The JURAN Quality Program

Revolutionized by Dr. Joseph M. Juran—"The Father of Quality"

Commerce 399 Group Project

Presented by Group A4:
Claire, Dan, Grace, Roy, Xinna
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"My job of contributing to the welfare of my fellow man is the great unfinished business."
Presentation Overview

- Background
- Key Distinctive Attributes
- Perceived Strengths and Weaknesses
- Examples of Use
- Training Requirements and Maintenance Needs
Joseph M. Juran—“The Father of Quality”

More than 70+ working years dedicated to the relentless pursuit of quality progress

Added in a human dimension to today’s TQM

Realized the root cause was people’s resistance to change

Was awarded the “Order of the Sacred Treasure” from Japan
## Background

<table>
<thead>
<tr>
<th>Year</th>
<th>Juran’s experience and contributions:</th>
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<tbody>
<tr>
<td>1925</td>
<td>Juran started work with the inspection department of Western Electric where he was faced with many quality management challenges</td>
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<td>1928</td>
<td>Juran applied statistical methods to manufacturing problems</td>
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<td>1937</td>
<td>Juran becomes Chief of Industrial Engineering at Western Electric’s home office</td>
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## Background

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<th>Year</th>
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<tr>
<td>1951</td>
<td><strong>The Quality Control Handbook</strong>: A reference book for all who are involved in quality management</td>
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<td>1950’s</td>
<td>Revolutionized the Japanese philosophy for TQM and helped shape their economy into an industrial superpower</td>
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<td>1964</td>
<td><strong>The Managerial Breakthrough</strong></td>
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<td>1979</td>
<td>Juran Institute founded</td>
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<tr>
<td>1986</td>
<td><strong>The Juran Trilogy</strong></td>
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Quality Defined

According to Juran, the definition of quality has two aspects from the customer’s perspective:

Quality is...

1. A greater number of features that meet customer needs
2. Fewer defects
Key Attributes

- The Juran Trilogy
- Fitness for Use
- Quality Council
- Pareto Principle
- 10 Steps to Quality Improvement
The Juran Trilogy

To attain quality you must begin by establishing the vision, policies and goals of the organization. Converting these goals into results is done through three managerial processes called the JURAN TRILOGY.
(aka the three universal processes for managing for quality)

1. Quality Planning
2. Quality Control
3. Quality Improvement

“Quality does not happen by accident, it must be planned.”

1. **Quality Planning**: The structured process for designing products and services that meet new breakthrough goals and ensure that customer needs are met.

**STEPS in the quality planning process...**
The Juran Trilogy

STEPS in the quality planning process:

1. Establish the project
2. Identify the customers
3. Discover the customer needs
4. Develop the product
5. Develop the process
6. Develop the controls and transfer to operations
The Juran Trilogy

2. **Quality Control**: a universal managerial process for conducting operations so as to provide stability—to prevent adverse change and to “maintain the status quo”

Quality control can also be described as “a process for meeting the established goals by evaluating and comparing actual performance and planned performance, and taking action on the difference”
The Juran Trilogy

The Quality Control Process:

1. Choose control subject
2. Establish Measurement
3. Establish standards of Performance
4. Measure Actual Performance
5. Compare to Standards (interpret the difference)
6. Take action on the difference
The Juran Trilogy

“All improvement takes place project by project”

3. **Quality Improvement**: The process for creating breakthrough levels of performance by eliminating wastes and defects to reduce the cost of poor quality

- Prove the need for improvement
- Identify the improvement projects
- Establish project improvement teams
The Juran Trilogy

3. Quality Improvement: (con’t)

Provide the project teams with resources, training, and motivation to:

- diagnose the causes
- stimulate the remedies
- establish controls to hold the gains
The Juran Trilogy Diagram

THREE UNIVERSAL PROCESSES OF THE JURAN TRILOGY®

Quality Planning

Quality Control (During Operations)

Design

Control

Sporadic Spike

Original Zone of Quality Control

Cost of Poor Quality Chronic Waste

Imagery

Improvement

New Zone of Quality Control

Time

Operations

Lessons Learned

“Fitness for Use”

Quality begins with who, how, and why these customers will use it, without this information any improvement will be guesswork.

In other words, all improvement activities should be customer focused.

Juran’s five attributes for “fitness for use”:

- Quality of design
- Quality of conformance
- Availability
- Safety
- Field use
The Quality Council

Senior management with the responsibility for designing the overall strategy for quality planning, control, and improvement.

The objective of the Quality Council is to establish the quality improvement culture in an organization by:

- Setting targets
- Running cost analysis for training and equipment requirements
- Improving organization-wide communication
- Breaking down interdepartmental or functional boundaries
The Pareto Principle
(aka the 80/20 principle)

The Pareto principle says that “in any population that contributes to a common effect, a relative few of the contributors—the vital few—account for the bulk of the effect.”

This principle is used widely in human affairs.

For example, 80% of the world’s wealth is controlled by 20% of the world’s population; 80% of crimes are caused by 20% of the criminals (these numbers are relative estimates and the principle applies generally as a rule of thumb to many situations).
JURAN applied this principle during the **strategic goal deployment process** as follows:

A relatively few number (roughly 20%) of the “projects” selected during the quality improvement process will provide the bulk (roughly 80%) of the improvement.

Most of the cost of poor quality can be attributed to a relatively small number of causes—“The Vital Few.”

1 In this context, “projects” refer to chronic problems scheduled for solution. Source: Juran Quality Control Handbook, Fifth Edition, 1999
Identification of the “Vital Few” projects should receive TOP priority.

Beyond the “Vital Few” projects are the “Useful Many” projects, collectively they contribute only a minority of the improvement, but they provide most of the opportunity for employee participation. The choice of these projects is made through the nomination-selection process.

Ten Steps to Quality Improvement

1. Build Awareness of need and opportunity for improvement
2. Set goals for improvement
3. Organize to reach goals
4. Provide training
5. Carry out projects to solve problems
Ten Steps to Quality Improvement

6. Report Progress
7. Give Recognition
8. Communicate Results
9. Keep Score
10. Maintain Momentum by making annual improvement part of the regular systems and processes of the company
Strengths

- Emphasis on interaction and communications between companies and their current and potential customers.
- Emphasize the strategically planned, step by step process of quality improvement rather than shortcut to quality.
- Rewards based on results.
Weaknesses

- Difficulties catering to all tastes
- Quality is not everything
Examples of Use

- **BURNDY’S MANUFACTURING**
  - improvement projects yield average net returns of
    - $275,000 for large clients
    - $174,000 for middle and small clients

- **JURAN INSTITUTE**
  - statistical methods applied to manufacturing problems

- **A T & T**
  - published in annual Statistical Quality Control Handbook
More examples...

- MOTOROLA – (reduced defects in manufactured products)
- SHELL – (41% maintenance cost reduction)
- DUPONT – (reduced cost, increase sales and working capital; $175,000 pre-tax earnings)
- Government Agencies – (e.g. U.S. Customs increased promptness of service for passengers moving through border crossings)
Program Training and Maintenance

There must be an ORGANIZED and INTEGRATED approach to management of quality training.

Some of the key components include:

- Delineation of responsibilities
- Strong focus on the customer—internal and external
- A plan with clear strategies and tactics
- Resources
Program Training and Maintenance

Key components con’t...

- Budgeting
- Staffing
- Evaluation
Program Training and Maintenance

A strategic training plan addresses these key areas:

- Quality Awareness
- Executive Education
- Management Training
- Technical Training
- Resources
- Budgeting
- Staffing

# Program Training and Maintenance

**Main reasons why training fails:**
- inadequate facilities
- inadequate training materials
- poor leadership
- lack of budget

**Other more subtle (but no less serious) reasons for failure in training:**
- lack of prior participation by line managers
- failure to change behavior

Management plays a key role in heading off failures—must establish policies and guidelines and communicate effectively.
Examples of currently available, highly effective approaches and sources for quality-related training include:

- American Society for Quality Control
- American Society for Training and Development
- Corporate Universities (eg Motorola)
- IBM Quality Institute
- Juran Institute
- National Technological University
KEYS to maintaining an effective quality program year-in and year-out:

- Full commitment from top management (Leadership by example)
- Ongoing training and professional development; encourage employees to participate in the process
- Access to the needed resources and given TOP priority
- Take no shortcuts to quality
- Set quality goals, review progress, give recognition, and communicate, communicate, communicate!
Questions ?