Value stream analysis

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Why and When Is It Used?

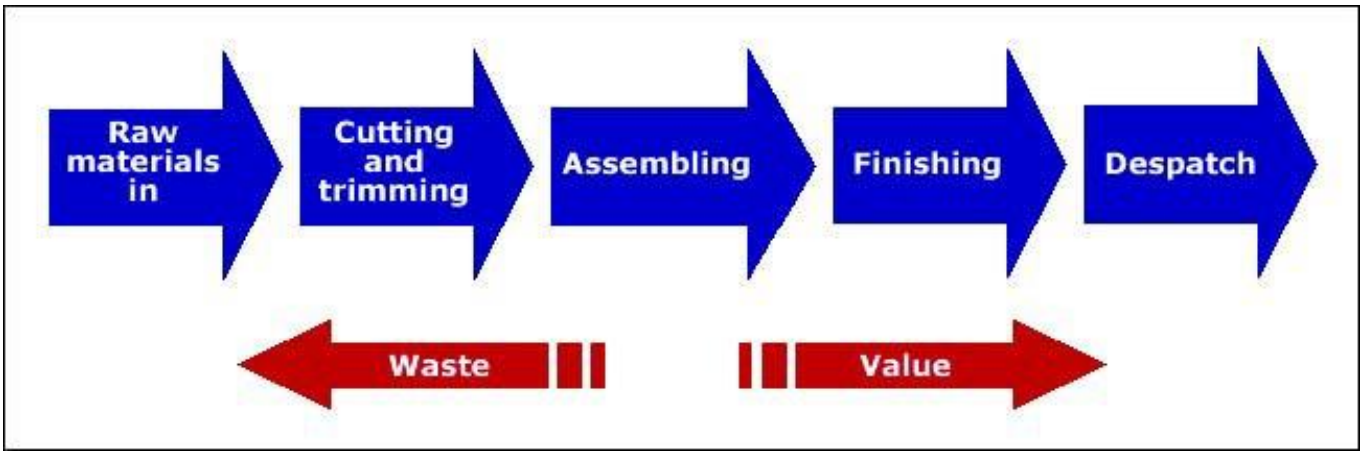
In business process re-engineering and similar activities – such as moving towards 'lean' thinking in manufacturing or service operations.

How Does It Work?

Value stream analysis is based on the idea that the firm consists of a sequence of activities, each of which is designed to add some value to the product or service as it moves towards the customer. However, the production of goods or provision of services also implies certain costs. Firstly, of course, there are overheads that support the overall running of the business. And at each stage there is also the cost of running the relevant activities, etc. But there is also – unfortunately – a component of waste associated with each activity and with the flow through the organization, which also adds cost and unnecessary time, space, etc. to the process.

For example, if partly finished pieces have to wait in a queue before they can be processed, this wastes time. If there is too much of a gap between machines, or if the layout means parts have to travel a long way between activities, there is wasted time and space.

Value stream analysis involves drawing up a flow chart for your business and then asking, at each stage including the stages between activities, whether cost/waste or value is being added. This often highlights unnecessary space, distance travelled, processing inefficiency, etc.



The concept of a 'lean' enterprise or supply chain is just that – one that has minimal unnecessary 'fat' built in – and value stream analysis techniques are the key tools in developing such enterprises.

Strengths of This Tool

The key strength of value stream analysis is that it quickly focuses on where change is needed and throws up opportunities for change.

Another strength of value stream analysis is its versatility – it can be applied equally well to service as to production activities. For example, the process of carrying out paper processing in sales or in developing insurance quotations or processing claims can also be analysed.

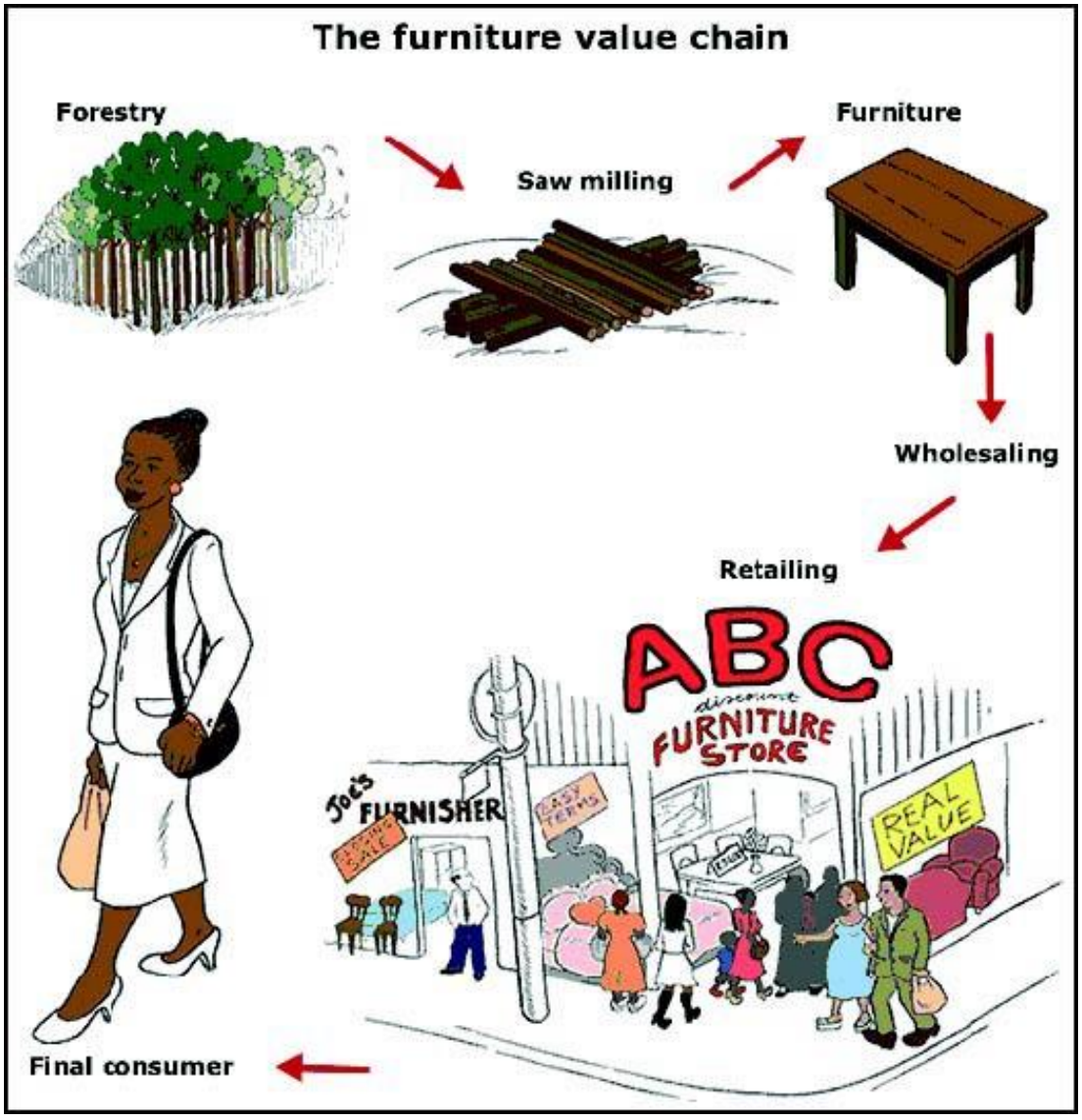
Furthermore, the technique does not need to stop at the boundaries of the firm; it can easily extend beyond the firm back into the supply chain and down into the distribution network. Its potential there is to highlight where unnecessary losses arise in weaknesses in relationships between firms – and where strategic targets for improvements lie.

Value Stream Analysis: Interfirm Applications

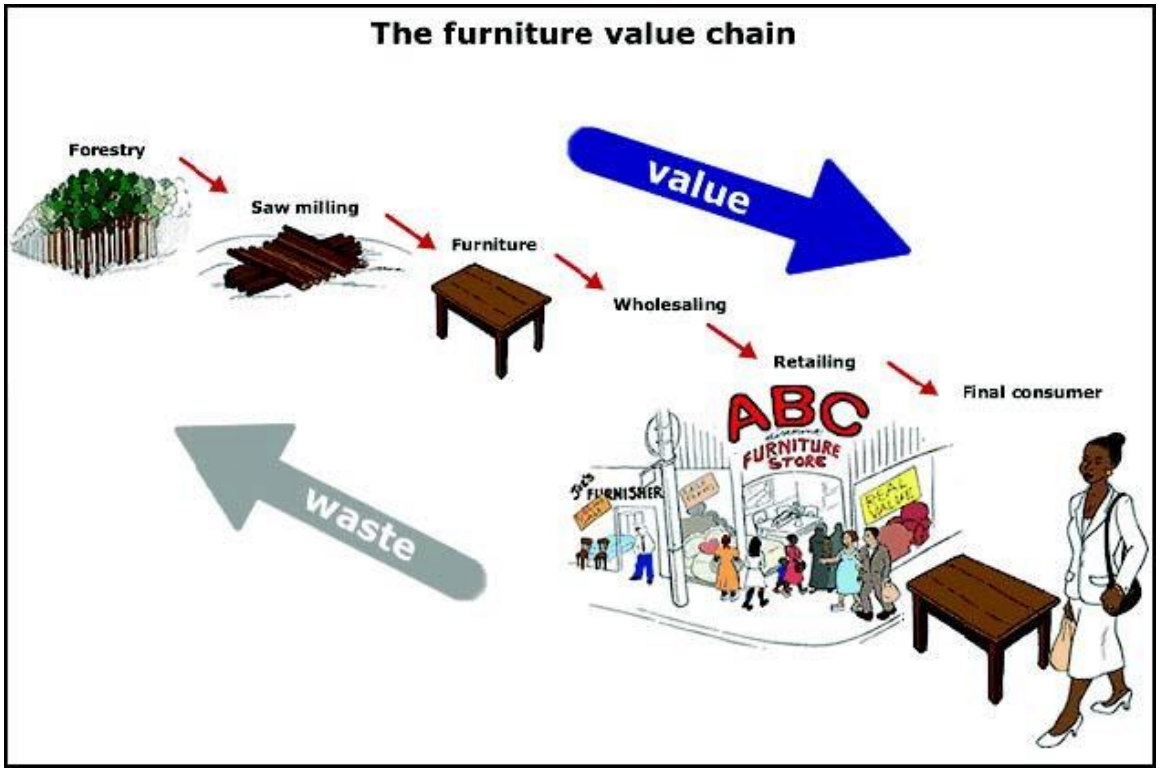
This is a tool that can be used inside the enterprise but has particular relevance in looking at improving across supply chains and networks. Even if each firm participating in a chain is operating as competitively as possible, there might still be problems in the whole chain - for example, delays or accumulation of inventories between key stages. Managing supply chains is about managing the whole system and looking for problems that occur between stages as well as within individual firms. To do this we need a map of the whole supply chain that shows everyone involved where they fit, how value is built up and where wasteful non-value adding activities are occurring. Building this map and agreeing on problems is a key stage before any joint problem solving can begin aimed at improving the situation.

How does it work?

If we think of an industry like furniture manufacturing, the value stream map might look like this:



Value is built up at each stage as wood is gradually converted into a product that people will buy. But, as we move along the value stream, so wasteful non-value adding activities can happen. For example, there may be communication problems between the forests and the millers that mean that timber is not cut at the right stage, and milling is made more difficult. Or, timber deliveries from the mills to the furniture factories may be late or to the wrong specifications, creating great problems in furniture manufacture and perhaps leading to late deliveries. Ideally the other bought-in components should arrive just in time to go into the furniture – and the knocked-down furniture then leaves in order to make the ship leaving for Europe. By using the map we can begin to see where such problems occur and where waste – due to queues, waiting time, incompatible scheduling, over-long transportation, etc. – is built up.



Once the map has been built it provides a focus for joint problem solving activities of various kinds. Again many of the techniques used within the enterprise for continuous improvement can be deployed here at the interfirm level. There are many tools that can be used to build up more detailed and systematic value stream maps – for more information see the following links:

http://www.cf.ac.uk/carbs/lom/lerc/

http://www.moresteam.com/lean/l601.cfm