

TPS: the Thinking Production System

It's easy to spot waste on an assembly line. But what do you look for in an office?

Teruyuki Minoura of Toyota, and John Shook, co-author of *Learning To See* and senior advisor in the Lean Enterprise Institute, say that "TPS" should really stand for "Thinking Production System." In their view, more than anything else, a manager committed to Lean must constantly ask questions: Why do we have parts piled up here? Why is this worker falling behind? Why are there errors in this process? Managers need to think, to ask questions, to find ways to improve the system.

But what do you look for in a business process? What are the signs of waste? How do you spot the problems? When you're dealing with knowledge workers in an office, critical process inefficiencies aren't as visible as they are in a factory. Value stream mapping is only part of the answer. You also need to see and eliminate the waste inherent in how people work.

Here's a guide to some of the questions you should be asking.

Sclerosis of the inbox

How often does your IT department have to buy new storage space for the mail server? How often do they suspend mail privileges because people are storing emails about mission-critical issues like, say, the decision to have Chinese food for lunch. . . last April?

Your knowledge workers' inboxes are gorged with junk like late-career Orson Wells because they don't have a Lean process for managing the tidal wave of email. The real cost of these clogged inboxes isn't the server space, however – that's pretty cheap these days. It's the terrible "signal to noise" ratio that makes it more difficult to identify and respond to what's truly important. Consider this: in 1999, NASA's Mars Climate Orbiter burned up in orbit due to a miscommunication regarding English and metric units. A task force found that a simple, unanswered email about the correct measurement units led to the disaster. The total loss to NASA – \$327 million.

Each email contains information and ideas that are part of the value streams that flow through your knowledge workers. When that information gets stuck in someone's inbox – when the value stream stops flowing – you're looking at nothing more than another form of excess inventory. And as NASA learned, when the value stream backs up and puddles of inventory form, the consequences can be very expensive, indeed. What's lurking in your inbox?

When it absolutely, positively has to be there overnight. Because you goofed.

Did your company single-handedly rescue United Airlines from bankruptcy by booking a lot of last-minute airline tickets? Does your firm send a lot of overnight mail? FedEx has made a pretty good living off of knowledge workers who don't create effective project implementation plans, and as a result need their phenomenal service to pull the fat out of the fire.

Of course, nothing ever goes perfectly according to plan. There will always be a need for a last-minute bail out. But by using Lean planning techniques – determining responsibility for each task in a complex project, identifying clear mid-course check-in points, and (most importantly) letting people know in advance what will be required of them and when – you can reduce the frequency of those desperate scrambles to catch the FedEx truck at 4:00pm for the privilege of spending \$20.75 to mail a letter. For you non-math majors, that's 53 times the cost of regular mail.

“Damn it Jim, I’m an accountant, not an archaeologist!”

Is your conference room always booked because people are embarrassed to use their offices for meetings? Does your CFO use Carbon-14 dating when he needs to find client files on the bottom of the pile near his door? (No, not that pile. The one on the other side of the door. You know, next to the other pile.)

If it looks like an archaeological dig in your beautifully appointed offices, your knowledge workers don't know how to process the information that flows to them down a value stream. As with email, each piece of paper represents inventory that you should strive to eliminate. Moreover, the odds are excellent that someone farther down the value stream is waiting (which is a form of waste, remember?) for that information. And if it's worthless or obsolete information that no one is waiting for? Well, then you're paying rent on garbage – on average, about 11 square feet of file space per person.

It's an office. Not a game of Whack-A-Mole.

Why are people staying so late at work? Are people coming in on weekends to catch up on their projects? Do people ever get to focus on their work, or are they always being interrupted? Why are people responding to email as soon as it arrives?

If your office looks like a game of Whack-A-Mole, with heads continually popping out of office doors or over cubicle walls, and the sound of email alerts dinging relentlessly, your knowledge workers aren't getting their work done very efficiently. Of course, they're in good company: a UC Irvine study found that knowledge workers are interrupted in their tasks every 11 minutes, while a Basex survey revealed that 55% of executives read their email as soon as it arrives.

This constant fracturing of attention is expensive. The FAA found that switching from one task to another reduces efficiency by 20-40%, meaning that people aren't getting their work done as quickly as they could. Consider: your knowledge workers are losing 45 minutes per day just because of non-Lean work habits. Over the course of a full year, that's about 4½ work weeks. Would you like to calculate the titanic expense of that inefficiency?

A better way to work.

A typical Toyota assembly line in the United States makes thousands of operational changes in the course of a single year. Journalist Charles Fishman points out “that number is not just large, it's arresting, it's mind-boggling. How much have you changed your work routine in the past decade? Toyota's line employees change the way they work dozens of times a year.”

In fact, Toyota isn't really dedicated to producing cars. Toyota is dedicated to finding better ways to produce cars. If you manage a business process, you need the same mentality. You need to focus on improving the process by which knowledge workers move value forward. And that involves both the way the value stream is organized, and the way people work within that stream.

As John Shook says, "doing the task, and doing the task better, become one and the same thing." And that's a better way to work.