

# Lean IT

## How does it **HELP** IT?

### What is Lean IT?

Lean IT is the expansion of lean manufacturing and lean service principles to software development and management of information technology (IT). Its core objective, applied in the context of IT, is the elimination of waste, where waste is work that adds no value to a product or service but also to improve quality.

Although Lean IT is relatively new on the IT horizon, lean principles are well established and have had broad applicability since their adaptation from manufacturing in the beginning of 1930s.

### Lean Principles

There are **FIVE** key principles to Lean IT.

**Identify Customers and Specify Value** - Only a small fraction of the total time and effort in any organization actually adds value for the end customer. By clearly defining the values for specific products and/or services from the customer's perspective, all the waste can be eliminated.

**Identify and Map the Value Stream** - A value stream is the activities across all areas of an organization involved in delivering a product or service. This represents the end-to-end process that delivers the value to the customer. Once you have set out the customer requirement, the next step is to identify how you are delivering it to them.

**Create Flow by Eliminating Waste** - When you are mapping the value stream you will find that only 5% to 50% of activities actually add value. Eliminating this waste ensures that your product or service "flows" to the customer without any interruptions, detours or delays.

**Respond to Customer Pull** - Pull is about understanding customer demand on your services and then tailoring your process to respond to this. Essentially this means you produce only what the customer wants, when the customer wants it.

**Pursue Perfection** - By creating flow and pull that link together, you will find more and more layers of waste become visible. This process continues towards perfection, where every asset and every action adds value for the end customer.



## IT Waste

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### Defects

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- Not understanding user/customer requirements and expectations, thus delivering ineffective solutions
- Application bugs and design flaws or unstable software/hardware/devices making it difficult for staff to get value added work done
- Unauthorized changes to software and systems
- Inadequately tested changes to software and systems
- Helpdesk knowledgebase information incorrect, incomplete or obsolete causing harm and lost productivity
- Free text fields instead of drop down/check boxes that allow user error and bad data

### Over provisioning

Providing something that is not used is most definitely a waste. Pull production systems, availability and capacity management will help reduce this waste. Some examples are:

- Help desk troubleshooting that address symptoms but not root causes
- Producing and distributing reports that are not used
- Unused functionality in software
- Workflow routings that are not necessary
- Over-dimensioned systems
- Ineffective and repetitive meetings

### Delays

Delays are often one of the easiest of the wastes to identify and remove. Lead-time and efficiency can be greatly boosted through the removal of this waste, together with workflow balancing and pull production. Some examples of this are:

- Searching for information
- Delays from excessive review and approval steps
- Slow application response
- Delays between coding and testing
- Reports that take a long time to run
- Long helpdesk hold and call back times

### Non-value added processing

IT and service processes are usually overflowing with non-value added processes. The trouble is that they are much harder to see and identify in an office environment than on the production line. Using value stream mapping and root cause analysis can help reduce this waste. Some examples of non-value added processing are:

- Processing of sales invoices
- Ordering of training materials
- Storing of materials
- Having staff meetings to discuss a product or service
- Printing and assembling work books for training class

### Transportation issues

Another quite self-explanatory waste, often you have to take a step back and map activities to see the waste. Some examples are:

- Sending attachments rather than links
- Onsite visits instead of using remote technology to resolve issues
- Poor user interfaces
- Physical software/security and compliance audits

### Excess inventory problems

Inventory problems are the worst of the wastes, as they can lead to many other wastes. Inventory issues can lead to delays, defects from expiries, overproduction, and usually require some non-value added processing. Inventory problems are often hard to see in an office or transactional environment but they are there. The ideal is to have zero inventories and have material exactly when it is required; however it is almost impossible to achieve this in the real world due to variation and uncertainty. This waste can often be improved with supply chain optimization, capability studies, variation studies and inventory modelling. Some examples of excess inventory problems are:

- Excess information on local and shared drives
- Work waiting to be reviewed/approved/forwarded
- Software purchased but not deployed
- Backlog accumulating in software development
- Unused/unnecessary software licenses
- Excessive inventory of printer cartridges and consumables
- Excessive parts inventory

### Excess motion

By limiting motion while engaging in a process, you can reduce the time and energy required for that process. The waste of motion is usually one of the hardest to reduce significantly and does not provide as big an impact to the total value stream as removal of the other wastes. By using time and motion studies you can reduce the waste. Some examples are:

- People looking for parts/tools/supplies
- People looking for files/paperwork
- People going to a meeting, not prepared
- People going to a room down the hall to retrieve printouts from their computer
- People walking to another room or building to process documents

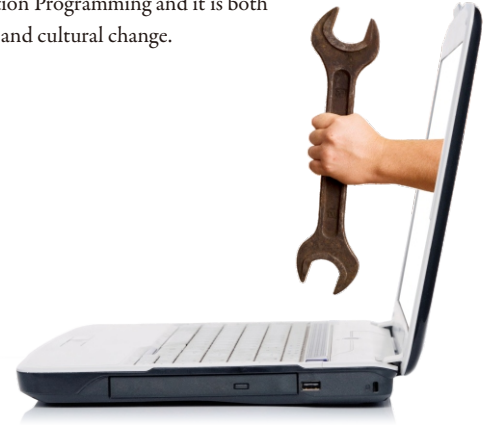
### Un-used employee knowledge

This waste was the latest addition to the list. It is by far the hardest to see in an organization. The best way to deal with this problem is to just encourage employee creativity as much as possible without trying to measure this waste. Brainstorming sessions and idea gathering techniques can help reduce this waste within the organization. Some examples of un-used employee knowledge are:

- Unnecessary process/data or system complexity
- Lost, conflicting or underutilised knowledge
- No empowerment and not asking for ideas
- Excessively detailed standards – no flexibility
- Not capturing and sharing ideas
- Not making knowledge easy to located and apply
- Not investing in education and training

## Implementing Lean IT

The introduction of lean in a company is known as Lean Transformation Programming and it is both an organizational and cultural change.



### 1. Perform an initial lean assessment.

The purpose of a lean assessment is to identify organizational strengths and weaknesses and determine how "lean" the organization is initially in different areas. It should include financial and operational analysis. It is important to select a consultant with significant lean experience to conduct the assessment.

### 2. Begin tracking metrics.

The lean assessment will provide the baseline and answer the question "Where are we now?" Tracking and posting metrics will show you where you are going during the whole lean transformation and will determine how successful your program is. Develop a set of metrics that you will use to track your implementation efforts. It is important to select a reasonably small number of metrics and post them. Do note that the metrics need to be transparent and available for everyone to see.

### 3. Develop a one-year, detailed implementation plan as well as a three to five year plan.

Develop a timeline based on the lean assessment and metrics selected. It should include goals and milestones. The plan needs to be tailored to the unique circumstances of the organization; this is not a one-size-fits-all plan.

### 4. Develop a training plan.

The two most common mistakes with regards to lean training are either training too early or failing to train at all. Both of these mistakes can prove to be costly. It is important to develop a training plan that coincides with the implementation plan. You should identify who should be trained, when they should be trained, and in what disciplines they should be trained.

### 5. Develop a communication and performance/reward plan.

Communicating the plan to go lean to everyone in the organization and letting them know how this will affect them is critical to success. Part of the communication plan should include a plan to reward both teams and individuals for their successful participation in the Lean implementation.

## Challenges



### Value-Stream Visualization

Unlike lean manufacturing, from which Lean IT is derived, Lean IT is often dependent on value streams that are digital and regularly intangible, rather than physical and tangible. This makes it difficult to visualize IT value streams and apply Lean IT.

### Resistance to Change

Lean IT initiatives are likely to demand organizational, operational, and behavioural changes to staff. This will most likely be met with resistance throughout the organization. Whether driven by a fear of job losses, a belief that existing work practices are superior, or some other concern, such changes may encounter resistance.

### Fragmented IT Departments

IT organizations are usually managed in a series of operational or technology silos, each with its own management tools and methods to address particular aspect of waste. Sadly, fragmented efforts at Lean IT contribute little benefit because they lack the integration necessary to manage cumulative waste across the value chain.

## Conclusion

The bottom line is, like ITIL, Six Sigma, CMMi and other models and frameworks, Lean IT is not a recipe for success. It requires both subject matter experts who understand and can develop ideas for how to eradicate waste and process optimization experts who can analyze work, understand cost-benefits and can plan and execute the proposed improvements.

The biggest lesson for any IT department is that Lean IT is not about the tools that are used; it is about the processes and procedures used. Every journey has to start somewhere, and for lean IT the journey begins with understanding what assets an organization has and how they are used. For most organizations, usage will be measured on a cost and value basis, but they should measure anything that is meaningful to the organization.

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The objective of lean IT is to eliminate waste and to make IT as efficient as possible, but efficiency is only one dimension that organizations have to consider, there is also risk and sustainability, which ensures that IT services will be delivered to match the organization's future demands.

