

# QUALITY MANAGEMENT

# QUALITY

Excellence



Durability

Life Quality



Water Quality

Air Quality

Time Quality

Good Quality Food



Life Standard

Good Quality for Cheap Price



Over Qualified



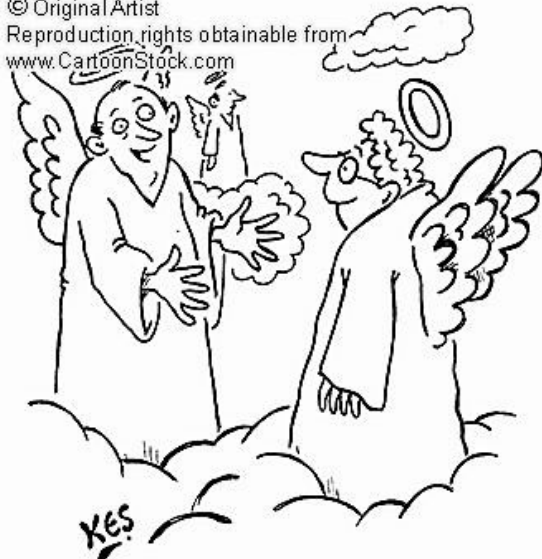
# QUALITY MANAGEMENT

WHAT IS QUALITY?

## CUSTOMER / CLIENT SATISFACTION

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"Sure, we know how to have a  
good time up here!"



# THE CONCEPT OF QUALITY IN THE CONSTRUCTION INDUSTRY

In construction industry ‘the concept of quality’ is considered in different dimensions.

- The final product can be mentioned as;
  - the quality of the building
  - the quality of the process
- In construction industry
  - both a **product** is produced
  - and meanwhile a **service** is provided.



# EIGHT DIMENSIONS OF QUALITY

- One of the approach for the product belongs to Garvin, and
- Garvin determined the eight dimensions of quality such as;
  - **PERFORMANCE**
  - **FEATURES**
  - **RELIABILITY**
  - **CONFORMANCE**
  - **DURABILITY**
  - **SERVICEABILITY (USEFULNESS)**
  - **AESTHETIC and**
  - **PERCEIVED QUALITY** (Evans and Lindsay 1991).

# EIGHT DIMENSIONS OF QUALITY

- **PERFORMANCE**

- First of all, a building should be appropriate to its function and should ensure customer satisfaction. That means; the building should reveal a self-expected performance.



# EIGHT DIMENSIONS OF QUALITY

- **FEATURES**
- The properties such as; chosen techniques for the construction of building, the properties of the materials, the compatibility of these materials with each other, solutions of the nodes and etc. affect the quality of a building.



Gaudi, Casa Battlo

# EIGHT DIMENSIONS OF QUALITY

- **RELIABILITY**

- Looking at the notion of a quality product, product must give confidence about delivering customer expectations about it.
- Assurance that building can deliver its functions without any problem.
- Features such as; the strength of the building, inviolability of the materials and not being contrary to the health, fulfillment of the required physical conditions, having fire and earthquake resistance, etc. should give confidence to the user.





# EIGHT DIMENSIONS OF QUALITY

- **CONFORMANCE**
- The design of the building, construction technique, the materials, style and other aesthetic properties should be appropriate for the building's function and environmental conditions according to the customer expectations.



# EIGHT DIMENSIONS OF QUALITY

- **DURABILITY**
- It is important to preserve the materials, details and the whole building in the long term like the first day.
- The presence of details or materials that wear out, require repair or replacement in a short time will cause buildings to be defined as poor quality.
- Also it is very important that the construction techniques of the building, the materials and details are resistant to earthquakes depending on fire and the geological characteristics of the building land.



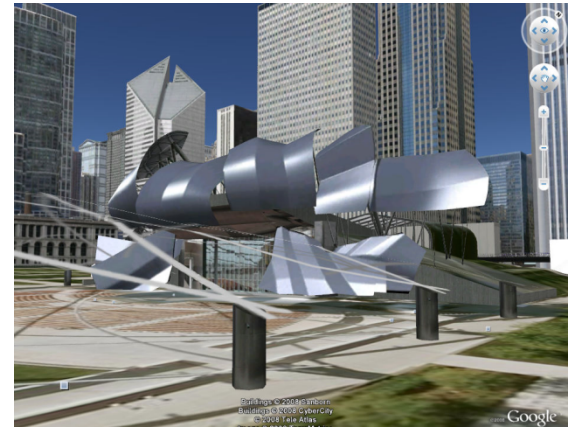
# EIGHT DIMENSIONS OF QUALITY

- **SERVICEABILITY (USEFULNESS)**
- Serviceability is the existence of the necessary features relative to the solutions of the problems that may occur during the use of building.
- For example: easy accessibility of the roof in case of a possible problem, the presence of a space that is required for renovations or the presence of a fire escape in case of fire, it's location, it's compliance with standards, etc. should be considered initially.



# EIGHT DIMENSION OF QUALITY

- **AESTHETIC**
- Another important feature about quality is aesthetic.
- The building should satisfy users' visual pleasure and should be sentimental.



Frank Gehry

# EIGHT DIMENSIONS OF QUALITY

- **PERCEIVED QUALITY**

- Perceived quality is the level of satisfaction about the quality of building that has been felt by customer. It is a relative concept because every person has different sense of value from each other (Evans and Lindsay, 1991; Şeker, 2000).



# TOTAL QUALITY MANAGEMET (TQM)

- TQM is an integrating management consept that aims to improve the quality of product or service continuously with the participation of everyone involved in the organization (Evans and Lindsay, 1991).
- Japan-origin
- Play an essential role in many companies' success
- Continuous improvement
- Certain active participation of all employees in the organization
- Reaching profitability by satisfying employees, customers and the community.



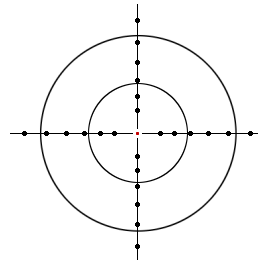
# Total Quality Management: Basic Concepts

- Orientation to results
- Focus on the customer
- Leadership and constancy of purpose
- Management by process and data
- Employee development and participation
- Continuous learning, innovation and improvement
- Developing cooperation
- Corporate social responsibility

# Total Quality Management: Basic Concepts

- **Orientation to results**

Perfection depends on creating a balance between the needs of all shareholders (employees, customers, suppliers, society's and everyone that have financial relationship with institution.)



- **Focus on the customer**

Customer is the person that says final word about product and service quality; therefore, by focusing the needs of current and potential customers, company must try to become in a higher position in the areas of customer loyalty, customer retention and increasing market share.



# Total Quality Management: Basic Concepts

- **Leadership and constancy of purpose**

Behaviors of a leader in an institution determines clarity of objection, creates unity and creates an environment that helps institution and employees to reach perfection.

- **Management by process and data**

Institutions show their best performances when; relations and action between institutions are clear, managed systematically, and decisions that interests processes and planned improvements are taken according to data which is trustful and reflects shareholders' views.



# Total Quality Management: Basic Concepts

- **Employee development and participation**

In order to realizing an institution's employee's potential, there must be a shared value trust and an authorization culture. Such an environment eases everyone's participation.

- **Continuous learning, innovation and improvement**

Performance of an institution makes peak when its knowledge is managed in continuous learning, innovativeness, and reformation culture.



# Total Quality Management: Basic Concepts

- **Developing cooperation**

Its best performance depends on trust to institutions which it cooperates, sharing know-how and constituting mutual beneficial relationships based on consolidation.

- **Corporate social responsibility**

Long term interests of institution and its employees depends on taking an ethical approach, exceeding society's general expectations and current regulations.

# KAIZEN(*Continuous Improvement*)

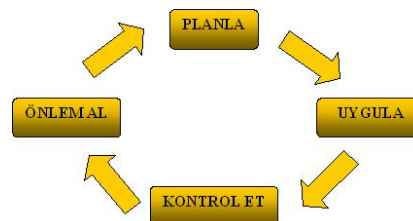
- In Japanese, *kai* means change, *zen* means better.
- *Kaizen*, means working in a direction that aims processes and increases customer happiness, affects competitive powers, expresses slow but numerous and fast improvements in worker, process, time and technology. And it expresses reduction in costs.
- *Kaizen*, aimed to processes instead of results. Because, if it is intended to increase results, processes that reveals these results must be improved.
- *Kaizen* is a system which rewards that human is to be seen as a resource, and aiming towards this resource even outside of the business, giving importance in education, improvement of human resources, come into effect of creating teams and rewarding employees not only because their performance results, but also with their contribution to the improvement processes.

# KAIZEN

- *Process Level*: protecting processes, taking corrective precautions and improving processes.
- *Time Level*: aims to be able to answer as soon as possible to the changes in the market, fast innovations, increasing range of products so that reducing costs and improving activities by reducing time to do them.
- *Technology Level*: reducing costs, converting various technologies and simplifying them.

# Main Principles of Kaizen Philosophy

- Acknowledge the problem.
- Pick projects that doesn't require lots of money.
- Look for “our” problems not “theirs”
- Only measurement is economical interest.
- Determine priority. Run the project by principles like quality, costs, distribution etc.
- Follow the rule plan-do-check-act (PDCA)
- Use appropriate solution tools.

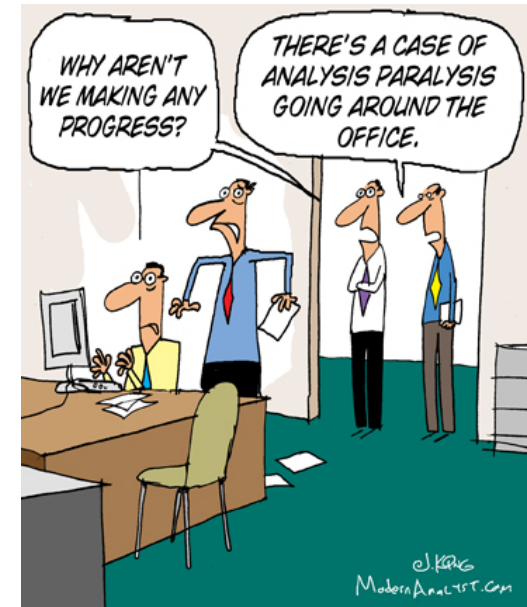


# TOTAL QUALITY MANAGEMENT (TQM)

- **Key resources**
  - **EDWARDS DEMING: STATISTICAL PROCESS CONTROL**
  - **JOSEPH MURAN: PLANNING - CONTROL - DEVELOPMENT**
  - **PHILIP CROSBY: QUALITY IS FREE**
  - **KAORU ISHIKAWA: QUALITY CIRCLES, FISHBONE DIAGRAMS, PARETO ANALYSIS ETC.**
  - **TOM PETERS VE ROBERT WATERMAN: IN SEARCH OF EXCELLENCE**
  - **GENICHI TAGUCHI: ROBUST DESIGN**

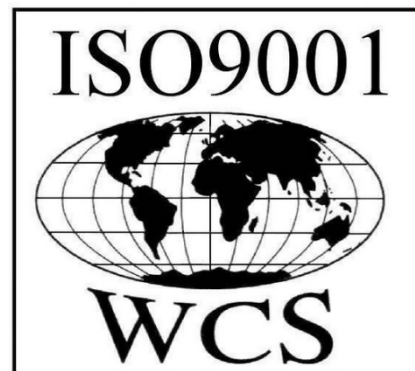
## MAIN PRINCIPLES

- **MANAGEMENT WITH FACTS, NOT MYTHS!**
- **WITHOUT DATA, NO PROCESS!**
- **WITHOUT DATA, NO ANALYSIS!**
- **WITHOUT ANALYSIS, NO DECISIONS!**
- **AVOID PARALYSIS WITH ANALYSIS!**



# QUALITY MANAGEMENT SYSTEM AND STANDARTS

- In TSE (Turkish Standards Institution), standards as series of TS EN ISO 9000:2000 are:
  - TS EN ISO 9000 : Quality Management Systems – Main Definitions and Terms
  - TS EN ISO 9001 : Quality Management Systems - Conditions
  - TS EN ISO 9004 : Quality Management Systems – Guide to Increase Performance
  - TS EN ISO 19011 : Environment Quality Management Systems





- Common traits of these management systems are that they include structure of documentation. Which means they suggest running systems to be done by written procedures and rules (TS EN 9001:2000).
  - Document control
  - Records control
  - Management commitment.
- Management systems' work perfection is only possible with embracing TQM philosophy.
- In short, systems without TQM in their cores are no longer valid.

**TOTAL QUALITY  
MANAGEMENT**

**QUALITY  
MANAGEMENT**

**QUALITY ASSURANCE**

**QUALITY CONTROL**

**INSPECTION**

**ISO 9000**



# QUALITY EXCELLENCE AWARDS

- BALDRIDGE AWARD (US)
- EUROPEAN QUALITY AWARD
- DEMING PRICE (JAPAN)
- NATIONAL QUALITY AWARD (TURKEY)



# BALDRIDGE AWARD

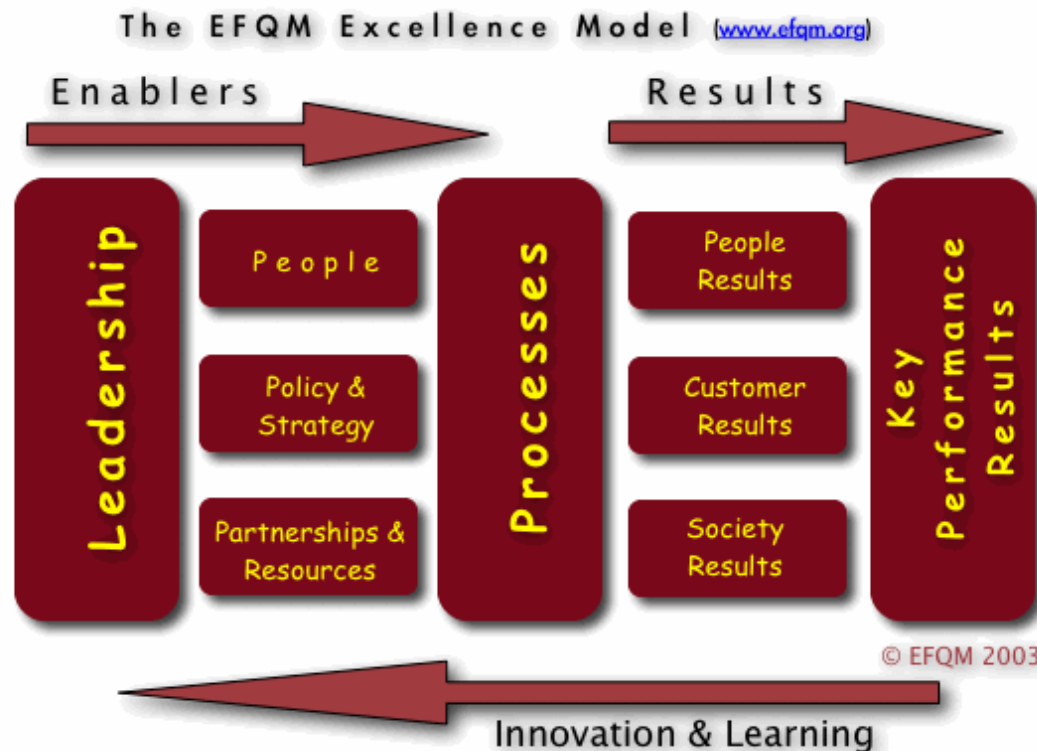
- 1987
- Performance targets as award criteria
  - Continuous improvement of value in product that presented to the customer
  - Continuous improvement in institutional ability and productivity



# European Foundation for Quality Management (EFQM)



- The model founded on the fact that there can be a lot of approaches in order to realize sustainable perfection in every level about performance resides in following statement:
- *Perfect results that echoes on performance, customers, employees and public can be constructed with leading policy, strategy, employees, resources and processes with appropriate leadership.*



- At the heart of the model, a logic that is defined as **RADAR** takes place.
- RADAR consists of four dimensions:

*	<b>Results</b>
*	<b>Approach</b>
*	<b>Deployment</b>
*	<b>Assessment</b>
*	<b>Review</b>

# RADAR Logic



This logic requires an institution to do the following:

- Targeted results are parts of the process that forms policies and strategy. These results must comprise both financial and operational performances and perceptions of shareholders.
- Planning and improving consolidate and well based approaches in order to reach present and future goals.
- Systematic expansion of approaches in order to actualize these approaches precisely.
- Evaluating and revising approaches for monitoring and analyzing results by residing in continuous learning. Therefore, determining improvement points, prioritizing, planning and applying them.
- When using this model in institutions, for example in self-evaluating, Approach, Deployment, Assessment and Review dimensions must be related to every “Entry” sub-criteria. “Results” dimension must be related to “Result” sub-criteria in RADAR scoring matrix.

# Excellence Model Criteria

- 1. CRITERION - LEADERSHIP**
- 2. CRITERION -POLICY AND STRATEGY**
- 3. CRITERION - EMPLOYEE**
- 4. CRITERION - PARTNERSHIPS AND RESOURCES**
- 5. CRITERION – PROCESSES**
- 6. CRITERION - CUSTOMER RELATED RESULTS**
- 7. CRITERION - EMPLOYEE RELATED RESULTS**
- 8. CRITERION - COMMUNITY RELATED RESULTS**
- 9. CRITERION - KEY PERFORMANCE RESULTS**



# Excellence Model Criteria

## 1. CRITERION- LEADERSHIP

- Excellent leaders improves vision and mission and making realizing them easy. They improve institutional values and systems which needed to sustained success, and realizes them with their activities and behaviors. In times of change, they provide consistency of objective. Excellent leaders can change an institutions direction and encourage others to follow.

# Excellence Model Criteria

## **2. CRITERION-POLICY AND STRATEGY**

- Excellent institutions realizes their mission and vision by developing shareholder focused strategy and by consideration of sector and market which they are operating in. They create policies, plans, objectives and processes in order to realize their strategies.

# Excellence Model Criteria

## 3. CRITERION- EMPLOYEES

- Excellent Institutions manages, develops and helps to use freely their employees' knowledge and full potentials on the individual and team level in the whole institution. Treats all employees equally and encourages them to take part in actions, and authorize them. They appreciate attach importance to their employees and encourages them in order to use their knowledge for institution's benefits, and to make them participate continuously.

# Excellence Model Criteria

## **4. CRITERION- COOPERATION AND RESOURCES**

- Excellent institutions plan and manage their external cooperation, suppliers and internal resources in order to affect their policies, strategies and processes positively. During planning and managing cooperation and resources, institution keeps balance of its, society's and environment's recent and future needs.

# Excellence Model Criteria

## **5. CRITERION- PROCESSES**

- Excellent institutions design, manage and improve their processes in a way that these processes can support their policies, strategies; satisfy their customers and other shareholders and increase added value for them.

# Excellence Model Criteria

## **6. CRITERION- RESULTS ABOUT CUSTOMERS**

- Excellent institutions use comprehensive performance and perception indicators about their customers and they get successful results at that.

# Excellence Model Criteria

## **7. CRITERION- RESULTS ABOUT EMPLOYEES**

- Excellent institutions use comprehensive performance and perception indicators about their employees and they get successful results at that.

# Excellence Model Criteria

## **8. CRITERION- RESULTS ABOUT SOCIETY**

- Excellent institutions use comprehensive performance and perception indicators about society and they get successful results at that.



# Excellence Model Criteria

## **9. CRITERION- BASE PERFORMANCE RESULTS**

- Excellent institutions use comprehensive performance indicators about bases of their policies and strategies and they get successful results at that.

# DEMING PRIZE



- 1947 JUSE (JAPANESE SCIENTISTS AND ENGINEERS)
- EDWARDS DEMING
- STATISTICAL METHODS
- TOTAL QUALITY MANAGEMENT GURU
- Purpose of the award is to help realizing **corporate level quality control that is based on statistical process control.**
- It was given to only Japanese companies until 1987. After that date, it can be also given to the foreign companies.

# DEMING (TQM)



- Determine goals of the organization to increase product and service quality.
- Adopt new management philosophy. (don't tolerate non-qualified labor, poor quality product and services.)
- Put an end to examination of mass in the organization
- Stop evaluating organization based on price tags.
- Provide continuous development.
- Provide education on duty.
- Make leadership institutionalized.
- Put an end to fear.
- Remove borders between departments.
- Remove slogans, posters and numerical objectives.
- Remove quotes and numerical objectives.
- Remove applications that cause employees not to work properly.
- Apply continuous education.
- Realize transformation with participation of everybody.

# NATIONAL QUALITY MOVEMENT



- **National Quality Movement-** Aims to increase the number of nation-wide example institutions in every sector and every region in the perspective of Total Quality and Perfection.

# SIX SIGMA

- A management strategy that uses easy and efficient statistical tools to **determine, measure, control, improve and analysis processes** in businesses in order to maintain perfection in operations.
- Six Sigma approach focuses in three topics:
  - Increasing customer satisfaction.
  - Reducing cycle time
  - Decreasing errors
- SOURCE: WIKIPEDIA

# SIX SIGMA

- Sigma is standard deviation in statistics.
- 6Sigma can be used as a measurement of process changes.

## Six Sigma Team

- In every Six Sigma application there are “**champion**”, “**specialist black belt**”, “**black belt**” and “**green belt**”. The responsible of 6Sigma is “champion”. Champion selects projects, approves and keeps track. Black belts are ones that makes applications and runs projects.
- Specialist black belt observes and inspects all applications. Additionally, there are green belts who provides logistics like measurement, analysis, documentations
- SOURCE: WIKIPEDIA