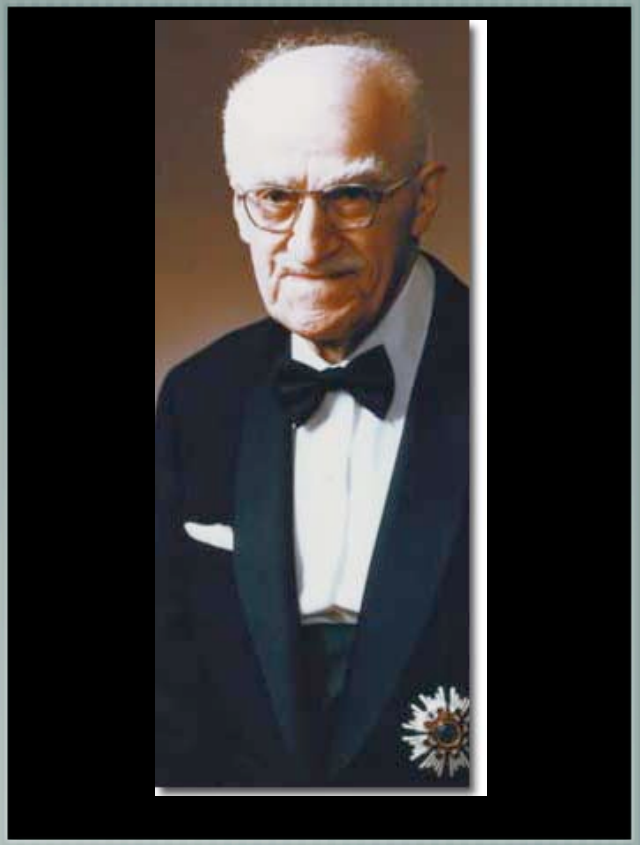
The JURAN Quality Program

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



"My job of contributing to the welfare of my fellow man is the great unfinished business."

Commerce 399 Group Project

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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

Year	Juran's experience and contributions:
1925	Juran started work with the inspection department of Western Electric where he was faced with many quality management challenges
1928	Juran applied statistical methods to manufacturing problems
1937	Juran becomes Chief of Industrial Engineering at Western Electric's home office

Background

Year	Juran's experience and contributions:
1951	The Quality Control Handbook : A reference book for all who are involved in quality management
1950's	Revolutionized the japanese philosophy for TQM and helped shape their economy into an industrial superpower
1964	The Managerial Breakthrough
1979	Juran Institute founded
1986	The Juran Trilogy

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

Source: Juran Quality Control Handbook, Fifth Edition, 1999

The Juran Trilogy

"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

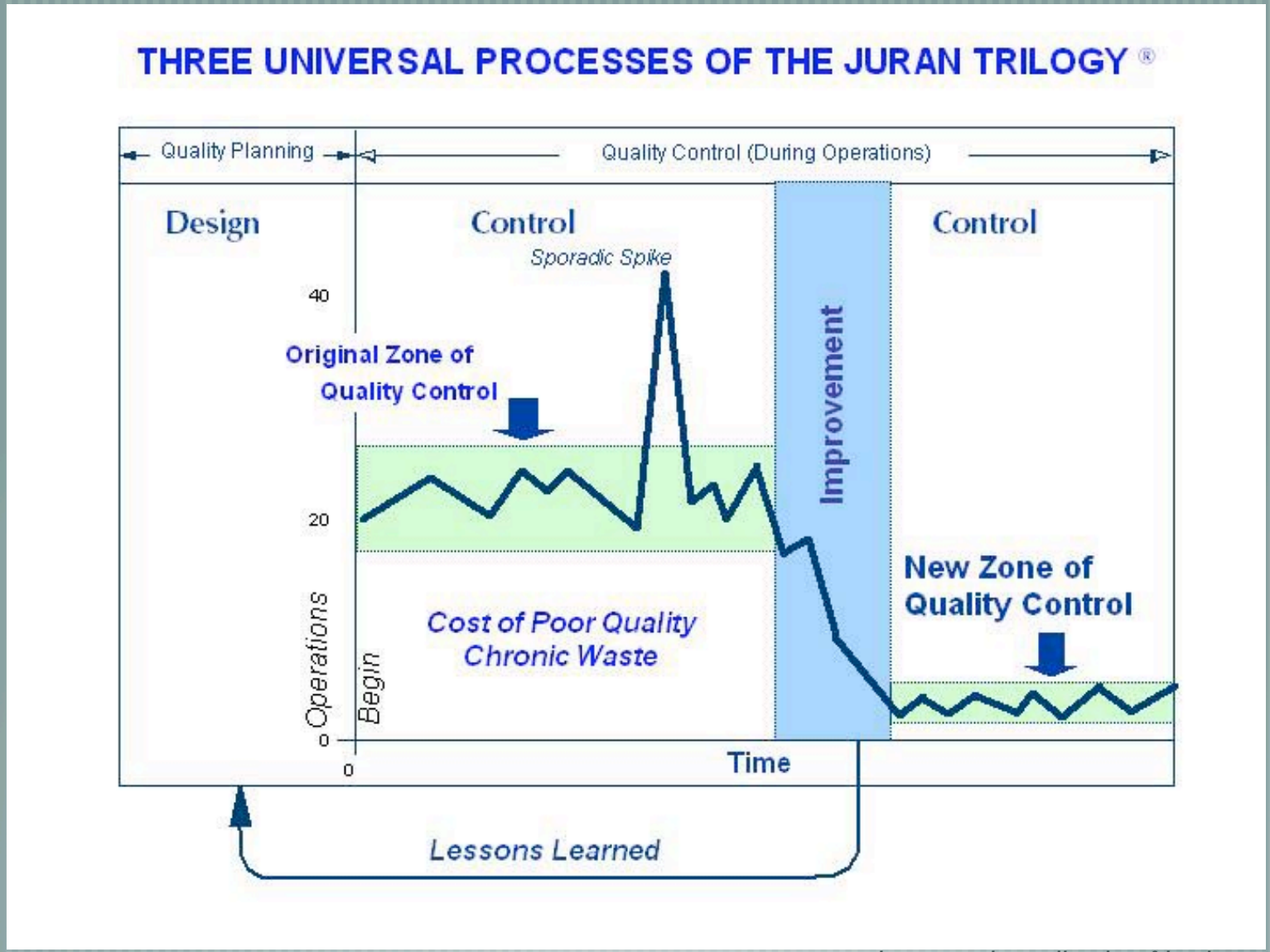
- Prove the need for improvement
- Identify the improvement projects
- Establish project improvement teams

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



Source: Juran Quality Control Handbook, Fifth Edition, 1999

"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)

*named after the Italian economist Vilfredo Pareto

- The Pareto principle says that **"in any popululation 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 the worlds wealth is controlled be 20% of the world's population; 80% of crimes are caused by 20% of the criminals (these numbers are relative estimates and the principal applies generally as a rule of thumb to many situations)

The Pareto Principle (continued)

- 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

The Pareto Principle (continued)

- 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
  - choice of these projects is made through the nomination-selection process

Source: Juran Quality Control Handbook, Fifth Edition, 1999

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
- JURAN INSTITUTE
  - improvement projects yield average net returns of
    - $275,000 for large clients
    - $174,000 for middle and small clients
- A T & T
  - statistical methods applied to manufacturing problems
  - 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

Source: Juran Quality Control Handbook, Fifth Edition, 1999

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

Program Training and Maintenance

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

Program Training and Maintenance

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 ?