

## Quality



The rating of a car and the value of an auto manufacturer's brand come entirely from the customer's appraisal of quality. For Nissan, quality is a multifaceted concept encompassing every single aspect related to Nissan customers and their vehicles. The "Enhancing Quality" program is one of our strategies in pursuing the goals of Nissan Power 88, our mid-term business plan. Through our efforts in this area we aim to achieve higher quality that inspires lasting trust among our customers, leading them to choose a Nissan and make it part of their lives for a long time.

### Pillars of Activity

#### 1. Product Quality

Product quality is the fundamental quality that allows our customers to enjoy years of safe, comfortable driving. We believe it is the customers who judge product quality. We have set the goal of reaching the top level in the quality indices used by third-party organizations that most influence customers in the marketplace.

#### 2. Perceived Quality

Perceived quality is the quality that customers feel when seeing, touching and using a vehicle. Nissan carefully analyzes and quantifies what makes people perceive something they handle to be good or attractive, seeking ways to improve quality as it is taken in by all the senses.

#### 3. Sales and Service Quality

Sales and service quality means giving our customers the sort of care that exceeds their expectations when they purchase a car or bring it in for servicing, thereby enhancing the Nissan brand. We aim to achieve top-level customer satisfaction in Japan, the United States, Europe and nine other key markets around the world.

#### 4. Quality of Management

Quality of management lets staff approach their work with a full understanding of company policy and confidence in it. We aim to improve our management quality by strengthening communication between management and employees to foster a sense of solidarity among all of Nissan's people.

### Nissan's Approach to Quality

#### Comprehensive Improvement Through "Enhancing Quality"

There are many aspects to the single word "quality." We consider anything involving our vehicles to be connected with this concept, from the condition of a vehicle and the customer's impression of the showroom salespeople's service to even the creation of a working environment in which every single Nissan employee can find fulfillment.

In 2011 we announced our "Enhancing Quality" program, spelling out clear quality-related goals for Nissan and methods to achieve them by 2016. The end target is to achieve the top level in the area of quality from the customers' perspective. There are certain third-party quality indices on which customers around the world place considerable weight, and our aim is to win top-level rankings in these objective benchmarks. In our aim to become the leader in overall quality, we will continue to inspire trust and ensure satisfaction in all situations involving Nissan customers and their vehicles.

Through this comprehensive approach to quality improvement, our goals are to raise the Nissan brand into the top group of global automakers in product quality and to elevate Infiniti to leadership status among luxury brands.

#### Pursuing Quality in All Phases

At Nissan, we strive to move and surprise our customers by pursuing our "Enhancing Quality" activities in two phases. The first is the development and production phase, where we aim to prevent reliability issues and customer dissatisfaction before they occur; the second is the market phase, where we take action with surprising speed to address issues and dissatisfaction that do arise. This two-phase concept lies at the heart of our *monozukuri*, or craftsmanship, in the area of quality.

### A Fair, Prompt Approach to Recalls

It is the primary responsibility of the manufacturer to make every effort to ensure that product incidents do not occur in the first place. Nonetheless, manufacturing cars is an extraordinarily complex process, and there are occasions in which an incident, or the possibility of one, can occur unexpectedly. Our approach is to make recalls transparent and to handle them fairly and promptly. The decision to make a recall is based on our compliance with relevant laws and our consideration of how the incident may affect the safety of our customers. When Nissan judges that a recall is necessary, it is carried out swiftly to ensure that top priority is given to customers' safety and to minimizing any disruption.

Our recall decision process has received high praise from the U.S. Department of Transportation as a model for the automotive industry, and has already been implemented at all of our operation sites worldwide.

## Promotion Structure

To realize our two-phase approach to quality issues, we have established the NMQF, or Nissan Monozukuri Quality Framework. The basic concept of the NMQF is the accumulation of technologies and human skills needed to improve quality, applying them in the product development and manufacturing stages as well as in enhancing the quality of vehicles already on the road. In this way we achieve real results.

In the NMQF we focus specifically on four processes:

1. Through continuous development of new technologies, we pursue quality enhancements on an ongoing basis. We also improve our human resources through quality-related technical training and the fostering of a quality mindset.
2. Through accumulated improvements to quality-related technologies we develop standards to be applied uniformly across our offerings as we expand our group of "quality experts" through systematic training programs.
3. During product development and manufacturing, we apply our accumulated technologies and skilled personnel to get an accurate picture of market needs; to ensure initial quality, quality over time and consistency in quality; and to keep serious reliability issues from recurring or prevent them in the first place. These approaches let us achieve our goal of preventing issues and customer dissatisfaction.
4. To improve market quality, we make appropriate use of the technologies and human resources we have built up over time to quickly gain an accurate grasp of the state of quality in the market; to respond swiftly to issues that crop up; and to feed this information back into our production line processes right away. This allows us to address the issues and dissatisfaction that arise with surprising speed.

## Product Quality

### Better Processes to Improve Quality

Nissan has defined "Enhancing Quality" as one of the areas of focus for Nissan Power 88, its mid-term business plan. Product quality is a key component of this area. Until now we have worked to reduce reliability issues in vehicles coming off of the line. Now we have launched additional efforts to considerably reduce customer dissatisfaction and durability issues arising over the entire vehicle life, as well as "quality image breaker" issues that impact people's perception of the cars.

We track our level of product quality with both internal and third-party indices. Among the external indices, we have identified 11 "most influential indicators" in eight national markets around the world, and we are aiming to achieve top-level scores in each of them. Since these external scores are only updated once per year, we have set up internal indices along similar lines. We update these more frequently to track our progress and make quicker improvements as needed.

### Reducing Customer Dissatisfaction

Dissatisfaction can arise from factors that are not mechanical problems: the customer might find the trunk difficult to shut or the navigation system too complicated to use, for instance, negatively affecting perception of the vehicle's quality. The J. D. Power and Associates Initial Quality Study released in June 2011 noted that the rear window wiper switch in many Nissan vehicles was hard to use due to differences between it and the switches in other manufacturers' vehicles. We responded to this by improving the instruction manual and giving a thorough explanation to purchasers of our vehicles; we are also considering a design-phase reworking of this switch's operation as another way to improve our products.

**Addressing Durability Issues**

Durability issues are those that arise from lengthy vehicle use as molded resin parts change color or deform, as surface materials are abraded, as chrome is stripped away and as material fatigue begins to lead to odd noises from the vehicle. Nissan obtains data on warranty service claims made two, three and four years after the initial sale and on problems that arise out of the warranty period. We analyze this data with a view to developing technologies that are more resistant to durability issues. We are aiming to reduce durability quality issues by at least 30% by fiscal 2016, compared to the fiscal 2010 level.

**Improving Parts Quality in Leading Competitive Countries**

Nissan’s efforts to improve product quality start with production processes within the Nissan Group and extend across the entire supply chain, including parts procurement. In 2007 we launched activities to improve defect rates in parts delivered from suppliers in the leading competitive countries of China, Thailand and Mexico to factories in Japan, North America and Europe. By providing quality management tools to match the capabilities of each supplier and giving development support to suppliers with particularly high risk levels, we were able to reduce the defect rate in Mexico-produced parts for American plants to one-twentieth its original level by fiscal 2010. For parts produced in Thailand and China for use in Japanese plants, the defect rate fell to just one-eight-hundredth of the 2007 level. We continue our efforts to tighten our cooperative linkages with suppliers in Japan and in other parts of the globe.

**Field Quality Centers**

Nissan established its Field Quality Centers (FOCs) with the goal of getting a better understanding of customer demands in each region of the world and providing prompt solutions to the quality issues arising there. There are now seven FOCs in operation in Japan, Europe, the United States (two locations), Brazil, China and India.

Taking into consideration our “three gen” principle, namely *genba* (on-site activities), *genbutsu* (real parts) and *genjitsu* (facts), we try to collect as many of the problem parts and vehicles as possible at these centers. We then bring everyone together—our suppliers along with our design and production divisions—to pinpoint the cause of the problems and decide appropriate measures to be employed as quickly as possible.

We use the information gathered in the future production of vehicles, making every effort to prevent a recurrence of reliability issues or incidents.

**Quick Rollouts of New Vehicle Production Structure**

Nissan introduced 4G Strategies to provide consistent, high-quality products to customers around the world. We have been able to quickly build an optimum production structure for new models at each of our plants worldwide according to these 4G Strategies.

**Nissan’s 4G Strategies (Japan)**

<p><b>Global Production Engineering Center (GPEC)</b></p>	<p>The GPEC develops optimized production processes through focused trials and analysis of new vehicles. In addition to dramatically improving quality in the vehicle production preparation stage, it strives to establish quality consistency globally by spreading high quality standards to manufacturing plants in and outside Japan.</p>
<p><b>Global Training Centers (GTCs)</b></p>	<p>Manufacturing quality and productivity depend greatly on the skills of individual workers. To raise these skills to a competitive level in Nissan’s plants worldwide, the GTCs carry out training through classroom lectures and skills training activities based on the Nissan Production Way. Graduates of the Master Trainer programs take part in training programs for local staff in regional training centers, effectively passing their skills on to others.</p>
<p><b>Global Packaging Design Center (GPDC)</b></p>	<p>The GPDC functions as a training center for developing logistics specialists to work at our manufacturing bases. Training includes parts packaging design, packaging testing and evaluation methods, CAD and optimum logistics cost management to maintain high quality.</p>
<p><b>Global Launching Experts (GLEs)</b></p>	<p>GLEs provide support in resolving issues related to <i>monozukuri</i> (production) that arise in the new vehicle launch phase. We are meeting our QCT (quality, cost, time) targets for each new vehicle launch thanks to the evaluations and advice from GLE core members and the support of GLE registered members.</p>

**Most Influential Indicator (MII) Survey 2011 Results**

Country	Survey	Results
USA	<i>Consumer Reports</i>	Top reliability rating for Infiniti QX, Nissan Titan.
		"Recommended" rating for 6 Infiniti, 9 Nissan models.
		"Top Picks" selections for Nissan Altima (family sedan div.), Infiniti G37 (sport sedan div.).
	J.D. Power Initial Quality Study (IQS)	Infiniti placed 8/14; Nissan placed 13/13 overall. Nissan Frontier in 2nd place; Infiniti FX tied for 3rd; Nissan Maxima in 3rd.
	J.D. Power Automotive Performance, Execution and Layout (APEAL)	Nissan models: Armada placed 1st, Frontier 2nd, Maxima 3rd.
Japan	J.D. Power IQS	Nissan models: Serena placed 2nd, Tiida tied for 2nd.
	J.D. Power APEAL	Nissan models: Juke placed 1st, Elgrand 2nd, Cube 3rd, X-TRAIL 3rd.
China	J.D. Power IQS	Nissan models: Tiida tied for 1st, Sylphy 3rd, Teana tied for 3rd.
	J.D. Power Vehicle Dependability Study	Nissan models: Livina placed 1st, Teana tied for 1st, Qashqai 2nd, Tiida 3rd.
India	J.D. Power APEAL	Nissan Micra placed 1st.
Indonesia	J.D. Power IQS	Nissan models: X-TRAIL placed 1st, Grand Livina 3rd.
Malaysia	J.D. Power IQS	Nissan models: Sylphy placed 1st, Grand Livina 3rd.
Thailand	J.D. Power APEAL	Nissan models: Frontier Navara Calibre placed 1st (pickup double cab segment), Tiida tied for 1st, Frontier Navara Calibre 3rd (pickup extended cab segment).
	Thailand Automotive Quality Award	Nissan March took 1st prize.
South Africa	Synovate Product Satisfaction Index	Nissan models: NP200 Pickup (U90) placed 2nd, NP300 (LD22) 2nd, Navara 2nd.
Germany	ADAC	Nissan models: Qashqai and Note "very reliable" 3 years running; Micra "reliable" or "very reliable" for 3 years.
	J.D. Power Vehicle Ownership Satisfaction Study (VOSS)	Nissan ranked 16/28.
UK	<i>What Car?</i>	Nissan models: Note ranked "good," Qashqai and Micra "average."
Italy	<i>Quattroruote</i>	Nissan Qashqai ranked 1st.
France	J.D. Power VOSS	Nissan ranked 7/24 manufacturers.

**Perceived Quality**

**Better Understanding of Customer Perceptions**

Another pillar of our quality improvement approach is "perceived quality." This is the quality that customers feel when seeing, touching and using a vehicle. For example, when customers come to the showroom they open the vehicle doors, sit in the seats and check things like the texture of interior fittings. Nissan carries out thorough analysis of why customers perceive certain things as good as part of its efforts to improve quality as it appeals to all five senses. We set clear targets and methods for achieving higher levels of quality so that customers will sense an attractiveness in Nissan vehicles that cannot be found in other brands.

**Deeper Understanding of Customer Feelings**

The feeling of quality is a subjective matter, and fixing quantified criteria calls for very careful investigation. To date Nissan has evaluated cars using the opinions of numerous in-house product monitors and specialists with in-house training and has surveyed customers who have purchased or are considering purchasing a Nissan car in order to fix criteria for quality evaluation from the customer's point of view. We have now begun carrying out actions that reflect our understanding of customers' feelings from the stage of new model development. We are also expanding the geographic range of our surveys to deepen our knowledge of people's emotional approach to vehicles in each global market.

**More Accurate Predictions of Social and Technological Trends**

Customer sensibilities and social trends change rapidly from day to day. Cutting-edge technologies are constantly in development and customer needs for these technologies are a moving target. We are working to improve our ability to foresee future social and technological trends in markets around the world, addressing the rapid change seen in the markets and feeding what we have learned into our vehicles, giving them attractiveness not seen in our competitors' products.

### Toward Truly High Quality

The true quality of a car cannot be experienced just through a visit to a showroom. There are aspects to quality that can only be perceived when viewing the vehicle from a bit farther away or after the car has been driven for some time. In creating our cars we give thought to the finer details that are not so readily apparent. This is part of our effort to deliver truly high quality to our customers.

#### Scientific Measurement of Human Comfort

In order to increase perceived quality, it is necessary to objectively understand the feelings customers experience when they look at, touch and use a vehicle. Nissan employs scientific methods to measure and analyze human perception and quantifies feelings of comfort to help create optimal designs.

For the sense of touch, for example, we analyzed the feel of various objects such as clothing, furniture and traditional handicrafts. We found that softness close to that of a finger pad feels best when pushing, and a surface texture with roughness similar to a fingerprint's ridges feels best when stroking. We are now using a new material in the armrest of the Nissan Fuga that has the softness of a finger pad and a surface texture similar to a fingerprint.

Further, the human finger has "moisture sensors" in the valleys of the fingerprint ridges. These trigger a sensation of soft, pleasant moisture when the ridge valleys are stimulated, despite the absence of wetness. Softness, meanwhile, is felt more easily when the finger comes into contact with multiple ridges at the same time. We use a premium textured material called "soft-feel grain" in the interior door handles of the Fuga. We have also applied our findings on human touch perception of moisture and softness to improve the feel of the hard plastic materials used in the vehicle interior.

### Sales and Service Quality

#### Enhancing the Nissan Brand

Nissan comes into contact with customers on many occasions: when they purchase a vehicle, of course, but also when they bring it in for servicing, when they finish paying off the loan and when we send them information on special sales campaigns, new models and test-drive opportunities. As a means of enhancing the Nissan brand, we pursue "sales and service quality" by going beyond customer expectations in all of these areas. Through effective management of our sales and service quality at sales companies in major national markets around the world, we enhance our connections with customers, improve customer satisfaction, earn stronger support for Nissan and strengthen our brand. Our aim is to achieve top-level customer satisfaction in Japan, the United States, Europe and nine other key national markets.

We are currently working on four key initiatives aimed at boosting our sales and service quality: improving the knowledge and skills of our sales and technical staff at sales outlets; enhancing the quality of the service that we provide to all our customers; strengthening Nissan management systems to support the quality activities of dealerships and showrooms; and fostering a customer-oriented mindset among Nissan employees. These four initiatives will be pivotal to our continuous and consistent activities to maximize customer satisfaction.

#### Improved Knowledge and Techniques

In the area of sales quality, an important factor is the improvement salespeople show in their knowledge of the vehicles and their sales techniques. We carry out education on the new models we bring to market for trainers from our sales companies on a global basis. Future plans include joint development of training materials by participants from many of our major markets; these materials will be distributed in other markets to improve the level of our training worldwide.

For service quality, meanwhile, the key goal is to provide high-quality repair and maintenance work that only takes one visit, is soundly performed and does not require the customer to wait too long. We are working on a global basis to enhance service quality by training our people, providing accurate technical information, delivering parts promptly, improving shop tools and designing cars to be more serviceable.

#### Better Customer Care

In our sales outlets all over the world, we pay constant, close attention to the views of our customers. In all our dealings with them—from when they first visit a dealership and receive explanations of our vehicles to when they purchase a car and bring it in for service—we seek to improve the quality of our customer care.

### Enhanced Global Management

As the network of a corporate group expands on a global scale, it can grow difficult to properly manage sales and service quality, leading to a decline in customer service. At Nissan, we focus our efforts on sharing the ideal form of this quality with our people around the world, evaluating whether business locations in each region are meeting their goals in this area and encouraging them to adopt best practices from other regions. The end goal is to strengthen our management systems. In China, for instance, we use benchmarks based on our activities in Japan, adapting the activities for implementation in the Chinese market.

### Maintaining Focus on the Customer

To provide full satisfaction to all customers, it is vital to foster a customer-service mindset in each and every one of our employees. We carry out a full range of activities aimed at deepening Nissan employees' understanding of quality issues and developing this mindset within them.

### The Nissan Sales and Service Way

Nissan has established the Nissan Sales and Service Way (NSSW) as a set of global guidelines helping dealers to better respond to the individual needs of customers, seeing things through their eyes to provide professional, high-value service. We conduct various activities to increase customer satisfaction and to improve our sales and service quality based on these guidelines. These activities include dealer training to improve product-related knowledge, service skills and customer care, as well as the provision of guidance to improve dealership operations in response to customer satisfaction surveys. We are also developing personnel and systems to put these improvements into place and enhance the customer focus of our job process, with care given to the voices of customers collected through our call centers and other means.

Nissan carries out these initiatives globally while keeping in mind differences in cultural conditions and customs across countries and regions. In this way we seek to provide the best customer service during the purchase and ownership experiences, as well as in other areas.

### Service and Support for Customers, Dealers

Nissan has opened its National Customer Service Center (NCSC) in Japan to make qualitative improvements to the service support it offers to customers and dealerships. The NCSC consolidates our customer support hotline, dealership vehicle repair support and service technical support functions, which were previously spread over different parts of the country. The NCSC carries out tasks including providing expertise for maintenance and repair services, giving support to dealers for repairs, carrying out training in sheet-metal coating, collecting market data on incidents and acting as a center for customer inquiries. Initiatives adopted by the NCSC include collaboration with service technical support teams, digitization of product information including catalogs and the introduction of a new call-handling system. Benefits include the provision of highly precise technical data and reduced waiting times for customers with telephone inquiries, resulting in an overall improvement in the quality of our response to customer inquiries.

In conjunction with the launch of Nissan LEAF, we introduced a support system for dealers worldwide. Utilizing information technology to exchange image and voice data, as well as data from diagnostic devices, the system links dealers with Nissan's development division to enable prompt, accurate remote servicing.

### Improved Service Capabilities

Nissan is making efforts to improve the technical capabilities, including basic diagnostic and repair skills, as well as the customer service skills of its after-care service staff. These skills are put to the test in the All-Nissan Service Technical Contest. The event, hosted with assistance from throughout the Nissan Group, focuses on employees working in dealership service departments.

The competition has four categories in total: Technical Staff (less than 10 years' experience) and New Technical Staff (2–3 years' experience) for those involved in diagnostic and servicing work, and Technical Advisor and Female Technical Advisor for those involved in frontline service activities. Teams and individual participants who take top honors at the nine regional competitions go on to compete at the national competition. The event brings together service staff with exceptional knowledge and experience from all around the country, giving them a chance to put their day-to-day practices to the test against those of their fellow colleagues. Such events help to increase both the technical skills and motivation of employees in service departments, thus strengthening the service structure of the Nissan Group as a whole.

**Quality of Management**

**Support from the Top**

Quality of management lets staff approach their work with a full understanding of company policy and with confidence in it. This employee understanding will help foster a sense of solidarity between them and management, leading to corporate growth. We are actively encouraging the understanding of Nissan strategies through direct communication, with initiatives that include opinion exchange sessions bringing the CEO or COO together with employees. (See p. 63.)

**Providing Truly Nissan Value**

**A Focus on Cabin Climate**

As part of our “Life on Board” concept, which guides the process of designing cars around the people who will use them, we focus in particular on efforts to make vehicle interiors more comfortable. This means creating cockpits providing an easier driving experience, comfortable cabin spaces and luxurious interior fittings. We seek to provide a new sense of value and new experiences from the time a person enters the car until he or she gets out.

For example, our “Comfortable Seat with Spinal Support” is designed for a fatigue-free sitting experience. Through considerable research and analysis on both the human body and automobiles, we achieved a design that supports the rider in an ideal position of comfort even during a lengthy drive. Our “micro-grain” technology for vehicle interiors, meanwhile, produces a high-quality texture on plastic surfaces and allows the wide dispersion of light to avoid unwanted glare. Finally, we have developed a vitamin C filter based on our “Health and Well-Being” concept. This filter supplies moisture to the skin during air conditioner operation.

*Area Leaders' Messages*

**Moving and Surprising Our Customers**

**Haruyuki Konno**  
 General Manager  
 Planning Group  
 Total Customer Satisfaction Function



In our program of “Enhancing Quality,” one of our strategies for achieving the Nissan Power 88 goals, we are taking steps to earn top-level ratings in the quality indices that customers all around the world focus on most. The results of our efforts to date are increasingly clear, with many of our cars earning high marks in Europe, China and other regional markets. We have also seen a more than 50% drop in initial quality issues in our vehicles.

Our customers will be together with our cars for a long time, and we want them to enjoy a car life free from defects or dissatisfaction. To this end we will continue to improve our quality—not just in our products but in the service we provide as well.