sales, 8. 3% growth of sales volume from prior year. In Europe, Nissan will plan 1. 0% sales volume growth with 720, 000 units sales. Nissan plan to grow up significantly in other regions. 29. 6% growth, 1, 070, 000 units sales is planned in other regions.