Introduction to Material & Information Flowcharts

Learning Objectives

- Provide overview of Material and information flow chart concepts, tools and methods
- Develop ability to represent a system using M&I flow charts
- Awareness of how to utilize this information to identify opportunities for improvement

Purpose of M&I Flow Charts

- To Measure the condition of JIT in the current system
- Grasp the current condition to ID problems that increase lead time to the customer
- Use a system perspective to prioritize problems associated with stagnation and flow
- Communicate problems and countermeasures for them
- Understand the relationship between processes
- Identify individual process and conveyance lead time and total lead time
A visual representation or map showing the movement of material and information through a defined series of processes (system)

M & I Flow Chart Definition

Process

M & I Flow Symbols
• Go and See, observe the actual conditions
• Begin with identifying the customer and supplier and do a quick walk-thru of the area
• Locate and identify the processes in between the customer and supplier
• Identify the material and information movement (flow) starting with the customer and working backwards towards the supplier

Building an M & I Flowchart

• Develop and use a “critical eye”
• Develop an understanding of the actual production area (shop floor) conditions
• See problems first hand
• Ask questions
• Identify and note problem areas that cause increased lead time

Building an M & I Flowchart Cont.

• Material Movement
  • Bottleneck
  • Complex or simple flow
  • Production and conveyance lot size
  • Production timing
• Information Movement
  • What information, if any, is present
  • Size and type of information
  • Timing information released or received
  • How the information is sent

What will you see in an M&I?
• What happens to the material at each point along the path?
  • How is the material used?

• Where:
  • Is the material made?
  • Does it come from?
  • Where does it go?

Does the material stagnate anywhere?

Material Flow

Complex Flow

Simple Flow

Material Stagnation

• Material stagnation due to varying speeds of production cycle time (CT)
Information

• What information is being conveyed?
  • What is done with the information?
• Who sends the information?
  • Who receives it?
• When is the information sent and received?
  • When is it used?
• Where does the information come from?
  • Where does it go?
• How is the information used?
  • How is it transmitted (sent)?

Information Stagnation

• Information stagnation due to varying forms, conditions and amounts of information

Developing an M&I Flowchart

• Investigate
  • Understand the movement of material and information in the system
    • Ask questions

• Document
  • Use standard symbols to document the results of your investigation
Developing an M&I Flowchart

Draw Current Condition

Add Angry Clouds
How to Observe

• Genchi Gembutsu (Go and See)
  • “Get your boots on”
  
  Don’t ask people
  Ask the process:
  what are the actual conditions
  actual material
  actual information
  
  See for yourself

Action Plan

• Use 8-Step P/S Thinking
  • List observable problems
  • Prioritize the list
  • Identify target
  • Find R/C
  • Develop C/Ms & implementation plan
  • Trial and verify C/Ms
  • Standardize
  • share

Material & Information Flowchart

Summary

• Material flows from **left** to **right**
• Chart the customer on the **right**
• Chart the supplier on the **left**
• Information flows from **right** to **left**
• Investigate material **AND** information flow from customer back to the supplier
• Note the production instructions (ordering method, lot sizes, production rate etc.) **AND** conveyance instruction (fixed time or quantity resupply)