Designing Quality Products and Processes

Lecture VII
[Chapters 8 and 9 in textbook]

Evolution of the “Quality” Function

The traditional “Quality Department”

Responsibility for:
- quality control
- quality assurance

Evolution of the “Quality” Function

Should the “quality department”

be external to production
[more “independent”]
internal to production
[less adversarial]

Tends to go through cycles

Evolution of the “Quality” Function

Concept of “partnering” in the supply chain

Internal quality, External quality
Supplier relations, Customer relations

Evolution of the “Quality” Function

New characteristics of the organization

Cross – functional teams
Roles and Responsibilities of Upper Management

Upper management

“action” not just “support”

Roles and Responsibilities of Upper Management

Participate actively and positively in quality activities

Roles and Responsibilities of Upper Management

Provide the necessary resources

- training
- equipment
- recognition rewards

Roles and Responsibilities of Upper Management

Facilitate “cooperation” rather than “competition”

Roles and Responsibilities of Upper Management

Quality Council

Upper management team

Difference in focus rather than difference in personnel

“your action speaks so loudly, I can not hear what you say”

Roles of the “Quality Manager”

Traditional

- Measuring and documenting “problems”
- Inspection department (sort, select, reject)
Roles of the “Quality Manager”

Contemporary

Managing to “ensure quality”

(including quantity and delivery)

Contemporary (cont.)

Quality planning
- plant versus corporate activities

Setting up quality measurement at all levels
- applicability at different levels

Auditing quality
- internal and outgoing

Auditing quality practices
- procedures being followed (ISO9000)

Roles of the “Quality Manager”

Contemporary (cont.)

Coordinating & assisting with quality projects
- continuous improvement (Kaizen)

Participating in supplier partnerships
- supply chain quality system

Training for quality
- tools, techniques, problem solving methods, and statistical methods

Roles of the “Quality Manager”

Contemporary (cont.)

Consulting for quality
- assist other parts of organization

Developing new quality methodologies
- keeping up with current state of the art

Transferring activities to line departments
- related to all of the above

6 Sigma Quality Project Teams

Workforce Teams

Who is “selected” for the team

volunteers?
chosen?
elected?
Workforce Teams

Personal characteristics and skills that are important for team members

Ability to communicate with peers is more important than the ability to communicate with management

Communication skills

Inter-personal skills

Comparison of Organizations

Scope of work

Traditional - each individual is responsible for a narrow scope

Self-managed - team is responsible for a broad scope

Job categories for personnel

Traditional – many narrow categories

Self-managed – a few broad categories

Organizing, scheduling and assigning work

Traditional – primarily by supervisor or staff

Self-managed – primarily by team

Measuring and taking corrective action

Traditional – primarily by supervisor or staff

Self-managed – primarily by team
Comparison of Organizations

Training

Traditional - training for task assigned to individual

Self-managed - extensive training for multiple tasks plus interpersonal skill training

Opportunity for job rotation

Traditional - minimum

Self-managed - high because of extensive training

Reward systems

Traditional – related to job, individual performance and seniority

Self-managed - related to team performance and scope of skills acquired by individual

Handling of personnel issues

Traditional - primarily by supervisor or staff

Self-managed – many issues handled by team

Sharing of business information

Traditional - limited to non-confidential information

Self-managed - open sharing of all information

Self-Managed Teams

Benefits

Improved work methods
Helpful in recruiting
Staffing flexibility
Improved quality
Output may improve
Staff support reduced
Supervision reduced
Improved decision making

Problems

Salary costs go up
Training costs go up
Personnel needed for training
Unmet expectations may occur
Resistance by middle management
Resistance by staff groups
Conflict: participants & nonparticipants
Time lost in team meetings
Quality Training for Different Functional Areas

Upper management
Middle management
Quality department
Production supervision
Line workers

Developing a Quality Culture

Maslow's list of human needs and potential quality motivation

Physiological needs (i.e., need for food, shelter, basic survival. In an industrial economy, this translates into minimum subsistence earnings). Opportunity to increase earnings by receiving a bonus for good work.

Safety needs (i.e., once a subsistence level is achieved, the need to remain employed at that level). Job security: e.g., quality makes sales; sales make jobs.

Belongingness and love needs (i.e., the need to belong to a group and be accepted. Appeal to the employee as a member of the team he or she must not let down the team).

Esteem needs (the need for self-respect and for the respect of others). Appeal to pride of workmanship, to achieving a good score. Recognition through rewards, publicity, etc.

Self-actualization needs (i.e., the urge for creativity, for self-expression). Opportunity to propose creative ideas, to participate in creative planning.

Job satisfaction / dissatisfaction

Not opposites of a single continuum
Dissatisfaction – from specific “dislikes”
Satisfaction – from what a worker does
Developing a Quality Culture

The problem is no “change”

The problem is the transition !!

The “Goal”

Goal of the company / plant / department / operation

Throughput - inventory - operating costs

Performance Measurement

Forms of recognition / rewards

- Based on participation, effort, or results
- Individual or group
- Monetary or non-monetary
- Competitive or non-competitive
- Who decides the form/amount of recognition
- Who selects the recipients
- Frequency of recognition