

How Lean Principles Can Benefit Process-Driven IT



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For many companies, IT tends to be a functional silo removed from the organization's core operations. All too often, that leaves us with too much data or the wrong kind of data -- both of which work against the goal of IT, which is to help system users make good decisions. We need to break that pattern.

In 30 years of working with, installing, and even uninstalling IT systems, I have yet to find an IT environment that is 100 percent efficient. In fact, most aren't even 50 percent efficient, and typically they are plagued by one or more of the following problems:

- Systems that are over-constructed;
- Systems requiring duplicate data entries;
- Systems that have numerous workarounds;
- Systems requiring some processes to be made by hand; or, in extreme cases,
- Systems that require processes to be done by hand so that the data can be manually entered into the computer and be maintained in a database

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If we think of IT as part of an organization's core business, with processes just like any other [business unit](#), we can begin to think about process optimization -- and the best approach to process optimization is Lean.

IT Efficiencies and IT Waste

Lean offers the tools useful for making improved decisions that will result in increased IT efficiencies. Based on the principals of the Toyota Production System (TPS), it is usually thought of as a construct for manufacturing. But, in fact, Lean can easily be focused on eliminating IT waste and improving IT efficiency by doubling, if not tripling output. Among its tried and proved tools and principles of success are:

- Lean Management (TPS) Principles
- A3 – 9-Step Problem/Improvement Analysis and Reporting
- [Six Sigma](#) Variance Reduction
- Cycle Time Analysis
- Value Stream Mapping
- Spaghetti Charting
- Value Added vs. Non-Value Added Activity Analysis
- Bottleneck Assessment

As for waste, it typically is the result of a lack of understanding of user expectations. Waste can also occur because of the re-work needed to correct previous inefficient traditional methods and because of poor planning. In fact, there are any number of ways in which an IT organization's processes can end up having been "designed by circumstance" rather than "designed purpose," resulting in the following kinds of waste:

- Over-production: The result of "just-in-case" IT work authorized in anticipation of a potential event at the expense of applying resources to known value-added efforts
- Waiting: The delays that occur between activities that increase total cycle time
- Unnecessary Transportation: In IT, this equates to the amount of time it takes to navigate through a series of applications to accomplish a highly repetitive task
- Over-processing: This occurs when a lack of standardization leads to time spent re-inventing the wheel
- Inventory: In IT, inventory is backlog, and when the organization's workload is unevenly distributed, some people wind up with enormous backlogs, leading to poor throughput performance and lost revenue
- Unnecessary Movement: Includes the inefficient flow and movement of individuals trying to access the tools they need, and the inefficient movement of data within the system
- Defects: Bad code and inadequate documentation are examples of IT defects
- By using Lean principles and techniques to identify these wastes, you can create streamlined IT processes that have been "designed by purpose."

Let's look at a common situation -- the need to improve the implementation of software patches -- using the example of a large, centrally-managed IT organization. Patches and software updates are sent out on a regular basis; but in this organization, there are inefficiencies and delays in securing the network, and inaccuracies in reporting the number of compliant versus non-compliant systems.



With system patches taking weeks or even months to get pushed out and implemented, the organization set three targets for improvement: Faster package delivery time, fewer "out-of-compliance" systems, and 100 percent [compliance](#) in all updates.

As a result of implementing Lean principles, such as focusing on the elimination of waste, using Value Stream Mapping, and implementing A3 techniques, the organization saw the immediate reduction of package delivery time from 18 to 12 days. Within two months, "out-of-compliance" systems were reduced by 50 percent, and within four months all systems were compliant.

In a second example, a hospital utilized Lean to streamline their system updating process. The hospital's medical in-processing procedure for setting up new patient accounts took too long and was causing significant delays in patient analysis and treatment, with only 40 percent of the in-processing requirements being completed on time. In the best case scenario the in-processing took seven days, and at its worst it took 240 days.

The hospital set two targets for improvement: Optimize the current process to reflect the nature of the critical path for in-processing patients, and eliminate non-value added tasks to ensure that the critical path activities were completed. Within two months of implementing Lean Value Stream Mapping and A3 techniques, the hospital was able to complete 90 percent of all tasks within three days of a patient's arrival.

A couple of years ago, I was asked to facilitate improvements in a government attorney general's office in which most of employees were legal clerks and lawyers. I looked for both the non-value-added content of their work and for bottlenecks, and then identified the IT touch points (excessive interaction with the computer) and manual processes that could be automated. This resulted in recommendations to change work assignments and workflow to address work build-ups and backlogs.

Less than two weeks after implementation, the office had tripled its daily work output. Note that this was accomplished without any new hiring or layoffs. Instead, the staff "leaned-out" both the paperwork and the information flow process within the organization. These new processes were based on evaluating logical progressions and [efficiencies](#) rather than on how the work had been done before.

A New Opportunity to Make IT Efficient

IT is rich in opportunities for Lean process improvements – with the potential for as much as a 99 percent data performance improvement, in my experience – and it's clear that the starting point for organizations is to consider IT as a full partner in the organization whose business processes are similar to those of any other part of the company.

Within the IT group, leaders must validate that any [IT solution](#) being selected is the best solution, and they must minimize waste in IT development and implementation using Lean techniques. By doing so, they can increase efficiencies and reduce waste in IT changes, upgrades and patches, thus helping ensure that the entire organization is optimized for success.

We need to make IT less mysterious and recognize that the processes that drive IT are a perfect match for the process optimization at which Lean excels. Let's move forward "Leaning-out" IT.

About the Author

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