TOTAL QUALITY MANAGEMENT

(TQM)

*It is a philosophy that is designed to make an organization faster, flexible, focused and friendly. It leads to a structured system that focuses each employee on the customer. It creates an environment that allows organization-wide participation in planning and implementing a continuous improvement process to meet customer needs.*

SOURCE: G. Hoffherr, et. al., 1994
Total Quality Management (TQM) concept:

"TQM means that the organization's culture is defined by and supports the constant attainment of customer satisfaction through an integrated system of tools, techniques and training." Sashkin and Kiserr

Early US pioneers were Drs. W. Edwards Deming and Joseph M. Juran

– Slow acceptance in the US

First wide scale utilization was in Japan following WW II

Points to remember about TQM

- TQM can work in all types and sizes of businesses and organizations
- TQM is not a short-term project, simple slogans, or an inspection program
1. Build awareness of the need and opportunity for improvement
2. Set goals for improvement
3. Organize to reach the goals (identify problems, select projects, assign responsibilities)
4. Provide training
5. Carry out projects to solve problems
6. Report progress
7. Give recognition
8. Communicate results
9. Keep score on the various team efforts
10. Maintain momentum by making annual improvement part of the organization

Deming's Cycle (PDCA)
DIMENSIONS OF QUALITY

- Performance
- Features
- Reliability
- Conformance
- Durability
- Serviceability
- Aesthetics
- Perceived Quality
- Price Competitiveness

TQM TOOLS

Data collection methods
- Direct observation
- Interviews
- Questionnaires
- Focus groups
- Direct checking
- Sampling
Non-quantitative analysis methods

- Flowcharts

**EXAMPLE:** Cashier notes a large amount of broken cookies

Cashier to Customer to Shelf to Stocker to Store Back Room to Truck to Warehouse to Rail to Bakery

**EXAMPLE:** Customers are unsatisfied with the Green Valley’s parts department

- Poor Computer System
- Parts not in Stock
- Cost
- Low Turnover
- Too Small Inventory
- Poor Bin System
- Customers are Unsatisfied
- Rude
- Poor Phone Response
- Employee Training
Quantitative analysis methods continued

- **Histograms**

**EXAMPLE:** Livestock farm comparing hay quality from different sources

![Hay Quality by Source](image)

Quantitative analysis methods continued

- **Scatter Diagrams**

**EXAMPLE:** Effectiveness of newly introduced herbicide varies from research trails – is it temperature related?

![Herbicide Effectiveness](image)
(TQMToolsContinued)

# Quantitative analysis methods continued
- Pareto Diagrams (80 - 20 Rule)

**EXAMPLE:** Horticulture firm supplying plants to a mega-market chain is concerned with high rejects and returns

![Pareto Diagram](image)

**Reasons for Rejects and Returns**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong Timing</td>
<td>40</td>
</tr>
<tr>
<td>Wrong Size</td>
<td>30</td>
</tr>
<tr>
<td>Poor Vigor</td>
<td>20</td>
</tr>
<tr>
<td>Color</td>
<td>10</td>
</tr>
</tbody>
</table>

(TQMToolsContinued)

# Quantitative analysis methods continued
- Control Charts (e.g. Run Chart)

**EXAMPLE:** Pickle processor filling a 16 ounce jar of pickle relish

![Relish Run Chart](image)

**Relish Run Chart**

- **Upper Limit:** 16.2
- **Goal:** 16.1
- **Lower Limit:** 16.0
(TQM Tools Continued)

The run chart is the basis of a management area called “Statistical Process Control”
- Controlled variation
- Uncontrolled variation

Other techniques used
- Benchmarking
- Critical Path Analysis (CPA)
- Many others

REASONS WHY TQM SOMETIMES DOES NOT WORK

- Failure to embrace the concept at all levels
- Not an add-on program (not something you drop into place or add a new department to address)
- Need strong leaders to make it work (if leader leaves the process often fails)
- Often it is assumed it is a "quick-fix" process
- Attempting to use traditional "proven" methods to solve problems
- Middle managers have a hard time changing
- Attempting to apply in only a small area
  - Cross-functional teams are often needed
<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grapevine and secrecy</td>
<td>Open communications</td>
</tr>
<tr>
<td>Control of staff</td>
<td>Empowerment</td>
</tr>
<tr>
<td>Inspection &amp; Firefighting</td>
<td>Prevention</td>
</tr>
<tr>
<td>Internal focus on rules</td>
<td>External focus on customer</td>
</tr>
<tr>
<td>Cost and schedule</td>
<td>Quality of conformance</td>
</tr>
<tr>
<td>Stability seeking</td>
<td>Cont. change &amp; improvement</td>
</tr>
<tr>
<td>Adversarial relations</td>
<td>Co-operative relations</td>
</tr>
<tr>
<td>Allocating blame</td>
<td>Solving problems at their roots</td>
</tr>
</tbody>
</table>

SOURCE: J. Pike & R. Barnes, 1994