

Lean's Unnoticed Waste

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Lean pioneer Dr. Shigeo Shingo, often referred to as the Thomas Edison of Japan, wisely said, "The most dangerous kind of waste is the waste we do not recognize. Usually if people find waste, they will get rid of it. The big problem is not noticing something is wasteful." He strongly advocated that our focus should be to "Find Waste" and not just "Eliminate Waste."

Lean practitioners define waste as any activity that consumes time, resources or space but does not add any value to the product or service. To help identify the wastes (known as muda in the Toyota Production System), Lean organizes them into seven different types—over-production, waiting, transportation, inventory, motion, over-processing and defects.

Using a checklist of Seven Wastes certainly helps one identify and find the wastes within an organization. However, learning from Dr. Shigeo Shingo, we should ask, is this checklist comprehensive? Is there any other type of waste that we have failed to recognize? What other waste should we be looking out for if we want to achieve the next level of productivity improvement and efficiency?

In this article, I want to put forth the case for an addition to the Seven Wastes; there is an eighth type of waste that Lean practitioners should recognize and eliminate—The Mind. I am not referring to untapped human potential, such as skills, talent, or creativity, that some Lean practitioners advocate as the eighth waste. I am referring to the waste created when we don't use the powerful thinking capability that the mind is capable of. I would argue that it is precisely this wasting of the mind that prevents many organizations that have attempted to implement Lean from realizing full potential. I'll explore examples that suggest that this waste is not uncommon, consider why this waste exists and show why we should not let this waste slip away and erode our efforts to improve productivity and create value for organizations.

A Waste that destroys value

I don't think enough of us realize that if we do not exercise our ability to think effectively, we are not only creating waste but destroying value. Here are some compelling examples:

- Eastman Kodak developed the digital camera in 1975 but decided not to invest in the technology for fear that it would undercut sales of its film business. By the time the company decided to push into the digital market in the 1990s, competitors such as Fuji and Sony were controlling the market and Kodak was unable to fully capitalize on the product it invented. By 2011, the stock price dropped to 65 cents from a high of \$94 and the company filed for bankruptcy.
- In 2005, Osim, the market leader in healthy lifestyle products (well known in Asia for its massage chairs) acquired Brookstone (a chain of retail stores in United States) through a leveraged buyout. This infamous decision resulted in Osim having to write-off the entire amount (\$149 million) after three years.
- APT, the world's largest manufacturer of food containers, had a recurring defect (angel hair) that took a substantial toll in man-hours, capacity, financial resources and employee relations. The problem existed for eight years since the opening of the plant. With a focused effort of applying systematic troubleshooting, the root cause was found within two months saving the organization \$1.3 million annually.

As the above list suggests, not tapping the ability of the mind to solve problems and make decisions effectively is wasteful and can result in significant costs and missed opportunities.

Complex issues require more than intuition

We might expect that the ability to think clearly and effectively should become second nature to most of us once we learn the ropes and understand how things work. Unfortunately, this is not true. Thomas Alva Edison (1847–1931), the famous American inventor and businessman once said, "It is astonishing what an effort it seems to be for many people to put their brains definitely and systematically to work."

Is putting our brains to work really that difficult and effortful? To explore that, I turn to Daniel Kahneman's life-long work, which is best captured in his book, "Thinking Fast and Slow." Kahneman explains that our minds use two modes of thought, which he names System 1 and System 2. System 1 represents what we call intuition. It provides us with automatic, instant, intuitive and involuntary impressions, intentions and

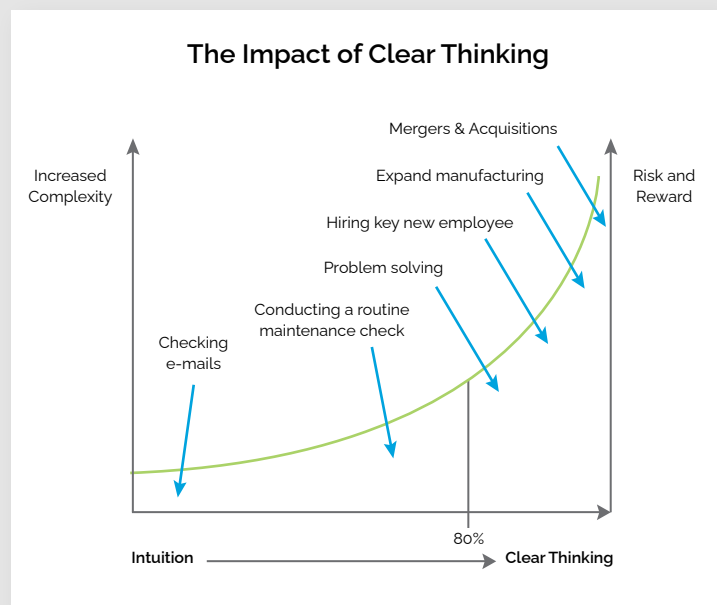
feelings. System 2 represents reason, self-control and intelligence. It is the more controlled, effortful and analytical of our thoughts.

To have a better understanding of these two modes of thinking, Kahneman asks us to consider the following two mathematical problems:

- **Problem 1:** $2 + 2$
- **Problem 2:** 17×24

When we look at the first problem, most, if not all, of us arrive at the number four with little or no effort. However for problem two, while we know it is a multiplication problem, no immediate answer comes to mind. We know that we can solve it, but without spending time on it we are not certain of the answer. These two problems beautifully illustrate the difference between our System 1 and System 2 thinking.

In his book, Kahneman illustrates that we favor System 1 thinking, as it requires no effort, rather than System 2 which is taxing and effortful. Most people will use System 1 thinking wherever possible to minimize effort, which is hard work and typically in short supply. This would be of little concern if we could rely on our System 1 to make high quality decisions and solve problems effectively. Unfortunately, effective, complex problem solving and decision making requires System 2 thinking. Using System 1 in place of System 2 for such situations can result in tremendous waste and lost opportunities.



The following diagram illustrates that the correlation between risk/reward and complexity and indicates when we should apply System 1 and System 2 thinking.

Consider what happens if we incorrectly applied System 1 thinking to situations that require System 2 thinking; we could end up with the significant waste (risks). Thomas Edison must have observed numerous situations where System 2 thinking should have been used, but was not, to have prompted him to comment that many people need a lot of effort to put their minds to work.

"A mind is a terrible thing to waste"

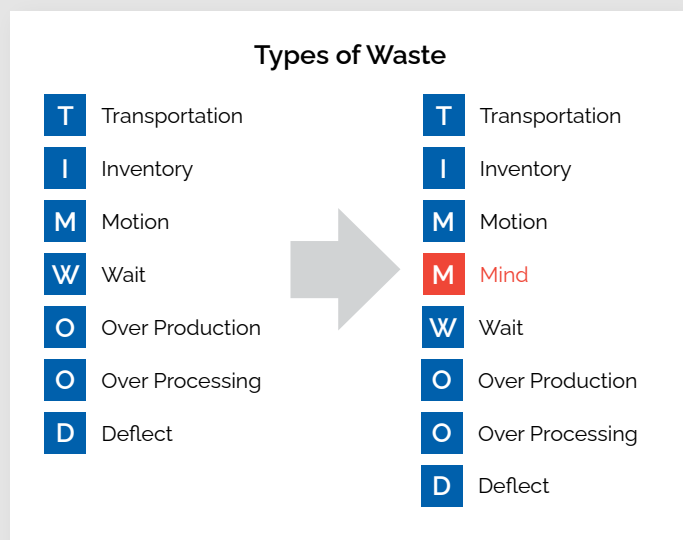
We have learned that when left unchallenged, System 1 can lead us astray. Indeed we might argue that poor quality, intuitive System 1 thinking might account for the majority of the poor problem solving and decision making we see in organizations today. In the context of Lean, it is certainly wasteful. The reasons for keeping this waste in check are obvious. I will just cite a couple of examples of how some

companies have benefited from eliminating the wasting of the mind through the disciplined application of clear (System 2) thinking.

- Yanfeng is a leading global automotive supplier, focusing on interior, exterior, seating, cockpit electronics, and passive safety. During a critical launch for an important client, 5% of the seat track being produced was rejected due to slow travel. As this is a high rate of failure, the Yanfeng team immediately started troubleshooting the problem using a systematic approach (Kepner-Tregoe (KT) Problem Analysis). After about one hour, cause was determined. Interestingly, this all occurred while the client was present. After the problem was resolved, the client was interested in understanding how the issue was resolved so quickly. The team took time to walk him through the steps of their problem analysis. At the conclusion of this exercise, he was notably reassured that the Yanfeng team had the tools and the ability to address issues, should they occur in the future. When looking at the financial impact of applying this approach to thinking, Yanfeng estimates that they avoided the possible loss of \$50,000 in annual revenue.
- UBE is a leading Chemical Group based in Thailand. Its timely use of systematic troubleshooting processes in a chemical leak situation, enabled the plant to avoid an unplanned shutdown and to deal with quality issues. This resulted in cost savings of around US\$100,000. Using the KT Problem Analysis process, the maintenance team collaborated to focus on gathering relevant factual information about the leak, systematically eliminating irrelevant possible causes and saving time in finding true cause.

In summary, I would put forth the proposition that in addition to the Seven Wastes that Lean practitioners are on the lookout for, companies need to start to recognize the eighth waste that has often avoided detection, the wasting of the mind's thinking capability. It is time to change the commonly known mnemonics (TIMWOOD) of the Seven Wastes into (TIMMWOOD).

"A mind is a terrible thing to waste," the slogan of the United Negro College Fund for more than fifty years, serves as a great reminder. While this famous quote is meant to solicit support for traditionally black colleges and minority scholarships and to emphasize the value of education, it is a universal truth. As companies continue their drive towards improving efficiency and effectiveness, let's start recognizing and eliminating this waste and put the TIMMWOOD in action.



About Kepner-Tregoe

Founded in 1958, and based on ground-breaking research regarding how people think, solve problems, and make decisions, Kepner-Tregoe provides a unique combination of training and consulting services to improve quality and effectiveness while reducing overall costs. The KT methodology is used at every level of client organizations: to implement strategy, achieve continuous improvement, increase customer satisfaction, and drive effective issue resolution throughout the organization.

