



Understanding Agile Principals

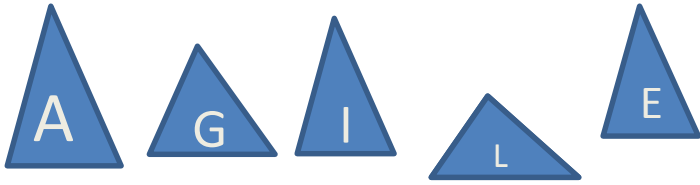
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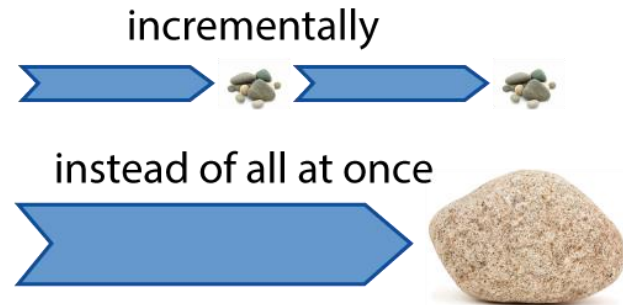
OVERVIEW

Overview



What it means?

- A term used to describe "light-weight" development
- A methodology for iteratively developing products
- Based on Scrum and the subsequent Agile Manifesto for Software Development

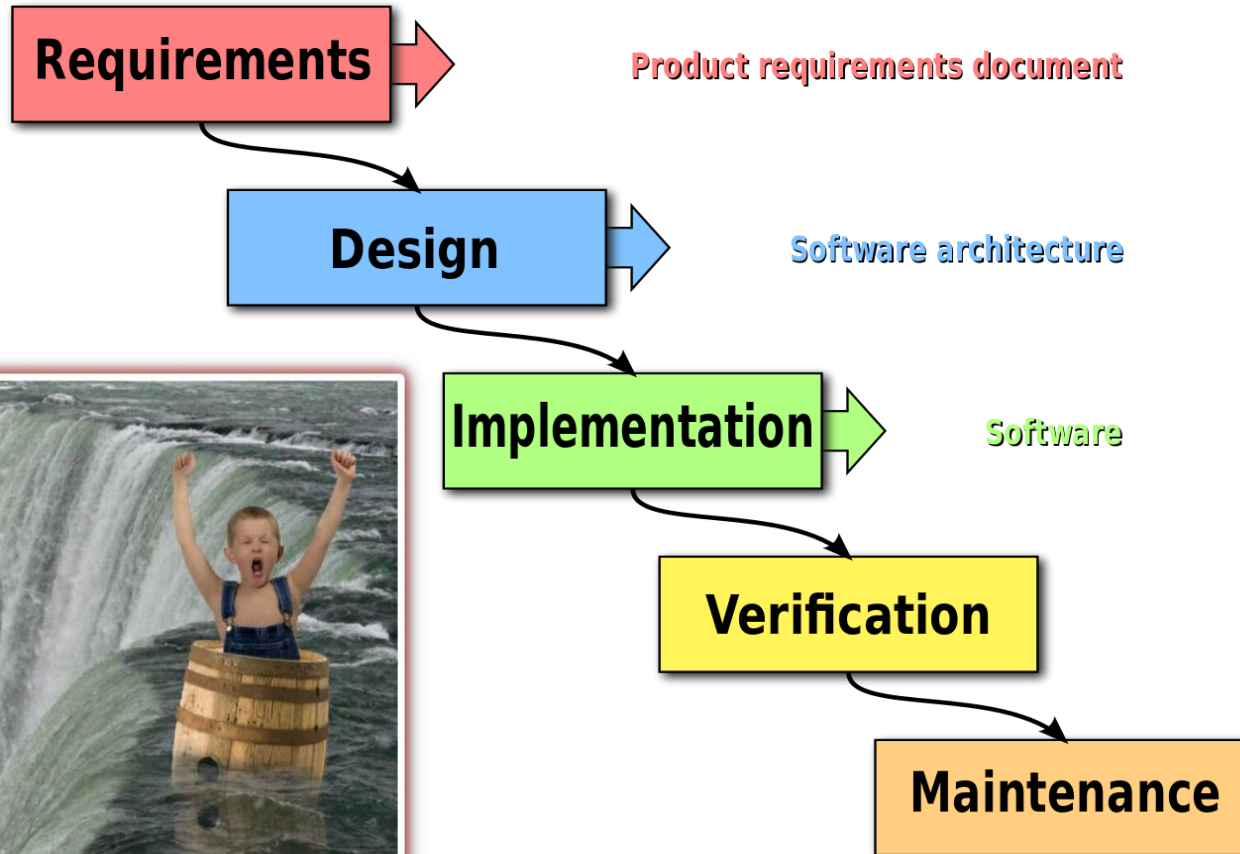


“Agile is a time boxed, iterative approach that builds software incrementally from the start of the project”.

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AGILITY IN GOVERNMENT

Waterfall Methodology



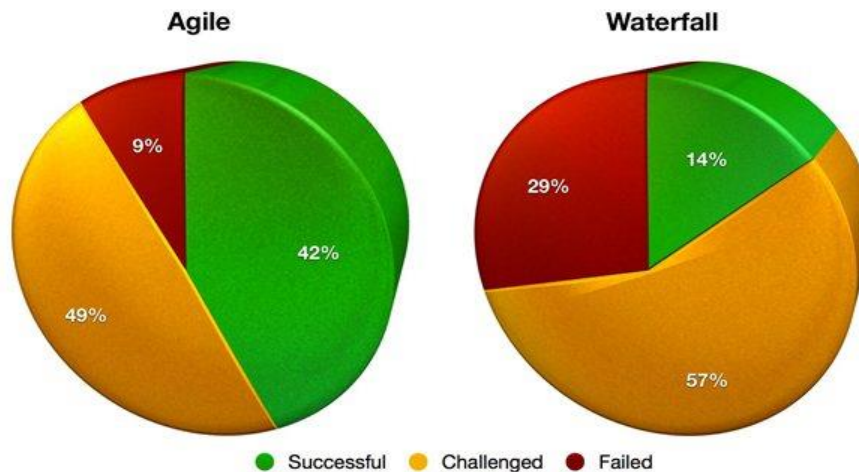
- Waterfall Development has not traditionally worked well on large development projects in Government



“THE AGONY OF
DEFEAT”

Summary of Unsuccessful Projects

- Federal IT spending is 3.9 of the U.S. Federal budget. 78 Billion USD
- 90% of large IT projects in government are unsuccessful.
- Over half were delayed, over budget and didn't meet user expectation.
- 41% failed completely. 32 Billion Waste.



2012/2015 Standish (most used) Chaos Report:

Unsuccessful Projects: Federal

- The FBI's Sentinel Project was a \$450 million project was stopped after an investment of four-plus years and \$421 million.
- Airforce modernization project spent one billion dollars (\$1,000,000,000) on Big Upfront Design before canceling the effort
- Without building a single working model

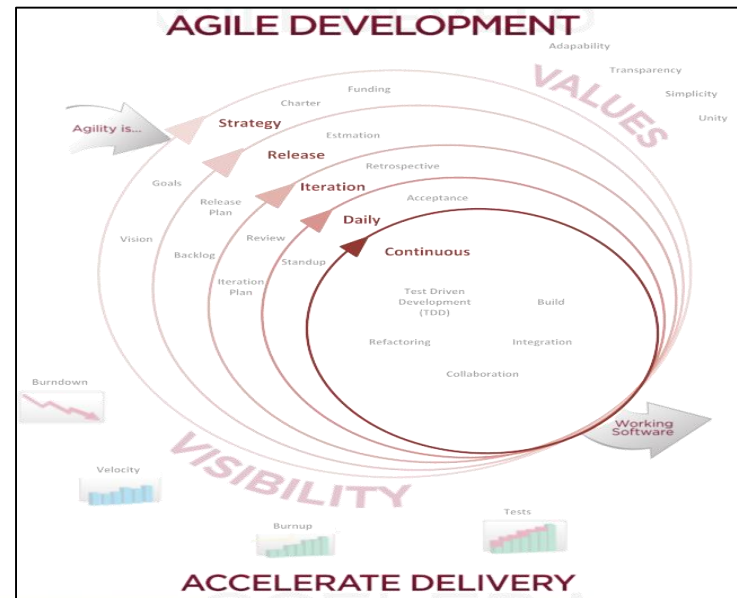
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A services agency built on the lean start-up model and based within the Federal Government. Their purpose is to support agencies in transforming the way they deliver services and technology.

1. First Federal Scaled-Agile Transformation
2. Development of Agile Procurement Process (GSA)

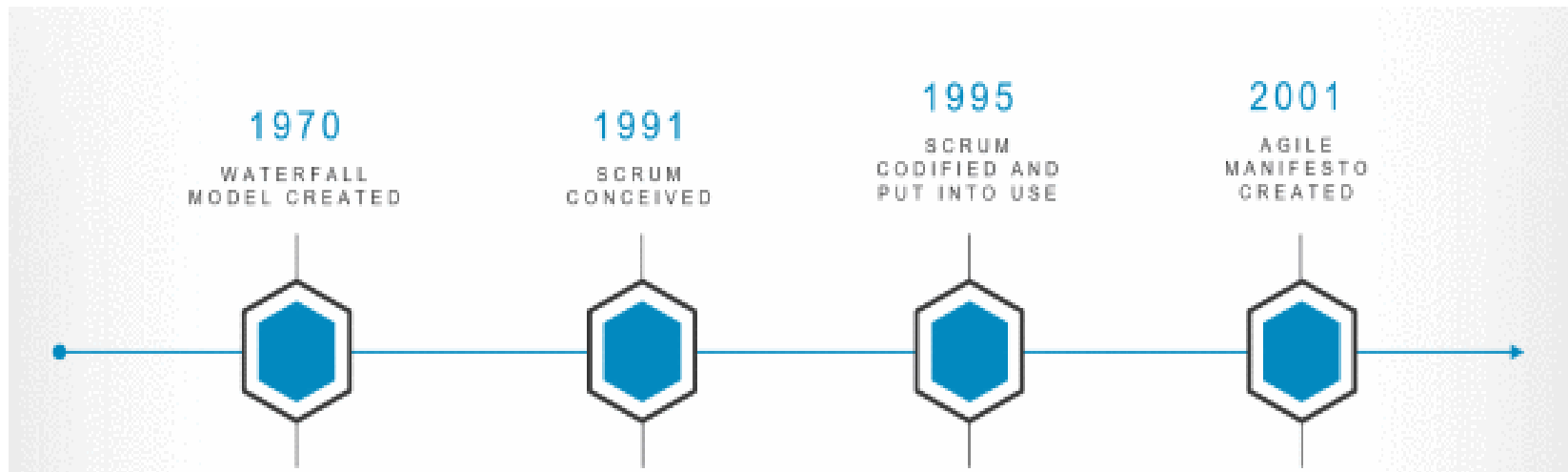


“Feedback-based, epic generation determines themes = Evaluate themes; objectives, KPIs and produce value streams” -



OVERVIEW OF AGILE SOFTWARE DEVELOPMENT

Agile Timeline



THE AGILE MANIFESTO

- On February 11-13, 2001, at The Lodge at Snowbird ski resort, 17 people met to drink beer, ski, relax, and try to find common ground.,and of course, to eat. What emerged was the Agile ‘Software Development’ Manifesto.
- Representatives from Extreme Programming (XP), SCRUM, DSDM, Adaptive Software Development, Crystal, Feature-Driven Development, Pragmatic Programming, and others participated. A bigger gathering of organizational anarchists would be hard to find, so what emerged from this meeting was a signed *Manifesto for Agile Software*;
- Alistair Cockburn’s initial concerns reflected the early thoughts of many participants. He didn't expect that this particular group to ever agree on anything. But his post-meeting feelings were also shared, "Speaking for myself, I am delighted by the final phrasing. I was surprised that the others appeared equally delighted”.

THE AGILE MANIFESTO

The Agile Manifesto lists 12 principals to guide teams on how to execute with agility. These are the principles:

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
- Deliver working software frequently, from a couple of weeks to a couple of months, with preference to the shorter timescale.
- Business people and developers must work together daily throughout the project.
- Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity -- the art of maximizing the amount of work not done -- is essential.

Four Values

The Agile Manifesto

Individuals and interactions	over	Processes and Tools
Working Product	over	Comprehensive Documentation
Customer Collaboration	over	Contract Negotiation
Responding to change	over	Following a plan

That is, while there is value in the items on the right, we value the items on the left more.

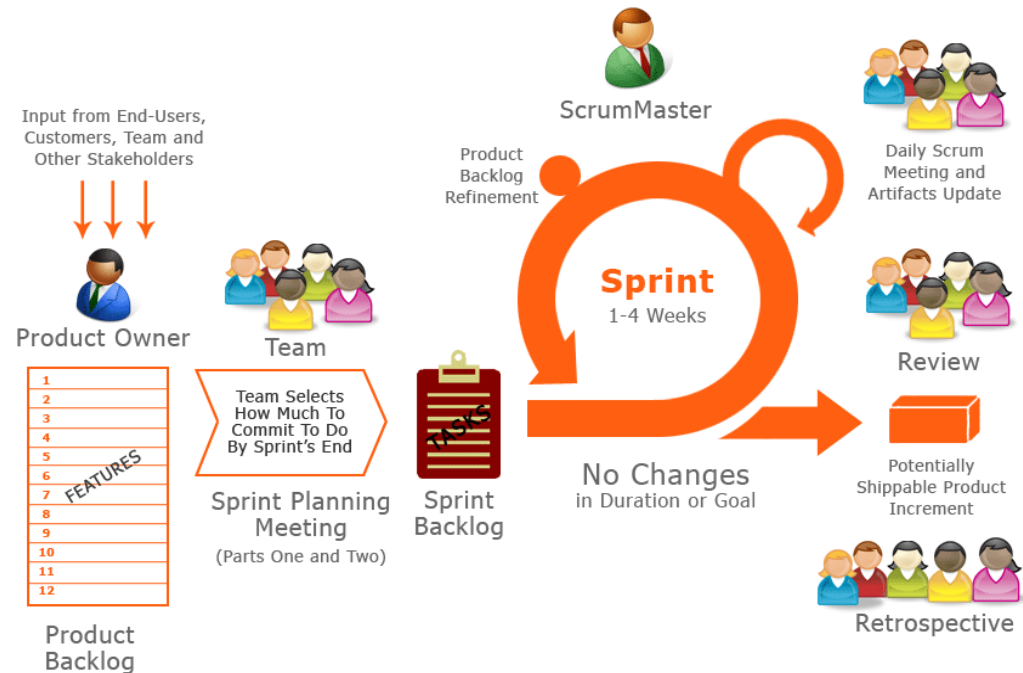
www.agilemanifesto.org

Definition of Scrum

- Definition of Scrum (n): A framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.

Scrum is:

- Lightweight
- Simple to understand
- Difficult to master



Definition of Scrum

- Roles: In Scrum there is a Development Team, Scrum Master and Product Owner.
- Ceremonies:
 - Daily Scrum
 - Sprint Planning
 - Sprint Review
 - Sprint Retrospective
- A Typical sprint will last between 2 and 4 weeks but no more than one month; A Sprint needs to be;
 - Short enough to keep business risk acceptable
 - Short enough to synchronize development

Definition of Scrum

The Development Team

Responsible for delivering a potentially shippable increment of working software.

- Self-organized
- Cross functional
- Developer as title
- Defines practices
- 4 to 9 persons



Definition of Scrum

The Product Owner

Responsible for the product backlog and maximizing the product ROI.

- Represents the users
- Clearly expresses backlog items
- Orders them by value
- Ensures visibility

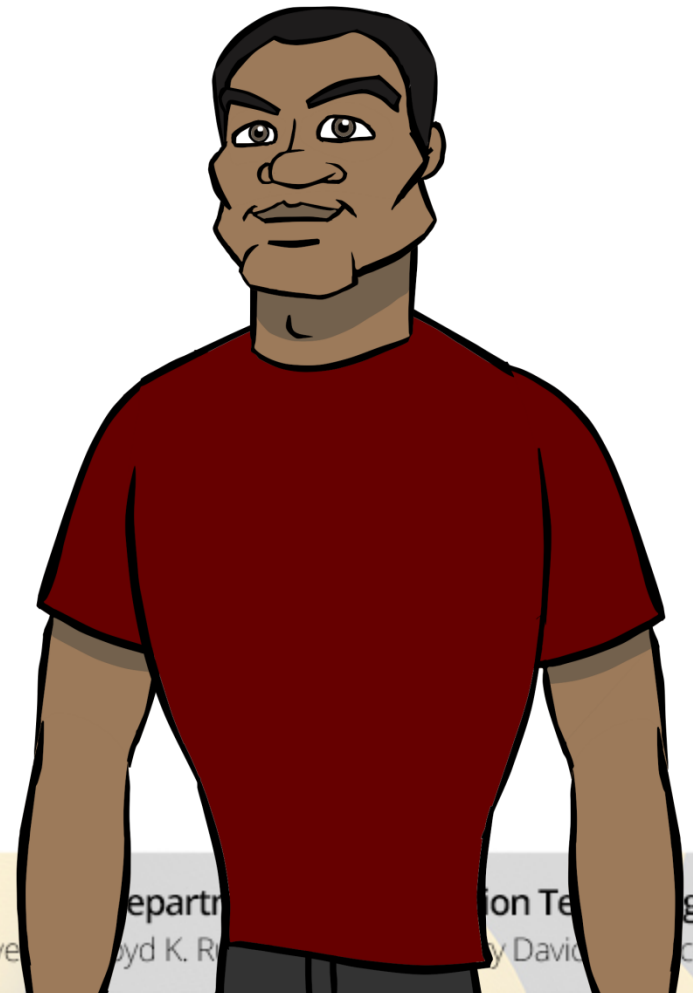


Definition of Scrum

The Scrum Master

Responsible for the scrum process

- Removes impediments
- Facilitates scrum events
- Facilitates communication



Definition of Scrum

The Product Backlog

Single source of requirements for any changes to be made to the product.

- Living list that is never complete
- Ordered: value, risk, priority & necessity
- Estimated by the team



Definition of Scrum



The Sprint Planning

Two part time boxed meeting: ~4 hr

1. Defines what will be delivered in the increment
 - Team selects items from the product backlog and defines a sprint goal
2. Defines how the increment will be achieved
 - Items are converted into tasks & estimated

Definition of Scrum



The Daily Scrum

15 minute time-boxed event for the Team to synchronize activities.

- What has been accomplished since last meeting?
- What will be done before the next meeting?
- What obstacles are in the way?

Definition of Scrum



The Sprint Review

4 hour time-boxed meeting

- Product owner identifies what has been done
- Team discusses what went well, what problems it ran into & those that were solved
- Team demonstrates what it has done in a demo
- Product owner discusses the backlog as it stands
- Entire group collaborates on what to do next

Definition of Scrum

The Sprint Retrospective

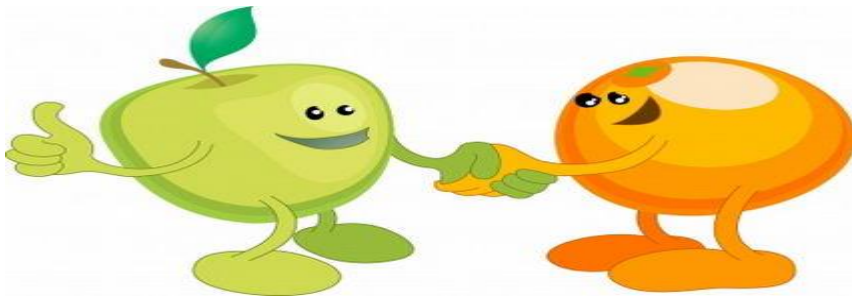


Improves the process.

- Inspect how the last Sprint went
- Identify and order the major items that went well and potential improvements; and,
- Create a plan for implementing improvements

Definition of Kanban

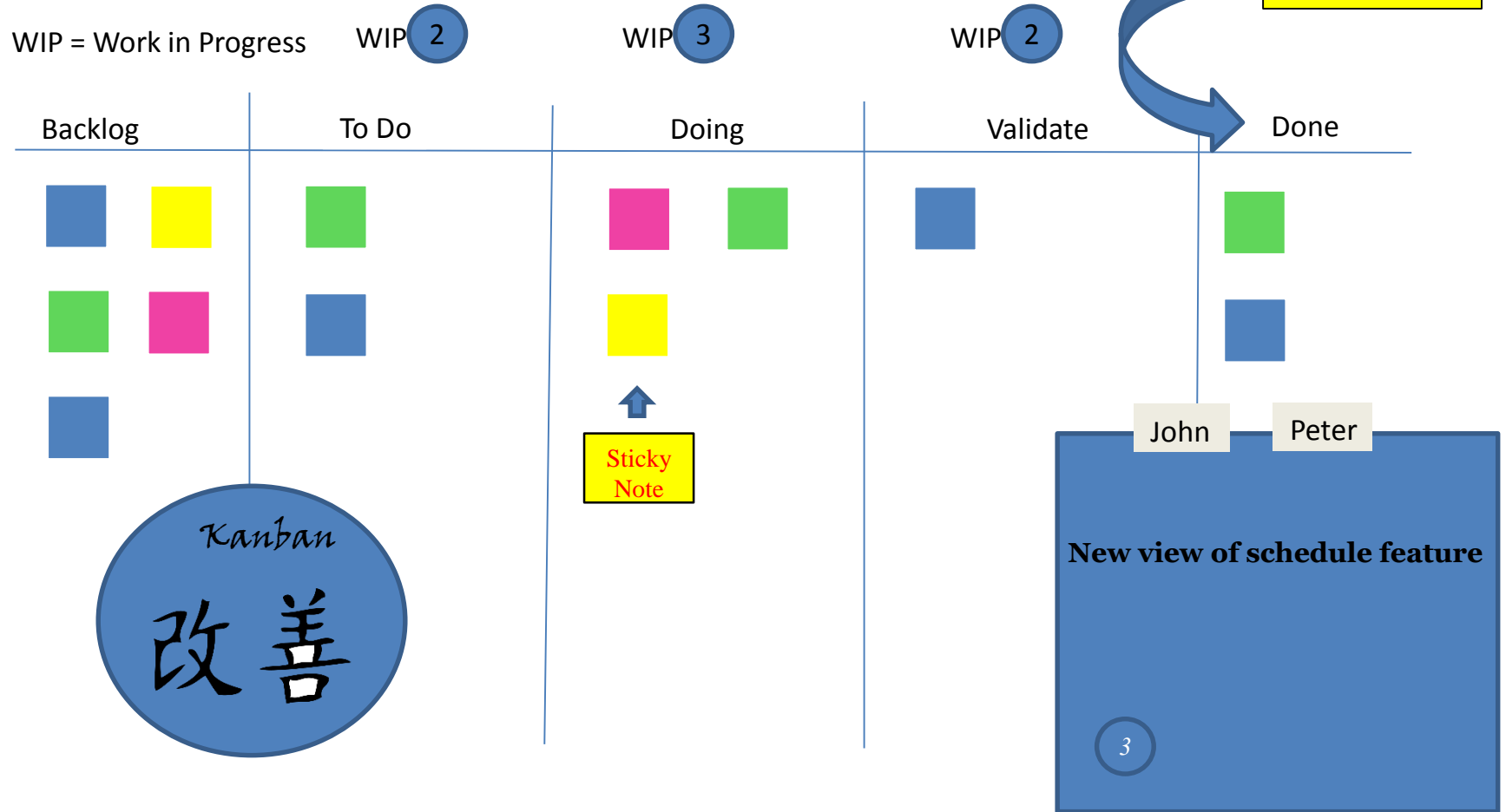
- 看板 (Sign Board) A Japanese manufacturing system in which the supply of components is regulated through the use of an instruction card sent along the production line.
- An instruction card used in a Kanban system.
- **Differences between Scrum and Kanban**



- Scrum is a framework or “set of rules” governing software development practices and other practices that uses a Kanban processes board....whereas...

Kanban is a system or process relying on a visual Kanban (Sign Board) that imposes WIP (work in progress) limits.

Definition of Kanban



LEAN PRINCIPLES

Kaizen Culture

- Continuous improvement culture
- Workforce empowered and self-organized
- Tolerance of failure in name of process/performance improvement
- Collaboration and performance of team
- Visual Controls
- Volunteers for tasks
- Trusting Culture

Kaizen

改善

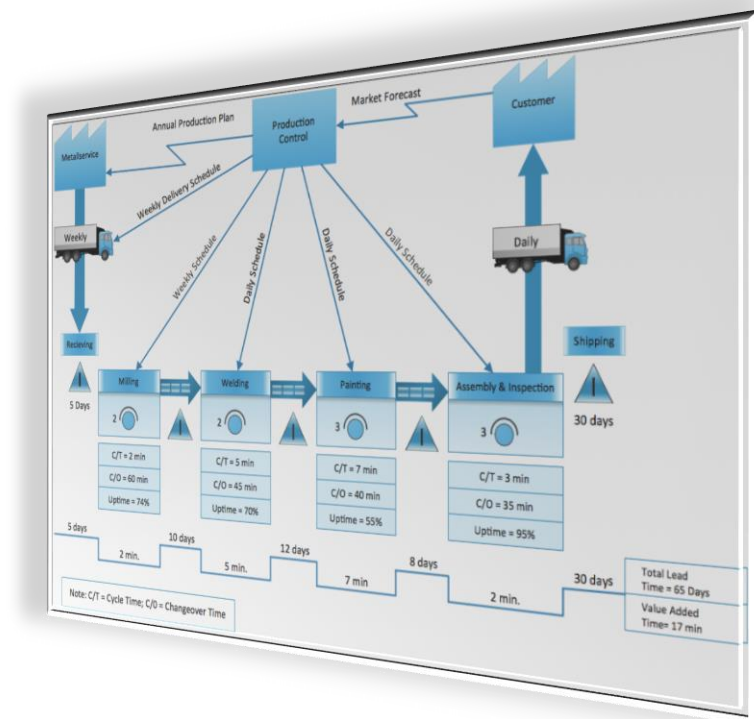
To make better

Kaizen Mindset

- 1 Everything can and should be improved
- 2 Not a single day should go by without some kind of improvement being made somewhere in the company
- 3 Imagine the ideal customer experience and strive to provide it
- 4 Don't criticize, suggest an improvement
- 5 Think of how to improve it instead of why it can't be improved
- 6 Think beyond common sense; even if something is working, try to find the ways to make it work even better
- 7 See problem solving as cross-functional systemic and collaborative approach

Lean Value Streams

- Lean Value Streams and Value Stream Mapping (from Concept-to-\$\$Cash) came prior to Agile Software Development.
 - Occurred in the 1950s manufacturing of cars in Japan.
 - It was a result of the need to “lean” processes and reduce waste; additionally to create sustainable, viable infrastructure.



TEAM OF TEAMS AND SCALING AGILE

- “Scaling Agile” is a tricky term which some people believe is not possible
- There are several “Agile” frameworks developed to “Scale” in which multiple teams/ and or vendors will need to coordinate
- SAFe 4.0 (Scaled Agile Framework) recommends Program Increment (PI) Planning. Scrum, recommends (Nexus) and Scrum of Scrums techniques. Regardless of the “Agile” framework, all recommend incremental meetings of all development Stakeholders Representatives.

Delaware Focus Project

HYBRID AGILE EXAMPLE

Delaware Focus Project

A Hybrid Agile Approach to Limited Scope Projects



Delaware Focus Project

- History
 - Deloitte.net Waterfall project was scrapped for Hybrid Agile
 - Sales Force implementation to cover 4 business areas
 - Local Champions established to demonstrate before and after
- Why significant for Maryland?
 - Project mimics need for enterprise infrastructure
 - Hybrid Model
 - EPMO and Oversight Infrastructure = Self-developed, Customized Enterprise portfolio implementation
 - Iterative and Incentive-based contracting for Project Vendors
 - Developed a Cloud-based, tracking tool with real time detailed dashboard metrics (Program Tracker). Weekly sprint reports were established.

Delaware Focus Project cont.

- Project Description
 - 4 week Sprints
 - Fixed Price
 - Fixed Scope (No Variability)
 - Performance-based contract
 - Vendors get paid based on accepted story points
 - Progress is measured against points
 - Epics were estimated prior to initiation (14,000 points)
 - Fixed invoicing rate was established based on points
 - Contractors could invoice based on accepted story points at the end of each iteration

Delaware Focus Project cont.

- Some of the Lessons learned were as followed:
 - More Staff Training was needed upfront
 - More time was needed to make more allowances for defects and tracking

Value Streams

Why agile & Why Value Streams....



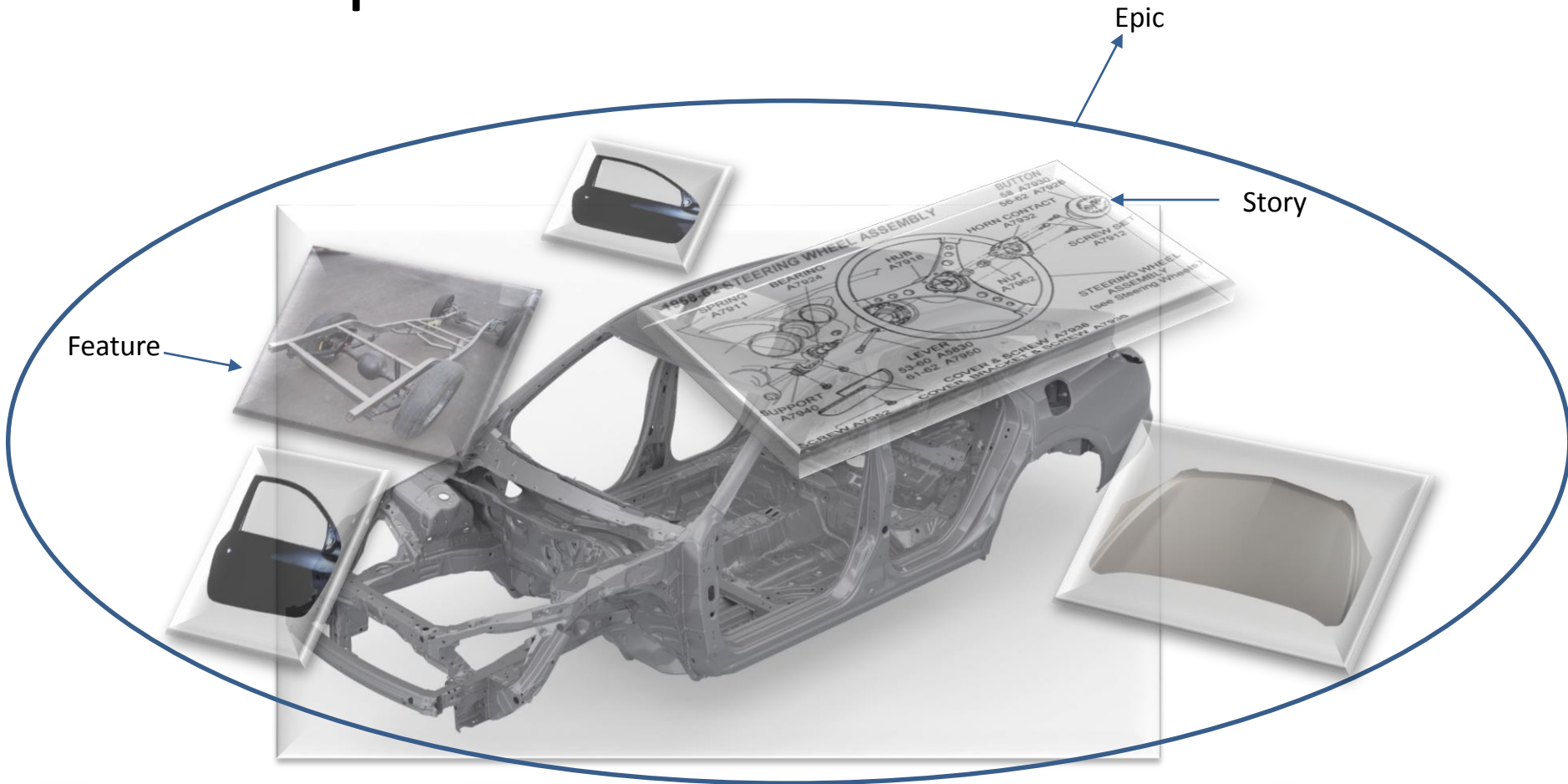
For Govt to be more citizen centric

- More Responsive to Changes
- Accelerate delivery of important services
- Better engagement and user experience

For IT Industry to be more competitive

- Faster time-to-market & deployment
- More Responsive to Changes
- Better engagement and user experience

Epics – Features & Stories

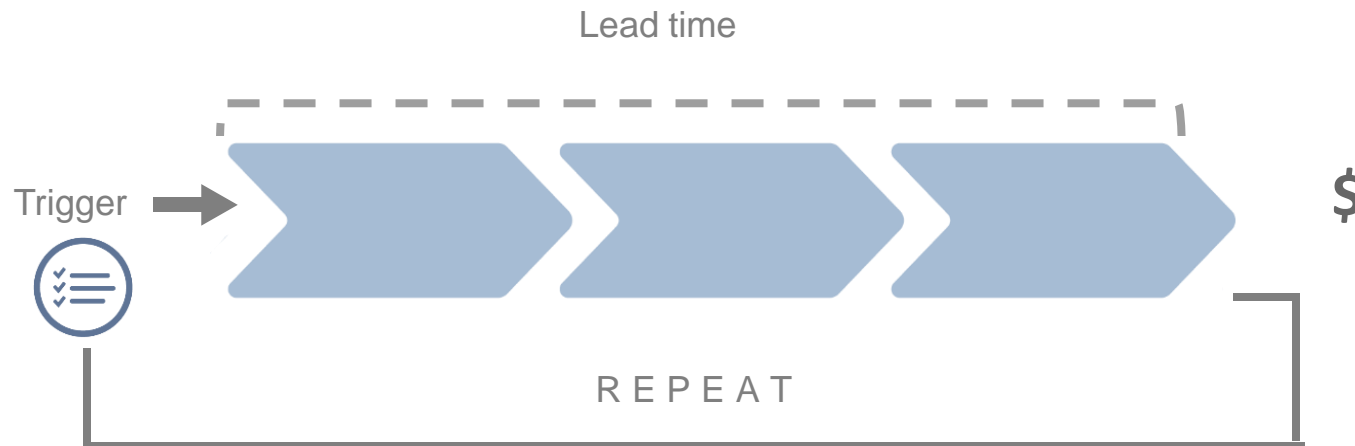


Value Streams

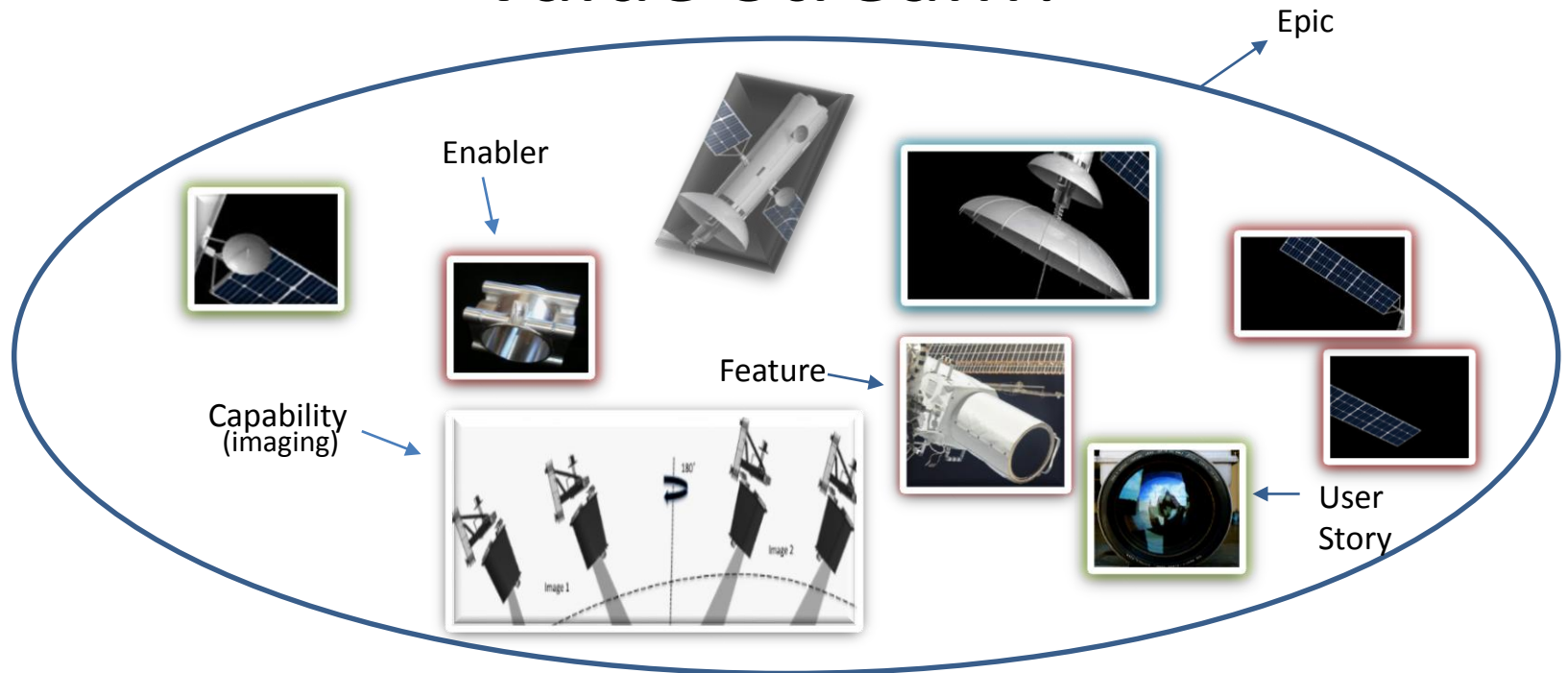
- The flow of value is triggered by some important event, perhaps a Customer purchase order or new Feature request
- It ends when some value has been delivered—a shipment, Customer purchase, or Solution deployment
- The steps in the middle are the activities the Enterprise uses to accomplish this feat
- The time from the trigger to the value delivery is the lead time

What is a Value Stream?

- A Value Stream is a fundamental thinking construct in Lean. Each Value Stream is the sequence of steps used to continuously deliver value to the Customer.
- It includes the whole sequence, from concept or customer order to delivery of value and/or receipt of cash
- It contains the people who do the work, as well as the flow of information and materials



Simple really....but, what is a “Safe” Value Stream?



Views of Earth Weather (Value Stream)

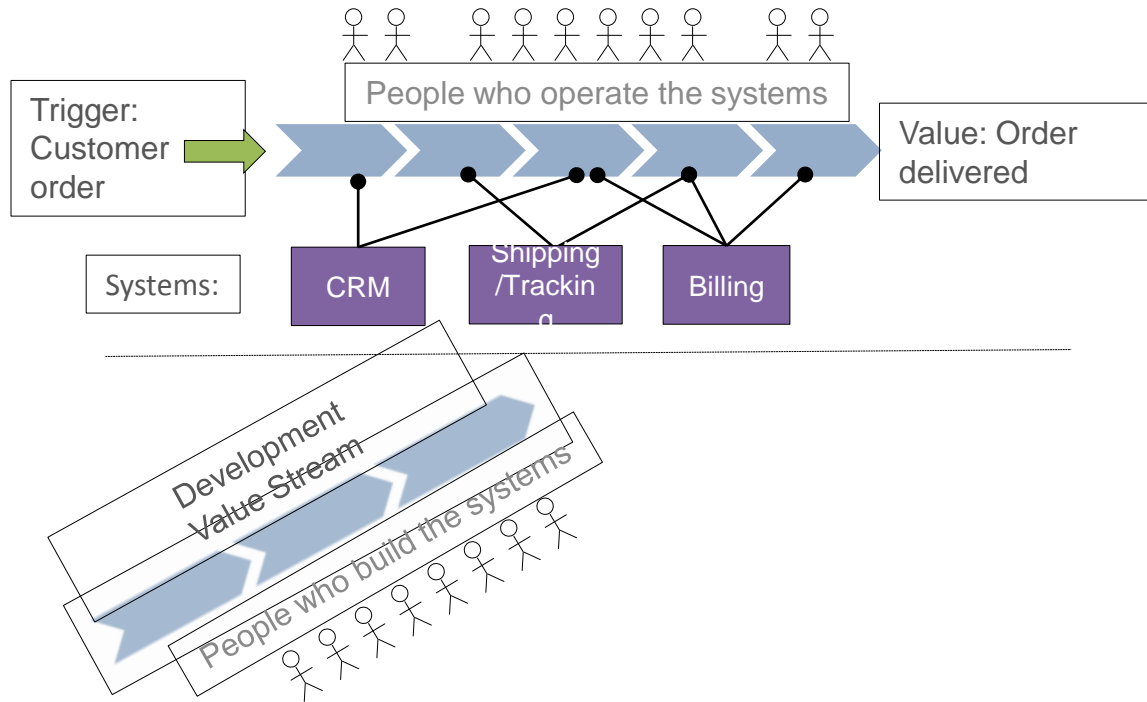
Simple really...but, what is the value stream?



Two Types of Value Streams

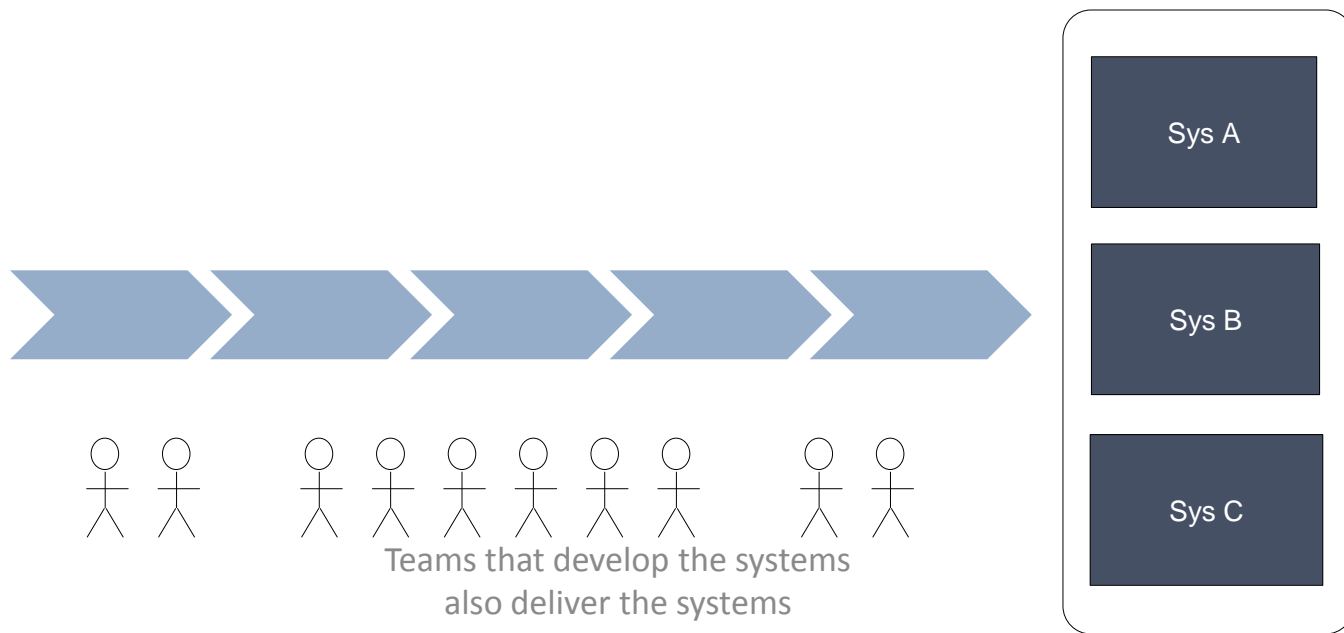
- Operational Value Streams
 - Used to deliver end Customer value
- Development Value Streams
 - Development of the systems and capabilities that enable operational value streams

Operations Value Stream: Order Processing



Example 2: Solution builder

- For some solution builders, that deliver directly to the end user, operational and development Value Streams are the same



See Agile Frameworks and Agile Links for more information