

Going Along the Road of Quality Power: China's Choice

Quality is a way to prosperity and power of a nation. Faced with the economic globalization, quality represents the degree to which material and cultural achievements meet the demands, such as domestic products, services and construction; an overall reflection of the level of national productive force development and international competitiveness; an important criteria to judge whether or not the country is strong; a concentrated expression of the national quality. Quality is not only the revelation of the national "hard power", integrating technology level, innovation capability, resource allocation, management conditions, quality of employees and other factors. On the other hand quality is the embodiment of the national "soft power", with the comprehensive reflection of such factors as legal environment, culture and education, value idea, credit construction. Quality can't be improved without the development of technology, talents and culture. Likewise enhancing quality provides a higher standard and better prospects for the development of technology, talents and culture. It can be found, throughout the development course of developed countries, quality has played an irreplaceable role with regard to strengthening the international position of respective countries and consolidating international competitive advantage in different historical periods.

The Chinese people and government have attached great importance to quality development, treating quality as an important factor for successful development. What's more, the recently issued programmatic document ——"Made in China 2025", regards the "quality first" as the basic principle, putting forward "Adhere to quality as the lifeline of building manufacturing power; intensify the enterprise quality entity responsibility; make stronger the tackling of quality technology and independent brand

development; build regulations and standards system, quality supervision system and advanced culture of quality; create a market environment of honest operation; walk on the road of quality orientation. " Now I will focus on this theme, together with the main issue in "Made in China 2025", centering on three aspects in my report: (1) Achievements and challenges of China quality; (2) Strategic goals and tasks of quality development in China quality; and (3) Opportunities and accomplishments of the quality organization.

1. Achievements and challenges of China quality

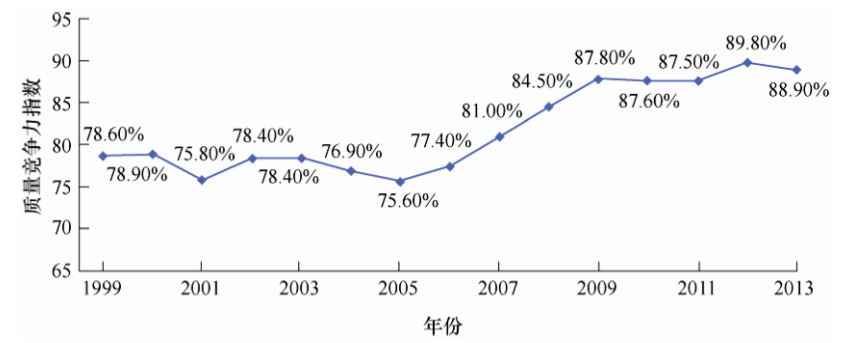
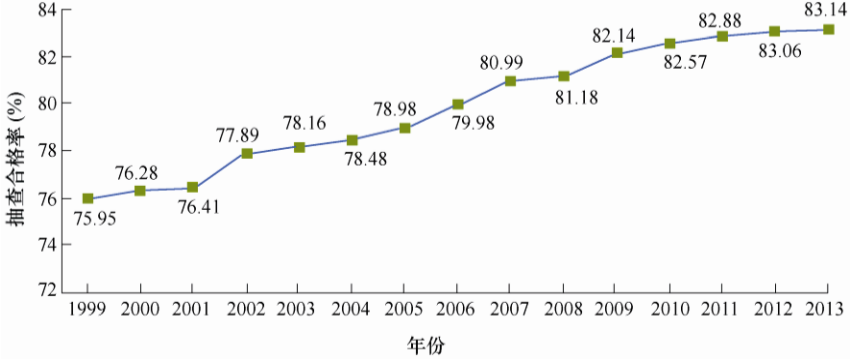
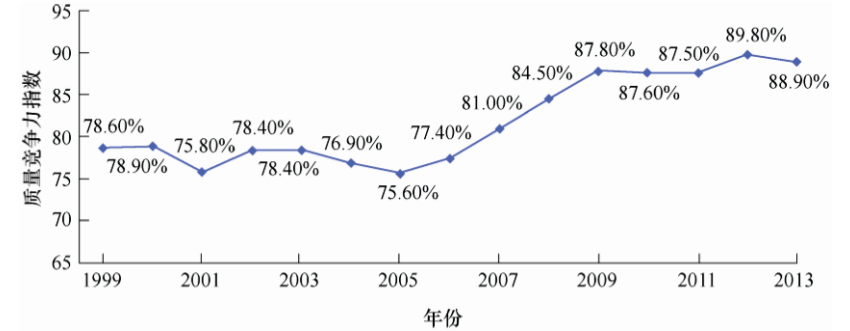
(1) Steady improvement in the overall level of quality

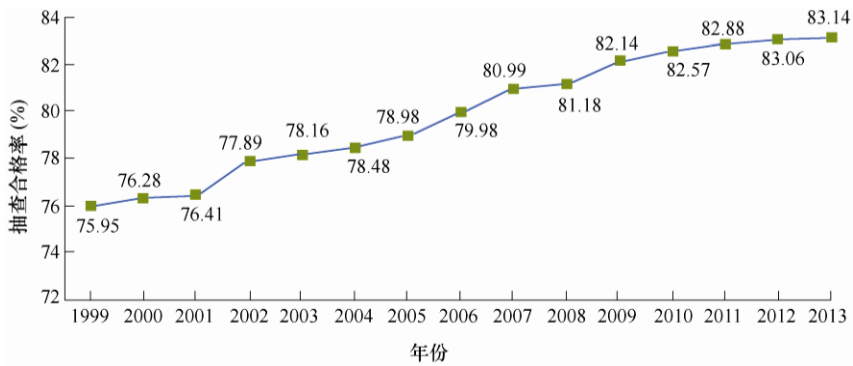
China's economy has been maintaining rapid growth for 30 years or more, becoming the second highest in the world as far as the total economic volume is concerned plus No.1 place in its total import and export. Nowadays "Made in China" is covering the global market thanks to the contribution of quality development.

More importantly, when entertering the new century, China's quality level of manufacturing sector has continually been enhanced, with the overall quality increase in main industries and enterprise management level has relatively been greatly upgraded; the key indicators of China's manufacturing quality continually have been improved, producing a number of manufacturing enterprises bearing with strong quality competitiveness and ability to lead industry development.

According to official statistics, China's manufacturing quality competitiveness index increased from 75.95 in 1999 to 83.14 in 2013 (See Figure 1), and the qualified rate of the test check in product quality supervision improved from 78.6% in 1999 to 92.3% in 2014 (See Figure 2). In addition, the quality of partial major equipment, consumption and high-tech products has reached or come closer to the level of developed

countries. Customer Satisfaction Index (CSI) to the producer services in service industry has also continually been rising.





2. Quality development faces more challenges

Despite of the gradual development in overall level quality in China, the improvement of the quality level is lagging behind the growth of scale, not being able to fully meet the increasing fierce international competition. These are shown in the following aspects.

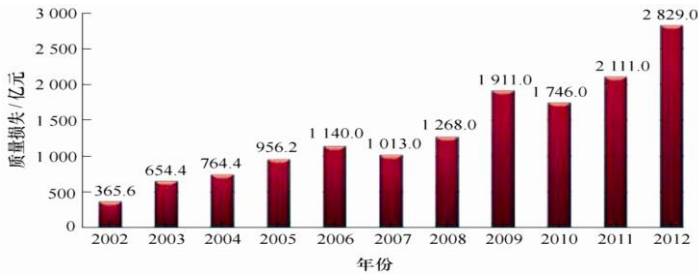
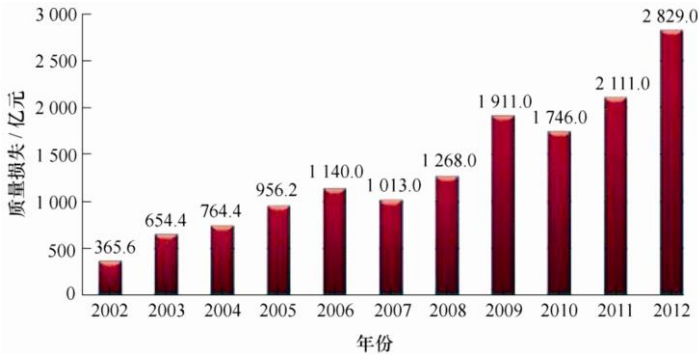
(1) Low Quality Level

Product failure rate is lingering at a high level. In recent years, although disqualified rate of the test check by state product quality supervision is declining year by year, however, defective rate of some products is still lingering at high level. For example, failure rate of power transformer is more than 21% and that of the ceramic seal faucets at above 22 %

Low reliability of key components. Take basic components of machine for example, most of the products of the key basic parts, components and raw materials are subject to imported equipment in the key equipment field due to the instability of inherent quality, low accuracy maintenance and low reliability, thus leading to "empty shell" in industry. e.g. more than 80% high-power-and-speed machine in the internal combustion engine, up to 60% high-power valve and reactor in petrochemical machinery, more than 70% of high-end features parts which NC machine tools need are subject to importing from overseas.

Loss of manufacturing quality is at a high resistant level. It appears that there is a rapid upward trend on direct losses of manufacturing quality

and a year-by-year rising trend on quality loss of industrial products, reaching 2,829 billion RMB in 2012 (See Figure 3), while indirect losses are difficult to estimate. Furthermore there is also a low first-time qualification rate of manufactured products, e.g. the once qualified rate of large forgings is only 70% in contrast to Japan and France with nearly 100%.



(2) Weak Quality Foundation

There is so far no overall planning and investment with regard to national quality basic construction, nor is any joint development of institutional mechanisms, thus leading to inefficiency of quality improvement support. Overall standard level is low. Having a big gap compared with foreign advanced standards, there exist problems in China's technical standards, such as lack of technical standards, criss-cross repetition, aging and lagging behind others. Under such circumstances foreign companies often

take the chance to lunch products with backward technology to China while domestic products exported to international markets often suffer technical trade barriers, subject to anti-dumping and other unfair treatments. Without suitable standard-setting mechanisms and sufficient research capacity, China now has no choice but to observe less than 0.5% of the total International Standards (ISO, IEC, ITU) currently.

Metrology support capability is inadequate. Compared with other countries, gaps exist in sustained research capabilities for the new generation of national measurement standards. Therefore, in some key areas, particularly those in support of strategic emerging industry development, the level of critical measurement standards is not high, nor the testing technology or the weak quantity-transfer traceability ability. So it is urgent that the technology innovation capacity be improved.

Basic guarantee function of certification and accreditation is not strong. Compared with developed countries, the certification coverage rate of the industrial enterprises above designated scale is still at a low level with low social awareness of certification and accreditation. What's more services are respectively monotonous, which fails to satisfy the diverse needs of manufacturing industry. Technical innovation regarding inspection and testing certification is not adherent enough to manufacturing technology innovation, thus failing to achieve synchronous development. Worse still, with imperfect manufacturing collaboration and innovation mechanism, the innovation-driven actions has not been fully realized, causing a low international mutual recognition rate of inspection and testing results.

Quality professional and technical personnel fail to satisfy demands. By the end of 2013, compared with developed countries, there existed big gaps, i.e. only 1.6 per 10,000 employers are entitled to be qualified for quality engineers in China. Meanwhile, China is lack of high overall skill

level of industrial workers, perfect vocational and technical training system as well as talents reserve and adequate personnel training on key stations, thus exacerbating the volatility of the product quality.

(3) Weak Quality Competitiveness

Lacking world-famous brands. Chinese products are in the state of embarrassing situation , being characteristic of "OEM power, small brands". On the whole China is still at the mid-to-low-range of the global industrial value chain, with low value added products. There were 100 Chinese enterprises entering 2014 Fortune top 500 enterprises, however, only one Chinese enterprise was selected into Interbrand Brands 100 Rankings. Therefore, consistency and reliability of Chinese products are not widely recognized internationally.

For many years, the number of notifications and recalls in international trade has ranked first in the world. In 2013, 41,140 batches of exported industrial products, worth \$ 2.426 billion, were forced to return China, in which the quality problem batches returned accounted for 53.9%.

3 Strategic Goals and Tasks of Quality Development in China

China's manufacturing industry is big but not strong, and one of the main phenomenon lies in low quality. Chinese government holds consistent recognition that it is an inevitable strategic choice as well as an important and urgent task for China's sustainable development to enhance the quality and strengthen the competitiveness.

(1) Strategic goals of quality development in China

According to the deployment of "Made in China 2025", quality development in China will be phased to achieve the following strategic goals.

By 2025, the new competitive advantages in manufacturing quality will have been initially formed with technology, standards, brands and

services as a core; with quality technology management and control models continuing to be innovated; with basic support capabilities on quality and technology significantly enhanced, and with the quality of the industrial structure more highlighted so as to push the overall level of product quality to a new step. The overall manufacturing quality will have basically entered the ranks of the world's manufacturing power.

- Product quality standards in major manufacturing industry and strategic emerging industries will have approached to or reached the advanced international level; consumption products quality concerning safety and health will comprehensively achieve the requirements on laws, regulations and mandatory standards.
- Industrial structure will have been further optimized, significantly expanding the scale and proportion of quality-sensitive industry; upgrade the quality of inter-industry; improve the quality level in the whole industry chain and achieve quality upgrading in the industry.
- Clusters of world first-class level quality manufacturing companies and industrial will have been formed so as to form its own internationally competitive brands.

By 2050, the overall quality level of China's manufacturing will have entered into the forefront of the world, with the outstanding quality competitiveness, and with significant quality efficiency, making the emergence of a large number of world-class companies and international brands with leading quality and first-class management.

(2) Strategic tasks of quality development in China quality

To achieve these goals above mentioned, "Made in China 2025" has put forward focusing on the implementation of the following strategic tasks.

- Promote advanced quality management techniques and methods. Construct the platform for recognizing standard compliance of key products; promote technical and safety standards of key products to

achieve a comprehensive international advanced level. Quality benchmarks and leading-companies demonstration activities should be carried out, popularizing those advanced production management models and methods, such as high performance, Six Sigma, lean manufacturing, quality diagnostics, quality continuous-improvement. Support enterprises to improve the quality of on-line monitoring, online control and product lifecycle quality traceability. Organize optimization actions in key industries to improve control level of critical industrial process. Carry out mass demonstration of quality management activities like quality management team and site improvements. Strengthen quality management of small and medium-sized enterprises (SMEs) and launch training, diagnosis and counseling activities of quality and safety.

- Speed up the upgrading of product quality. Implement the action plan to improve the quality of industrial products, in which the key common technologies that affect product quality improvements in a long term, should be organized to overcome, regarding the automotive, high-end CNC machine tools, rail transportation equipment, large complete sets of technology equipment, engineering machinery, special equipment, the key raw materials, basic components, electronic components; enhance development and application of the reliability design, testing and verification technology; promote the adoption of advanced molding and processing methods, on-line detection devices, intelligent production and logistics systems and testing equipment, so that such indicators of the key physical products can reach the internationally advanced level of similar products, such as the performance stability, quality reliability, environmental adaptability and life. The fields regarding food, medicine, baby supplies and household appliances, quality

management, quality self-declaration and quality traceability system covering the product life cycle, should be implemented to guarantee the quality and safety of the key consumption goods. Greatly improve the quality reliability of defense equipment, and heighten combat capability of defense equipment.

- Improve the quality control system. Perfect the product quality standard system, policy planning system and quality management laws and regulations. Enhance the industry access and market exit management regarding such key areas as livelihood and security. Set up mandatory reporting system for accidents on consumption goods in production and operation of enterprises; improve system of collection and dissemination of the quality credit information; intensify the enterprise quality entity responsibility. Consider the illegal record on quality as an important part of corporate integrity rating; build system of quality blacklist; increase efforts to combat and punish illegal and counterfeit brand of quality behavior. Establish a regional-industry early warning system of quality and safety; prevent and resolve safety risks of product quality. Strictly implement such systems as the "three guarantees", product recalls. Make stronger regulatory inspection and accountability, in order to protect the interests of consumers effectively.
- Reinforce the quality development foundation. Develop and implement such standards as manufacturing quality, safety, health, environmental protection and energy saving , which match international advanced level. Strengthen base of measurement technology and research on cutting-edge technology; establish a number of high-accuracy and high-stability measurement standards, which are urgently needed in the development of manufacturing

industry; enhance national quantity-transfer traceability ability related to manufacturing. Strengthen construction of national industry metrology center; build new system of national measurement technological innovation; improve guarantee system of inspection and testing technology ; construct a number of high-level laboratories for quality control of industrial products and technology evaluation and centers for product quality inspection and supervision; encourage the establishment of professional technology-testing alliances. Refine management of certification and accreditation; improve the effectiveness of compulsory product certification; promote the healthy development of voluntary product certification; enhance the level of management system certification; steadily promote international mutual recognition. Support industry associations to release self-regulatory norms or conventions and carry out activities of the quality credibility commitment.

- Promote brand building. Guide enterprises to develop brand management system; focus on the entire process involving research and innovation, manufacturing, quality management and marketing services; enhance inherent quality so as to reinforce the brand development foundation. Support a number of professional service organizations for brand development and operation, which are responsible for carrying out such services as brand management consulting and marketing etc. Perfect registration management system of collective mark and certification mark. Create a group of cluster industrial regional brands with distinctive features, strong competitiveness and good reputation in market. Build brand culture; lead enterprises to improve brand awareness with quality and credibility as a core; establish concept of brand consumption, thus enhancing value added brand and soft power. Accelerate China's

internationalization process on the brand value evaluation; bring into full play the role of various media; increase China's brand promotion efforts so as to set up a good image

(3) Opportunities and accomplishments of the quality organization

“Made in China 2025” has drawn up a magnificent blueprint for the development of China's economy, especially the manufacturing sector. To achieve this plan requires all forces in which the quality organization and international cooperation is indispensable

At Quality Conference in China(Beijing), held in September 2014, the Chinese Premier Li Keqiang indicated:“ In terms of quality there is no border , and there is no limit for quality improvement. China, as the country of responsibility, for internal policy on the one hand, will vigorously implement the strategy through the improvement of quality to enhance the comprehensive national power ; strengthen the level of quality development, for external on the other hand ; implement a more proactive strategy of opening up and tighten international cooperation.”

“Made in China 2025” clearly puts forward the roadmap: Continue to expand opening to the world; actively utilize global resources and markets; strengthen global industrial distribution and international exchanges and cooperation so as to form the new comparative advantages to enhance the level of opening up to manufacturing.

In the field of quality management, China will strive to develop various kinds of quality organizations; strengthen the construction of social intermediary organizations with respect to quality control, inspection and testing, measurement and calibration, conformity assessment, credit evaluation, etc. to promote the market process of the quality service.

China will also strengthen the monitoring and instruction to quality service market; encourage enterprise restructuring ; promote the building

of large scale, network and brand of quality service organization. Meanwhile, China will establish self-disciplined operation mechanism according to market law; further promote industry regulation development; bring into full play the pivot leading role of the intermediate organization in terms of quality development.

In terms of international exchanges and cooperation of the quality, China is determined to actively participate in and host the international conference of quality; exchange quality management and technological achievements; carry out pragmatic cooperation ect.

In close connection with the major industrial countries, regional economic development planning as well as the inspection techniques, standards compliance, China plans to establish the bilateral and multilateral cooperation in the quality consultation mechanisms; involve in the international and regional quality-related standards and rule-making with reference to the international practice. In addition China will encourage Chinese enterprises, research institutes, higher learning institutions, social groups to carry out international exchanges and cooperation in quality field and introduce foreign advanced quality management methods, techniques and high-end talent.

By the end of 2014, there were 105 cities which implemented the strategy to strengthen city with quality management in China, aiming at applying total quality management to urban operations; improve urban quality and people's living standards. According to incomplete statistics, there are more than 100 cities which have set up a "Mayor Quality Award" to reward enterprises and individuals who have contributed to quality work. China attaches great importance to the quality work, which will open "a new era of quality management," while the quality management organization will also invite a flourishing spring in quality management.

Shanghai, where I live, is China's largest city and is also China's

economic, financial, trade and shipping center. All circles in Shanghai believe that the quality management is the life of Shanghai as well as the cornerstone and engine of building Shanghai “Four centers. Therefore, Shanghai Quality Management Association is determined to actively display the functions of quality organization by doing good job in the four following aspects.

First, building a multi-level quality service platform for the purpose of promoting activities to help companies consolidate competition on quality basis. According to different levels and standards of business, the Quality Association will conduct various forms of membership activities to help enterprises establish a “quality first” management philosophy and master advanced quality management methods such as outstanding performance.

Second, carry out extensive quality training to send high-quality personnel for the construction of the Highlands. In the past five years, we have been training more than ten thousand quality personnel such as quality engineers, quality managers, Six Sigma Black Belt and Green Belt, system auditors, providing up to ten thousand leaders of corporate training, internal auditor, inspector and other basic quality technical personnel.

Third, do a good job in quality research and investigation. In recent years, we have undertaken hundreds of types of quality research projects commissioned by government and enterprises, taking a positive quality and in-depth exploration in the areas of macro-quality management, quality policies and regulations, the statistical analysis of quality, and business quality strategy etc. Meanwhile we carry out public social surveys at home and abroad based on the quality development and livelihood concerns annually, such as public perception about quality power, the awareness of foreign consumers to Chinese brand survey,

public service surveys etc..

Fourth, establish an international quality communication platform for international cooperation. On the one hand we actively” go out” , leading enterprises to actively participate in international quality conference and learn cutting-edge quality outcomes; on the other hand, we actively welcome foreign experts to explore the common concern issues of quality by means of Shanghai International Quality Symposium platform.

Fellow academicians and quality field leaders! China is in the process of a new round of reform and opening up in an aim to the development of China’s more effective economy .Quality power becomes the strategic choice of China’s sustainable development. So we recognize the importance of quality and the need to invite globe quality experts to guide and help us more than ever. For the incoming month, from November 9th to 11th, we will host the 10th Shanghai International Quality Symposium of the 21th APQO International Conference. In this pleasant autumn season, Shanghai will welcome the arrival of distinguished academicians. We believe that under the guidance and assistance of the academicians, the quality road in China will be more widened and comprehensive upgrade of China’s quality will create common prosperous quality era.

Thank you!