The Technology Value Stream

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What is the Technology Value Stream?

Nanette Brown of Carnegie Mellon University sites to Mike Kersten as saying that a value stream is “the end to end set of activities performed to deliver value to a customer through a product or service… Value streams are composed of all the activities, stakeholders, processes & tools required to deliver business value to the customer”. If we apply this to technology what we get is how we would measure our ability and the timeframe it takes to leverage and design technology to deliver results to our clients and customers. The DevOps Handbook would further clarify this definition by stating that the Technology Value Stream is “the process required to convert a business hypothesis into a technology-enabled service that delivers value to the customer.”

DevOps and Lean

Lean is a principle laid out by toyota and their production system. It is a way of breaking down systems into their key components and eliminating waste in the forms of time, money, and effort through taking steps to reduce queue time, limiting interruptions and optimizing the flow of operations. DevOps is essentially the result of leveraging lean principles to streamline the technology value stream.

Lead Time

Lead Time vs Processing Time

Lead time is the total amount of time it takes for a task to get through the system. This includes the time actually spent working on a task plus the amount of time that work spends sitting in a queue.

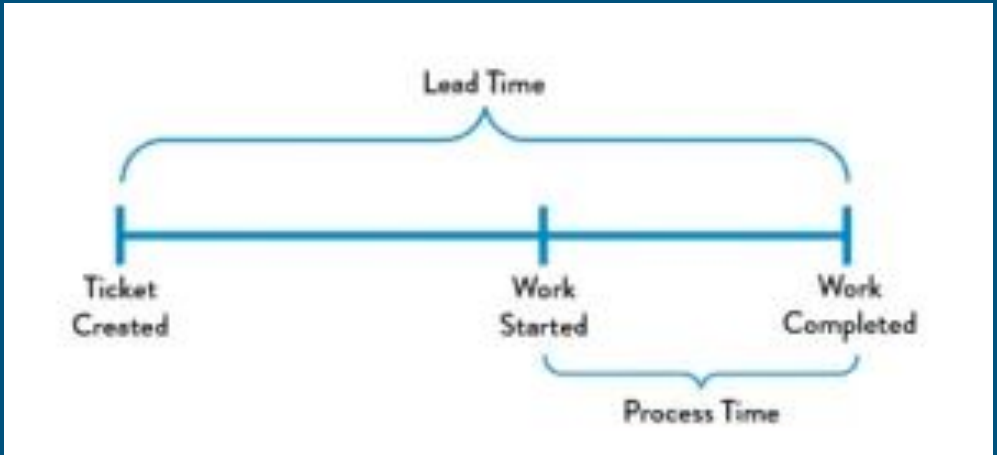
Processing Time

Lead Time vs Processing Time

Processing time is the amount of time actually spent working on a task. It is a metric that ignores any time spent in queue or prework tasks and only measures the actual amount of time and effort that goes into doing the work.

Lead Time and Processing Time

What this diagram shows is that it is often the case that a large portion of lead time with any task is consumed simply waiting for the work to start. So while it is important to optimize work streams to reduce process time lead time can often be dramatically reduced by removing the roadblocks that prevent the work on any given task from begining.



Common Scenario: Lead times taking months

It is very common to see lead times in the month for organizations operating under standardized operational models that have not yet adopted DevOps. In these organizations it is common to have people assigned to multiple projects constantly shifting priorities and performing significant amounts of manual labor that can prevent them from touching new work. In addition since the work is often done manually the processing time for the task can take a very long time. By adding up time that a task sits waiting to be worked on and the time that it takes to actually do the work these more traditional operational models can often have lead times that stretch out over several months.

Lead times measured in Minutes: The DevOps Ideal

With DevOps the goal is to break down tasks into small repeatable chunks and automate wherever possible. It aims to have employees concentrate on a single task and work that through to completion before taking on other work. This single task should be the goal of multiple areas and by optimizing how the work is performed the objective is to remove complexities from Processing Time and in turn allow items to flow through the queue much faster ideally optimizing Lead Times into a metric that is measured on the timeframe of minutes rather than months.

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