



Flow Manager

Applying Kanban to scale agility with flow

Version 0.7 Beta	Silke Noll



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Flow Manager

Applying Kanban to scale agility with flow.

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Before we start...

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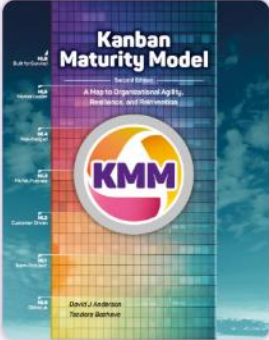


KMM+

A Map to Organizational Agility, Resilience & Reinvention

You are stuck and your agile initiative is not giving you expected outcomes anymore?
Learn the **Kanban Maturity Model** with **KMM+ subscription**.

The **Kanban Maturity Model** can guide you out of crisis!



KMM+ will help you to:

Create a free account in Kanban+ and apply the trial code, which you can find here: <https://kanban.plus/pages/kmm-trial-subscription>

You may find it useful for the exercises and to support your learning.

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Introduction

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Introduction to the Class

Getting started, meeting the class, and why flow? Why now?

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What is your purpose for attending this class?

What do you hope to take away?

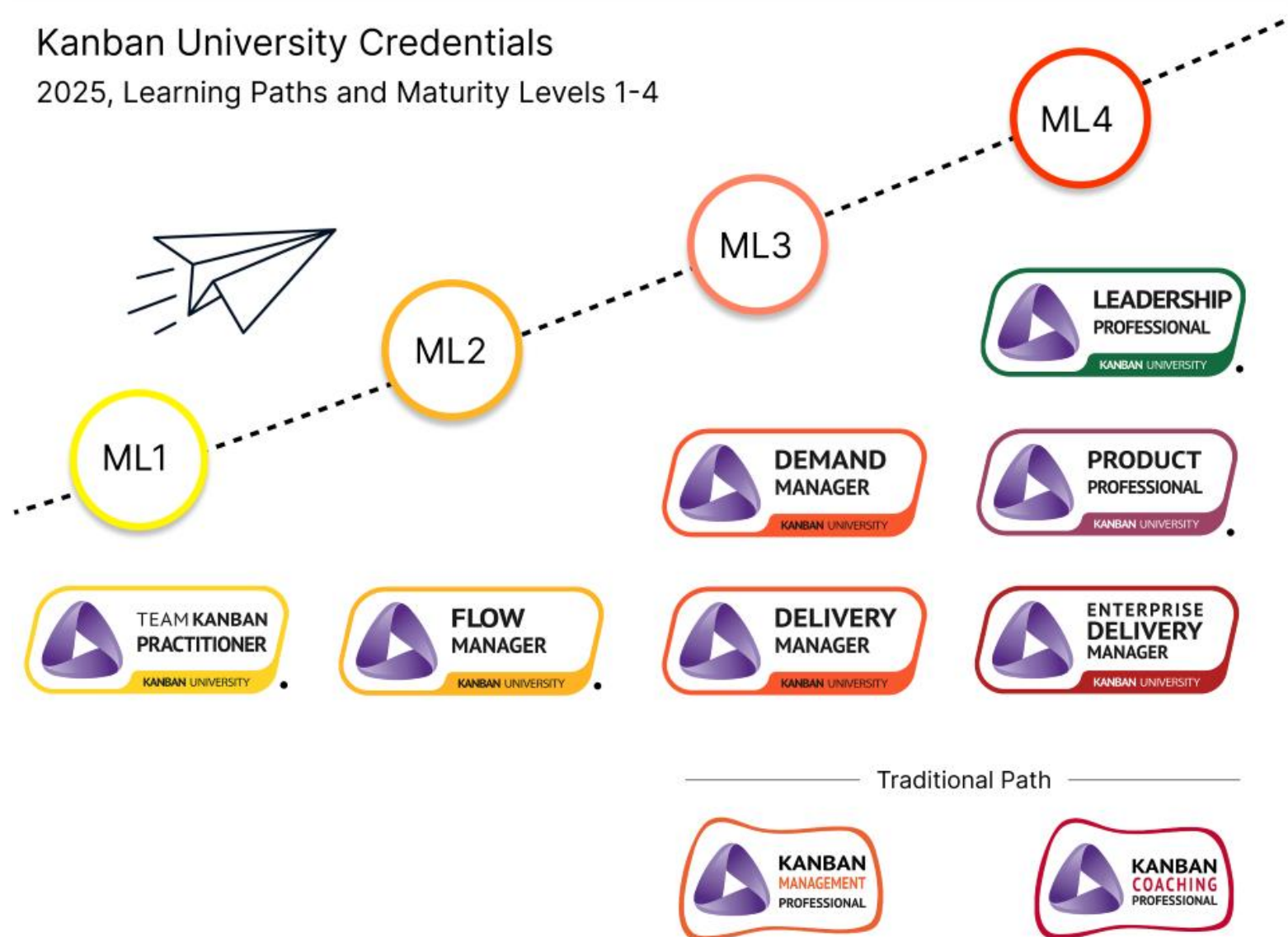
Write your top 3 reasons for attending Flow Manager training.

Put them in short words in the purpose area on the board.



Kanban University Credentials

2025, Learning Paths and Maturity Levels 1-4



- No Prerequisites

Flow Manager Training – Goals and Objectives

By the end of this class, you will be able to:

- Map and visualize a service delivery or product development workflow
- Facilitate the workflow Kanban Meeting
- Facilitate the understanding of Customer requests
- Create awareness of flow of work to identified Customers
- Ensure that flow metrics are being collected and reported
- Facilitate the resolution of blockers, rework, and aging WIP
- Facilitate the flow review meeting
- Lead changes intended to improve flow and shorten delivery times

Why Flow? Why Now?

What pain points exist in your organization that might be addressed by better flow?

Problems

Challenges

Customer
Dissatisfaction

Need

Purpose

Why now?



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Outline

Class Outline

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Structure of the Class

1 Kanban Method & Organizational Maturity

2 Flow Manager Role

3 Flow Simulation

4 Operational Practices Managing Flow

5 Management Practices Improving Flow

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Part One

Kanban Method & Organizational Maturity

Driving enterprise transformation

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Structure of Part One - Kanban Method & Organizational Maturity



Module 1

Why flow, why now?

Module 2

Organizational Maturity

Module 3

Culture

Module 4

The Kanban Method

Module 5

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Module One

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Why Flow, Why Now?

A context for the Kanban Method

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Module One – Aims and Objectives

The aims and objectives of this module are:

- To convey that the biggest impact on performance of knowledge worker activities comes from improving the management decisions
- Modern managers need to be system thinkers who think in systems
- Knowledge work consists of a series of knowledge discovery activities
- Knowledge and information are perishable, therefore, time to convert ideas into finished work matters
- The perishable nature of knowledge/information discovery affects quality and predictability in a non-linear fashion

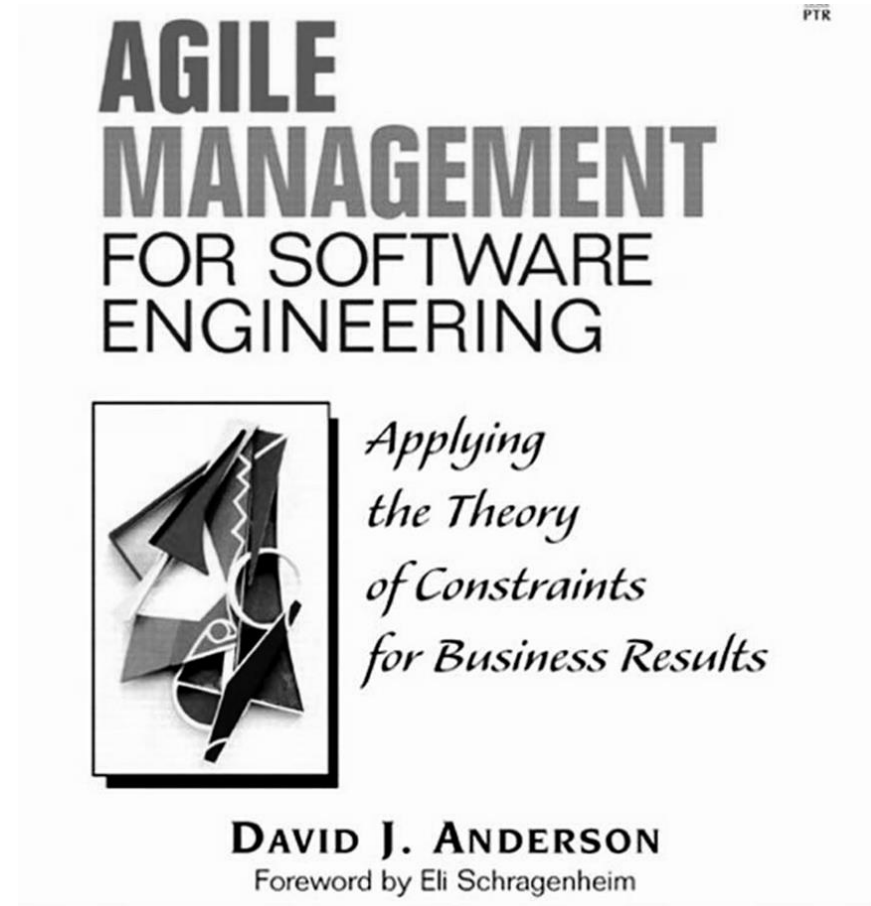
"Poor management can increase software costs more rapidly than any other factor"



Barry Boehm, 1981

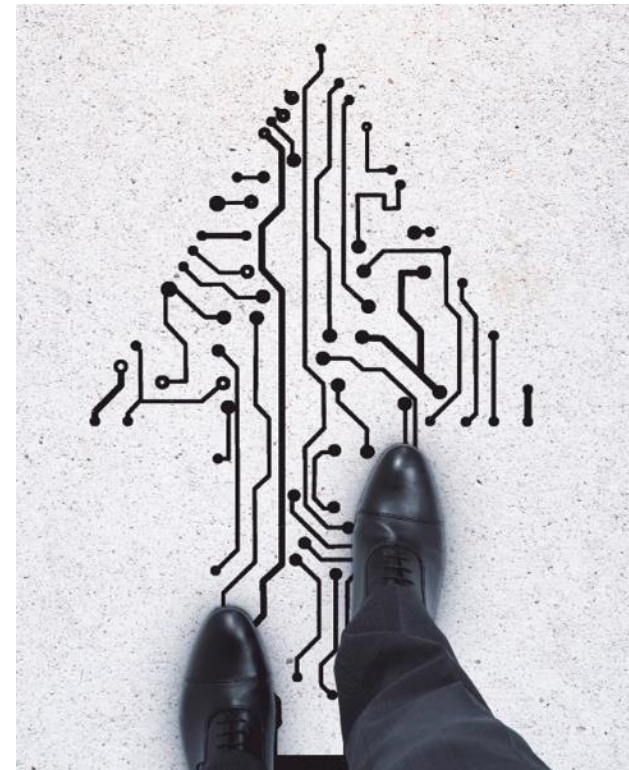
20+ Years Ago...

The book "Agile Management for Software Engineering" was published on 17th of September 2003.



There was a simple message: To enable enterprise scale agility, focus on managers, not individuals or teams

- Agility is enabled through better management decision-making.
- Agility shouldn't require extra overhead, rather it should be existing workers, teams, and managers doing their jobs and making decisions that promote greater agility.



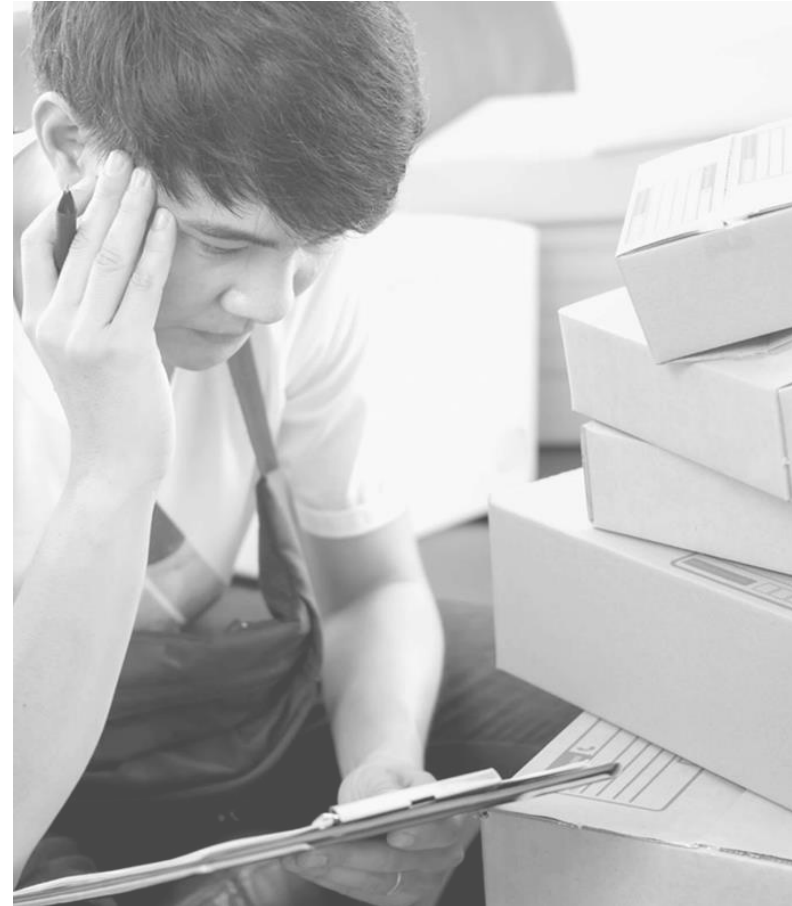
Inventory in knowledge work



**Requests for a product or service
identifiable by a Customer**

Information has value and a cost

Unlike tangible goods, knowledge work inventory doesn't use physical space, but it does cost money, and hence, it has a carrying cost.



Lesson One

- We should track work requested by Customers or ideas for products, services, or features created by business people, as they progress towards completion.
- Tracking time expended doing work or resource utilization is of much less value.
- The available time (number of workers x number of hours worked) is not a representation of inventory.



Knowledge work is perishable

**Product
development
work is like
selling fruit**



Information is perishable – it degrades over time

What you know to be true now,
may not be true in future.

What you know now, with clarity,
and precision, may fade to
something vague and imprecise
later.



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Quality relates directly to the speed with which information can be converted into a finished product.



Knowledge work is like selling fruit.

The inventory is perishable!

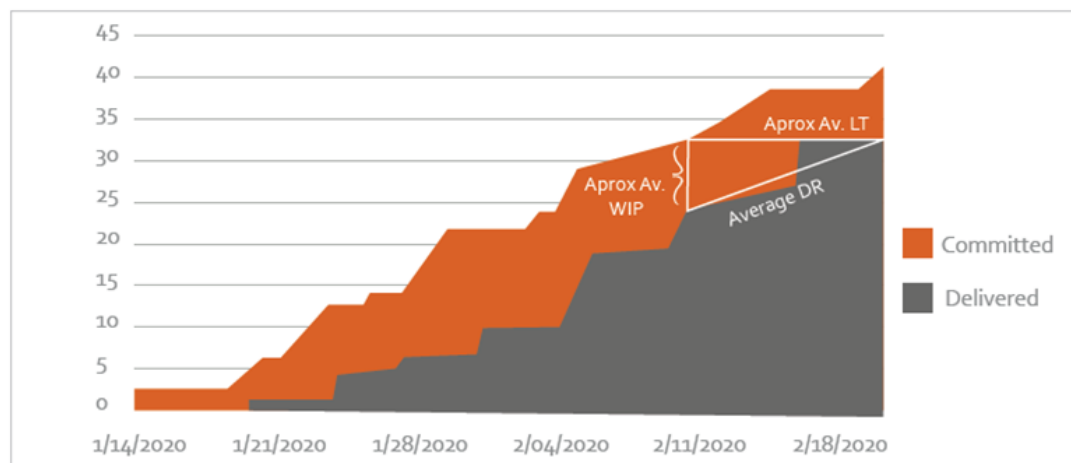
Lesson Two

Because knowledge work is
perishable,
there is a cost of delay.



Flow - Donald Reinertsen

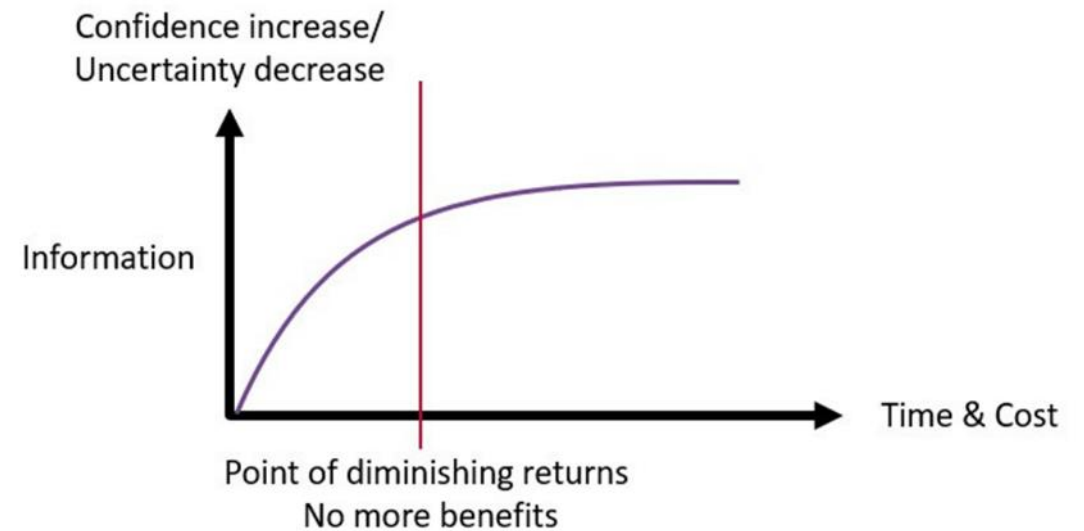
"Managing the Design Factory" (1997)



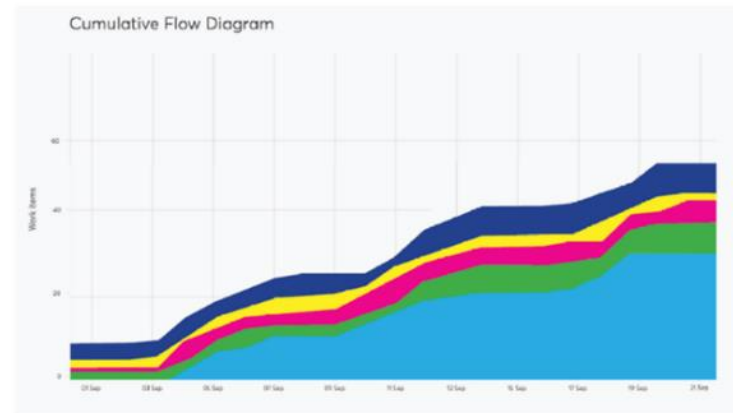
- Proposed the concept of flow in new product development, as...
- As a sequence of "Information discovery" activities tracked visually, with...
- An area graph known as a Cumulative Flow Diagram.

Switch activities at the point of diminishing returns on information acquisition

- We perform activities to acquire information or knowledge.
- At the point of diminishing returns we switch to a new activity.
- Each activity forms a sequence that can be visualized on a board, left-to-right, and modelled as a flow.
- This mental model focused minds on lead time, from the point of commitment to the point of delivery.



Move to the next activity at the point of diminishing returns. Track information discovery on the CFD.



From Inventory to Workflow

Inventory moves through a workflow
(a term first used in the early 20th
Century) or a value stream (a term
from mid 20th Century).

We needed a way to instrument our
process and track and report
inventory.

Lesson Three

- We cannot manage what we cannot see.
- Instrumenting for, tracking, and reporting progress through a workflow is the fundamental enabler for a focus on lead time reduction.
- Identifying the units of inventory, and the work item types, is a fundamental capability for managing modern professional services, intangible goods, and knowledge worker businesses.



Lesson Four

Capacity should be measured as a quantity of units of inventory.

Capacity should NOT be measured as the product of the number of workers x the available hours worked.



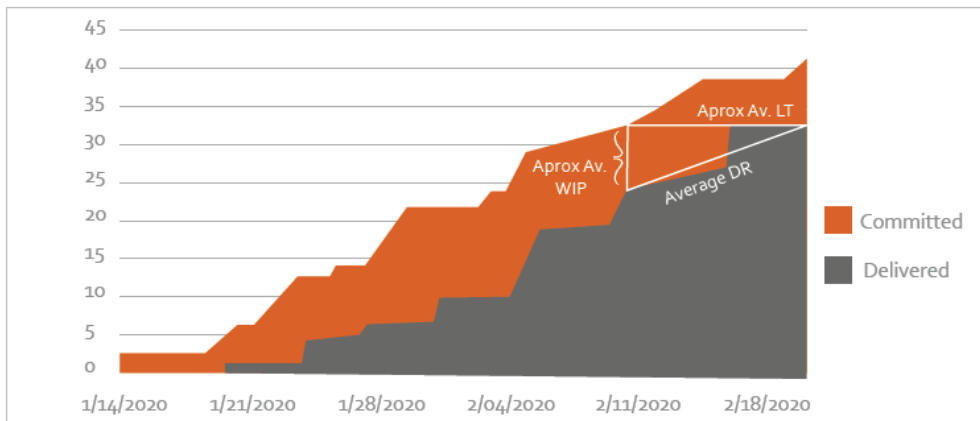
Managing Flow



Once we can track inventory and "see" flow, known management techniques from other industries are available to us!

Stabilize the system

Monitor variability in flow – Smooth, laminar flow or turbulent flow



- Identify bottlenecks - diverging lines
- Identify starvation - converging lines
- Smooth flow will have gentle ripples and consistently sized areas of colour.

The True Cost of Waste

Failure demand vs. value demand

Early commitment:

- Poorly defined or changing requirements
- Aborted work

Quality: Poor engineering discipline.



Lesson Five

- Defer commitment to gather the most information possible avoiding rework or aborted work.
- Shrink lead times to minimize the chance that the market shifts and the Customer changes their mind.



Fixing quality problems and eliminate failure demand!

Has produced 10x improvement!

Managing flow produces dramatic improvements



Delivery rate increase: 3x-30x

Lead time decrease: 90%+

Lesson Six

- Stop starting, start finishing!
- Focus on flow!



Kanban Pull System

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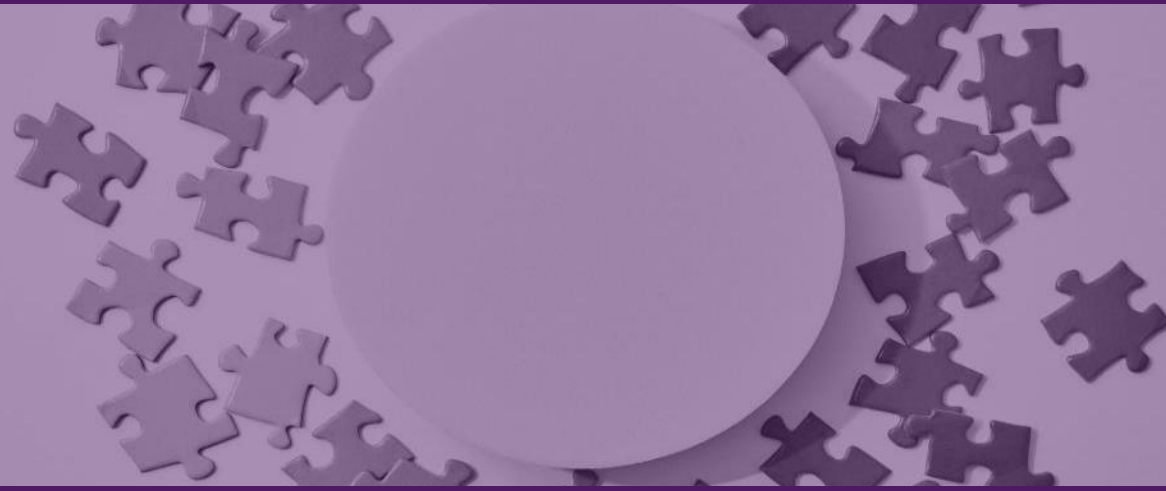


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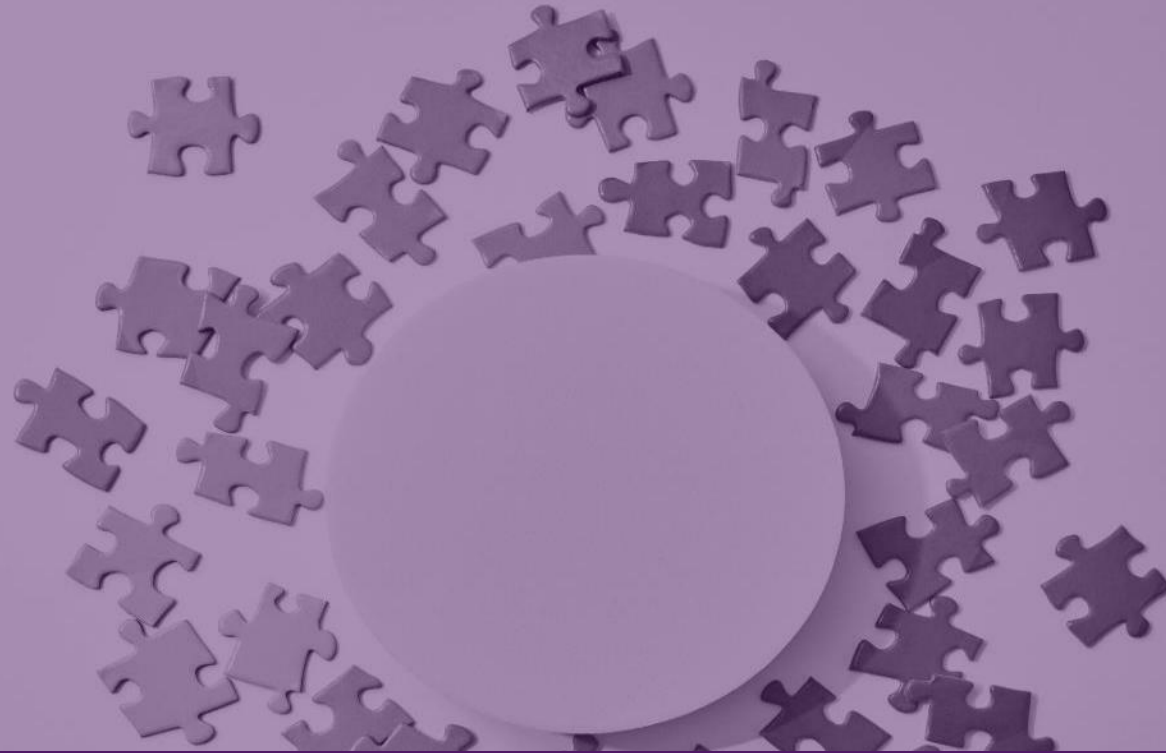


Managers should think in systems!

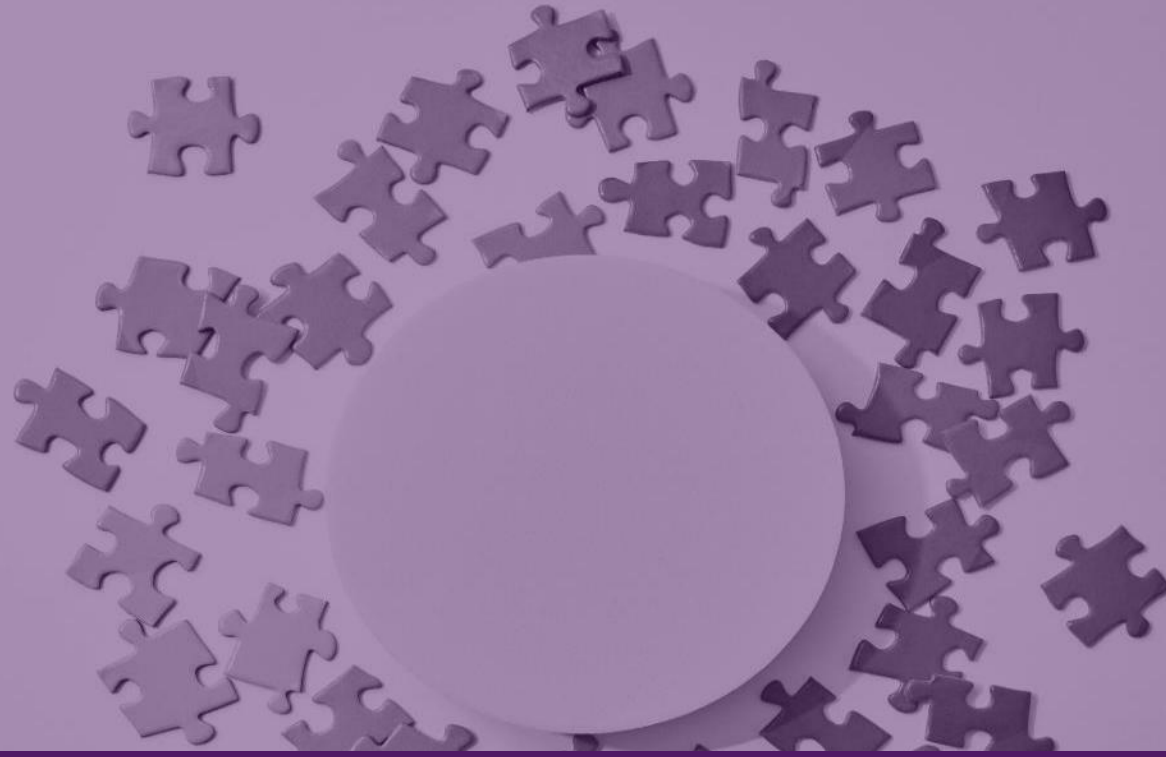
The system is defined by a set of policies



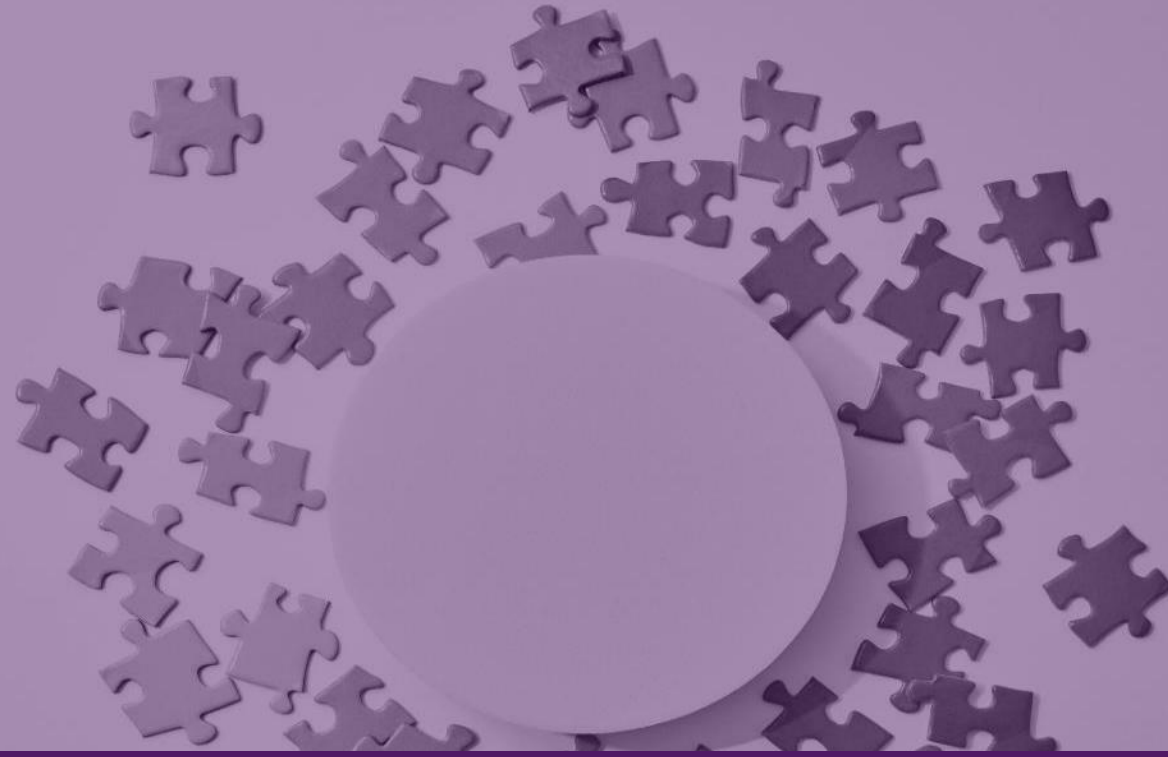
The managers have control over those policies



The leaders' job is to define a system that is capable of producing a desirable outcome



The workers acting within the system have autonomy to make decisions



The point of managerial control is the collection of policies that define the system

"The best companies in an industry build processes that allow them to outperform their competitors"



Lou Gerstner, 2002

Lesson Seven

- In an agile organization with an autonomous, empowered workforce, managers must become systems thinkers.
- Managers need to take ownership of the system. The system is defined by a set of policies that are under management control.
- It is the managers' responsibility to deliver on Lou Gerstner's vision that mature organizations build processes that provide their competitive advantage.



"Poor management can increase software costs more rapidly than any other factor"



Barry Boehm, 1981

The Kanban Method...

was developed specifically to provide simple guidance that enables managers to create systems to effectively manage flow.

Lessons in Agile Management

Recall the seven lessons and discuss their implications.

Lesson One: Manage work not people

Lesson Two: Information & Knowledge are perishable.

Hence, delay has a cost

Lesson Three: Make invisible work visible

Lesson Four: Measure capacity in units of customer-valued requests

Lesson Five: Defer commitment to gather more information

Lesson Six: Stop starting, start finishing. Focus on flow

Lesson Seven: Managers need to be systems thinkers



What needs to change in your organization to enable flow?

Module One – Learning Outcomes

You now know:

- The Kanban Method was created to enable managers to define systems for managing flow of knowledge/information discovery
- Managers need to be systems thinkers
- Systems need to set people up for success and enable autonomous working and empowered decision making
- How to describe a series of knowledge/information discovery activities, each of which follows a concave curve with a point of diminishing returns
- That knowledge/information is perishable, and that quality & predictability are affected non-linearly by delay in converting ideas into finished work

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Module Two

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Organizational Maturity

Understanding Maturity level 2 – Customer Driven, and the need for flow

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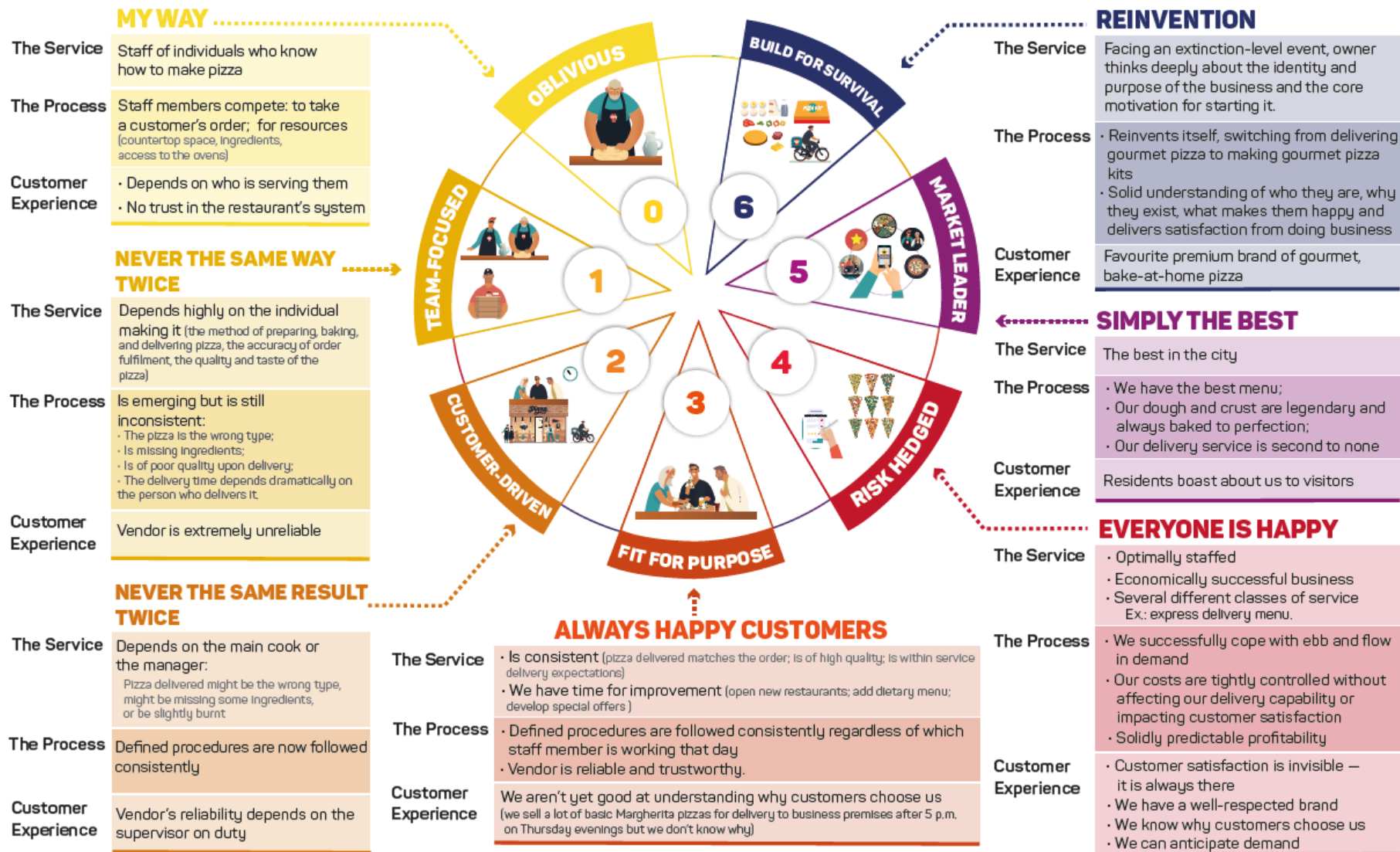
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Module Two – Aims and Objectives

The aims and objectives of this module are:

- Understand the concept and model of organizational maturity
- Understand the definition of maturity level 2
- Describe the benefits of Kanban at ML2
- Communicate how the Kanban University professional career ladder relates to organizational maturity
- To provide an overview of Culture, Practices and Outcomes at ML2

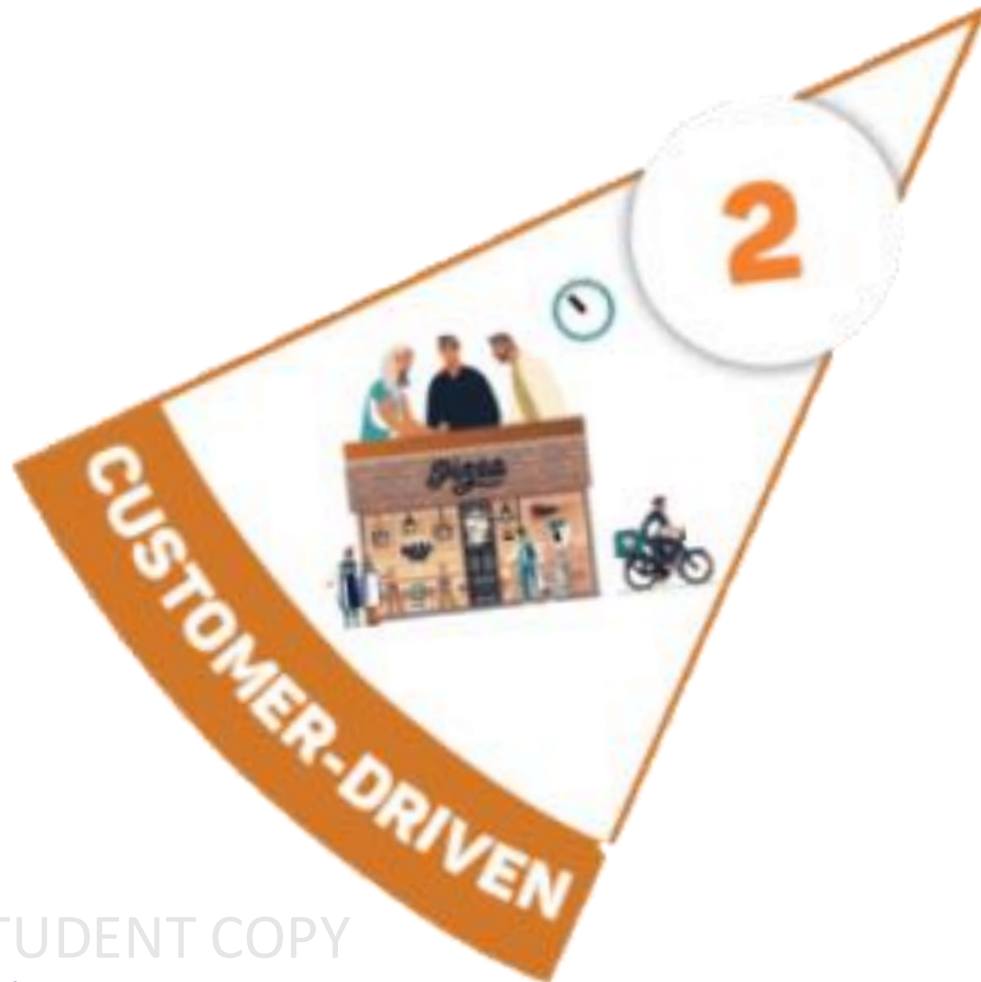
Organizational Maturity



Reading reference: **KMM Explained**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/pizza-poster/pizza-1-eng>

Kanban at ML2 – Customer Driven

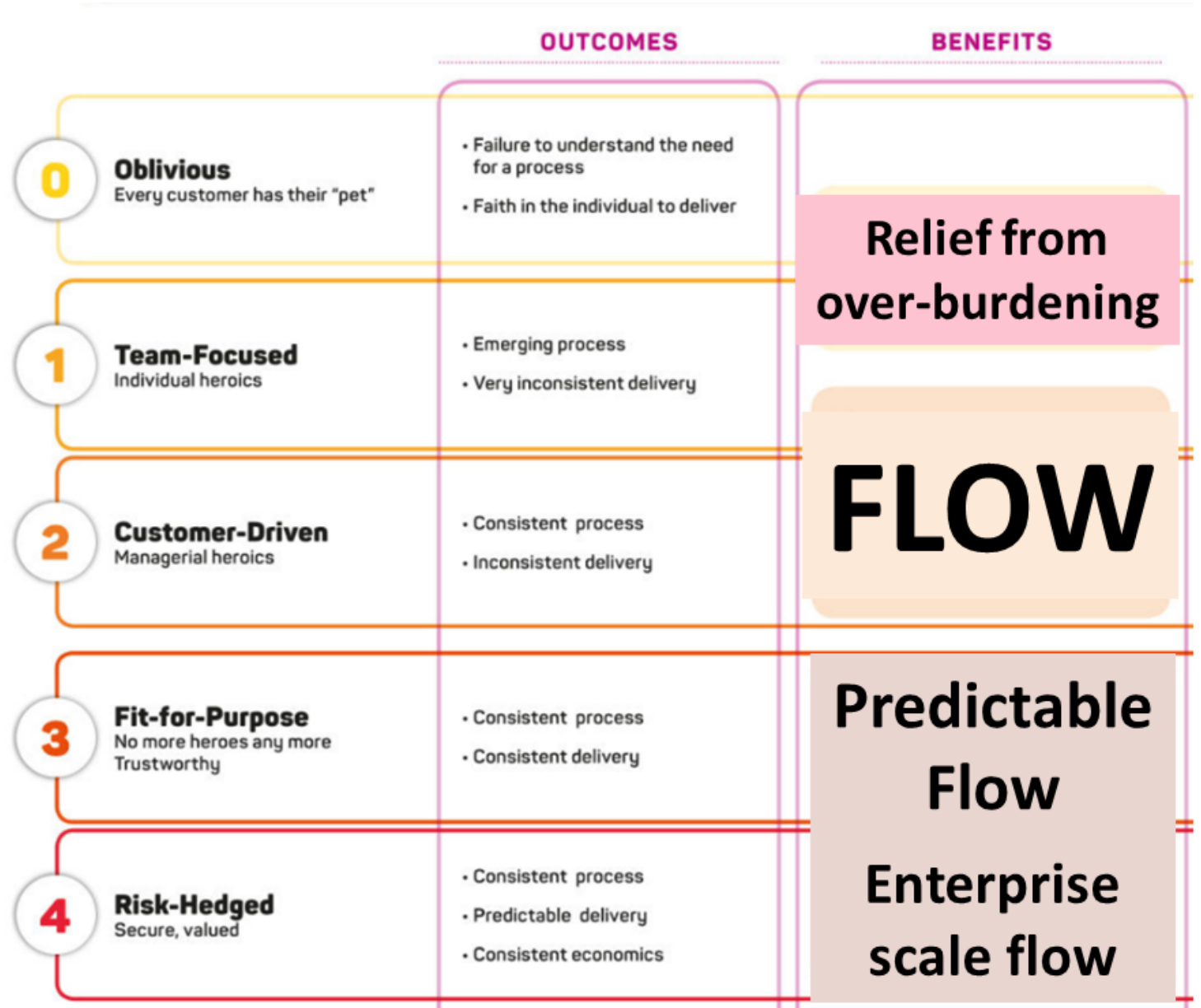


Maturity Level 2	Customer-Driven
Characterization	Never the same result twice
Leadership	Tribal
Leader's Character Traits	Charisma
Cultural Values	Customer awareness, evolutionary change, flow, leadership, narrative, respect, understanding of internal processes
Service	Depends on the supervisor, manager, or owner on duty: Pizzas delivered may have slight quality issues, are occasionally of the wrong type, slightly burnt, or missing ingredients.
Process	Defined procedures are now followed consistently.
Customer Experience	Depends entirely on the supervisor on duty

Reading reference: ***Maturity Level 2***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-posters/poster/kmm-poster/ml2>

Benefits of Kanban



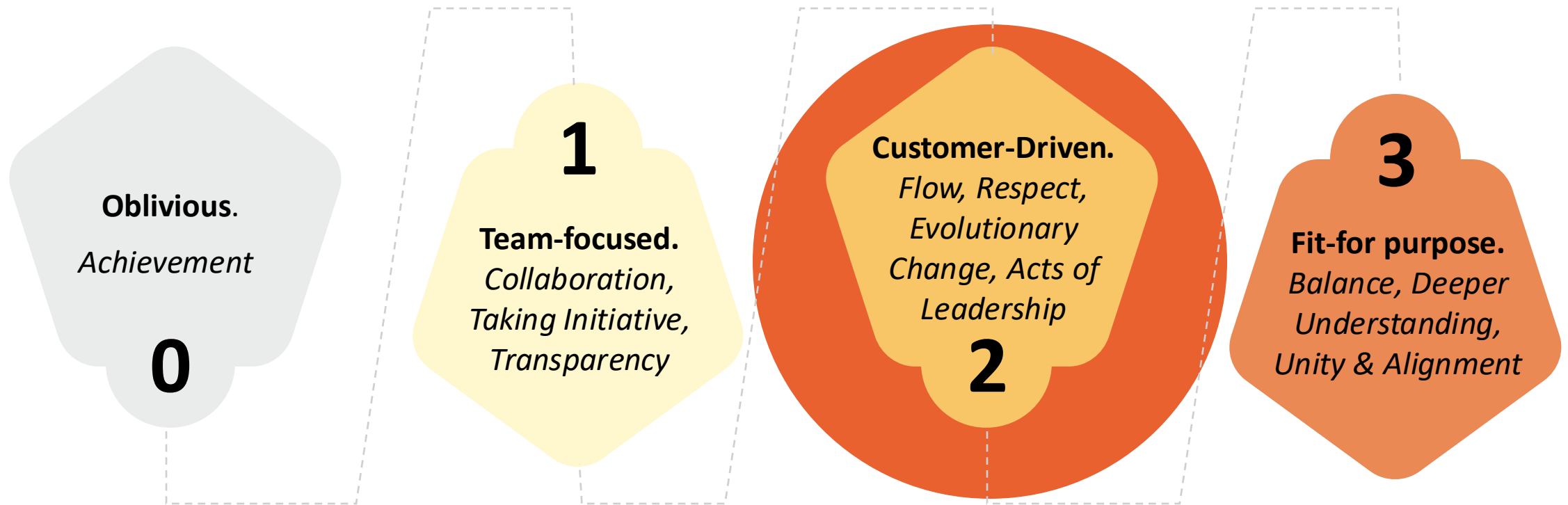
Reading reference: **ML2 Benefits**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/outcomes-benefits-poster/overview-2-eng>



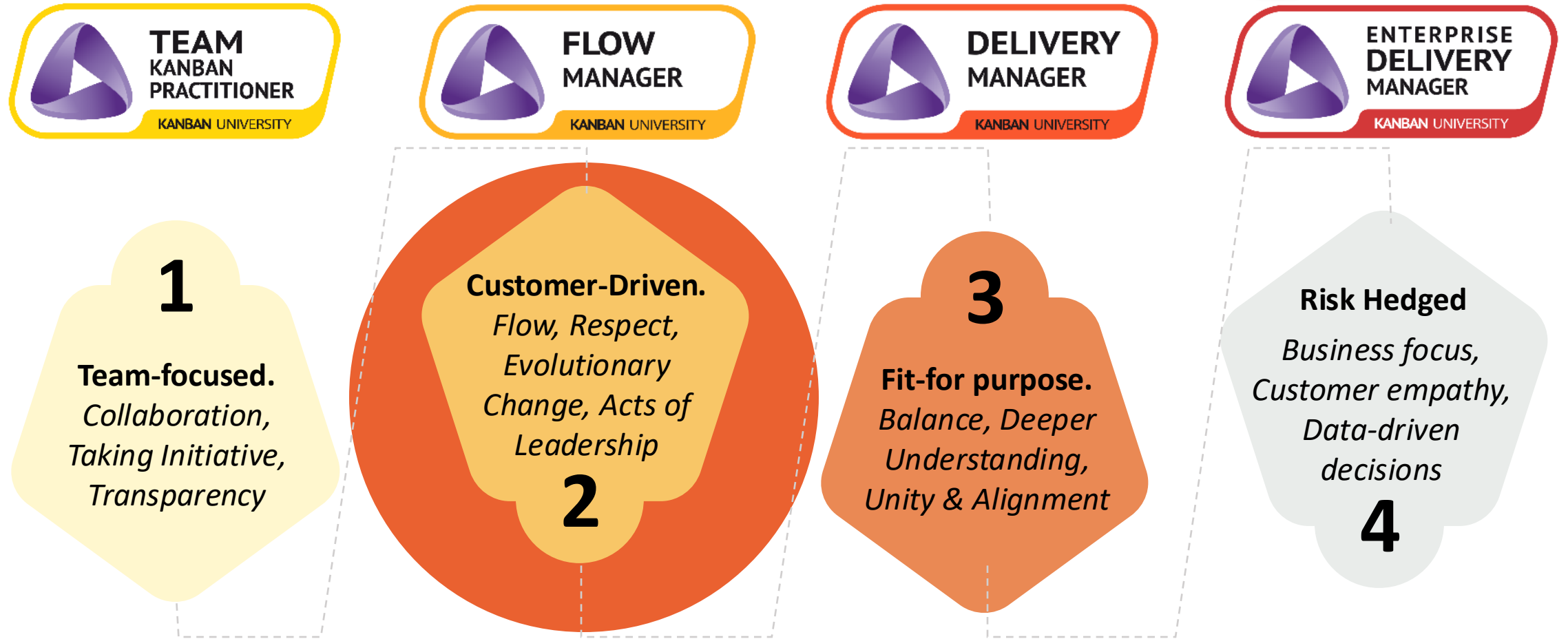
It's the organization that matures, the Kanban system design adapts to the maturity

Different levels of organizational maturity



Focus of this class

Professional career ladder



Focus of this class

Maturity Level 2 – Customer Driven

Never the same results twice.....

Defined, repeatable
process

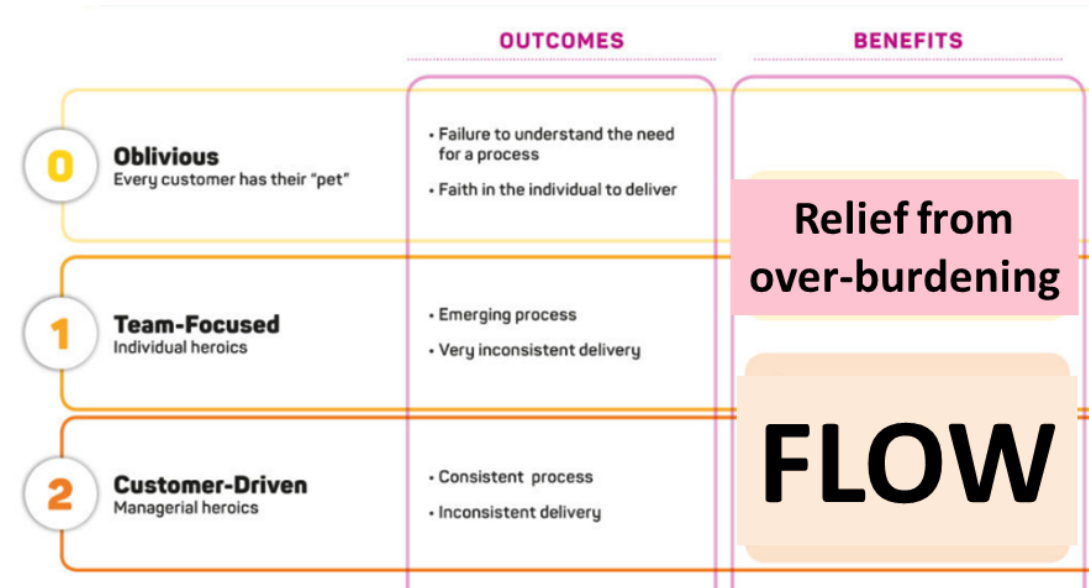
Outcomes remain
somewhat unpredictable

Often characterized by:

- Managerial heroics
- Delays and last-minute tension despite coordinated team effort

Benefits of Kanban at ML2

- Consistency of process
- Identifiable Customer requests
- Reducing lead times
- More predictable behavior
- Improving against Customer expectations



Reading reference: **ML2 Benefits**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/outcomes-benefits-poster/overview-2-eng>

Culture at Maturity Level 2

Level 2 is characterized by consistency of process with improving but continued inconsistency in delivery



Focus to understand Customer perspective and needs



Focus on creating end-to-end flow



Evolve in small steps



Cooperation

Reading reference: **ML2 Culture**
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/culture-4-eng>

Practices at Maturity Level 2

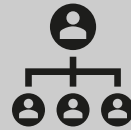
Level 2 is characterized by consistency of process with improving but continued inconsistency in delivery



Introduction of the Flow Manager role
Transitioning from managing tasks
to manage work from the Customer's perspective.



Start seeing and managing work as a service.



Consistent process and basic policies defined for
managing product development and/or service
delivery. Introduce the role of Flow Manager.



Basic management of end-to-end flow, blockers,
rework, and dependencies between teams. Some
flow-related metrics are in place (capacity, demand,
blockers, rework, work aging).



Problematic policies periodically revised

Reading reference: *ML2 Practices*
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/outcomes-benefits-poster/mldescription-2>

Outcomes at Maturity Level 2

Level 2 is characterized by consistency of process with improving but continued inconsistency in delivery



Initial understanding of Customer expectations, demand and capacity.



Improved service quality and delivery but not fully reliable and consistent.



Insufficient coordination between teams

Reading reference: ***Outcomes and Benefits at ML2***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/outcomes-benefits-poster/outcomes-4>



This class is intended to create a **leader** who can take an organization to **Maturity Level 2** and begin the transition to **Level 3**

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Breakout 3

5 min

Organizational Maturity

Which maturity level do you think applies to your immediate organization? And why do you think so?



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Module Two – Learning Outcomes

You will now be able to:

- Describe the concept of organizational maturity in simple terms
- Confidently describe the benefits of Kanban at ML2
- Demonstrate knowledge of the Kanban University professional career ladder
- Demonstrate a sound understanding of the Culture, Practices and Outcomes at ML2

Culture

Culture elements necessary for an organization operating at maturity level 2

Module Four – Aims and Objectives

The aims and objectives of this module are:

- To understand why we always lead with cultural values
- To know the cultural values required for ML2
- To review and describe the seven ML2 values
- To discover what trust looks like at ML2

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Outcomes follow Practices.
Practices follow Culture.
Culture follows Values.

And therefore,

Lead with Values!

Reading reference: *KMM Mantra*

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/culture-11-eng>

ML2 Culture

The dominant cultural behavior at Maturity Level 2 is that of the heroic manager who whips and cajoles work to flow through the chain of teams and ensures that an important Customer gets what they requested within their expectations. You know that you are in a Maturity Level 2 organization when Customers request and trust specific managers to take care of their needs.

Flow managers will feel pressure to deliver (whatever it takes).

If our aspiration is Enterprise-scale agility, we must break this culture and transition to ML 3.

Reading reference: ***ML2 Culture***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/culture-4-eng>

Understanding Culture

$$Culture = \sum Values \times Behavior$$

Define
Identity

(Decisions + actions)
of the leaders

Reading reference: ***Definition of Culture***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/culture-20-eng>

Maturity Level 2 Values



Maturity Level 2 Values

Acts of Leadership



Decisions are not made without leadership.

Change does not happen without leadership.

Without leadership at all levels there can be no autonomy.

To move quickly, to move with agility, organizations must encourage and enable leadership at all levels.

Without autonomy and leadership throughout the organization decision making will be centralized.

Without autonomous, decentralized leadership there will be delay.

Reading reference: ***Acts of Leadership***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/values-5-eng>

Maturity Level 2 Values

Customer Awareness



Every worker should be able to answer “Who is this for?”

Every work item tracked in the kanban system should be identifiable by the Customer, something that they value whether in whole or in part.

Customer awareness brings purpose and meaning to our work.

Delivering value for a Customer brings job satisfaction.

Customer awareness is the first step on a journey of Customer understanding and empathy – a first step towards greater Customer satisfaction and fit for purpose service delivery.

Reading reference: ***Customer Awareness***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/values-6-eng>

Maturity Level 2 Values

Evolutionary Change



Don't fix that which isn't broken.

Much of what you do now is working – respect it.

Start where you are, make small, incremental, low-risk changes.

Designed solutions and prescriptive frameworks tend to be fragile in the real world – they are not tailored to the environment in which they are deployed.

Evolved solutions tend to be robust and hardened to the environment, they emerged in the environment from real experience.

Evolutionary change and improvement are more likely to stick!

Reading reference: ***Evolutionary Change***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/values-7-eng>

Maturity Level 2 Values



Flow

Customers always care about time – delivery date (timelines), lead time, predictability.

Time always has a value.

There is always some cost of delay.

Predictable delivery enables deferred commitment.

Deferring commitment improves optionality.

Options always have value, enabling better risk management.

Avoiding delay and enabling flow, is the key to managing time.

Reading reference: **Flow**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/values-8-eng>

Maturity Level 2 Values



Respect

Respect the system.

Respect the environment.

Respect the Customer and their expectations.

Respect the workers by setting them up for success.

In Kanban, the Respect value is about **systems thinking** and creating an environment, a system, a culture that sets people up for success and provides them with the resources, capabilities, time and space, to do great work that delights Customers and enables economic success.

Reading reference: ***Respect***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/values-10-eng>

Maturity Level 2 Values



Narrative

Narrative helps us to understand why. Celebrate the story!

Narrative gives us a sense of belonging, a sense of identity, a sense of purpose.

Value your own story, history, identity, and purpose.

Value your Customer's story, history, identity, and purpose.

Understand your work by understanding its story and how it fits as part of something bigger.

Make the time and space to record the narrative, to share the narrative, to understand the narrative.

Narrative brings meaning and purpose to our professional lives

Narrative brings meaning to data.

Reading reference: ***Narrative***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/values-9-eng>

Maturity Level 2 Values



Understanding
(internal)

Think in systems. Understand the work and its workflow. Learn and value how your system of work, works.

Without understanding we cannot be scientific about change and improvement.

Kanban is a model-driven approach to improvement. Changes should be introduced because we believe that they will create an improvement – a belief based on an understanding of science, mathematics, and models that help us make sense of our environment and how our system of work, Works.

Understanding is about getting beyond superstition, wishful thinking and blind experimentation.

Understanding eliminates waste, focusing on changes with a high probability of success.

Reading reference: **Understanding (internal)**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/values-11-eng>

Trust at Maturity Level 2

- Explicit Values
- Explicit Policies
- Explicitly Defined Boundaries of Responsibility and Empowerment
- Transparency (visualization of work, workflow, & policies)
- Consistency of process (professional discipline)
- Quality of workmanship (professional capability)

Reading reference: ***Trust at ML2***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/trust-2-eng>



Trust increases as the
organizational maturity
improves

Reading reference: ***Trust at ML2***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/culture-poster/trust-2-eng>

For each of the seven values, assess whether the value is present at your company or not? Is it a strongly held or weakly held value?

1. Acts of Leadership
2. Customer awareness
3. Evolutionary change
4. Flow
5. Respect
6. Narrative
7. (internal) Understanding (of systems)

Narrative has been a traditionally hard value to explain and teach. Why do you think it is so counter-intuitive? How would you demonstrate the need to make time and space for narrative?



Module Four – Learning Outcomes

You are now able to:

- Identify the culture at ML2
- Explain the culture formula to understand culture
- Confidently identify and understand the seven ML2 values
- Understand how organizational trust improves at ML2

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Module Four

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The Kanban Method

Principles and General Practices

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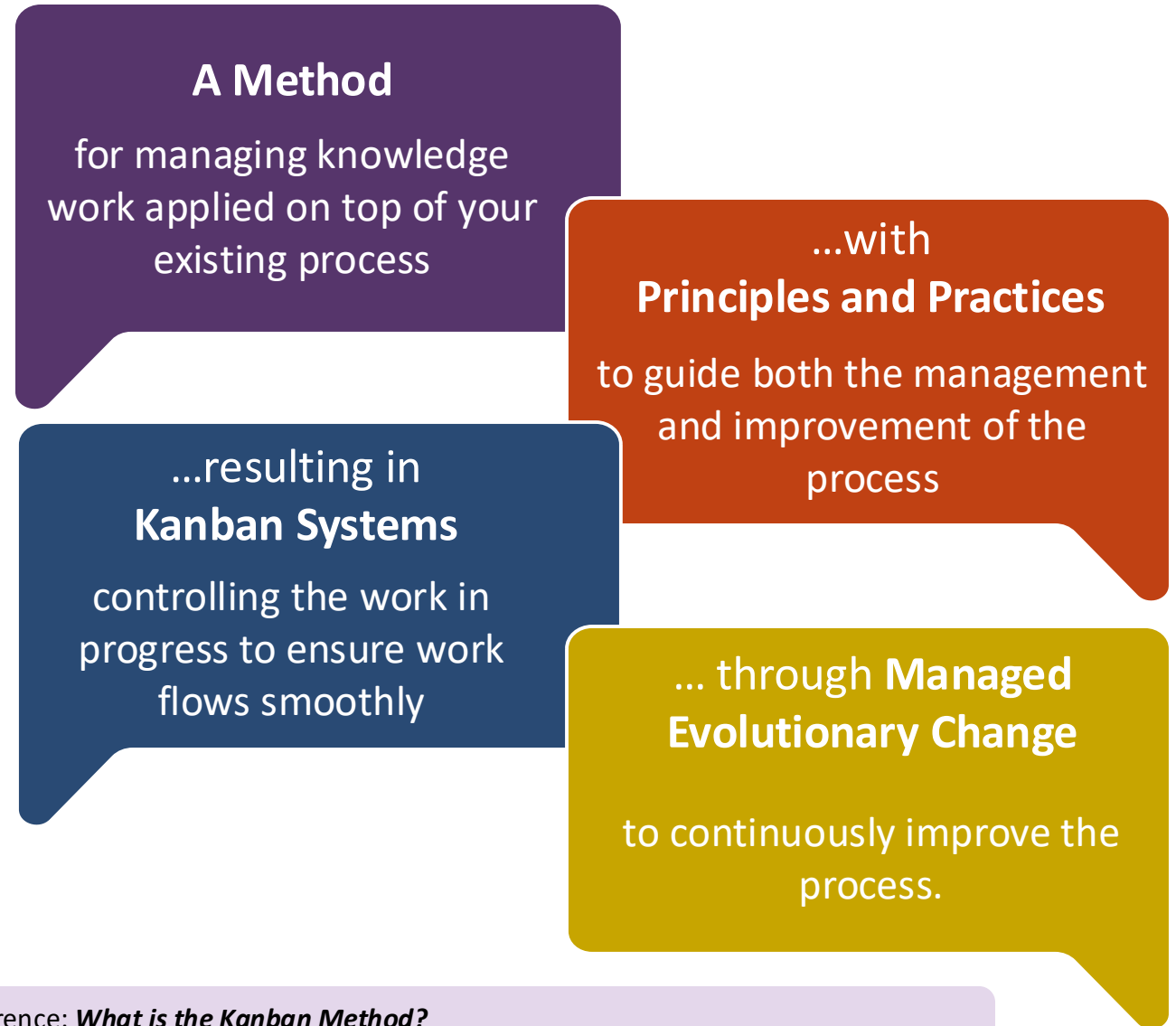
Module Four – Aims and Objectives

The aims and objectives of this module are:

- Learn the origins of the Kanban Method
- Learn the three Change Management Principles
- Learn the six General Practices, their purposes and the division into two sets of three, the operational practices, and the management practices
- Define the operational practices of Visualize, Limit WIP & Manage Flow practices required to facilitate flow
- Define the management practices of Make Policies Explicit, Establish Feedback Loops and Improve Collaboratively, Evolve Experimentally practices, required to evolve and improve the flow system

What is Kanban?

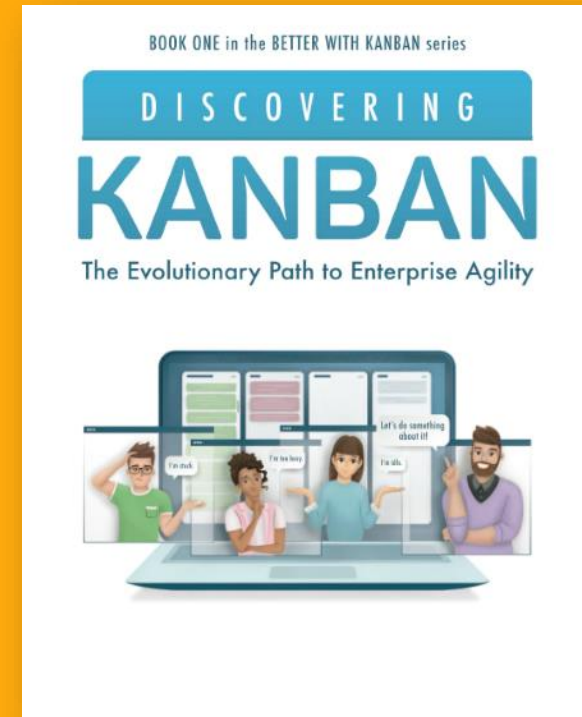
For now, remember:



Origins of the Kanban Method

- Inspired by Toyota & a need for an evolutionary approach to improvement
- Kanban was pioneered by David J Anderson in 2004 at Microsoft.
- Kanban has been adapted for knowledge work.
- Kanban is used today in many service industries.

Reading reference: ***A Conscientious Manager's Dilemma***
<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-chapters/reader/1-managers-dilemma>

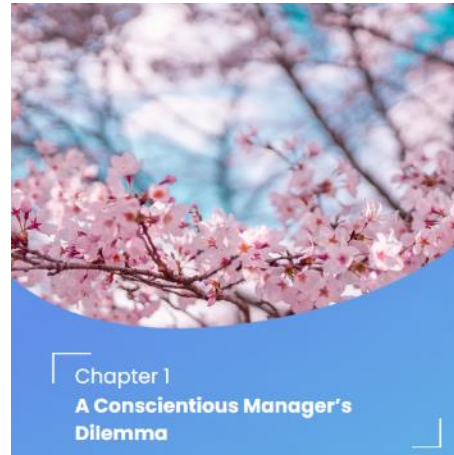


Get an immersive experience!



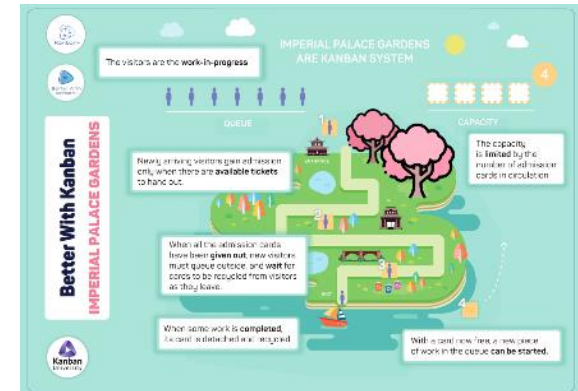
Watch video

<https://www.youtube.com/watch?v=Fp7tzaLLrTI>



Read the chapter

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-chapters/reader/1-managers-dilemma>



Download poster

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-downloads>

Change Management Principles

1

Start where you are!

2

Agree to pursue evolutionary change.

3

Acts of leadership at all levels.

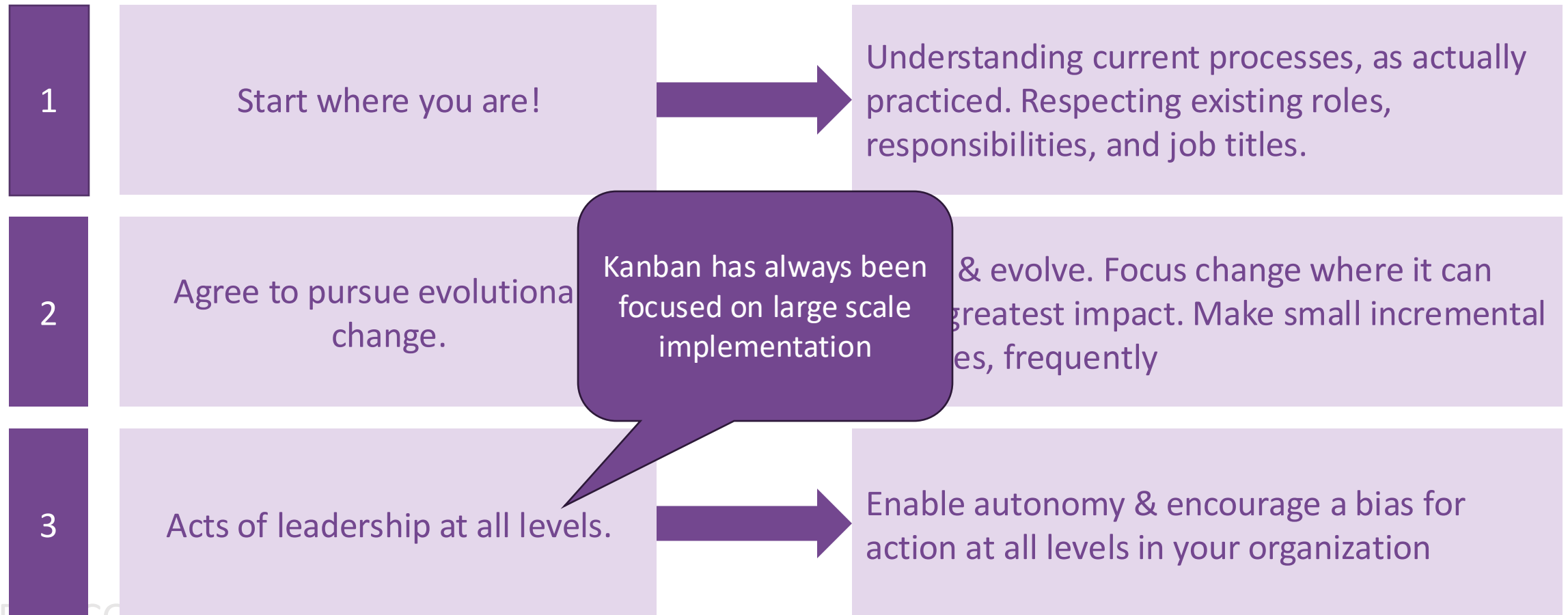
With Kanban, we start by developing and visualizing a joint understanding of the current way of working.

Then, improvements are identified and implemented.

Reading reference: ***Kanban Principles***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-posters/poster/kanban-in-numbers-2/9-principles>

Change Management Principles



Kanban Method: General Practices



Visualize



Limit WIP



Manage flow



Make policies
explicit



Establish
feedback
loops



Improve
collaboratively,
evolve experimentally

Reading reference: ***Kanban Practices***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-posters/poster/kanban-in-numbers-2/6-practices>

General Practices: 2 sets, 2 purposes

Operational Practices



Visualize



Limit WIP



Manage flow

Management Practices



Make policies
explicit



Establish
feedback
loops



Improve
&
evolve

Reading reference: ***Kanban Practices***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-posters/poster/kanban-in-numbers-2/6-practices>

General Practices: 2 sets, 2 purposes

Manage the work



Visualize



Limit WIP



Manage flow

Improve the system



Make policies
explicit



Establish
feedback
loops



Improve
&
evolve

Reading reference: ***Kanban Practices***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-posters/poster/kanban-in-numbers-2/6-practices>

Flow Manager Role

Facilitate flow



Visualize



Limit WIP



Manage flow

Improve the workflow



Make policies
explicit



Establish
feedback
loops



Improve
&
evolve

Reading reference: ***Kanban Practices***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-posters/poster/kanban-in-numbers-2/6-practices>

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We want to make work and its flow visible.

We want to engage everyone involved with a shared understanding.

In addition, we want to make information about the work and its flow visible through charts, graphs, and metrics.

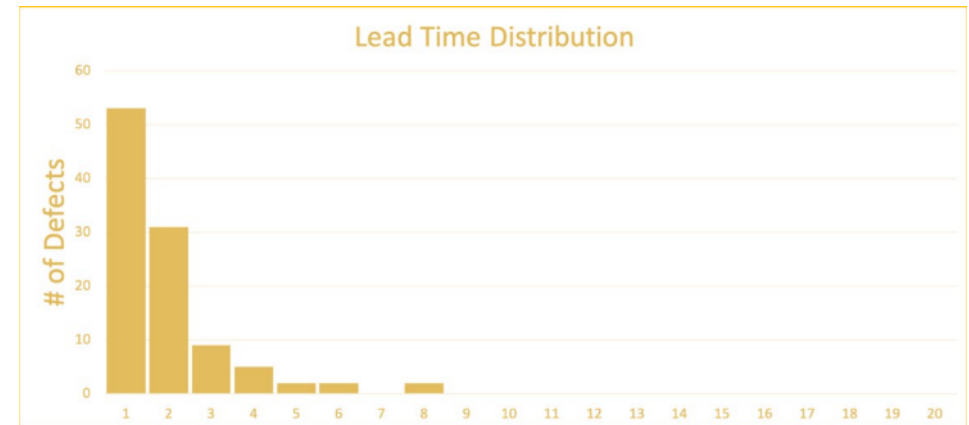
Visualize



Reading reference: ***Visualize***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz-intro-eng>

Visualize



A policy that constrains the number of work items or requests allowed in a given part of the kanban system.

New items or requests can only be started when there is available capacity. *

* The unit of “capacity” is an item or request of a known type. “Size”, “effort” or “time to complete” are not relevant.

Reading reference: ***Limit WiP***

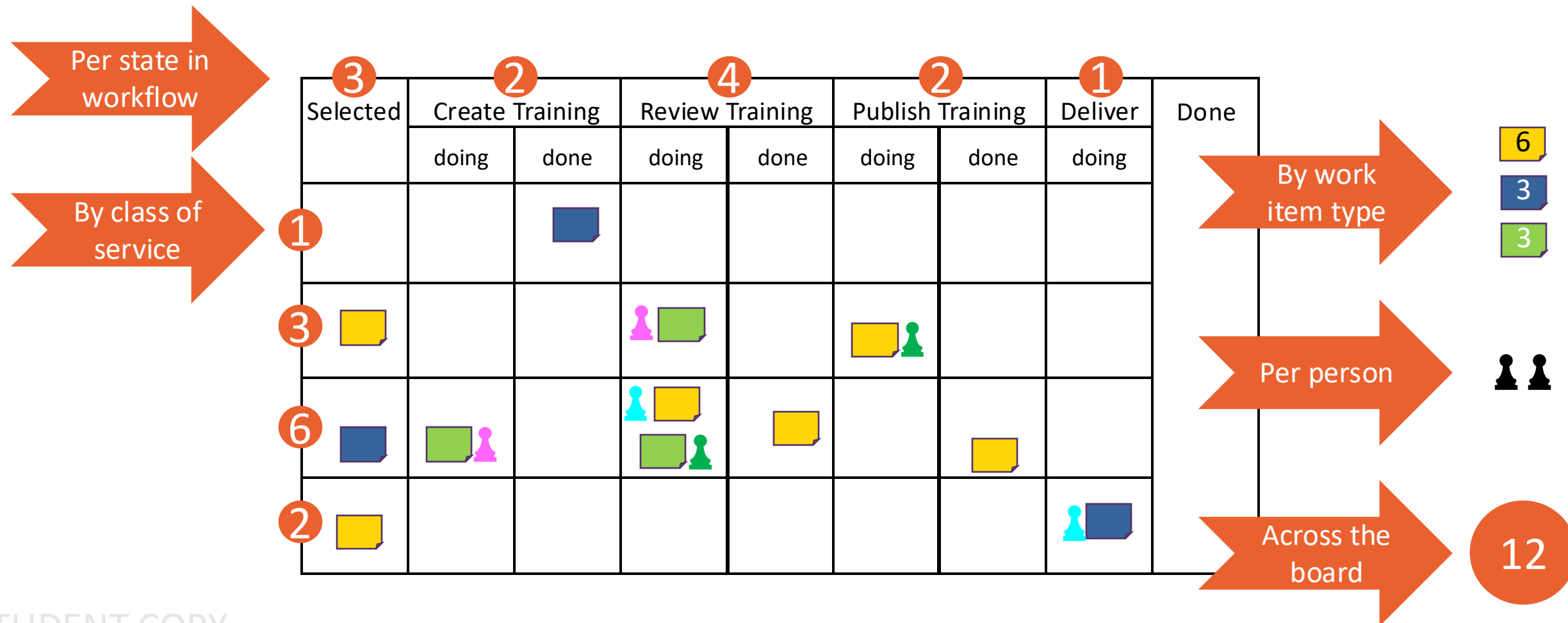
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/lw-intro-eng>



Limit Work In Progress



Visual of Possible WIP-limits



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The point of a workflow is to result in delivery.

We focus on managing the flow of the work to achieve smooth, predictable, and faster delivery.

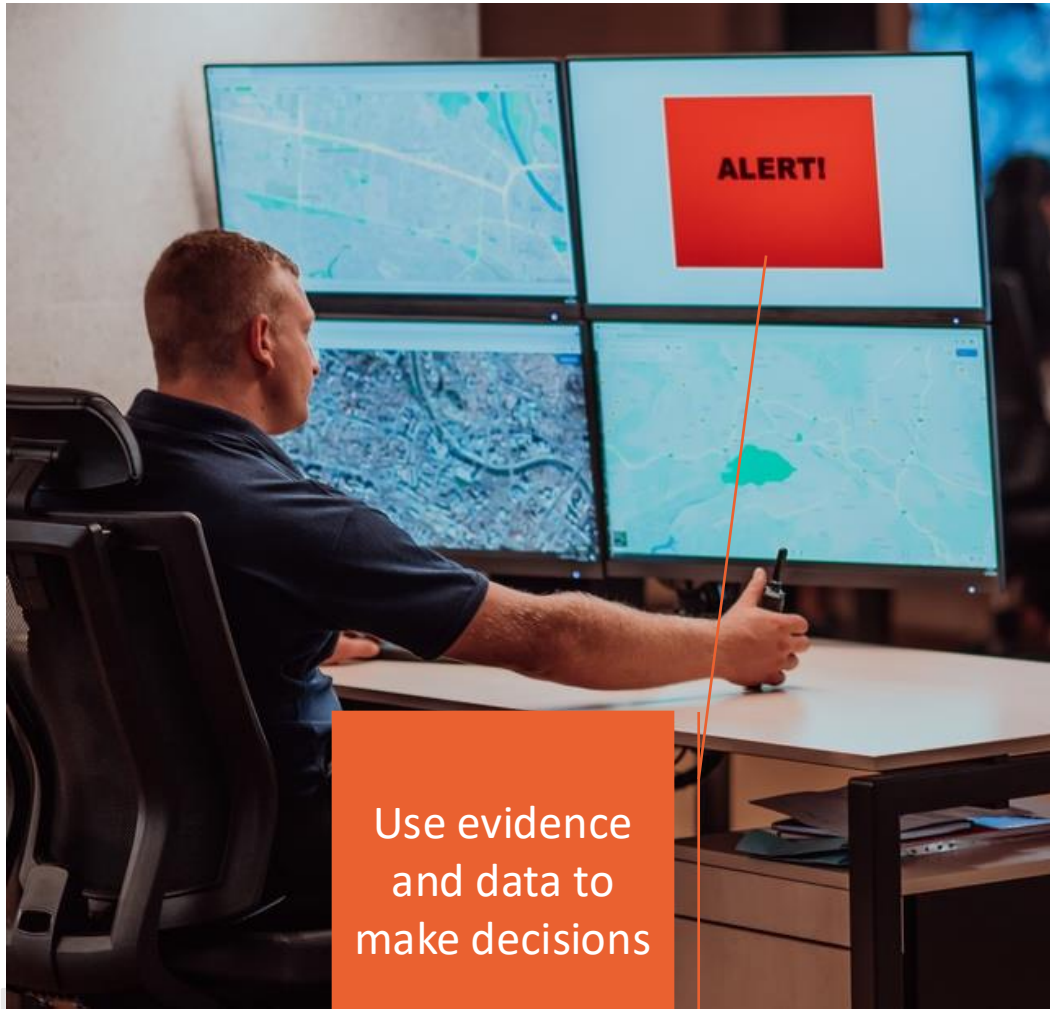
Manage flow



Reading reference: ***Manage Flow***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf-intro-eng>

Manage flow



Use evidence
and data to
make decisions



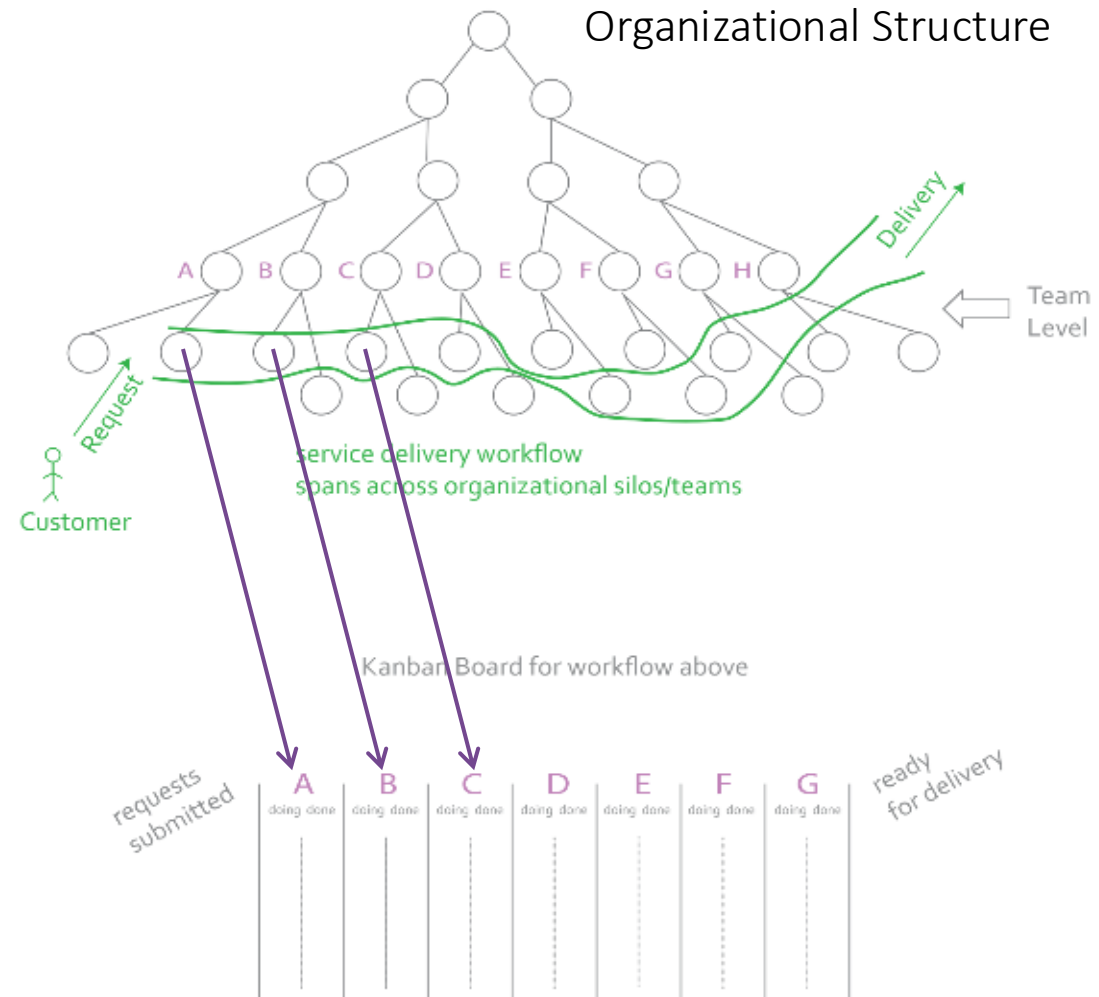
Set limits



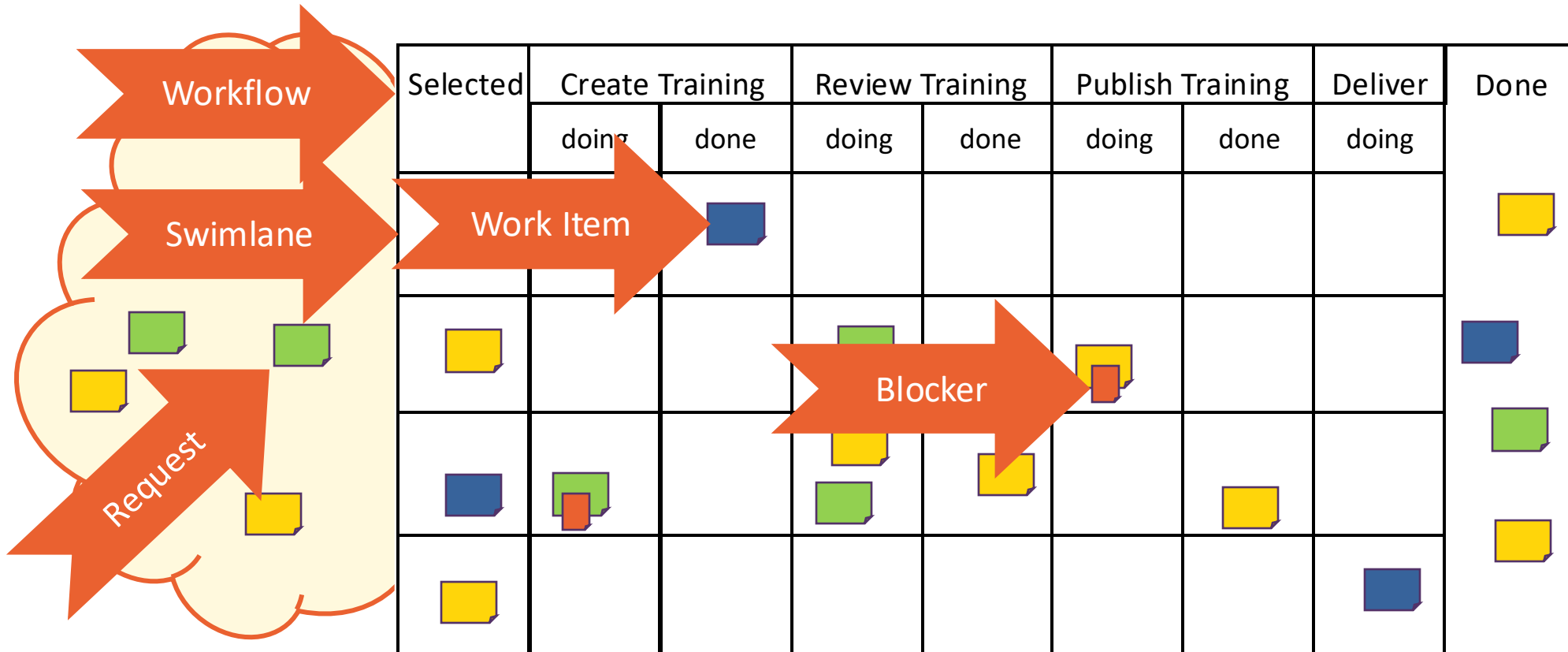
Add to the
flow relative to
capacity

Service Delivery Workflows Span Multiple Teams

New kanban system enables
**cooperation without
reorganization**



Manage Flow



A definition of the system. The rules of how the workflow works.

An explicit description of various policies that define the rules of our process, framing of decisions, boundaries of autonomy and empowerment.

Make policies
explicit



Reading reference: ***Make Policies Explicit***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/xp-intro-eng>

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Example: Policy wall from HSBC

Update work
items Policy

Policy:
Dot every task, bug and blocker
after every standup.

Reasoning:
Data on tasks, blockers and bugs tell us how long it takes to deliver them and how long they're blocked. We can use blockers to tell us how long something has been blocked. Together, they help us to find policies that could be improved and to forecast future deliveries.

Policy:
We don't change anything on
the board until it's updated in
Jira

Reasoning:
We're a distributed team and Jira is our shared understanding of the truth. Therefore, it's most important to keep Jira up to date.

Policy:
If a task is blocked, mark the
story as blocked, too.

Reasoning:
So people who are tracking a story's progress can see that there's an issue that might delay the story getting done as quickly as they might expect.

Blocker Policy

Policy:
Stories follow the first task into
Dev and the last task into QA

Reasoning:
We want to track the time a story spends in development and QA and development is defined as the time from the first to the last task while in QA a story is tested as a whole.

Policy:
When reporting a bug, decide if it's
critical or not. Assign non-critical bugs
to Piotr in Backlog. Put critical bugs in
Ready for Dev.

Reasoning:
Product owners might not want to spend time on bugs that don't block users, but they also don't want to be blockers for getting important work done.

Policy:
Write the date on the back of
stories when they change states.

Reasoning:
We use the dates to calculate cycle time per story and to build a cumulative flow diagram.

Meeting Policy

Policy:
If the story/bug you are working on
involves changes to a shared component, it
is necessary to have at least one sign off
from someone in Account Opening, Credit
Cards and Loans

Reasoning:
The reason is to avoid regressions occurring in other applications that may use the shared component in a slightly different way. This process should be followed regardless of the complexity of the change.

Meeting Policy:
No team-wide meetings between 11-2.
No meeting lasts more than 59 minutes.
All meetings are optional.
Leave if you don't find it valuable.

Reasoning:
Meetings should be more valuable than work. If they're not, we'd rather be working. People who call meetings should provide agendas to help people make good decisions about how to use their time.

Deployment Policy

When a story is moved to „ready to deploy“ the team decides whether to initiate a deployment process. Only when the work to be deployed is ready do we create a GSD and release notes with the aim to deploy at the first responsible opportunity.

Reasoning:
It creates stress, frustration, and degrades trust when we commit to deploying work that we „hope“ will be ready to deploy during the planned window.

Deployment
Policy

A feedback loop starts with information about the existing workflow performance and then requires action based on whether the result is in line with the desired goals and expectations or must be improved to align with those goals.

Feedback without action is not a feedback loop.

Establish Feedback loops



Reading reference: ***Establish feedback Loops***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/fl-intro-eng>

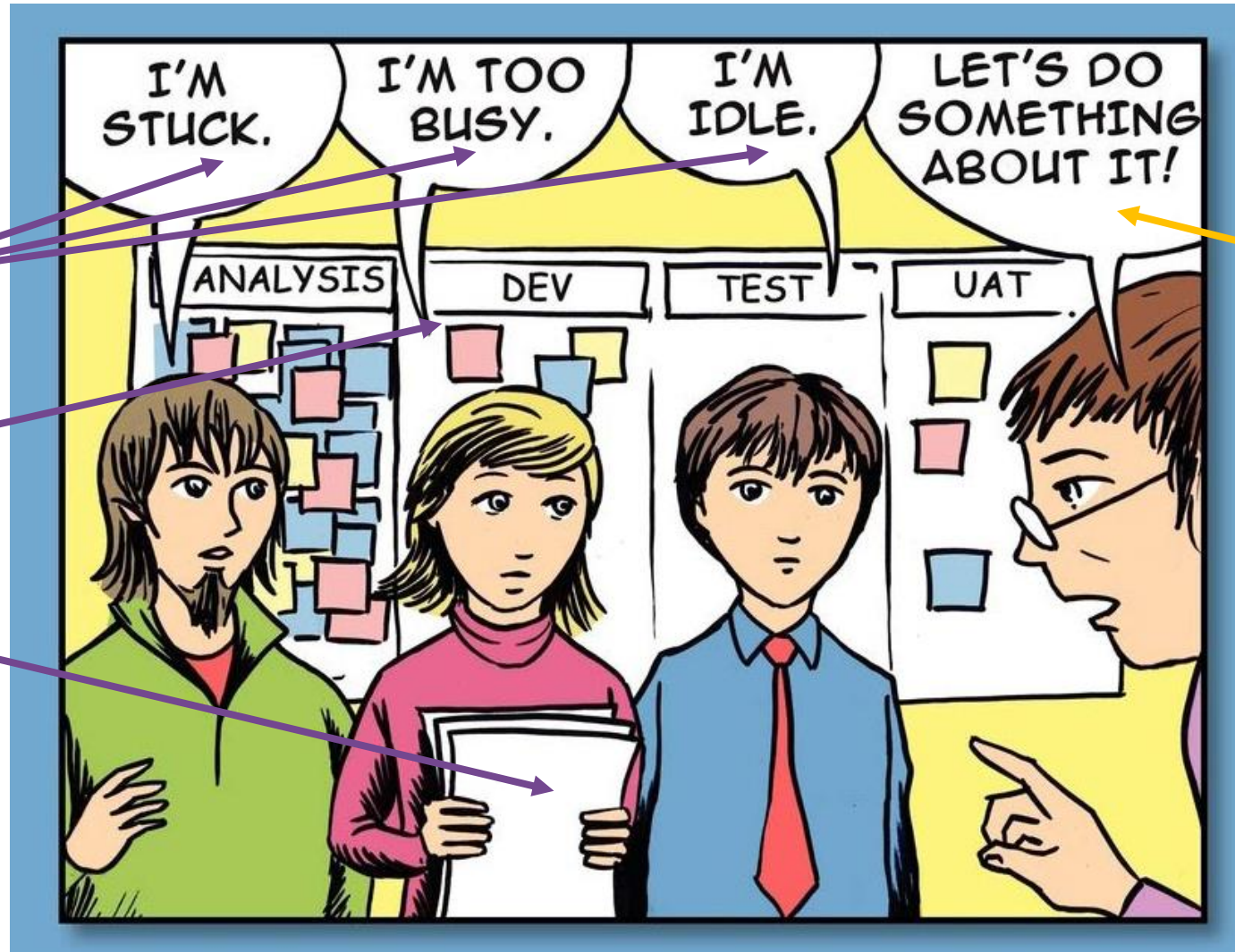
Feedback Loops

Feedback Mechanisms

Communication Meetings

Board

Reports and Metrics



Feedback Loop

Acts of Leadership



Feedback without action
is not a feedback loop.

Reading reference: ***Feedback Loops: everything you need to know***

<https://kanban.plus/blogs/blog/feedback-loops-everything-you-need-to-know-interview-with-andreas-bartel>

Changes that lead to improvements should be driven by shared understanding and implemented through collaboration.

Proposed changes should be designed using a model-driven approach – a hypothesis that the change will lead to an improvement should be possible

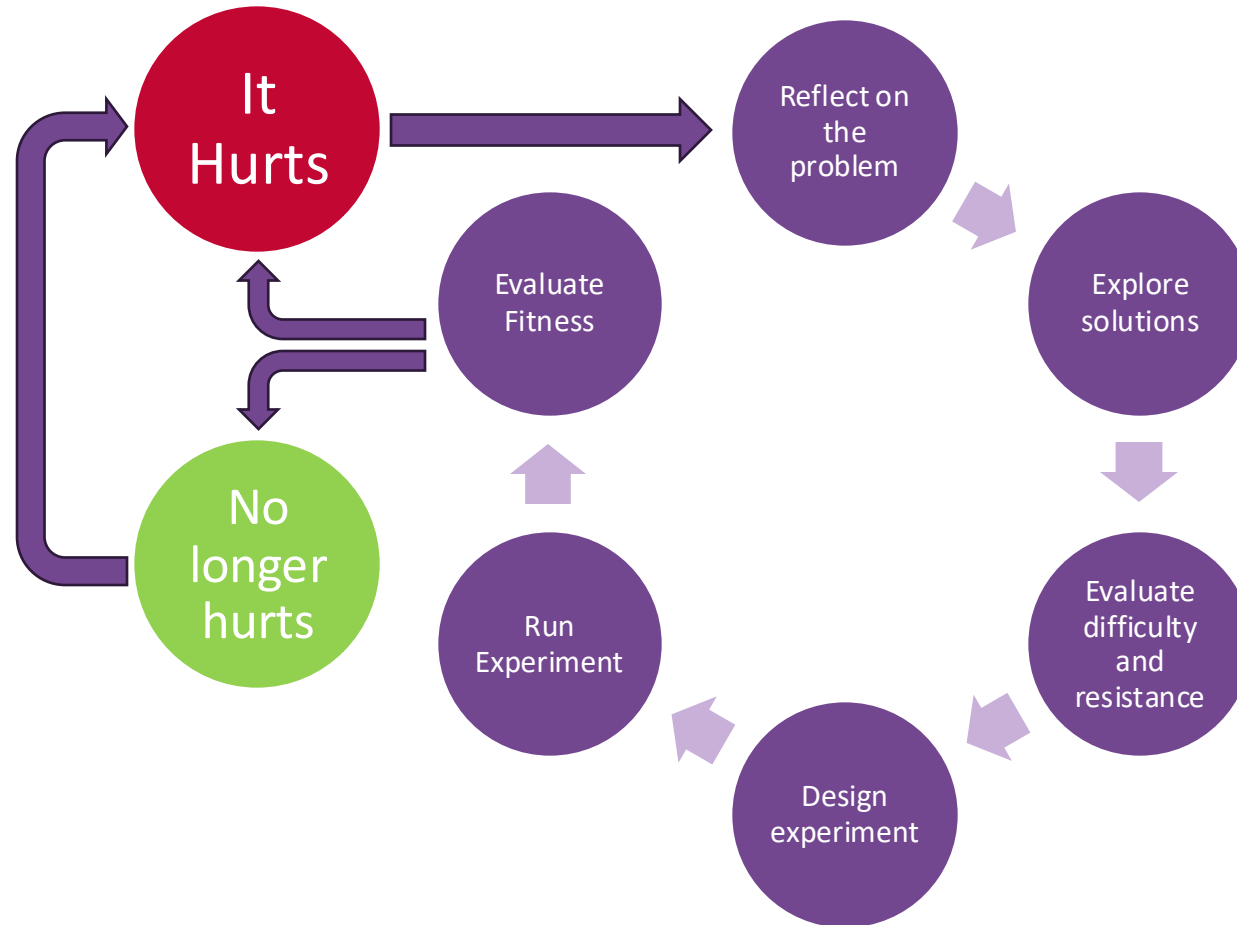
Reading reference: ***Improve and Evolve***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/ie-intro-eng>

Improve
collaboratively,
evolve
experimentally



Improve collaboratively, evolve experimentally



Principles and Practices

Discuss the principles & practices. How do they relate to your existing working practices & culture?
What challenges do you foresee when making the switch?

Be ready to share 3 insights per group.



Module Three – Learning Outcomes

You are now able to:

- Understand that Kanban was inspired by manufacturing companies such as Toyota but has been adapted for use with knowledge work, intangible goods, professional services, 21st century businesses
- Describe the three Change Management Principles
- Describe the six General Practices, their purposes and how they can be subdivided into operational practices to facilitate flow and management practices used to improve the system of flow

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Module Five

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STATIK

The systems thinking approach to implementing Kanban

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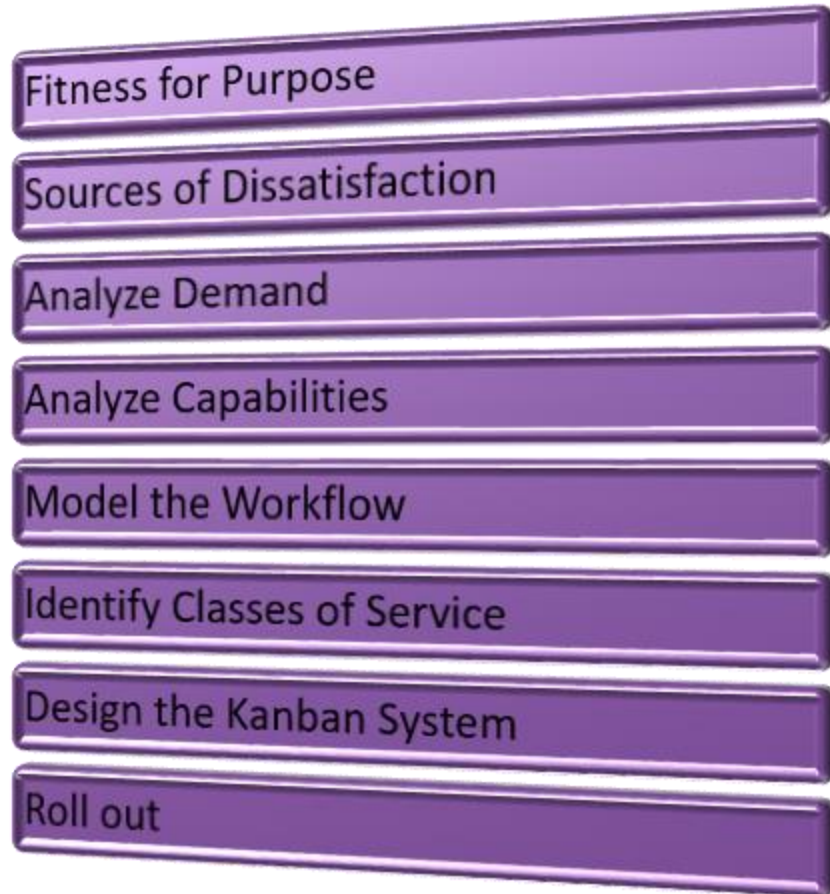
Module Five – Aims and Objectives

The aims and objectives of this module are:

- To gain the knowledge that there is a codified and systemic approach to designing and introducing kanban systems and the Kanban Method, STATIK
- To learn that STATIK is implemented with greater scope and depth depending on maturity level, starting with ML2
- To provide an overview of the 8 steps in the STATIK approach and shows the specific implementation at ML2
- To use what you have learned in this module to create a kanban system

STATIK Intro

Systems Thinking is a way of understanding how a system behaves as a whole rather than through analysis of component parts in isolation. It is a key influence in the definition of the steps needed to introduce Kanban in an organization. The steps in this process are not necessarily sequential, but iterative, using learning from one step to inform and influence the others in a collaborative environment.



Value Derived From..	How and What	Who and How Well	Why
Maturity Level	ML2 - "Understanding"	ML3 - "Deeper Understanding"	ML4 - "Even Deeper Understanding"
<u>STEPS</u>	<u>ML2 STEPS</u>	<u>ML3 STEPS</u>	<u>ML4 STEPS</u>
1. Fitness for Purpose	Not applicable at ML2	Who are your customers? What are their expectations (SLEs)	Fitness criteria by purpose
2. Sources of Dissatisfaction	Internal only	External and internal sources	Gaps vs fitness thresholds, Filters by dependencies and risks
3. Analyze Demand	What do customers ask for?	Demand analysis (rates, patterns, Gaussian/Pareto, regular/seasonal)	Same as ML3, Filter by dependencies and risks
4. Analyze Capability	Basic metrics instrument to capture capability and demand	Compare against expectations – gap analysis	Mapped to risk profiles, Capacity allocation, Ops Review, Strategy Review
5. Model Workflow	Knowledge/information discovery activities	As ML2	Map interdependent services (external/internal/leaf nodes), Filter by dependencies
6. Classes of Service	No applicable at ML2	Policy definitions mapped to expectations, agreements (SLAs)	Mapped to risk profiles
7. Design System	Work item types, workflow steps, flow review	Replenishment, Classes of Service, Service Delivery Reviews (SDR), Risk Reviews, Delivery Planning	Capacity allocation, Ops & Strategy Reviews
8. Roll Out	See coaching curriculum	See coaching curriculum	See coaching curriculum

Step Zero – Identify Services

- STATIK is applicable to individual services.
- Where your organization is a network of interdependent services, you can apply STATIK independently at each node in the network.
- Kanban scales out in a service-oriented fashion.



Step One - Understand what makes the service fit-for-purpose for the customer

Explore the criteria that define customer satisfaction with the service delivery. These are usually related to but not limited to **lead time, quality, predictability** and **safety or regulatory concerns**.

These criteria are known as the **fitness criteria** because they determine how the customer evaluates whether the service delivery is acceptable, or “**fit for purpose.**”



Step Two - Understand sources of dissatisfaction with the current system

This is done in **two steps**:

One - Ask the customers what they are unhappy about

Two - Ask the service delivery organization if they have any internal sources of dissatisfaction – things which are preventing them from doing a good and professional job and delivering on expectations.

Sources of dissatisfaction provide input for the kanban system design. We will try to design the kanban system, its capacity allocations and its classes of service to eliminate as many of the problems as possible.



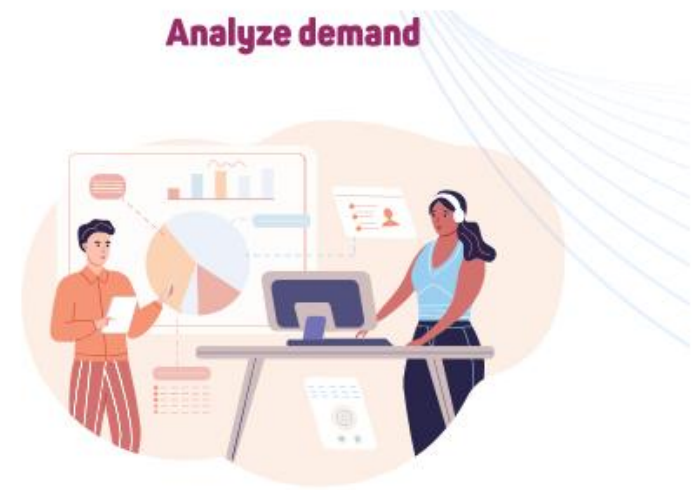
Step Three - Analyze demand

In order to design a suitable kanban system, we need to know the nature of the demand: who are the customers; what do they ask for; what is the arrival rate and pattern of arrival of requests; what are their expectations.

The first task is to identify the work item types. For each identified work item type, we want to understand the arrival rate – the volume of demand, and the pattern of arrival – the rate of demand over time and at different times of day, days or weeks of the month, months or quarters of the year. We want to understand the ebb and flow of demand.

3

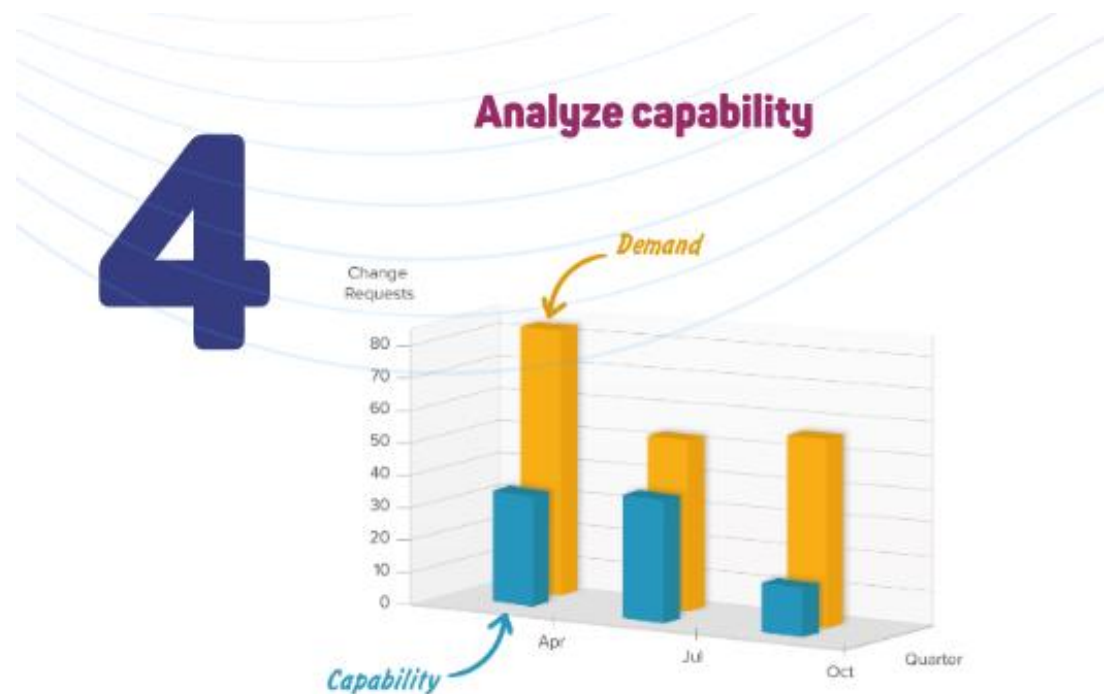
Analyze demand



Step Four - Analyze existing capability

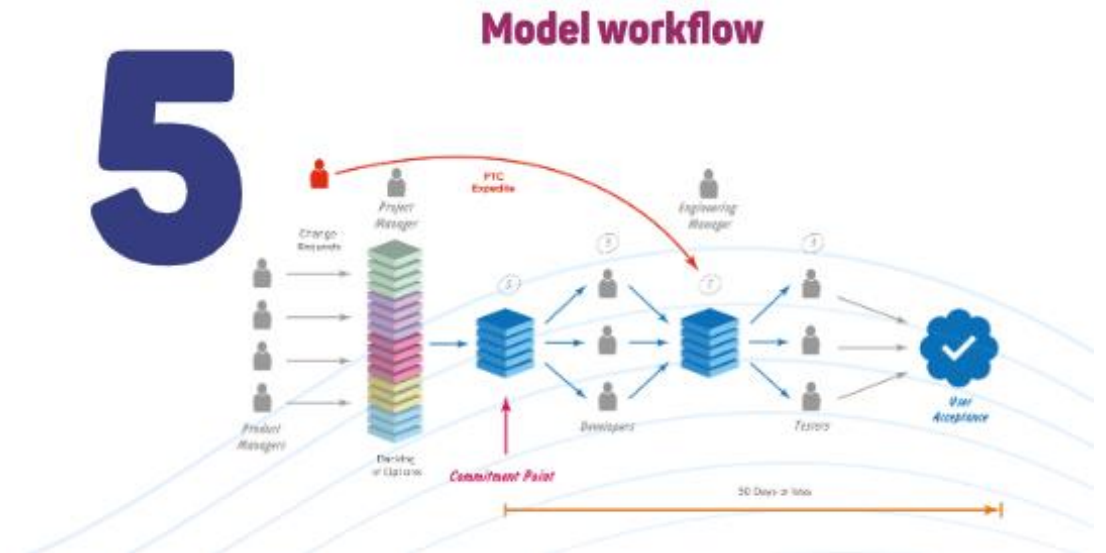
Analyzing capability involves studying historical data for service delivery: lead time; quality both functional and non-functional; predictability; conformance with regulatory requirements or standards. The current capability can be compared to the service level expectations of the customers.

Given that there are sources of dissatisfaction, it is likely there will be a gap, perhaps a significant one, between current capability and existing customer expectations.



Step Five - Model workflow

- Identify a series or sequence of dominant activities performed to discover new knowledge or information about the work in progress.
- Identify the points of diminishing returns where a new activity has replaced the existing one as the dominant means to discover new knowledge and information



Step Six - Discover classes of service

- A class of service is a set of policies that describe how a piece of work should be treated.
- Do you treat all work the same way? If not, why not? And how does the treatment differ?
- Document these policy differences to make classes of service explicit

6

Discover classes of service



Step Seven - Design the Kanban system

- Kanban system designs reflect the needs of the organization and its maturity, capability to manage risk, cost, value delivery, and potentially competing stakeholder and customer concerns expectations.
- The more sophisticated the organization, the more sophisticated the kanban system



Step Eight - Socialize the design and negotiate implementation

- People need to understand change and how it affects them
- They need to buy-in to changes
- They must not feel threatened by changes
- If possible, they should be part of the discussion from the very beginning.
- Socializing change to facilitate adoption is a key change leadership skill

8



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Breakout ?

10 min

STATIK

What is the value in capturing sources of dissatisfaction? How might it help with rollout and adoption later?

Do you have the available information to answer all of the questions? Or will the first step be to put in place tracking and instrumentation to gather the data? How might you move forward without data?
Hint: Does anyone have insight, experience and knowledge of the end-to-end process?



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Module Five – Learning Outcomes

You are now able to:

- Confidently describe the codified and systemic approach to designing and introducing kanban systems and the Kanban Method, STATIK
- Appreciate and be aware that STATIK is implemented with greater scope and depth depending on maturity level, starting with ML2
- Describe the 8 steps in the STATIK approach and you are aware of the specific implementation at ML2
- Create a kanban system using the knowledge gained from this module

Structure of Part Two - Flow Manager Role



Module 6

The Flow Manager Role

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Module Six

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Flow Manager Role

Definition, implementation, & implications

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Module Six – Aims and Objectives

The aims and objectives of this module are:

- To describe the role of the Flow Manager along with the typical day to day functions
- To review the KMM guidance on implementing roles in an organization
- To ensure that the changes and cultural appropriateness required for the implementation of the Flow Manager role are understood

Flow Manager



2

- At ML2, the need for introducing the role of a Flow Manager to oversee the service delivery-related aspects of work arises.
- A typical approach: Assign it to a team member who has volunteered for it and has appropriate knowledge and skills to do the job.

LW 2.1 Establish constant WIP (CONWIP) limits on an emergent workflow

MF 2.6 Manage defects and other rework types

MF 2.7 Manage aging WIP

MF 2.8 Implement Flow Manager role

XP 2.3 Define policies for managing aging WIP

XP 2.4 Define policies for managing defects and other rework types

XP 2.5 Define basic policies for dependency management

FL 2.2 Conduct Workflow Kanban Meeting

FL 2.3 Conduct Flow Review

IE 2.2 Identify sources of delay

IE 2.3 Revise problematic policies

IE 2.4 Define actions to develop basic understanding of the process and improve flow

Typical Functions of a Flow Manager

- Create the consciousness that the service team is delivering a service to identified Customers.
- Ensure that flow metrics are collected.
- Facilitate the workflow Kanban Meeting.
- Facilitate the understanding of Customer requests.
- Facilitate the resolution of blockers, rework, and aging WIP—related issues that are escalated from the service team.



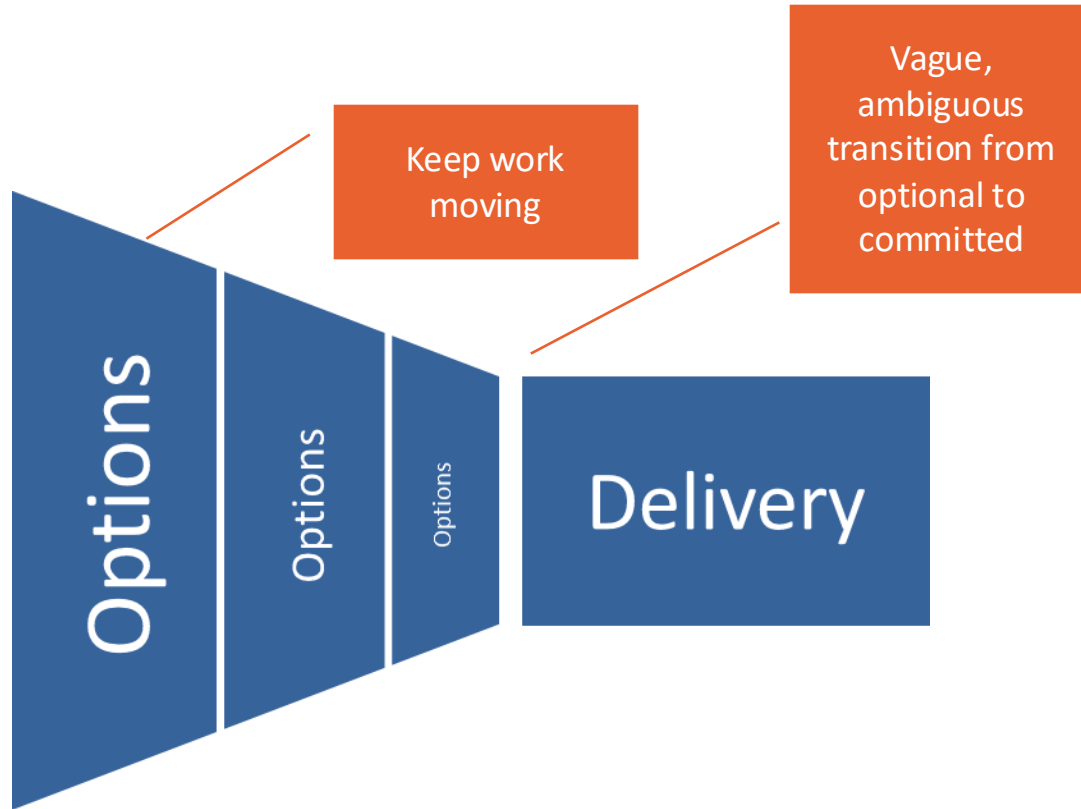
Reading reference: ***MF 2.8 Implement Flow Manager role***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf28-eng>

Flow Manager

- When organizations make a transition from Maturity Level 1, Team-Focused, to Maturity Level 2, Customer-Driven, we observe a shift from managing tasks to managing Customer-valued and Customer-requested deliverables.
- At ML2 we recognize that upstream and downstream flows may still be indistinguishable from one another and that the commitment point remains ambiguous. Or the Upstream system functions in a degenerate form of To Do—In Progress—Ready for [downstream activity] states in the process.
- The Flow Manager is responsible for the end-to-end flow of work in its current shape with no distinction between Upstream and Downstream Kanban.

Maturity level 2: Flow Manager Role



- Flow Manager
 - Manages flow end-to-end
 - Doesn't distinguish upstream from downstream
 - At ML2 vague understanding of committed versus optional work
 - Focuses on keeping things moving

Lack of Flow Manager

When no one is responsible and accountable for keeping the work moving, it tends to fester in the buffers between siloed teams.



KMM Guidance on Roles

- Remember, like in theater, roles are "to be played", in various forms.
- Specifically, a role does not have to be a job title
- Roles can be introduced as an individual or a group responsibility, a job title, or a position in the organizational structure
- The title of the role can vary in each organization, and the functions need to be adjusted to the nature of the services that are managed

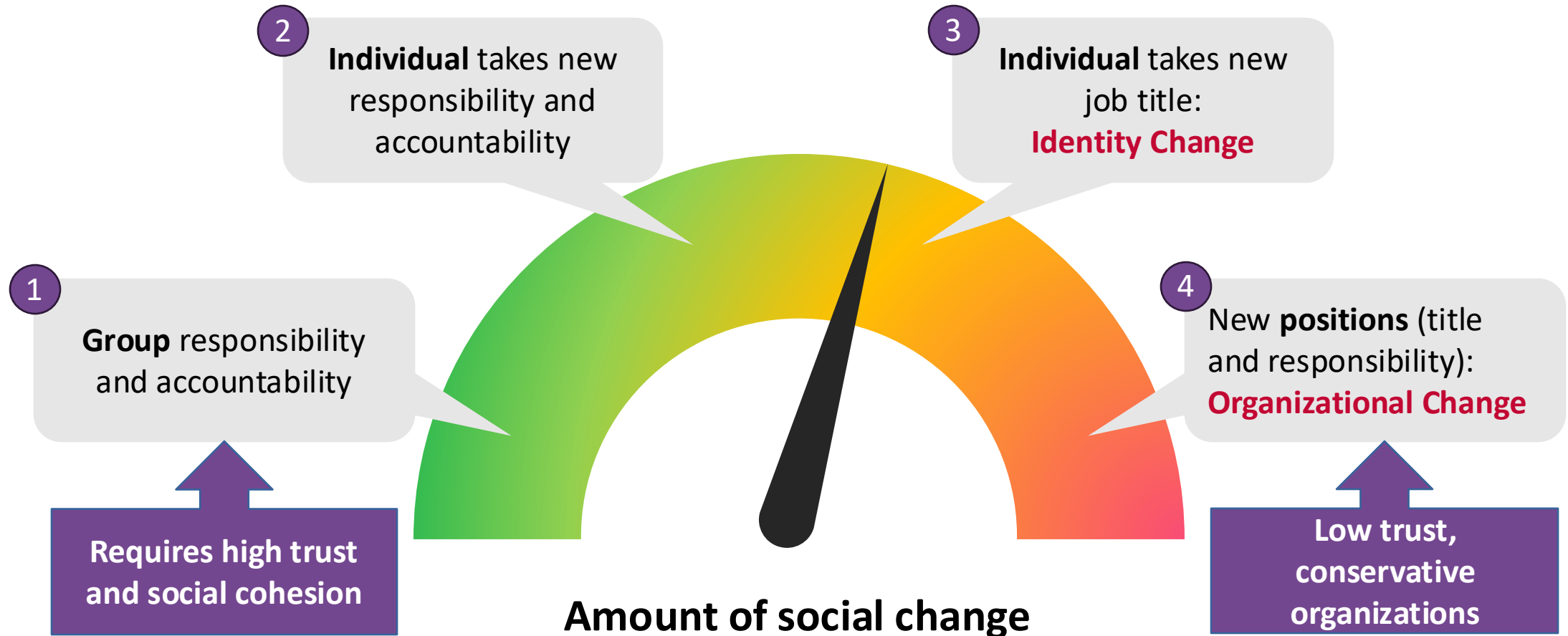
Reading reference: ***MF 2.8 Implement Roles***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/barriers-poster/barriers-44-eng>



Adjust the role implementation to the organizational culture. Consider existing roles and titles first!

Implementing the role: 4 Patterns

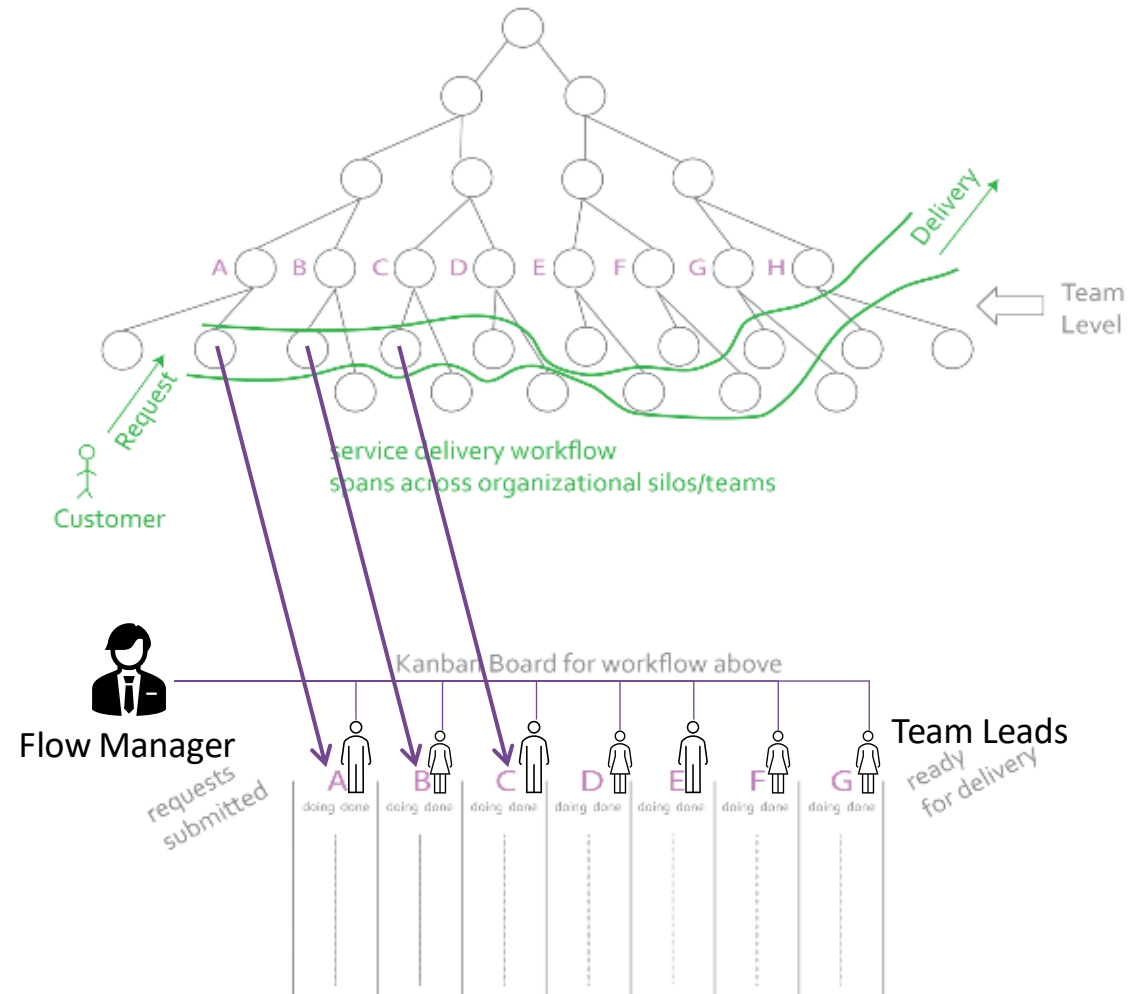


Reading reference: *Implementing Roles*

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/barriers-poster/barriers-44-eng>

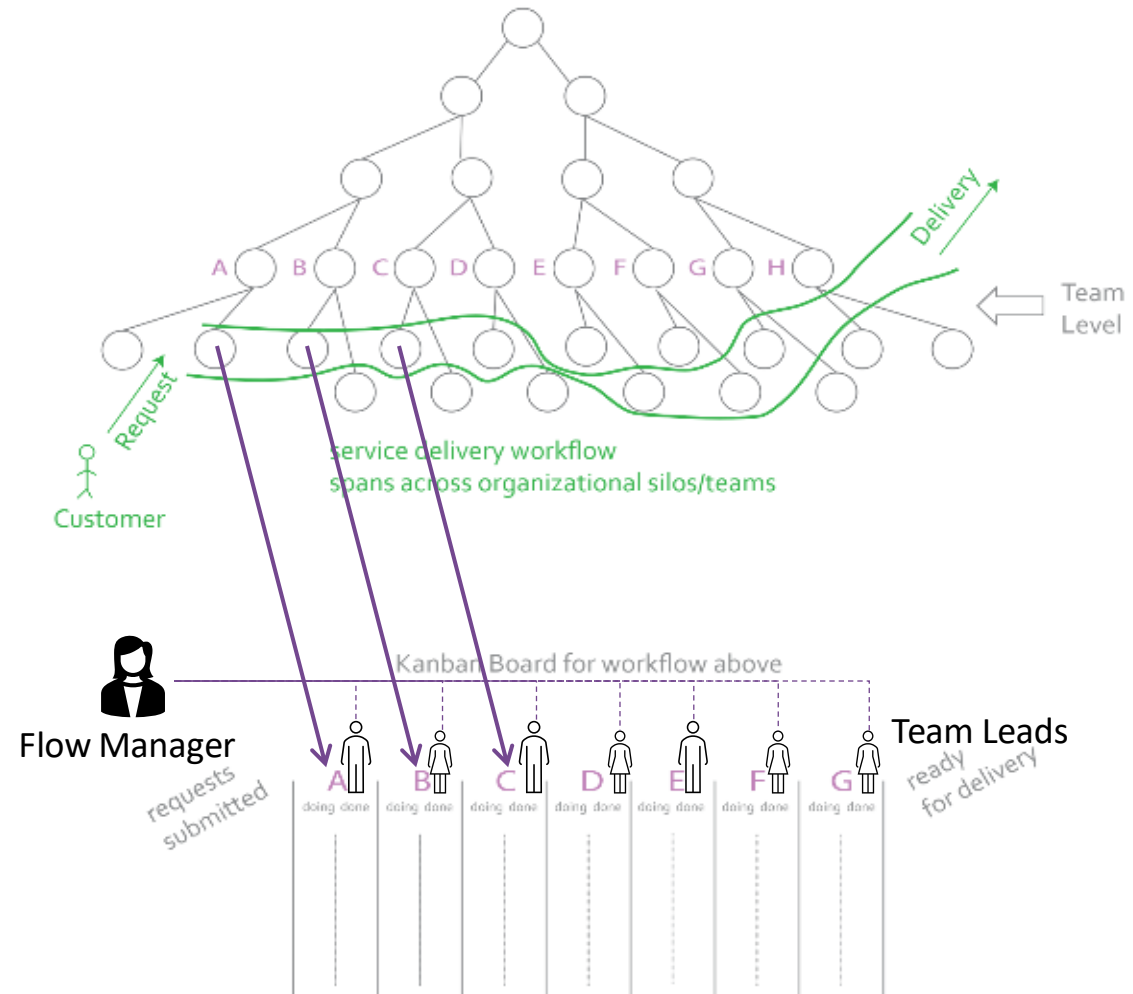
4. Organizational Change

Flow Manager owns the workflow, team leads from each function/activity report up to the flow manager



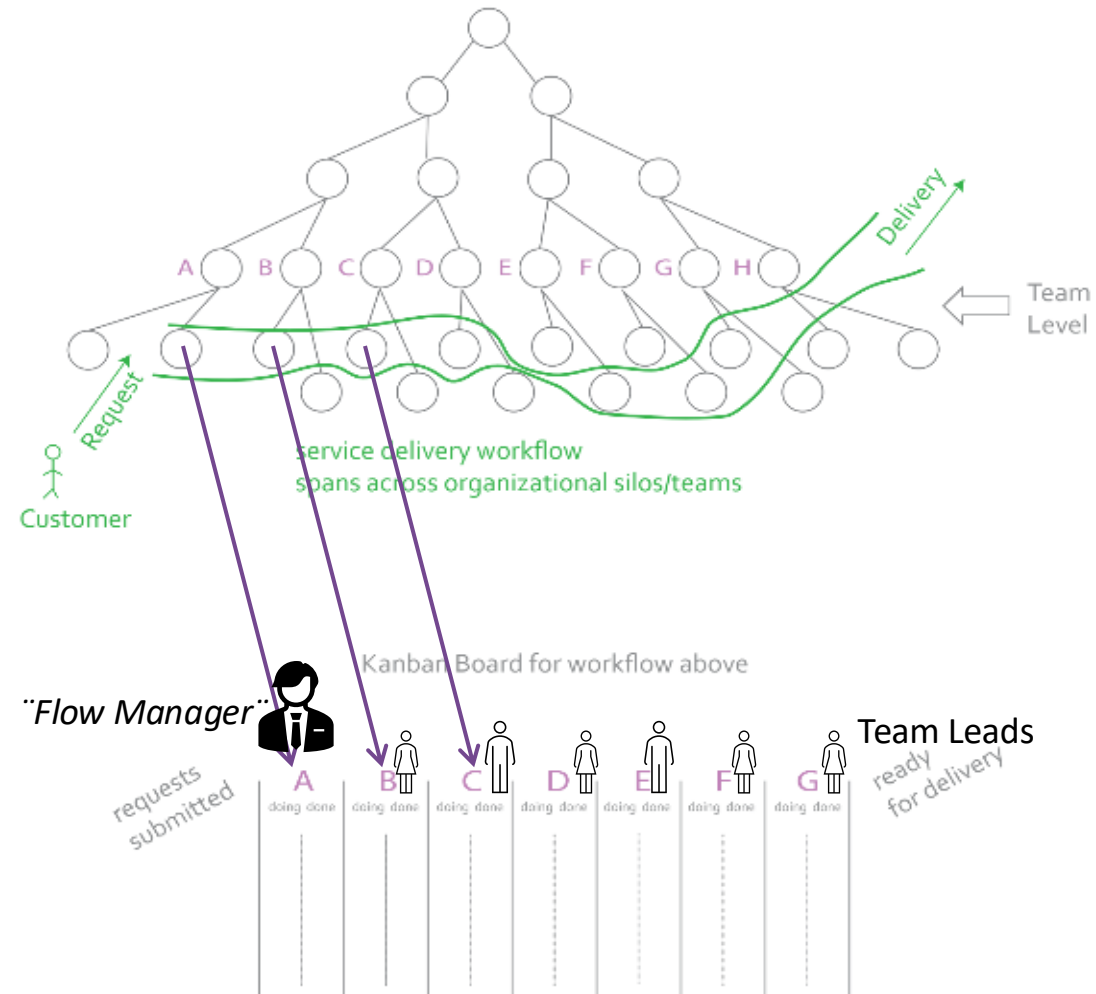
3. Formal Job Title

Flow Manager owns the workflow, coordinates team leads from each function/activity



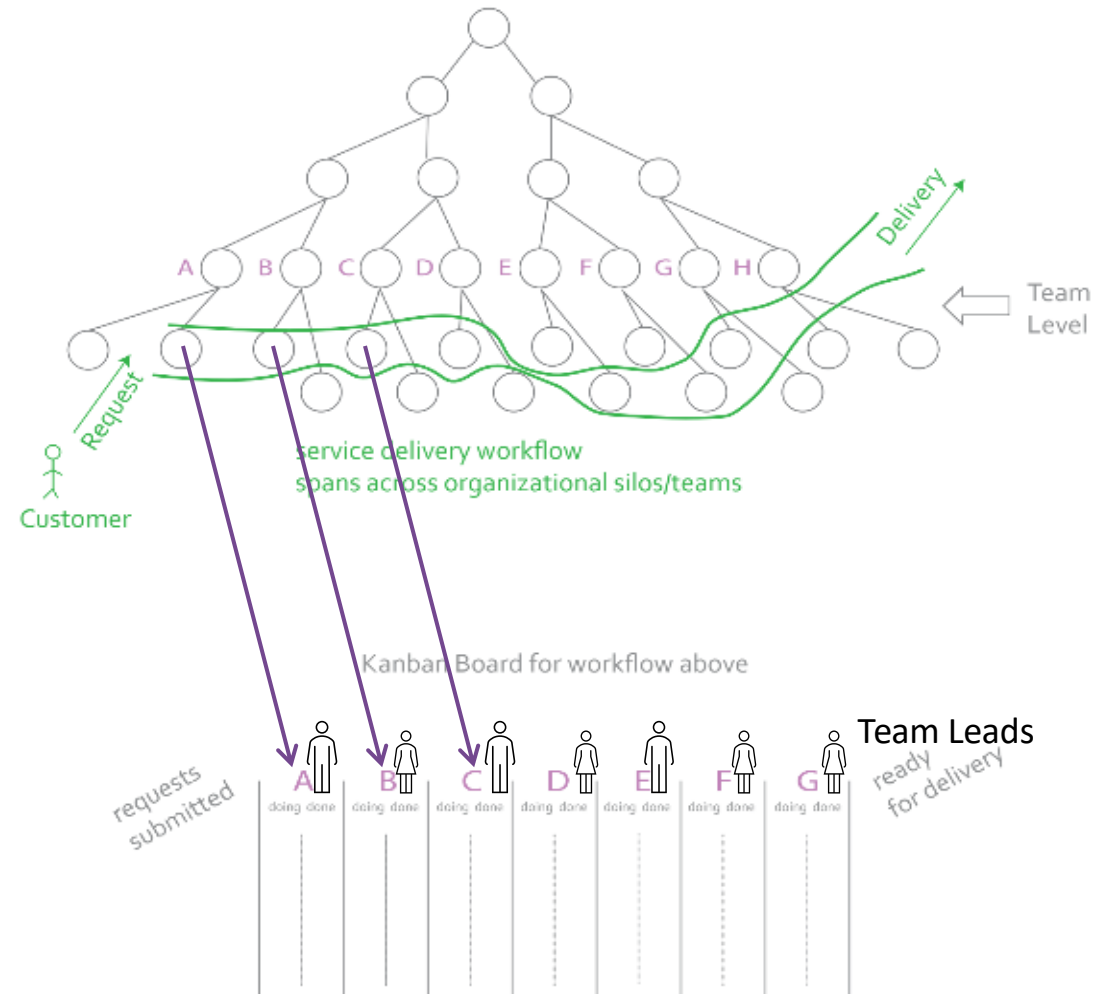
2. Individual Adds Responsibilities

A team lead often at the beginning of the workflow accepts additional responsibilities and plays the flow manager role



1. No Flow Manager – Shared Responsibility

Everyone involved shares the responsibilities of *flow manager*. There is **group accountability** for delivery results.



Flow Manager Role

A flow manager, in part, leads the organization to maturity level 2. Does this role currently exist in your organization? If not, who might step up to take on the responsibility?



Module Six – Learning Outcomes

You are now able to:

- Understand the role of the Flow Manager and the day-to-day functions within that role
- Know how to map your organizational culture to the appropriate organizational implementation pattern
- Identify who should play the flow manager role, and know whether or not it will involve a job title or organizational change to be successful

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Complete

End of Day 1

Students should understand ...

The Kanban Method

The Kanban Maturity Model

Organizational Maturity and Culture at Maturity Level 2

Responsibilities of the Flow Manager role & implementing the role in an organization

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Structure of Part Three – Flow Simulation



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Simulation

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Simulation

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Simulation – Aims and Objectives

The aims and objectives of the simulation are:

- To experience flow
- To experience a maturity level 2-3 working environment
- To learn, use and understand flow metrics
- To experience the cadence and decision-making needed to flow work

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4 Hours

Let's do a simulation

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Simulation – Learning Outcomes

You are now able to:

- Describe and execute the pull process
- Use and understand basic metrics
 - Cumulative Flow diagram
 - Lead time histogram
 - Understand the value of narrative with metrics and reports
- Confidently use feedback loops, with acts of leadership, to make change and drive improvement
- Describe how evolutionary change based on policy modification changes the way that the system behaves and operates

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Complete

End of Day 2

Students should understand ...

How it feels to work in a flow environment

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Part Four
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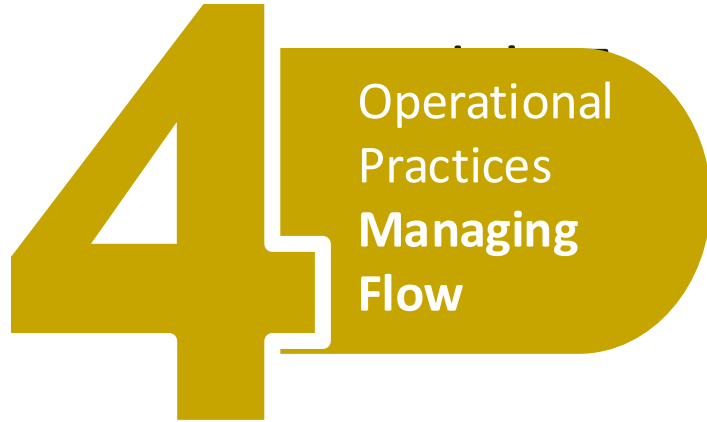
Managing Flow

Using the operational practices of the Kanban Method

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Structure of Part Four – Operational Practices /Managing Flow



Module 9

Metrics

Module 7

Workflow

Module 8

Limiting WIP

Module 10

Managing
Dependencies

Managing Flow



Individuals & teams acting with autonomy self-organize around the work, flowing it to completion

Empowered individuals act within the system, operating the system as designed

Reading reference: ***Manage Flow***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf-intro-eng>

STATIK at Maturity Level Two – Understanding

At ML2 value is derived from “how and what” – *workflow and work item types*

1. Fitness-for-Purpose	Not applicable at ML2
2. Sources of Dissatisfaction	Internal only
3. Analyze Demand	What do customers ask for?
4. Analyze Capability	Instrument to capture capability and demand, basic metrics
5. Model Workflow	Sequence or flow of knowledge/information discovery activities
6. Classes of Service	Not applicable at ML2
7. Design System	Work item types, Workflow steps, Flow Review
8. Roll Out	See coaching curriculum

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Module Seven

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Workflow

Tracking & visualizing the flow of Customer-valued work

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Module Seven – Aims and Objectives

The aims and objectives of this module are:

- To learn what the requirements are for managing flow at ML2
- To learn about Workflow, Work Items and Work Item Types
- To learn how to model the workflow
- To discover who your Customers are and the services they require from you
- To discover the nature of, and how you manage Customer demand.
- To discover what your Customer expectations are and how you manage them
- Learn how to mature a team level board to a workflow delivery board at ML2

Manage Flow at Maturity Level 2

- Define work types based on Customer requests
- Define basic services
- Map upstream and downstream flow
- Collect flow-related data (e.g., lead time)
- Capture the desired delivery date
- Manage defects and other rework types
- Manage aging WIP
- Implement Flow Manager role

Workflow, Work Item, Work Item Type

Workflow

A series of activities, often performed within a Kanban service, that results in products or services being delivered.

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STEP 5

Work Item

A deliverable or a component thereof resulting from the demand placed at the system that will be worked on by the service.

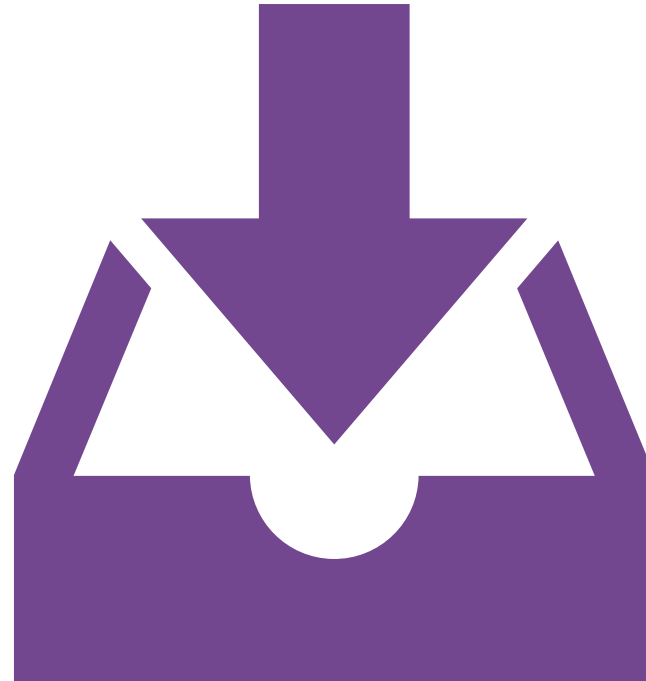
Work Item Type

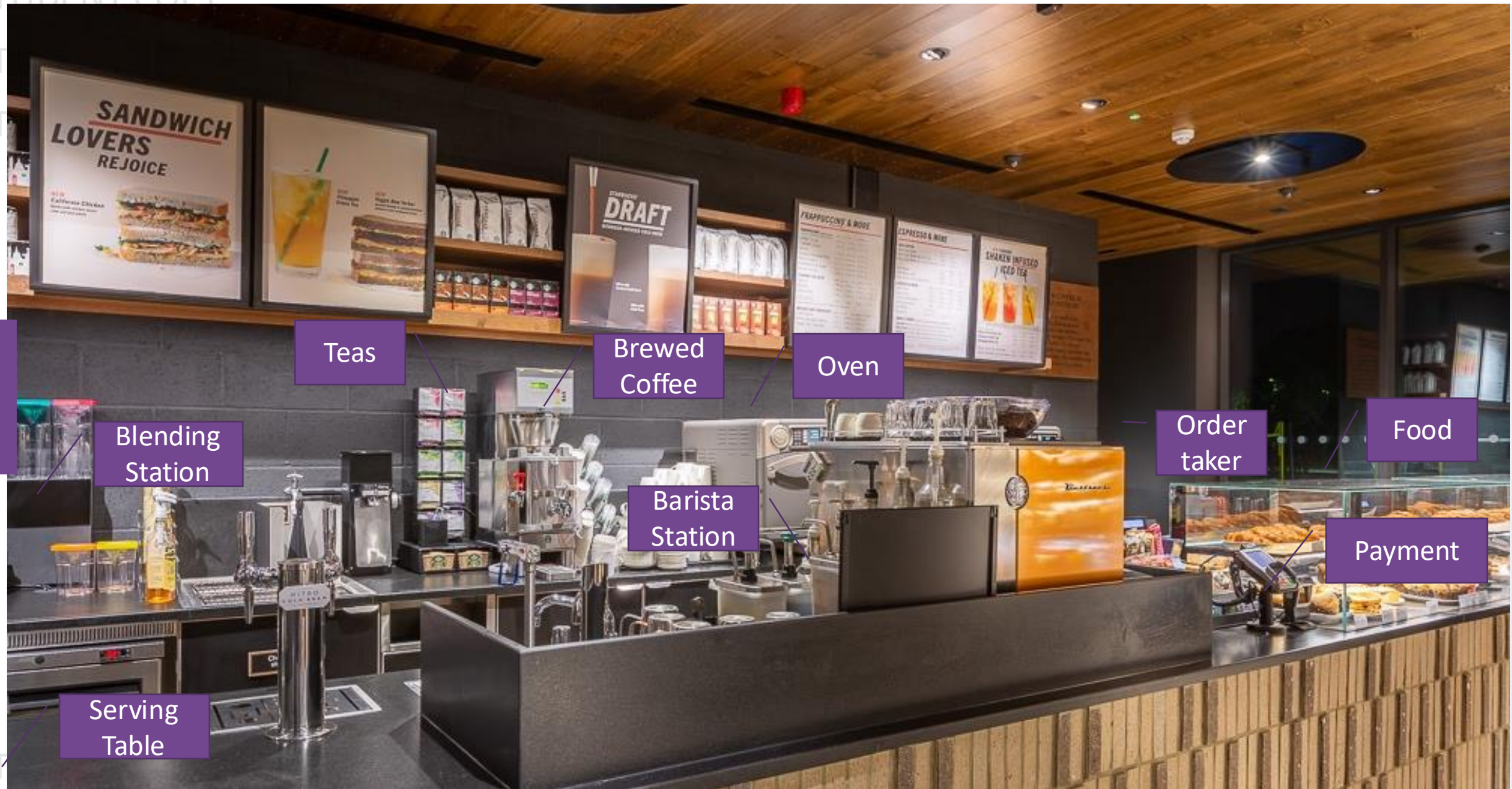
A grouping of work items that behave similarly and follow the same workflow.

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Customer Requests at Maturity Level 2

- At Maturity Level Two, the work item types should reflect Customer requests. At this level, anyone in the workflow should be able to describe the Customer-valued work items. This information should be designed into Kanban boards or the tickets on the board.





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Breakout 7.1

5 min

Think about the operation of a coffee shop.

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How many different types of requests can you identify?

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What things might workers find frustrating, what could prevent them offering good service?



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Work item type



We can manage different types of work or requests on one Kanban board.

Examples of work item types

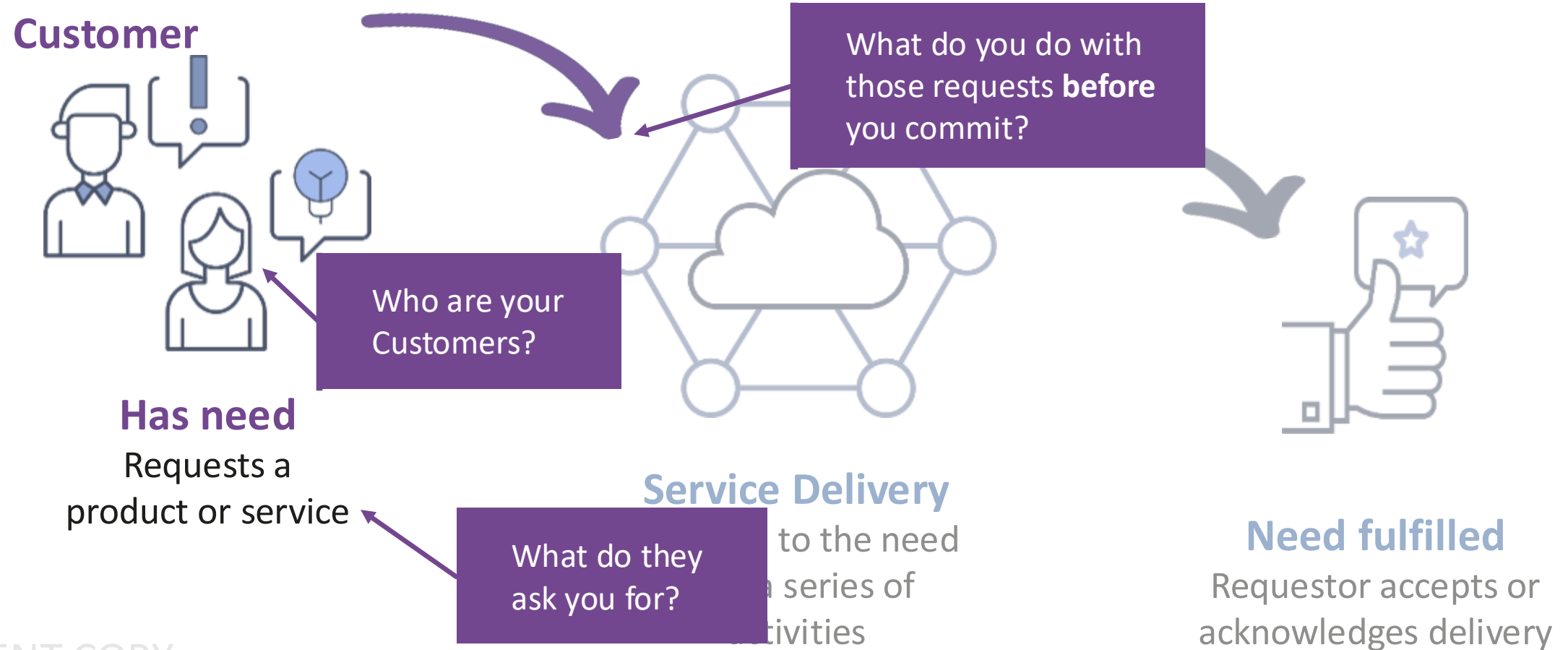
Marketing Service

- Prototypes
- Design specifications
- Reports
- Trade show demos
- Ad campaigns

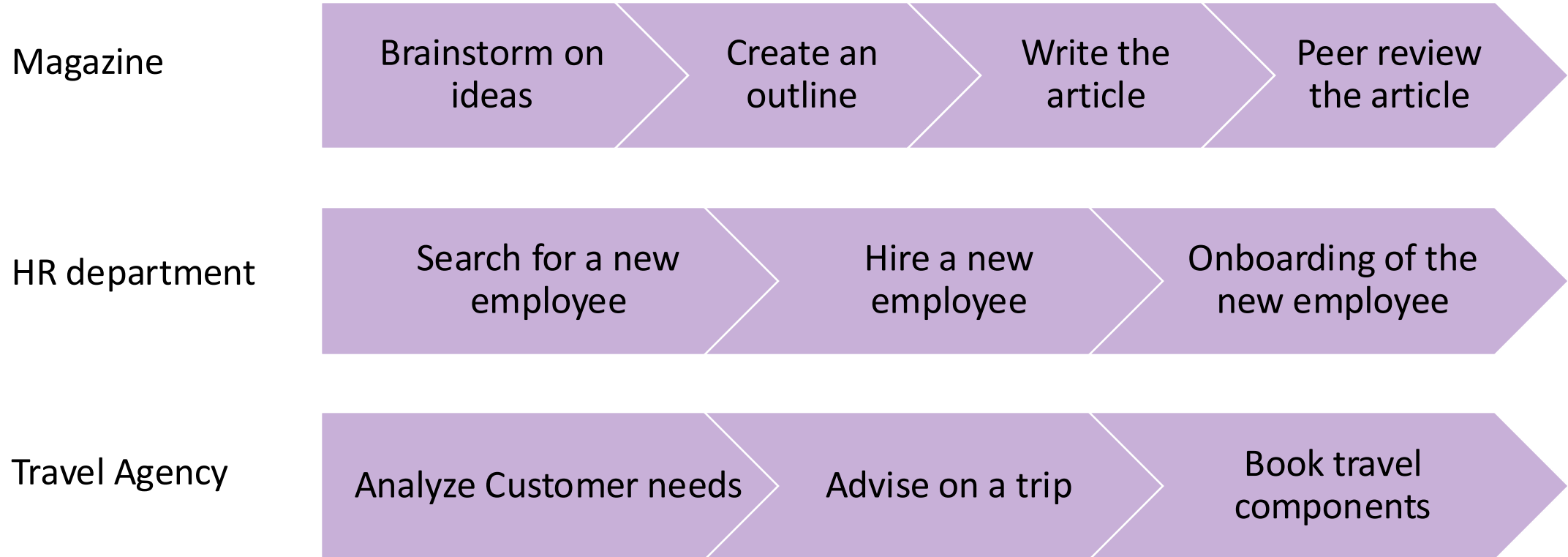
HR Service

- Vacation requests
- Recruiting
- Benefit packages
- Employee training
- Payroll record updates

What Service Do You Provide?



In Kanban we model workflows





Workflow steps do not necessarily have handoffs. Handoffs almost always result in workflow steps.

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Breakout 7.2

10 min

Revisit the operation of a coffee shop.

Can you map the workflow steps for each type of request you identified earlier?



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Coffee shop work item types

Steps

Queue	Take order	Pay	Work Item Type	Get Food Item	Warm Food Item	Food to Customer	Name on Cup	Get Brewed Item	Brewed to Customer	Ready to Make	Process Milk	Make Espresso	Blend Drink	Add Whipped Cream	Deliver to Customer
X	X	X	Cold Food	X		X									X
X	X	X	Warm Food	X	X	X									X
X	X	X	Brewed Coffee					X	X						X
X	X	X	Hot Teas					X	X						X
X	X	X	Milk & Espresso				X			X	X	X	X	?	X
X	X	X	Espresso				X			X		X	X	?	X
X	X	X	Frappuccino				X			X	X		X	?	X

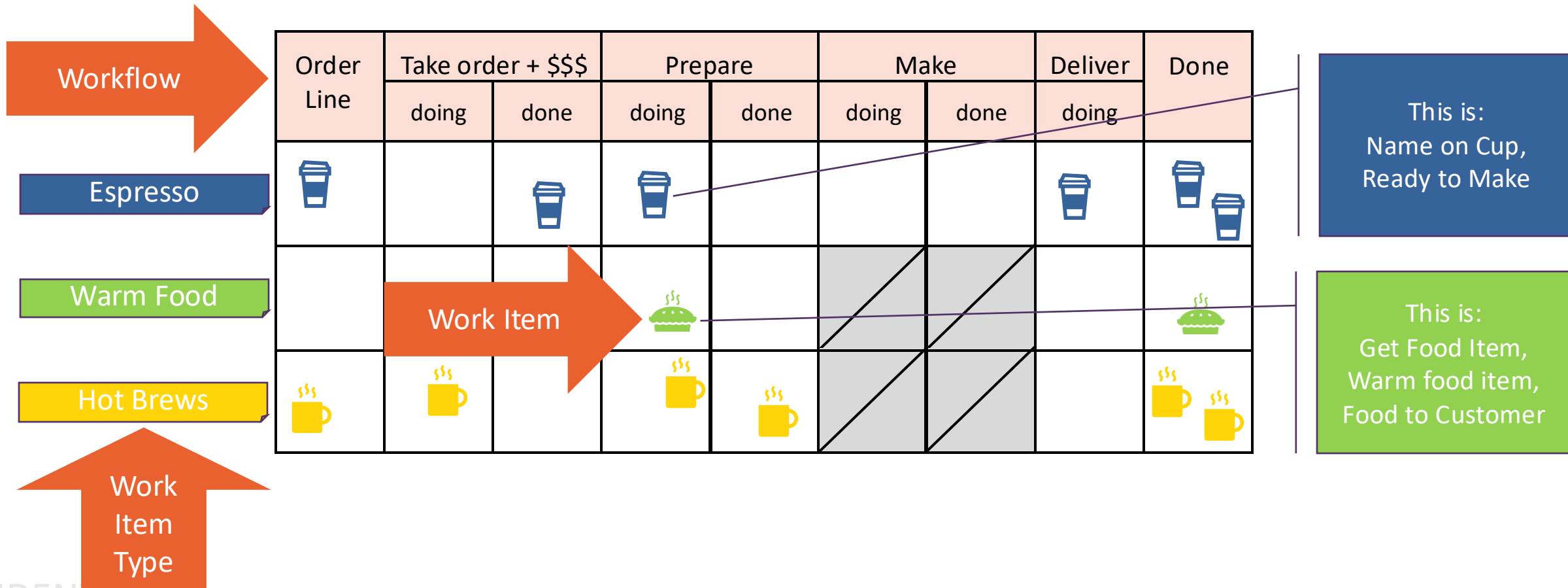
Coffee shop work item types

Dominant activities

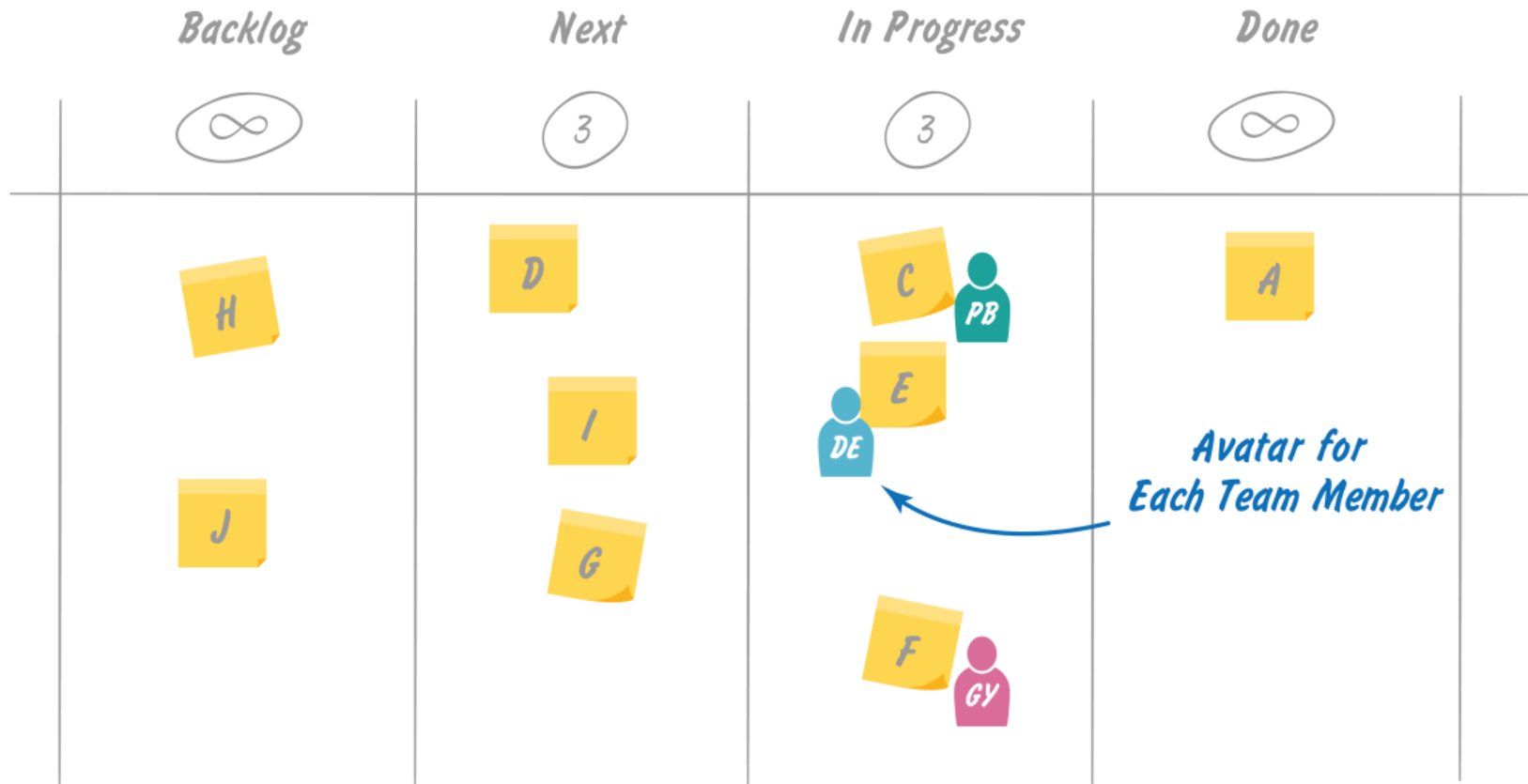
Order Line	Take Order			Prepare							Make				Deliver
Queue	Take order	Pay	Work Item Type	Get Food Item	Warm Food Item	Food to Customer	Name on Cup	Get Brewed Item	Brewed to Customer	Ready to Make	Process Milk	Make Espresso	Blend Drink	Add Whipped Cream	Deliver to Customer
X	X	X	Cold Food	X		X									X
X	X	X	Warm Food	X	X	X									X
X	X	X	Brewed Coffee					X	X						X
X	X	X	Hot Teas					X	X						X
X	X	X	Milk & Espresso				X			X	X	X	X	?	X
X	X	X	Espresso				X			X		X	X	?	X
X	X	X	Frappuccino				X			X	X		X	?	X

Workflow, work item type and work item

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STEP 7



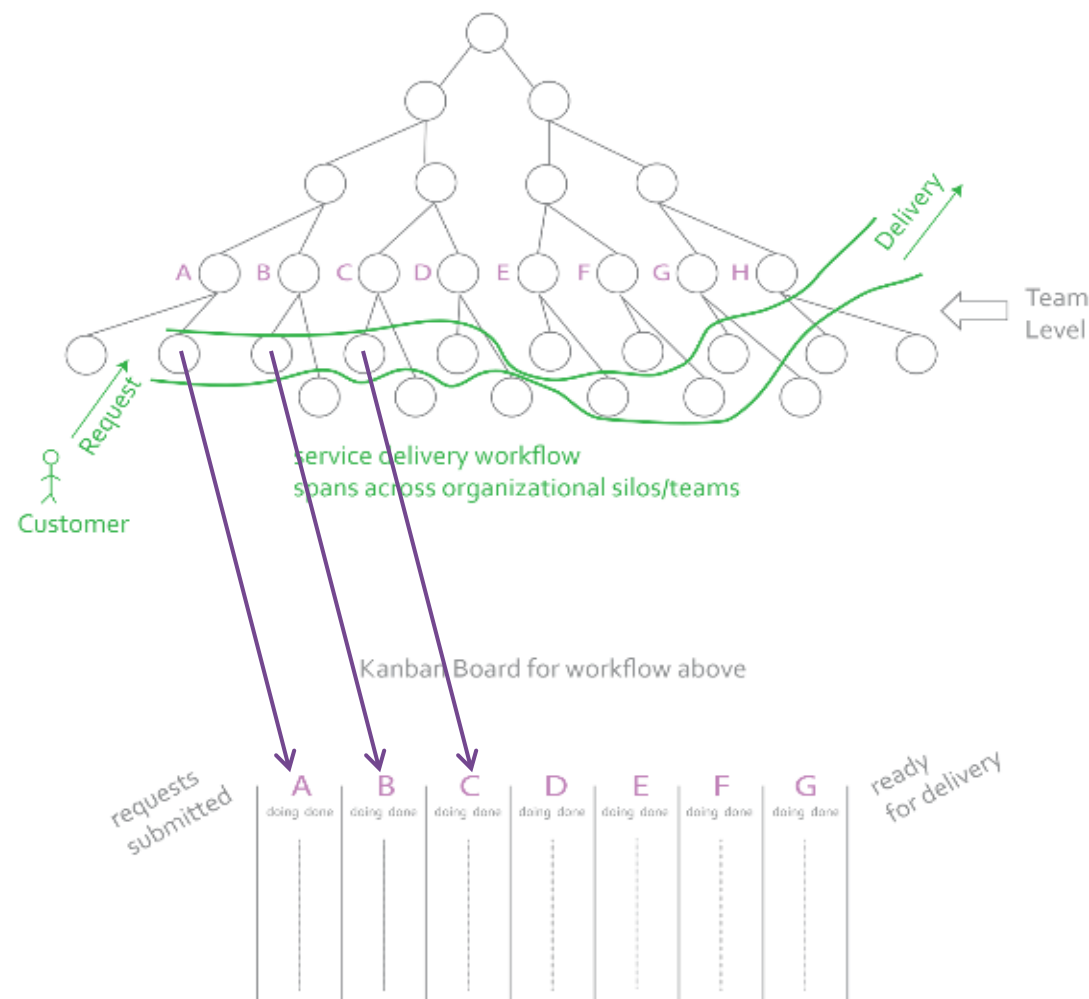
Maturing from the team board at ML1...



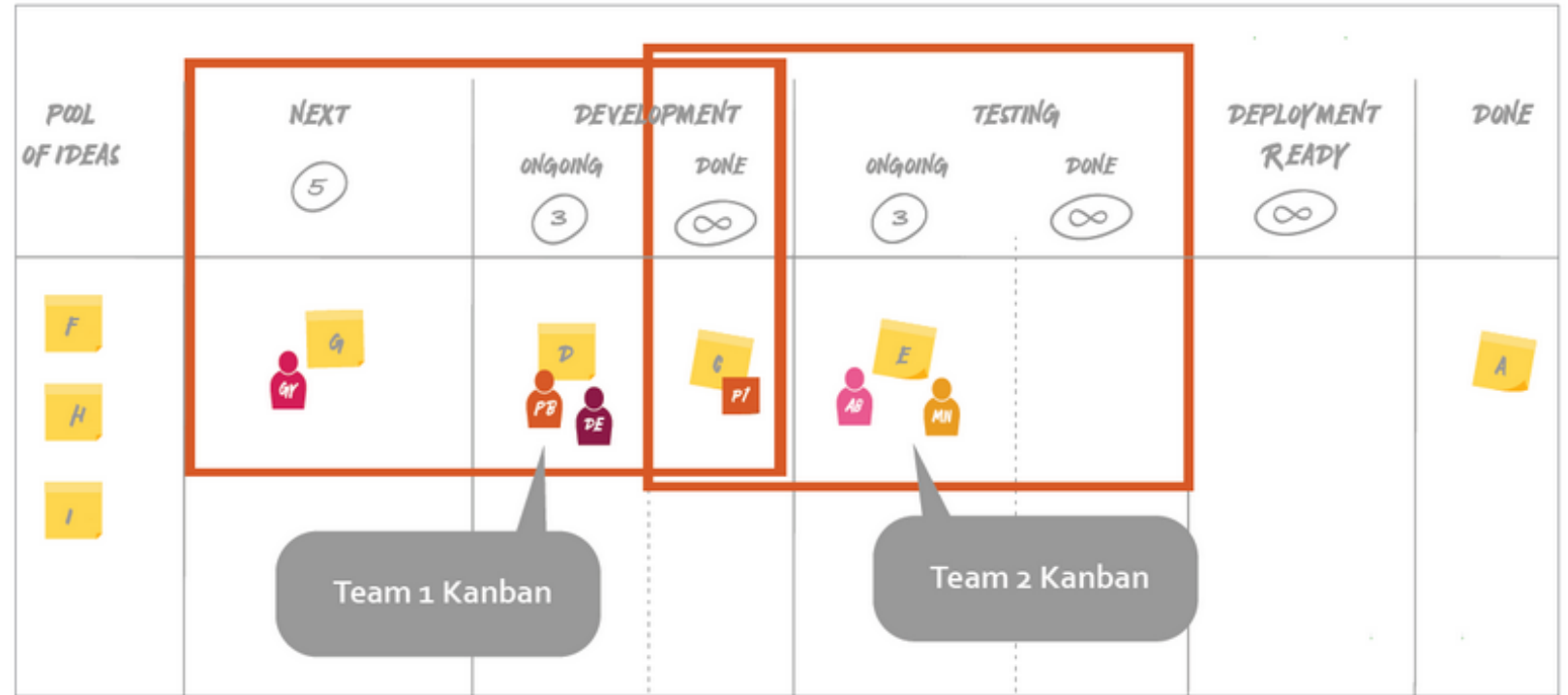
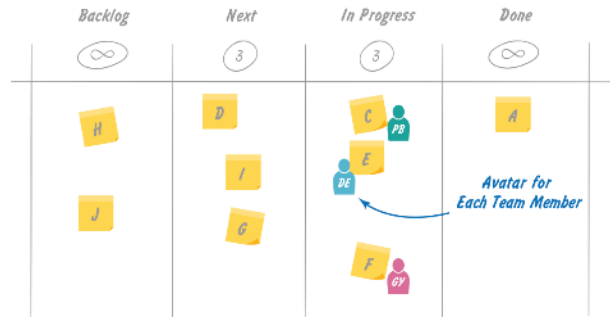
Reading reference: **VZ 1.4 Visualize the work carried out by a team by means of a team kanban board**
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz14-eng>

Service Delivery workflows span multiple teams

New kanban system enables cooperation without reorganization



...to a workflow delivery board at ML2



Reading reference: **VZ 2.12 Visualize defined workflow using a kanban board**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz212-eng>

What are some examples in your organization of ...

A Work Item
(a few examples)

Work Item Types
(max 4 types for now)

Workflow
(for each type)

Map the workflows
Sketch a Kanban board



Module Seven – Learning Outcomes

You are now able to:

- Describe the requirements for managing flow at ML2
- Identify Workflow, Work Items and Work Item Types relating to your services
- Model the workflow
- Identify who your Customers are and the services they require from you
- Understand the nature of demand and how to deal with that demand
- Know your Customers' expectations and how to manage them
- Create a workflow delivery board at ML2

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Module Eight

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Limiting WIP

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Module Eight – Aims and Objectives

The aims and objectives of this module are:

- Learn about how and where WIP can be limited
- Learn about how to limit WIP at ML2
- Understand the concept of constant WIP (ConWIP)
- Understand how team level boards can be chained together into an aggregated team workflow board
- Understand the difference between a chained team board and a full end-to-end pull system

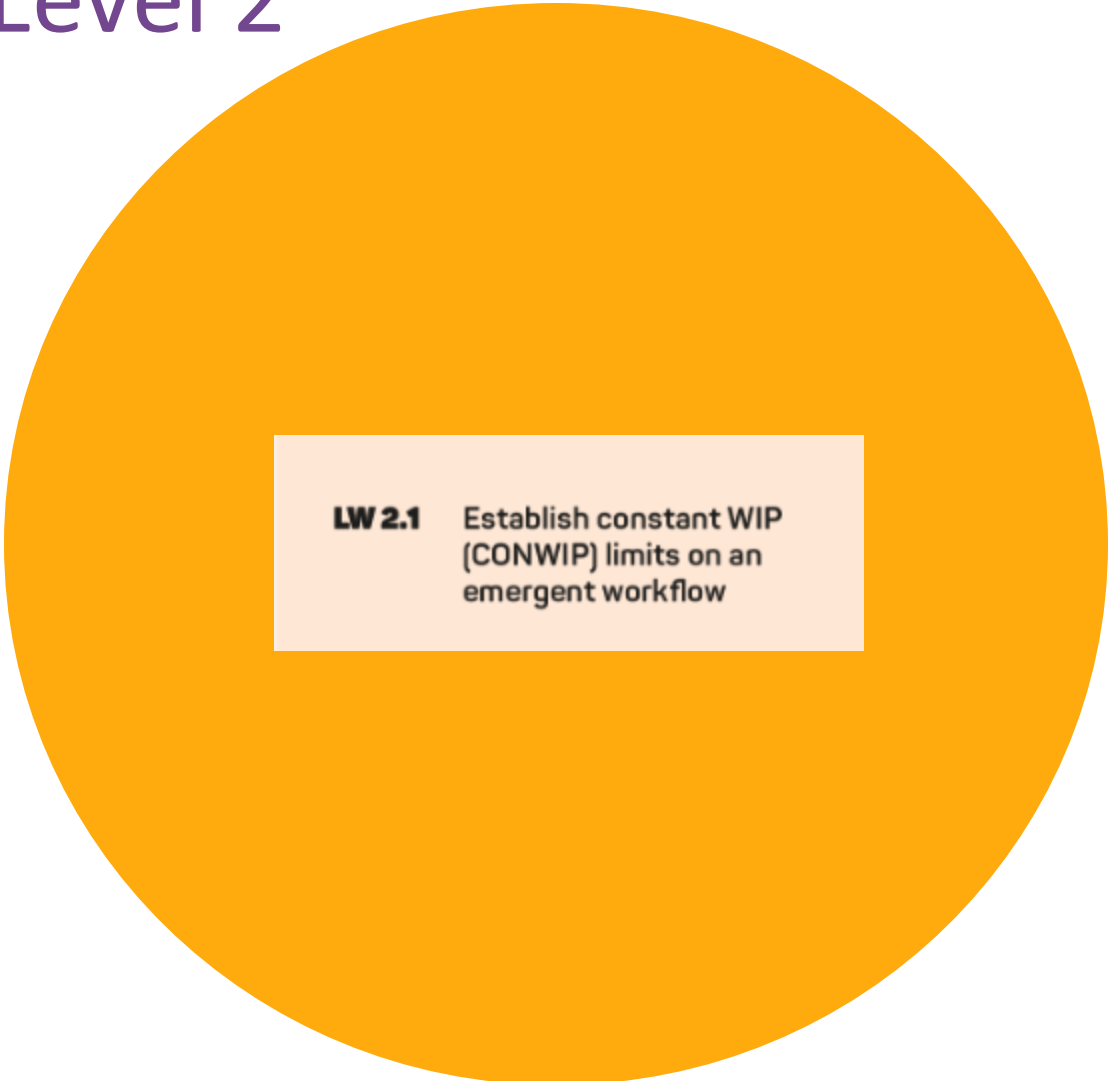
How and where can WIP be limited?

WIP limits can be determined

- By the type of work
- By the group or person making the request
- Per person
- Per state in the workflow
- Or across the entire board

Limiting WIP at Maturity Level 2

- The intent of limiting WIP at ML2 is to reduce overburdening in the entire system that delivers a service.
- Limiting WIP in the end-to-end service workflow creates a smoother flow and improves predictability, although unevenness in the teams' workload might occur.



LW 2.1 Establish constant WIP (CONWIP) limits on an emergent workflow

(constant work-in-progress for the entire workflow)

ML 2 ConWIP

9

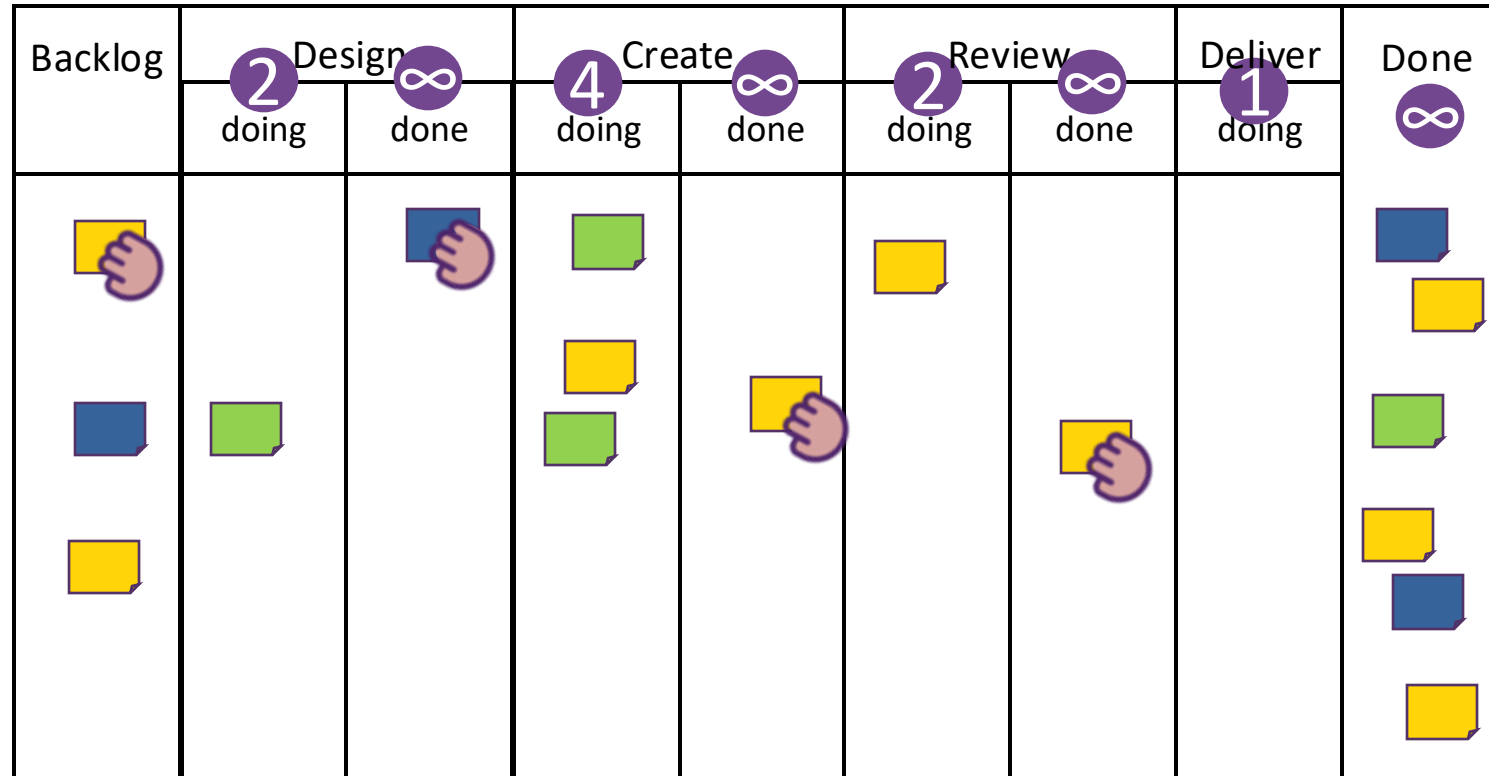
Backlog	Design		Create		Review		Deliver	Done
	doing	done	doing	done	doing	done	doing	

Reading reference: **LW 2.1 Establish constant WIP (CONWIP) limits on an emergent workflow**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/lw21-eng>

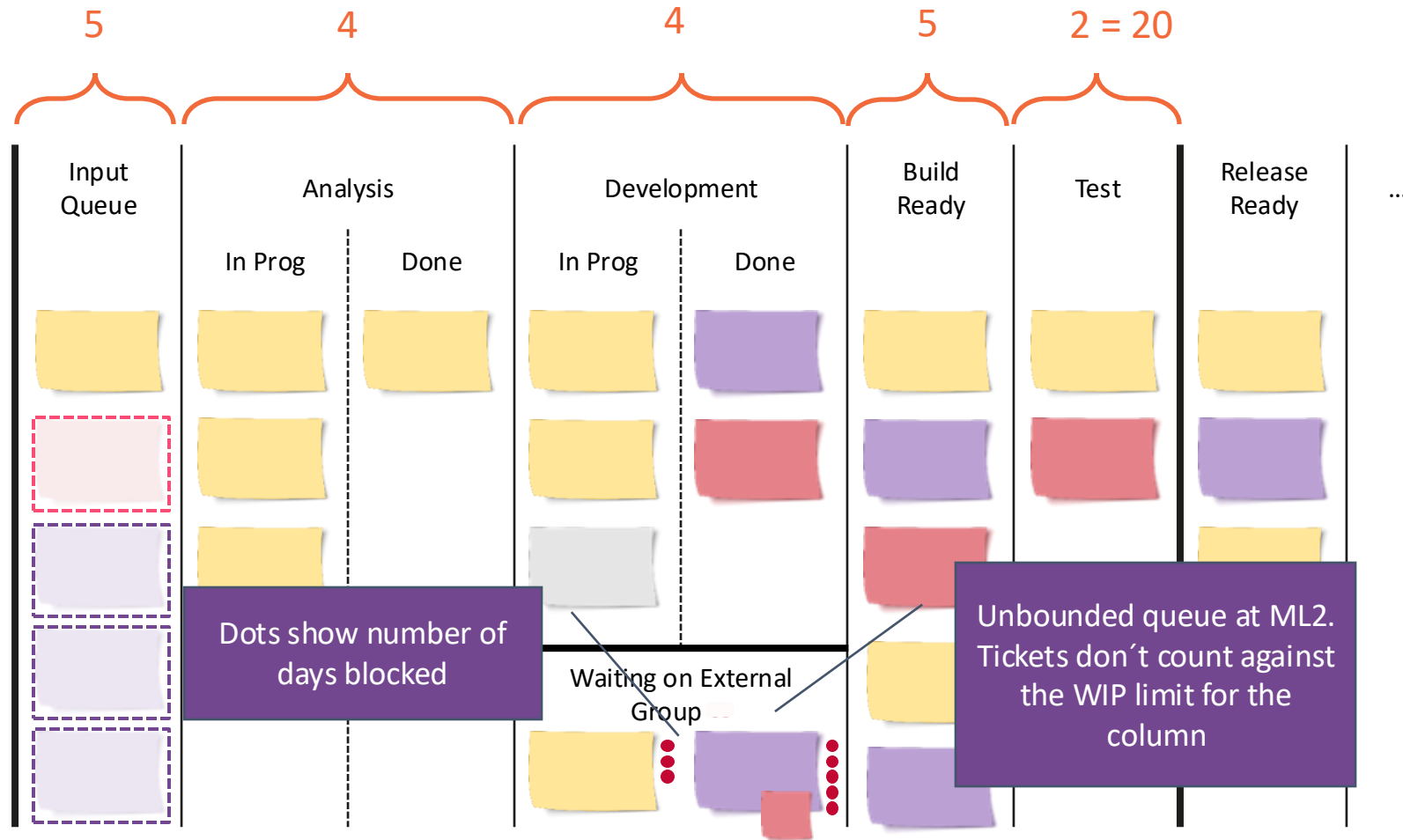
ML2 Aggregated Team Kanban

(unbounded queues between teams)

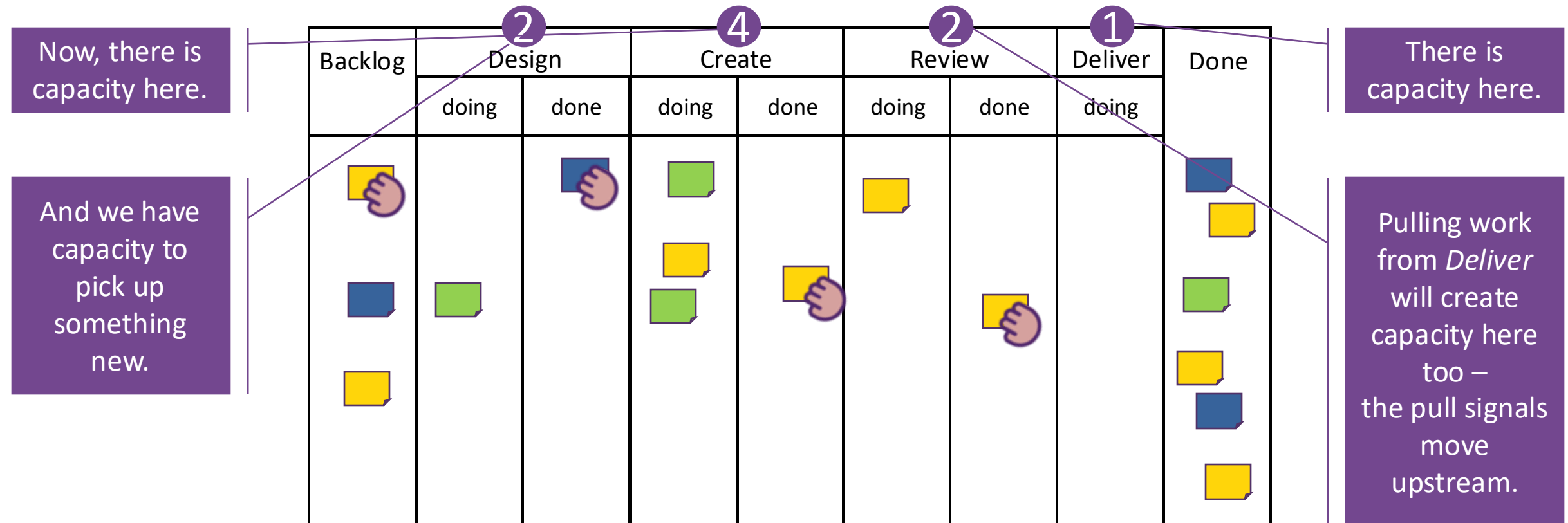


Reading reference: **VZ 3.3 Visualize workflow and teams' work items by means of an aggregated teams kanban board**
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz33-eng>

Use a parking lot for dependencies



At ML3, Kanban systems are pull systems



Limiting WIP

How do you currently
limit WIP now?

Which is easier?
CONWIP or aggregated
team Kanban

Are per person WIP
limits still necessary or
useful?



Module Eight – Learning Outcomes

You are now able to:

- Understand WIP limits at a workflow level
- Get beyond individual or team level WIP limits, and start to think in systems of flow
- Visualize workflow and system WIP limits via a ConWIP board, or an aggregated team kanban workflow board.

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Module Nine

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Metrics

For managing and improving flow

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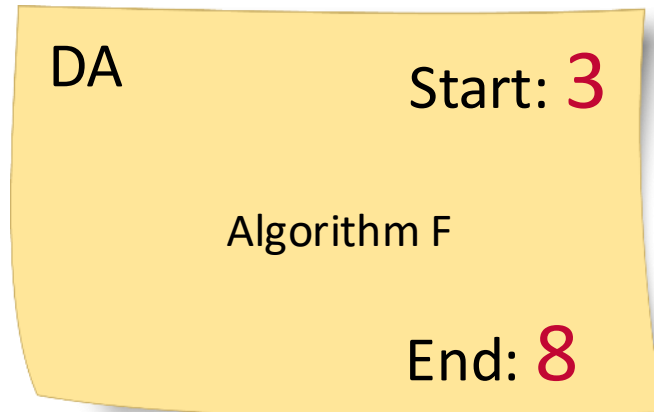
Module Nine – Aims and Objectives

The aims and objectives of this module are:

- To define simple, good Kanban metrics
- To discuss Don Reinertson's four criteria for good, useful metrics
- To recap on the Cumulative flow diagrams from the simulation and review these in more detail alongside narrative
- To introduce a key Kanban metric: Lead time
- To visualize WIP Aging
- To understand the value of capturing narrative
- Identify the seven key metrics for managing flow

The Simplicity of Kanban Metrics

Record dates on the tickets



We only need to record 2 data points:

Start date

- When a request entered our system, or when we started to work on it

End date

- When a request exited our system, or when it was ready for delivery to the Customer

Everything we need to manage flow can be derived from these two simple pieces of data

Good Metrics

Don Reinertsen defined 4 criteria for good useful metrics*

- Simple - You can easily understand it.
- Self-generating - An example would be start and end date.
- Relevant - Is it helping you get your job done?
- Leading Indicator - Is it helping you manage on a day-to-day basis?

Consider how each metric in the following slides meets these criteria.

* Reference: Managing the Design Factory 1997

Cumulative Flow Diagrams

We like Cumulative Flow Diagrams because they integrate a lot of useful information into a single picture...

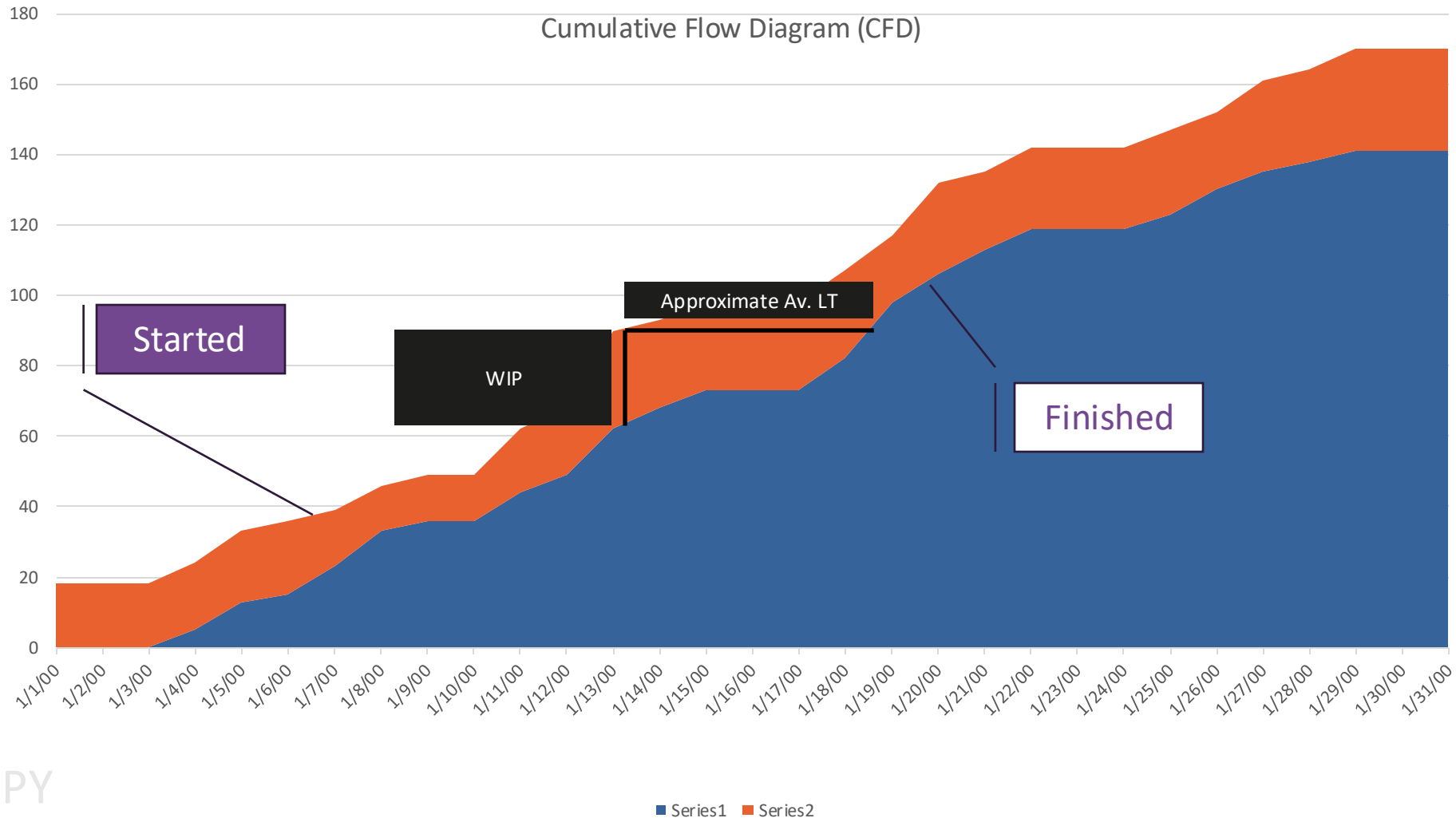
- Arrival rate
- Departure rate
- Approximate average lead time
- WIP

Reading reference: ***MF 3.4 Use cumulative flow diagrams to monitor queues***

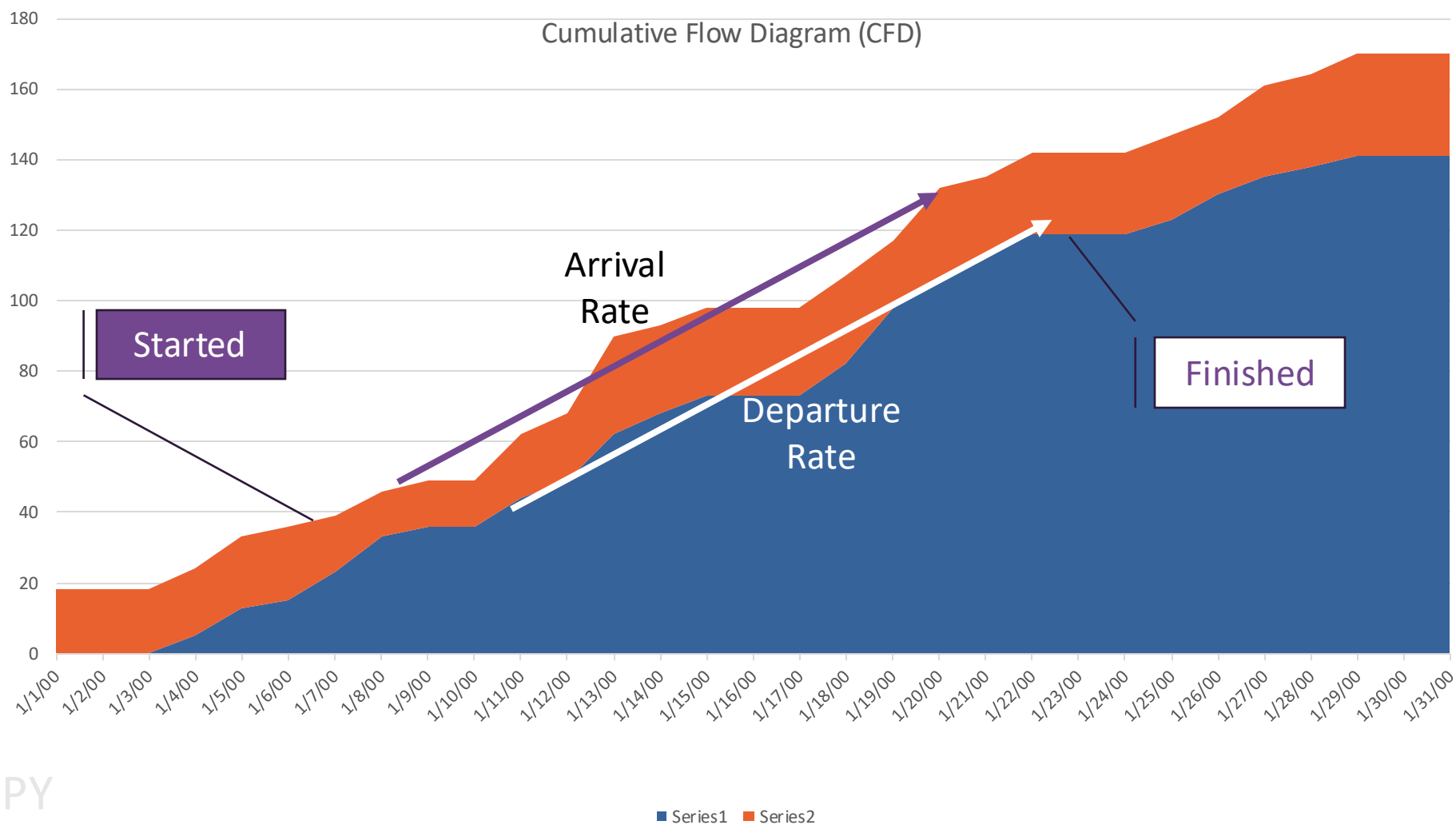
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf34-eng>

Cumulative Flow Diagrams

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Cumulative Flow Diagram



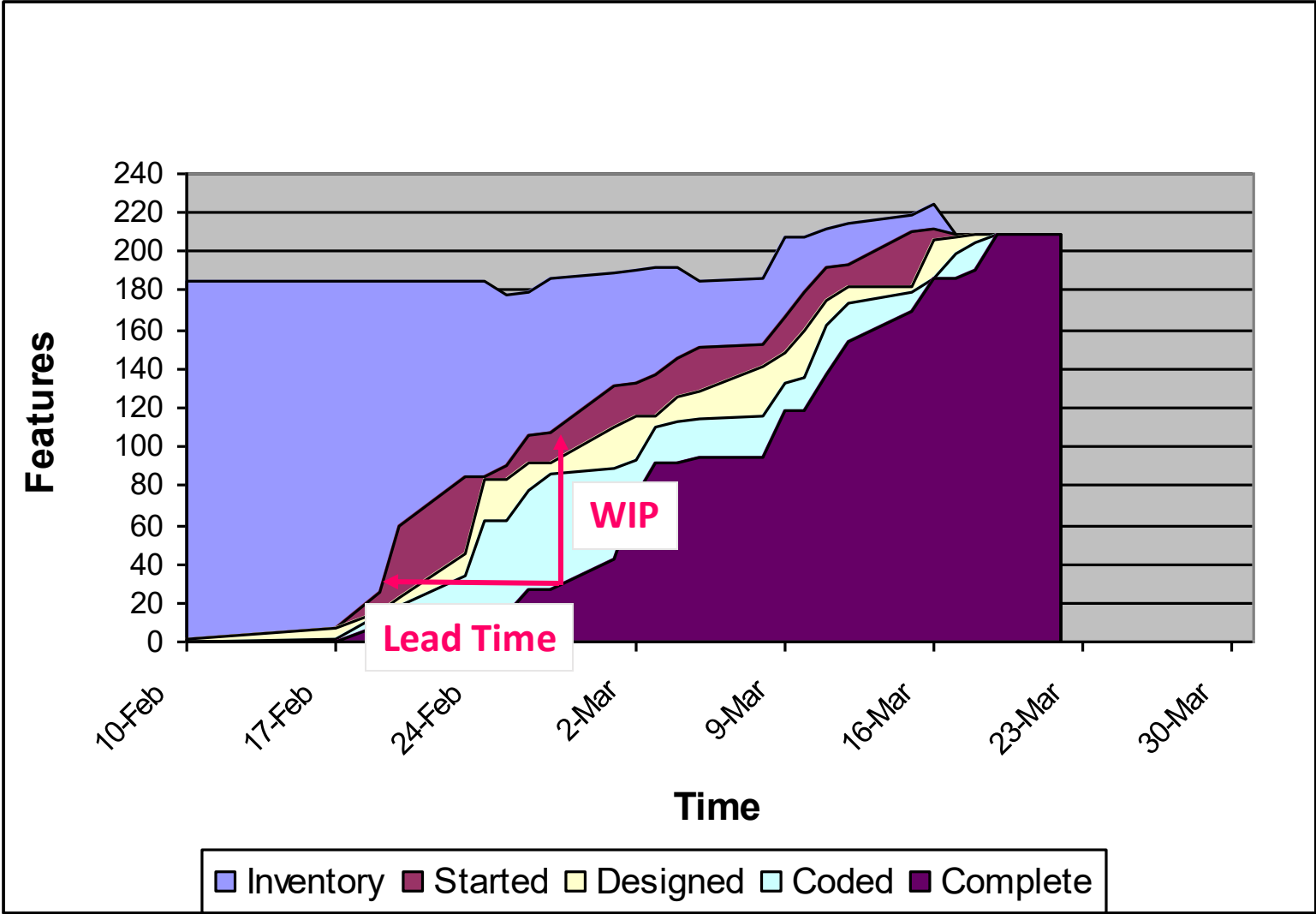
More Data Helps

Start date and end date are essential to manage flow.

However, if wish to improve the flow, we need a little more. Instrument the workflow to record the date that each request arrives to each step in the flow. Now, we have data that will provide insights to help us improve flow.

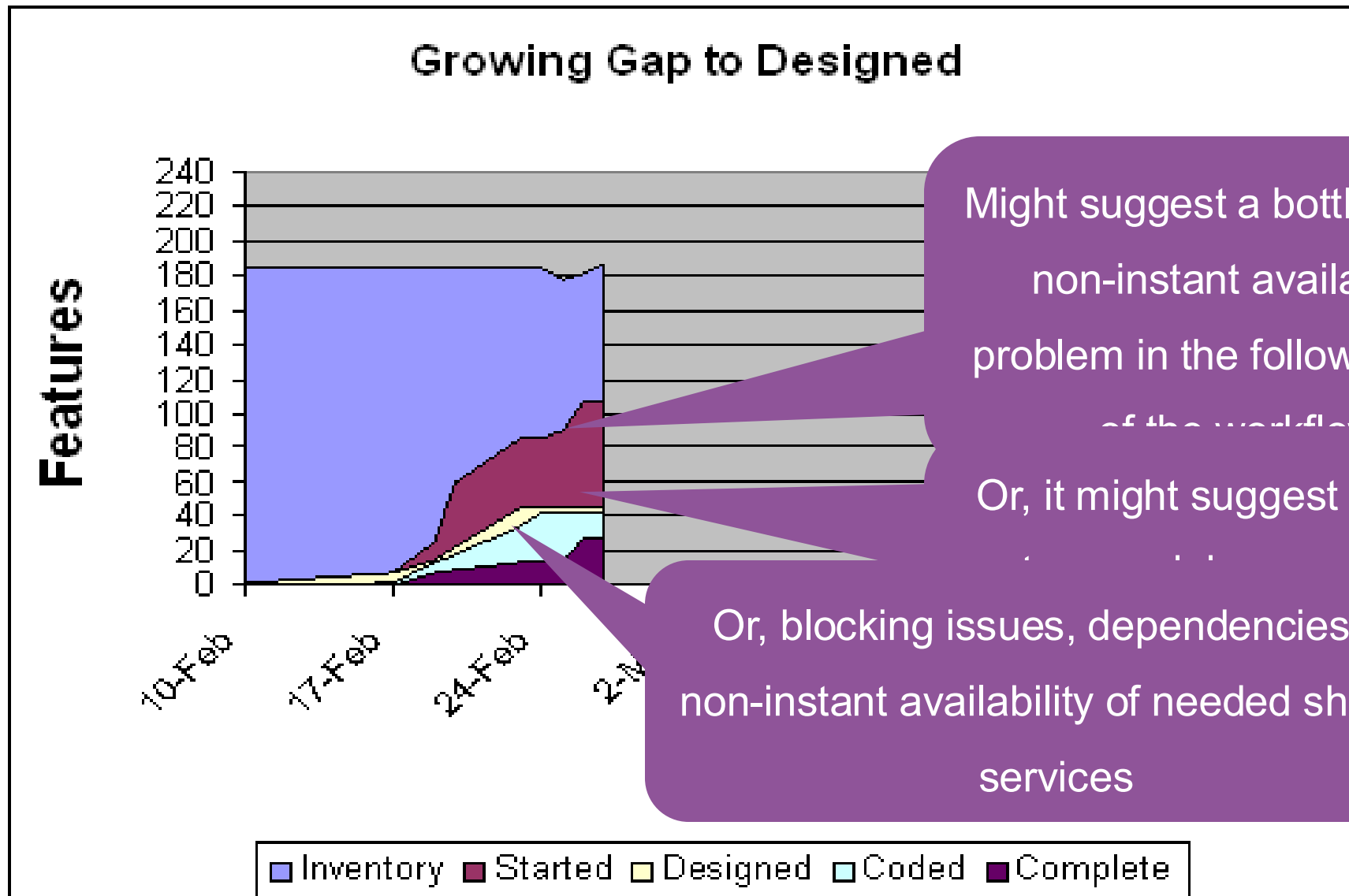


A more detailed CFD showing each step in the flow



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Growing Queue



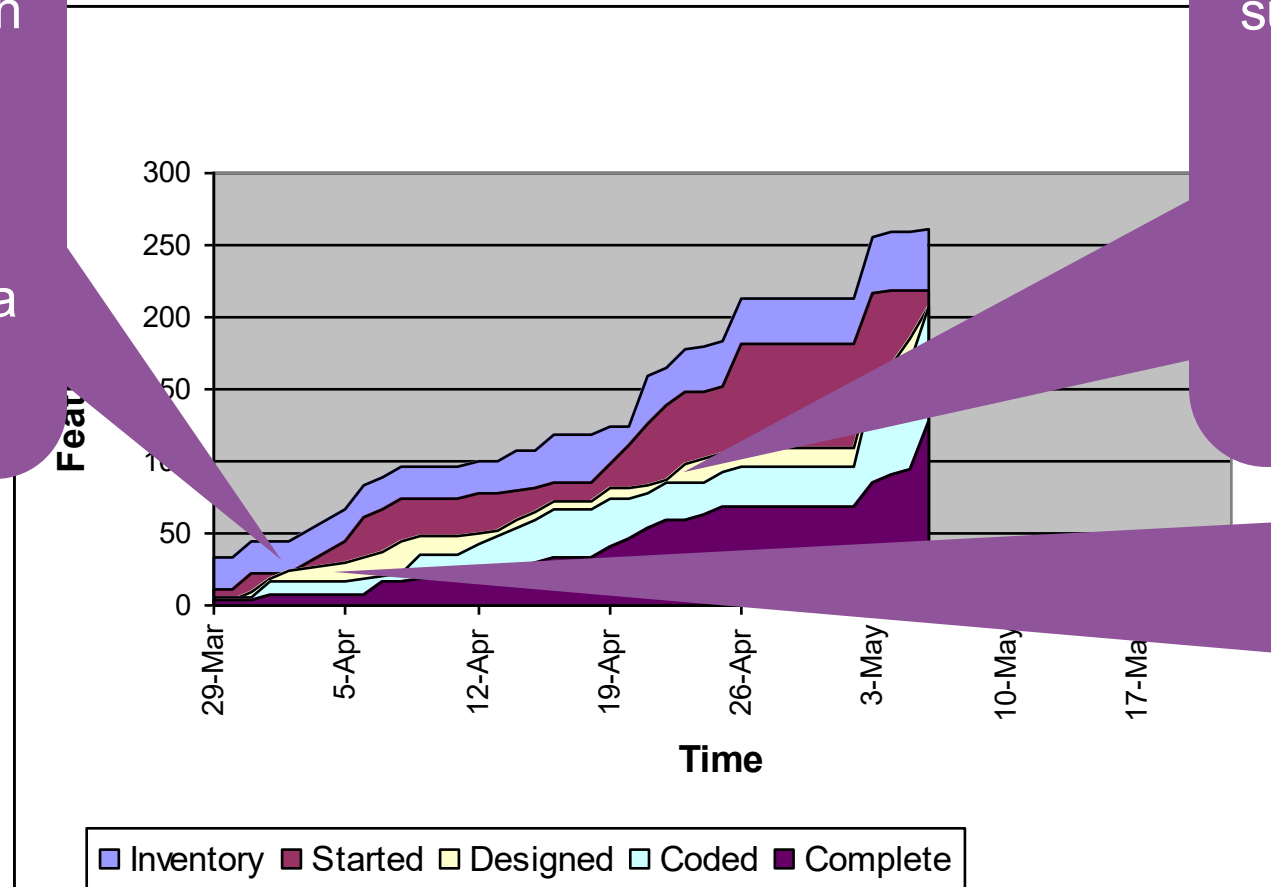
Might suggest a bottleneck or non-instant availability problem in the following step of the workflow

Or, it might suggest delays due to dependencies or poor

Or, blocking issues, dependencies or non-instant availability of needed shared services

Starvation (Idleness)

Starvation can suggest that an upstream step may be a bottleneck



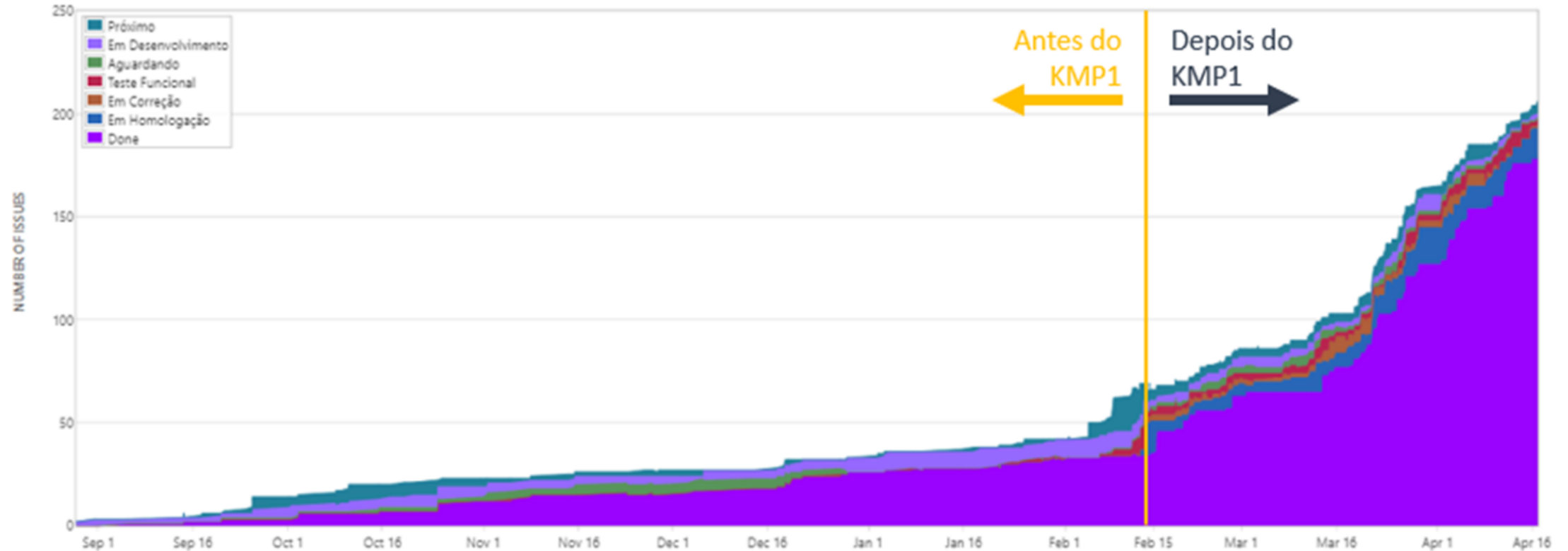
Or it might suggest excess capacity downstream requiring rebalancing

Different steps will have their own cycle times with an average and spread of variation



The cumulative flow diagram
is not enough on its own, you
need the narrative!

CFD with narrative showing impact of Kanban System Design training



Courtesy of Accenture Brasil

Using CFDs with narrative

Revisit your CFD from the simulation

Discuss the events in the simulation and can you correlate them to the picture?

Is it possible to link the narrative to the CFD?



Lead Time

Why would we care about delivery time (lead time) when ordering a service?



Lead Time

Agree on:

- When to start measuring
- When to stop measuring

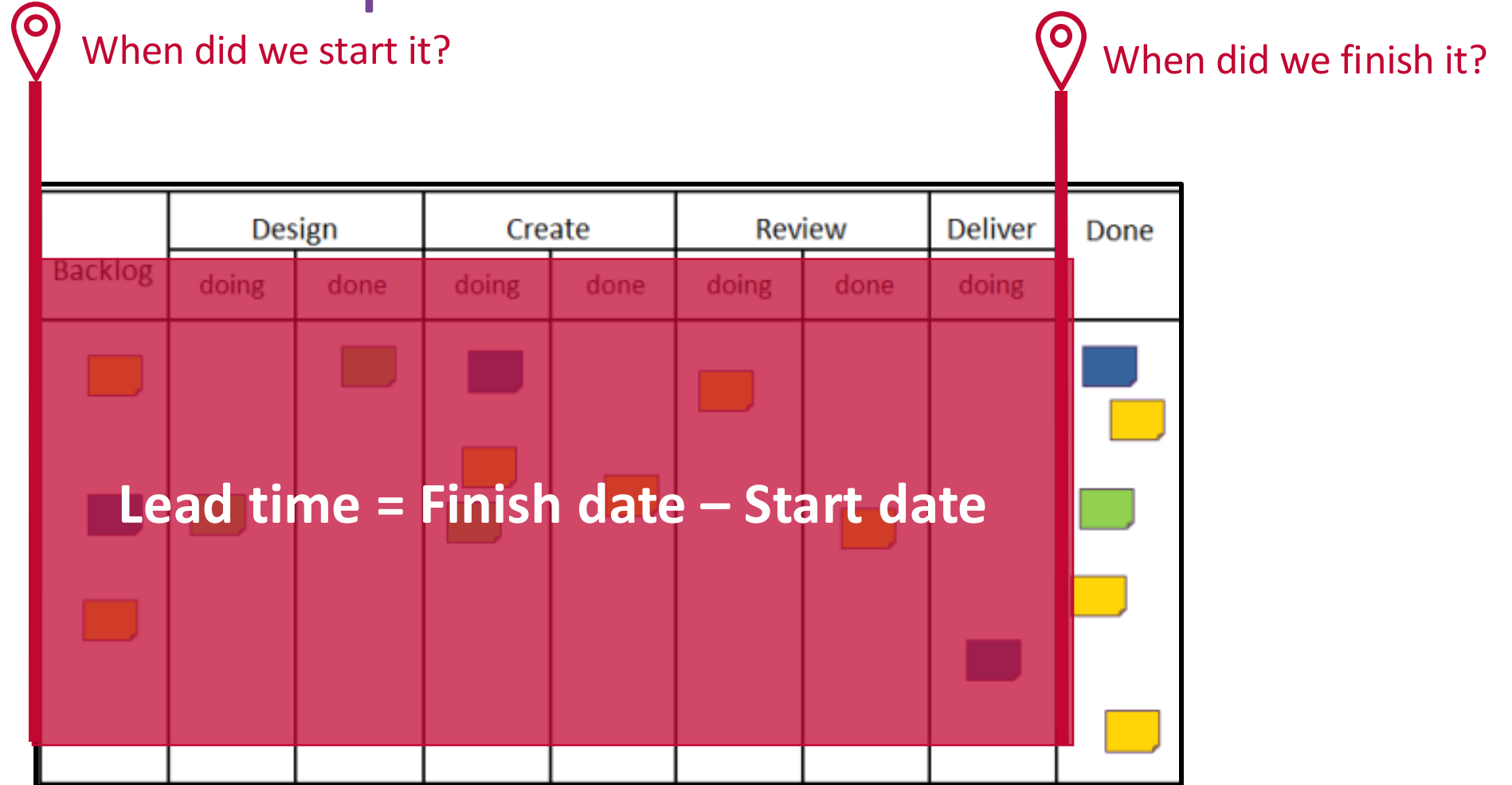
Instrument your system to record the start date and the end date on each ticket.



Reading reference: ***Understanding Lead Time***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-chapters/reader/kmm-appendixc-eng>

Lead Time example



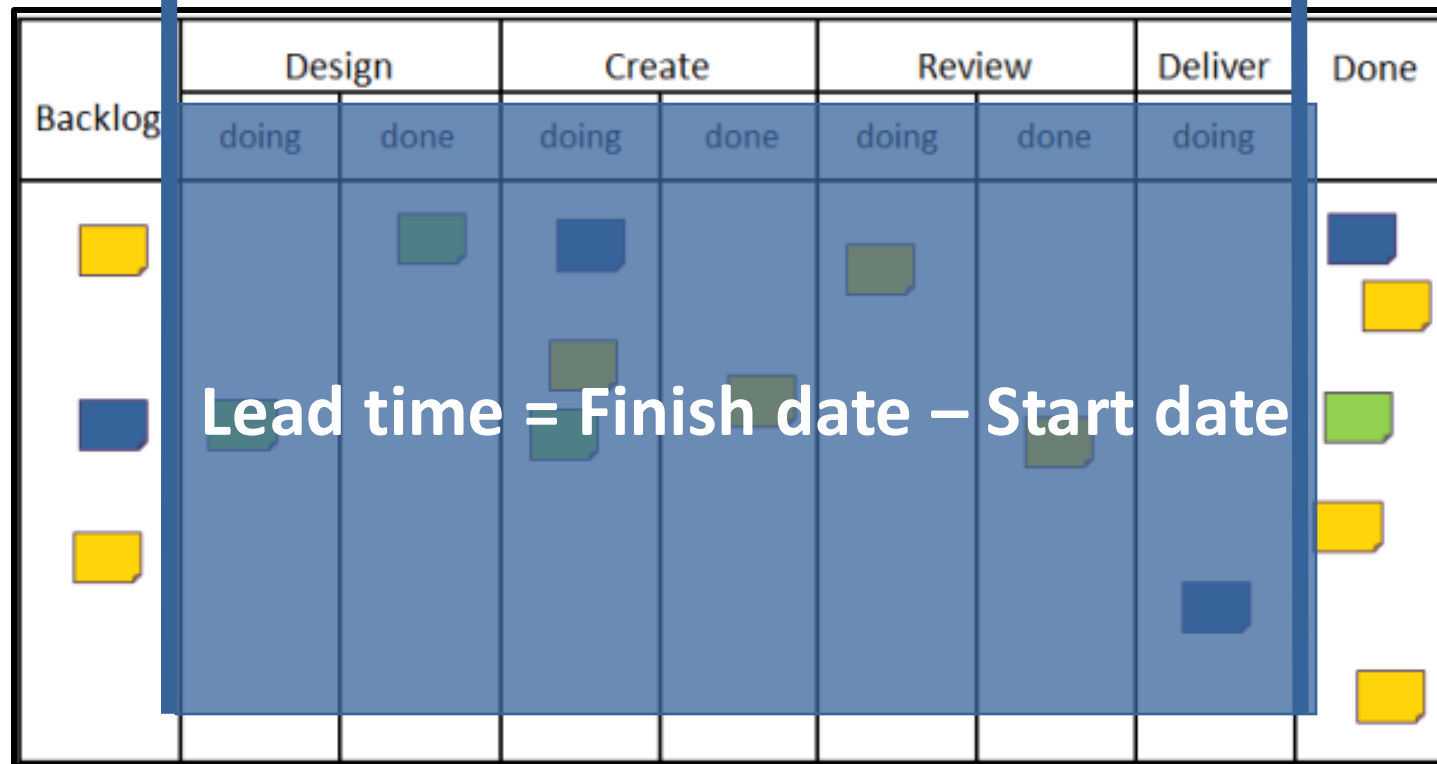
Alternate Lead Time example



When did we start it?



When did we finish it?



Lead time = Finish date - Start date

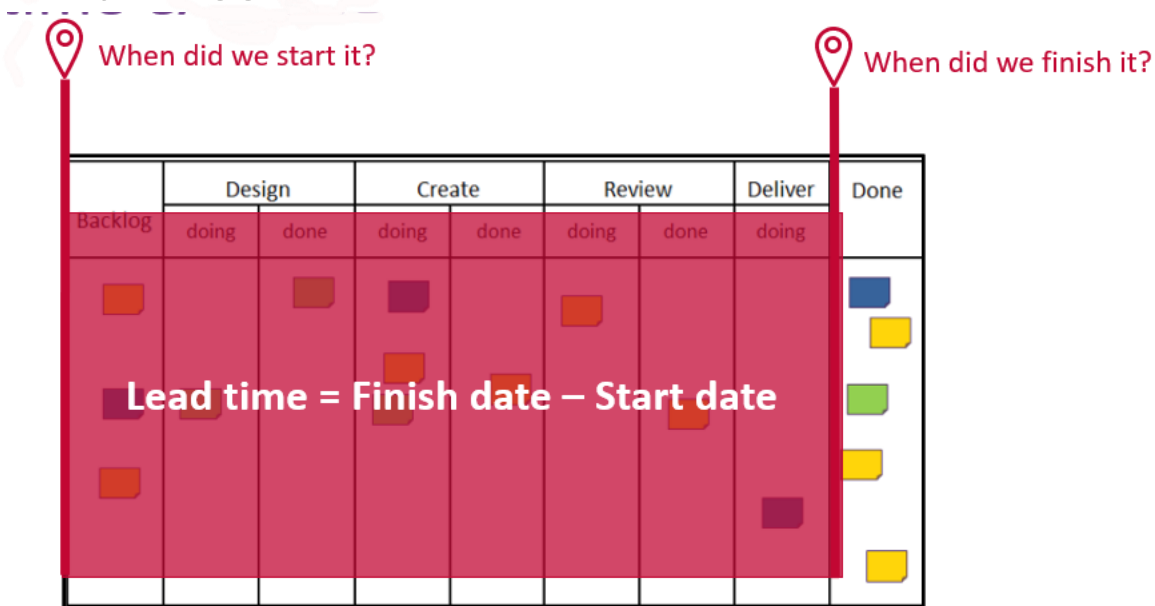
Either measurement is valuable information to address delays in the workflow.

What to measure?

Either measurement is valuable information to address delays in the workflow. Be consistent.

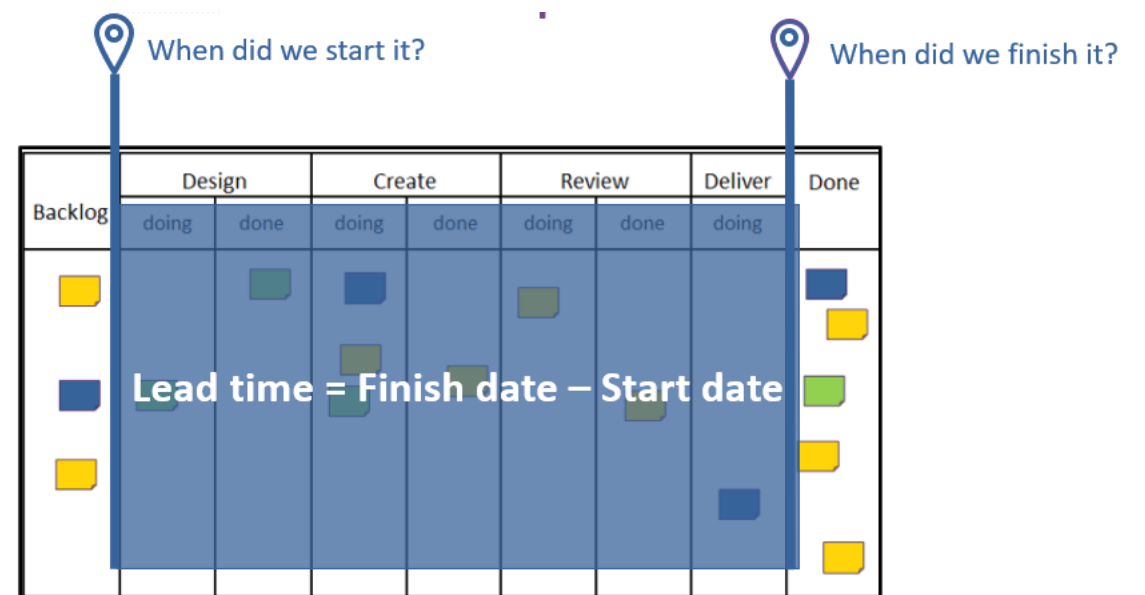
Start when pulled into the backlog

More common with *systems internal* to the enterprise where the work request is already part of a bigger commitment.

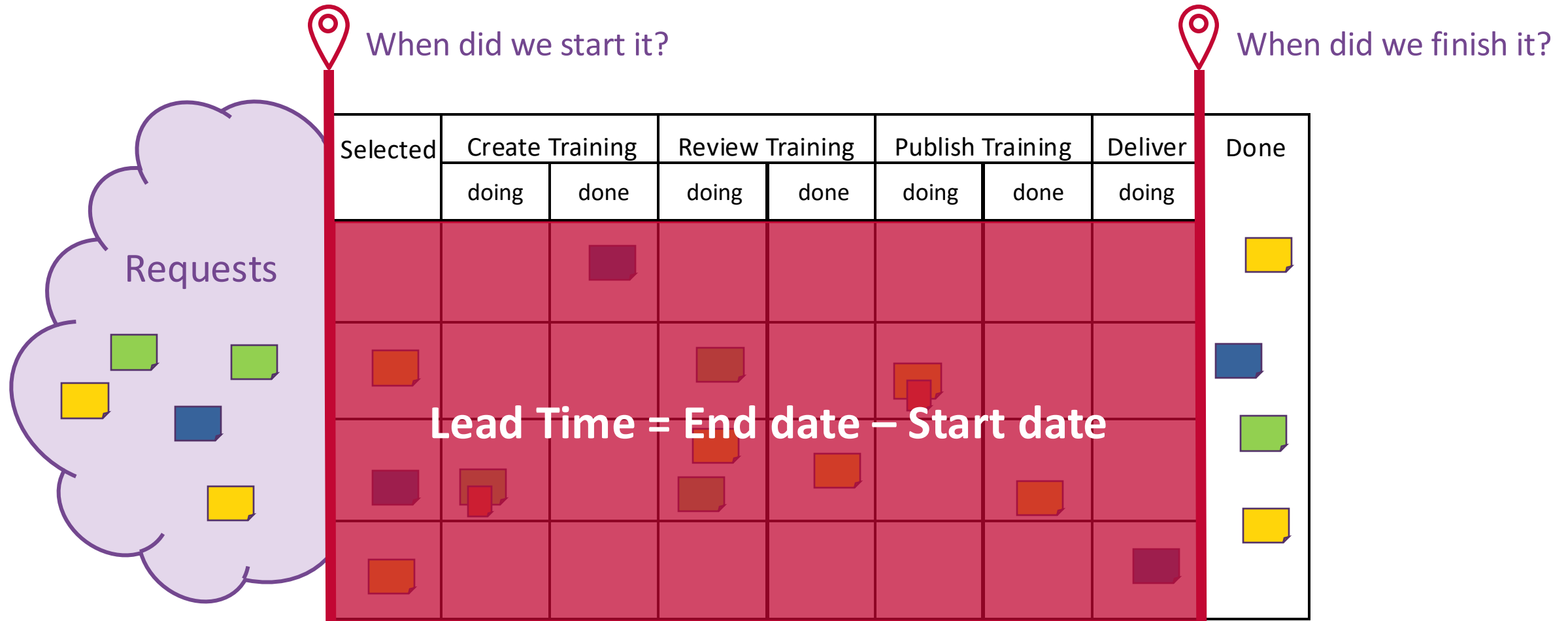


Start once work is started

More common with *Customer-facing systems* where the request remains optional until an agreement is reached, and delivery commitment is made.

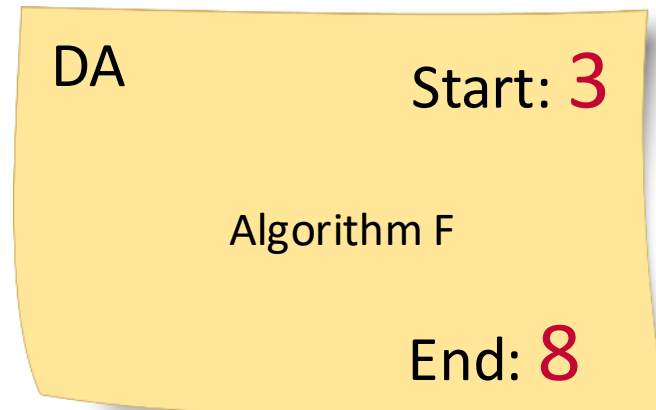


Kanban Key Metric: Lead Time



Harvest the tickets and the data on them

Record start and end dates. These are the only 2 data points that you need.



$$= \textit{End date}(8) - \textit{Start date}(3)$$

$$= 5 \textit{ Days}$$

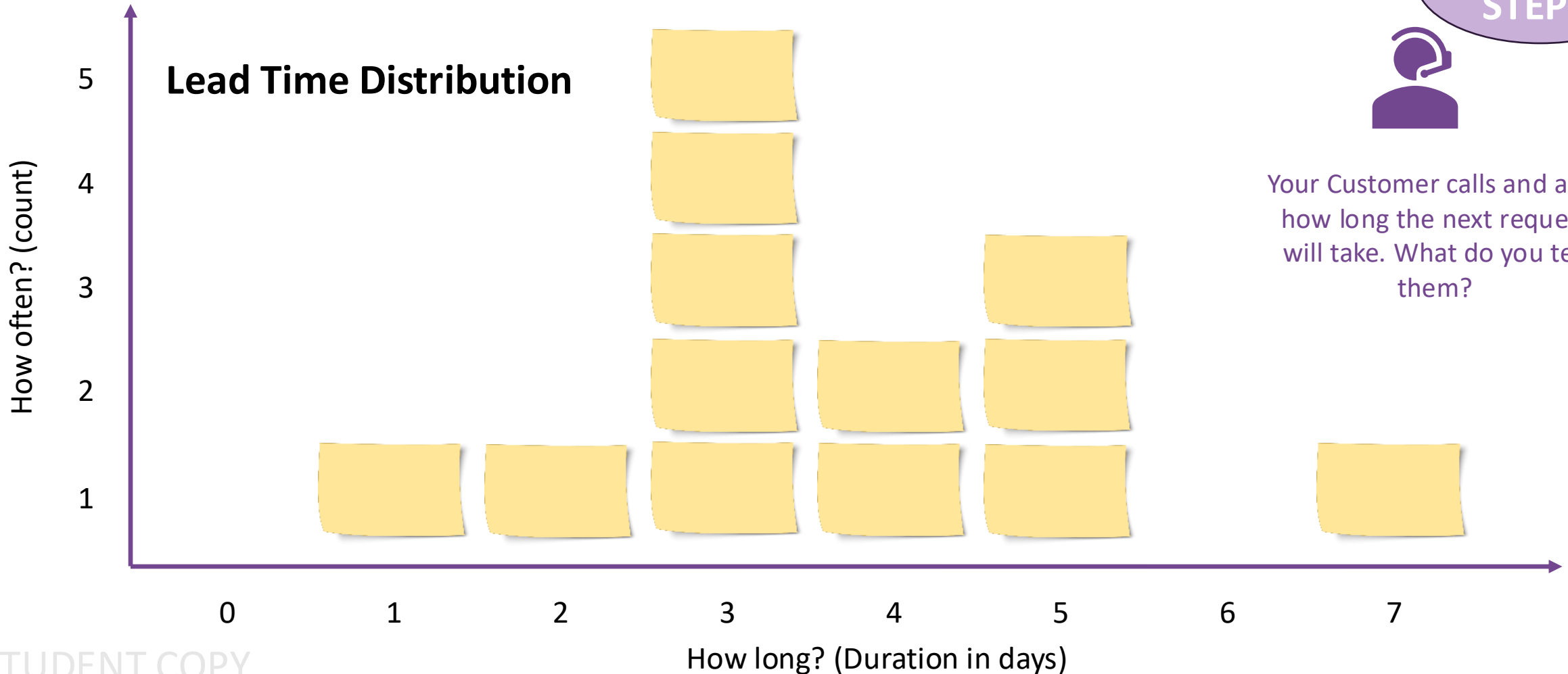
Build a histogram from the harvested tickets

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Your Customer calls and asks
how long the next request
will take. What do you tell
them?

Lead Time Distribution



Introduction: Lead Time

An inconvenient truth:

Lead Time^(*) is not a single number.
It is a probability distribution.

And here's the good news:

Different distributions can tell us what type of work is being completed and help us make risk management or planning decisions.

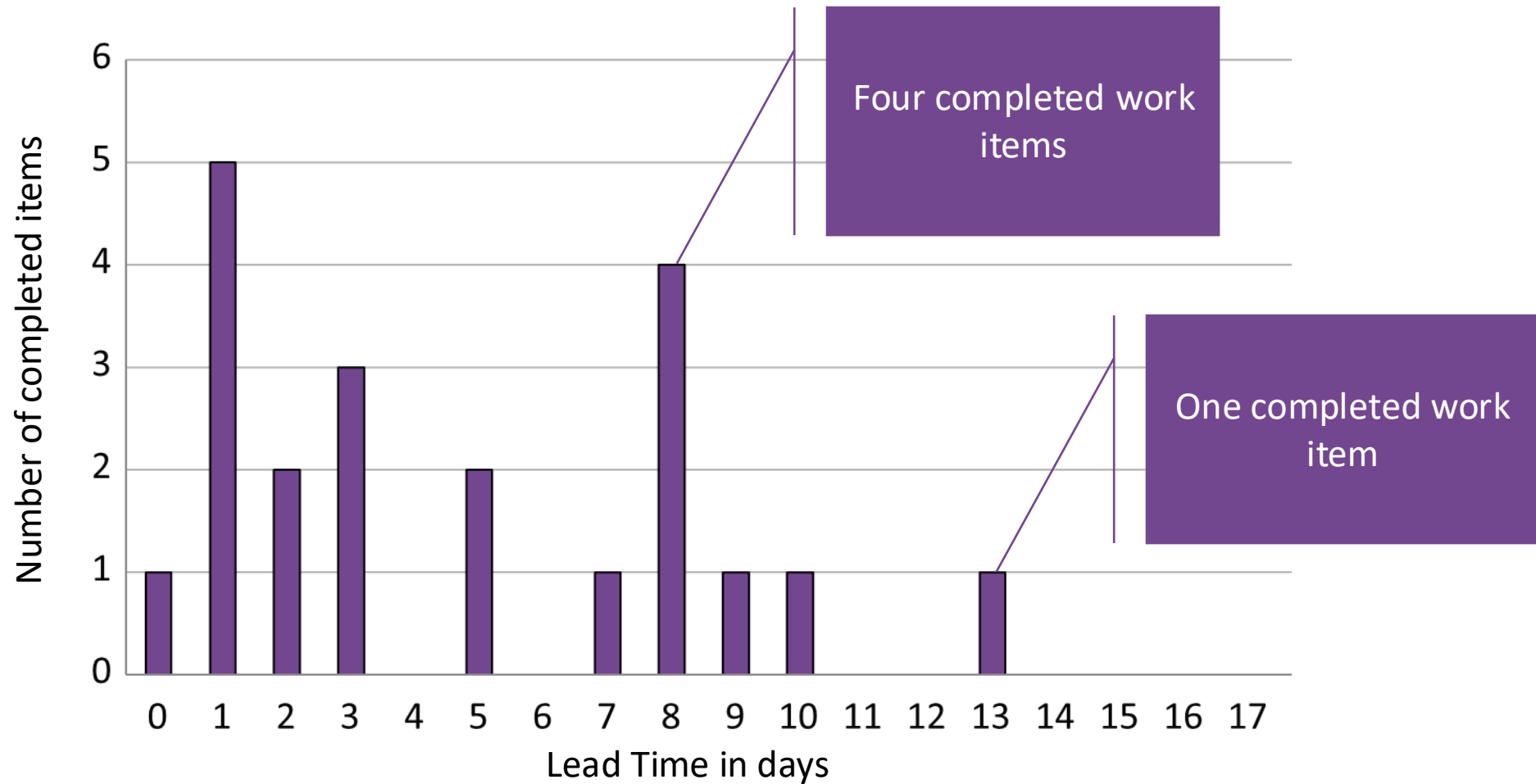
(*) Customer lead time, time-to-market, time-in-process, etc.

What is Lead Time?

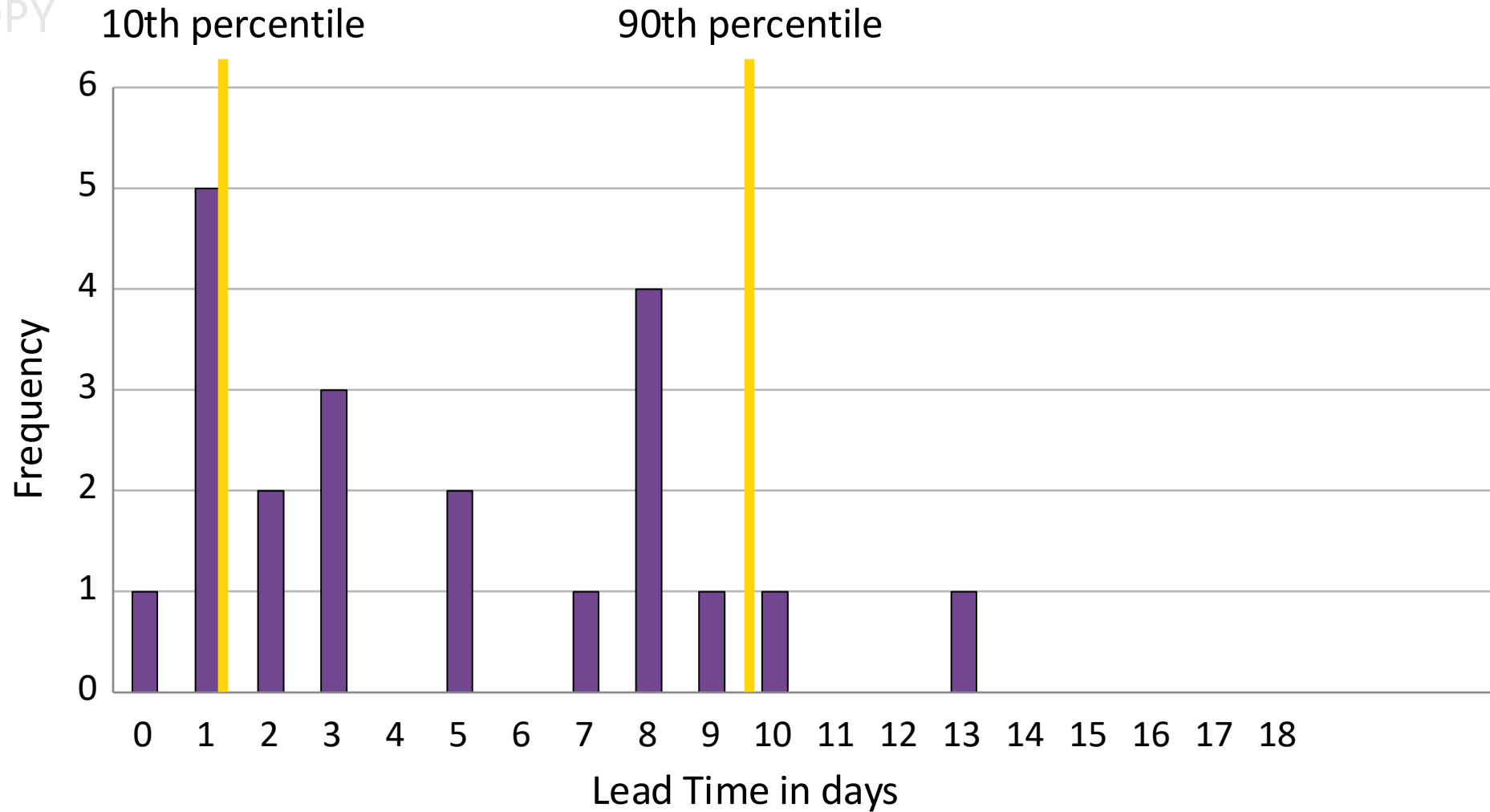
Which approach makes more sense for your kanban system? When does the lead time clock start ticking? And when will it stop?



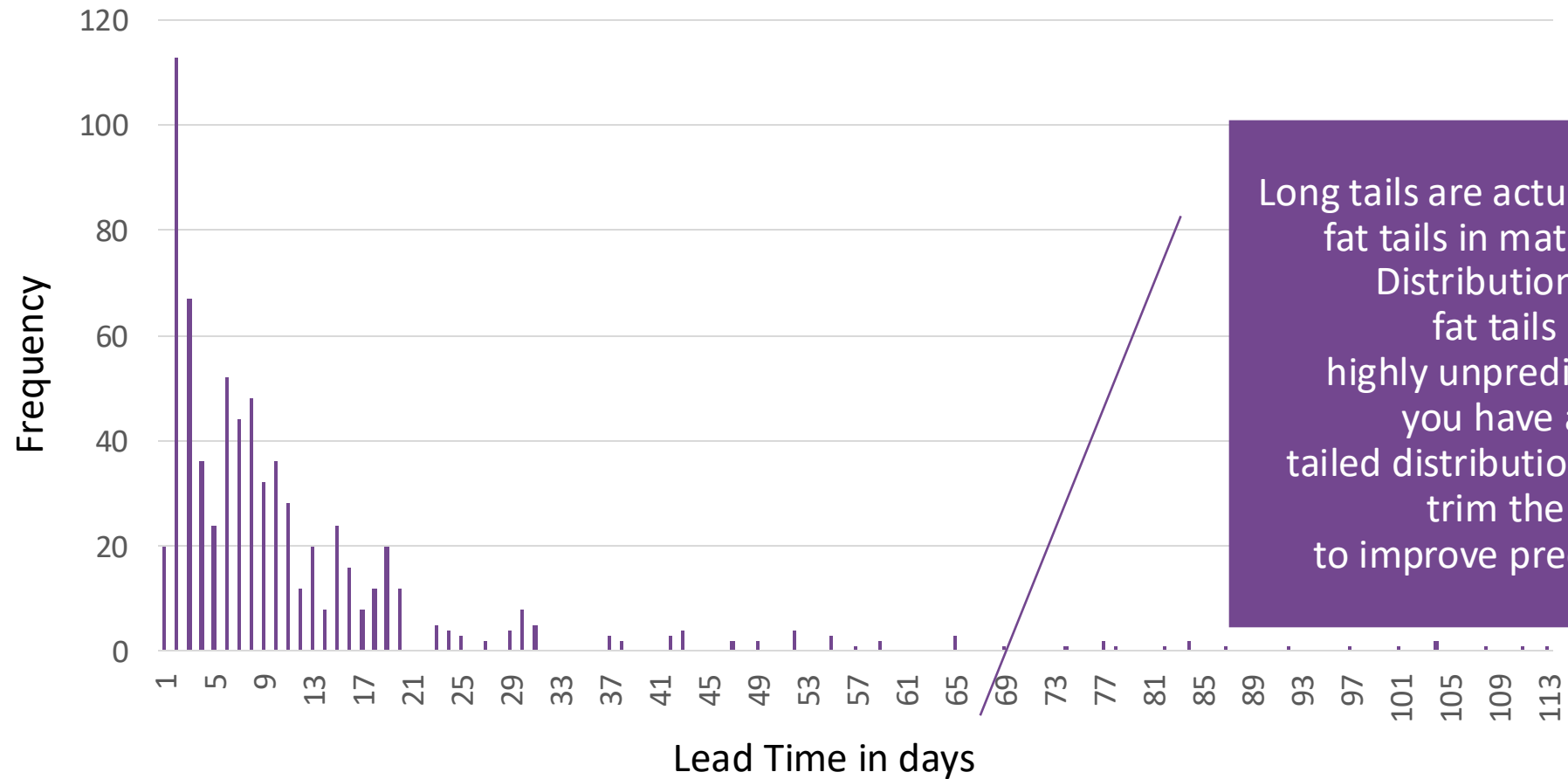
Example: Lead Time histogram



Lead Time distribution percentiles



Distribution with a long tail

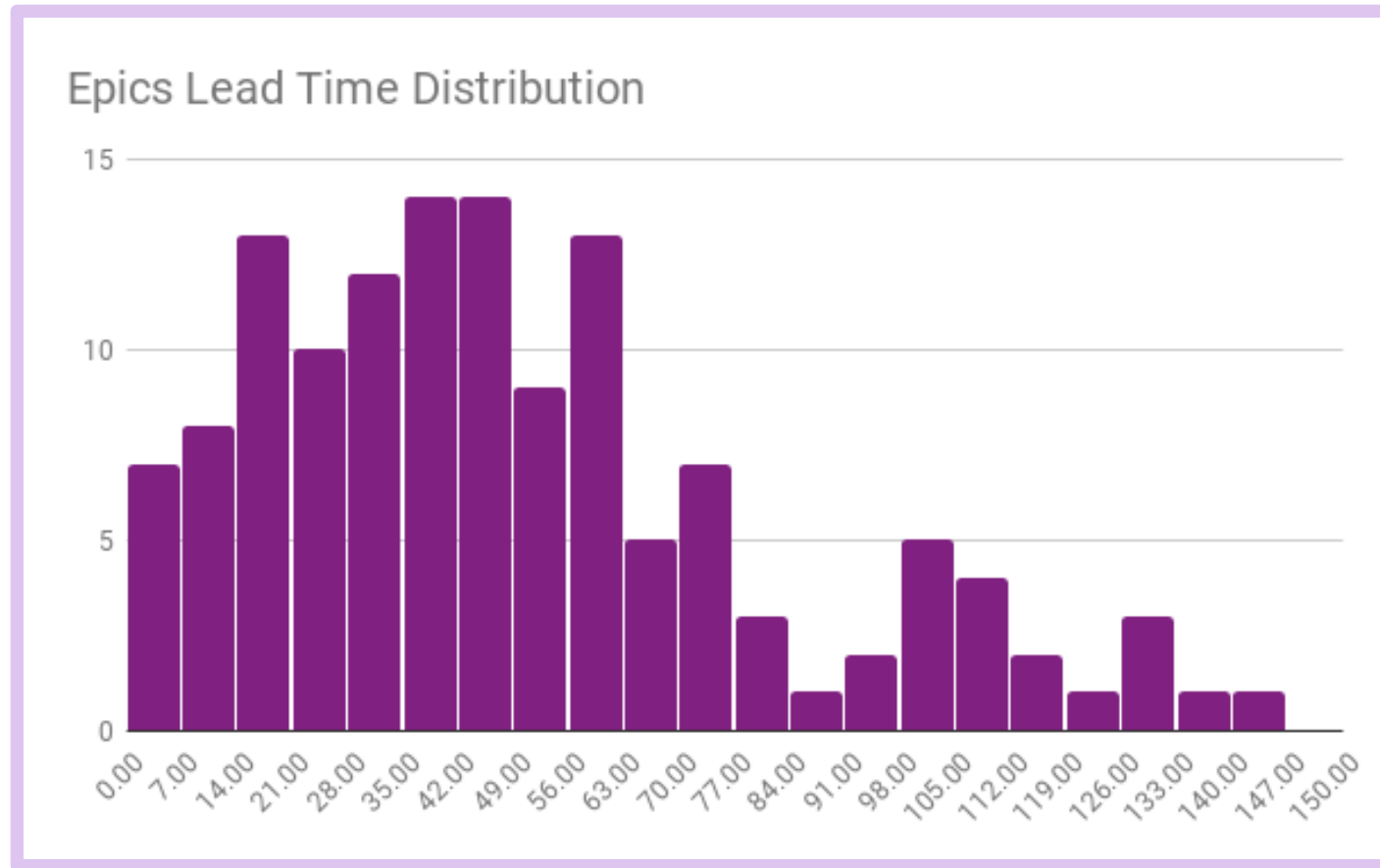


Long tails are actually known as fat tails in mathematics. Distributions with fat tails are highly unpredictable. If you have a fat-tailed distribution, you must trim the tail to improve predictability.

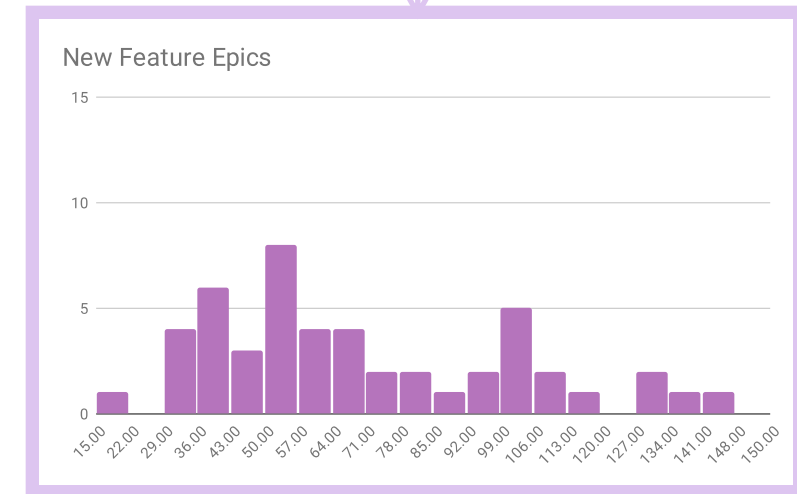
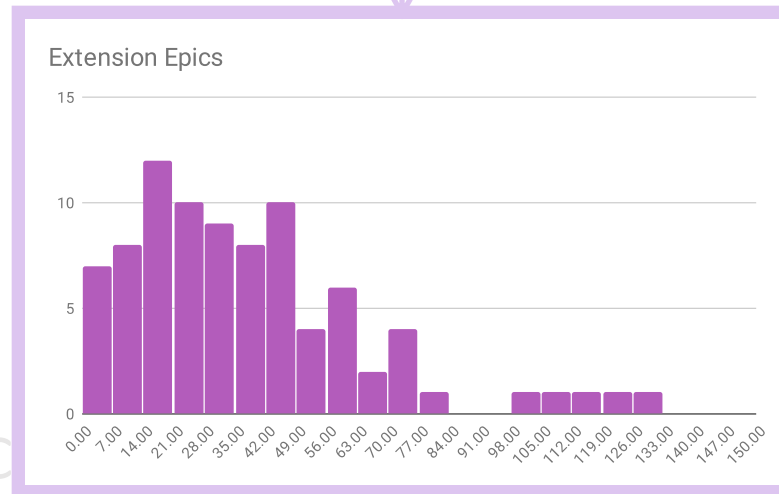
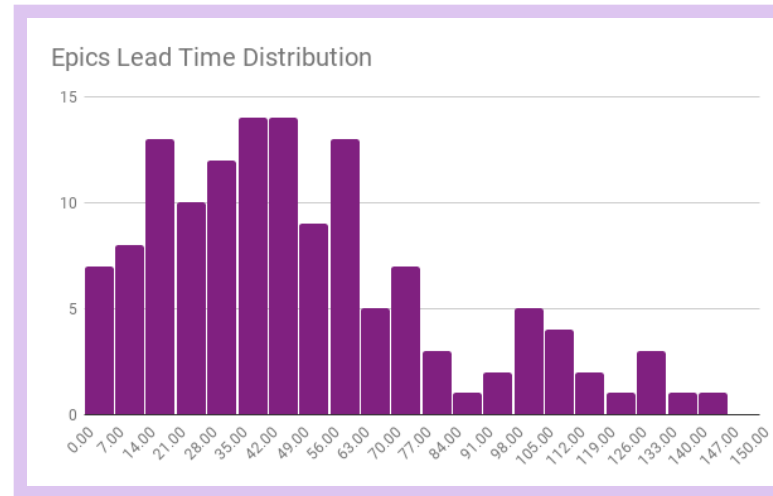
Splitting Lead Time Data

- Real-world lead time data often mix different types of deliverables:
 - 1) Identify your types and risk categories.
 - 2) Separate the data points belonging to different types or categories.
 - 3) Observe average lead time and pattern of variation for each category.
- High-quality data and effective categorization lead to clear, explainable distribution shapes.
- Please note that averages are not enough to communicate the delivery capability! Use at least two data points: The average and a high percentile (e.g., 85%).

Example of Multimodal Data – Epic Lead Time Distribution



Split



Curious about Lead Time?

What is lead time?

<https://kanban.plus/blogs/blog/what-is-lead-time>

Lead time and cycle time

<https://kanban.plus/blogs/blog/cycle-time-vs-lead-time-what-is-the-difference>

5 things to know about lead time

<https://kanban.plus/blogs/blog/five-things-you-need-to-know-about-lead-time>

How to read lead time distribution

<https://kanban.plus/blogs/blog/how-to-read-lead-time-distribution>

Lead time and Little's Law

<https://kanban.plus/blogs/blog/what-is-the-relation-between-little-s-law-and-lead-time>



Considering Lead Time

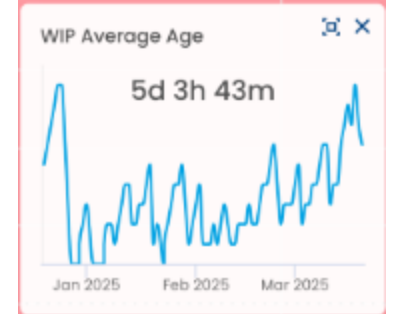
Which of the four criteria for a good metric are missing?

Why is average lead time of very little relevance?

How many data points do you think you need for a lead time histogram to be useful?



WIP Aging



Reading reference: **Visualize work item aging**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz24-eng>

Considering WIP Aging

How does WIP Aging augment Lead Time?

Does WIP Aging meet all four criteria for a good metric?

What are the pros and cons of Lead Time as a lagging indicator?

What might you miss if lead time was your only metric?



Metrics for Managing Flow

- Defect Rate (Quality)
- WIP (work-in-progress)
- Lead time
- Delivery Rate
- Discard Rate (Before start)
- Abort Rate (After start)
- WIP Aging



Across those seven:

- Trend over time
- Variation over time

Simple metrics

Breakout 14

5 min

Classify each of the metrics...

- Defect Rate (Quality)
- WIP (work-in-progress)
- Lead time
- Delivery Rate
- Discard Rate (Before start)
- Abort Rate (After start)
- WIP Aging

Simple?

Relevant?

Self-generating?

Leading or lagging?



Module Nine – Learning Outcomes

You are now able to:

- Define simple, good Kanban metrics
- Identify Don Reinertson's four criteria for good, useful metrics
- Understand the need to have Narrative alongside a Cumulative flow diagram
- Confidently use Leadtime as a metric for managing flow
- Visualize WIP Aging
- Understand the value of narrative to enhance the value of reports
- Identify the seven key metrics for managing flow and how each of these are classified

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Module 10
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Managing Dependencies

Reducing lead time tail risk to improve predictability

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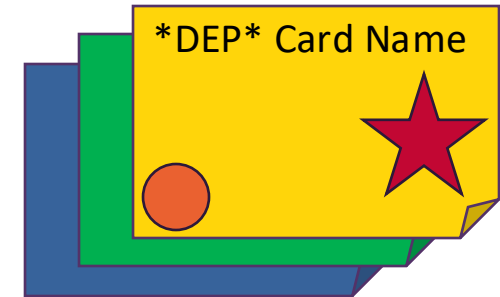
Module 10 – Aims and Objectives

The aims and objectives of this module are:

- To learn different ways to visualize dependencies such as on the Kanban board, the ticket or using avatars
- To discover how blocking issues and defects are visualized on the upstream Kanban board
- To use avatars to visualize dependencies on a shared service

Ways to visualize dependencies

- Change the design of the ticket
 - Color of the ticket
 - Decoration: Star/sticker/dot on sticky note
 - Checkboxes to indicate dependencies
 - Software: Automatic connection to dependent items
- Board Design / Work Item Type Definition
 - Separate swim lane for types of work that always have a dependency
 - Separate section on board



Sprint Backlog	2 Design		4 Create		2 Review		1 Deliver	Done
	doing	done	doing	done	doing	done	doing	
Yellow card		Green card	Blue card		Yellow card with star			Blue card
Blue card	Green card		Yellow card with star	Yellow card		Yellow card		Green card
Yellow card							Blue card	Yellow card
								Yellow card

Needs support from outside the Team

Reading reference: **Visualize dependencies**

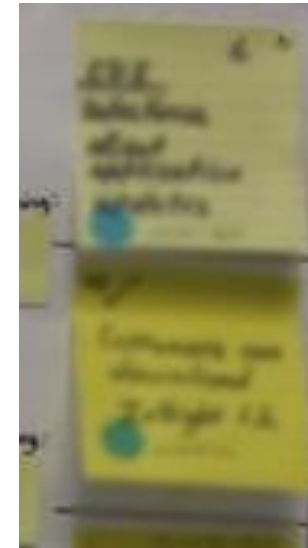
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz25-eng>

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz26-eng>

Visualizing Dependencies at Posit Science



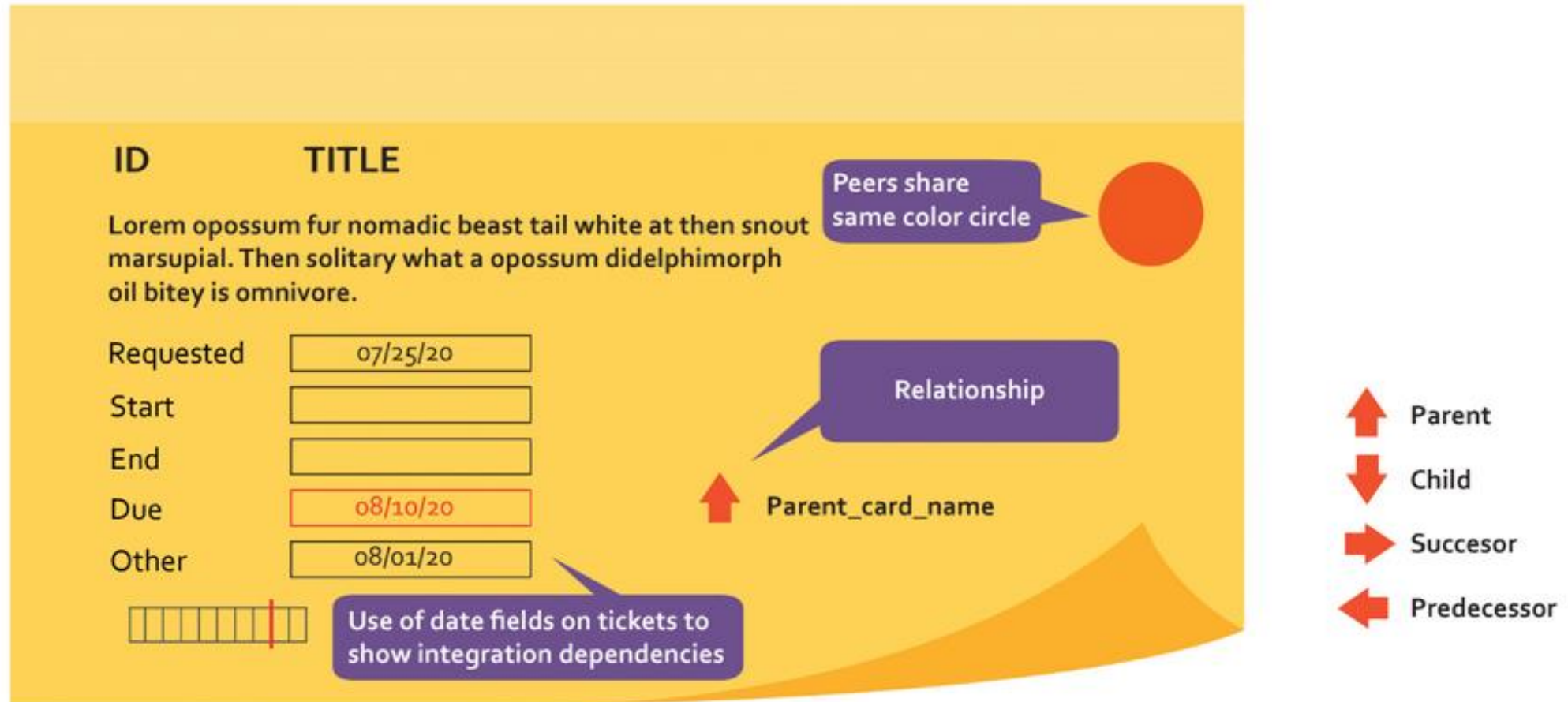
Dots depict dependencies



Reading reference: ***Posit Science case study***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-case-studies/reader/posit-science>

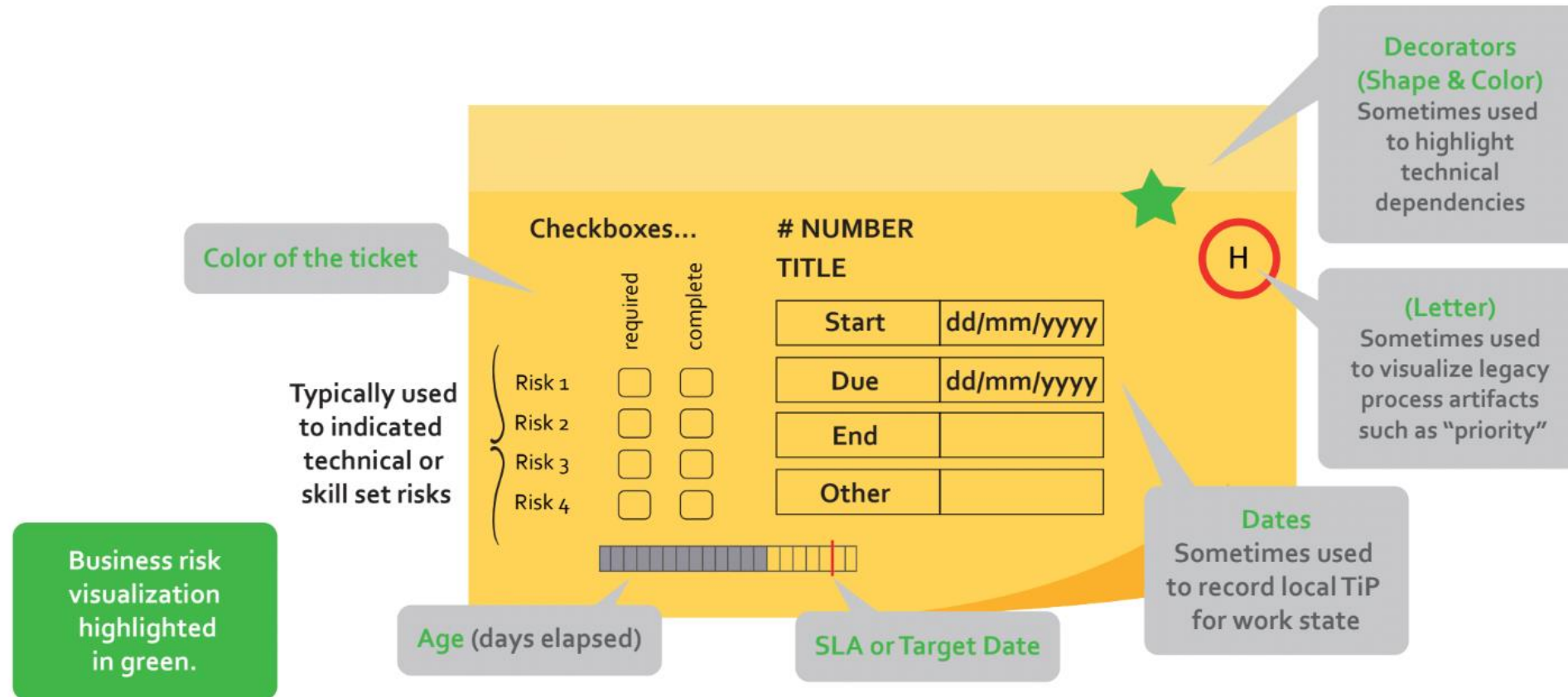
Visualizing Dependencies on Tickets



Reading reference: ***Visualizing Dependencies on Tickets***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/dm-poster/vz29-eng>
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/dm-poster/vz38-eng>

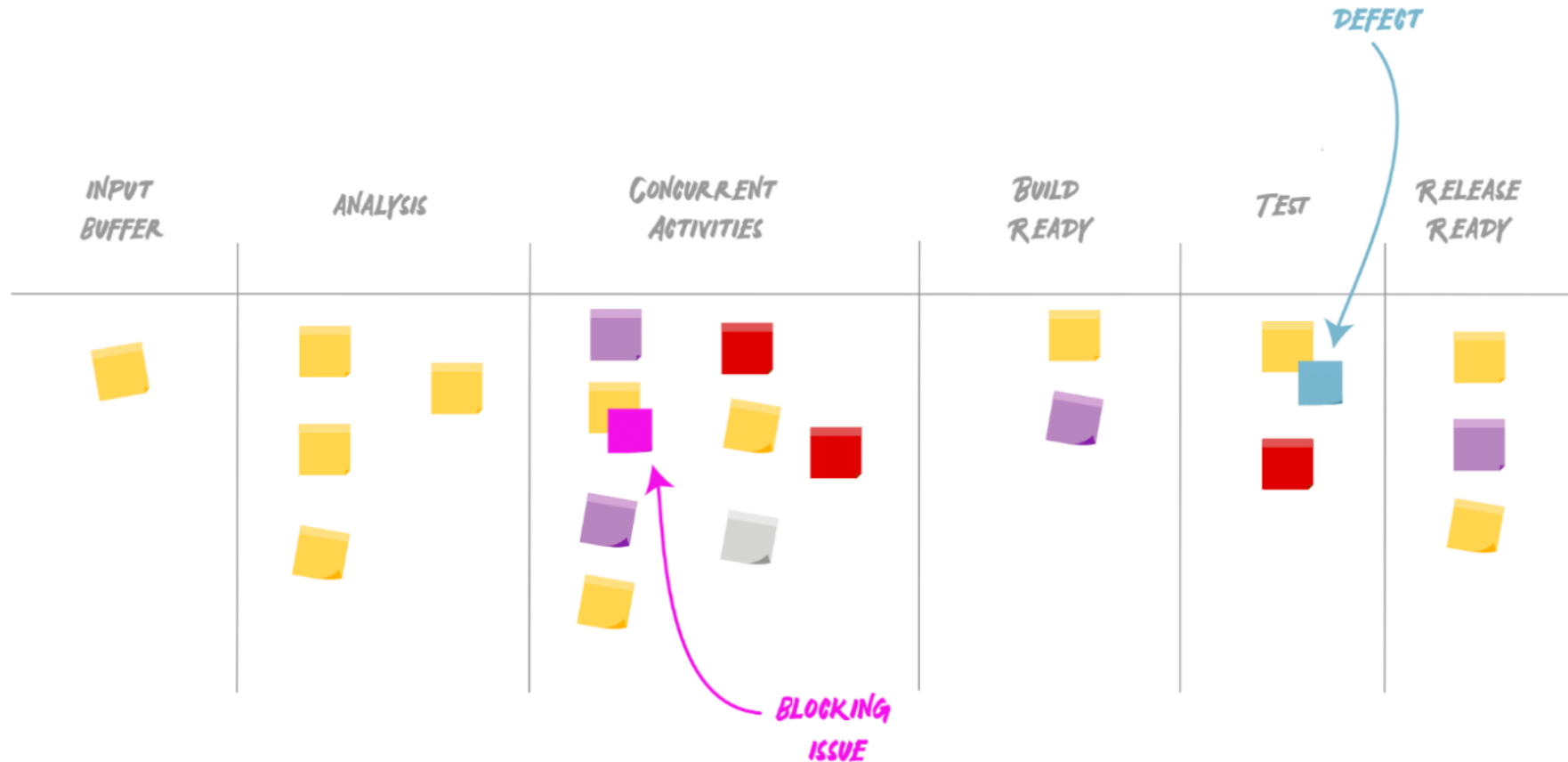
Visualizing Dependencies on Tickets



Reading reference: ***Visualizing Dependencies on Tickets***

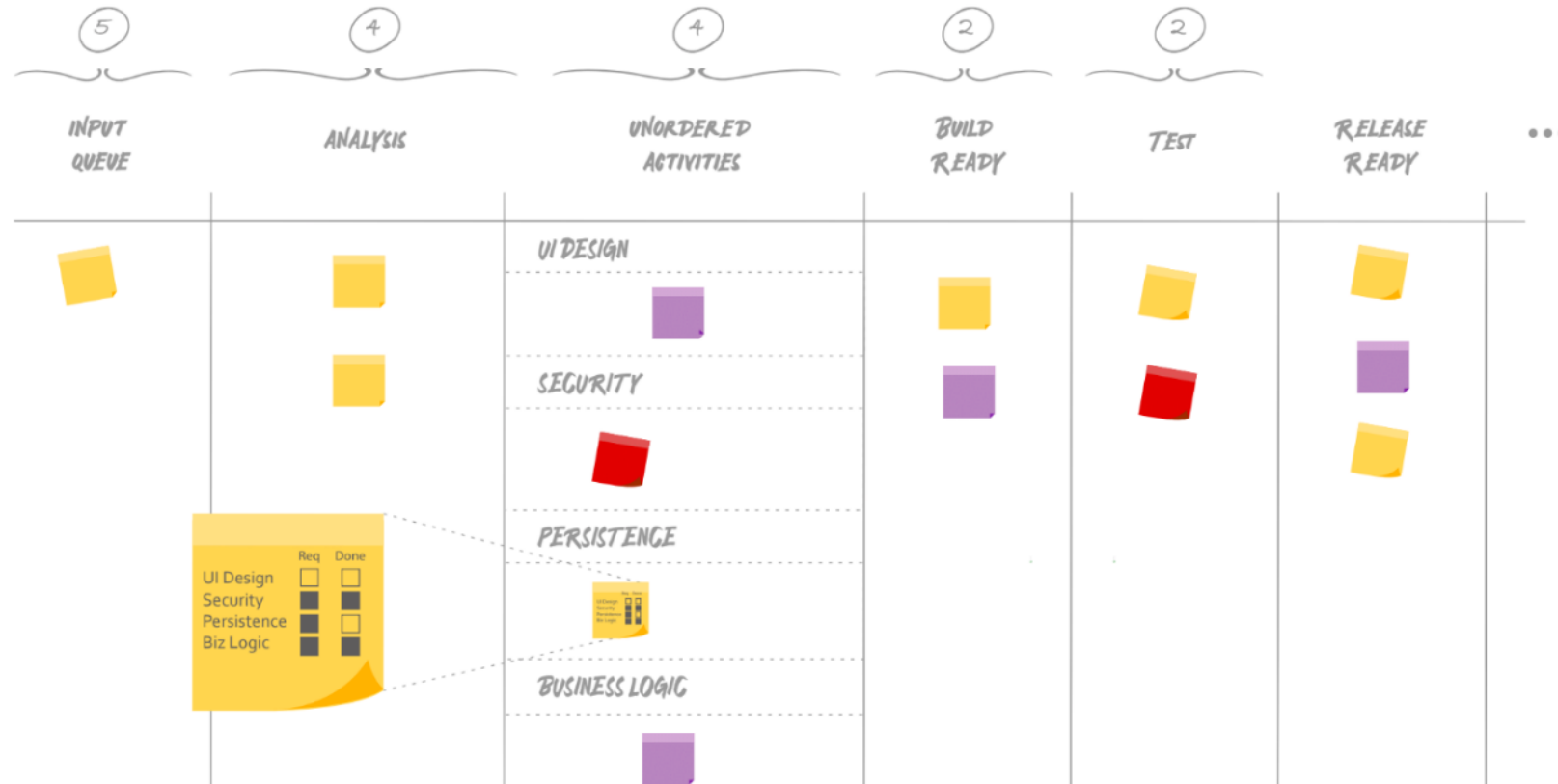
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/dm-poster/vz29-eng>
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/dm-poster/vz38-eng>

Blocking Issues and Defects



Reading reference: **Visualize ideas development by means of an upstream kanban board**
<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz34-eng>

Optional multiple and unordered activities performed by specialists' team



Reading reference: **Optional multiple and unordered activities performed by specialists' team**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/vz211-eng>

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Visual

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Dependencies

How do you visualize dependencies today?

How do you manage dependencies today?

Which visualization practices make sense for your organization?

Can you think of other ways to improve dependency management?



Module 10 – Learning Outcomes

You are now able to:

- Visualize dependencies such on the Kanban board, the ticket or using avatars
- Visualize blocking issues and defects on the upstream Kanban board
- Use avatars to visualize dependencies on a shared service

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75%

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Complete

End of Day 3

Students should understand ...
Operational practices for managing flow

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Part Five
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Improving the Flow

Using the management practices of the Kanban Method

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Structure of Part Five - Management Practices/ Improving Flow



Module 11

Cadences for
managing flow

Module 12

Flow Review

Module 13

Blocker Clustering

Module 14

Models for
improving flow

Module 15

Policies

Improving the Flow

- Leaders and managers act on the system in order to improve performance
- Use metrics & data at formal feedback events



- Understand how the flow of work Works
- Form hypotheses using models
Change policies to improve the system

Reading reference: ***Kanban Practices***

<https://all.kanban.plus/en/content/kanbanplus/bwk/default/bwk-posters/poster/kanban-in-numbers-2/6-practices>

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Module 11
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Cadences for Managing Flow

Managing the system of flow at Maturity Level 2

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Module 11 – Aims and Objectives

The aims and objectives of this module are:

- To learn about the two cadences involved in managing flow:
 - Workflow Kanban Meeting
 - Workflow Replenishment Meeting
- Discover the difference between planning and replenishment

Managing Flow

- Workflow Kanban Meeting

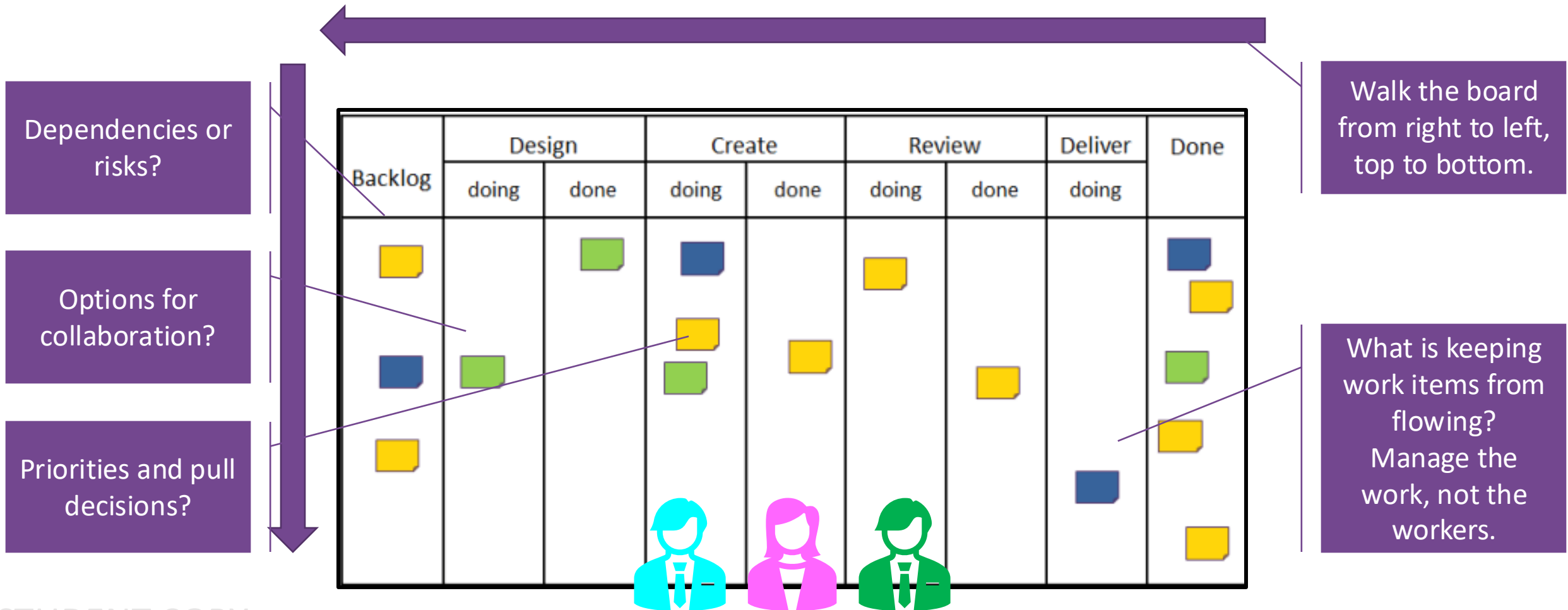
Walk the board right to left. Focus on the work and any issues delaying the progress of the work.

Focus on finishing before starting.

For new teams, this is a great place to pull work into the next column in the workflow.



Workflow Kanban Meeting



Workflow Kanban Meeting

Purpose



A collaborative conversation about how best to flow work to delivery

Who



Facilitated by Flow Manager includes representatives from all teams involved in work on the board

When



Meeting typically held daily at the same time in front of the board. About 15 minutes or less.

What



Walk the board from right to left. Manage work, not workers. Focus on completing work items and resolving issues.

Discuss priorities and team member pull decisions. Any options for collaboration? Treat issues that require more time after the meeting.

Discuss work items ready to be started. Dependencies or risks?

Consider imposed deadlines, agreed SLAs, and fixed date obligations.

Agree temporary policy overrides when appropriate to manage risk

How to Run a Workflow Kanban Meeting

- Flow Manager facilitates
- **“Walk the board” from right to left:** Go through the tickets from right (most close to completion) to left (most recently started)
- Remember to **manage work, not workers!**
- The facilitator may solicit a status update on a ticket or simply ask if there is any additional information that is not on the board yet
- More mature organizations may only discuss blocked items, and not discuss every ticket on the board
- There will be a discussion of pullable tickets in “Done” queues. Which ticket should be pulled next and by whom?

Reading reference: ***Workflow Kanban Meeting***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/fl22-eng>

Selecting New Work

Workflow Replenishment Meeting (ML2)

Select work items from the backlog to pull next. Typically, starts the lead time clock ticking for a request. The selected queue or buffer should be large enough to suffice until the next replenishment meeting.

Make use of metrics. The selected buffer needs to be greater than the average delivery rate (or throughput).



Workflow Replenishment Meeting (ML2)

Purpose



Select work items from the backlog to commit next, and to replenish the queue for delivery until the next Workflow Replenishment Meeting.

Who



Facilitated by the Flow Manager.
Attended by representatives of each team active in the workflow

When



Weekly, or as needed, based on the arrival rate of new information.

What



- Select items from those requested by the Customer and placed in the *Requested Work* column or *Backlog*.
- Make sure that the service team understands the requested work.
- Take into account technical aspects and dependencies among service teams when selecting a request to be pulled into the *Next* column.

Reading reference: ***Workflow Replenishment Meeting***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/fl21-eng>

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Breakout 16

10 min

Replenishment versus planning?

What is the difference between replenishment and planning?

What challenges would you anticipate when using replenishment?



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Module 11 – Learning Outcomes

You are now able to:

- Comfortably conduct a Workflow Kanban Meeting and a Workflow Replenishment Meeting
- Differentiate between planning and replenishment and understanding the challenges you might face with replenishment

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Module 12

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Flow Review

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Module 12 – Aims and Objectives

The aims and objectives of this module are:

- Discover the purpose, the who, the when and the what of the flow review
- To identify the causes of ragged flow and how to manage these
- To enable you to have the confidence to take action and make the appropriate changes to policies in order to improve flow and to realize the importance of narrative when it comes to making these changes.
- To stress the importance of closing the feedback loop.

Feedback loops

- Flow Review

Reflect on how work flows through the system and how it could be improved through experiments.

Typically every two weeks.
Uses Kanban metrics such as CFD, Lead Time Histogram, and may include Blocker Clustering activity and analysis as a convenience to avoid a separate meeting

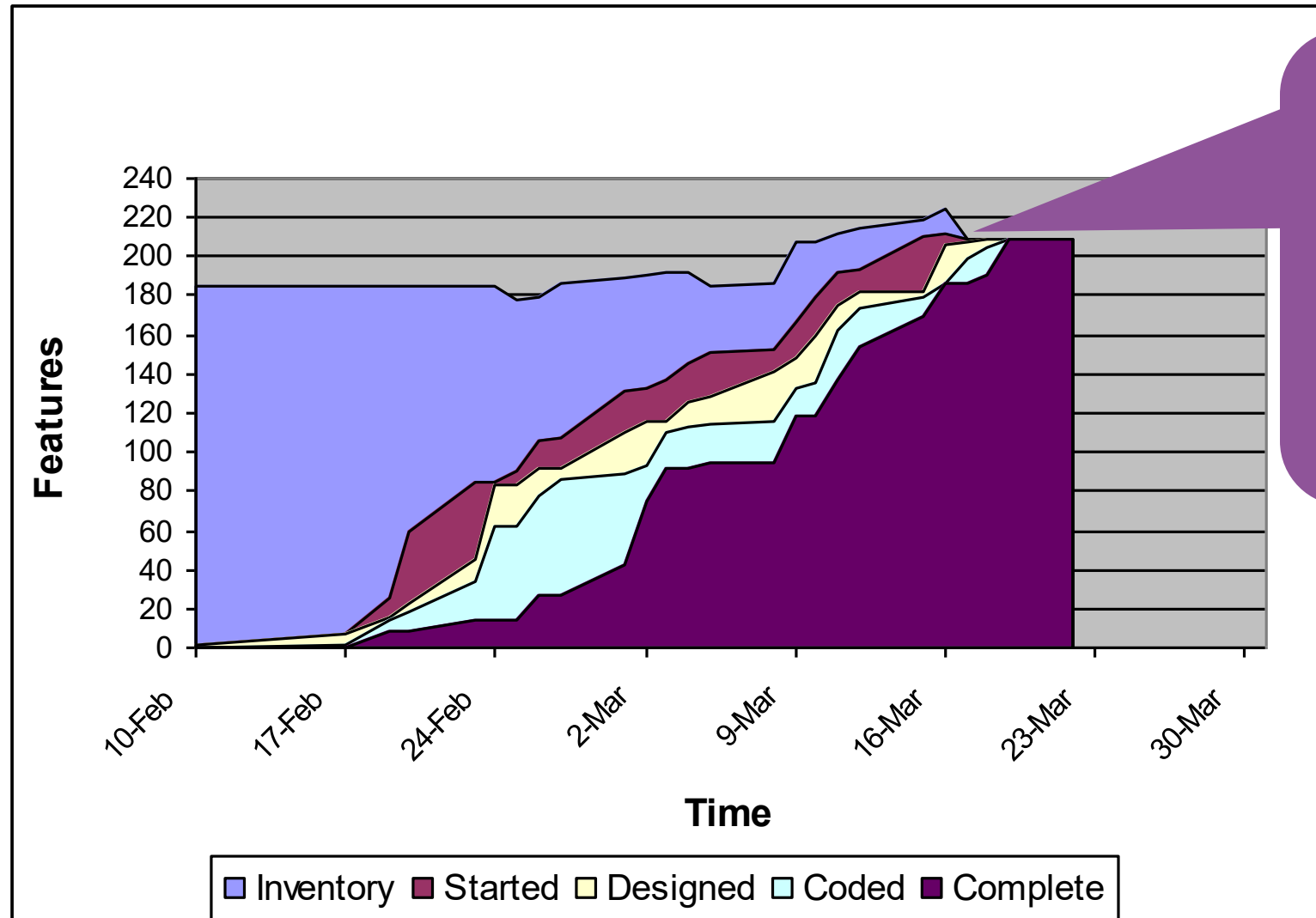




Bring the narrative!

Metrics without the story
limit improvement

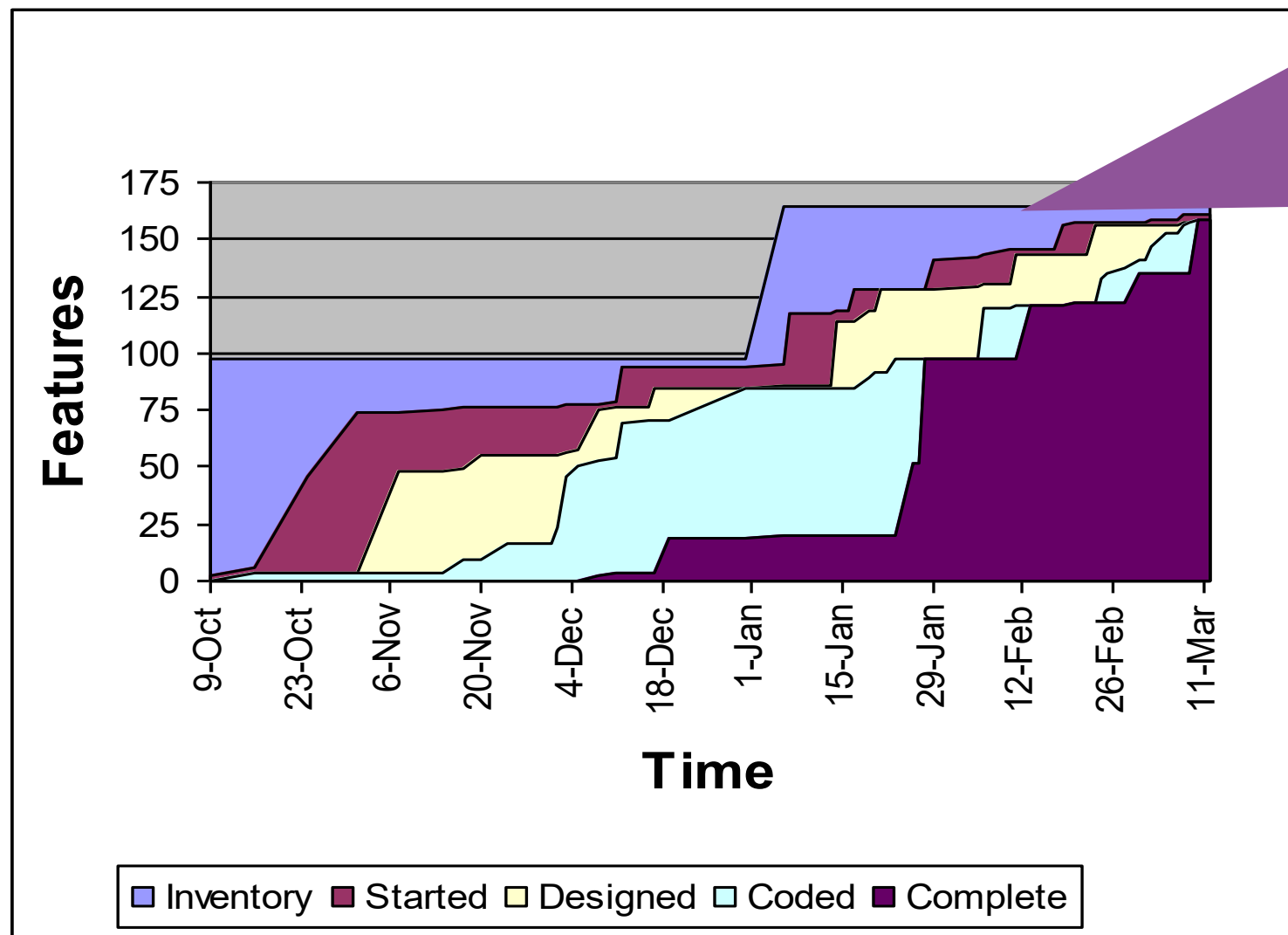
Smooth Flow (Healthy Example)



WIP is being reduced, average lead time is shrinking

Data suggests that flow is well managed

Ragged Flow (Unhealthy Example)

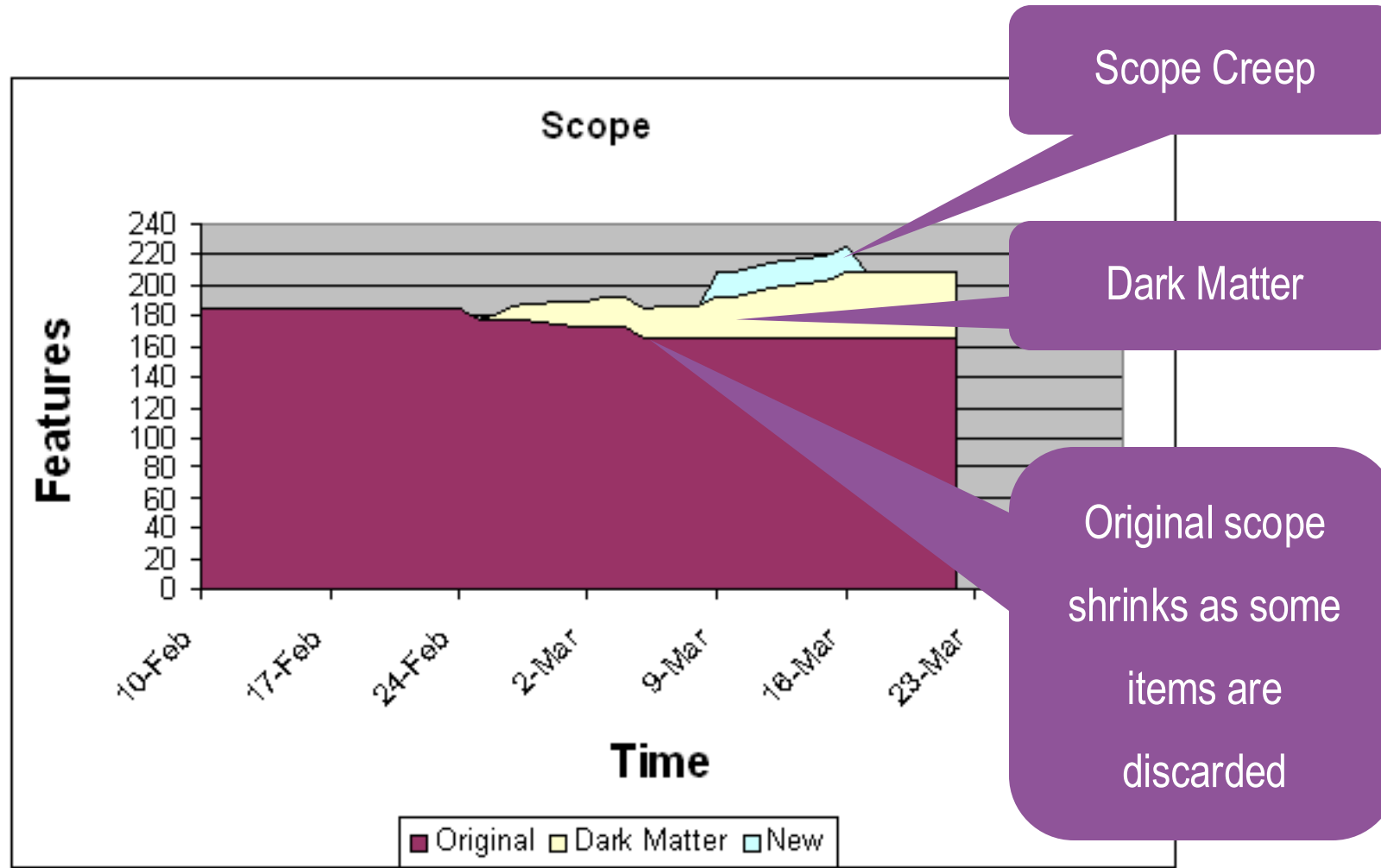


Large batch transfers

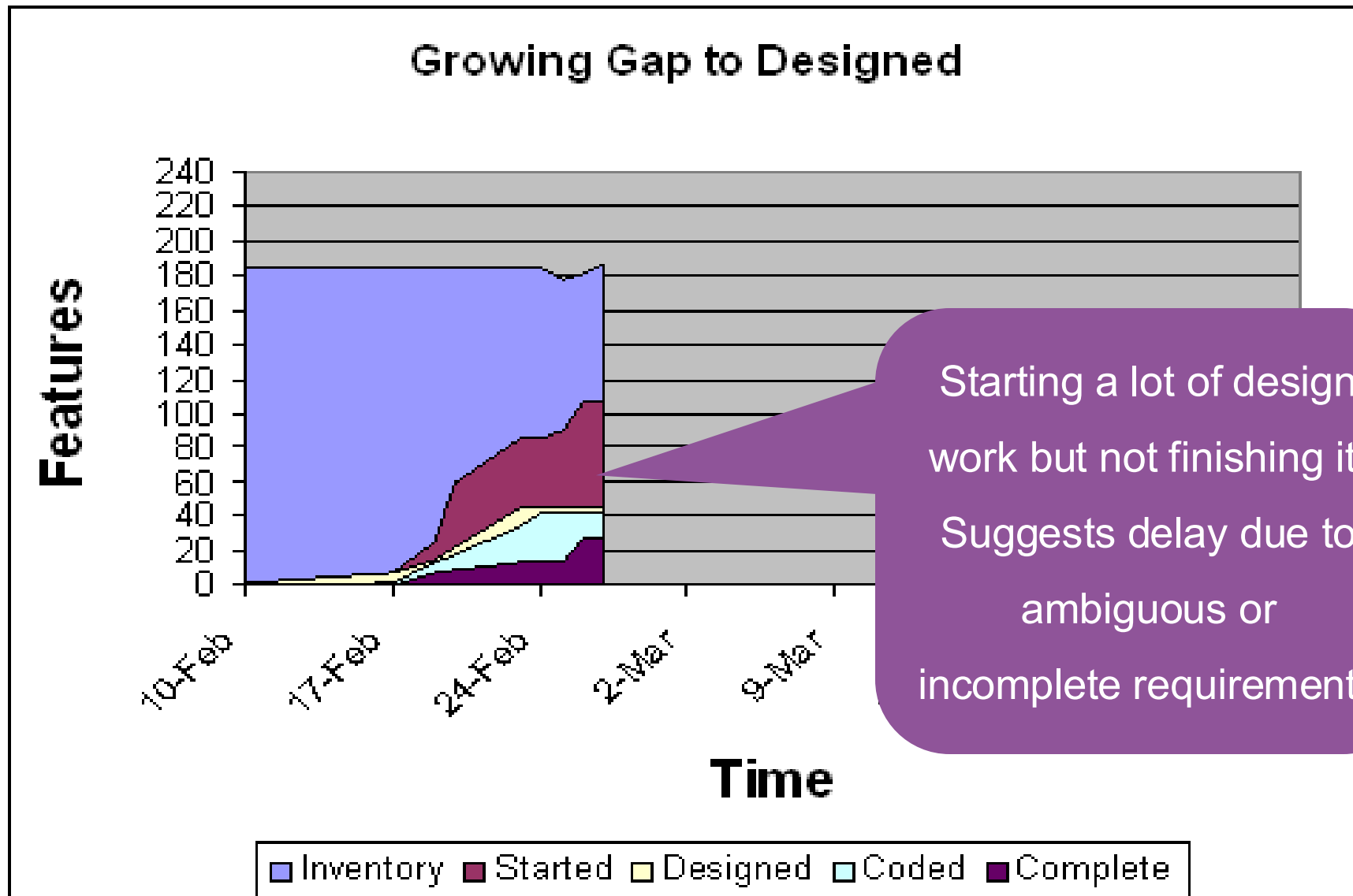
What happened after 1 January?

The look of the graph suggests that flow is not being managed

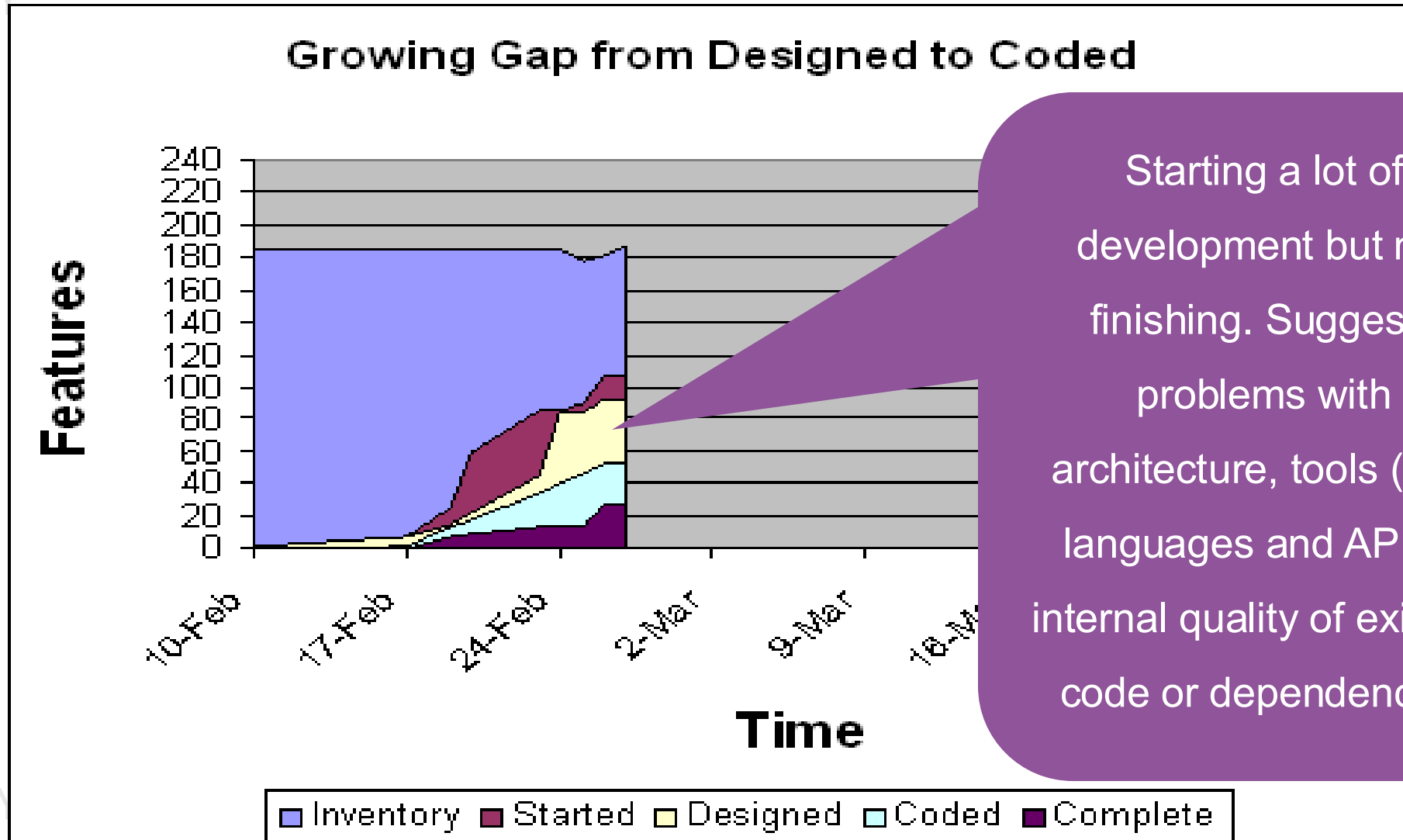
Unplanned Work – “Dark Matter”



Requirements Uncertainty



Architecture, Refactoring, or Dependencies

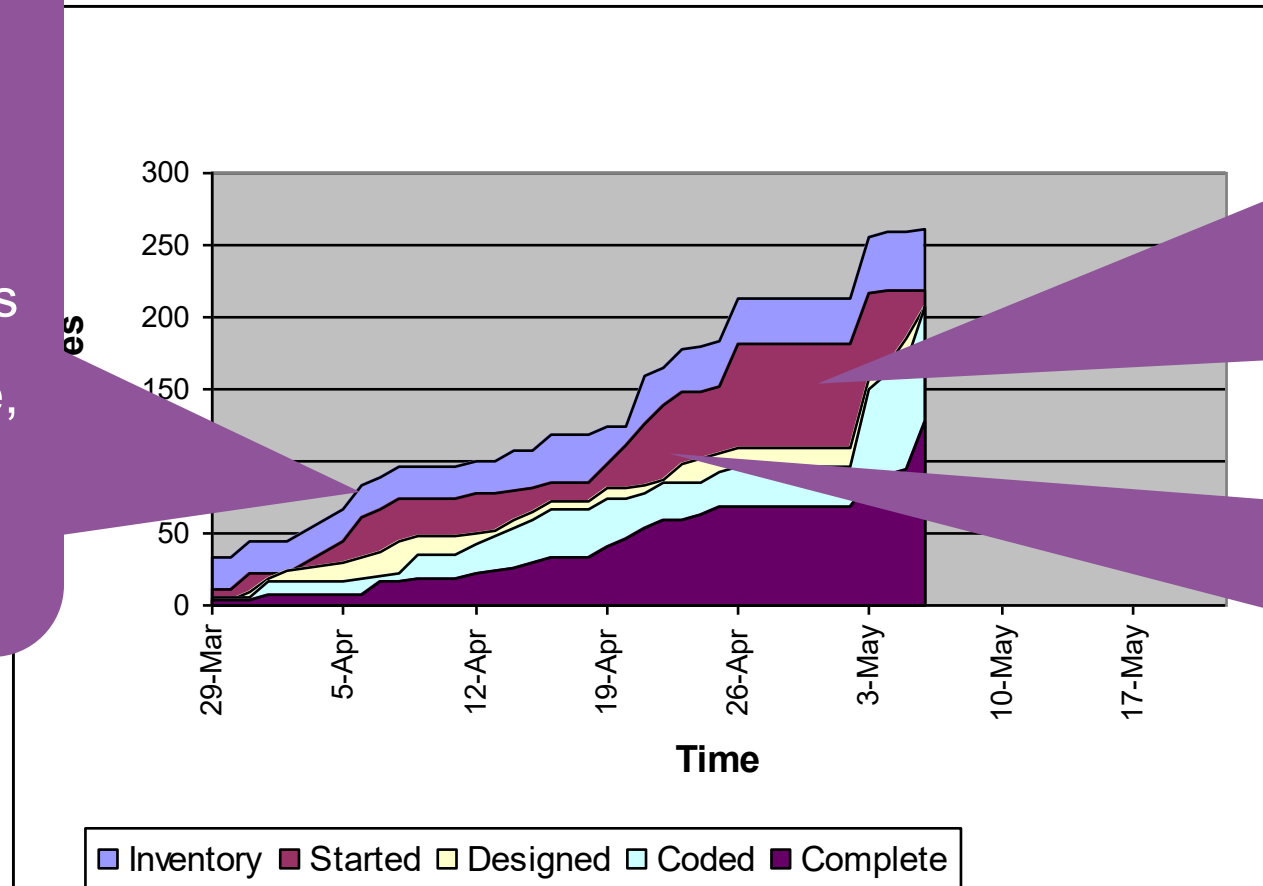


Starting a lot of development but not finishing. Suggests problems with architecture, tools (incl. languages and API's), internal quality of existing code or dependencies

Just-in-time Arrival of Requests

No scope agreed in advance

Problematic
for project
stakeholders
and managers
– no end date,
unbounded
scope



Reflected a
bottleneck in
personnel for
domain
analysis and
architecture...

...and ambiguity
in the
requirements for
an essentially
new product
category

Flow Review (incl Blocker Clustering)

Purpose



Reflect on how work flows through the system and how flow can be improved.

Who



Facilitated by Flow Manager includes representatives of each team involved in active work over the past month

When



Typically held every two weeks, 30-60 minutes or up to 2 hours every other occasion, if Blocker Clustering is included

What



- Before the meeting, review progress and system capability data derived from the kanban board or tracking system.
- During the meeting, reflect on the collected data and analyze the cases for which there was a perception of poor service, or a failure to meet Customer expectations if known.
- Define actions to improve the flow. Start with defining actions for reducing blocker time, rework, or WIP aging.
- Provide feedback and communicate decisions to the service team and their immediate manager.

Reading reference: **Flow Review**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/fl23-eng>

Taking action, showing leadership?

- Based on the results of the Flow Review, decide what changes to policies to introduce and what results you expect to observe as effects of introducing the modifications.
- Listen to the narrative associated with the data and observations to develop a better understanding of the context and the individuals who take part in the process. Make only a few changes at a time to facilitate studying their effects.
- Allow a reasonable time, not too long, for the actions to produce results that can be analyzed.

Close the Loop

- Provide the necessary support for the adoption of the modified policies.
- Compare expected and obtained results (at future flow review meetings) and reflect on what hindered or enabled achieving the desired outcome—improving the flow and the capability of the kanban system.
- Decide which policies to keep and which you still need to adjust to reach a deeper understanding and improvement of process and flow.

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Flow Review requires
management action &
leadership to drive change

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Breakout 17

10 min

Design your Flow Review

Who should attend?

What is the cadence?

Which data, metrics and reports will be
needed?

Who will present?

How will you capture ideas for improvement
and actions to be taken?



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Module 12 – Learning Outcomes

You are now able to:

- Conduct a flow review to understand how work flows through the system and how flow can be improved
- Identify the causes of ragged flow and how to manage these
- Confidently take action and make the appropriate changes to policies in order to improve flow. You now realize the importance of narrative when it comes to making these changes.
- Close the feedback loop. Provide the required support and show acts of leadership. Be clear on your desired outcomes and identify the reason this was achieved, or indeed why this was hindered, and what changes are required.

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Module 13

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Blocker Clustering

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Module 13 – Aims and Objectives

The aims and objectives of this module are:

- To identify the different types of blocked items, their likelihood and their impact.
- To learn about blocker clustering
- Discover the purpose, the who, the when and the what of the blocker clustering review.
- To define policies for managing blocked items
- To think about the questions you can ask, to ascertain if there is a need to introduce new meetings or if you can repurpose existing ones

Feedback loops

- Introducing Risk Review

Risk management is typically a poorly developed or non-existent skill in lower maturity organizations.

To get started with risk management, we'll introduce the practice of blocker clustering – an approach to analyzing and assessing the frequency and impact of delay caused by blocking issues.



Three Types Of Blocked Items

Blocked with an issue **internal to our workflow** (and within our political control)

Blocked due to an issue **outside our workflow but within our business** (requires collaboration and possibly political capital to resolve)

Blocked due to an issue **external to our firm**, typically with a vendor, regulator, customer, or perhaps a political issue such as a forthcoming election

Define Policies for Managing Blocking Issues

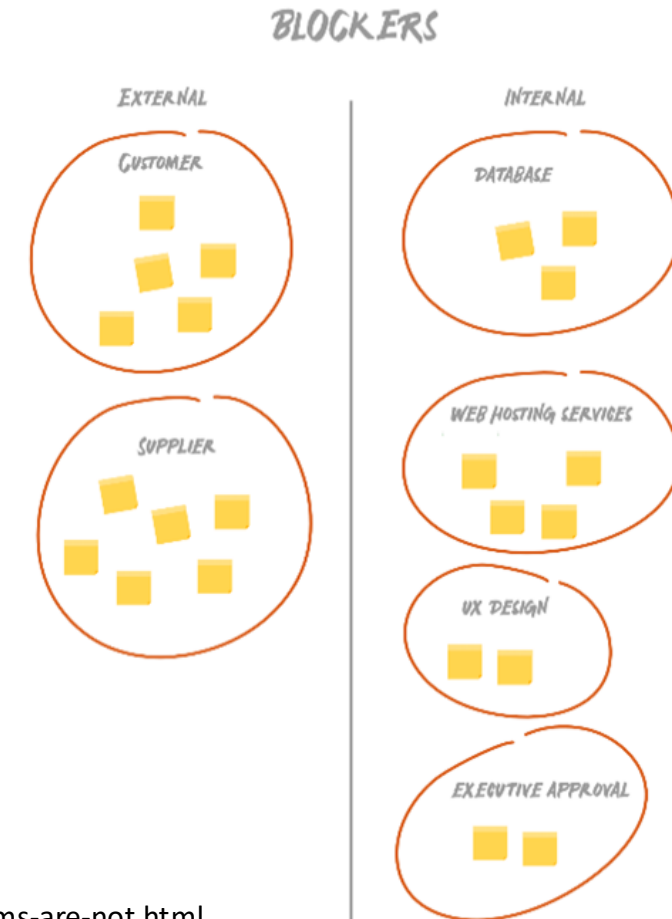
- Define how blockers are visualized
- Define what kind of blocker data is collected
- Define which kind of blocking issues can be resolved autonomously by the teams (without managerial intervention)
- Define which kind of blocking issues have to be escalated (need managerial intervention)
- **Escalation policy should be agreed collaboratively by leadership**
- Periodically revise the established policies

Reading reference: ***Manage blocking issues***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf30-eng>

Blocking Issues and Defects

- Collect all blockers (description and ideally blocked time) over a period of time.
- Cluster them by source/cause for the blockers.
- Then analyze:
 - Identify Risks
 - Identify Likelihood & Impact
 - Root Cause Analysis
 - Reduction & Mitigation actions



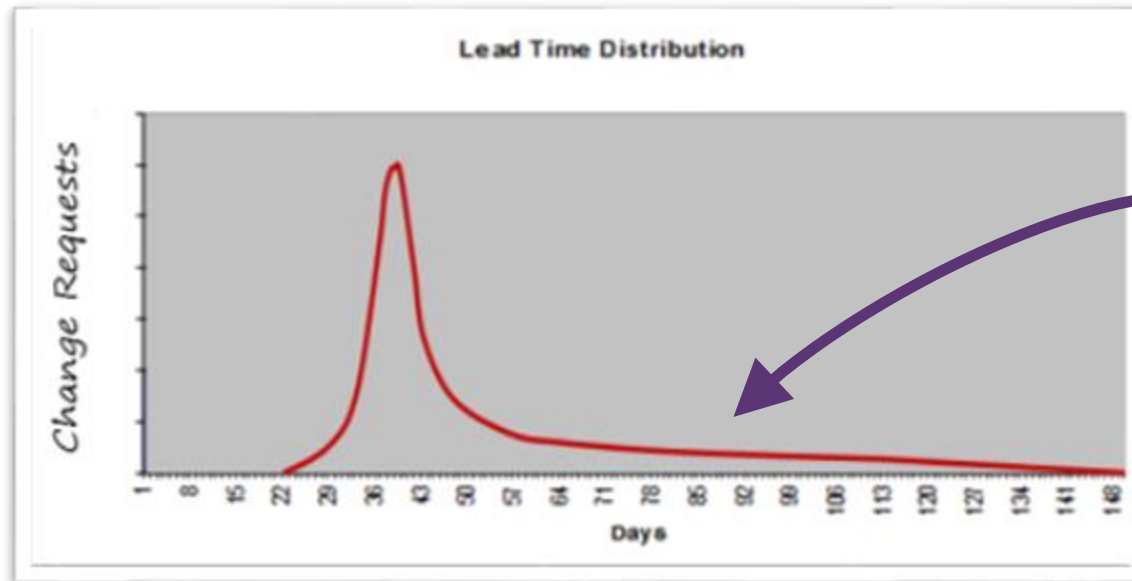
<http://www.klausleopold.com/2013/09/blocker-clusters-problems-are-not.html>

Reading reference: ***Manage blocking issues***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf30-eng>

Remember? Risk Management trims the tail!

- Identify dependencies, their likelihood & impact (delay that extends LT).
- We should prioritize eliminating sources of blockers that have significant impact. This trims the tail on the distribution.
- Impact is more important than frequency to improve trust



*Dependencies
often cause
long lead
times*

Blocker Clustering



Study the main reasons for the blockers and their impact in terms of lead time.

Forms the basis for understanding and mitigating risks.



- Collected blocker tickets with start and end dates as well as blocker reasons

- Reflections on the outcome of this analysis.
- Feedback and decisions to the service team and immediate manager



Team representatives and management



Categorize per blockage reason.
For each category of blockers, analyze the range of time it takes to resolve the issues.
Define actions to improve flow.



Monthly

1 hour



Blocker Clustering

Should blocker clustering be a separate meeting? Or could it be included as an activity in an existing meeting agenda? If so which one?

What is the appropriate cadence for blocker clustering? What time period is needed to gather enough new information?



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Do I need to introduce all these
additional meetings?

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More than just meetings!



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More than just meetings!



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Escalating Feedback Loops Introduction

1st set of questions:

- Do I have this feedback loop already? Should we recognize it for what it is and just tune it up a bit?
- Do I have an alternative (that can be repurposed)?
- Does any of them require improving?

2nd set of questions:

- Can I merge this feedback loop into any existing meeting or review?
- Can I merge two or more new feedback loops?

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If the answer is “**no**” then, *and only then*, do we create a new, separate meeting or review.



(Source of an image: <https://www.linkedin.com/company/corporate-rebels—the-search-for-the-happy-grail/>)

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Module 13 – Learning Outcomes

You are now able to:

- Identify different types of blocked items, their likelihood and their impact on the flow of work
- Cluster blockers by type and the root cause. Identify the risks associated and how these can be mitigated.
- Confidently conduct a blocker clustering review
- Define policies for managing blocked items
- Ask the correct questions to ascertain if there is a need to introduce new meetings or if you can repurpose existing ones

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Module 14

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Models for Improving Flow

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Module 14 – Aims and Objectives

The aims and objectives for this module are:

- To identify sources of variability in work and ways to respond
- To identify unplanned work, defects, rework and policies that can be put in place to help
- To identify failure demand, how to visualize this and how to improve
- To manage expedited work, how to visualize this on the board and to understand why it is important to have expedite policies in place.
- To identify sources of delay and ways to reduce them
- To define and identify bottlenecks, how to visualize them and how to improve bottleneck issues.
- To define and identify non instant availability and the issues associated. Learn how to visualize this and identify ways in which it could be improved

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Breakout 19

5 min

Make a list of things
that cause variation in
work and flow of work



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Variability in Work & Possible Responses



Size

Use different work item types



Complexity

Dependency management, information spikes (upstream), prototypes, options development, trade fidelity (causing complexity) for simplicity (understand fitness for purpose), classes of service



Quality

Eliminate defects, eliminate failure demand (to reduce unplanned work), classes of service



Compliance

Use classes of service (compliance has a cost of delay)

Variation in Size of Work Requests

- Differentiate between variations in size of items of the same type, versus items of a different type, often a different order of magnitude in size
 - E.g. Theme, Epic, Feature, Story, Task
 - Versus variation in size of any given story
- Use different work types, different swim lanes, separate WIP limits, separate metrics and reporting
- Recognize that variation in size and work time of items within a single type, will have a low impact on lead time, in a low flow efficiency environment where delays dominate the lead time. Hence, small differences in the size of work items within a single type do not matter

Variation in Complexity

- Some work items contain unknowable work until a process of discovery is started – you have to do the work to understand it
 - One ticket can spawn multiple siblings
 - Option 1: break the WIP limit
 - Option 2: send siblings back to the queue and pull as dependent tickets
 - One ticket can spawn child tickets, usually of a different type and usually creating dependencies on other services
 - Park the ticket in a dependency parking lot, send the child tickets to the appropriate Kanban systems for service
- Iterative discovery
 - Use an upstream, pre-commitment, to explore multiple rounds of information discovery before “green lighting” the item for delivery

Variation in Quality



Class of service can be used to control quality levels

Different policies on testing, compliance, and quality checks can be used to balance the risk of poor quality against lead time, predictability, and timeliness



What to do with the “bug” tickets?

The #1 most asked question in Kanban training!!!

See next section

Compliance

- Use a class of service
 - May be a 1-1 relationship between work item type and class of service, if there is only one type of work that requires compliance
- Class of service will contain policy related to compliance.
- Use “definition of ready (to pull)” or “definition of done” policies.
- Use checkboxes on the ticket to visualize the need for, and completion of compliance checks.
- Compliance verification and audit may be a shared service (dependency).
- Compliance will typically cause delay and may cause rework.

Variability in Flow and Possible Responses

Unplanned work

- Use different work item types, and visualize separately

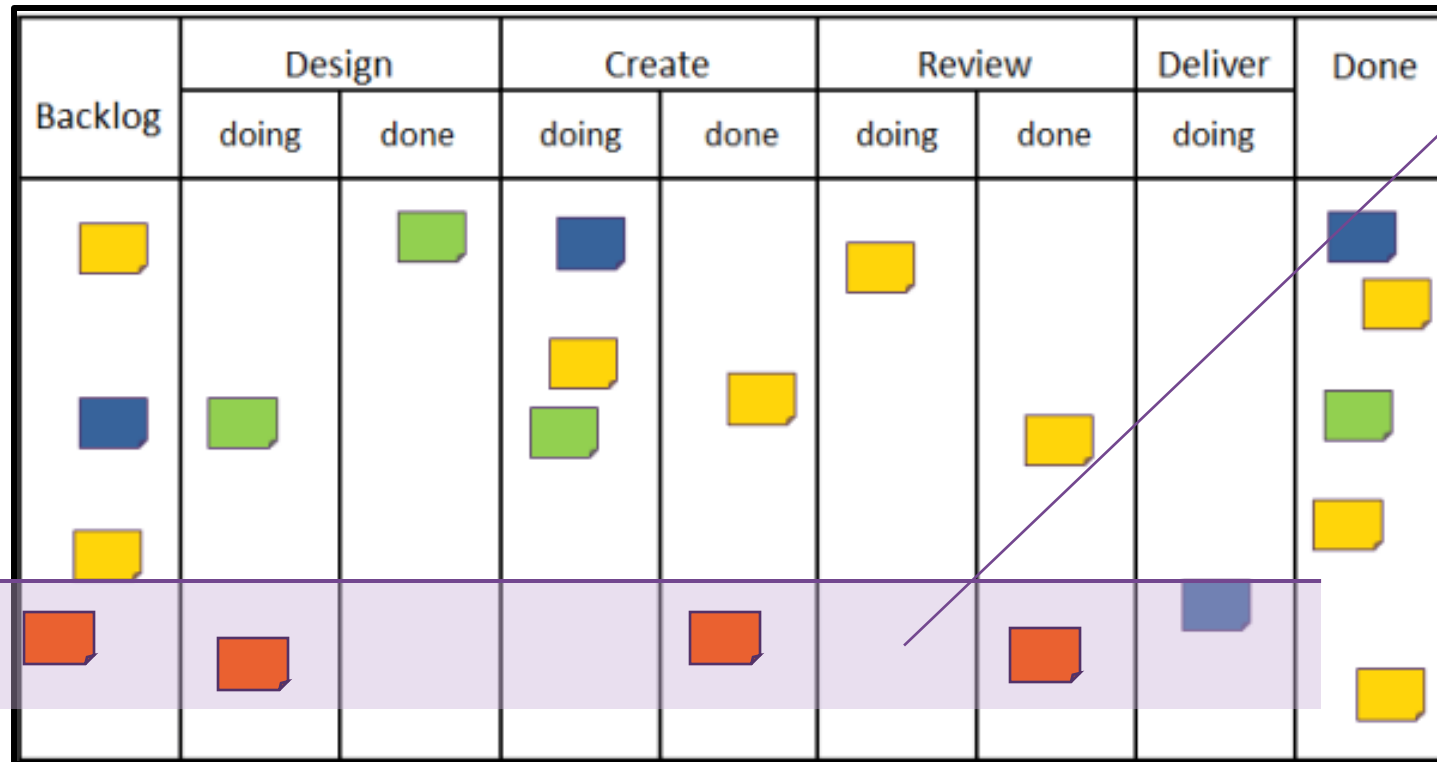
Rework

- Treat defects as a different work item type, block the original item while defects are fixed

Expediting

- Different work item types, priority work cause delays to other work, fattening the tail of the lead time distribution

Unplanned Work



Unplanned
work swim lane

Now we have a way to visualize the unplanned work and perhaps do something about it such as reserving capacity.

New Information Arrives - Scope Change

Backlog	Design		Create		Review		Deliver	Done
	doing	done	doing	done	doing	done	doing	
	The nature of the problem has changed.							
								
								
								

Possible responses:

- Change the work item type
- Create additional requests
- Are these children or peers of the original?

New information Arrives – Dark Matter

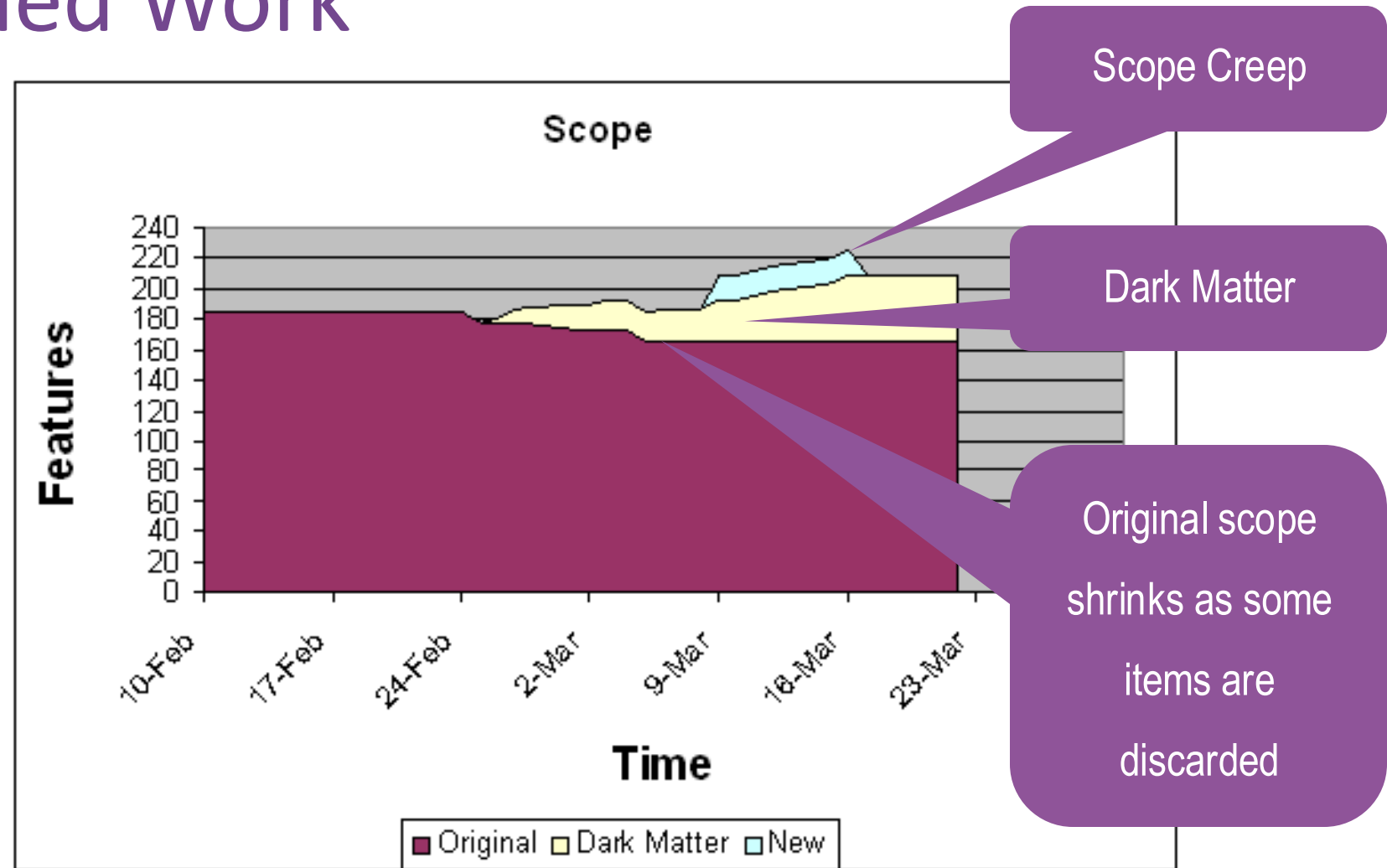
It may have been impossible to discover this without getting started

Backlog	Design		Create		Review		Deliver	Done
	doing	done	doing	done	doing	done	doing	
								 
		Uh oh. Bigger and harder than we thought.						
								 

Possible responses:

- Change the work item type
- Create additional requests
- Are these children or peers of the original?

Unplanned Work



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Breakout 20.1

5 min

What would you consider
to be work that is only
“discoverable” by doing?

What types of work may be unknowable before you start?



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Breakout 20.2

10 min

What workflow and policy improvements might reduce discovery delays?

How can you change your workflow to prevent delay and defects due to information discovery related problems?

What is an example of a policy that might reduce discovery delays in one area of the workflow and yet create new delays?

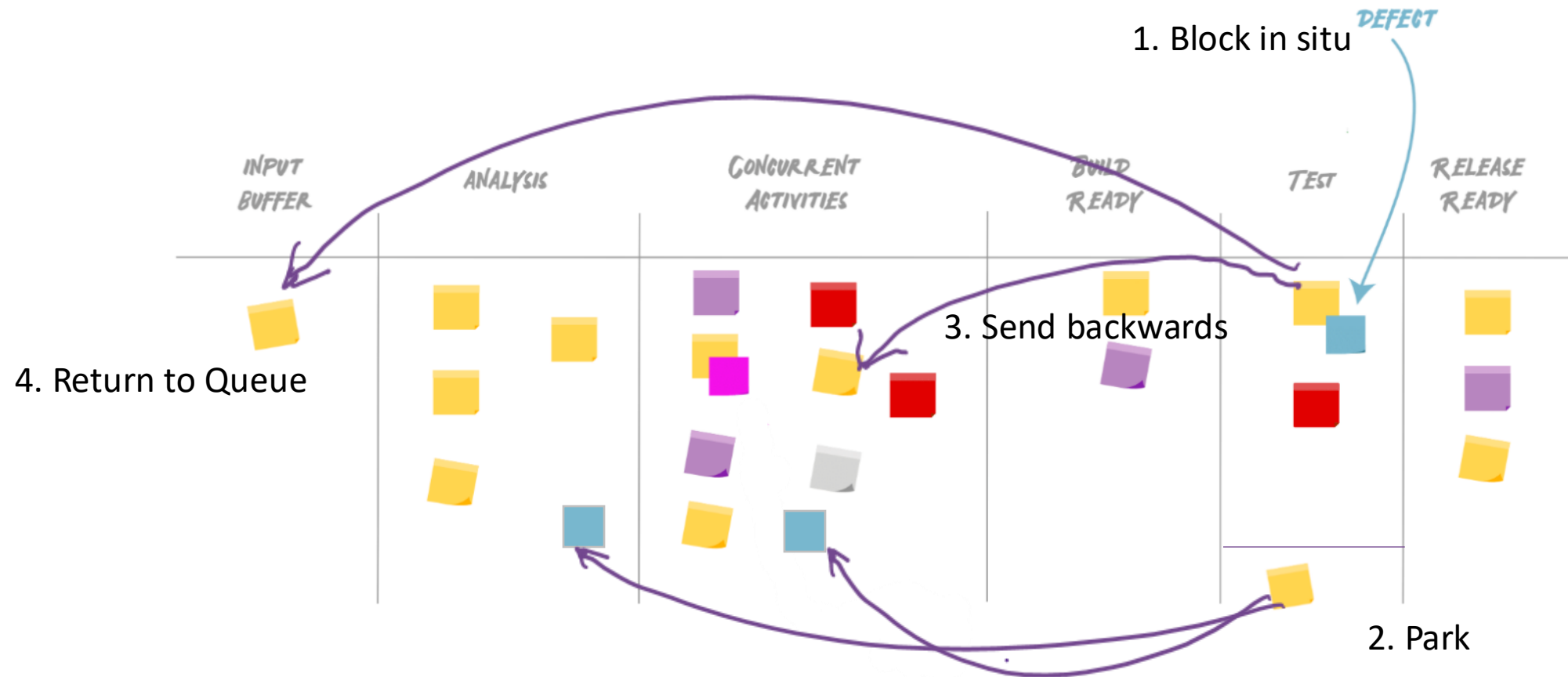


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Reworking Defects



Reading reference: **MF 2.6 Manage defects and other rework types**

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf26-eng>

Policies for Rework

What to do with the “bug” tickets?

Option One: Block the ticket where it is, still counts against WIP limit, create bug tickets as children of the blocked ticket, fix the bugs as a priority e.g. effectively expedite class of service – pre-empts, blocks other work until complete.

Option Two: Park the ticket, which doesn't count against the WIP limit, create children tickets for bugs, and send them backward to be reworked, which will break the WIP limit upstream.

Option Three: Send the original ticket back to the activity needed to fix the defect, which will break the WIP limit upstream.

Option Four: Send the original ticket back to the input to queue for rework – does not break the WIP limit.

High maturity
Most discipline



Low maturity
Least discipline

Rework

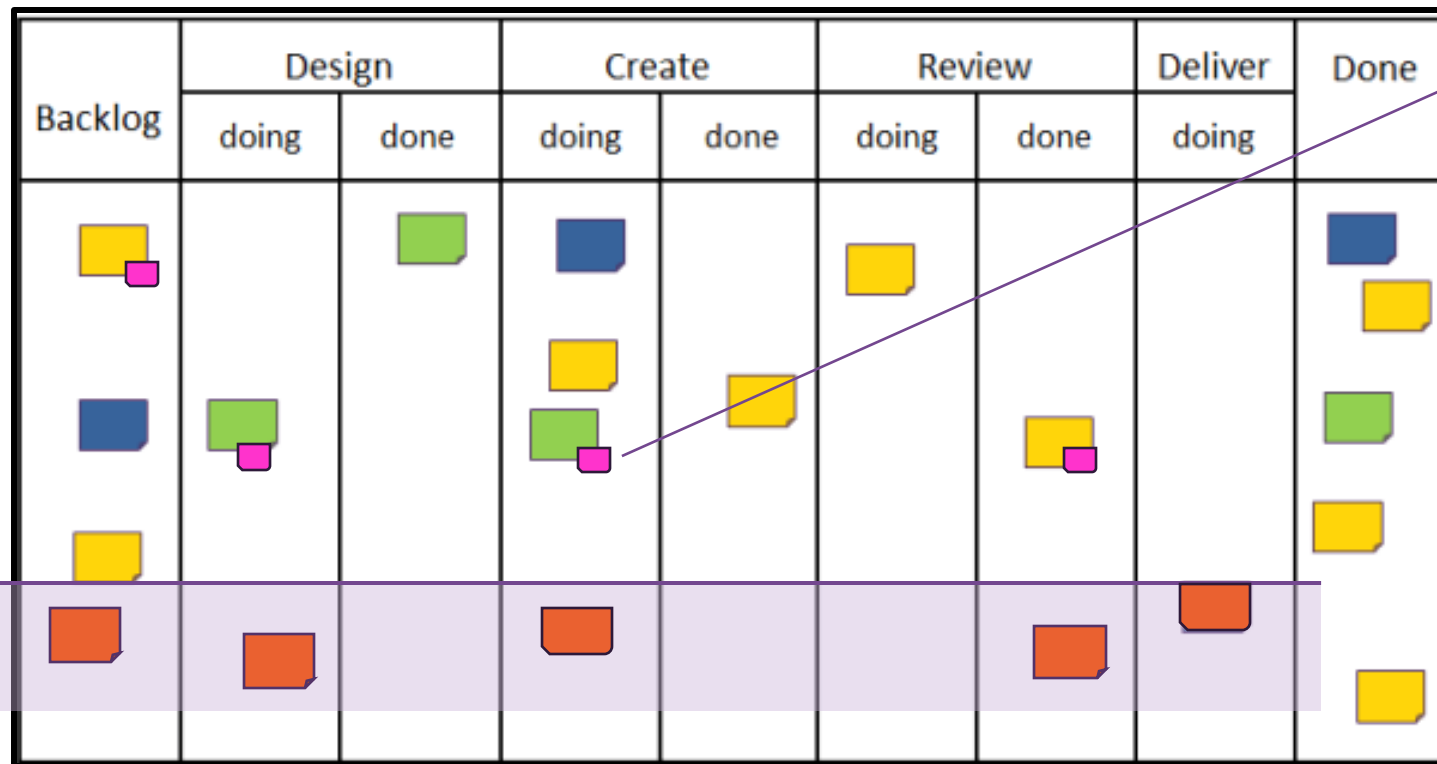
Failure Demand

- A consequence of failed initial quality & poor Customer experience/satisfaction
- Use ticket color or a ticket decorator to indicate which work items are failure demand. It may be appropriate to have an explicit work item type for failure demand and take actions to reduce this type of work.
- Analyze failure demand and graph the quantitative results summary.
- Discuss failure demand at Flow Review to drive corrective improvement actions intended to reduce it.

Reading reference: ***MF 3.11 Analyze and report on failure demand***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf311-eng>

Expediting



Visualize with space and colour.

Mark blocked work to show impact of expedite

Expedite Swimlane

Expedite Policies

When a worker is disrupted to work on an expedite request, should they mark their existing work as blocked or not? Is it merely "delayed"? What are the pros and cons of marking it blocked or not?



Sources of delay

- Delays to work
 - Queues
 - Multitasking (a form of non-instant availability)
 - Defect fixes - already visualized, & covered in sources of variation
 - Blocking issues (such as the arrival of information) – ***already covered***
- Delays in the flow of work
 - Dependencies - ***already covered***
 - Non-instant availability (of skilled workers, or required tools or equipment)
 - Bottlenecks (leading to idleness downstream)

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Breakout 21.1

2 min

Where are your delays?

Write down as many causes of delays as you can think of.



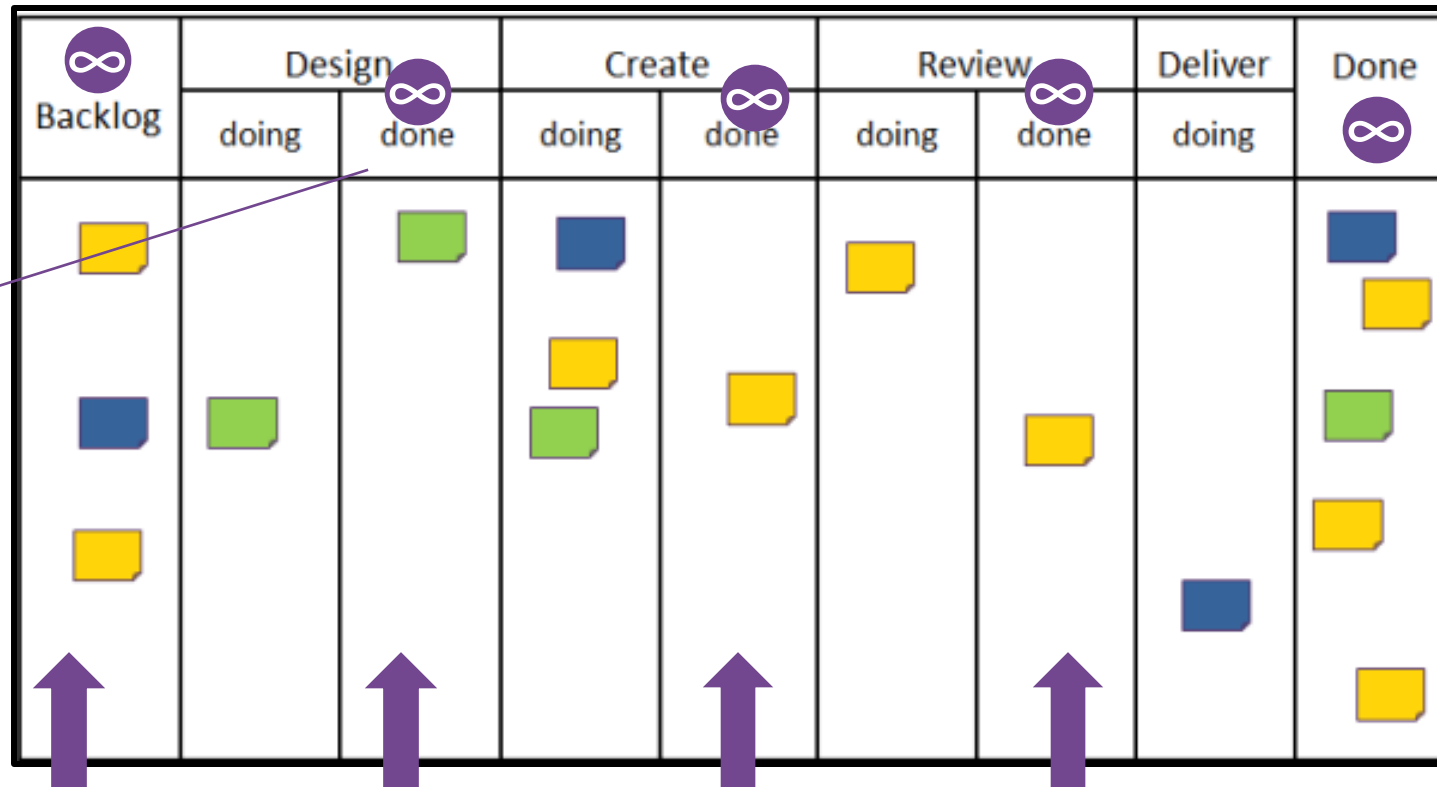
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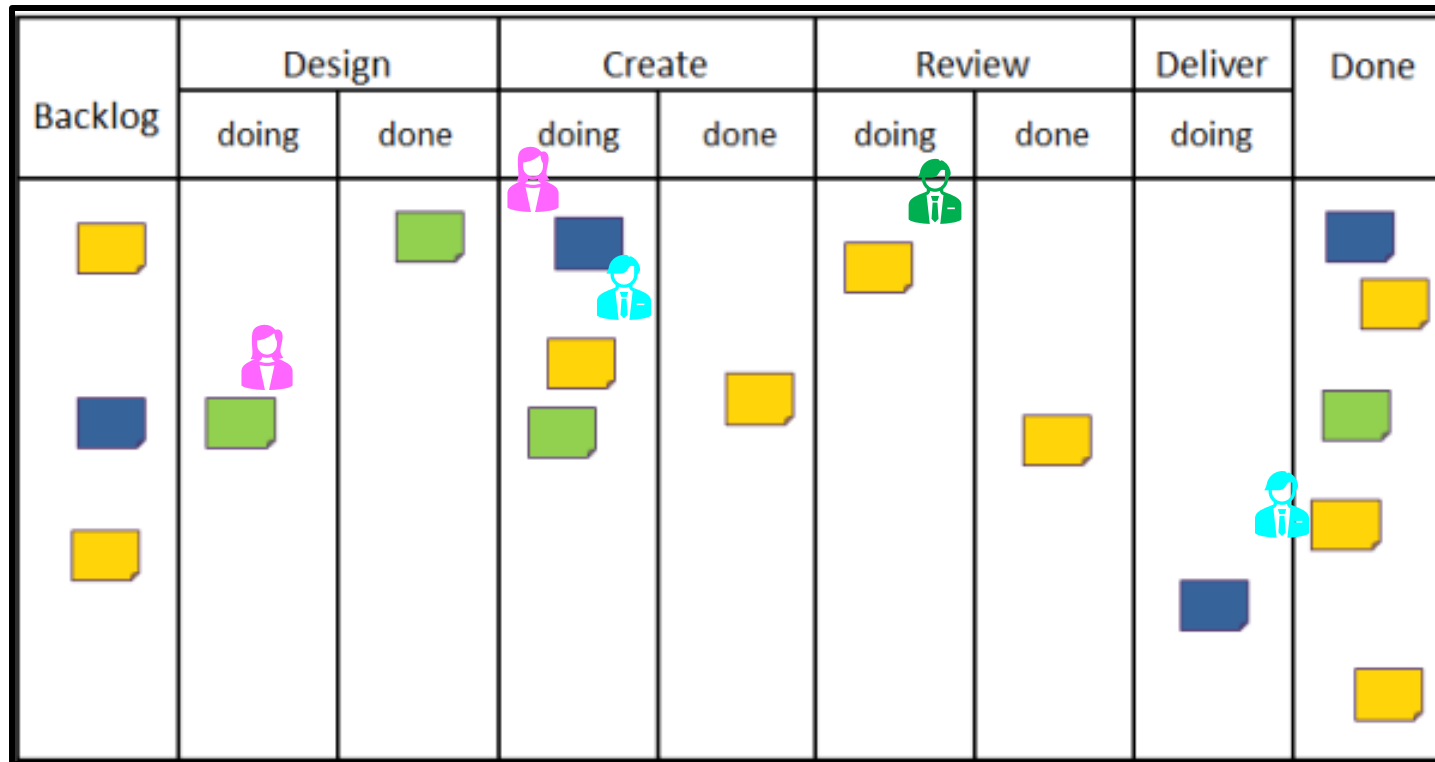


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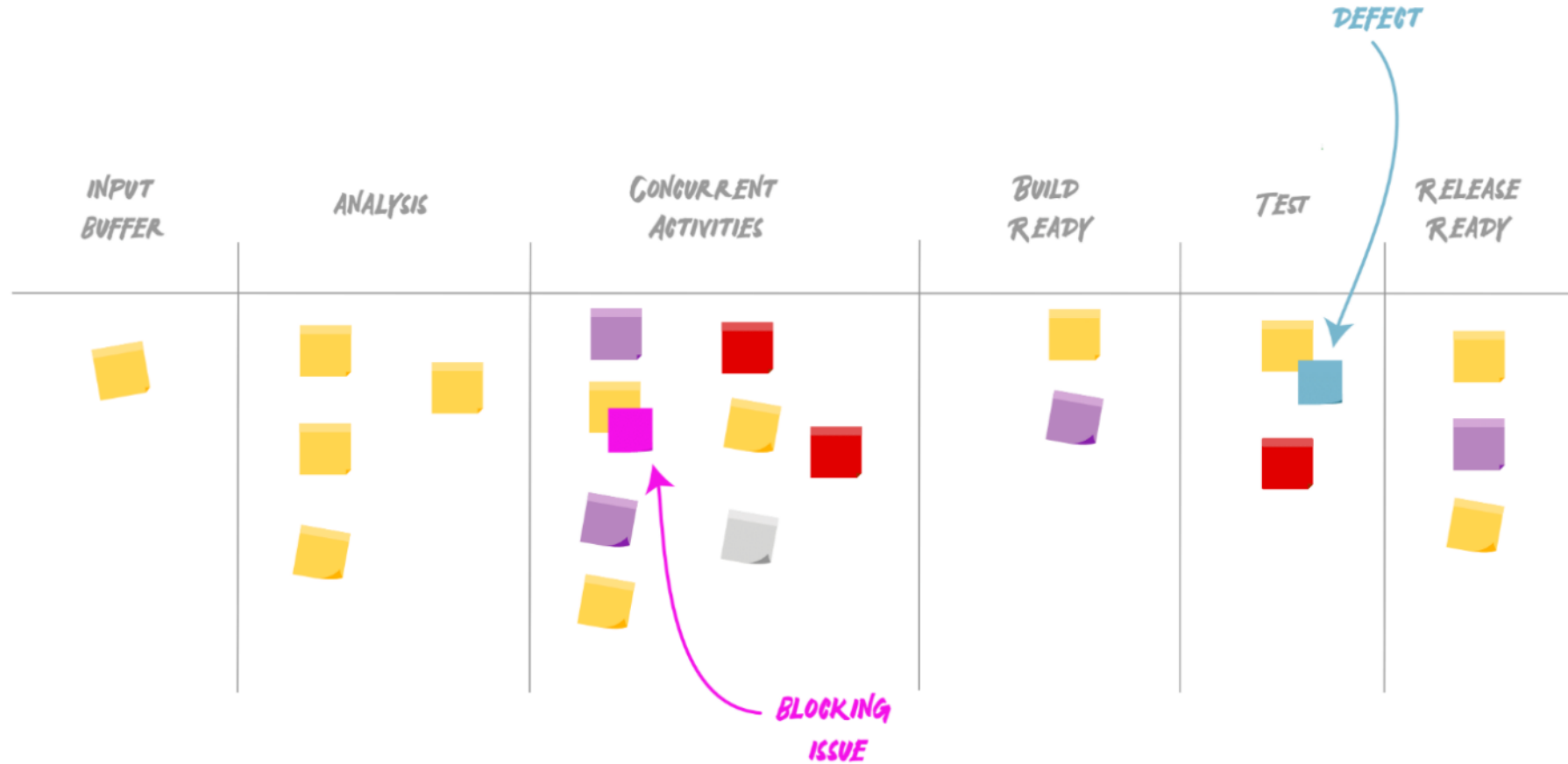
Waiting - In Queue



Distraction - Multitasking



Blocking Issues and Defects



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Breakout 21.2

2 min

Reducing delays

Which one core concept in the Kanban Method would help to reduce delays?



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What happens if we add another spinning plate?



Too much WIP increases defects & rework non-linearly

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Visualizing and tracking flow
can reveal bottlenecks.

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What is a “bottleneck”?

A resource / a stage in the process that can't keep up with the demand placed on it.

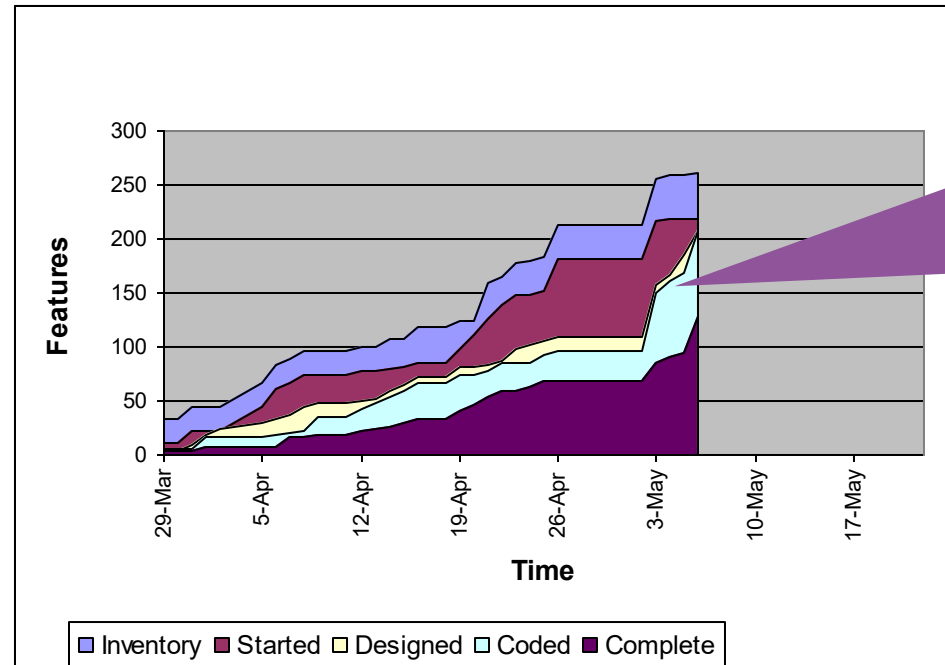


Bottlenecks are common in traffic



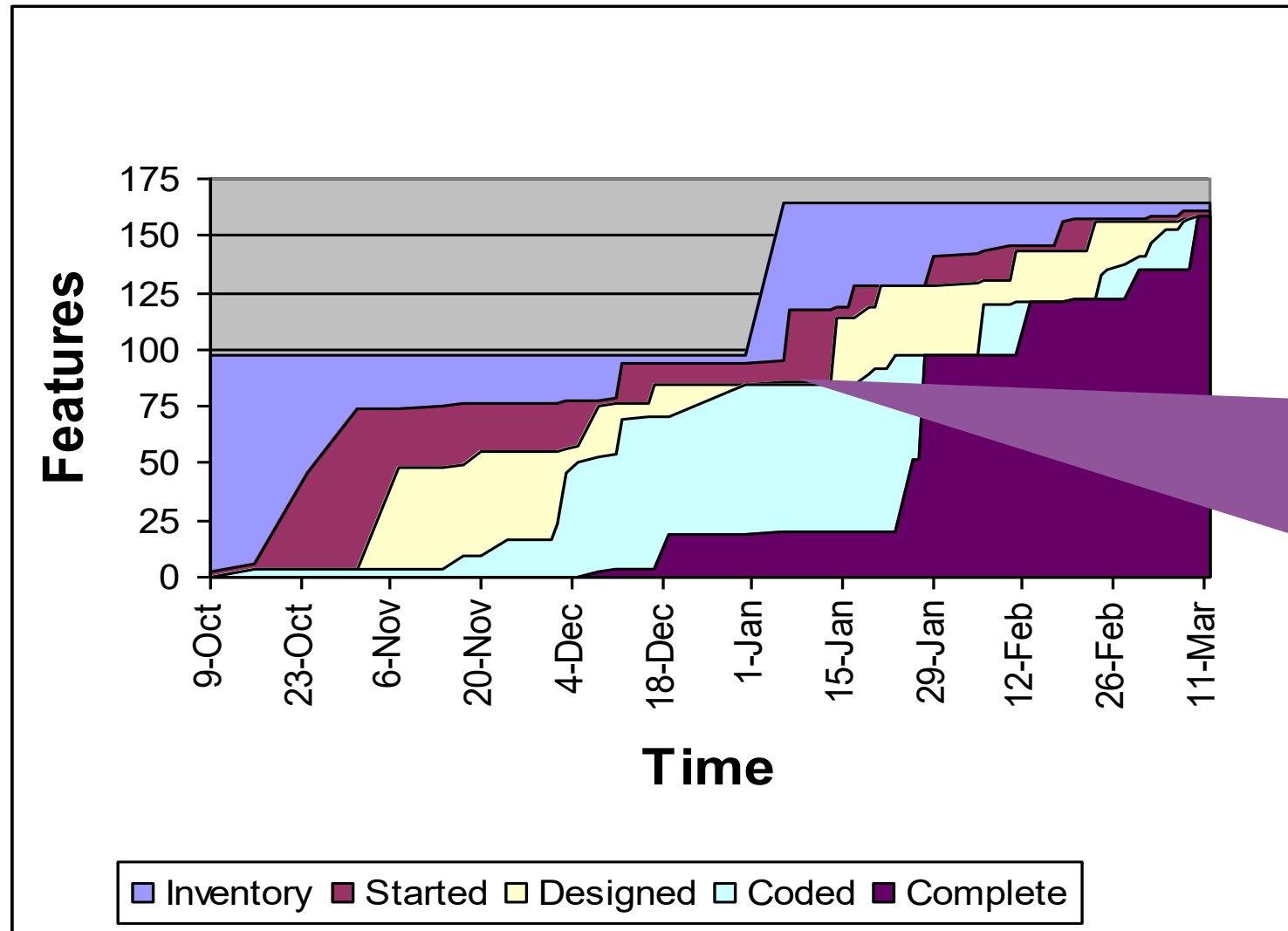
http://www.dan-sharkey.com/N498TH/archives/2010/06/flying_the_new_york_city_sfra.html

Visualizing Bottlenecks – Growing queue



Growing queue might suggest a bottleneck in the next stage of the workflow

Visualizing Bottlenecks – Starvation



Starvation of the “designed” workflow step suggests upstream may be a bottleneck

Improving Bottleneck Problems

- Bottlenecks must never work on items that will later be abandoned or aborted
 - Tighten upstream policy on the definition of ready
- Bottlenecks should never receive defective items that will require rework
 - Tighten up “pull” policies for quality (improve testing upstream)
- Increase the capacity of the bottleneck
 - More people, more resources, more equipment
- Reduce cycle time in the bottleneck to increase throughput
- Automate the bottleneck activity (a form of reducing cycle time)

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Breakout 22.1

2 min

Bottlenecks in day-to-day life

As a group, take 2 minutes to collect as many “bottleneck situations” you know from your day-to-day life as you can. Put them as stickies on the virtual whiteboard



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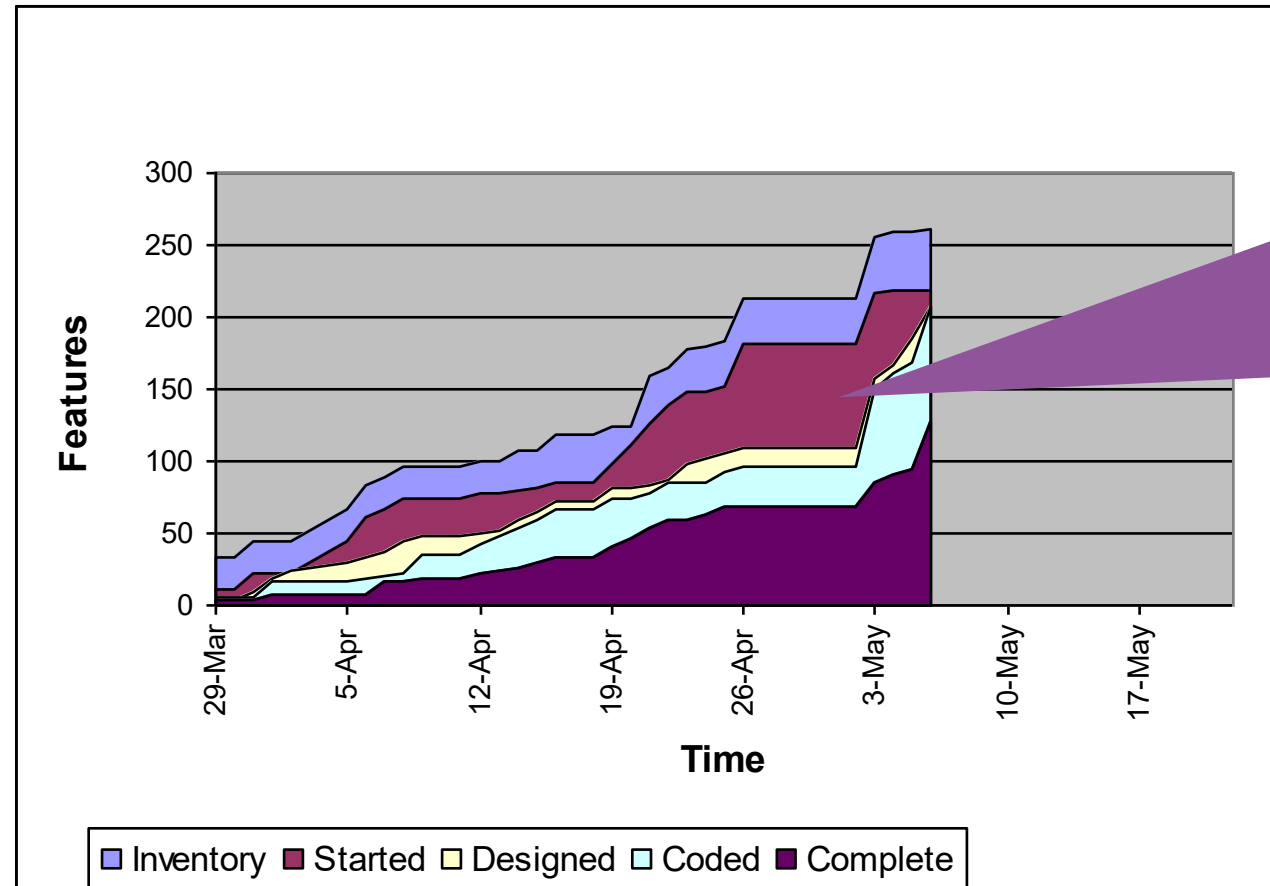
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Non-Instant Availability

- Have sufficient capacity to cope with average demand, hence, are not bottlenecks, but are not always available when needed
- Shared services, multi-tasking, or scheduled time-sliced service availability are all sources of non-instant availability
- Non-instant availability of the people, skills, information, tools, equipment, or other resources, causes work to be delayed
- Non-instant availability is a source of delay and a source of variability in lead time
- Non-instant availability results in queues forming while work waits to be processed
- Non-instant availability looks like a bottleneck but the solutions are different

Visualizing Non-Instant Availability – Growing Queue



Growing queue
might suggest
non-instant
availability in
the next stage

Improving Non-Instant Availability Problems

We cure non-instant availability by **improving availability**

For example:

1 hour per day, becomes 30 minutes twice per day

Automation is an alternative solution

The assumption is that automation creates instant availability

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Breakout 22.2

2 min

Non-instant availability in real life

As a group, take 2 minutes to collect as many “non-instant availability situations” you know from your day-to-day life as you can. Put them as stickies on the virtual whiteboard



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Module 14 – Learning Outcomes

You are now able to:

- Identify sources of variability in work and ways to respond
- Identify unplanned work, defects, rework and policies that can be put in place to help
- Identify failure demand, how to visualize this and how to improve
- Manage expedited work, how to visualize this on the board and you understand why it is important to have expedite policies in place
- Identify sources of delay and ways to reduce them
- Define and identify bottlenecks, how to visualize them and how to improve bottleneck issues
- Define and identify non instant availability and the issues associated. You are now also able to visualize this and are able to improve it

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Module 15

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Policies

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Module 15 – Aims and Objectives

The aims and objectives of this module are:

- To look at different examples of policies in Kanban systems and how these affect flow
- To define class of service
- Learn to differentiate by using different classes of service
- Identify typical policies for managing flow

Examples of Policies in Kanban Systems

WIP Limits (at different levels)

Capacity allocation^(*)

Pull criteria / Exit criteria
(for when a work item can exit a state)

Definition of Ready for implementation (at the Commitment Point)

Replenishment policies:
How does new work get selected

Standards/definitions of work item types, lanes on the board, ticket colors, ticket layout, etc.

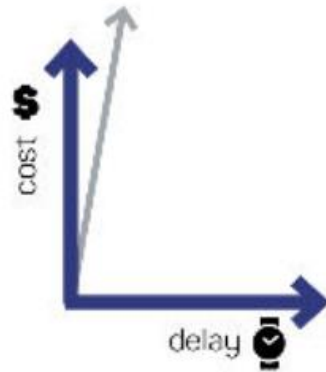
Classes of service for defining how categories of items are treated in a system

(*) This is explained further in the KSI/Delivery Manager class.

Do you treat all cards the same way?

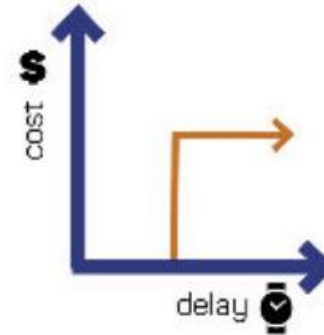
- Different items might have a different impact if not finished at a certain time. E.g., urgent items or items with a fixed deadline.
- Indicate the different types with colors, shapes, stickers, etc.
- Allow for differentiated treatment of the cards: use a set of policies that apply to one or more types of work. This will affect the selection, the time of starting and the order of delivery.

Classes of Services mapped to Delay Cost curves



EXPEDITE

Critical and immediate cost of delay; it can exceed other kanban limit (bumps other work).



FIXED DATE

Cost of delay goes up significantly after deadline.



STANDARD

Increasing urgency, cost of delay is shallow but accelerates before levelling out.



INTANGIBLE

Cost of delay may be significant but is not incurred until significantly later (if at all).

Learn more about classes of service and how to use them in the Delivery Manager class



A **Class of Service** is actually just a set of policies that define how something should be treated, such as, its queuing discipline

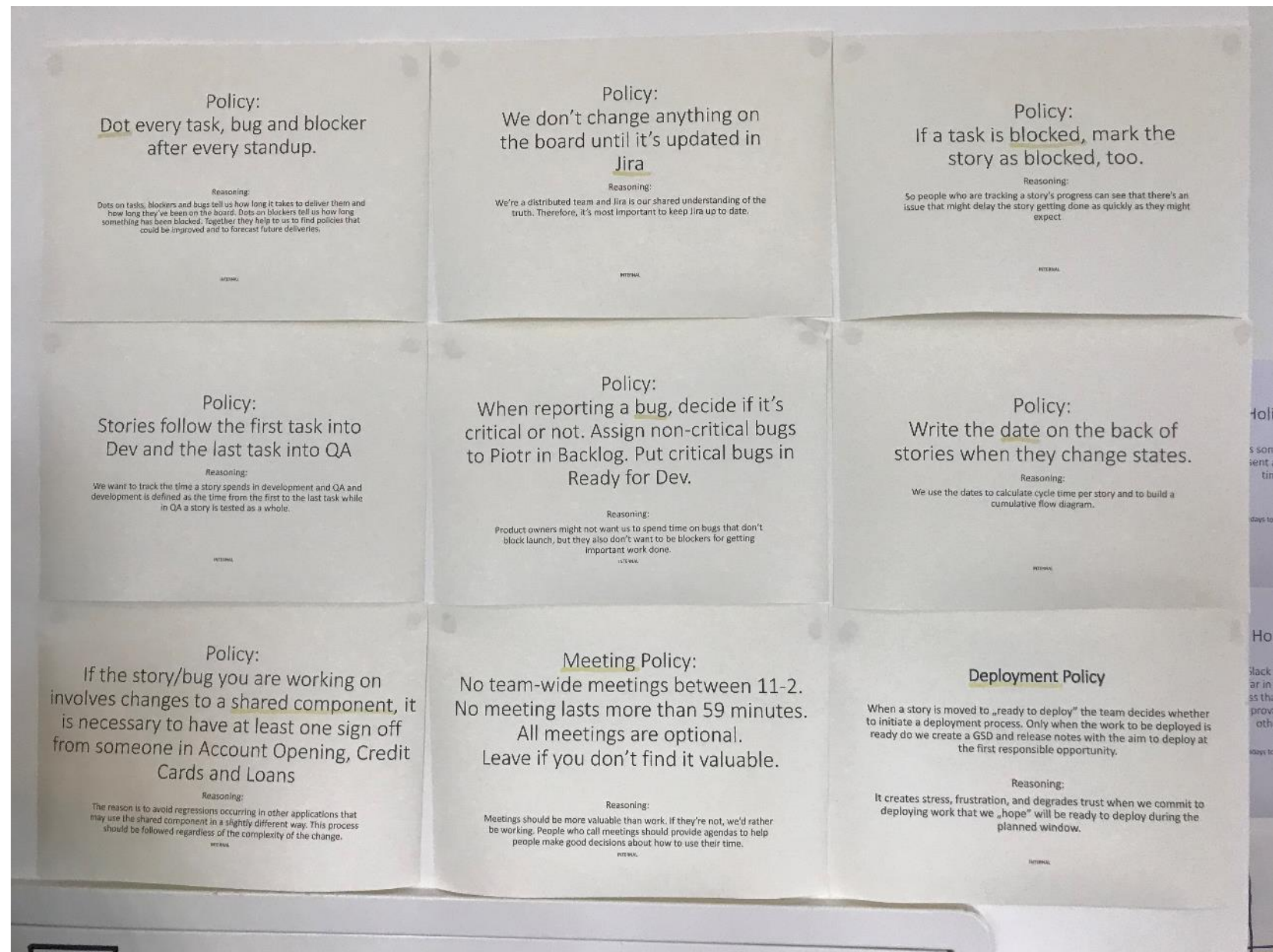
Reading reference: ***MF 3.10 Use classes of service to affect selection***

<https://all.kanban.plus/en/content/kanbanplus/kmm/default/kmm-posters/poster/practice-map-poster/mf310-eng>

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Real-world policies

Example: Policy wall from HSBC



Example: Team Agreement of an HR department in a bank

Agreement to keep the board current and use it to coordinate the day-to-day work, when to replenish

Tasks that take less than 2hrs do not go on the board

Prime lane for urgent tasks for the board of directors

Standards for the tickets and fixed dates

- Team-Vereinbarung
- ▶ Wir halten das Board stets aktuell.
 - ▶ Pro Woche ein gemeinsames Review des Boards inkl. Nachschub: ^{JF Mo} Nachschub Fr
 - ▶ Wir nutzen das Board zur täglichen Koordinierung unserer Arbeit.
 - ▶ Kleine Aufgaben bis ca. max 2h (lbd) ("Grundrauschen") nicht ans Board!
 - ▶ Größeres Ungeplantes: Ad hoc Zeile
 - ▶ "VS-Prime": Dringend und vom Vorstand hoch priorisiert. Haben Vorfahrt, dürfen WIP Limits brechen
 - ▶ Fester Termin: rot auf Ticket
 - ▶ Zieltermin: schwarz auf Ticket
 - ▶ Muss-Aufgaben mit kurzer Deadline: ready to start. ^{Pr. Vorstand} Alles andere: Themen-Speicher

- ▶ Ein Thema, das einen festen Termin hat der noch weiter in der Zukunft liegt: Erst in der Woche in "ready to start"
- ▶ "Rückkehrer" aus Waiting haben Vorfahrt vor Themenspeicher, gehen in ready to start
- ▶ Sobald ein Ticket "in progress" geht, darf es max. 8h Aufwand haben. (Größere Aufgaben unterbrechen)
- ▶ Blockiert / Waiting: pinker Sticker drauf mit Grund, Start und Ende

Keeping fixed date tickets off the board until the due date approaches

How to re-integrate "waiting" tickets into the flow

How to mark blocked tickets

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Types of Policies for Managing Flow

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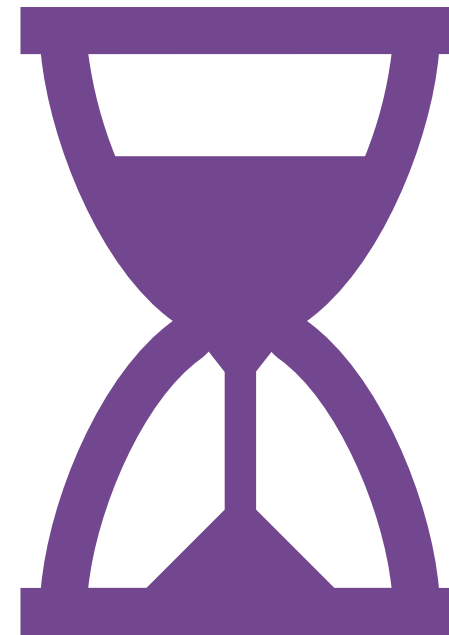
Flow Management Policies

- Define basic visualization policies.
- Create policies for managing blocking issues.
- Explicitly define request acceptance criteria (“definition of ready”).
- Explicitly define pull criteria.
- Establish re-order point (min limits) and max limits.
- Establish a replenishment commitment point.
- Define F4P-related metrics.



Aging WIP Policies

- Define an acceptable amount of time for processing a work item based on Customer's or service-level expectations.
- Define how and to whom to escalate work items that exceed this time limit.
- Periodically analyze the causes of WIP aging and revise policies as needed to prevent those causes from reoccurring.



Managing Defects and Other Rework Policies

- Define how rework is visualized and handled
- Decide whether a rework ticket should be attached to the work item that spawned it, and hence, remain in the same work state (e.g., Test) where the problem was discovered. At Maturity Level 2, it is typical that the rework ticket is sent backward.
- Define what data about the defect or rework is collected
- Define what analysis of the defects and rework must be done, who does it, and with what frequency
- Periodically revise the established policies



Discard & Abandonment Policies

- Create discard policies for upstream ideas.
- Establish expected level of discarded ideas and monitor them.
- Agree corrective actions, when discard level exceeds expected levels.
- Create time guillotine policy for aging items.
- Define clear abandonment criteria.
- **Learn more about this in the Demand Manager class**



Sequencing Policies

- Define policies behind work items sequencing.
- Define work item types based on triage and design flow for each of them.
- Link sequencing policy to risk assessment policy.
- **Learn more about this in the Product Professional class**



Risk Policies

- Create risk assessment policies.
- Define risk profiles and dimensions.
- Inform sequencing policy in case of any updates.
- **Learn more about this in the Product Professional class**



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Breakout 23

10 min

Improving Flow With Policy

Using the 5 example CFDs, from Module 11 Flow Review, for each one in turn, discuss how changes in policy could make the situation better (improve flow) or worse. Think about events **during the simulation**. How did policy changes affect flow?



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Module 15 – Learning Outcomes

You are now able to:

- Understand how policy can affect flow
- Confidently define class of service and how this affects the selection of work
- Understand the implications of and confidently implement policies for managing flow, aging WIP, defects & re-work, discard and abandonment, sequencing and risk

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100%

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Complete

End of Day 4

Students should understand ...
Management practices for improving the system of flow

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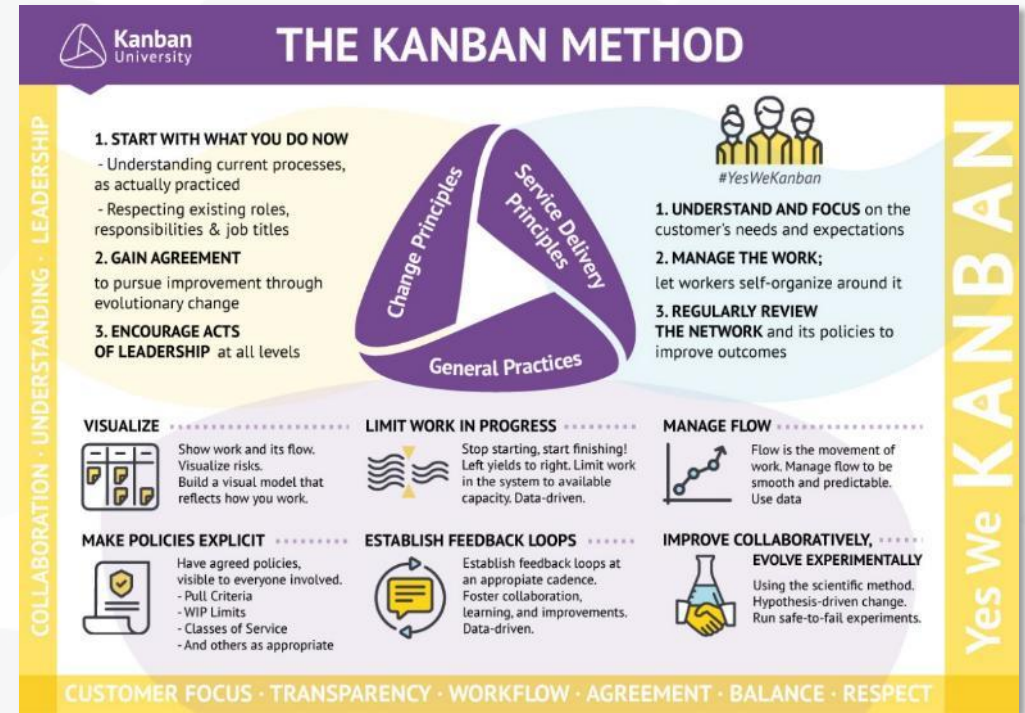
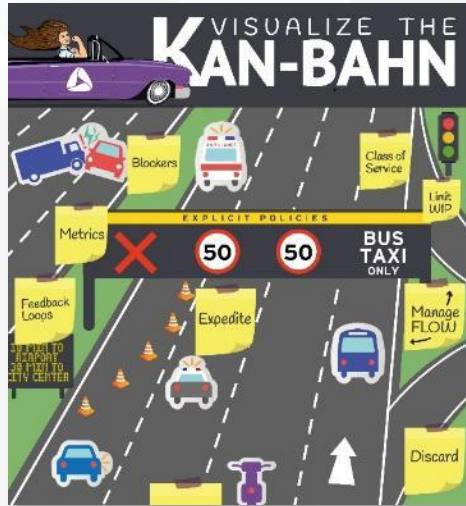
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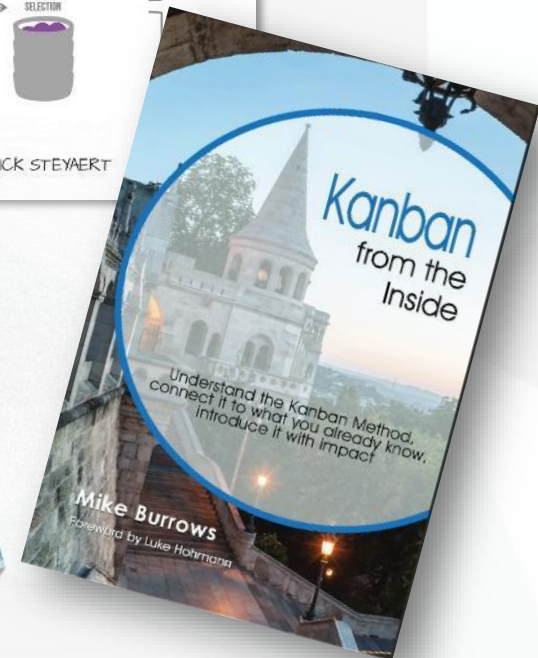
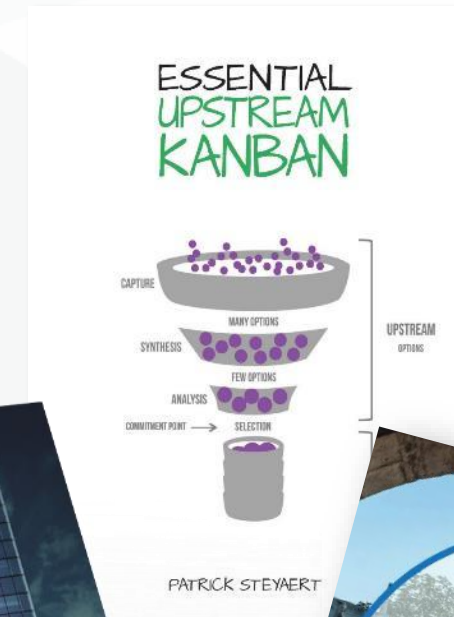
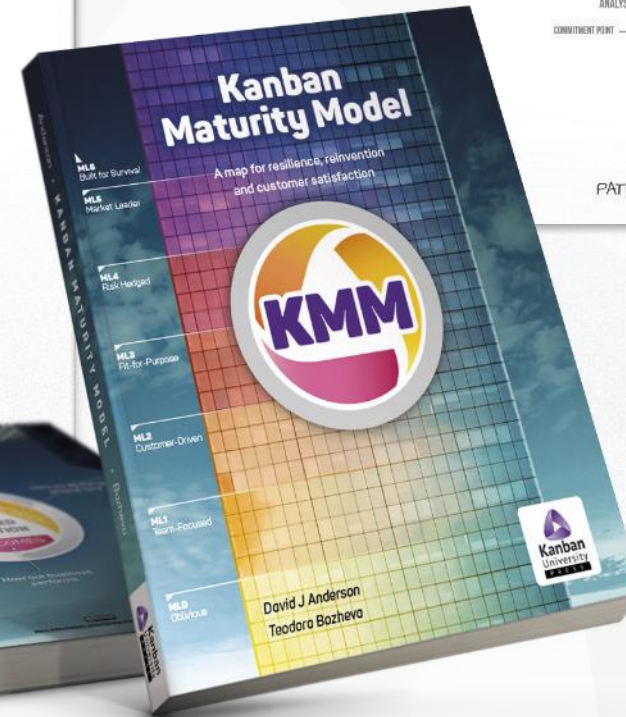
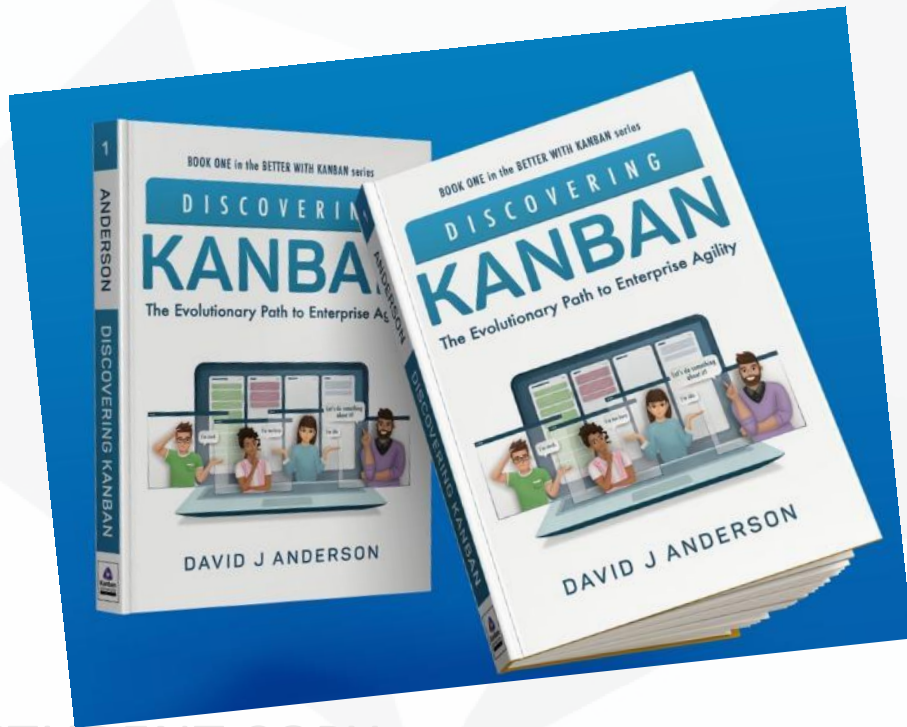


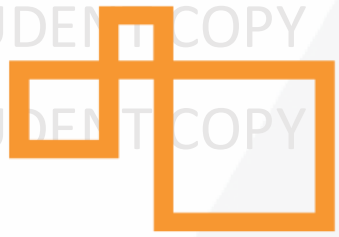
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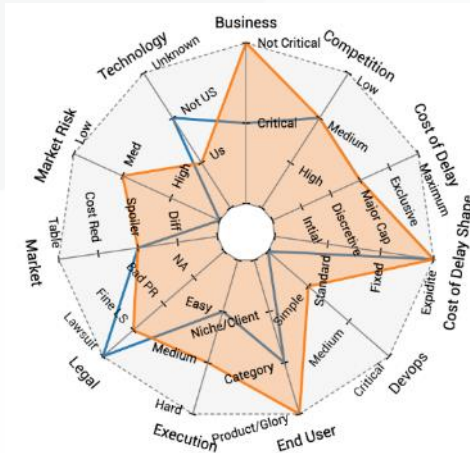
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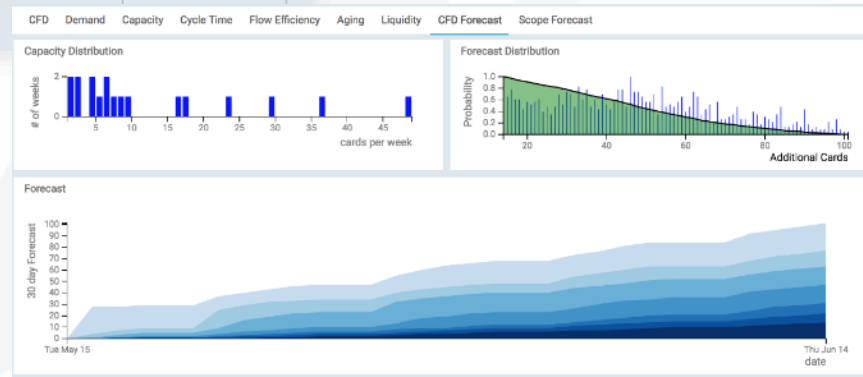
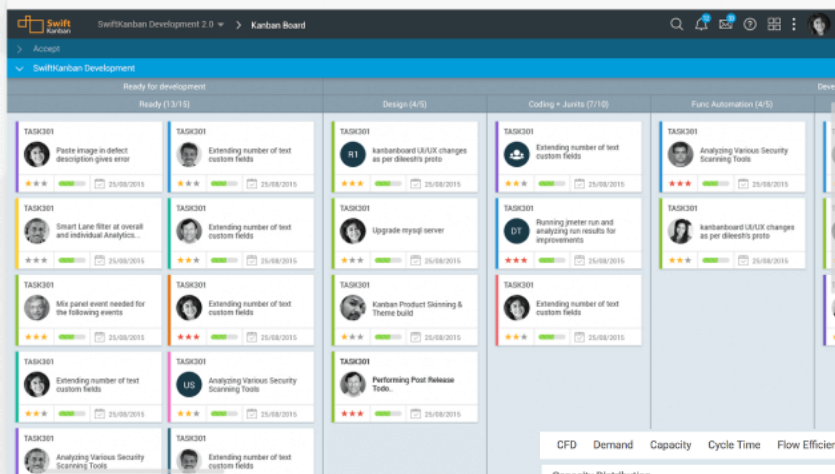


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Kanban
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Visualize your workflow and increase your team's productivity with SwiftKanban visual management and collaboration tool.

Nimble's SwiftKanban helps remote/distributed teams across business functions with their collaboration and work management needs. It enables you to do Kanban the right way - YOUR way - with robust analytics and support for Team, Portfolio, and Upstream Kanban, Scrum/Scrumban, and Enterprise Services Planning



Nave (getnave.com)

nave

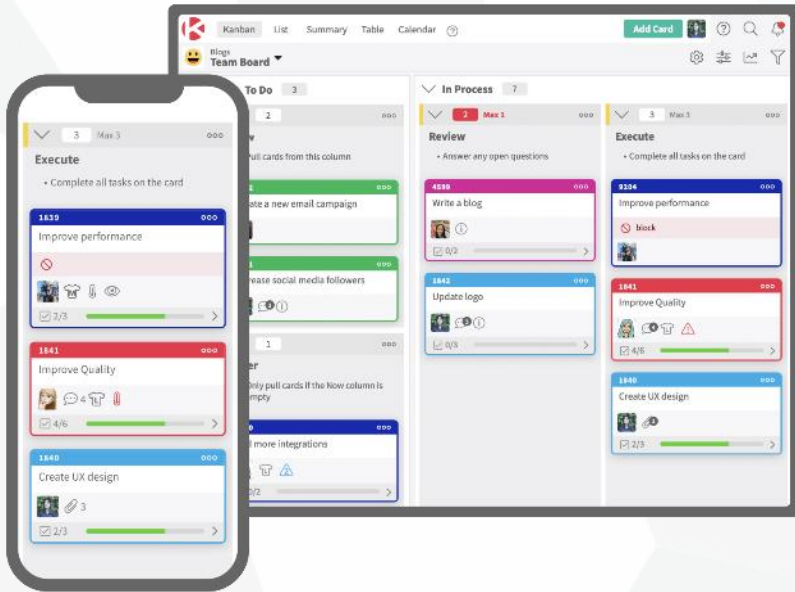
Kanban Analytics on Your Preferred Tool



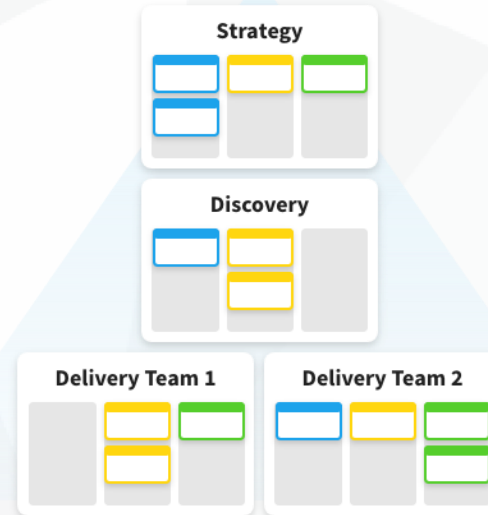
- Evaluate your workflow performance
- Analyze lead times and cycle times
- Monitor how long work stays in progress
- Identify bottlenecks as they occur
- Calculate your work delivery rate
- Make probability-based forecasts



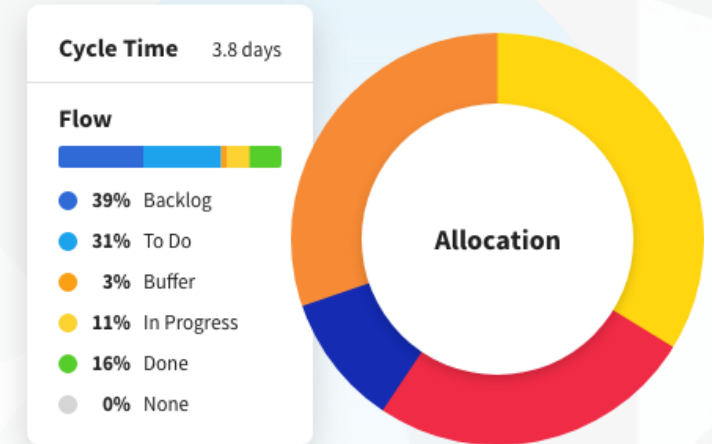
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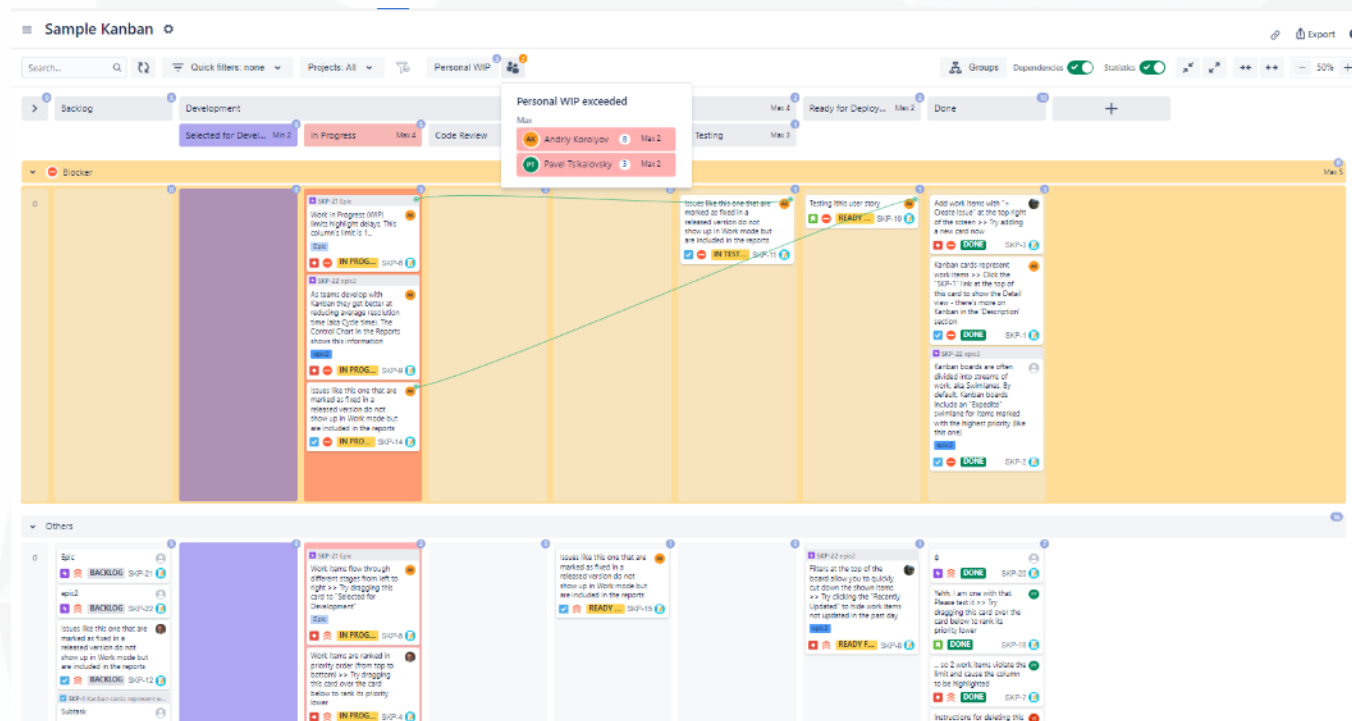
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- **Kanban** boards with column grouping and advanced WIP configuration (personal, column, column group, swimlane, intersection of column and swimlane).
- Great variety of **visualization techniques** by building a canvas with any Jira issue field to column or swimlane.



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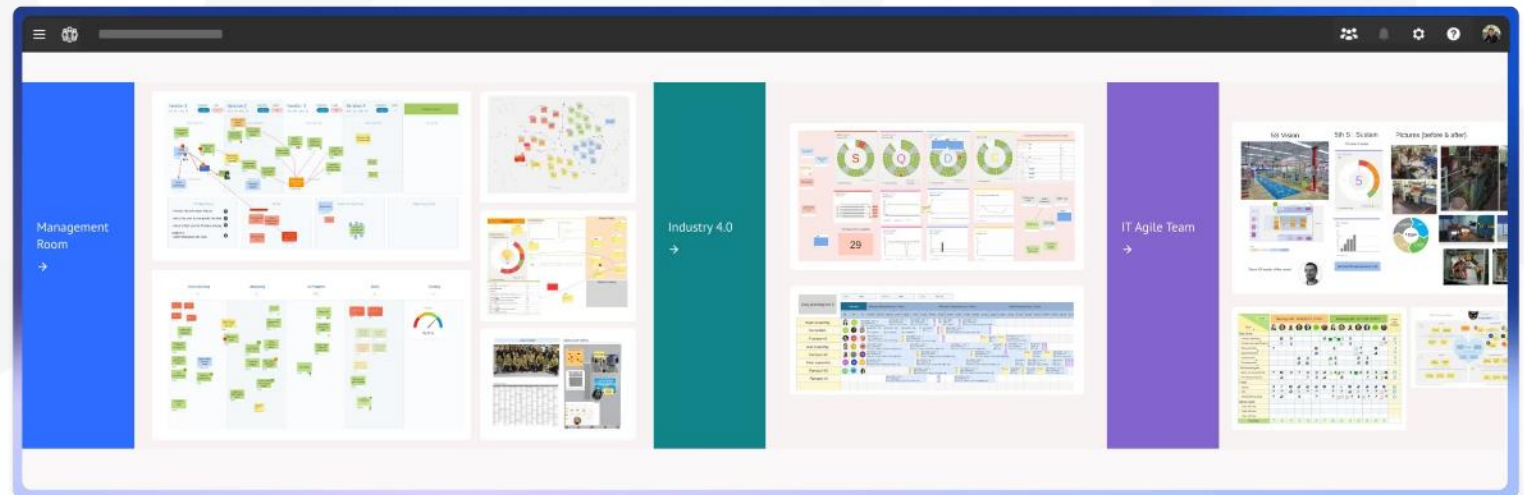


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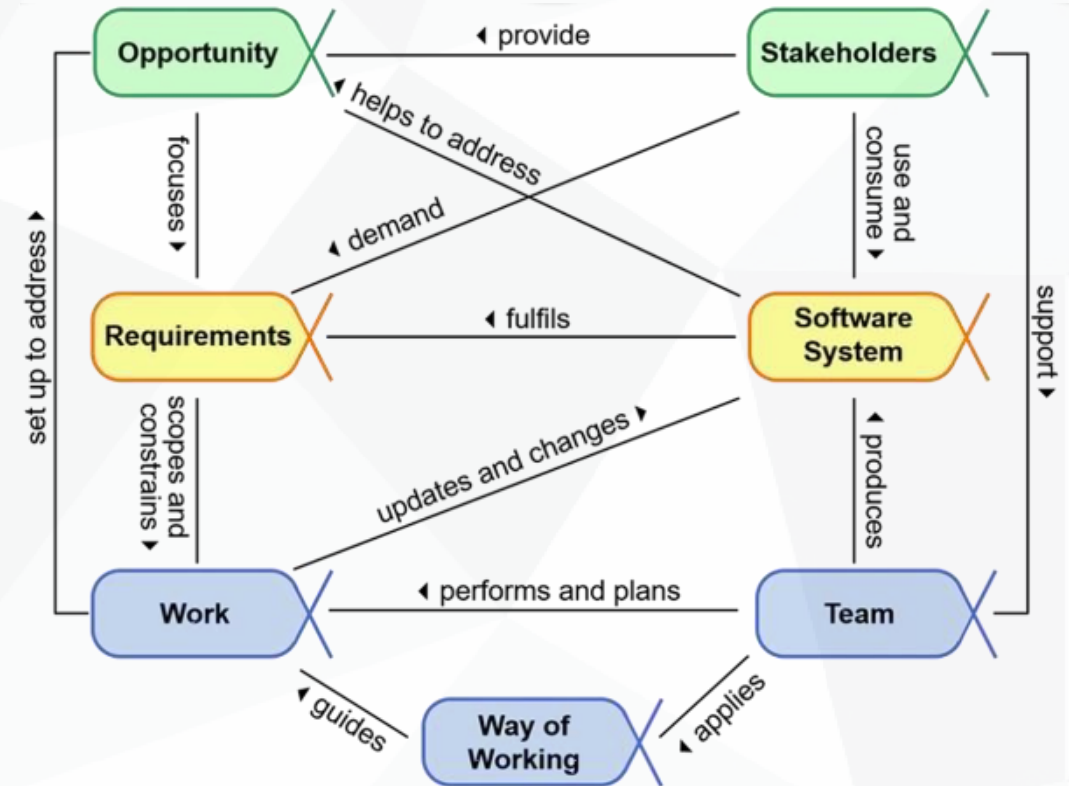


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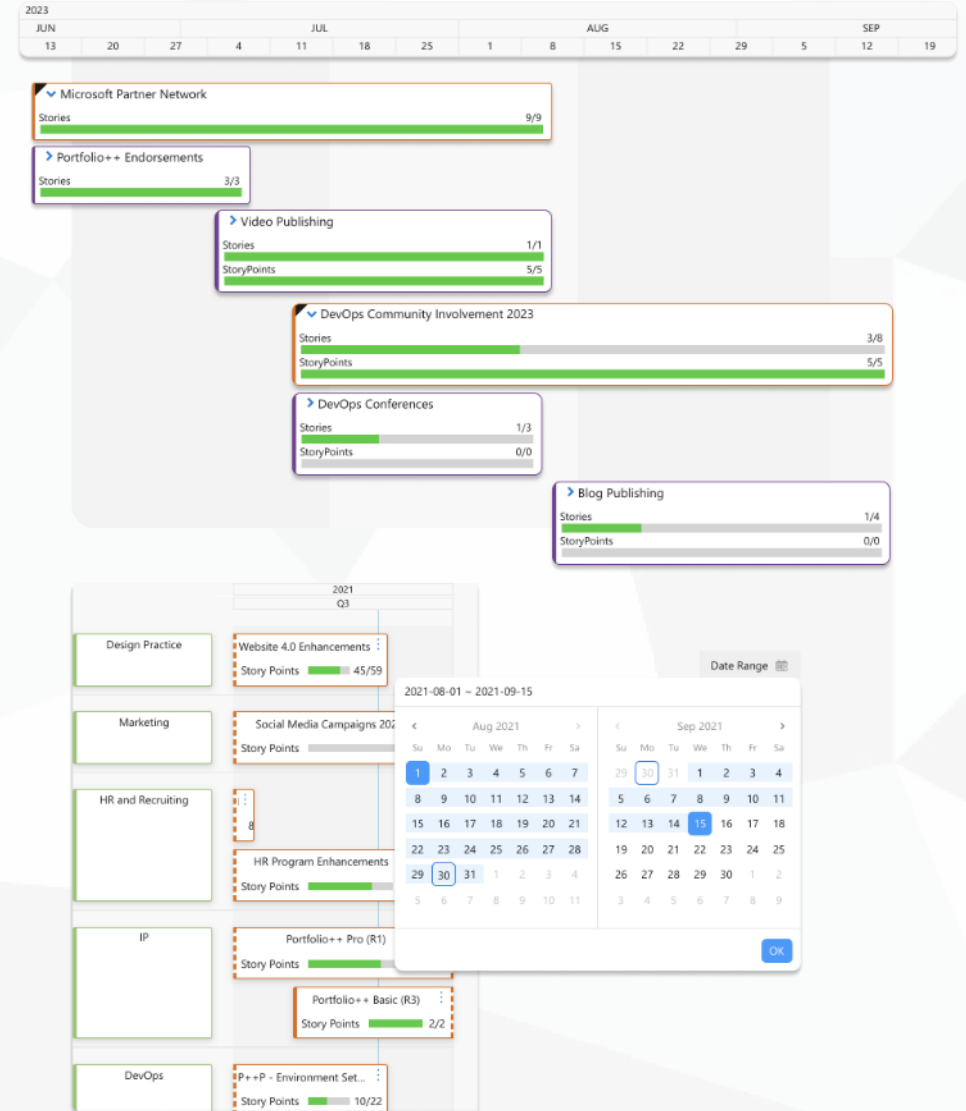
It has distilled the important elements of software engineering into a universal common ground. That means that any software endeavor can be described in Essence terms, no matter how it is being developed. It also means that any development method or practice can itself be described in Essence terms, using the Essence Language – a simple, intuitive, visual language.

There are a growing number of practices that have been described using the Essence Language and games that can help teams learn and apply them.





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