Section 1

Quality Management
Quality Management
Which service would you use?
Operations Management

- Project Management
- Product and service design and development
- Process design and technology
- Facilities and capacity planning
- Supply chain management
- Inventory management
- Performance measurements
- Quality management
“the customers perception of the transaction is that value has been gained”
What Influences that Perception?

- Quality Management
- Marketing
- Business Management
- Information Economics
Quality Management

- Focus on the Customer - needs
- Leadership – unity of purpose
- All employees involved – leverage all talents
- Systemic approach – understand the process
- Continual improvement – ways to improve
- Data Based – empirically based decision
- Supplier Relationships – raw material quality
- Minimize Variation – in process
Quality Standards - Individual Craftspeople
John Galsworthy – “Quality”
Eli Whitney – Muskets
Frederick W. Taylor – Scientific Management
Henry Ford – Assembly Line
Walter A. Shewhart – Statistical Methods
W. Edwards Deming – Statistical Process Control
Quality Improvement

- Lean Six Sigma
- Kaizen
- TQM – Total Quality Management
- TPS – Toyota Production System
- SPC – Statistical Process Control
- Kanban – Pull production
Deming’s “14 Points”

Key Points

✓ Continuous improvement
✓ No evaluation by performance
✓ Leadership help people and machines do a better job
✓ Improve constantly and forever
✓ Vigorous program of education and self-improvement
✓ Do not rely on quality inspections, Improve Quality
Lean Six Sigma

3.4 Defects per Million Incidents
Six sigma

Methods

Define – What is the problem?
Measure – Gather Relevant Data
Analyze – Determine Cause and Effect
Improve – Optimize the Process
Control – Control systems
Six Sigma

Process example
Kaizan

- Standardize operations and activities.
- Measure the standardized process.
- Gauge measurements against requirements.
- Innovate—meet requirements and increase productivity.
- Standardize the improved operations.
- Continue cycle *ad infinitum*.
Total Quality Management
Works best for Core Facilities

Involves All Stakeholders
Create a culture of quality
Aimed at Long Term Success
Driven by Customer Satisfaction
Value Stream
Eliminate Waste and Add Value

- Examine the Process
- Map the Process
- Find Bottlenecks and Waste
- Draw a New Map
- Work toward a Better Process
Create a Culture of Quality

The most important thing you can do!

• Everyone Thinks about Quality
• Value is Added at Every Step
• Celebrate Innovation
• Maintain a Customer Focus
Lean Management

Core Facilities are Lean by Definition

Highest Quality of Service
Lowest possible Price
Plots

LEVEY-JENNINGS

- Relative to the Mean

![LEVEY-JENNINGS Chart]

NORMAL DISTRIBUTION

- $6\sigma$ Relative to the Mean

![NORMAL DISTRIBUTION Chart]
Information Economics

Communicating Your Quality Efforts

• Show Levey-Jennings Plots
• Include Standards in your Reports
• Ask Customers to Participate
“I worry that whoever thought up the term quality control believed that if we didn’t control it, quality would get out of hand.”

–Lily Tomlin

- HAVE A GOAL
- Have a clear understanding of the gain
- Know the level of quality that delights