



## **Identifying Waste**

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Surviving and coming out ahead in these turbulent times demands that we all think carefully and choose well what to study and improve. Every organization has plenty of waste and opportunities for improvement.

### **But how do you find them?**

Most organizations do not focus on identifying waste, but instead come up with lists of idea driven improvements. That is, someone comes up with an idea for an improvement (usually some new technology or equipment that will do something faster or better), puts together a proposal, and then tries to implement it.

The problem with the idea-driven approach is that there is very little correlation between the list of ideas for improvement and the biggest problems or opportunities for improvement within the organization. The idea-driven approach to improvement depends on someone identifying a solution at the outset. The biggest opportunities are usually buried in the tough long-term problems for which solutions are not immediately obvious to anyone! If a solution doesn't occur to someone, the problem doesn't make the list. If it doesn't make the list, it is never studied sufficiently to come up with a solution.

Organizations get further faster by identifying the waste first and choosing the best opportunities from all of the areas of waste you have identified. A portion of the waste is easily spotted and addressed if you take the time to collect the information. But much of the waste is hidden -- built into budgets, accepted practices, current operating procedures, and shared assumptions. It is built into processes that are compensating for problems that have not yet been solved. This waste is difficult to see without expanding the vision of what is possible.

### **How to identify the waste?**

Over the years, we have seen several approaches to identifying the waste put into practice. Four such approaches to surfacing the waste are: the goal driven search, brainstorming, work walk-throughs, and examining the process. These approaches are discussed below.

### **A goal driven search:**

***Start with the most pressing organizational goal and drill down to find the waste that affects that goal.***

Do you want to save time, money, improve quality, conserve capacity - what? The goal driven search for waste takes that goal and looks for any problem that affects it.

- If your goal is to free up people's time, you would then study the time to identify and prioritize every aspect that waste's time. A work sampling study would provide you with a great deal of information about this.
- If you want to free up production capacity, you would study and prioritize all the factors that waste your capacity - bottlenecks, set up times, producing the wrong thing (product that sits in inventory), yields - all the capacity spent producing product that cannot be sold, production capacity devoted to rework.
- If you want to free up cash, you would search for waste in all the cash expenditures: utilities, component inventories, can you accelerate collections, can you shorten the time between order and delivery to accelerate invoicing? Can you shorten the time to collection? Can you ship more from inventory without adding to it? Are you expending cash on overtime that could be reduced if you reduced time wasters?
- If you want to increase revenue, you would focus on identifying and quantifying the waste in all the factors that get in the way of sales. Use of sales reps time, selling methodology, lead generation and lead yield, causes of lost sales, delays in installations or shipments.

The distinctive feature of the goal driven approach is that not all waste is treated equally. Instead of looking for waste in all its forms, this approach zeros in to identify and prioritize for removal of all the waste associated with a particular important goal.

**The brainstorming approach:**

***Collect a group of people knowledgeable about the work and solicit all the ideas about what waste is where.***

The brainstorming approach is perhaps the quickest and easiest way to identify an extensive list of the waste in an organization. It is also a great method for getting people involved in looking for and identifying the waste. Because the people who know most about the work identify the waste, these people are often very committed to working on improvement projects to get rid of that waste. On the initial attempt to identify waste, people generally leave untouched the waste that is deeply embedded in operating practices and instead surface more superficial opportunities. However, some of these will bear substantial fruit and an organization's skill at surfacing waste will generally grow as it develops more experience with studying and eliminating waste. Brainstorming areas of waste is an excellent way to start an organization on a path of systematic continuous improvement.

**The work walk-through approach:**

***Directly observe the work as it is done, searching for and capturing every bit of waste you can spot.***

Staple yourself to an order! Not literally, but one way to identify waste is to get a group of people together to follow the work all the way through the process watching for all the places that waste occurs. It is a good idea to make sure your organization has a clear idea about "amnesty" and so that the people hard at work do not feel you are watching for any mistakes they make. As you know, almost all the waste in an organization is due to flaws in the system of work; management has the job of making sure the system is working well so as to minimize wasted time, materials, capital, etc. You can enlist people's help in identifying what aspects of the system make it harder for them to do the job right with the minimum of time and effort.

**The check-out the process approach:**

***Create a value map to identify inventory pileups, bottlenecks, and delays. Use our process evaluation tool to analyze a process and identify and quantify the waste. Or use our SIPOC tool to evaluate a high level process flow.***

A SIPOC diagram is a very high level process flow, identifying each key input and output of each process. Once you have these identified, you list the quality criteria for each input and output, select an importance factor for each criterion and select how well it is met (or "don't know") and our SIPOC tool will calculate the high impact areas to go after for improvement.

**Please click on the SIPOC diagram image below to view in full-size**



(Answer YES to "Enable Macros")

The screenshot shows a Microsoft Excel spreadsheet titled "SIPOC Diagramming — Conway Charting Solutions Software". The spreadsheet is divided into two main sections: "Quality of Input to this Process Step" and "Customer's view of Output".

**Quality of Input to this Process Step:**

Supplier	Input	Quality Criteria	How important is this criterion?	How well is the criterion met?	Score
Asset Management	A. Demand Plan	1) Reliability of forecast	Important	Sometimes Met	36
		2)			
		3)			
Asset Management	B. Inventory	1) Accuracy of inventory lists	Very Important	Always Met	0
		2) Visibility to all stockrooms	Very Important	Don't Know	56
		3)			
Manufacturing	C. Production Plans and usage rates	1) predictability of usage	Very Important	Usually Met	24

**Customer's view of Output:**

Output	Quality Criteria	Score
A. Purchase orders for required components	1) Placed in a timely fashion	30
	2) Placed with reliable suppliers	30
	3) Sufficient quantity to meet demand uncertainties	48
B.	1)	
	2)	
	3)	
C.	1)	

**Key Process Steps:**

- Procurement places orders for the right component parts at the right quantity and quality
- Production builds computers
- Distribution stocks inventories of finished goods around the country

The spreadsheet also includes a status bar at the bottom showing the Windows taskbar with the time 12:45 PM.

In the above example, the delivery of component parts on-time and in the right quantity represents the largest opportunity (score of 60).

The real value of this approach comes from systematically thinking through the process and what is required for each key step in the process to operate flawlessly, and then to prioritize the aspects that are not working as required.

Our process evaluation methodology and tool provide another way to identify the waste. This approach uses a detailed process flow chart with both process steps and data about the time required for each step and the frequency of each decision loop. The steps are categorized as to whether it is value, rework, inspection etc. and the first level cause is identified. This approach and tool will enable you to summarize the portion of time for a process by category of work and by first level cause as well as to visualize the process if it were pure value add.

All four of these approaches frequently work quite well at identifying and prioritizing waste and far better than the idea-driven approach. Choose the method of identifying and quantifying the waste that best suits your organization at this point in time. Then get started on the eight-step improvement methodology. The sooner you start, the sooner you reap the benefits!