

## **Quality in Supply Chain Management**

### **Lecture VIII** *[Chapter 15 in textbook]*

## **Effects of Supplier Quality**

### **Supplier Selection Decisions**

*Traditionally,*

**“cost”**

*was the overwhelming dimension*

## **Effects of Supplier Quality**

### **Estimates for quality costs**

*50% are related to the suppliers quality*

*75% of warranty claims traced to purchased components for appliances supplier quality problem not detected*

## **Effects of Supplier Quality**

### **Method of handling poor supplier quality**

**Return  
Repair**

## **Effects of Supplier Quality**

*The quantity ordered was often*

**“adjusted”**

*for impact of poor quality  
(non-conforming product)*

## **Effects of Supplier Quality**

**Effect of emphasis on low inventories**

**Lean production  
Just in time (JIT)**

*To be successful, a partnership is required  
between the supplier and the customer*

## **Supplier Relations and “Partnering”**

***In the past, only the Purchasing Department dealt directly with the suppliers***

***This must change due to the skill sets required***

***technical knowledge  
product knowledge  
process knowledge***

## **Supplier Relations and “Partnering”**

***The relationship was based on –***

***“Power”***

***Leverage of either the customer or the supplier***

## **Supplier Relations and “Partnering”**

***Sharing of “risk” is part of partnering***

***between customer and supplier***

***(i.e., improvement projects)***

## **Supplier Relations and “Partnering”**

***Traditional versus strategic view of purchasing process***

***Aspect of purchasing - Supplier relationship***

***Traditional view: adversarial, competitive, distrusting***

***Strategic view: cooperative, partnership, based on trust***

## **Supplier Relations and “Partnering”**

***Traditional versus strategic view of purchasing process***

***Aspect of purchasing - Length of relationship***

***Traditional view: short term***

***Strategic view: long term; indefinite***

## **Supplier Relations and “Partnering”**

***Traditional versus strategic view of purchasing process***

***Aspect of purchasing - Quality assurance***

***Traditional view: inspection upon receipt***

***Strategic view: no incoming inspection necessary***

## **Supplier Relations and "Partnering"**

### **Traditional versus strategic view of purchasing process**

#### **Aspect of purchasing - Supplier base**

**Traditional view: many suppliers, managed in aggregate**

**Strategic view: few suppliers, carefully selected and managed**

## **Supplier Relations and "Partnering"**

### **Traditional versus strategic view of purchasing process**

#### **Aspect of purchasing - Purchasing business plans**

**Traditional view: independent of end-user organization business plans**

**Strategic view: integrated with end-user organization business plans**

## **Supplier Relations and "Partnering"**

### **Traditional versus strategic view of purchasing process**

#### **Aspect of purchasing - Focus of purchasing decisions**

**Traditional view: price**

**Strategic view: total cost of ownership**

## **Specification of Quality Requirements for Suppliers**

**Based of "customer" requirements expectations needs**

**Operational definitions of quality need for effective communication including usage requirements**

## **Specification of Quality Requirements for Suppliers**

**Cost/ specification trade-off**

**Realistic specifications**

**"Tight specifications loosely applied"**

**"Loose specifications rigidly applied"**

## **Specification of "Process" as well as "Product" Characteristics**

**Defining requirements within the suppliers facility to achieve a quality product**

## Acceptance Sampling Plan Terminology

### Acceptable Quality Level (AQL)

percentage of defective parts that has a high probability of being accepted

### Lot Tolerance Percent Defective (LTPD)

percentage of defective parts that has a low probability of being accepted

## Acceptance Sampling Plan Terminology

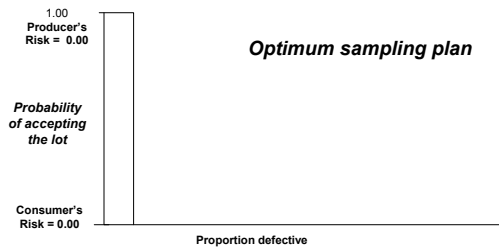
### Producers Risk (PR)

probability of accepting a lot that is at the acceptable quality level (AQL)

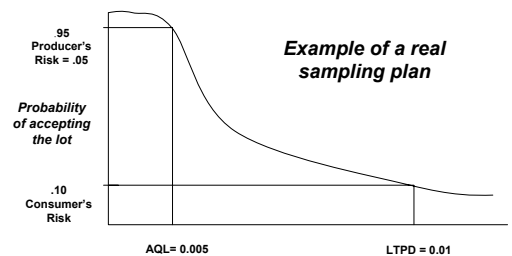
### Consumers Risk (CR)

probability of accepting a lot that is at the lot tolerance percent defective

## Acceptance Sampling Plan Terminology



## Acceptance Sampling Plan Terminology



## Specification of "Process" as well as "Product" Characteristics

### Defining the supplier quality system

How far into the supplier's system is the "partnership" involved?  
(i.e., financial data?)

## Supplier Selection

### "Make" or Buy Decision

Considering "total" system costs

## **Supplier Selection**

**Many or few (single) suppliers**

**Auto industry in the 80's**

## **Supplier Selection**

**Define the product and program requirements**

**Evaluate potential suppliers**

**Conduct joint quality planning**

**Require statistical evidence of quality**

**Certify supplier or require ISO 9000**

**Conduct joint quality improvement programs**

**Create and utilize supplier ratings**

## **Supplier Selection**

**The "quality team"  
(many organizational functions)  
are involved in all aspects**

**"hands-on" users of the material/items are  
important sources of information**

## **Supplier Selection**

### **Dimensions**

**Product life (i.e., equipment purchase)**

**Specification compliance**

**On time delivery**

**Claims**

**Order processing**

## **Supplier Selection**

### **Dimensions (cont.)**

**Invoicing**

**Technical assistance**

**Financial strength**

**Competitive pricing**

**Cost improvement commitments**

## **Quality Audits**

**After selection, an audit system is  
necessary both for control and  
continuous improvement**

**On-site and off-site components**

## Performing Joint Continuous Improvement Projects

**Supplier and customer**

## Vender Qualifications/Certification

**Qualifying the process**

**Assessing supplier capability**

**Supplier evaluations**

**Supplier submits test results for initial production**

## Scoring Supplier Quality System

Activity	Receiving inspection			Manufacturing			Final inspection		
	R	W	R × W	R	W	R × W	R	W	R × W
Quality management	8	3	24	8	3	24	8	3	24
Quality planning	8	4	32	8	4	32	10	4	40
Inspection equipment	10	3	30	10	3	30	10	3	30
Calibration	0	3	0	10	3	30	0	3	0
Drawing control	0	3	0	10	2	20	10	2	20
Corrective action	10	3	30	8	3	24	8	3	24
Handling rejects	10	2	20	8	2	16	10	3	30
Storage and shipping	10	1	10	10	1	10	10	1	10
Environment	8	1	8	8	1	8	8	1	8
Personnel experience	10	2	20	10	3	30	10	2	20
Area total			174			224			206

## Vender Qualifications/Certification

**Assessing supplier capability**

**Levels of certification**

**“qualified” supplier**

**“preferred” supplier**

## ISO 9000 Series Certifications

**Discussed later in the course**

**Assessing, documenting an improving supplier quality**

**General benefits**

**reduces the need for supplier audits**

**improves documentation and control**

**fosters more communication within the supplier community and with customers**

## ISO 9000-2000 Series Certifications

**“The organization shall evaluate and select suppliers based on their ability to supply products in accordance with the organization’s requirements”**

## **ISO 9000-2000 Score Card**

### **Supplier Financial Viability**

*D&B Rating and report  
NADSAQ / E Ratio  
Bank and trade reference*

### **Product Quality**

*Inspections  
Product performance and reliability  
Number of nonconformance*

## **ISO 9000-2000 Score Card**

### **Flexibility in negotiations**

*Terms  
Quantity Discounts  
Stock Rotation  
Product return Policy  
Freight Costs*

### **Product Delivery**

*Available to ship product and provide service from  
multiple locations  
Ability to drop ship*

## **ISO 9000-2000 Score Card**

### **Price**

#### **Customer Service**

*Response time  
Product service operation*

#### **Communications**

*New product offering  
Purchase order acknowledgement  
Response to opportunities for improvement*

## **ISO 9000-2000 Score Card**

### **Use of modern technology**

#### **Training**

#### **Purchasing**

*EDI (electronic data exchange)*

#### **Compliance with regulatory requirements**

*Performance against other best of breed  
suppliers*