
SPEED TO MARKET

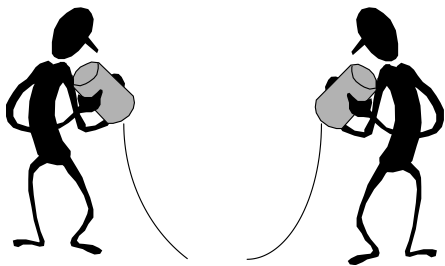
A Newsletter for
Job Shops–Niche Manufacturers–Focused Distribution Systems

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Excuse Me...



A frequently overlooked area of waste is the high cost of interruptions. It is not on the list of the *Toyota Production System's Seven Wastes*, and generally flies under the radar undetected. Not surprisingly, one reason for this invisibility comes back to our theme of the differences between make-to-stock and make-to-order businesses. *Speed to Market Readers* understand these differences and their implications to a large degree. What may not be so clear,

however, is that interruptions are far more frequent and costly in job shop environments compared to those environments in which employees perform repetitive tasks. Why is this so?

What is a knowledge worker? The term *knowledge worker* was coined by Peter Drucker in his 1959 book, *Landmarks of Tomorrow*. He rightly observed: "Productive work in today's society and economy is work that applies vision, knowledge and concepts -- work that is based on the mind rather than the hand." The term knowledge worker has generally been applied to information technology fields, such as programmers, systems analysts, technical writers, academic professionals, researchers, and so forth.

Notice Drucker's definition of work based on the mind rather than the hand. But how about those jobs that require both, a key characteristic of job shops? To be fair, Drucker subsequently expanded his definition of knowledge worker to include those who combine mental and physical work, but the old definition seems to have stuck.

The point here is straightforward. Although not generally recognized, employees in job shops are knowledge workers, not factory workers. The nature of skilled work generates interruptions, and these come with a high cost because they typically break into a train of thought. This is not to say that all interruptions should be eliminated as many are necessary and productive, but many are not. Eliminating unnecessary interruptions will make you shop run more smoothly and efficiently.

What is an interruption? From *Webster's Dictionary*, an interruption is defined as:

- To break in upon;
- To stop the course of;
- To break the continuity of

The Structure of an Interruption: The duration of an interruption is typically longer than the interruption itself. The components of an interruption include:

- Slowing down and stopping the task
- The interruption itself
- Reorientation
- Restarting the original task
- Returning to the original pace

When all the components of an interruption are included, you can see that a two-minute interruption has an impact of three or four times this amount.

Cost Estimating Model: We built the following model with one of our clients, Kesemann Tool and Die, a seven-man shop located in Concordia, Missouri. This being the “show me” State, they wanted to see for themselves what interruptions actually cost. In a group meeting, we gained a consensus that each machinist experienced an average of 6 interruptions per day, and they estimated the total time of these interruptions at 8 minutes each, once all the components of an interruption were taken into account. A total cost for a year was estimated at \$87,360. Reducing this by half would save some \$43,500. This is a number large enough to demand attention, even in a large shop.

Number of interruptions per day per person	6
Estimated duration (Minutes)	8
Total time per day (Minutes)	48
Number of people on the floor	7
Total interruption time (Minutes)	336
Number of working days per week	5
Total minutes per week	1680
Shop hourly quote rate	\$ 60
Cost per minute	\$ 1.00
Total cost per week	\$1,680
Total cost per year	\$87,360

Examples of Interruptions: We worked with this group to determine the types of interruptions they experienced during the course of a day. These included:

• Asking for help/assistance	• Questions from coworkers
• Requests for information	• Look up in catalogue for purchasing
• Dropping something	• Looking for prints
• Looking for information	• Looking for Tools/Cutters
• Checking on how programs are running	• People walking through a work area
• Supervision	• Rescheduling
• Social interactions	• Personal
• People dropping by	• Bathroom breaks
• Coffee breaks	• Clocking on/off jobs
• Telephone calls (in and out)	• Text messaging

How to reduce the number of interruptions: Here are some ways to reduce the number and duration of unnecessary interruptions:

- **Awareness.** The more people are aware of the high cost of interruptions, the less likely they will be to interrupt a co-worker when it is not necessary, or when it can wait until a better time.
- **Timing.** Some jobs require greater concentration than others. Avoid interrupting co-workers when they are working on something that requires high concentration.
- **Duration.** If you have to interrupt, keep the time to a minimum.
- **Keep working.** Not every interruption requires a person to stop what they are doing. It is not “impolite” to answer a question while you continue to work.
- **Don’t Stop Immediately:** If you are in the middle of something that requires concentration and you need to complete it to reach a natural break, tell the person who is interrupting you to wait a minute. When you have completed the difficult part of the task, then you can deal with the request.
- **Inform Others:** Tell people who tend to call you during working hours to call during break and lunch times. Apply the same rule to yourself for outgoing calls.
- **Organization:** Determine where people spend the most time looking for prints, tools, other information. Make sure these areas are well organized and disciplines are established (e.g., put things back in their proper locations after you are finished using them).
- **Work Rules:** In the old days, calls for individuals would have to come through the company switchboard. Now with cell phones, this means of control over personal calls has been lost. It may be necessary to review and revise work rules to eliminate personal calls during working hours, or make sure that people do not wander into the shop looking for a buddy, or to eliminate other types of personal interruptions.
- **Education:** Convene the people in your shop and conduct an exercise similar to that described in this article. By doing this, everyone will have a common understanding of the costs and remedies for interruptions.

Summary: An interruption is a break in the continuity of a task, either physical or mental. Interruptions are a form of expensive waste that is typically invisible. Job shops are particularly vulnerable to this type of waste because the environment is prone to interruptions due to the nature of the work itself, and because employees in job shops are knowledge workers who are performing non-routine mental and physical tasks. Although you cannot eliminate interruptions completely (nor do you want to because some are necessary and productive), you can minimize them. The previous list of suggestions is a starting point.

So remember, when you say “Excuse me,” it costs money.

See how much interruptions cost you. Download our Cost of Interruptions Calculator at

www.deltadynamicsinc.com/images/Cost%20of%20Interruptions%20Calculator.xls