

*Assessing and Maximizing the Value of Your  
ERP Investment*

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# ERP Health Score Card

10 = No Problem, 1 = Help !!

- Leadership Involved & Depends on ERP [ ]
  - Experience with the Implementation [ ]
  - Experience with Using ERP [ ]
  - Receiving ROI on ERP That Was Expected One Year After Implementation [ ]
  - Users Comfortable, Confident & Trust Using The System[ ]
- 
- Score = 9 – 10 Class “A” User, 6 – 8 Class “B” User
  - Score = 4 – 6 Class “C” User, Below 4 – **Failed the Course**

# **The Original Promise .. Improving The Bottom Line**

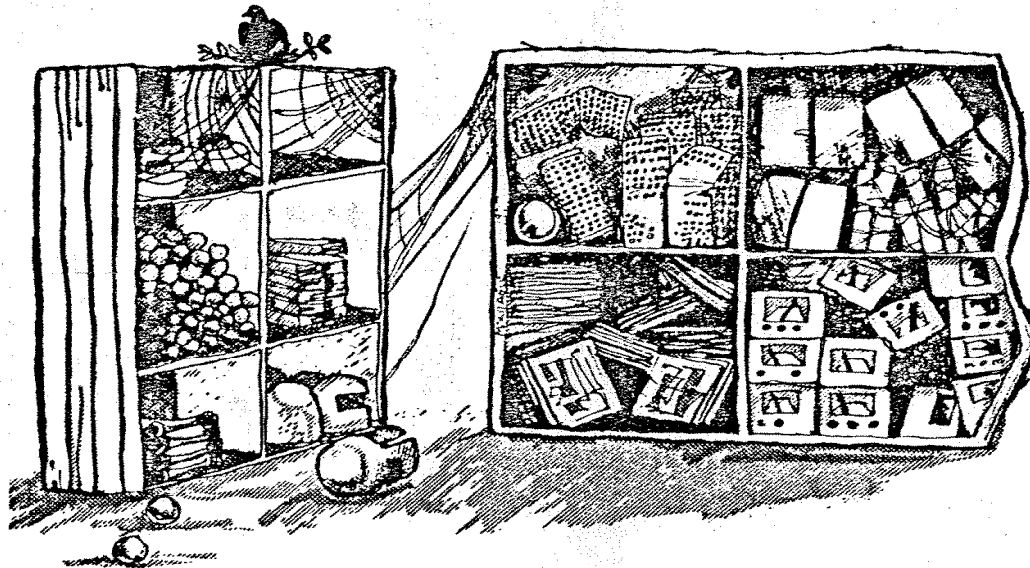
## *Symptoms of Manufacturing Problems*



- **LOW INVENTORY TURNS**
- **SEVERE PARTS SHORTAGES**
- **POOR CUSTOMER SERVICE**
- **LOW LABOR PRODUCTIVITY**
- **SELLING A PRODUCT AT A LOSS OR MARGINAL PROFITABILITY**
- **COMPETITIVE POSTURE CHANGING TO UNFAVORABLE**

# Is Your System An Asset or Liability ?

## *Low Inventory Turns*

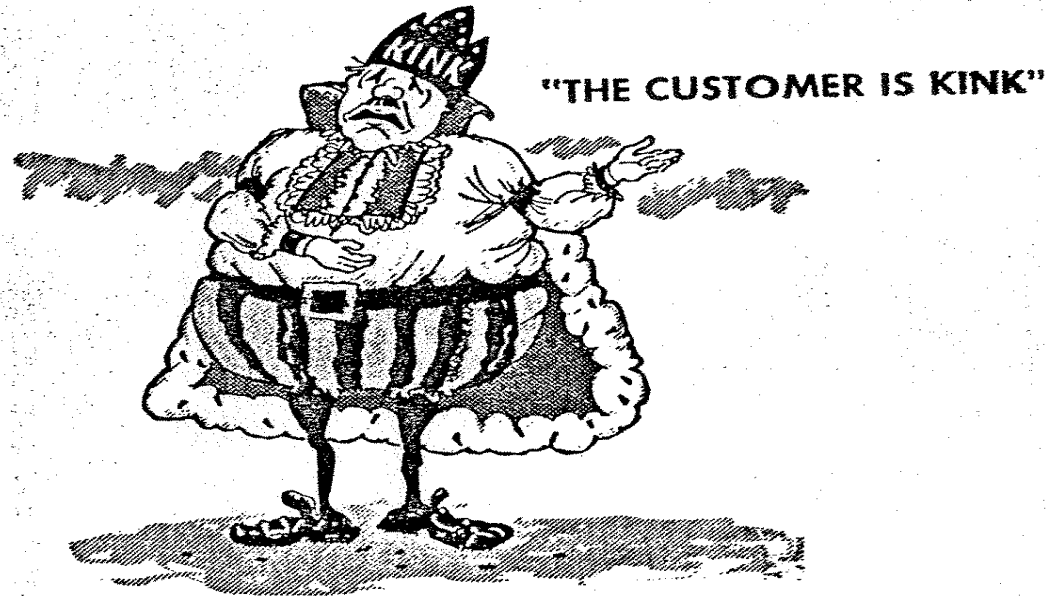


### REASONS

- **WRONG MIX OF INVENTORY**
- **RAW MATERIALS AND W.I.P. INVENTORIES TOO HIGH**
- **KITS PULLED OR STAGED FAR IN ADVANCE OF RELEASE TO DETERMINE SHORTAGES**
- **HIGH VOLUME OF ENGINEERING CHANGE NOTICES**

# Customers – Your Most Important Asset

## *Poor Customer Service*

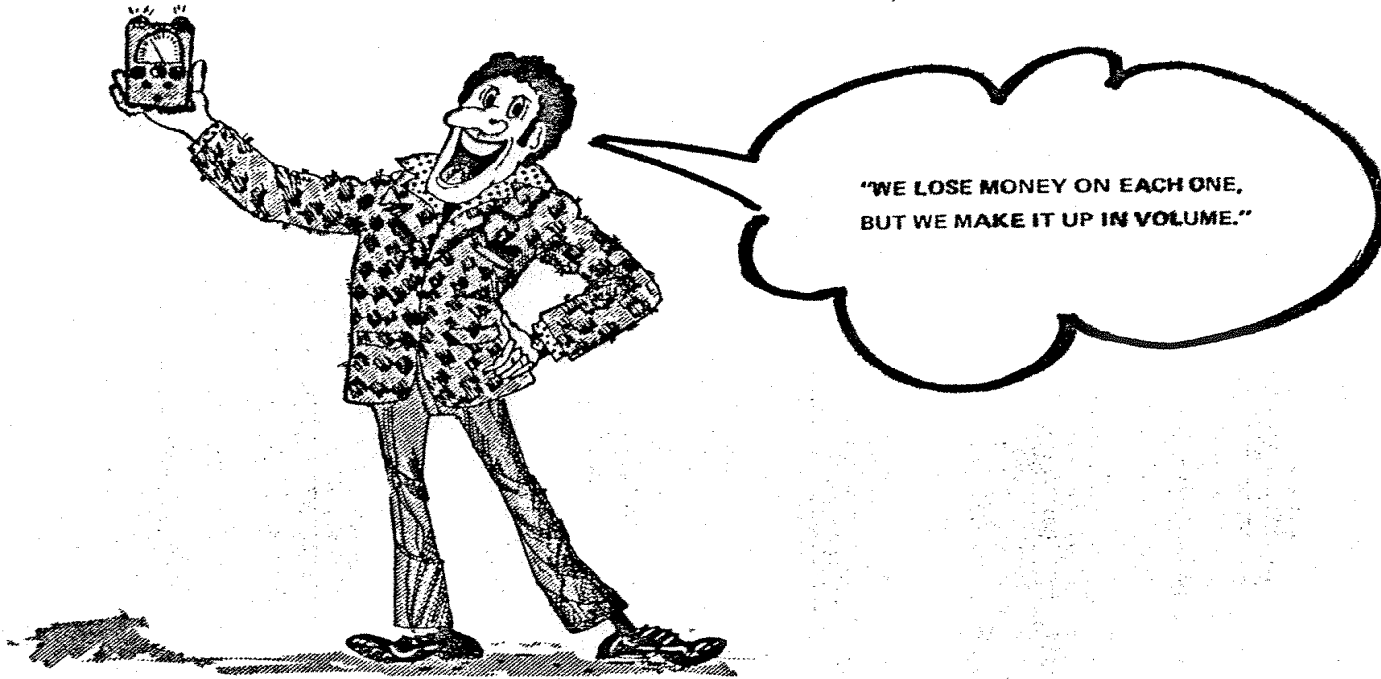


### REASONS

- MISQUOTED DELIVERY DATES
- QUALITY CONTROL SLIPPING
- LACK OF ABILITY TO GIVE ACCURATE STATUS
- INABILITY TO TELL WHICH ORDERS WILL BE AFFECTED BY A CHANGE

# Is Your Company A Charity Organization ?

*Selling a Product at a Loss or Marginally Profitable*

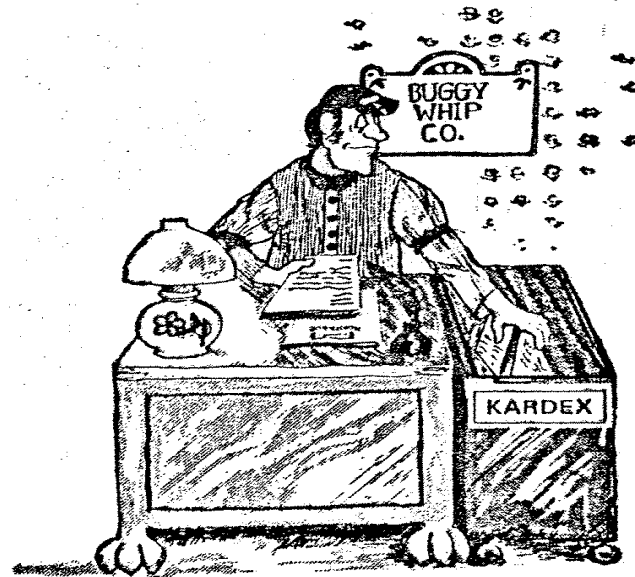


## REASONS

- LACK OF INSIGHT INTO ACTUAL COST AND VARIANCES
- HEAVY EXPEDITING
- WORKING ON WRONG PRIORITIES

# ***If You Do Not Improve.. Your Competition Will !!!***

## *Competitive Posture Changing*

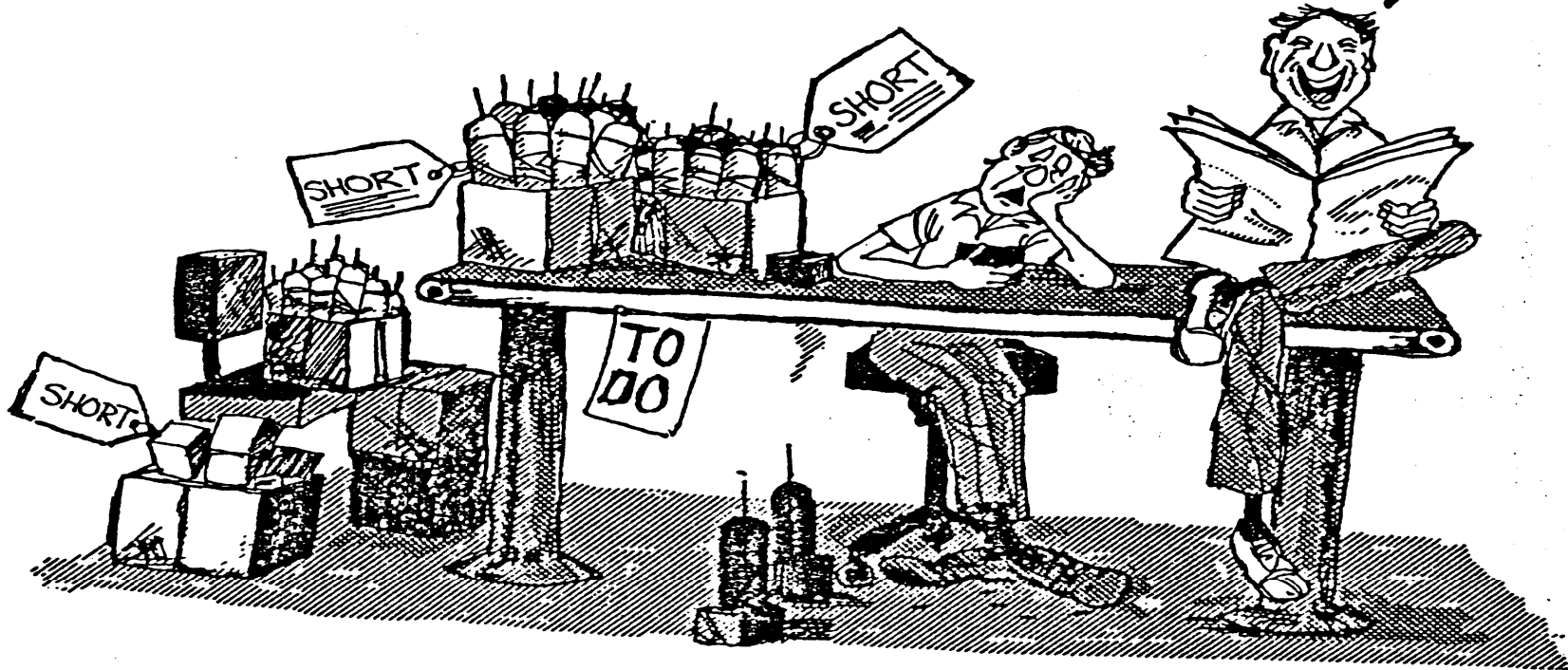


### **REASONS**

- **POOR CUSTOMER SERVICE**
- **HIGH PRODUCT COST**
- **POOR QUALITY**
- **YOUR COMPETITION IS GETTING SMARTER**

# Improved Productivity Improves The Bottom Line

## *Low Labor Productivity*

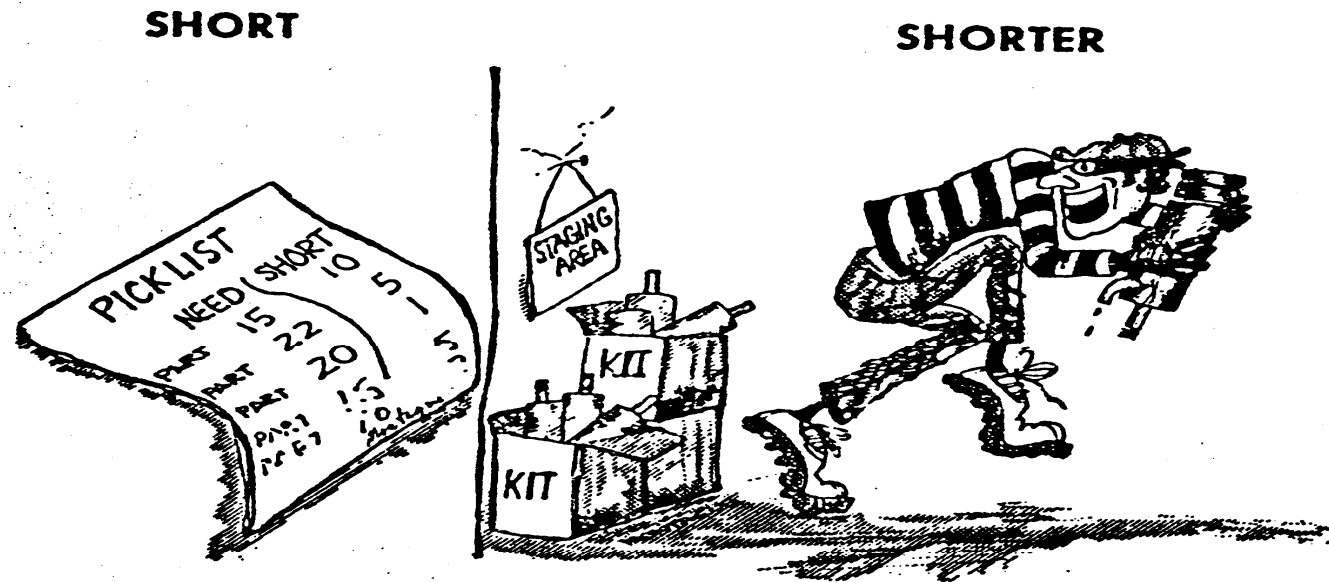


### REASONS

- SHORTAGES SLOWING OR SHUTTING DOWN THE PRODUCTION LINE
- WORKING ON WRONG PRIORITIES
- NO INSIGHT INTO LABOR EFFICIENCY
- POOR ENGINEERING CHANGE NOTICE COMMUNICATION

# *I Wonder Where The Inventory Went ?*

## *Severe Part Shortages*



### REASONS

- **WRONG MIX OF INVENTORY**
- **KITTING TOO FAR IN ADVANCE TO FIND SHORTAGES**
- **WRONG PRIORITIES ON SHOP FLOOR**
- **POOR VENDOR DELIVERY**

# The Vision and The Facts – Typical Business System Results 1980-2000

The Metric	The Vision	The Facts
<b>Inventory Reduction-</b> Raw Material & Finished Goods	10% to 40%	5% to 25%
<b>Purchasing Cost Reduction–</b> Reduced Expediting Costs	2% to 4%	1% to 2%
<b>Production Improvement–</b> Scheduled Production	5% to 50%	2% to 25%
<b>Percent of Orders Shipped On Time</b> – Priorities in Focus	95% to 98%	85% to 90%
<b>Improved Customer Service-</b> Fewer Later Orders	90% to 95%	80% to 90%
<b>Improved Customer Service–</b> Correct Parts Shipped	95% to 98%	85% to 90%

# Requirements for a Successful ERP System

The Old Way

	Metric	Min. Requirement For A Successful ERP System (Forecast/Plan)	US Company's Typical Results 1980-1990 (Actual Plan)
Top Management	Sales Performance	95%	75%-90%
	Inventory Turns	95%	75%-90%
Marketing	Return on Investment	95%	75%-90%
Sales	Forecast Accuracy for Product	95%	75%-90%
Master Planning	On-Time Delivery	95%	75%-90%
Production	On-Time Shipments	95%	75%-90%
Control	Past Due Orders	95%	75%-90%
Manufacturing	Schedule Performance	95%	75%-90%
Operations	Capacity Planning Performance	95%	75%-90%
Material	On-Time Order Completion	95%	75%-90%
Planning	Units Completed	95%	75%-90%
Stockroom	WIP Accuracy	95%	75%-90%
Purchasing	Inventory Turns	95%	75%-90%
Engineering	On-Time Order Releases	95%	75%-90%
	Inventory Accuracy	95%	75%-90%
Customer	Vendor On-Time Delivery	95%	75%-90%
Service	Purchasing Lead Time	95%	75%-90%
	DOM Accuracy	95%	75%-90%

**THE PROMISE**

**THE RESULTS**

# “ I Don’t Like Surprises”

From the *Houston Chronicle*, July 22, 2000

“Computer makers struggle with shortages of key parts”

“...because a **parts shortage** is preventing them from making computers and communications gear.”

“Now the shortages may linger as long as two years because parts makers **weren’t prepared** to gear up so quickly after a slump in the late 1990’s.”

“Agilent **shares tumbled** \$28.56, or 35% to \$48.50”

“Ericson American depositary **receipts dropped** \$2.75 to \$19.81”

“Parts makers say the escalation in cell-phone use **caught them by surprise.**”

“we **need more parts**”

# A Slight Problem...

**Financial parameters are an indicator of good news or bad news, and only indicate symptoms.**

Why not measure manufacturing performance... This will indicate the “source” of the problem and what area(s) needs attention to be brought back into “tolerance”

# Linking Operational Performance to Financial Performance

- If we link “manufacturing performance” to financial performance...When financial performance is doing well (or not well)...
- The manufacturing performance will indicate what specific areas of the company need improvement
- By measuring the company’s “critical success factors”, a company can identify very quickly what areas need attention, and make adjustments to that area to bring it in line with expectations.

# Importance of Measuring Performance

- Once people in the company understand the *vital importance of measuring the performance of the system* and striving to “tune” the system to peak performance, the results of a “world class” company will become apparent.

# Performance Measurements

## Areas of Performance Measurements

<b>Functional Area</b>	<b>Responsibility</b>	<b>Performance Objective</b>
Production Plan	Manufacturing	Production Performance
Master Schedule	Manufacturing	MPS Performance
Material Plan	Material Control	Schedule Reliability
Capacity Plan	Manufacturing	Capacity Performance
Bills of Material	Design Engineering	BOM Accuracy
Inventory Control	Material Control	Inventory Accuracy
Routings	Manufacturing Engineering	Routing Accuracy
Purchasing	Purchasing	Schedule Performance
Shop Floor Control	Manufacturing	Schedule Performance

# Performance Metrics

- Integral part of the management process
- They should be developed in line with the objectives of each department in the company
- Once departmental/group objectives are established, then accountability can be assigned and responsibilities clearly understood
- *Review on a monthly basis.*

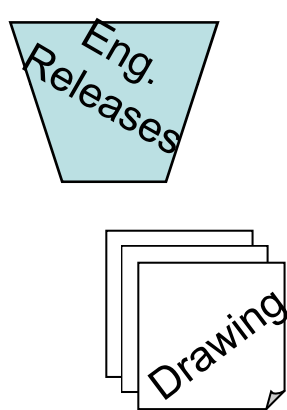
# Garbage In....Garbage Out



# The Importance of Data Integrity

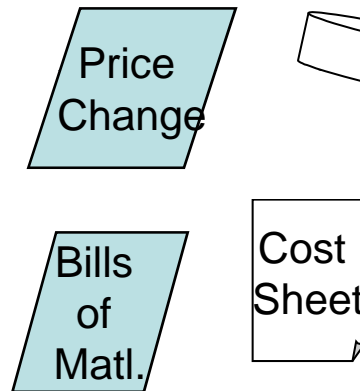
**What is data integrity?** *Data that can be relied upon and trusted to represent the “real world”*

## ADDITIONS



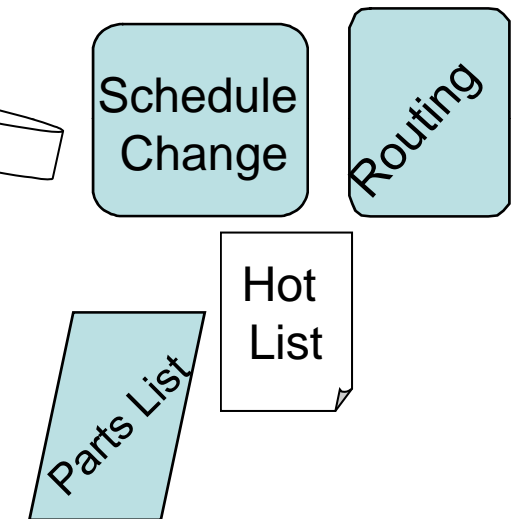
Engineering

## CHANGES



Accounting

## DELETIONS



Production

**Why is data integrity important?** In order to use the data in the system to manage the process, the data must be accurate by *more than 95% with respect to the physical data in the plant.*

# Cost of Poor Data Integrity

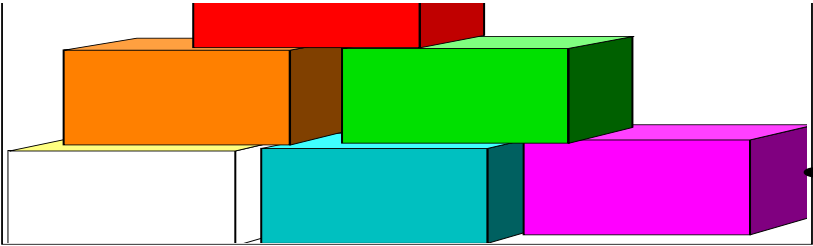
- Missed Production Schedules
- Missed Shipping Schedules
- Wrong Parts Received
- Wrong Parts Ordered
- Too Many Parts – Not Enough Parts
- Overtime

## THE RESULTS

- Expediting
  - Poor Customer Relations
  - Increased Product Cost
  - Cash Flow Issues
- *When No One Believes The System - Users Go Back To The “Old Way”.*

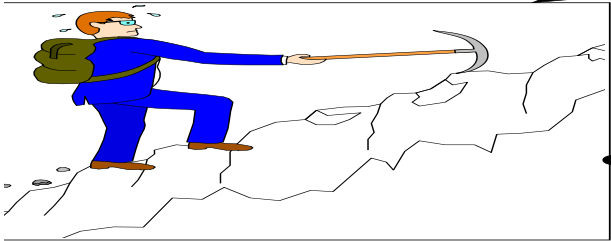
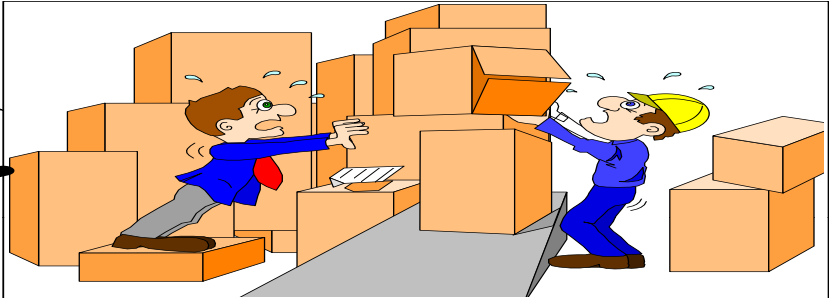
# The Path To Continuous Improvement

## THE VISION.....



PHASE 1 - THE BASICS  
Score > 1000 AND KPI > 95 %  
For The Next Phase

PHASE 2 - MRP / SFC  
Score > 2000 AND KPI > 95 %  
For The Next Phase

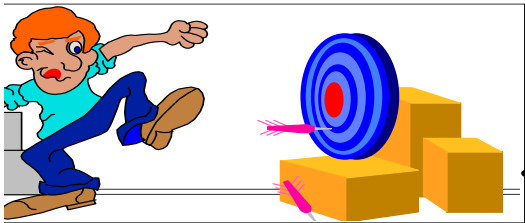


PHASE 3 - SUPPLY CHAIN MANAGEMENT  
Score > 3000 AND KPI > 95 %  
For The Next Phase

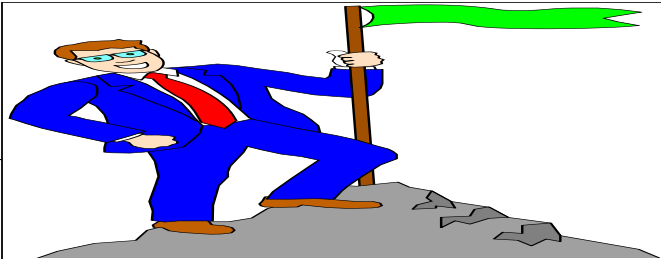


PHASE 4 - ADVANCED MANUFACTURING  
Score > 4000 AND KPI > 95 %  
For The Next Phase

PHASE 5 - BASIC WEB CAPABILITY  
Score > 5000 AND KPI > 95 %  
For The Next Phase



PHASE 6 - MANAGEMENT DSS  
Score > 6000 AND KPI > 95 %  
For The Next Phase



# Data Integrity – How Good Improvement Is The Key

- “How Good” is “Good Enough”?
- Improvement is the Key
- Level of accuracy can never be too high
- Measure in terms of “significant” errors

# *How Can MRA Help Your Company ?*

- **MRA, A Company That Sells Neither Hardware Nor Software, With Over 25 Years Experience In The Enterprise Resource Planning(ERP) Market Can Provide Cost Effective Business Solutions To A Company That Is:**
    - ***Either Disappointed With The Results Of Their Current System***
- or**
- ***Needs To Develop A "Plan Of Action" To Better Utilize Their Investment In Their Current System.***