Deploying lean techniques away from a manufacturing area

Mapping tools

Video capture is good for short, repetitive tasks where a physical or tangible object is being processed. It is not ideal when trying to capture information flows or non-repetitive interactions with people.

For this choose a different method such as:

- Process flow charting, best for simple interactions involving few people and a straightforward route.
- Swim Lanes or Four Lane Mapping where many people or departments are involved and the route is more complex.
- Value Stream Mapping where the information flow is related to the flow of a physical product.

Pick the most suitable method, or adapt one, to meet the needs of the activity and the abilities of you and your team. You need to feel comfortable with what you are doing and capture it so you can understand it and work with it.

Supporting data and key measures

Here are some suggestions as to the type of supporting data and key measures you could use. Choose ones that will highlight the issues, you can go back after waste spotting and collect more data and set different measures if you need.

- Source of errors (drawings, documents etc.)
- Estimated time for typical activity
- Operator work content
- Number of people that can and do carry out the tasks
- Availability of the person e.g. fully dedicated or other duties
- Project lead time (planned lead time)
- Availability of key equipment e.g. printer, computer test equipment
- Response time, number of call outs.
- Shift patterns
- Working hours/days/shifts
- Records with timings at key points or milestones

- Customer demand / delivery requirements
- Delivery performance and quality performance to customer(s)/ other functions
- Delivery performance and quality performance from suppliers
- Mismatches in software versions necessitating additional time to “interpret” and other tasks that require local Excel sheets to be done or cut and paste or exporting tasks.
- Analysis of process losses – e.g. downtime, quality, performance
- Overtime levels
- Handling method
- Product cost analysis

The following data is best collected when walking the process:

- In trays, work list queues
- Any batching done on drawings, materials, sign offs
- String diagram
- Documentation used at each point

In this example the measures are to show improvements in a process to compile a month end financial report where hitting the deadline was the target.

Measure	Before activity	March
process time	4,394 mins	3,242 mins
No. of Excel Worksheets requiring manual data entry	90	65
Average no. of manual journal entries per month	1,000	238
Review time available	4 hours	6 hours
D.S.A of Head office report	150 mins late	10 mins early

Wastes, threats and opportunities for improvement

Waste is any activity that does not add value or is not necessary under current conditions. It is unnecessary work. See examples of the 7 Wastes here.

Value adding tasks are those that change the nature, shape or characteristics of the product, in line with customer requirements e.g. printing, programming.

Non value adding tasks are those that are carried out, which are necessary under current conditions but do not increase product value e.g. filing, computer start up.

A **threat** exists where the current process is not performing in the way it should; examples of threats include:

- Quality issues
- High downtime
- Not hitting customer delivery requirements
- Capacity bottlenecks
- Long lead times or inconsistent lead times
- Low productivity
- High inventory
- Formal communications that are not standardised or are not carried out as defined
- Shared processes with no shop floor organisation
- Multiple back flows i.e. products passing more than once through the same process
- Miss matched takt times
- The difference in time and quantity between predicted orders and firm commitment from the customer

An **opportunity** exists where by changing the way we currently operate we could achieve improved performance above current targets. Examples of opportunities include:

- Eliminating processes completely.
- Combining two processes into a single process step.
- Linking two separated processes to eliminate inventory and or transportation.
- Eliminating order corruption points.

Order corruption, back flows and disconnects

An **order corruption** is an activity which due to internal rules or procedures, leads to an order being changed from its original customer state. There are two types of order corruption; a corruption of quantity and a schedule corruption.

- Quantity corruption example; a customer wants 6 parts, but the minimum order quantity is 10 and the process batch quantity is 15. Due to rules and procedures 15 parts are produced to meet an original need for 6.
- Schedule corruption happens when an employee uses discretion to choose what to process next, instead of following the plan, kanban etc.

Back flows. Where the “material” being processed goes back to a previous part of the process for an additional task, checking, signing off or rework.

Disconnects. Where the flow of information is broken. For example, where a task produces output that isn’t used.