How to Value Stream Map

How do you create a current state value stream map?
How do we create a Value Stream Map?

• This is a team exercise
• Involve the people that are involved in the process
• What actually happens not what should happen
• Usually supplier to customer for a specific product or product family
Choosing the product or product family

• Need to choose one product / family of products to map.
• Select one to be mapped;
  – Needs improvement
  – Valuable to the company
  – High likelihood of success
  – Can form the basis of improvement for other products / families
Product Family Analysis

• Some times a company has many products and it can be difficult to decide which to map or define families of products

• Product families share common processes and process routes.

• Simple matrix can be used to identify product families (use your highest volume/contributing products)
Product family analysis matrix

Product Family Matrix

- Identify suitable Product Family by grouping:

- Group products into families based upon similar downstream process steps

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Where do we start?

• A3 Paper, Pencil and inquiring set of minds..

• Define the Process to be mapped and bound the process (Supplier – Customer)

• Create a process box for each process step

• Sometimes we may map an entire supply chain and the process boxes can be companies.
Map the process flow
Information flows

• One of the things that differentiates VSM from other techniques is adding the flow of information;

• Add information flows to show how orders are placed and schedules communicated.
Add Information Flows

Supplier

Weekly forecast
Weekly Order

Production Control (ERP)

Monthly forecast
Daily Order

Weekly Schedule

30 day forecast

Daily Schedule

Customer 360 per Day

Weekly Order

Order

Circuit Boarding

Testing

Final Assy

Final Test

Shipping

Insertion

Oven

Washer

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Collect process data

Next we need to record the process data for our process, typical data that should be collected:

- Inventory
- Cycle time (time taken to make one product)
- Change over time (from last good piece to next)
- Uptime (on-demand machine utilization)
- Number of operators
- Net available working time
- Scrap rate
- Pack size/pallet sizes

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Add The Data
Creating a time line

• We want to show how long inventory remains in the system
• How long a product is processed for

• Use inventory and daily demand to calculate how many days of inventory you have.
• Processing time is time taken to process one item not a batch
Analyze the data

Supplier

Production Control (ERP)

Weekly forecast
Weekly Order

Monthly forecast
Daily Order

Customer

360 per Day

Weekly

Order

Monthly forecast

30 day forecast

Daily Schedule

Washer

Circuit Boarding

Insertion

Final Test

Final Assy

Testing

Oven

Weekly Schedule

Insertion

Testing

Oven

Total Lead time

8 Days

Total process time

8 Mins

1860 120 120 240 240 120 180 180

C/o =10m
C/t = 60s
U/t = 95%
Qual =95%

C/o =0m
C/t = 60s
U/t = 100%
Qual =100%

C/o =20m
C/t = 60s
U/t = 95%
Qual =98%

C/o =5m
C/t = 60s
U/t = 95%
Qual =100%

C/o =10m
C/t = 60s
U/t = 95%
Qual =98%

C/o =0m
C/t = 120s
U/t = 90%
Qual =100

60 Secs 120 Secs 60 Secs 60 Secs 60 Secs 60 Secs 60 Secs

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What does our VSM tell us

- The timeline tells us that product takes only 8 minutes to be processed but a single piece of inventory can be within the organization for over 8 days...

- The data boxes show us which processes have long changeovers or poor quality performance and other issues.
Next stage for our VSM

• The next stage is to create our Ideal state value stream map.

• This should be a challenging improvement on where we are today.

• Future state maps can then be created to move us toward the ideal using kaizen improvement bursts.
Moving from Current State to Ideal State VSM

Through a series of future state maps utilizing Kaizen Bursts we move from Current state to our ideal state map.
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