

CASH FLOW THROUGH PROCESS CONTROL

Traditional Cost-Based Companies

In every business there is a cash flow cycle tied to the process of producing a product or service. This cycle is separate from the longer term capital investment in equipment and facilities. In the case of a manufacturing business, this cycle runs from purchased inventory to booked receivables.

American business has long focused on cost to remain profitable and competitive. Very sophisticated approaches to cost-accounting, like activity-based costing have refined cost management. Operating practices, such as economies of scale to lower unit cost and functional consolidation to lower overhead cost have served American business well. But according to manufacturing consultant, Frank G. Rubury, these cost advantages in many cases have come at the expense of shorter cycle time and flexibility.

Rubury argues that business is all about creating value. In manufacturing companies this happens on the shop floor. Process time is therefore a critical factor. As the time it takes to manufacture a product increases, a number of cost effects result:

1. Operating expenses in the form of excessive labor cost
2. Unnecessarily high inventory.
3. Throughput is lowered.
4. Capacity will be consumed and the return on investment will take longer.

The effects on cash are dramatic. Greater amounts are required to pay higher operating expenses and finance inventory. To the extent that this cash is borrowed more of it will be needed to service the debt and less will be available as working capital.

Reduced throughput reduces sales, accounts receivable, ultimately incoming cash.

Traditional cost-based companies can change their destinies by focusing on processing time. Work flow translates into cash flow.

Process Improvement through Process Mapping.

Viewing the shop floor as a pipeline is a fairly standard way of diagramming a manufacturing process. The pipeline begins with a customer order. The process converts that order into cash. In an ideal situation, as the customer order goes through the pipeline value is added at various stages, during which purchased inventory is converted into finished goods. The speed at which the order is converted into cash is inversely proportional to the level of non-value producing activities and bottleneck operations found throughout the pipeline.

Any function that requires time that does not add value to the finished product is a non value-adding activity. Examples are:

1. Waiting for parts or materials.
2. Looking for tools or special equipment
3. A machine down for maintenance
4. Rework
5. Paperwork
6. Stopping production for inspection

7. Changing a setup.
8. Handling materials.

Process Mapping involves identifying each distinct process in the "pipeline," and determining whether it adds value or not. Time studies analyze the time spent for each process, and segregate the value-adding time from the non value-adding time.

Rubury recommends that the person doing the process mapping should:

1. Observe each activity
2. Number each observed step
3. Describe the step.
4. Indicate number of persons involved
5. Record the time required
6. Categorize the step as adding value or not.

These procedures are a simplified representation of the relatively sophisticated statistical and graphical analyses that follow from process mapping. These analyses can identify bottlenecks in the manufacturing process. Areas for improvement should be prioritized with the greatest emphasis on those that can produce the largest gains in the shortest period of time.

Rubury uses the example of a metal-stamping press as a bottleneck. The only value-adding process of which the press is capable is stamping parts. All other activities associated with it are non-value producing. In the example, when the press was not making parts there were a variety of reasons, such as:

1. Tooling for the next job was not ready
2. The press was being set up
3. Technical problems with the die
4. The scrap hopper or finished stamping hoppers were full.
5. An inspection gauge was not at the station
6. The press was undergoing a coil change.

Die and coil changes were necessary, but other causes for delay could be eliminated or minimized. Even for necessary functions time required to perform them may be lessened.

The cash flow impact of effectively identifying and dealing with bottlenecks in the manufacturing process cannot be over-emphasized. The stamping press in the example, might, by most cost accounting methods, be considered to cost several hundred dollars an hour. However, a bottleneck in the manufacturing process is like a crimp in the pipeline. It limits the amount that can flow through the pipe from that point on. In fact the actual cost of the bottleneck is the cost of all of the unutilized capacity downstream of the bottleneck. The standard cost figure greatly dilutes the importance of maximizing throughput. The traditional cost-based company is at a distinct competitive disadvantage over the company that focuses on reducing manufacturing cycle time.

Positive cash flow that results from improvement of the process time cycle, also is expressed in the form of profit, and drops directly to bottom line performance.