



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35.



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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.

DEPARTMENT OF AUTOMOBILE ENGINEERING

COURSE NAME : 19AUZ405 – LEAN MANUFACTURING

IV YEAR / VII SEMESTER

Topic – Six Sigma Implementation



Six Sigma Objectives

✓ Overall Business Improvement



Six Sigma methodology focuses on business improvement. Beyond reducing the number of defects present in any given number of products.

✓ Remedy Defects/Variability



Any business seeking improved numbers must reduce the number of defective products or services it produces. Defective products can harm customer satisfaction levels.



CASE STUDY 1 **SAMSUNG SDI**

Six Sigma was introduced into **Korea** in **1997**.

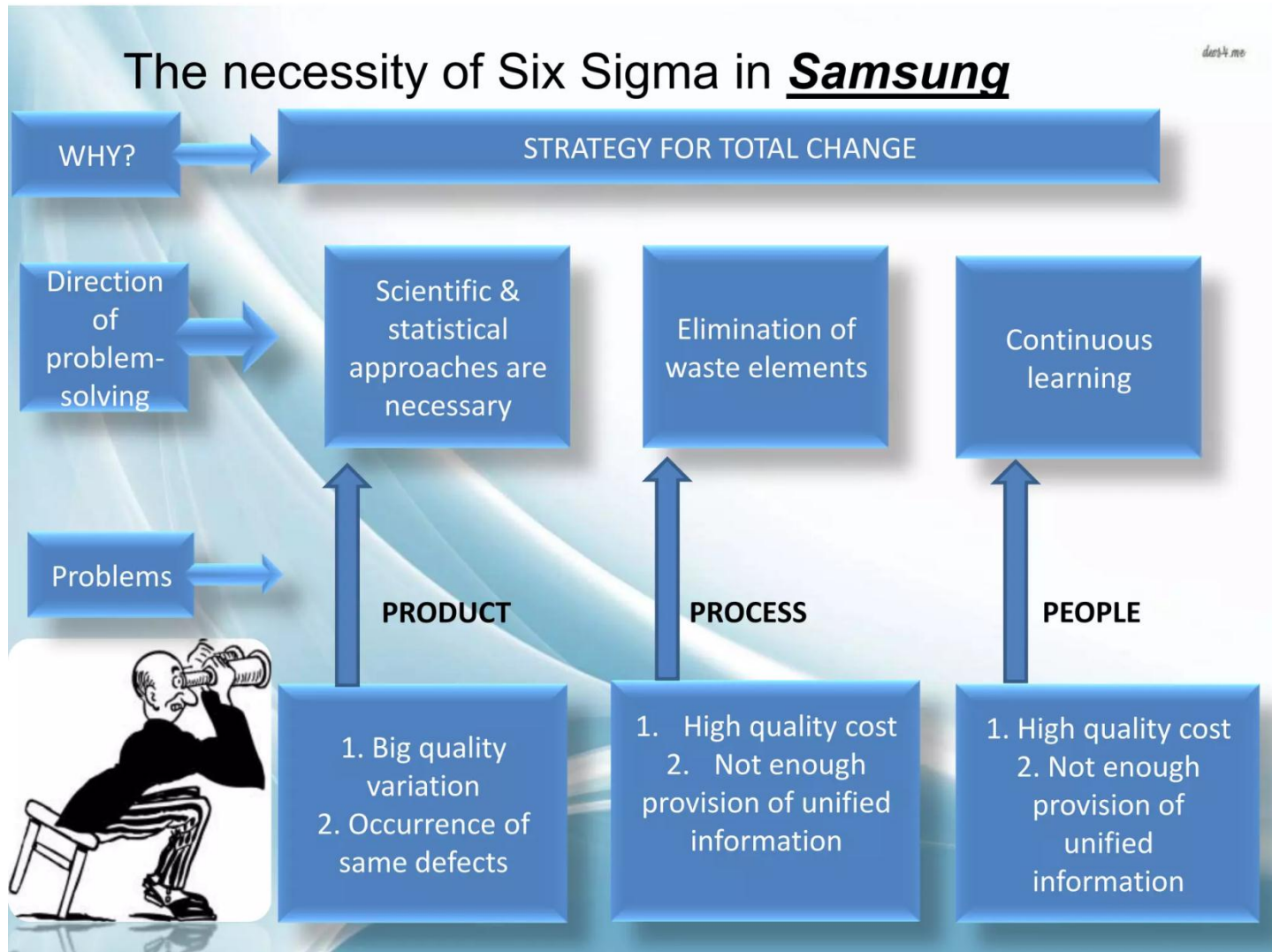
The First National Quality Prize of Six Sigma was given to two companies. One is **Samsung** and other is **LG electronics** ; which are virtually the leader of six sigma in Korea.

Samsung SDI was founded in **1970** as a producer of the black/white Braun tube.

It began to produce the color Braun tube from 1980, and now it is the number one company for braun tubes in the world. The market share of Braun tubes is 22%. The major products are CDT (color display tube), CPT (color picture tube), LCD (liquid crystal display), VFD (vacuum fluorescent display), C/F (color filter), li-ion battery and PDP (plasma display panel). The total sales volume is about \$4.4 billion and the total number of employees is about 18,000 including 8,000 domestic employees. It has six overseas subsidiaries in Mexico, China, Germany, Malaysia and Brazil.



The necessity of Six Sigma in Samsung





The problems were in the *large quality variations* in many products, repeated occurrences of the same defects, high quality costs (in particular, high failure costs), insufficient unified information for quality and productivity, manufacturing-oriented small group activities, and infrequent use of advanced scientific methods.



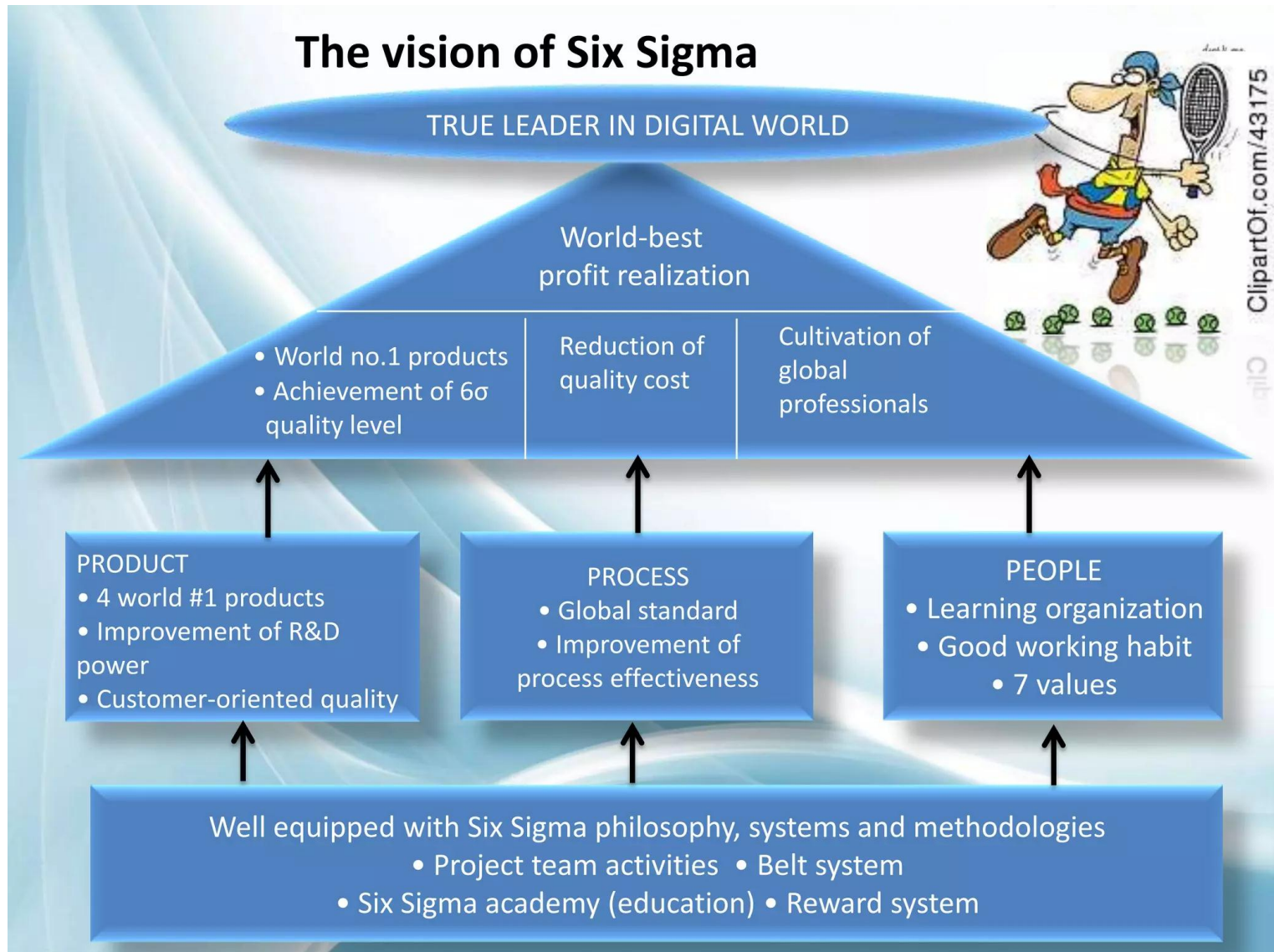
The company concluded that the directions for solving these problems lay in scientific and statistical approaches for product quality, elimination of waste elements for process innovation, and continuous learning system for people. These directions in turn demanded a firm strategy for a complete overhaul, involving a new paradigm shift to Six Sigma.

Samsung SDI made a contract with SBTI (Six Sigma Break-through Inc.) for Six Sigma consultation in 1999. It was a one-year, **\$3.4 million** contract in which SBTI was supposed to help the company in every aspect of Six Sigma.





The vision of Six Sigma





CASE STUDY 2

Six sigma in *Digital Appliance Company* of

LG Electronics



The Digital Appliance company of LG Electronics is another company which received the first national Six Sigma quality prize in 2000. LGE was founded in 1958 under the name of Gold star, and later became LGE in 1995. LGE consists of three companies:

Digital Appliance, Digital Media, and Digital Multimedia.

LGE-DA received the first national Six Sigma quality award. The major products of LGE-DA are air conditioners, washing machines, vacuum cleaners, microwave ovens, air compressors, refrigerators and motors.

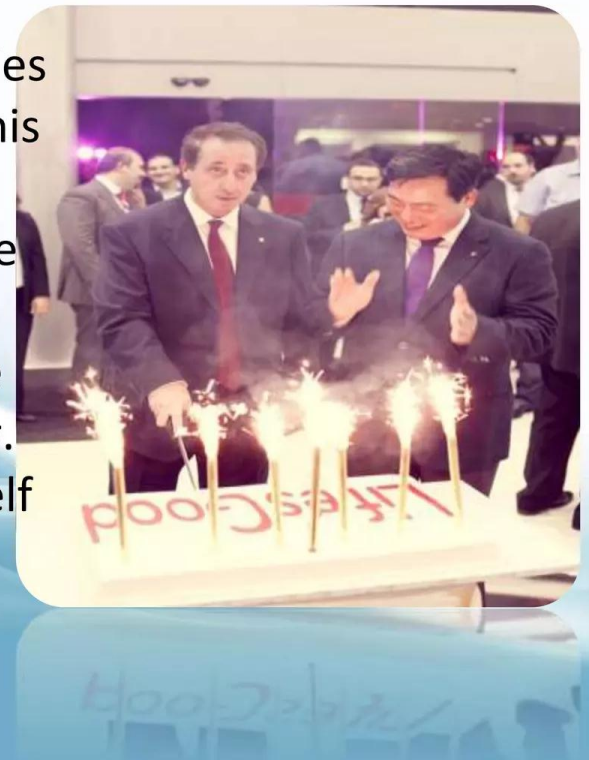
As of 2000, the company had **4,800** employees with total sales of **\$2.5 billion**. LGE now has **30** different overseas subsidiaries in China, Turkey, England, Mexico, Hungary, India, Vietnam, Indonesia, and other countries



In early 1990s, for business reasons the company concentrated on cooperation of capital and labor, since there were numerous labor strikes in the late 1980s. After they overcame the labor problems, the price reduction movement became the major business issue for competitiveness in the international market.

LGE-DA adopted the Six Sigma concept from 1996.

From 2000 Six Sigma and e-business strategies became the major innovation activities for this company. As far as quality management is concerned, the AQL was approximately at the 3σ level until 1991. Owing to the 100PPM movement since 1992, the company became successful in enhancing its quality level to 4σ . In 1996 it adopted Six Sigma, challenging itself to achieving the goal of 6σ quality level in a few years.





CASE STUDY 3

Catalent Pharma Solutions, is a leader in developing solutions for the pharmaceutical, veterinary, biological and consumer health industries. The company was faced with high numbers of defects after producing millions of units. The process flow was slow because of the time required to analyze the samples. Six Sigma processes were applied to address these issues.

The company specifically required a solution for their proprietary product known as **Zydis**. The company needed new systems that would help to predict the process variation. The improvements are also supposed to help operators understand statistical analyses.





The project team devised a database to collect information. Control charts were also completed and entered automatically. The programming language used for automation was flexible and easy to replicate. The efficiency was improved by making these changes. *After two weeks of implementing Six Sigma processes*, the company prevented the loss of two batches of product, which was worth **50,000 pounds**.(5101500.00 Indian Rupee)

Which is ***“Five million one hundred one thousand Five hundred”***

- This case study demonstrates how companies can improve processes to meet Six Sigma standards, prevent losses and save money. Companies that save money can reallocate the funds towards research and design or improvement of other processes. Every company should try six sigma processes.



Thank You !