

Kanban Systems Improvement (KSI)

Part II of the Kanban Management Professional Credential

Version 2.0

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Kanban Systems Improvement

Successful Evolutionary Change for your 21 Century Organization

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Power in Simplicity!



Kanban
CONFERENCES



Kanban
University

Pragmatic, actionable, evidence-based guidance!

Something you can take away and implement next Monday

Introduction

Kanban Self-Assessment

1. Novice	Curious, no real knowledge, “my boss sent me”
2. Informed	Attended a Kanban conference, watched Kanban videos, or read material about Kanban
3. Practicing	Implemented a Kanban board with my team
4. Practitioner	“Kanbanized” a customer-oriented workflow involving multiple organizational units, with multiple activities, work item types and classes of service
5. Master	Applied #4 to multiple interconnected services in the enterprise, with quantitative feedback loops



What is your purpose
for being in this class?

What are your
objectives?

Purpose of this Class

- Take a pro-active, rational and well-communicated approach to continuous improvement
- Achieve higher levels of both internal and external customer satisfaction, sustainably
- Outline a path to increase organizational maturity, including how to overcome resistance to change
- Implement simple and effective cross-boundary coordination
- Use proven tools and methods to increase capability, remove delays, reduce variability and manage bottlenecks
- Develop an understanding of evolutionary change and avoid the tendency for pushing disruptive, presumptive solutions
- Effectively scale workflow agility without changing job titles, organization structures, or causing other disruptions
- Increase skills and implementation of the 6 general practices of Kanban

Overview of the Course Modules

1 Kanban as
Evolutionary
Change Method

2 Kanban for the
Enterprise

3 Feedback
Loops

4 Improvement
Techniques

5 Evolutionary
Change and
Closure

Module 1

Kanban as an Evolutionary Change Method

Motivation for the Kanban Method

Motivation for the Kanban Method

“

Why Kanban instead of traditional change methods?

Traditional Change is an A to B Process

Current
Process



TRANSITION



Future
Process

defined / designed in advance



How Humans Process Information

Learning by Experience

FAST!
But slow to learn.

System 1
Sensory Perception
Pattern Matching



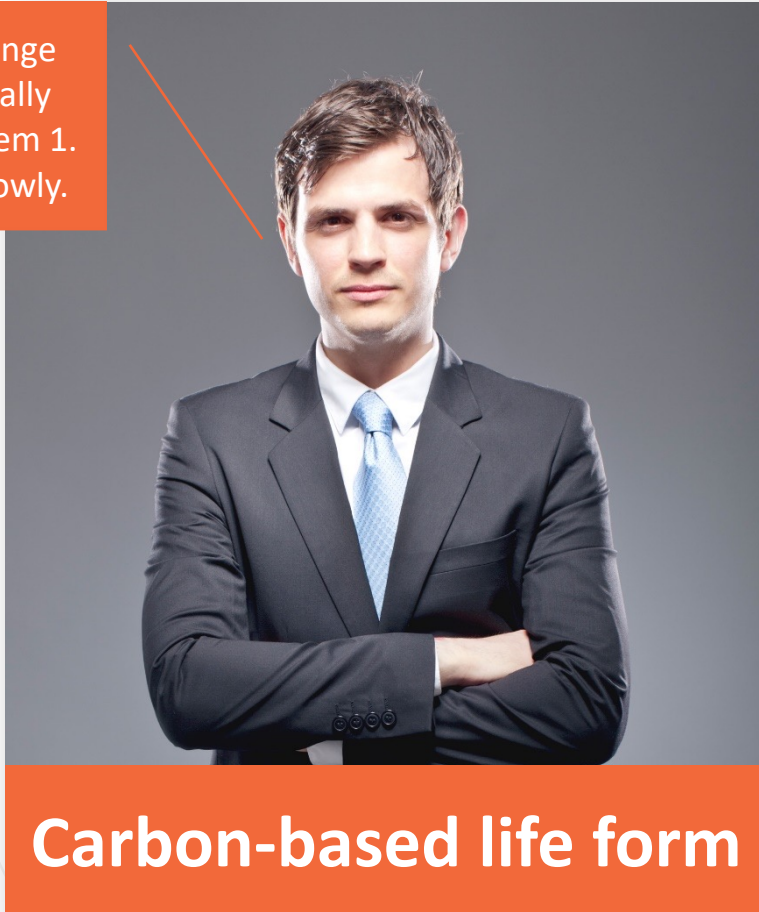
Learning by Theory

SLOW!
But fast to learn.

System 2
Logical Inference
Engine

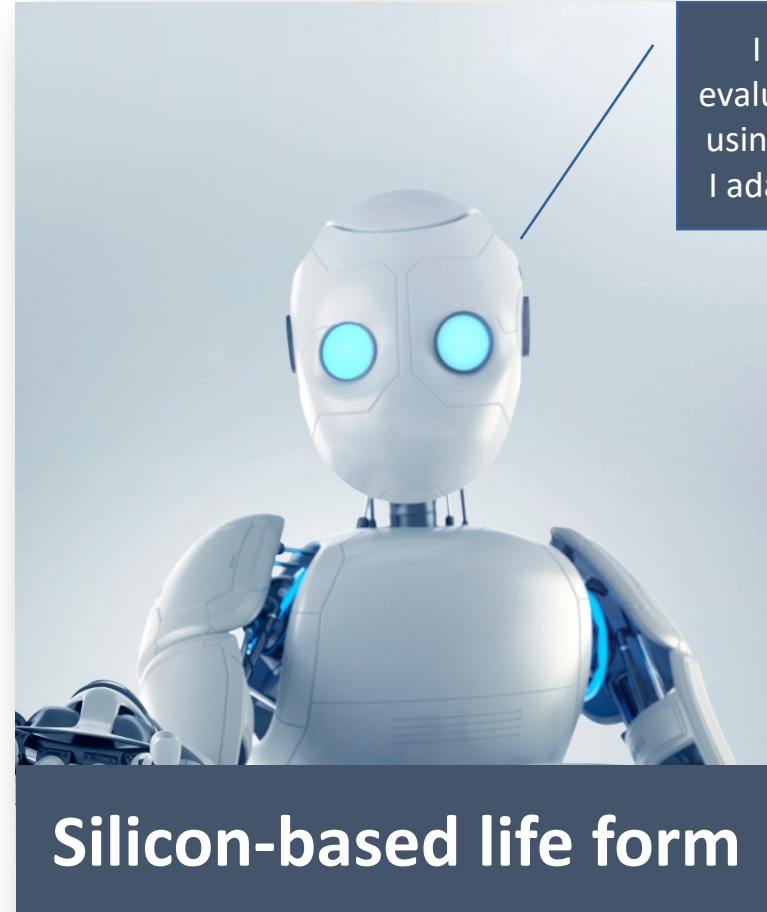
How We Process Change

I feel change
emotionally
using System 1.
I adapt slowly.



Carbon-based life form

I logically
evaluate change
using System 2.
I adapt quickly.



Silicon-based life form

Adopting new processes challenges people psychologically and sociologically



- Most people resist change because individually they have more to lose than to gain...
 - New roles attack identity
 - New responsibilities threaten self-esteem and social status
- Keeping current practices is more conservative but avoids shaking up the current social hierarchy



How is the Kanban Method
a different type of change
management?

The Kanban Method ...



- Rejects the traditional approach to change
- Believes it is better to avoid resistance than to push harder against it
 - Don't install new processes
 - Don't reorganize
- Is designed for carbon-based life forms
 - Evolutionary change that is humane

The Kanban Method ...



- Catalyzes improvement through use of Kanban systems and visual boards
- Takes its name from the use of kanban signals but it is just a name
- Anyone who thinks Kanban is just about Kanban (boards and systems) is truly mistaken



Water flows around the rock

“be like water”

The rock represents resistance

Exercise 1

15 min

Overcoming Resistance to WIP limit Introduction

- List reasons people might object to WIP limits. What are they afraid of?
 - Write each fear on a sticky note.
 - Are the objections emotional or logical?
- For each emotional resistance...
 - How might we mitigate the resistance?
 - What stronger emotion might help us overcome it? How might we design a visualization to raise awareness?
- For each logical resistance...
 - What logical argument is needed to overcome it?
 - Which body of knowledge is needed? Is training required?

RESISTANCE	LOGICAL OR EMOTIONAL	MITIGATION	LOGICAL ARGUMENT	BODY OF KNOWLEDGE
ENGINEERS HAVING TO DO A QA ROLE	EMOTIONAL	ALLOWING TRAINING COACHING / EMPATHY NO 1 IN TEAM.	HELPS THE FLOW PREVENTS STALE CODEBASE CONTEXT SWITCHING	YES → QA PROCESSES
PERCEIVED LESS WORK DONE (LESS WORK IN PARADIGM)	EMOTIONAL	EXPLAIN, ANSWER QUESTIONS. USE METRICS.	FOCUS ON FINISHING	LITTLE'S LAW.
THEY MAY HAVE TO PAIR WITH SOMEONE	EMOTIONAL	COACHING - IMPORTANCE OF SHARING KNOWLEDGE.	FOCUS ON FINISHING & SUPPORTING	IMPORTANCE OF A TEAMWORK



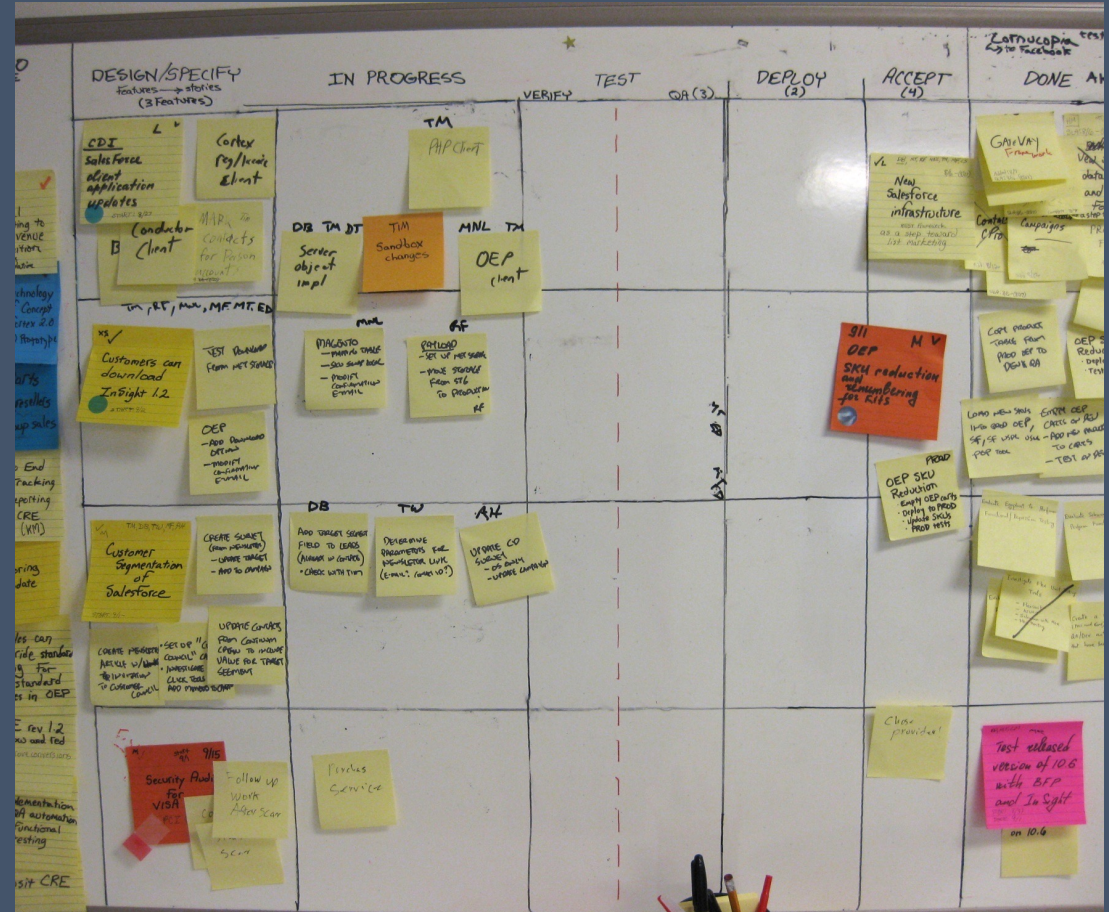
There are different types
of Kanban!

Evolutionary Change

A Case Study

Posit Science Case Study Review

- List work item types
- List classes of service
- Identify commitment points
 - Is it a symmetrical or asymmetrical commitment?
 - Is there a mechanism to reverse commitment?
- Identify any shared services
- Can you see any (potential) bottlenecks or non-instant availability problems?



Kanban Maturity Model

KMM

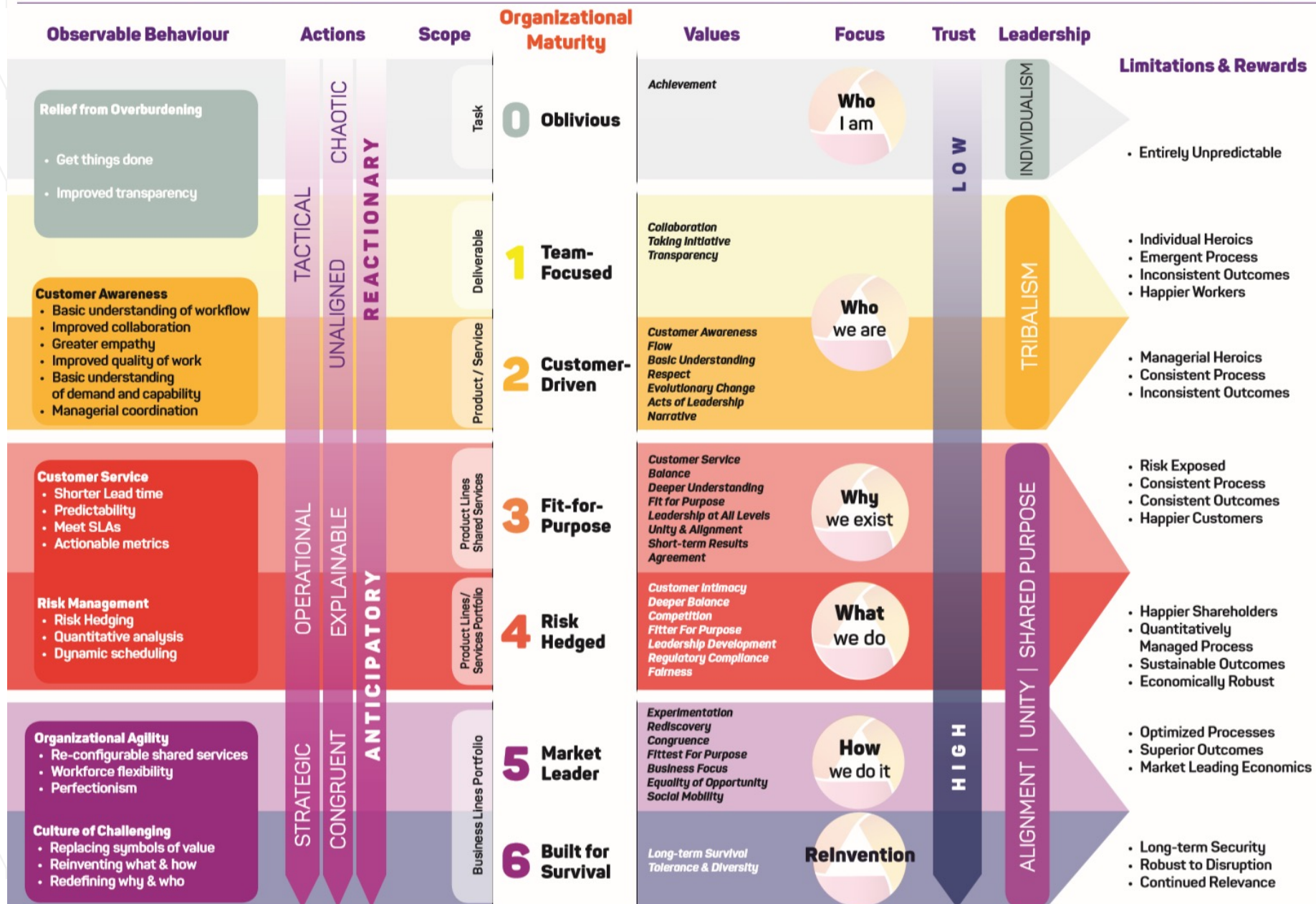
The purpose of the KMM

It is a **model of Organizational Maturity**

...**provides** a **map** for appropriate practice adoption

... **prevents** typical **failure modes** seen in Kanban implementations

... illustrates **appropriate practices** for each level of organizational maturity.



Three Aspects of KMM

Things people value and refer to them as principles or norms (written or unwritten) that justify behaviors and practices

“This is how we live here.”



- Routine activities
- Observable patterns of interactions
- Settled, regular Kanban practices
- Habits

“This is how we do things around here.”

- Demonstrated results
- Findings from external (customer) and internal (organization) perspective

“This is how our business looks like.”

Overview of Maturity Levels 0 to 4

0	Oblivious	Individualism	'My way": Every customer has their pet
1	Team-focused	Individual heroics	"Never the same way twice": individual heroics and unconnected teams
2	Customer-driven	Managerial heroics	"Never the same result twice": delays and last-minute tension despite coordinated team effort
3	Fit-for-Purpose	Customer Service	"Always happy customers": "no more heroes anymore", processes under control
4	Risk-hedged	Fairness	"Everyone is happy": "no more surprises", processes under control

Characteristics of an ML 0 organization

- Manage individual's work
- Individual oblivious to the need of policies
- Main objective: cope with the high workload
- Rudimentary instrumentation
- Business outcome totally depends on individual's skills and knowledge

Characteristics of an ML 1 organization

- Emerging culture of transparency, collaboration and teamwork
- Emerging process, still inconsistent, individuals typically manage tasks, some teams start managing work items
- Focus on starting
- Business outcome depend on individual's skills
- Metrics focused on applying the practices and individuals

Characteristics of an ML 2 organization

- Emerging service-orientation
- Consistent process, basic policies defined, emerging roles: Flow Manager, Service Request Manager
- Basic management of flow, blockers, rework, and dependencies between teams, some metrics are in place
- Customer expectations not yet understood
- Inconsistent outcome

Characteristics of an ML 3 organization

- Consistent process
- Manage upstream options, triage discipline
- Service delivery management, Classes of Services, Customer-oriented actionable metrics
- Basic operations / project portfolio review
- Consistent outcome
- The service is fit-for-purpose
- Kanban may be used to manage an upstream option development process such as drug design and approval
- Upstream Kanban is used to marshal options for commitment and delivery
- Typically, upstream (discovery) and downstream (delivery) are separate organizations with separate boards

Characteristics of an ML 4 organization

- The service becomes fit-for-purpose from stakeholders' perspective
- Quantitative understanding of the workflow
- Focus on risk identification and hedging
- Capability to manage shared resource and fluctuating demand

A KMM view of Posit Science

- In your workgroups, reflect on the Posit Science case study.
- Which maturity level might they have been at the beginning of the journey, and at the end?
- Referring to the KMM A0 poster, can you identify any specific techniques that were applied during the evolutionary change work?
- Reflect on the timeline for these changes: Thoughts and observations?

Reflection: Maturity Levels

- Reflect on your organization and your current Kanban implementation. What are the characteristics?
- Are you still at maturity level 0 or 1? These early maturity level organizations represent the majority of the market, perhaps 80%+. Why do you think that is?
- Why do you think “full” Kanban pull systems to be found at higher maturity levels are so challenging to adopt?



Example: Barriers to evolving to ML 2

1. Not starting with a customer-facing service
2. Lack of service orientation or customer focus
3. Copying an organizational blueprint
4. Forced to use an organization's standard process
5. Managers not trained in Kanban
6. Lack of Flow Manager
7. Legacy tooling

Key things to remember for now

“

It is the organization that matures,
not the Kanban that matures.
Culture and practices should go
hand in hand and together
determine the possible outcomes.

Module 2

Kanban for the Enterprise

Review of the Kanban Method. How to scale, upstream Kanban,
Services orientation.

The Kanban Method

A Review

Teach Backs: The Kanban Method

30 min

- Reviewing and presenting the core Kanban knowledge from the “old” section “Understanding Kanban Systems”.

What is a Service?

Customer



Has need

Requests a
product or service



Service Delivery

Respond to the need
with a series of
activities



Need fulfilled

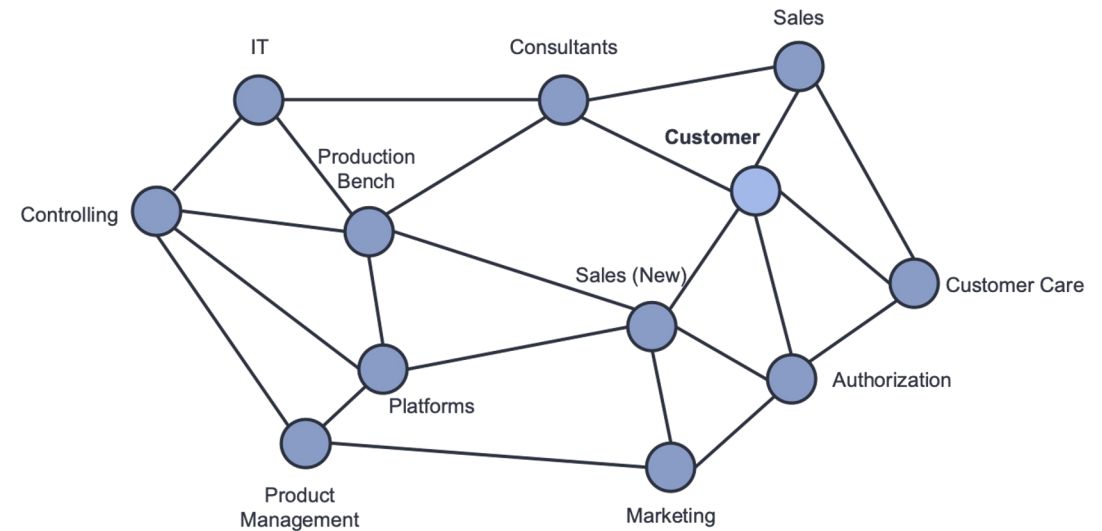
Requestor accepts or
acknowledges delivery

Kanban Method: Service Delivery Principles

Your organization is a network of interdependent services with policies that determine its behavior.

Therefore:

1. Understand and focus on the customer's needs and expectations
2. Manage the work; let workers self-organize around it
3. Regularly review the network and its policies to improve outcomes



Kanban Method: Change Management Principles



1. Start with what you do now
 - Understanding current processes as actually practiced
 - Respecting existing roles, responsibilities, and job titles
2. Gain agreement to pursue improvement through evolutionary change
3. Encourage acts of leadership at all levels

The Kanban Method uses ...

... **kanban boards** to visualize invisible work, workflow, and business risks together with **kanban systems** which limit work-in-progress

The Kanban Method delivers ...

... faster, more predictable **service delivery** and an **adaptive capability** that enables you to respond effectively to changes in customer demand or your business environment

Kanban Method: General Practices



Visualize



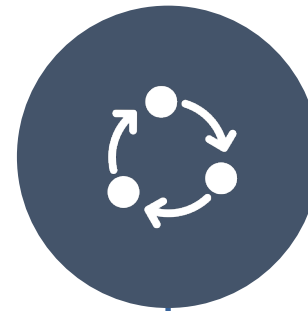
Limit WIP



Manage Flow



Make Policies
Explicit



Implement
Feedback
Loops



Improve
Collaboratively,
Evolve Experimentally
(using models and the scientific method)

Implementing Kanban for Service Delivery

Specific Practices

1. Visualize service delivery workflows
2. Implement pull systems with WIP limits
3. Manage flow within and across workflows
4. Make your decision framework, risk management policies, and boundaries of empowerment explicit
5. Implement the Kanban Cadences
6. Improve collaboratively, evolve experimentally
(using fitness criteria metrics and model-driven improvements, based upon an understanding of risks, variability, constraints, sources of delay, queuing theory, real option theory, transaction, and coordination costs)

STATIK (Systems Thinking Approach to Introducing Kanban)

Identify Services. For each service ...

1. Understand what makes the service “fit-for-purpose”
2. Understand sources of dissatisfaction regarding current delivery
3. Analyze sources of and nature of demand
4. Analyze current delivery capability
5. Model the service delivery workflow
6. Identify and define classes of service
7. Design the Kanban system
8. Socialize design and negotiate implementation

Scope of KSD—
Kanban System
Design class



This process tends
to be iterative.

Kanban systems don't model the org chart. They model the flow of work to customers.

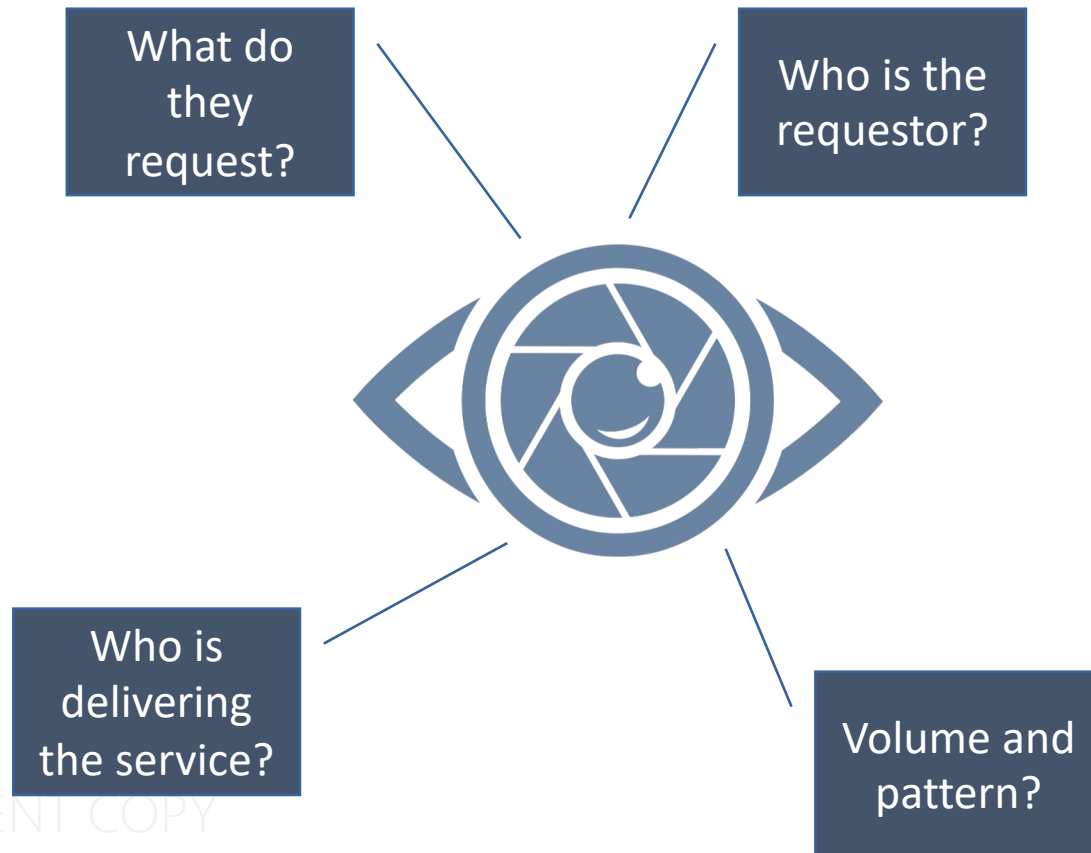
Seeing Services

The Kanban Lens

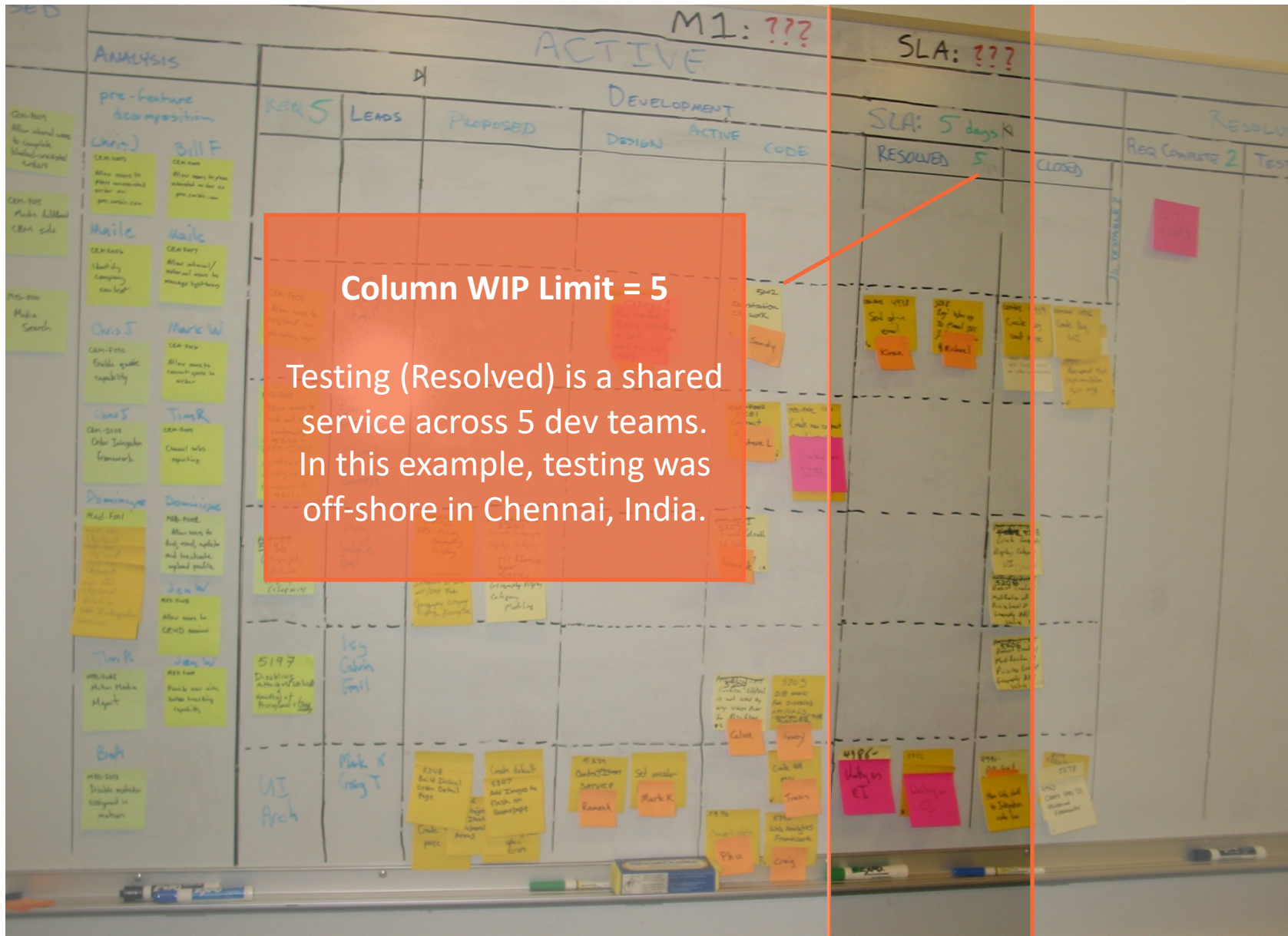
- See work as flow (from customer need to needs met)
- See workflow as a series of actions applied to the work
- See knowledge work as a service
- See your organization as a network of services

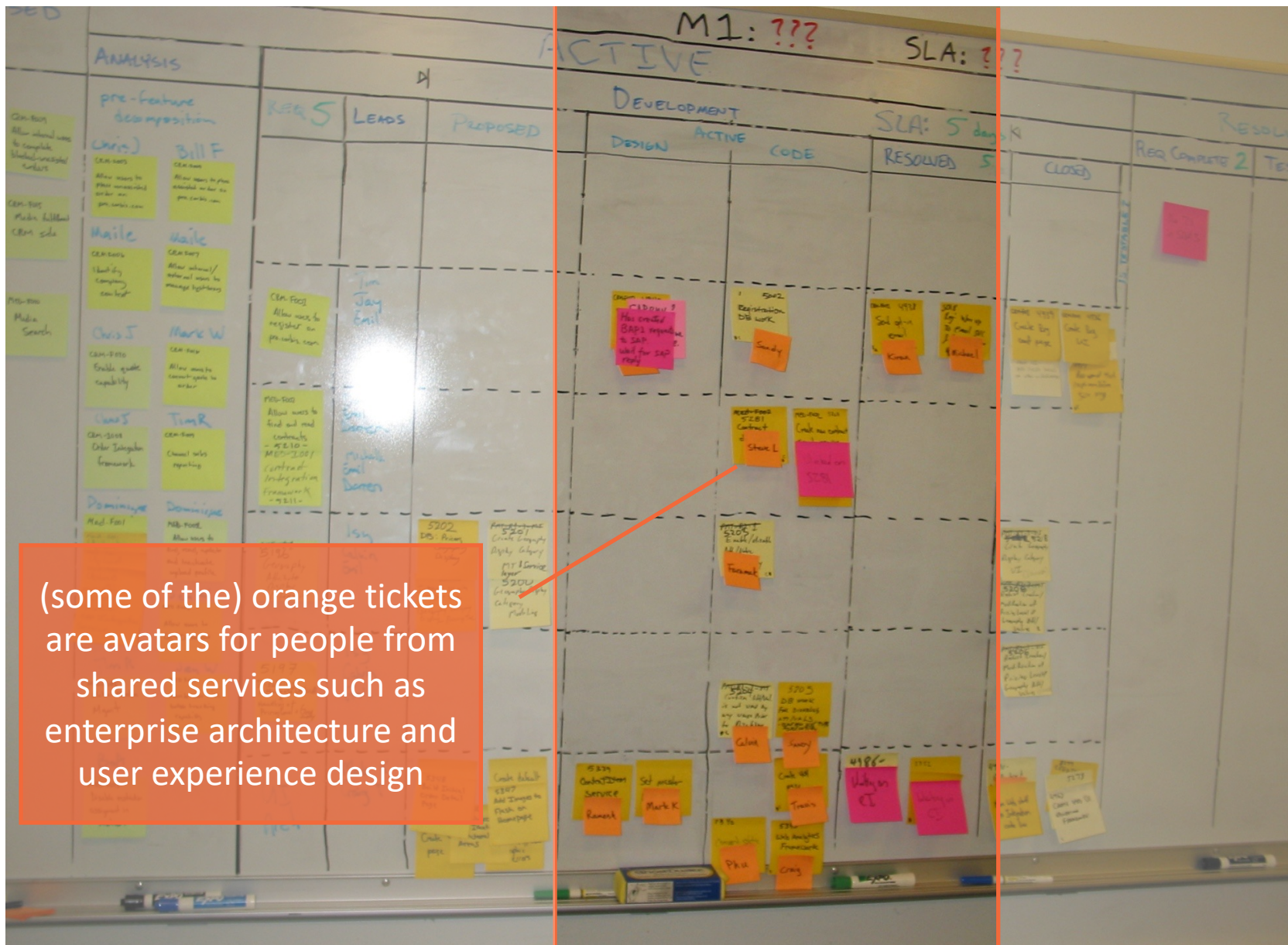


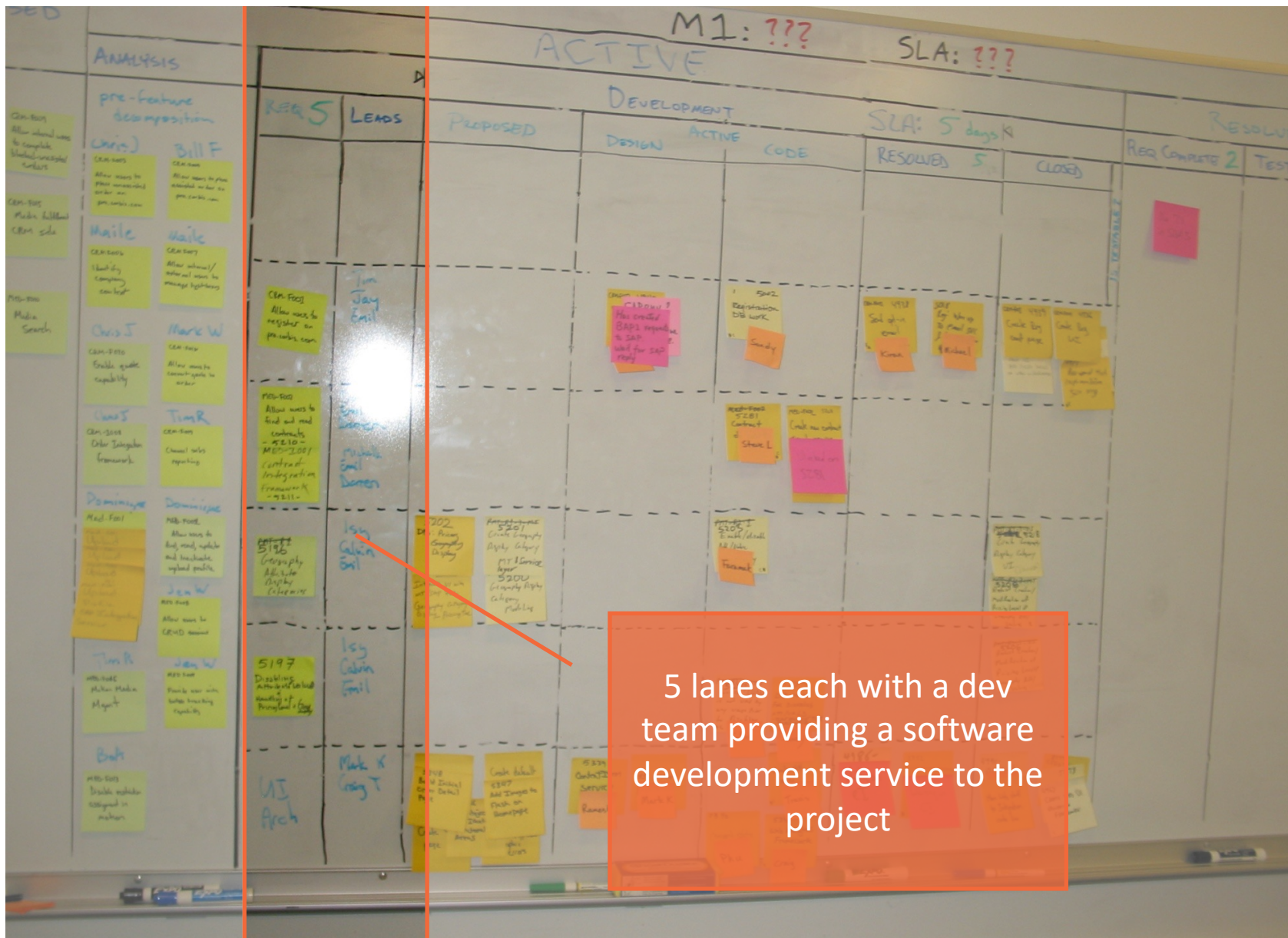
Identifying Enterprise Services Through the Kanban Lens



- See knowledge work as a service
- Perform STATIK per service
- See your organization as a network of services, e.g.,
 - Is the service “shared” across several requestors?
 - What other services are consumed or served?







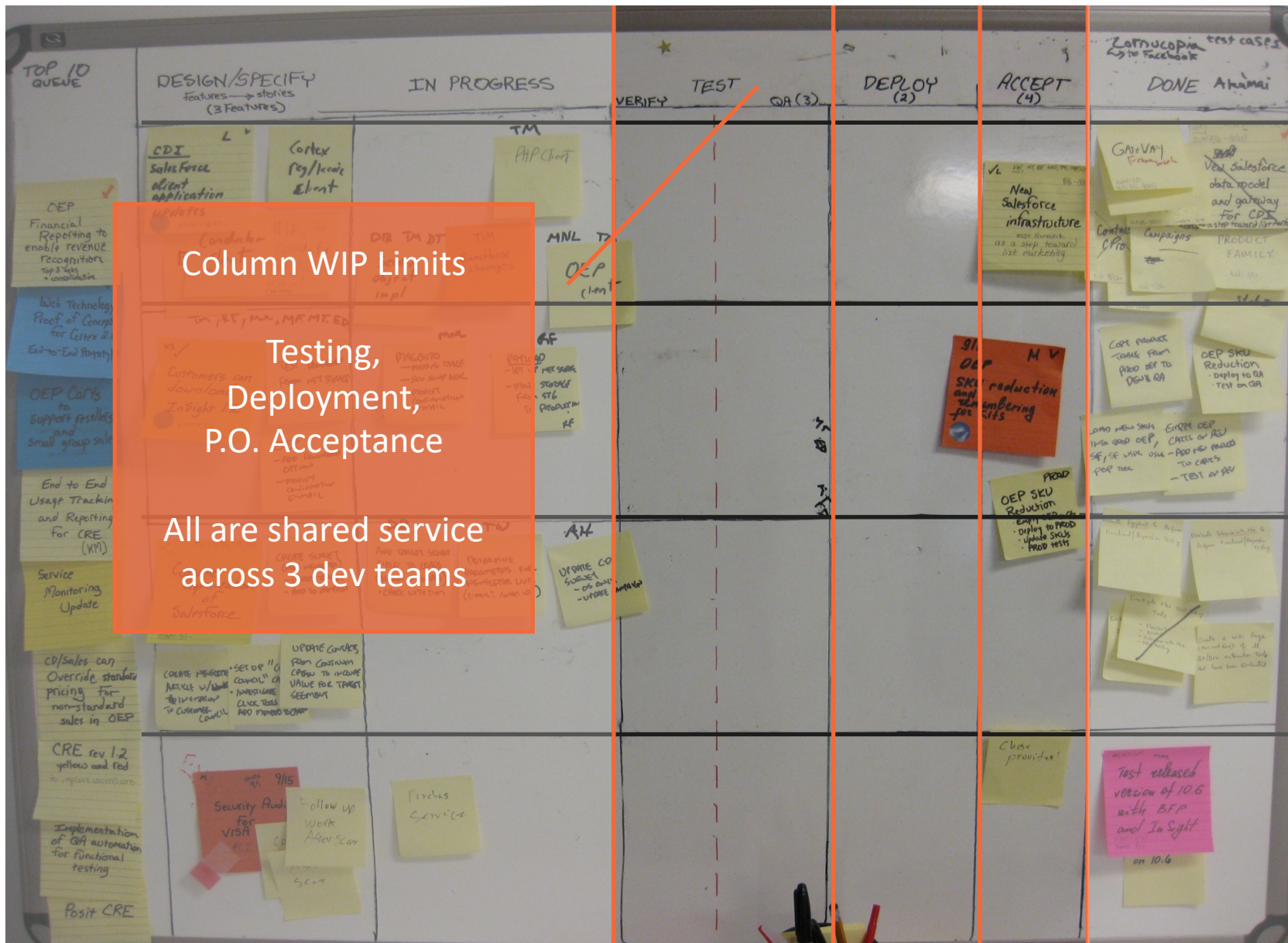
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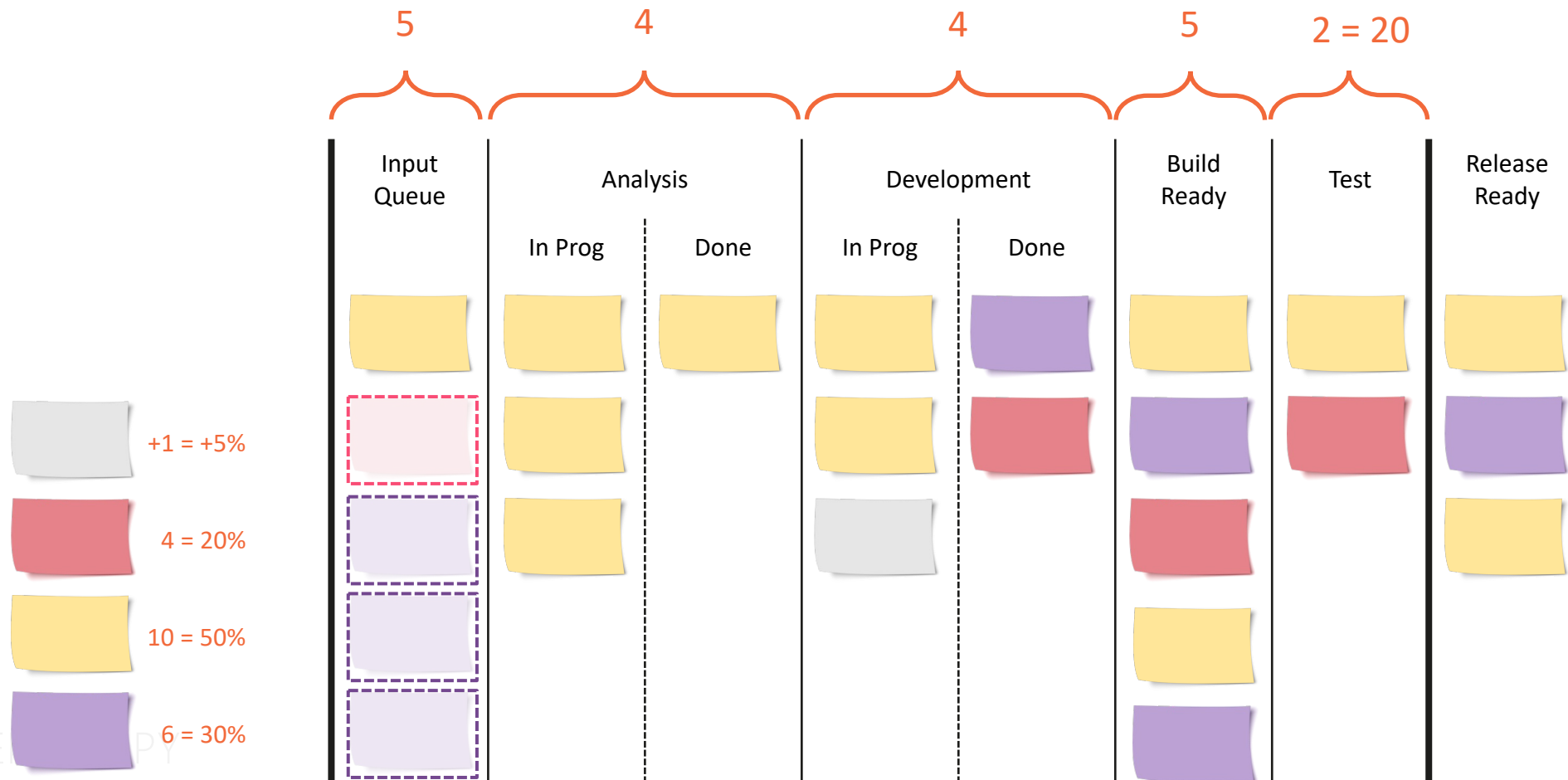
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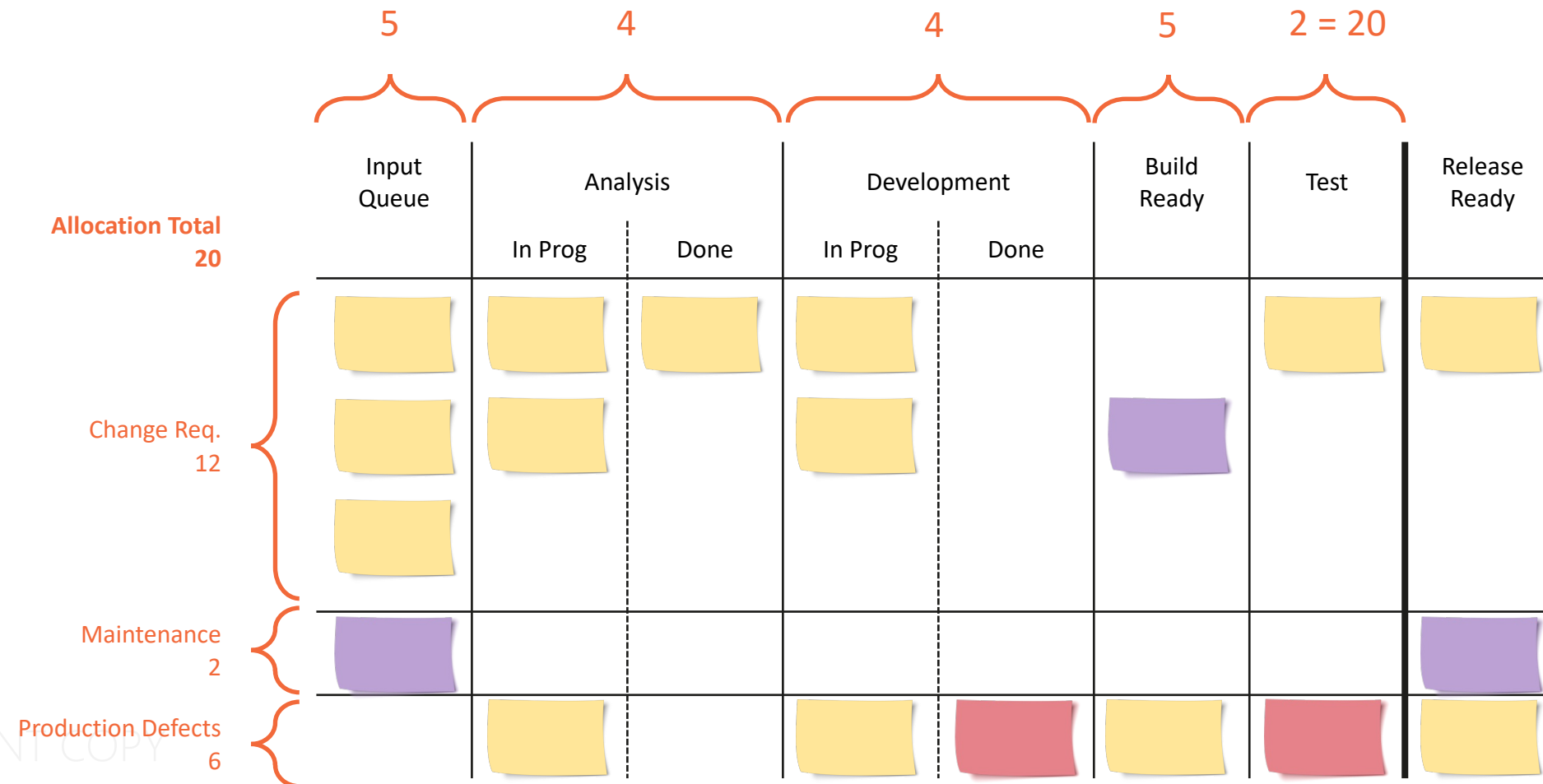


Single Service, Multiple Classes of Service

Allocate capacity with Kanban limit per color



Three Services Aggregated Together



Exercise – Seeing Services

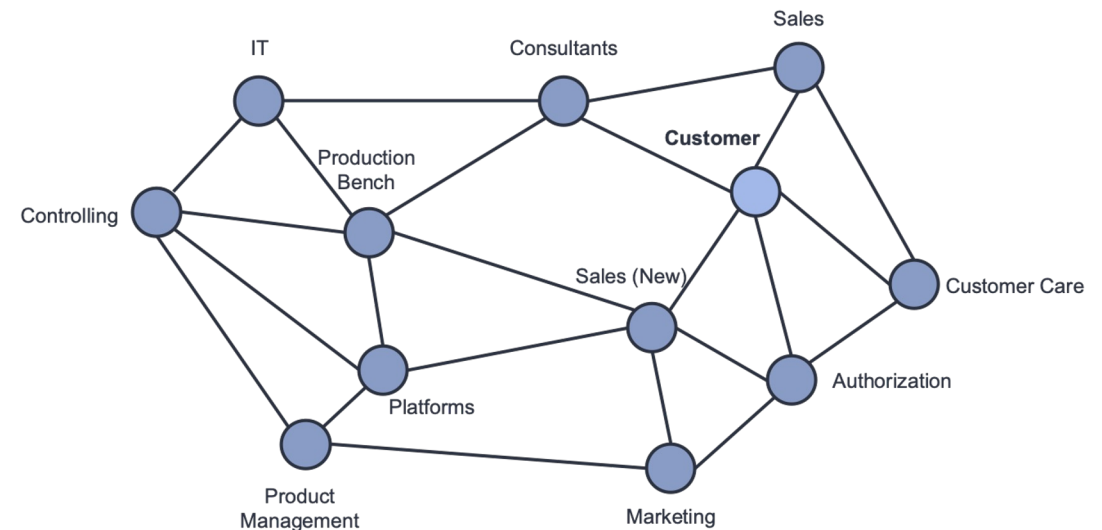
- List the services your customers perceive that you provide to them.
- Are there shared services in the organization?
- Why are they shared?
- For each service, what level of Kanban do you envisage:
 - Personal Kanban
 - Team Kanban
 - Service-oriented Kanban?
 - Full Workflow Kanban pull system?

Scaling out Across the Organization

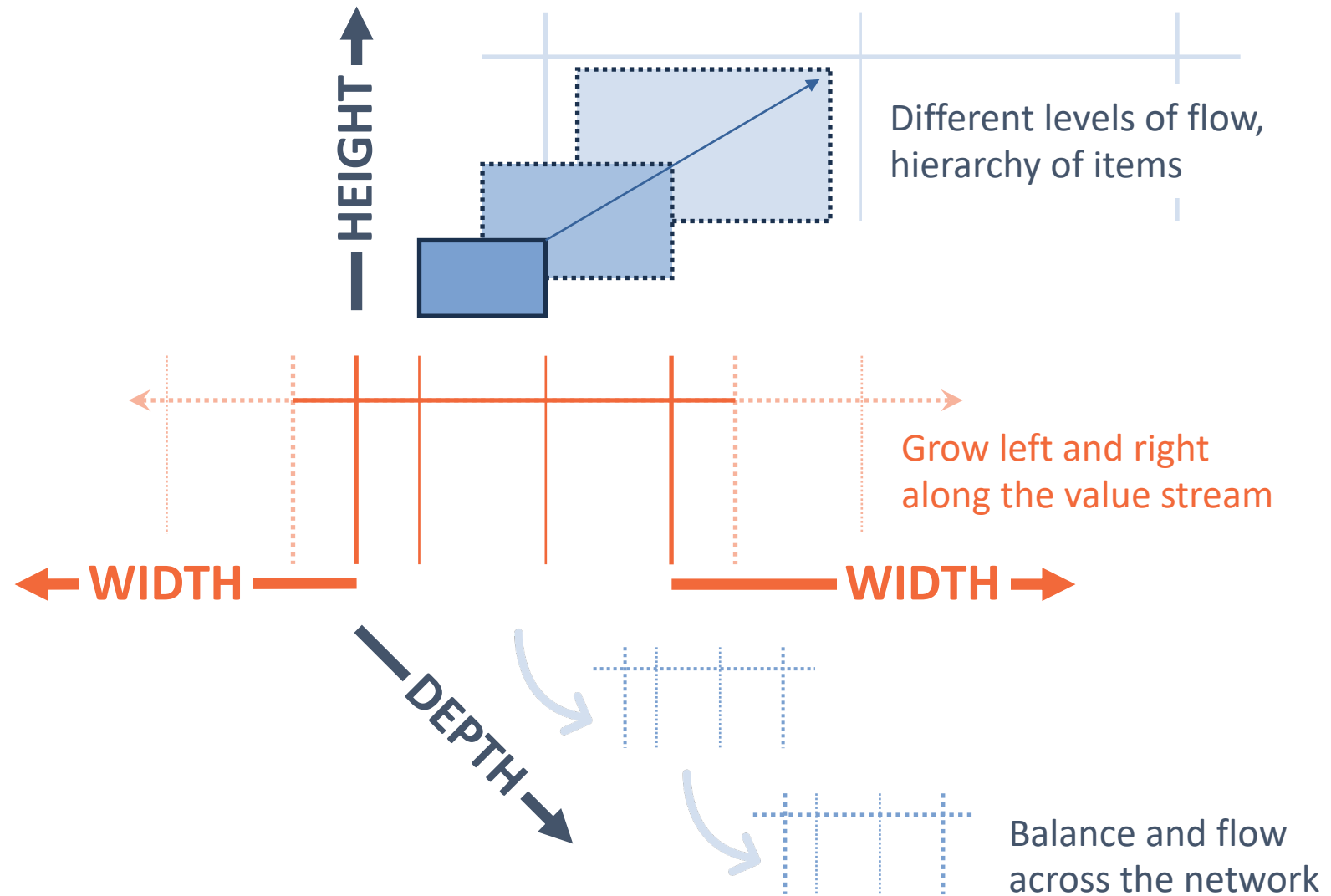
Identifying services and achieving flow of information are the keys to scaling across an enterprise.

Kanban Scaling Principles

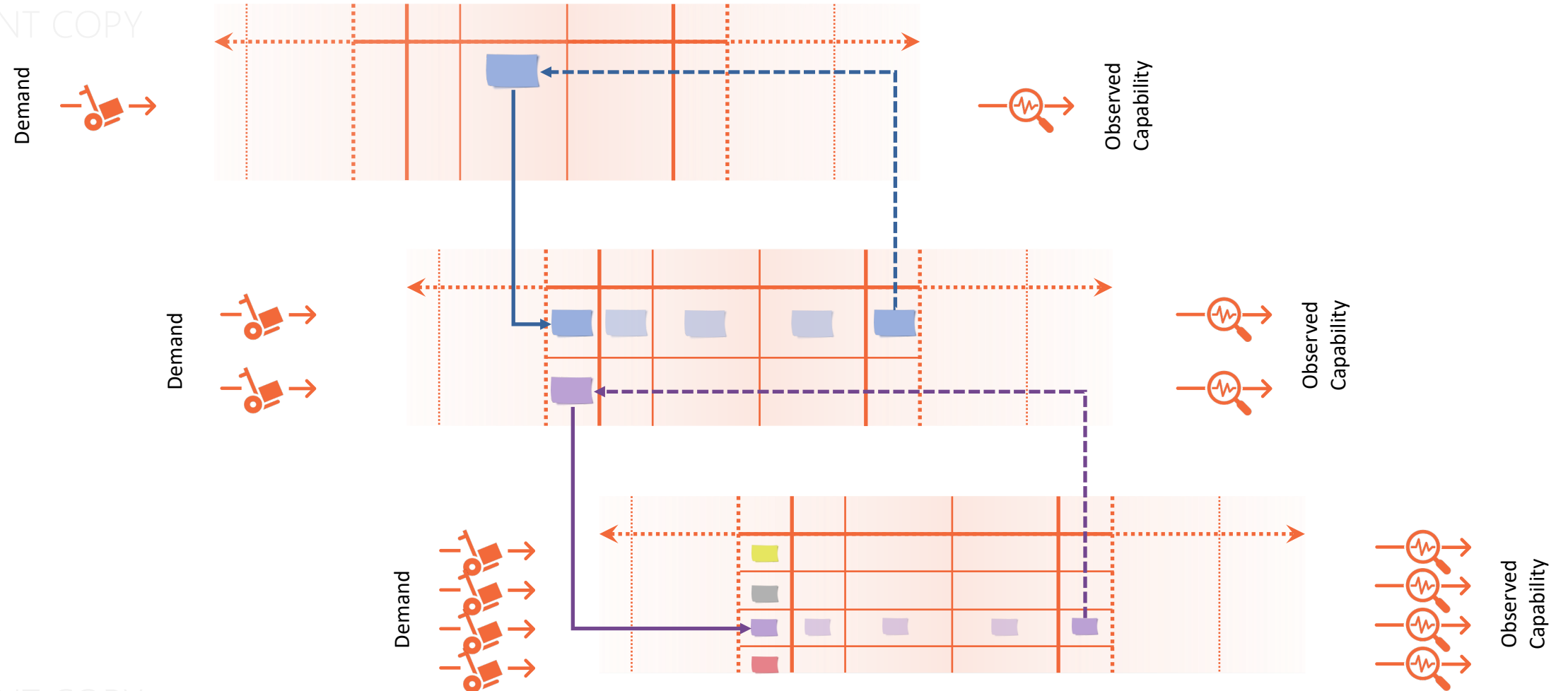
1. Scale out in a service-oriented fashion one service at a time.
2. Design each Kanban system from first principles using STATIK. Do not attempt to design a grand solution at enterprise scale.
3. Use the Kanban Cadences as the management system that enable balance, leading to better enterprise services delivery.



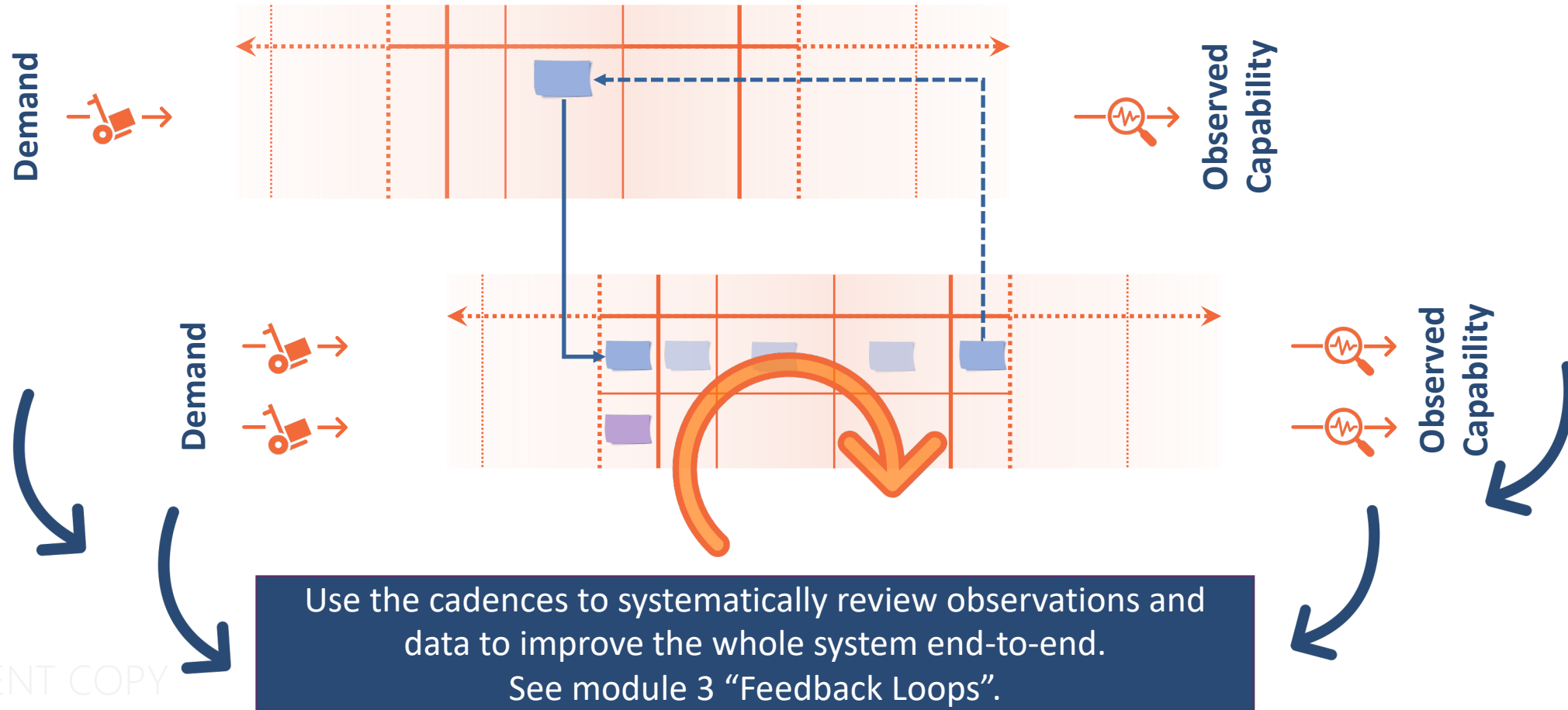
Kanban Scaling Dimensions



Treat each service separately



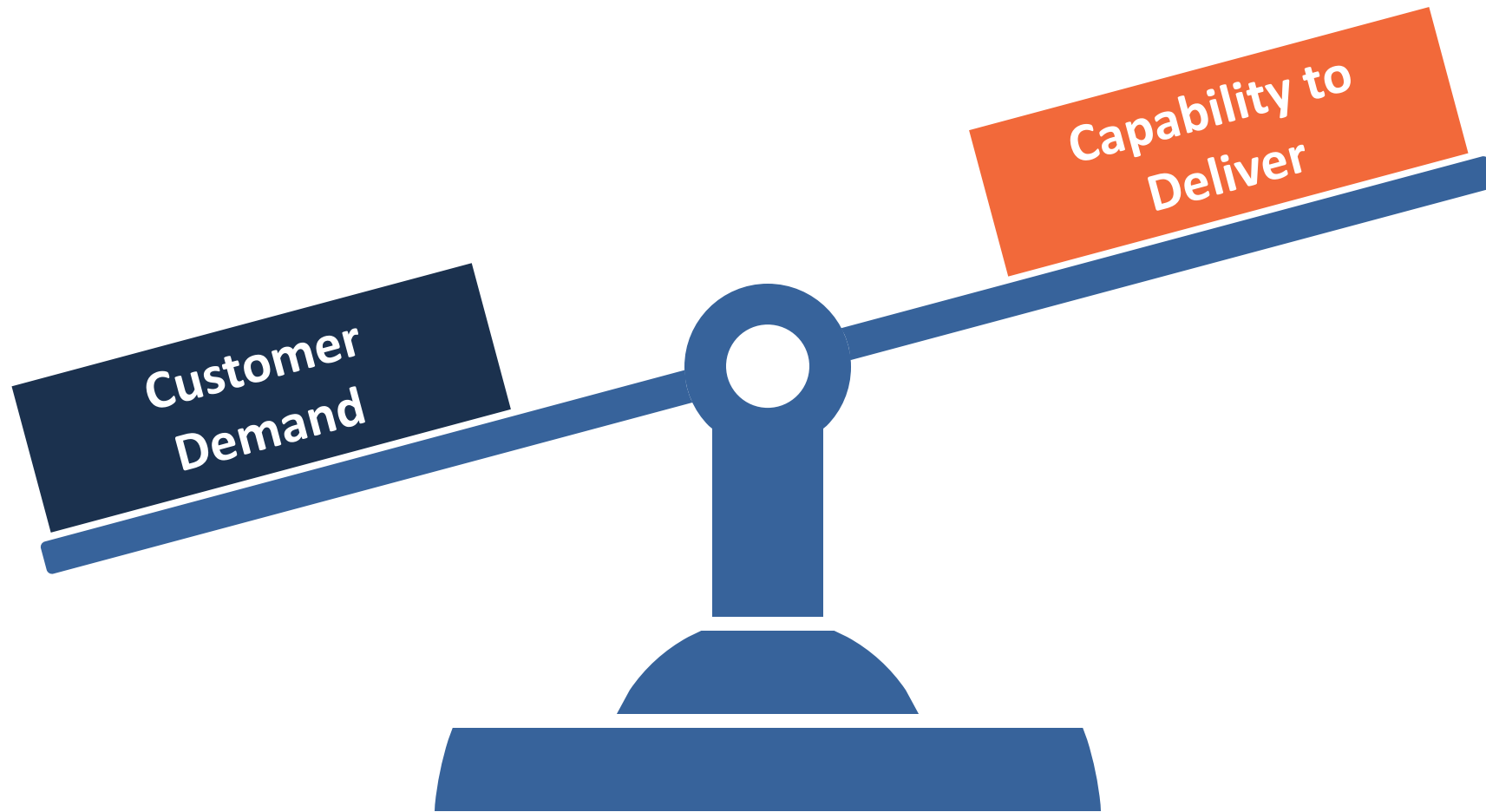
Organizational Improvements Emerge



Upstream Kanban

Upstream acquires options.
Downstream (delivery)
converts options.

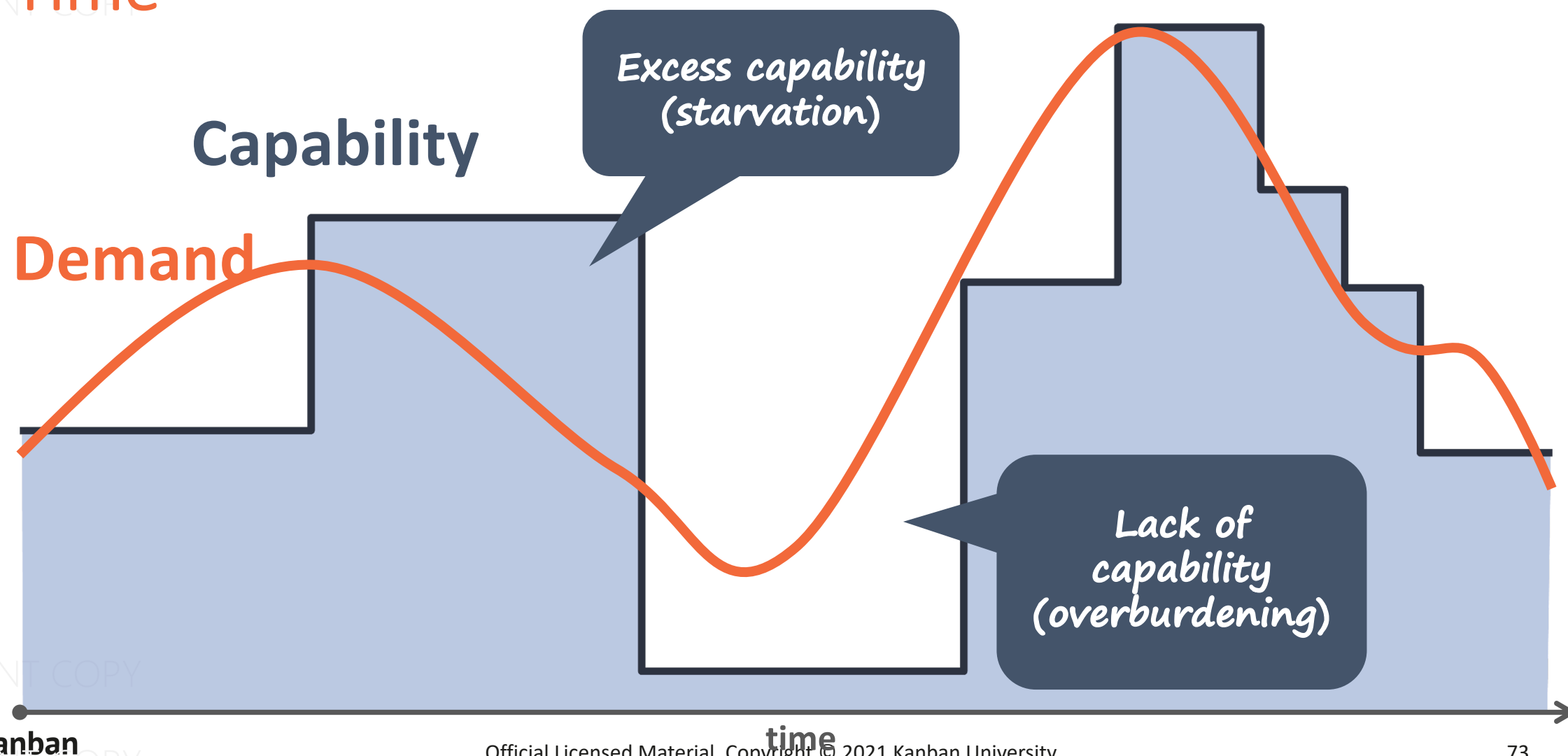
Kanban Balances Demand and Capability



Kanban System

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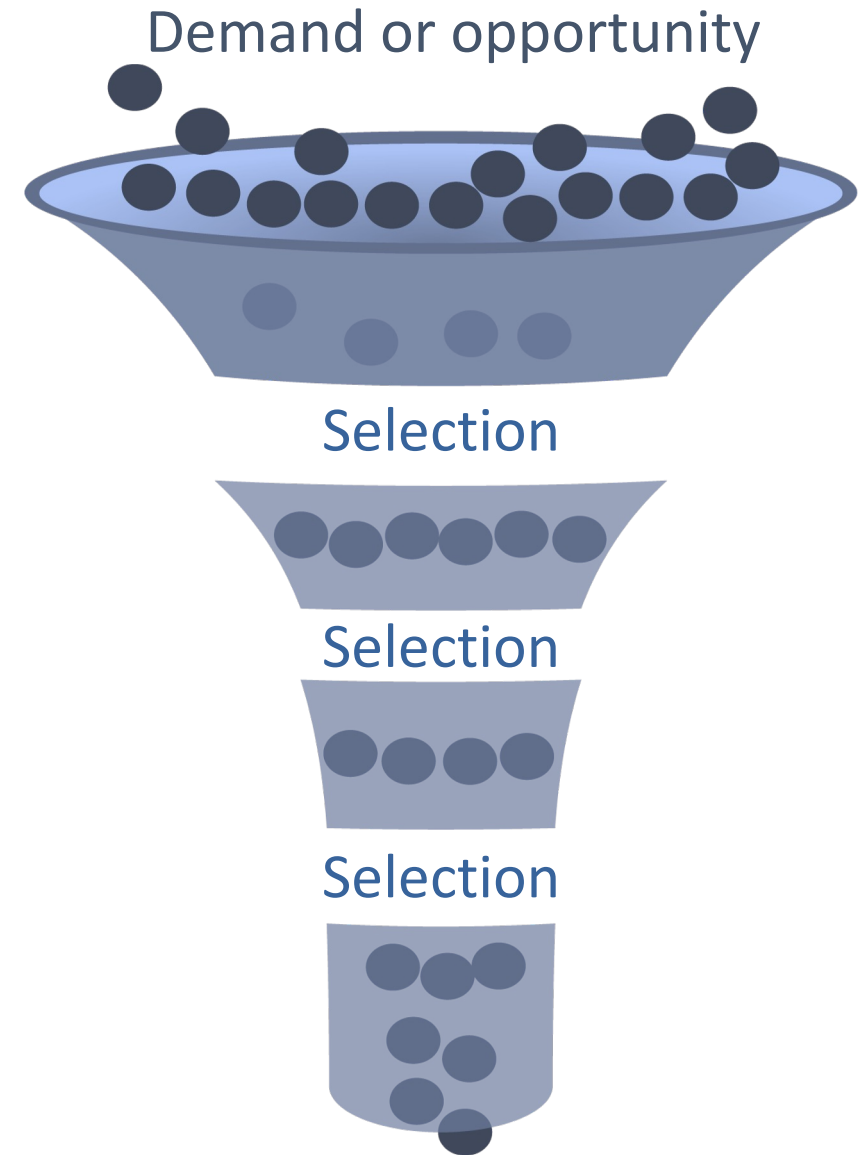
The Balance of Demand and Capability shifts over Time



The Upstream Challenge

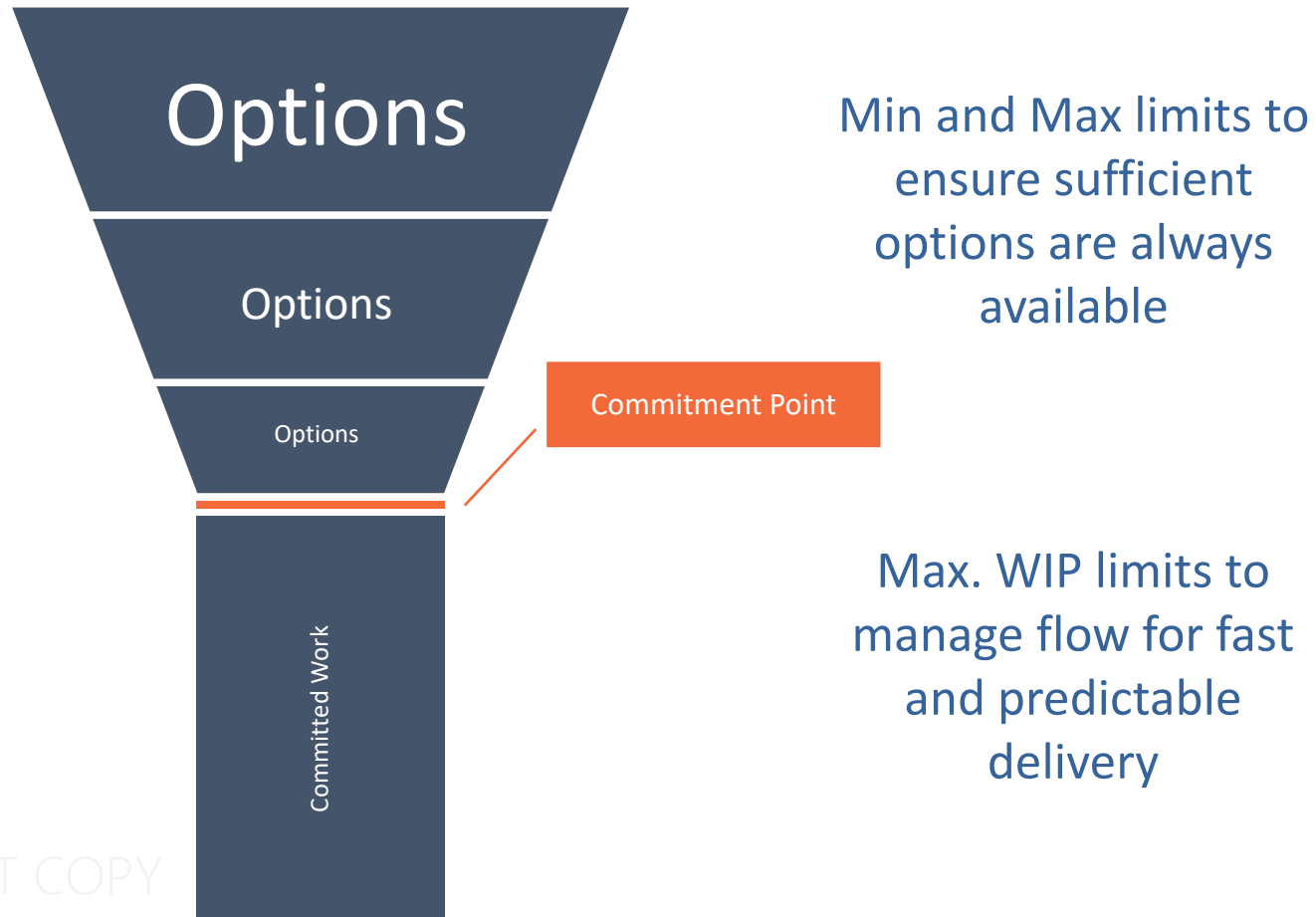
- Unclear demand or opportunity that does not present itself in a regular flow
- Demand comes in various shapes, sizes, forms
- Decision making in each of the selection stages causes delay
- Friction with the delivery process of committed work that is best organized around an even and predictable flow

UPSTREAM OPTIONS



Source: Upstream Kanban Condensed, Patrick Steyaert

Upstream vs. Delivery Kanban



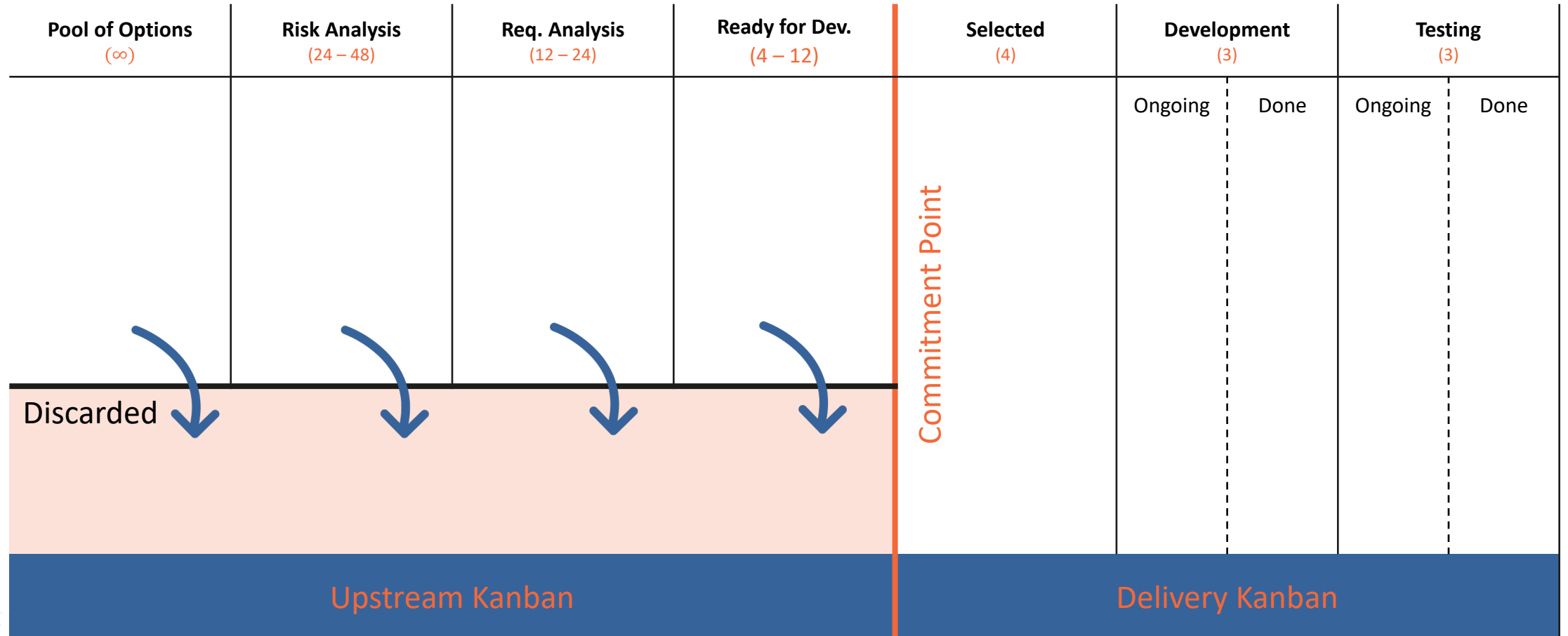
■ Upstream

- Money spent acquiring options
- High discard rates
- Iterative process

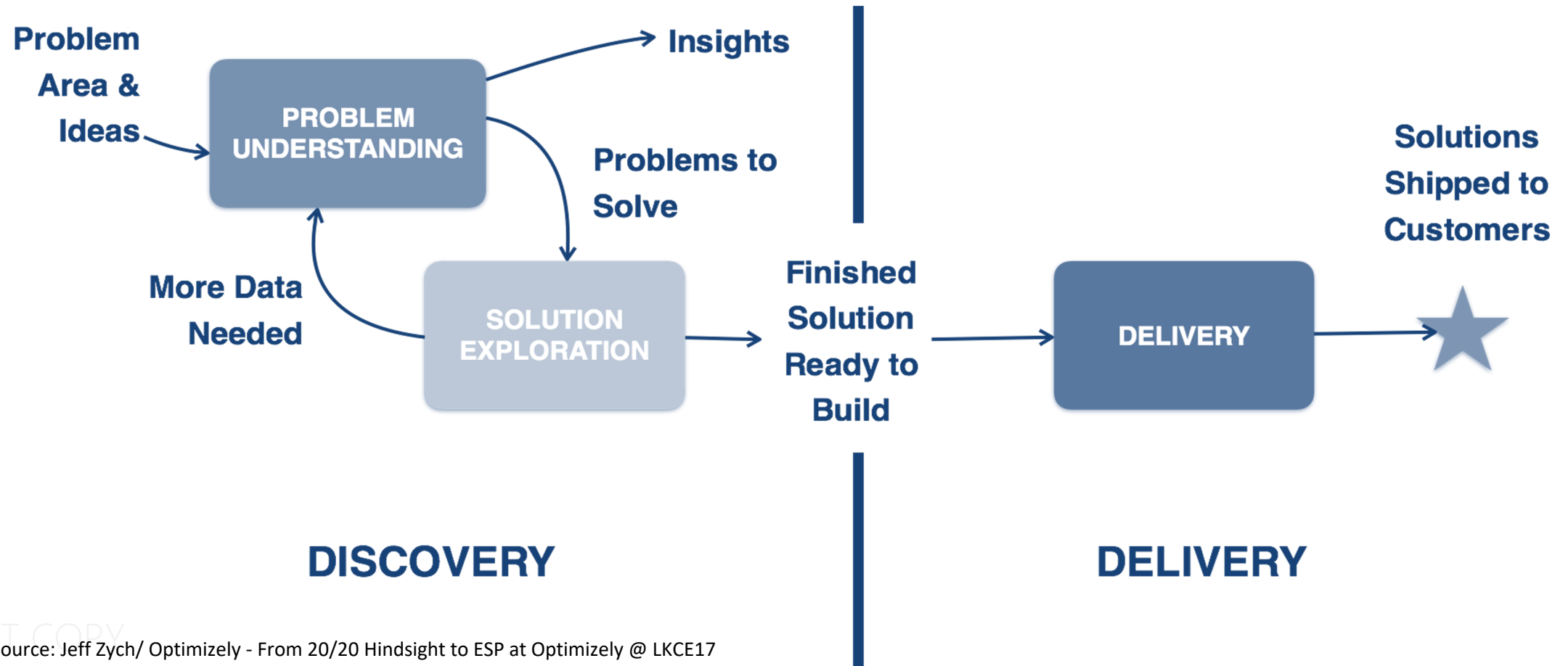
■ Delivery

- Money spent executing options generating customer value
- Little to no discarding
- Ideally sequential flow of work

Upstream Kanban Prepares Options



A Real-world Example: Optimizely's Product Development Process



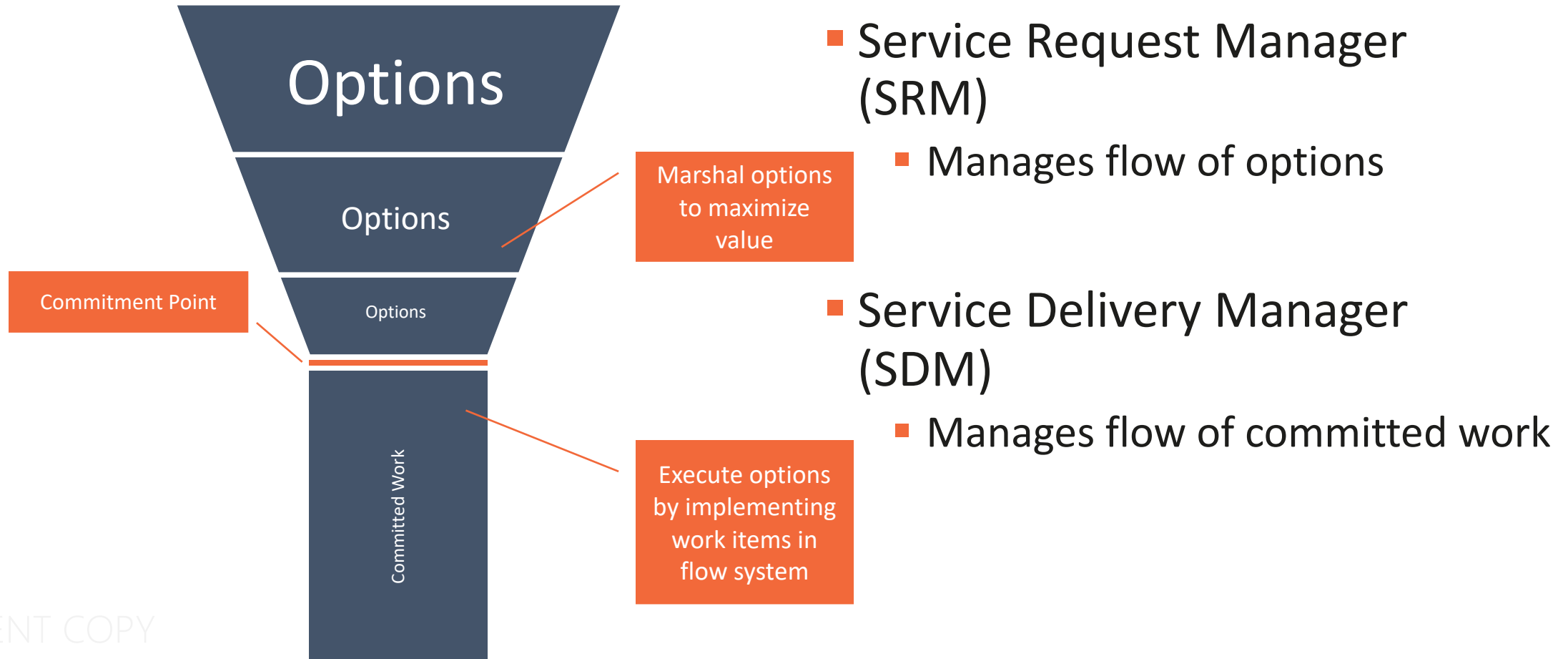
Source: Jeff Zych/ Optimizely - From 20/20 Hindsight to ESP at Optimizely @ LKCE17

Optimizely's End-to-End Board



Emerging Roles

Kanban Roles are Emerging



Exercise: Roles

10 min

- Do the roles of Service Delivery Manager (SDM) or Service Request Manager (SRM) exist in your organization today?
- If not, what are the cultural and political implications of introducing them? Would it be easier to stick with current roles, responsibilities and job titles?
- Who would play the SDM role, who the SRM role?
- What is their current title? Which responsibilities and what policy ownership do you envisage for them?



Module 3

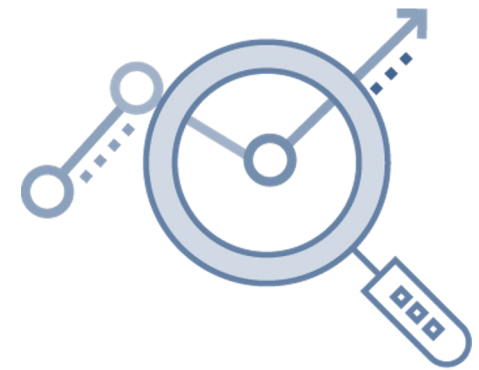
Feedback Loops

Introduction to Feedback Loops

Managing and Improving Service Delivery

Feedback Loops

- Are required within your organization for coordinated delivery and improving delivery of your service(s)
- Are key to scaling and improving service delivery
- Strengthen the learning capabilities of the organization and its evolution by means of managed experiments
- Some types of feedback loops in Kanban systems:
 - Kanban Boards
 - Metrics
 - Cadences (reviews and meetings)



Types of Cadence

Service Delivery

- Used to coordinate the day-to-day delivery of the service:
 - What to start next?
 - How can we self-organize around the work / use existing capabilities?
 - Will we deliver according to commitments?
- All of these are called “meetings”

Service Improvement

- To review and improve:
 - Have work items been delivered according to customer expectations?
 - Do interdependent services effectively interact with each other?
 - What risks exist for service delivery, and how to address them?
- Driven by data and observations about finished work items
- All of these are called “reviews”

Alignment with Organizational Maturity

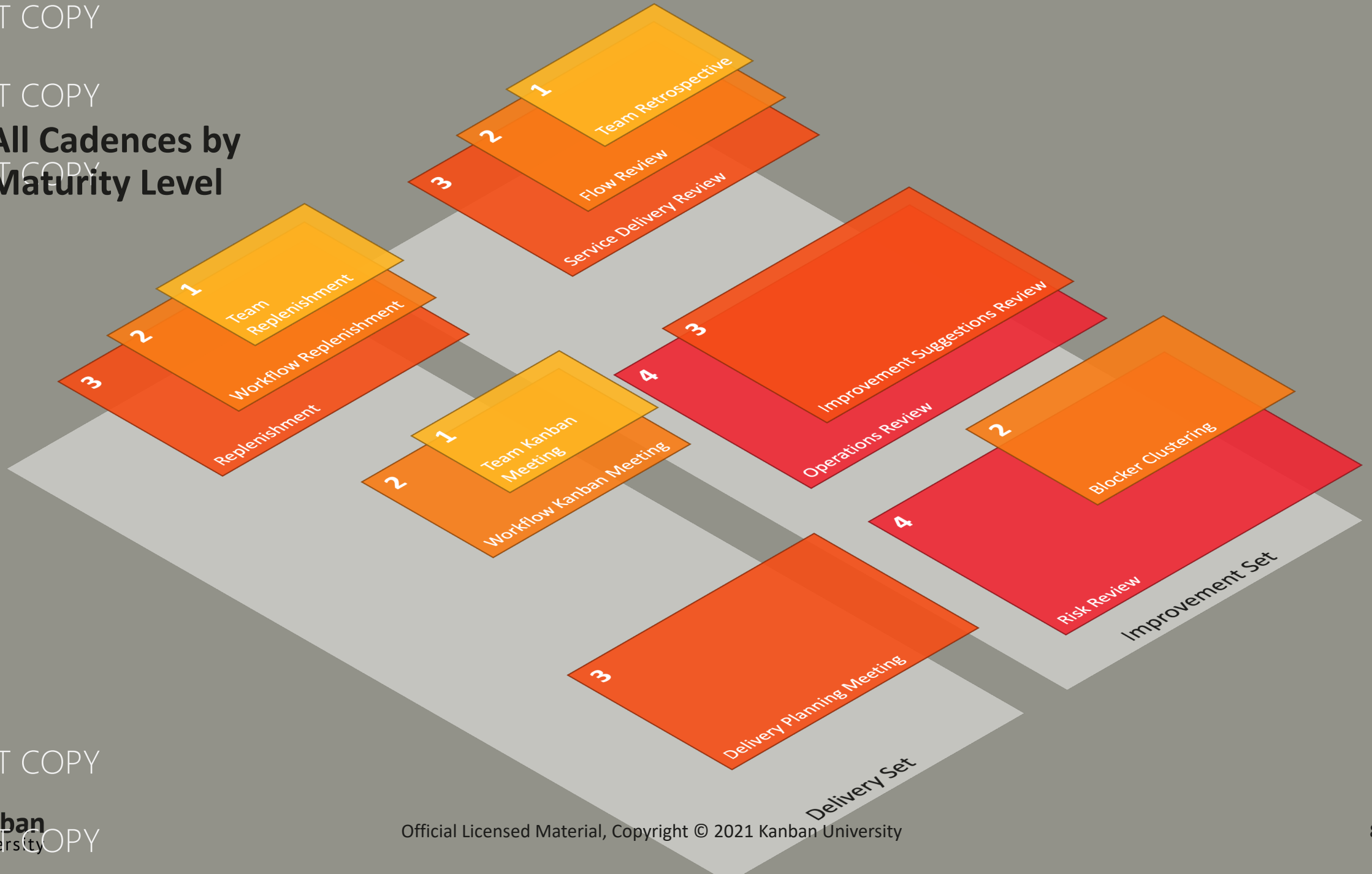
- As the organization matures, the feedback loops can and should mature as well.
- Build up the cadences gradually, enabling learning and insights in the organization.
- In this section, we introduce the cadence sets per maturity level.
- Although Kanban defines these cadences, this does not mean that these must be added to the already existing ones in an organization. The correct approach is to find out how the topics addressed fit best into organization's set of management meetings.

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All Cadences by Maturity Level



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Maturity Level 1 Cadences

Ensuring that the team has the same understanding of the status of the work and
can make right decisions about what to do

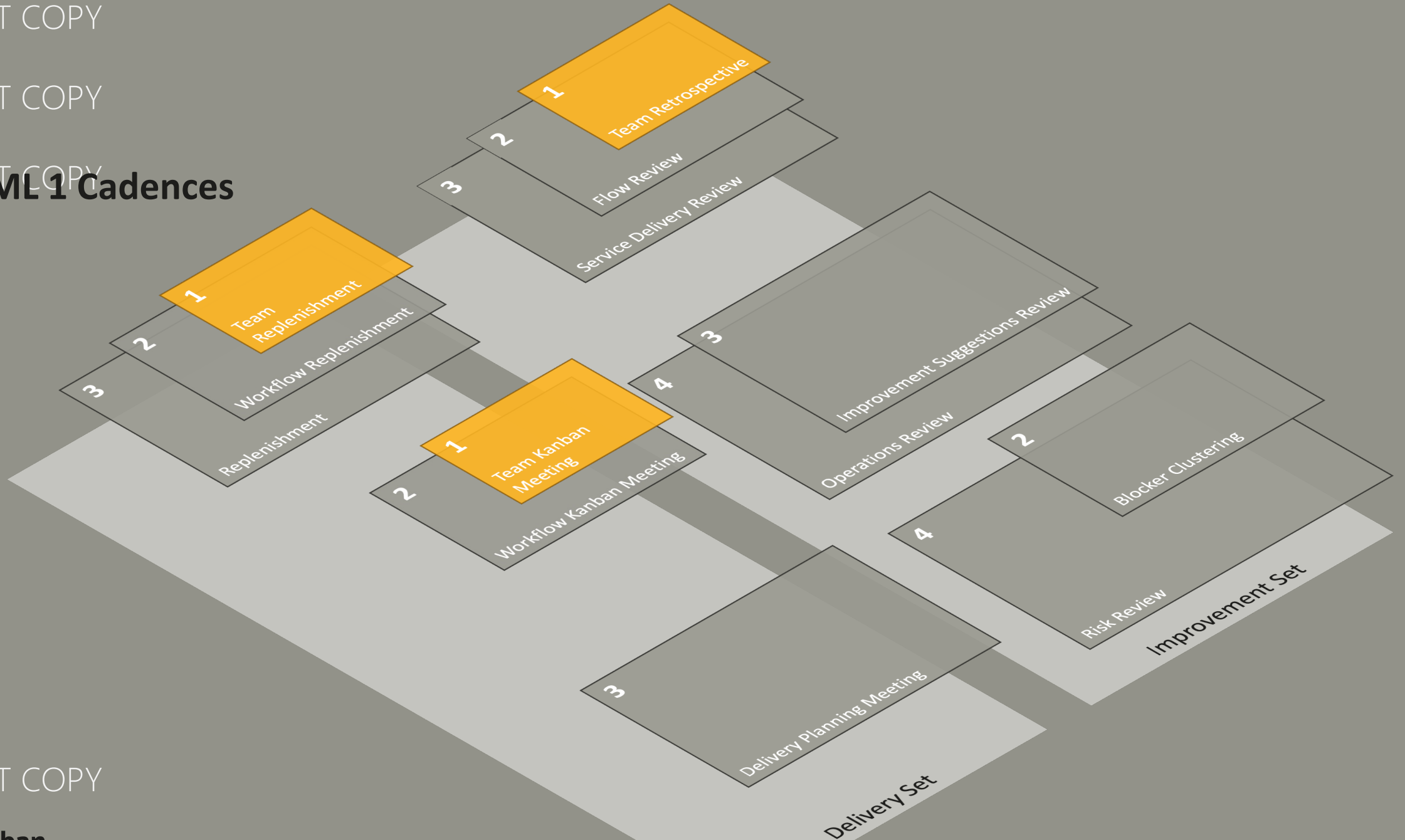
Facilitate the definition and refinement of the work practices

Cadences at team level

- Which cadences would be required at ML1 (team focused) to manage and improve flow or work at the team level?
- Could you provide any examples from your own experience?



ML 1 Cadences



Cadences at ML 1

Cadence	Purpose
Internal Team Replenishment Meeting	Select from the backlog / pool of work the items to do next.
Team Kanban Meeting	To observe and track the status and flow of the work (not the workers). How can we deliver the work items in the system quickly? Has capacity become available? What should we pull next?
Team Retrospective	Reflect on how the team manages their work and how they can improve.

Internal Team Replenishment Meeting

1



Select from the backlog / pool of work the items to do next.



- Information about work items ready to be pulled into the system
- Policy changes / portfolio changes

- Decisions regarding what was selected
- System changes (to Kanban Meeting)



Team lead or customer contact, (part of the) team



Consider dependencies and technical risks
Make a conscious decision what to pull into the Next to Start column, and in which order



Weekly,
or as needed



20 - 30 mins

Team Kanban Meeting

1



To observe and track the status and flow of the work (not the workers)

How can we deliver the work items in the system quickly?

Has capacity become available? What should we pull next?



- 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?



Everyone involved in the work at the board, usually someone moderates



Meeting typically held daily at the same time in front of the board. 15 minutes max!

Team Retrospective

1



Reflect on how the team manages their work and how they can improve.



- Done in front of the Kanban board, focusing on the completed work items.
- Collect observations / occurrences, e.g., missing / consider doing, ideas worth exploring further, annoying / enjoyable, and issues related to current policies.
- Categorize the collected feedback and define improvement actions.



Attended by the whole team, often with a facilitator



Should be held regularly, limited to one hour

Maturity Level 2 Cadences

Developing the skills to manage basic feedback information about the delivered services and workflow; Visualize information on the Kanban boards and basic metrics related to fulfilling customer requests

Workflow-oriented cadences

- How would you extend ML1 cadences to increase awareness of an End-2-End workflow and the customer?
- Discuss and collect a few notes.
- Could you provide any examples from your own experience?

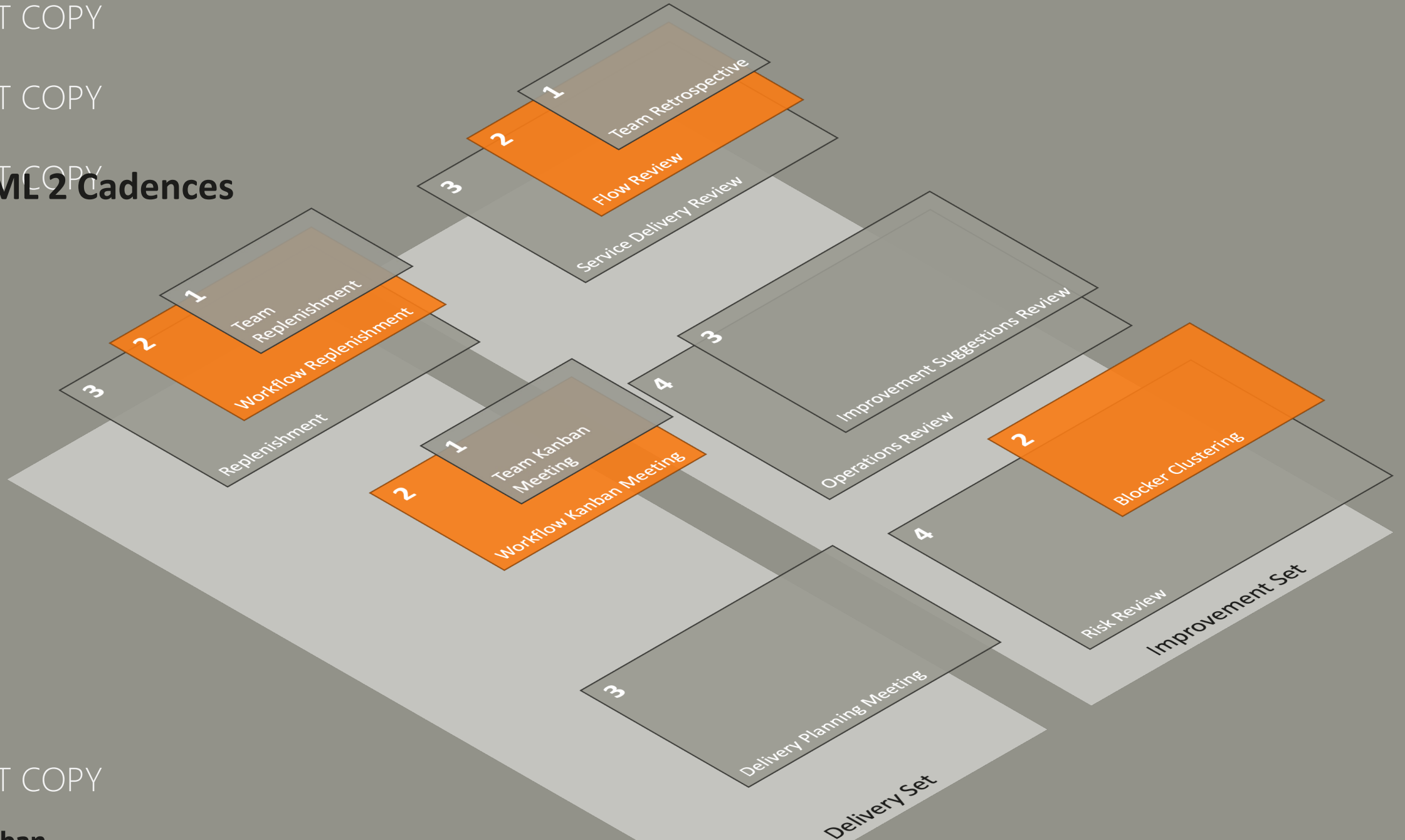


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ML 2 Cadences



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New Cadences at ML 2

Cadence	Purpose	Augments	
Internal Workflow Replenishment Meeting	Allow the service team(s) to select work requests and refill the Next-to-Start column so that they do not run out of work for the next period.	ML 1	Internal Team Replenishment Meeting
Workflow Kanban Meeting	Involve the service teams in a collaborative conversation about the status of the work, queues between stages of the workflow, and problems that affect the flow of work.	ML 1	Team Kanban Meeting
Flow Review	Develop an initial quantitative understanding of the delivered service, facilitating work planning, and improving predictability.	ML 1	Team Retrospective
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.	none	

Internal Workflow Replenishment Meeting

2



Allow the service team(s) to select work requests and refill the Next-to-Start column so that they do not run out of work for the next period.

Now possibly considers the work of multiple teams involved in the workflow.



- Observations resulting in changes to behavior or policies at Replenishment Meetings
- Policy changes / portfolio changes
- Decisions regarding what to pull
- System changes (to Kanban Meeting)



Leads or representatives of the teams involved in the workflow



Make sure the requested work is clearly defined, consider technical aspects and dependencies between service teams



Weekly,
see arrival rate
of info



20 - 30 mins

Workflow Kanban Meeting

2



Involve the service teams in a collaborative conversation about the status of the work, queues between stages of the workflow, and problems that affect the flow of work.

Now includes the end-to-end workflow of a service.
Supports cross-team collaboration.



- Commitments
- Decisions about new initiatives and capacity allocation
- Policy changes

- Shared understanding of how to best to flow current work
- Improvement suggestions



SDM, immediate service group or team doing the work (4-50 people)



Scope: End-to-end workflow of a service
The identified issues are resolved after the meeting by team members with relevant knowledge and skills



Weekly,
depending on
coordination cost



10 - 20 mins

Format of the Kanban Meeting

- The board shows the state of work and whether it is actively being worked on, is queuing, or is blocked, or waiting for some other reason.
- “Walk the board” iterating across the tickets from right (most close to completion) to left (most recently started).
- 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 and may not be known to the team.
- 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?

Holding a large Kanban Meeting

- There must be complete trust that every team member is a professional and can be trusted to do their job effectively. Equally, there must be trust that the board is up-to-date and accurately reflects the state of the project.



- Walk through bugs from right to left
- Walk through blocking issues from right to left
- “Is there anything we don’t know?”
- Are any flexible workers likely to be free and need a new work assignment today?

Flow Review

2



Develop an initial quantitative understanding of the delivered service, facilitating work planning, and improving predictability.

Now includes a quantitative, service-oriented view.

Still inward-looking at capabilities without considering customer expectations.



- Progress and system capability data from Kanban Meeting and tracking system
- Actions from Risk Review

- Defined actions to improve capability
- Communication of decisions



SDM, (parts of the) service delivery team, optionally team leads



Compare current capability with defined target conditions
Discuss possible improvement actions



Twice a month



30 min

Typical data prepared for a Flow Review

- **Distribution of the demand** per work type
- **Range of blocker time** per blocker cause
- **Range of defect and rework time** per cause
- Work items with **high age**
- Averages and distributions of:
 - **Customer lead time** per type of work
 - **Arrival rate** of the demand
 - **Throughput** per type of work for a period
 - **System lead time** per type of work

Blocker Clustering

2



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

Do you gather data on blockers today?

- 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 and Impact
 - Root Cause Analysis
 - Reduction and Mitigation actions



<https://2020.leanability.com/en/blog/2013/09/blocker-clusters-problems-are-not-isolated-events-3/>

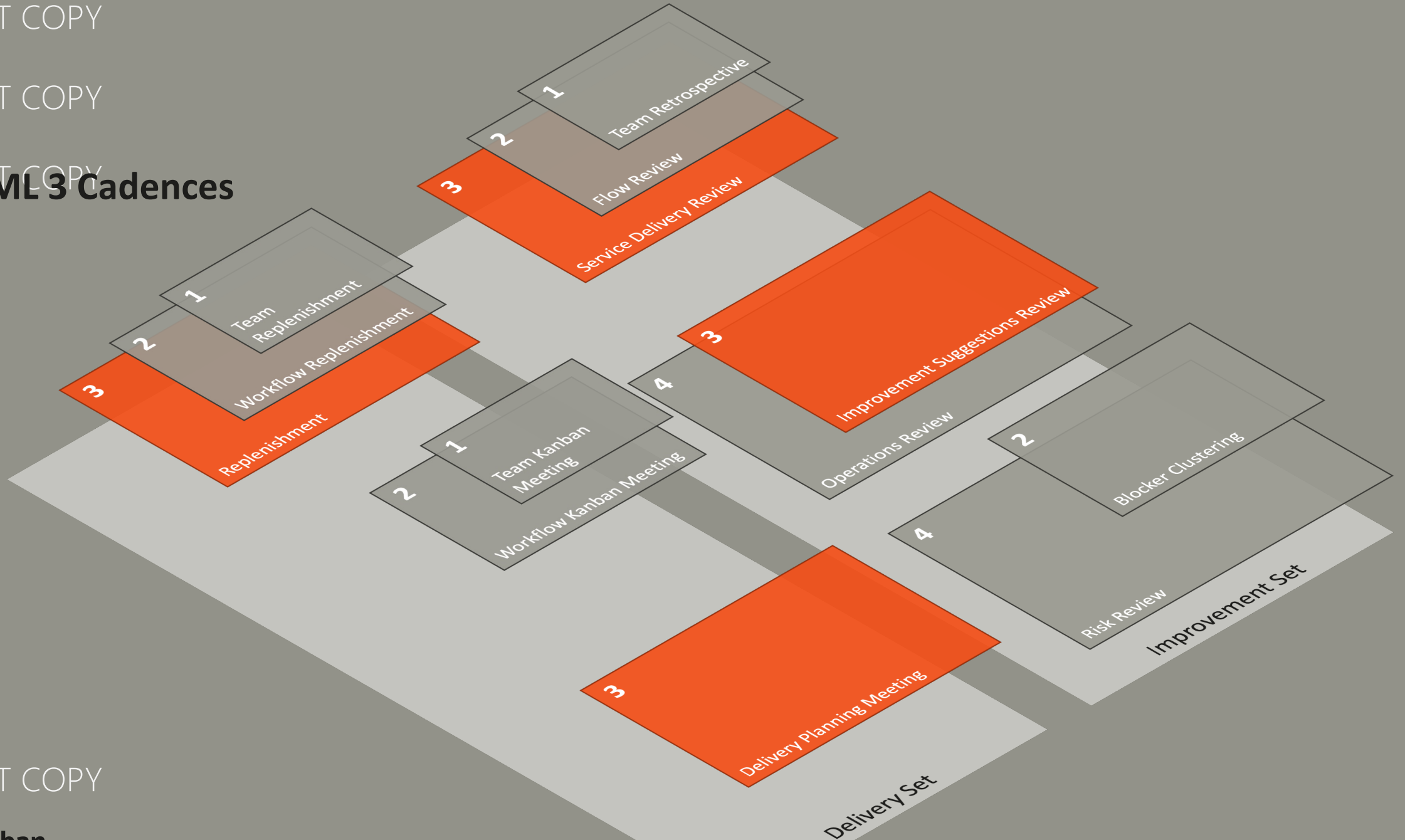
Maturity Level 3 Cadences

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ML3 Cadences



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New Cadences at ML 3

Cadence	Purpose	Augments	
Replenishment Meeting	To decide together with the customer and business stakeholders which work requests will be selected for the next period.	ML 1	Internal Team Replenishment Meeting
		ML 2	Internal Workflow Replenishment Meeting
Delivery Planning Meeting	Plan and monitor deliveries to customers.	none	
Service Delivery Review	Examine and improve the effectiveness of the selected service.	ML 1	Team Retrospective
		ML 2	Flow Review
Improvement Suggestions Review	Review improvement suggestions submitted by employees and decide which ones to implement now, later, or not at all.	none	

Improvement Suggestions Review

3



Review improvement suggestions submitted by employees and decide which ones to implement now, later, or not at all.



- Newly submitted suggestion tickets
- Improvement Kanban Board and pool of ideas

- Decisions on how to deal with suggested improvements



Representatives of the workflow or service delivery



Examine new suggestion tickets
Select to replenish the improvement Kanban board



e.g., once a month



1 hour

Replenishment Meeting

3



To decide, together with the customer and business stakeholders, which work requests will be selected for the next period.

Now involving commitments from both the customer and the delivery team(s).



- Available requests meeting selection criteria
- Prepared data and information such as service-related data

- Customer commitment that they want the requested items, team commitment to deliver within expectations
- Observations to the SDR for further system analysis



SRM, SDM,
customer and
business
stakeholders,
service delivery
representatives



Discuss what (combination of)
requests can be selected for
delivery
Pull selected items, document
used criteria / additional
considerations



Typically, once
to 4 times a
month



30min to 1 hour

Delivery Planning Meeting

3



Plan and monitor deliveries to customers.



- Information on which items are potentially available to deliver
- Risk considerations which might affect delivery decisions

- Delivery commitment and manifest
- Decisions on which items to release
- Changes in Class of Service of items
- Information on issues with delivery



SDM, anyone interested or involved in the logistics of making a delivery and decision makers



Which items will be on time for the next scheduled delivery?
What is required to actually deliver each item? Risks and mitigations?



Depends on the delivery cadence



1-2 hours

Service Delivery Review

3



Examine and improve the effectiveness of the selected service.

Now also takes an external customer perspective on the service.



- Prepared progress and data from Kanban Meeting and tracking tool
- Decisions or actions from Risk Review / Operational Review or similar

- Defined improvement actions to be communicated and executed
- Findings will be reported at the Operations Review



SDM, SRM, delivery team representatives, optionally customers and other external stakeholder



Compare current capabilities against customer expectations
Analyze shortfalls of SLE's
Discuss options for better balancing demand and capabilities and hedging risks



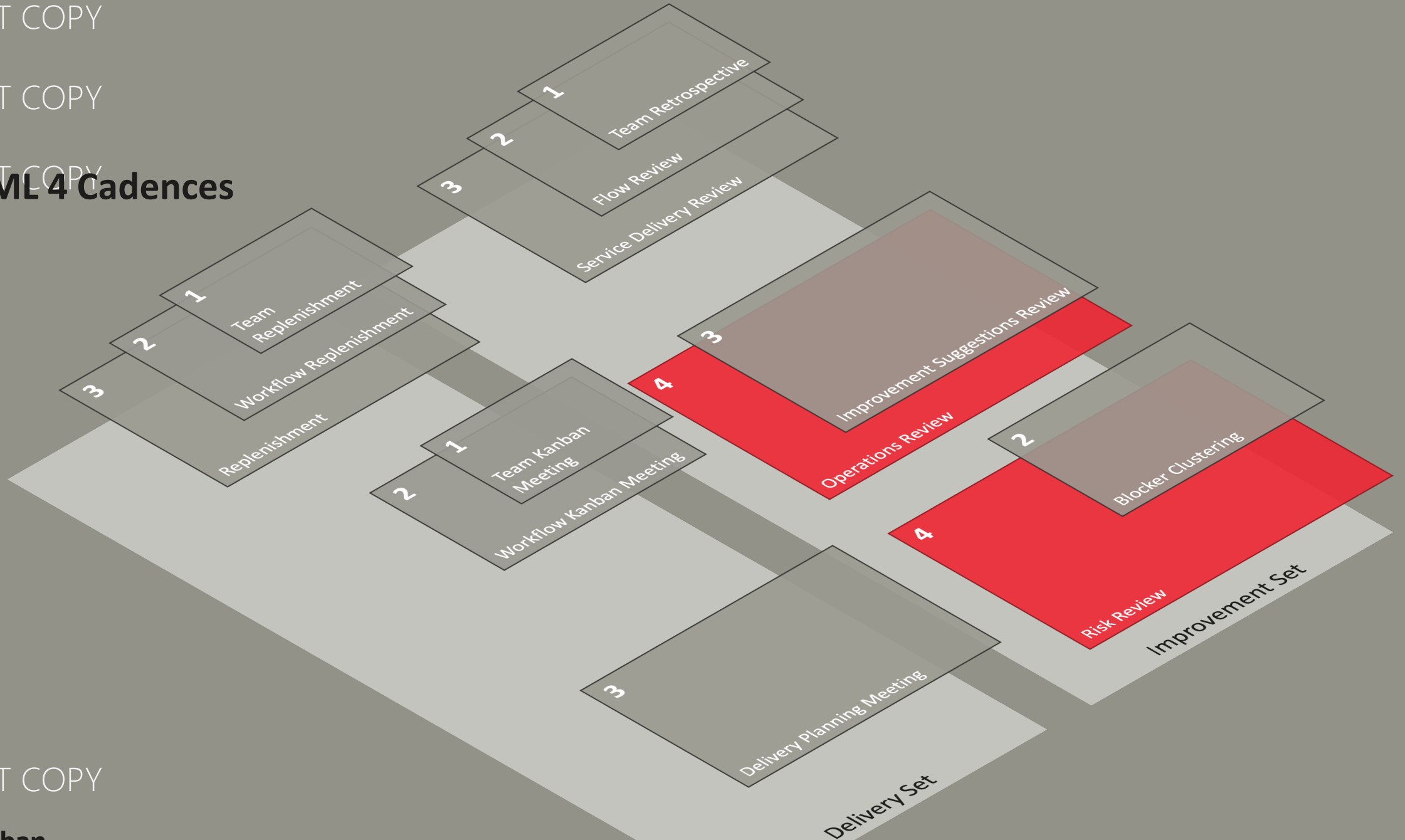
Typically, twice a month



30 min

Maturity Level 4 Cadences

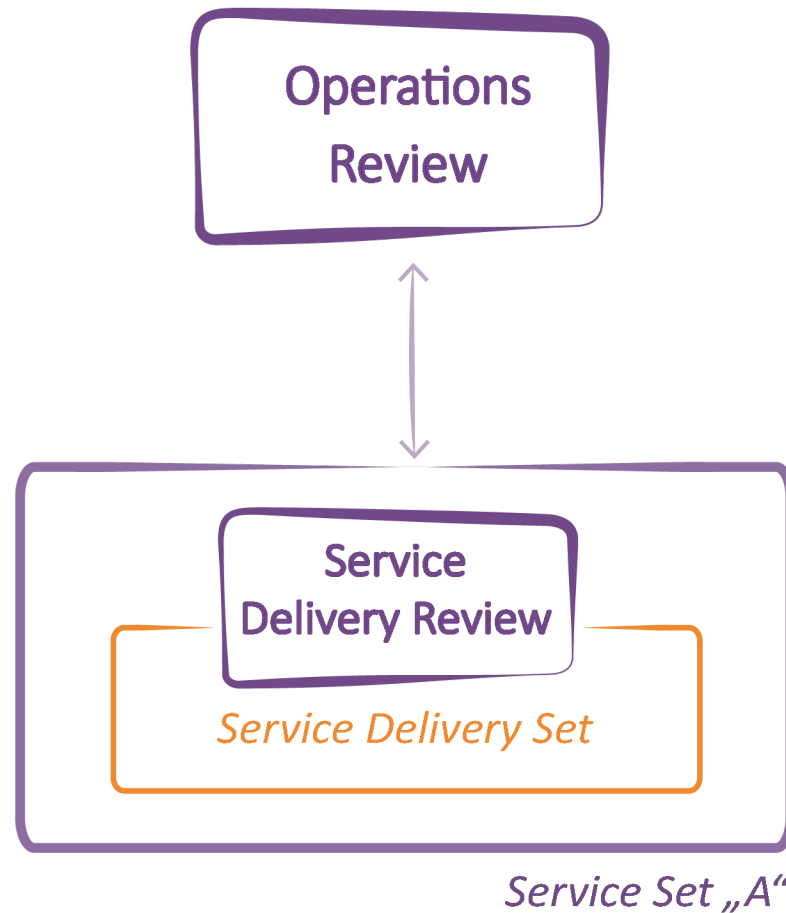
ML 4 Cadences



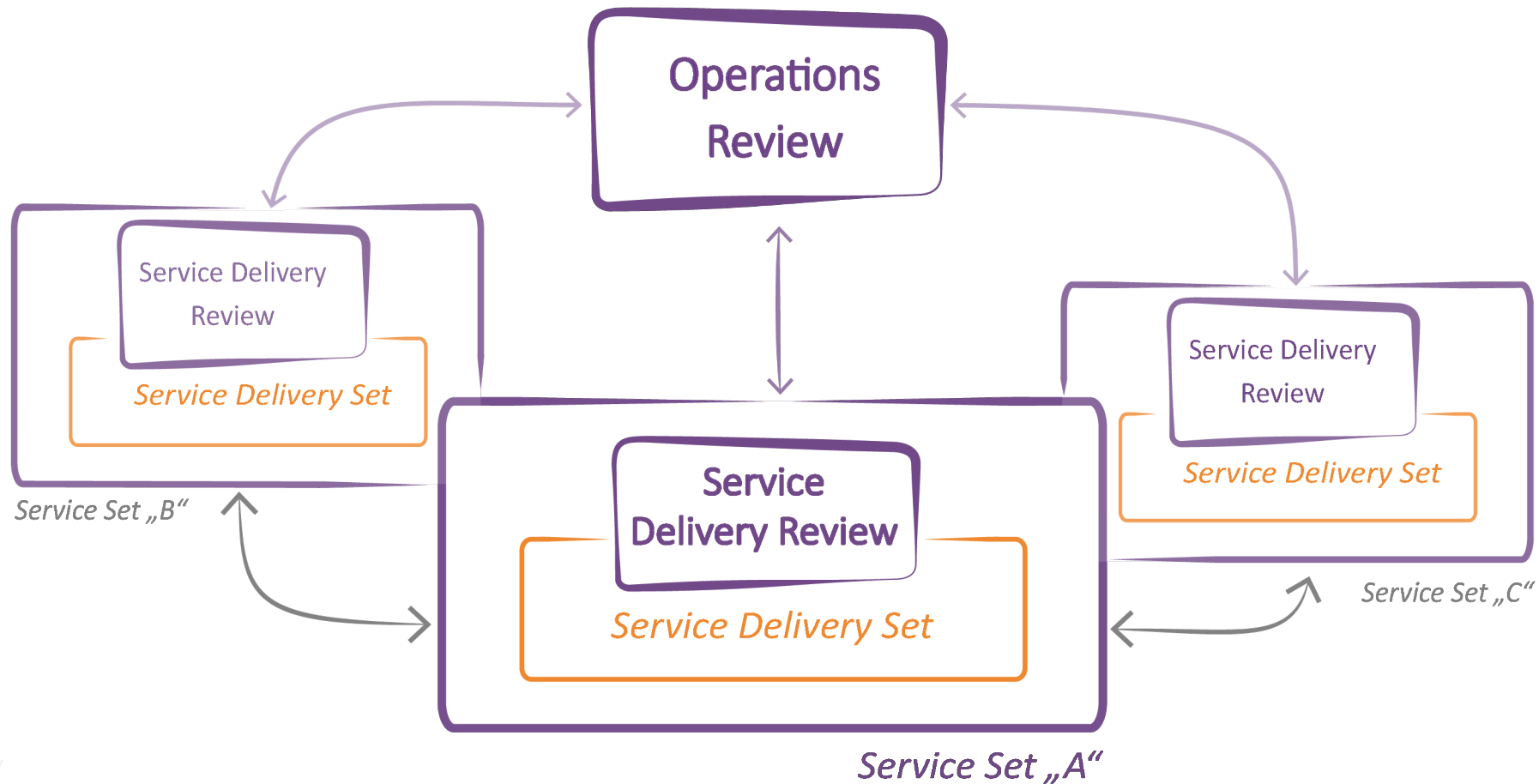
New Cadences at ML 4

Cadence	Purpose	Augments	
Operations Review	“System of Systems” level review. Disciplined review of demand and capability for each Kanban system with focus on dependencies and dependent effects.	ML 3	Improvement Suggestions Review
Risk Review	Understand and respond to risks to effective delivery of product and services of one or more Kanban systems.	ML 2	Blocker Clustering

Drive Improvements in a System of Systems



Drive Improvements in a System of Systems



Operations Review

4



“System of Systems” level review. Disciplined review of demand and capability for each Kanban system with focus on dependencies and dependent effects.

Systematic and data-driven review of how the system of system operates.



- Summary findings from all SDRs
- Business performance information
- Ongoing improvement initiatives about system-wide changes

- Improvement suggestions/decisions or required changes to strategy
- Dependent impact on tail risk for a lead time distribution to inform Risk Review



SDM and SRM per system, managers, individual contributors, customer representatives per Kanban system



Scope: a product or business unit
Dependencies understood, interdependent effects exposed
Kaizen events suggested, improvement opportunities assigned



Depending on context, often monthly



2 hours

Why is monthly usually a good choice?

- More often is too much overhead
 - Preparing data
 - Expensive meeting (lots of people)
 - 2.5 hours is a lot of time
 - Need enough time and data to show trends
- Quarterly is not frequent enough
 - No one can remember events from 3 months ago
 - Learning value is undermined
 - Too much data

Risk Review

4



Understand and respond to risks to effective delivery of product and services of one or more Kanban systems.

Connects the risks found in delivery to manage and improve delivery planning.



- Status of issues and risks from Operations Review and SDR
- Decisions from Delivery Planning Meeting

- Inform Delivery Planning
- Enable changes in service delivery and Kanban system design (flow to Service Delivery Review(s) and Operations Review)



SDM(s),
anyone with
information of
recent blockers



Analyze each risk using the
defined risk dimensions
Cluster risks according to the
required mitigation actions
Define actions possibly affecting
policies and Classes of Service



Monthly



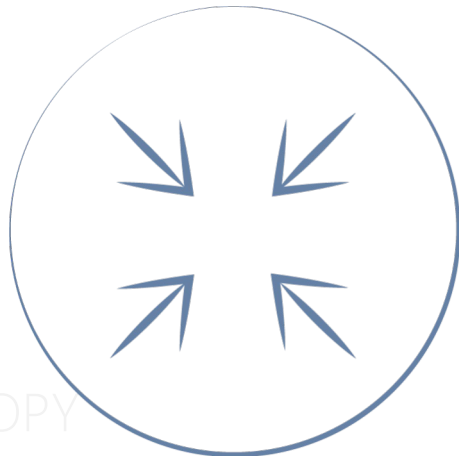
1-2 hours

Topics to be covered in Risk Review

- Review classes of service
 - Are they still appropriate? Are they being used? Have any exceptions been made? Is there a new pattern? Need for a new class of service?
- Review blockers
 - Prioritize mitigation and reduction actions based on blocker cluster analysis
 - Review risk hedging policies
 - Consider whether recently observed demand fits with historic patterns and capacity allocation is still appropriate
- Review demand shaping policies
 - Should we adjust policies that split demand on dependent or shared services?

Types of blocked items

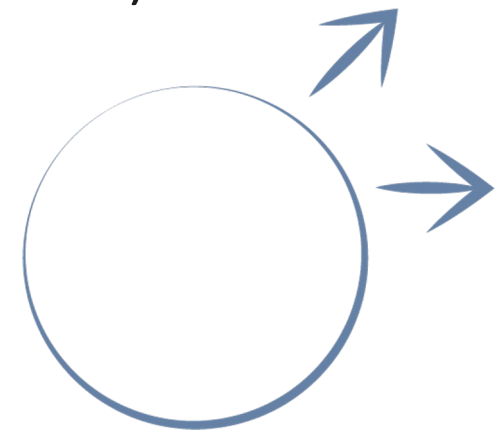
Blocked with an issue
internal to our system
(and within our political control)



Blocked due to an issue
outside our system but within our firm (requires collaboration and possibly political capital to resolve)

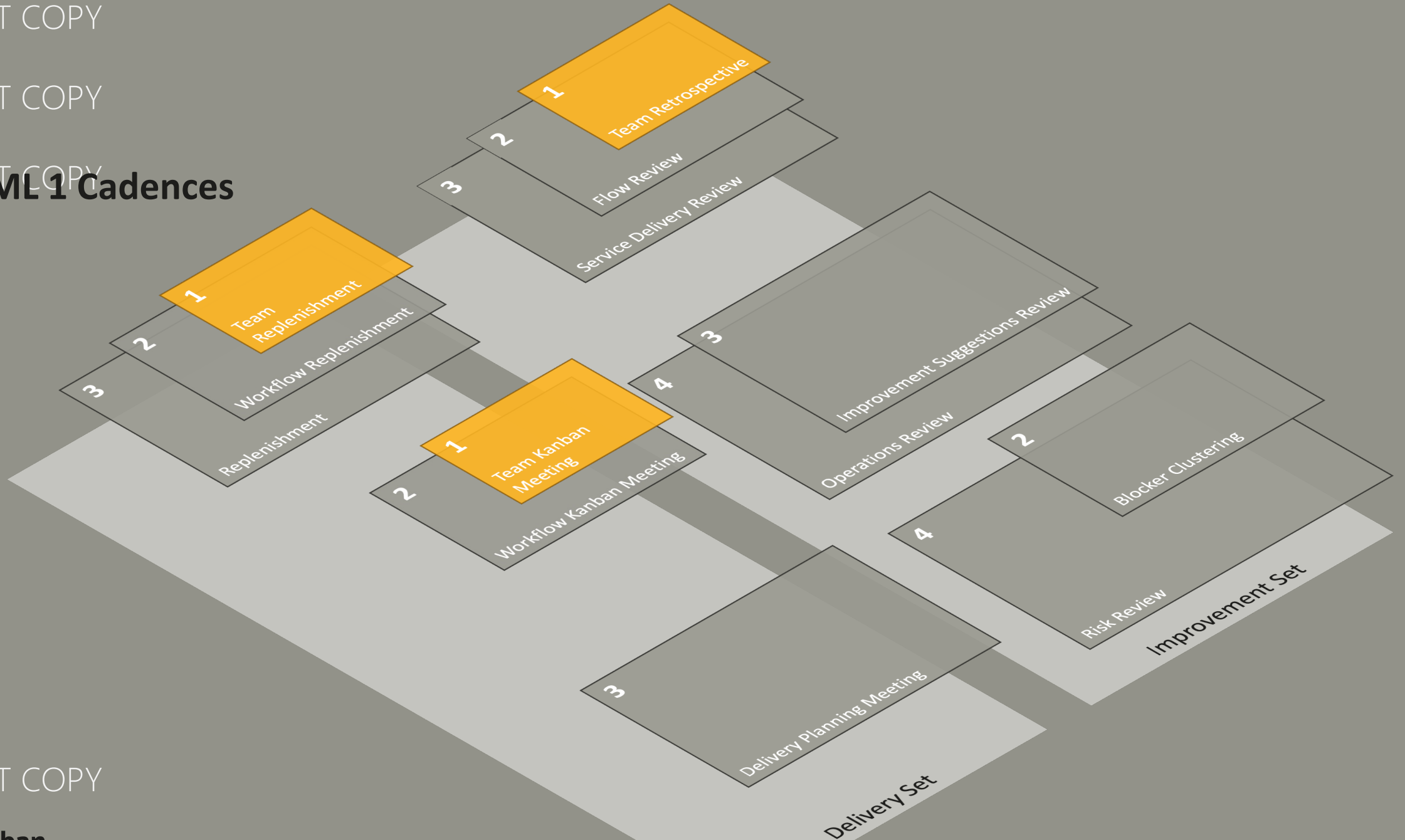


Blocked due to an issue
external to our firm
(typically with a vendor, regulator, customer, or perhaps a political issue such as a forthcoming election)



Summary: Feedback Loops

ML 1 Cadences

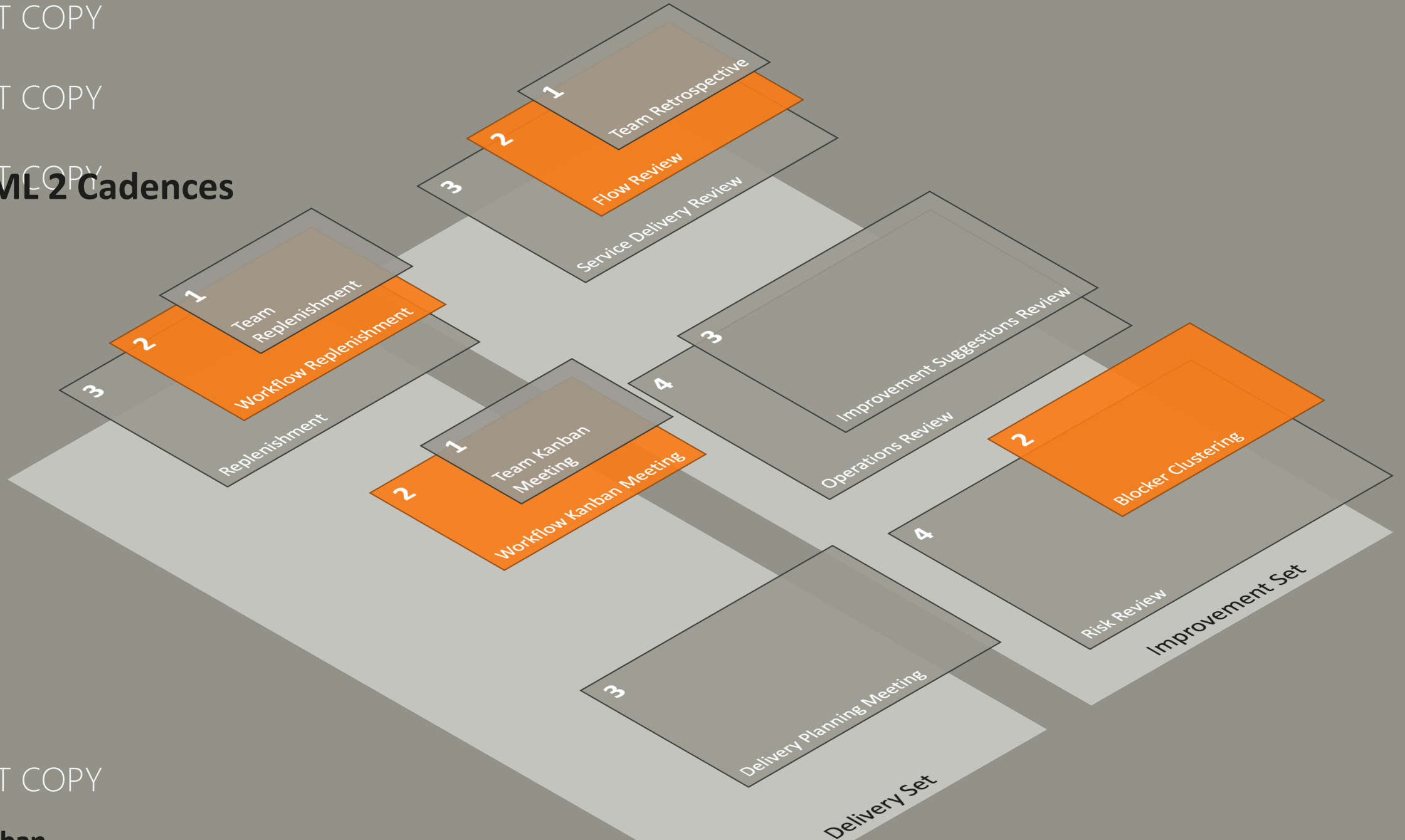


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ML 2 Cadences



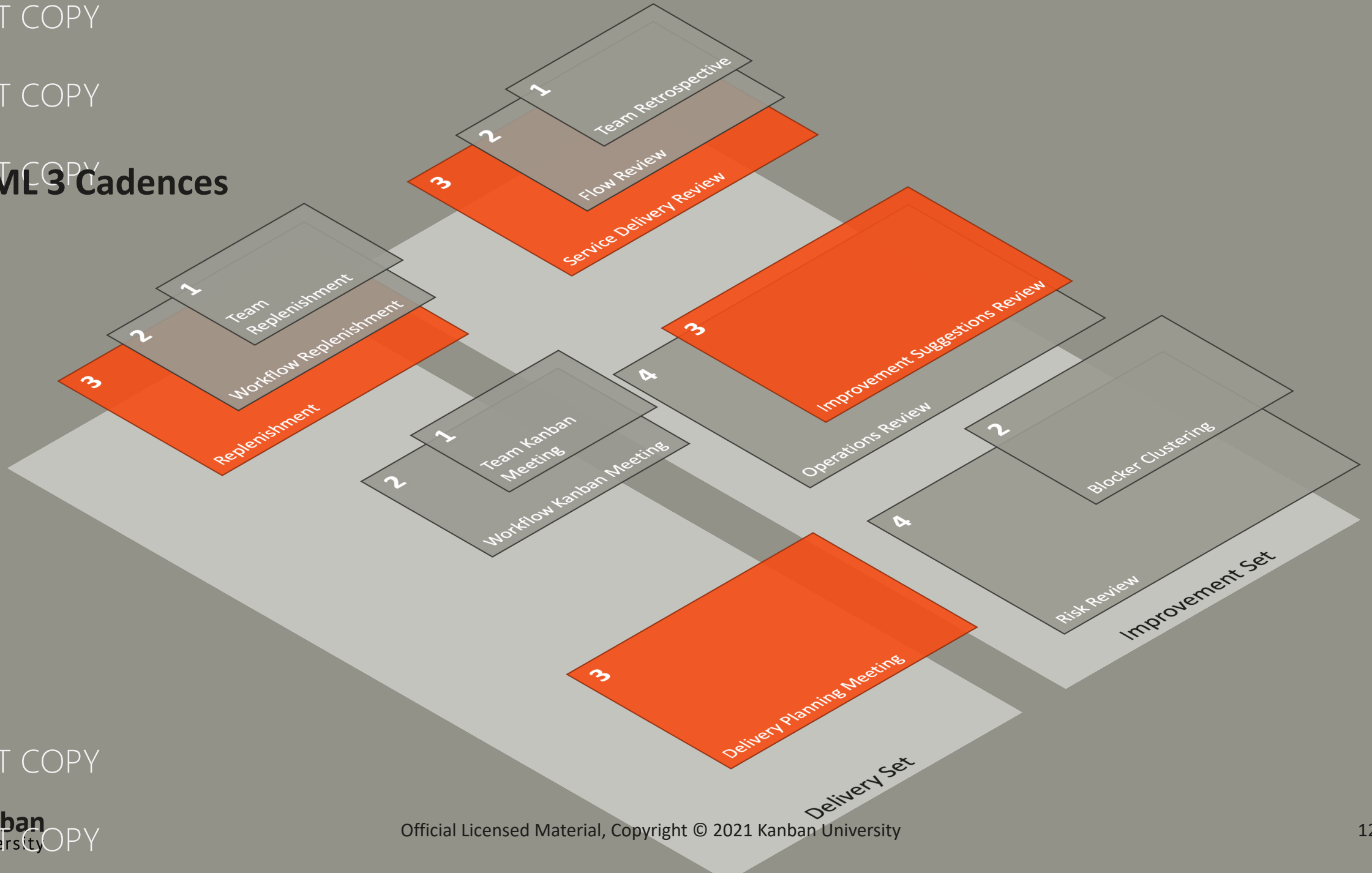
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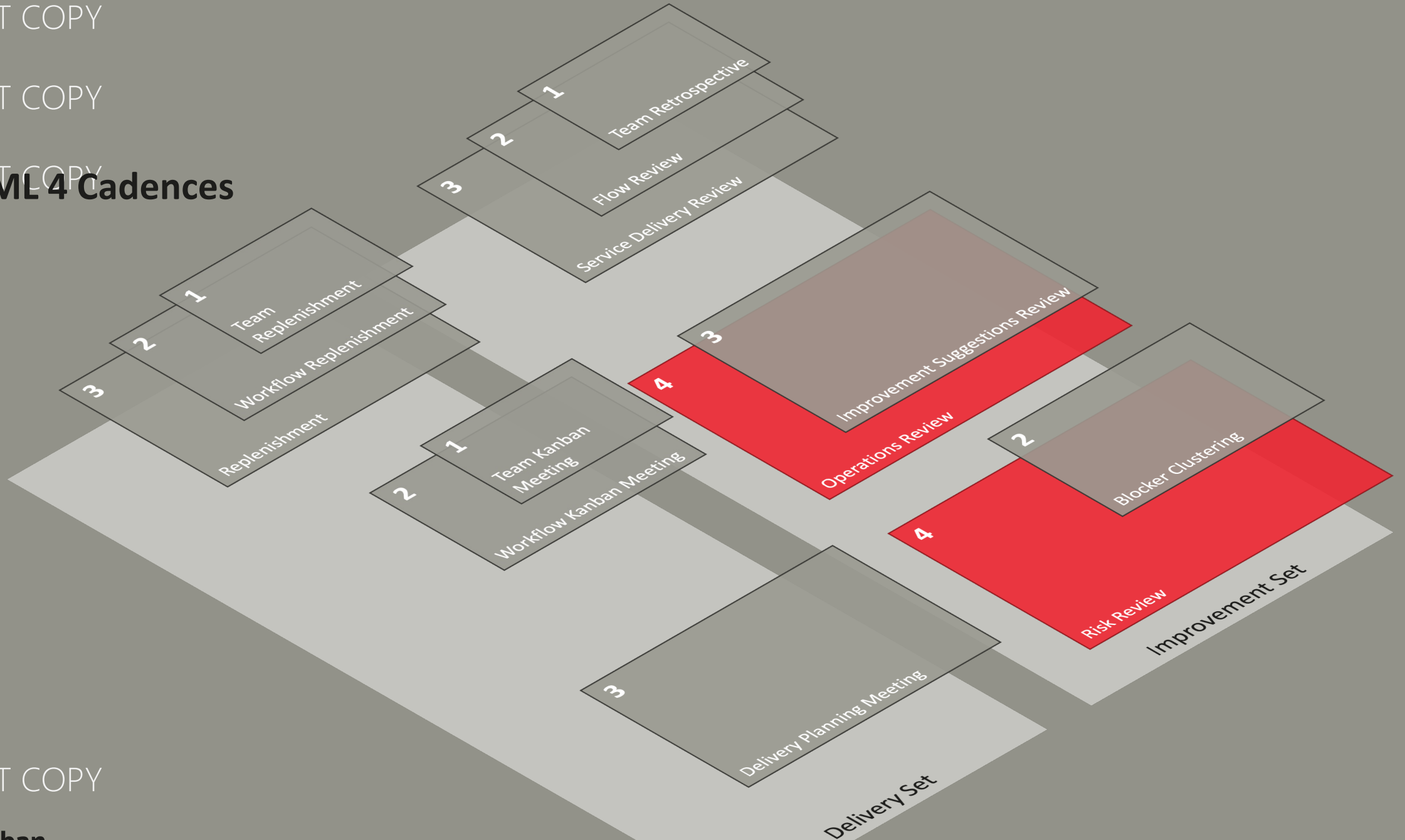
ML3 Cadences



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ML 4 Cadences



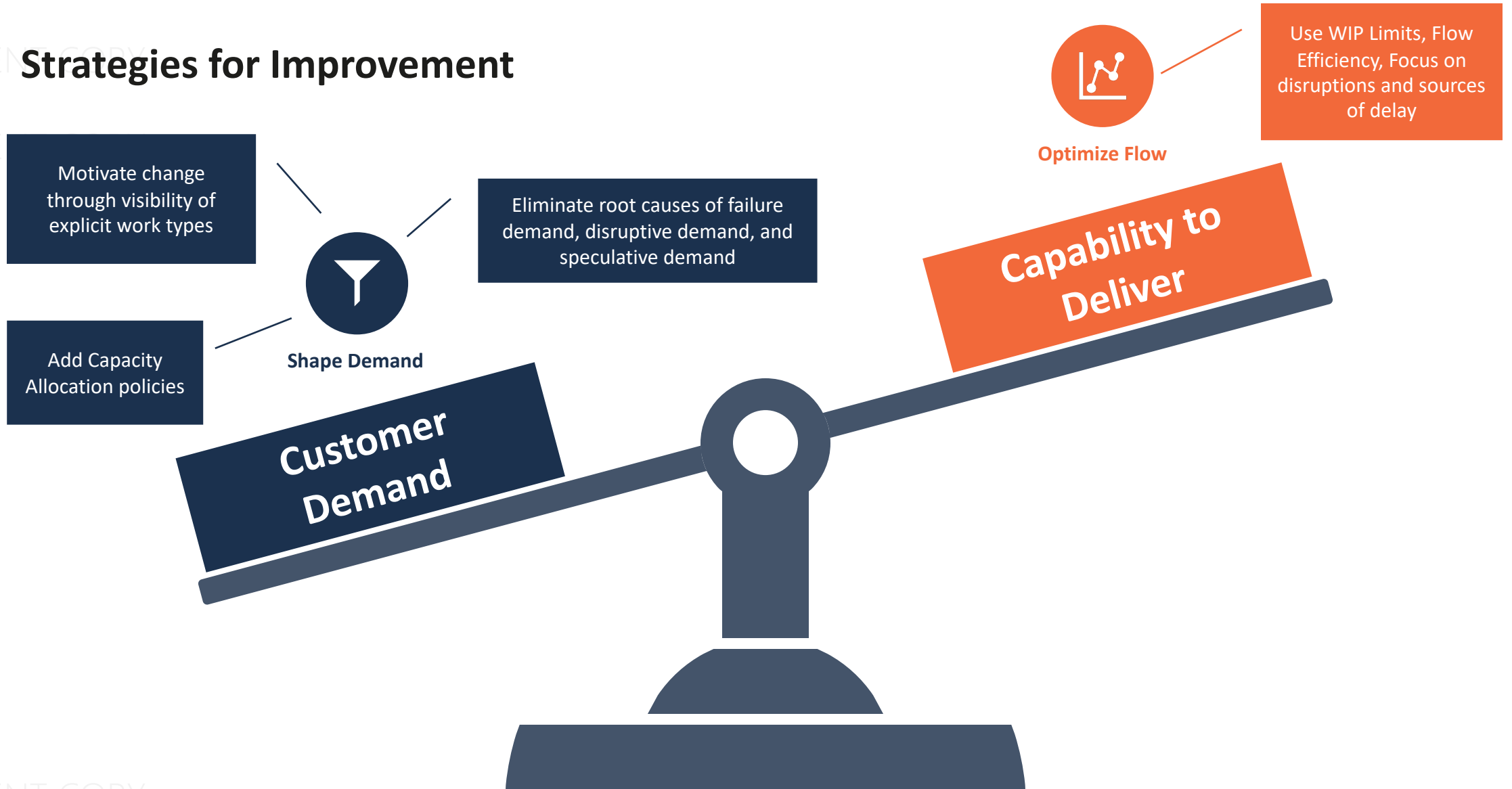
Design your cadences

- Apply what you've learned in this module to an organization of your choice! (Form groups around cases)
- What Maturity Level practices would be appropriate?
- First, reflect on the purpose of the cadences: Which feedback loops are operating effectively already?
- For cadences that are missing or could be improved:
 - Fill out the Cadence Cards. (see the template provided)
 - How do the meetings / reviews relate to each other?
 - What first steps can you initiate to get these changes implemented?

Module 4

Improvement Techniques

Strategies for Improvement

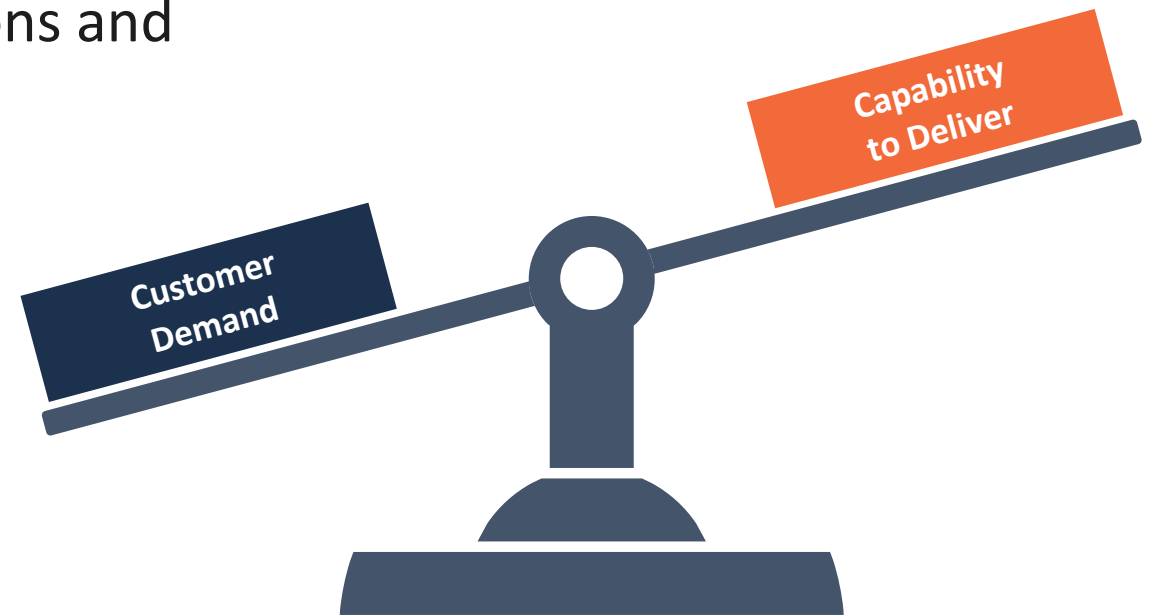


Kanban System

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Strategies for Improving Capability

- Measure Performance and Remove Delays
 - Identify queues and buffers and size appropriately
 - Blocker Clustering – reduce or mitigate root causes
- Reduce Variability caused by disruptions and dependencies
 - Common cause – system design changes
 - Special cause – risk management
- Manage Bottlenecks
 - Improve flow
 - Deliver more value
- Address overhead and inefficiencies
 - Reduce waste/overhead
 - Enable smaller batches



Kanban System

“

First, know your capability.
Then, apply strategies to
improve it.

Understanding Lead Time

Introduction: Lead Time

An inconvenient truth:

Lead time(*) is not a single number
It is a probability distribution

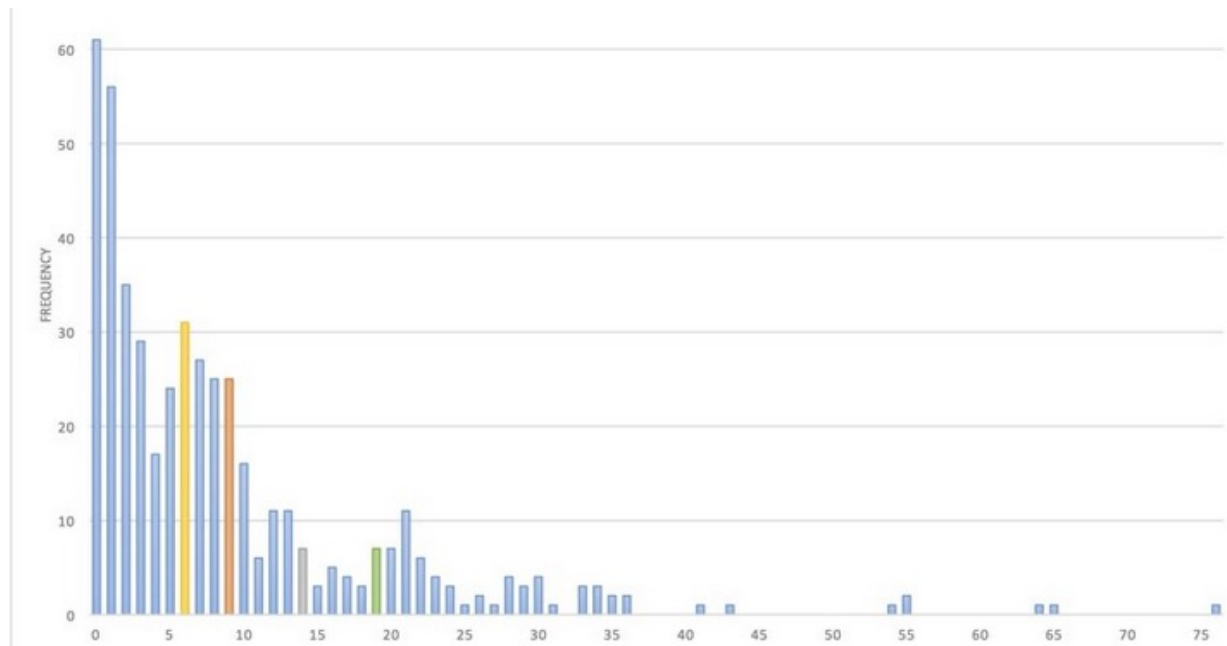
And here's the good news:

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

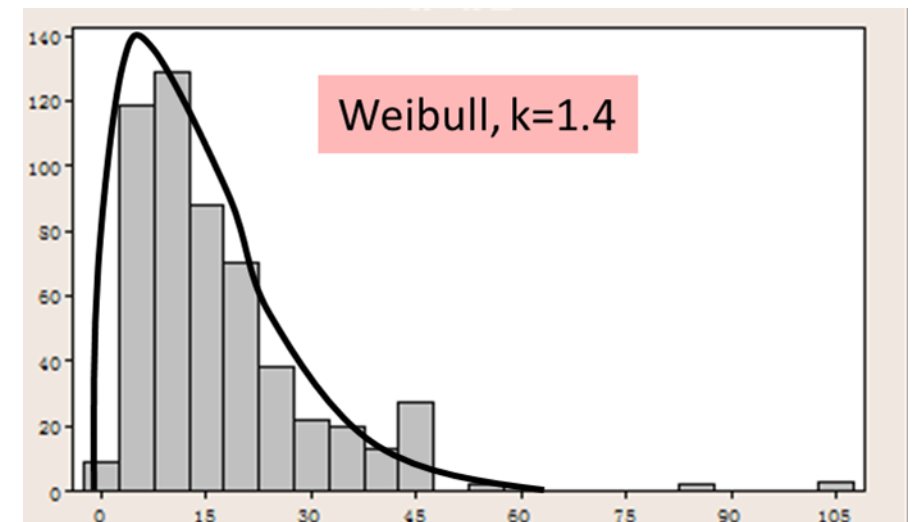
(*) customer lead time, time-to-market, time-in-process, etc.

Lead Time Distributions

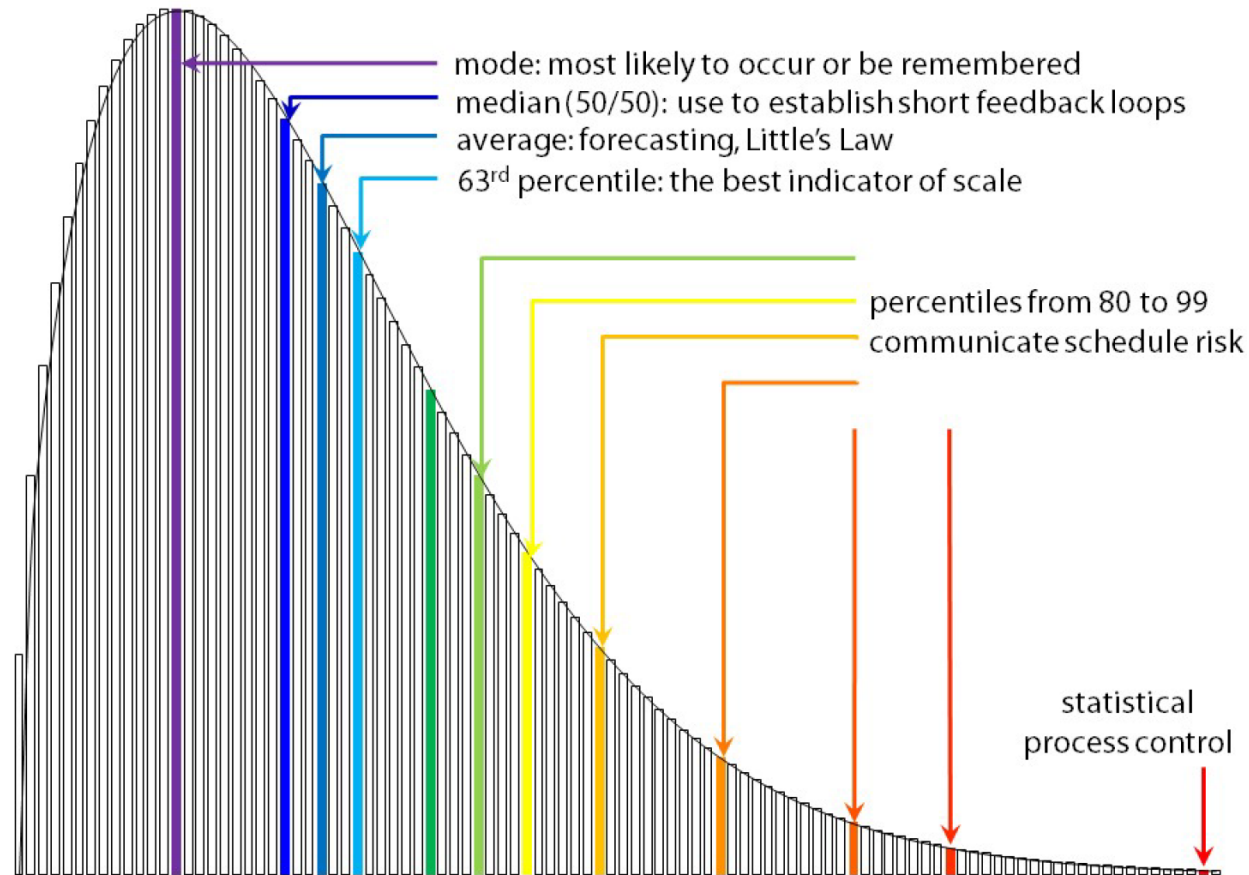
An IT operations service in Germany



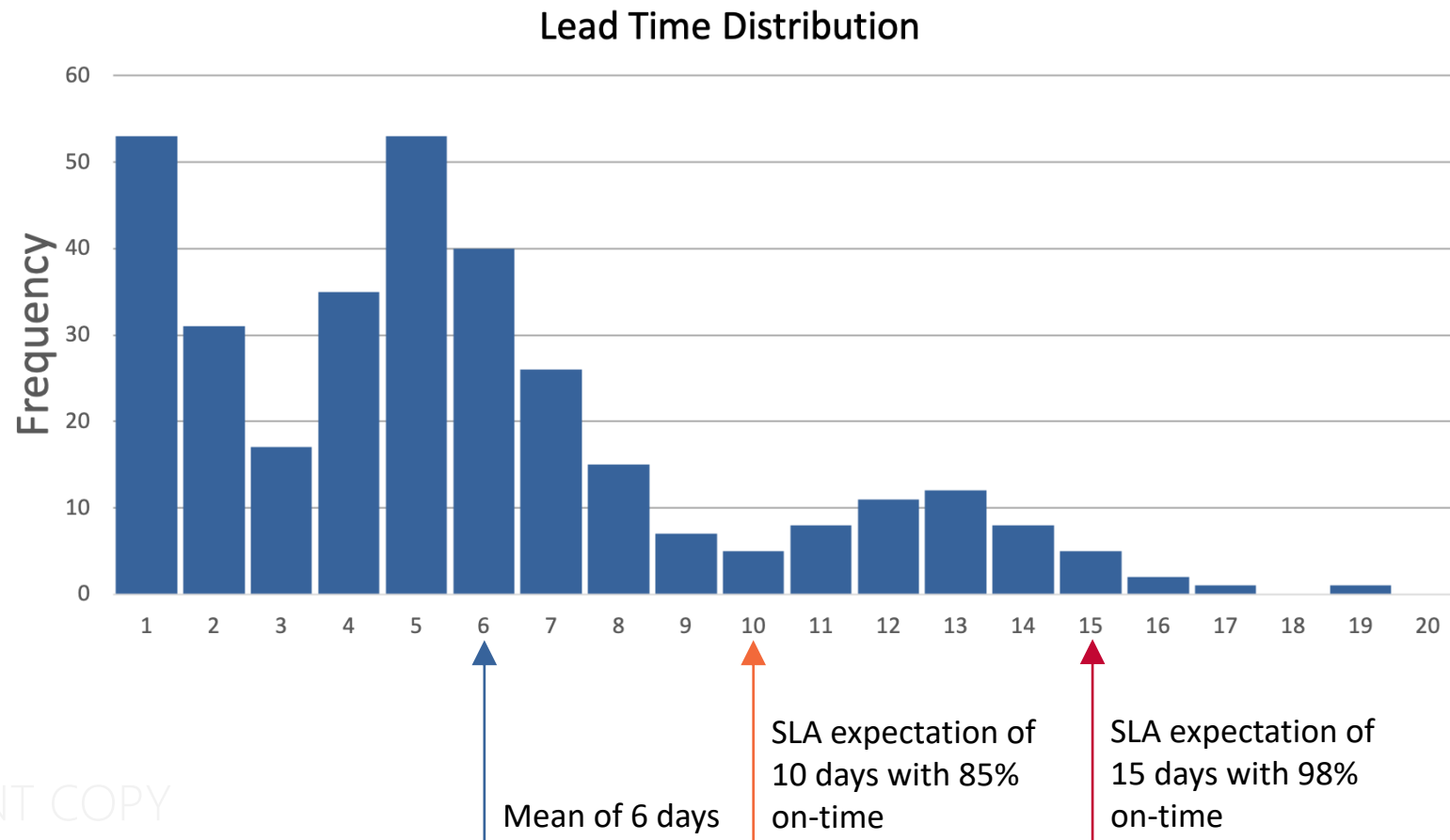
A major network hardware company in China



How to Read a Lead Time Distribution Chart



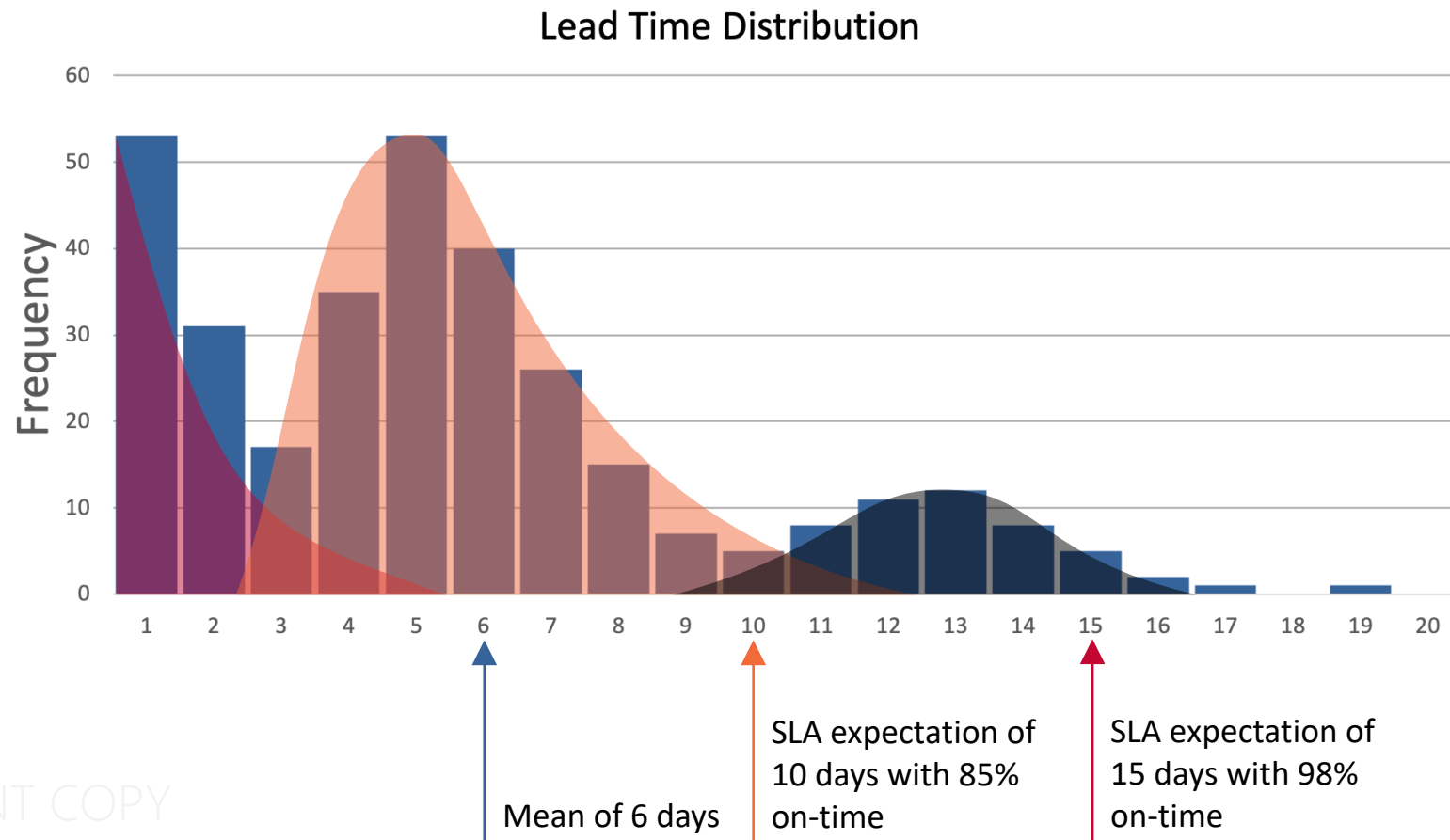
Lead Time Histogram



We deliver 85% of these types of work within 10 days, so we can promise delivery within 10 days with an 85% confidence.

If you want 98% confidence, we can commit to deliver within 15 days.

Lead Time Histogram



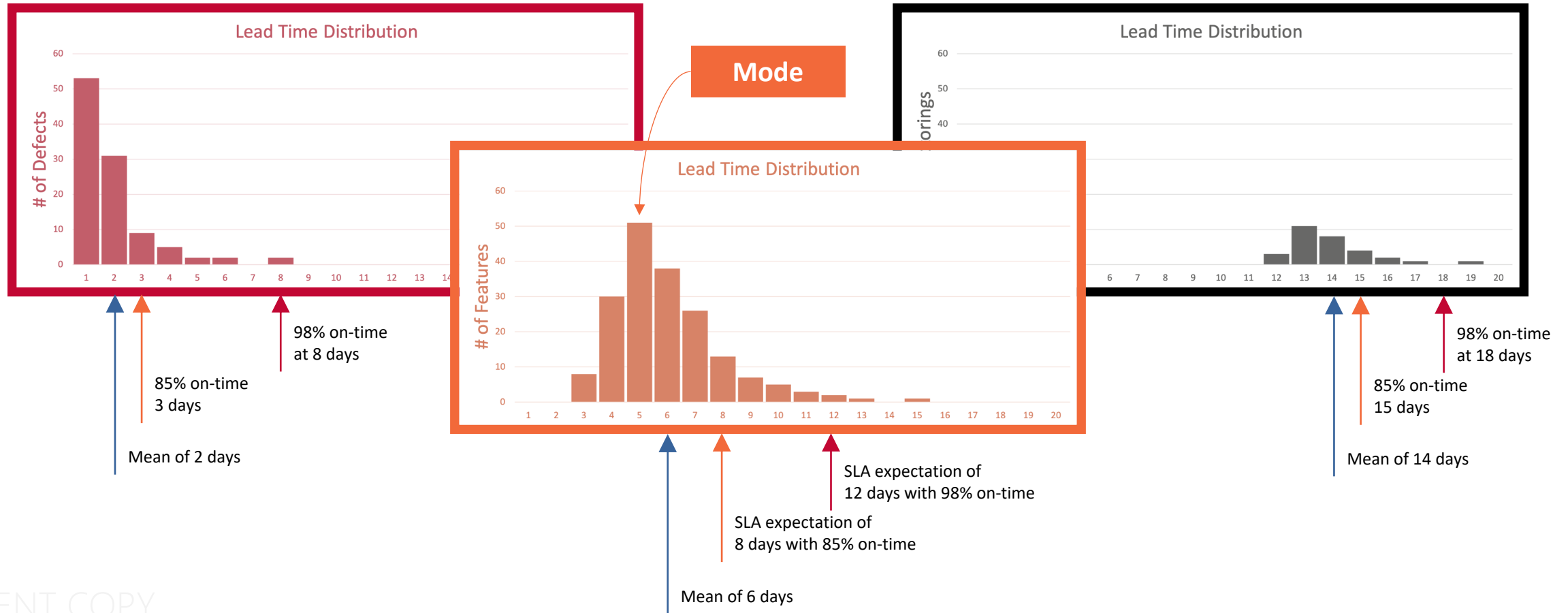
This is multi-modal data!

Defects!

Features!

Refactorings!

Filter by Type or Class to get Single Modal Data

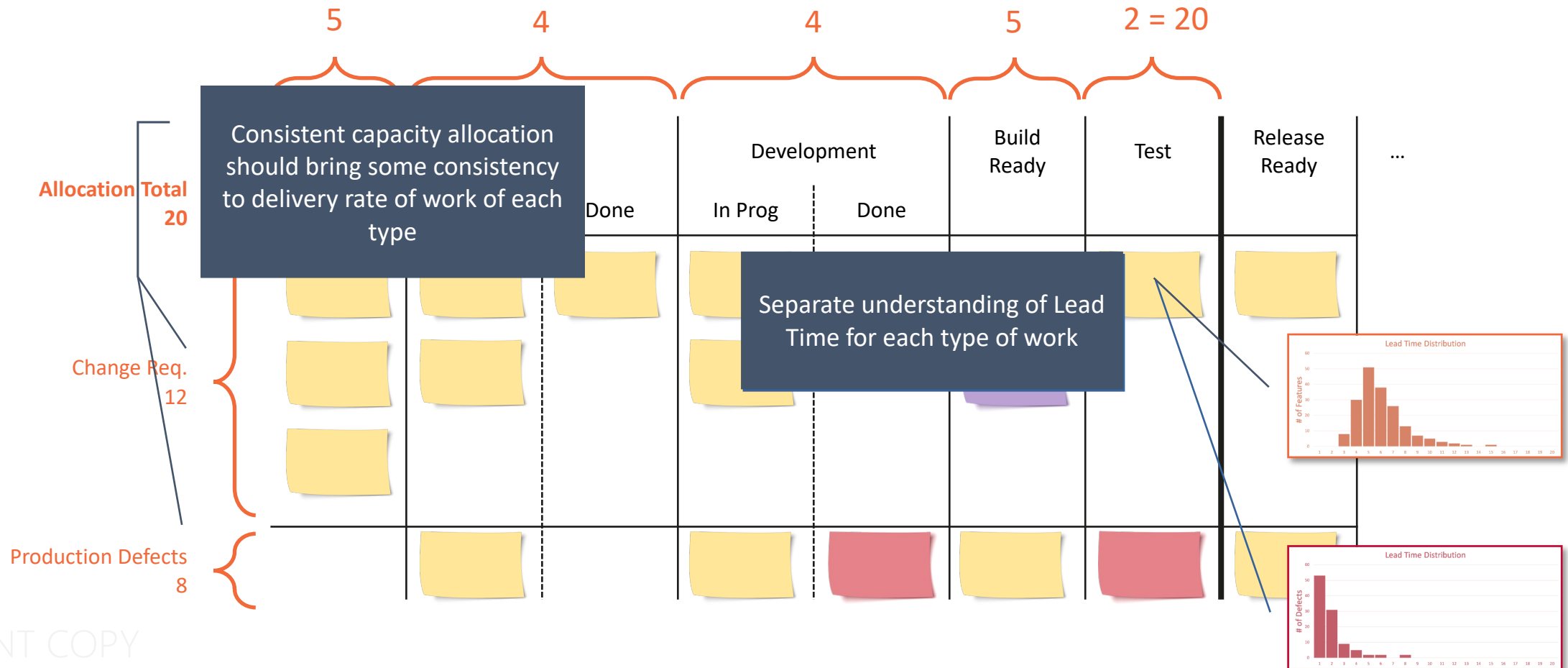


Splitting Lead Time Data

- 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%)

The known capability translates to elements such as capacity allocation on a Kanban system.

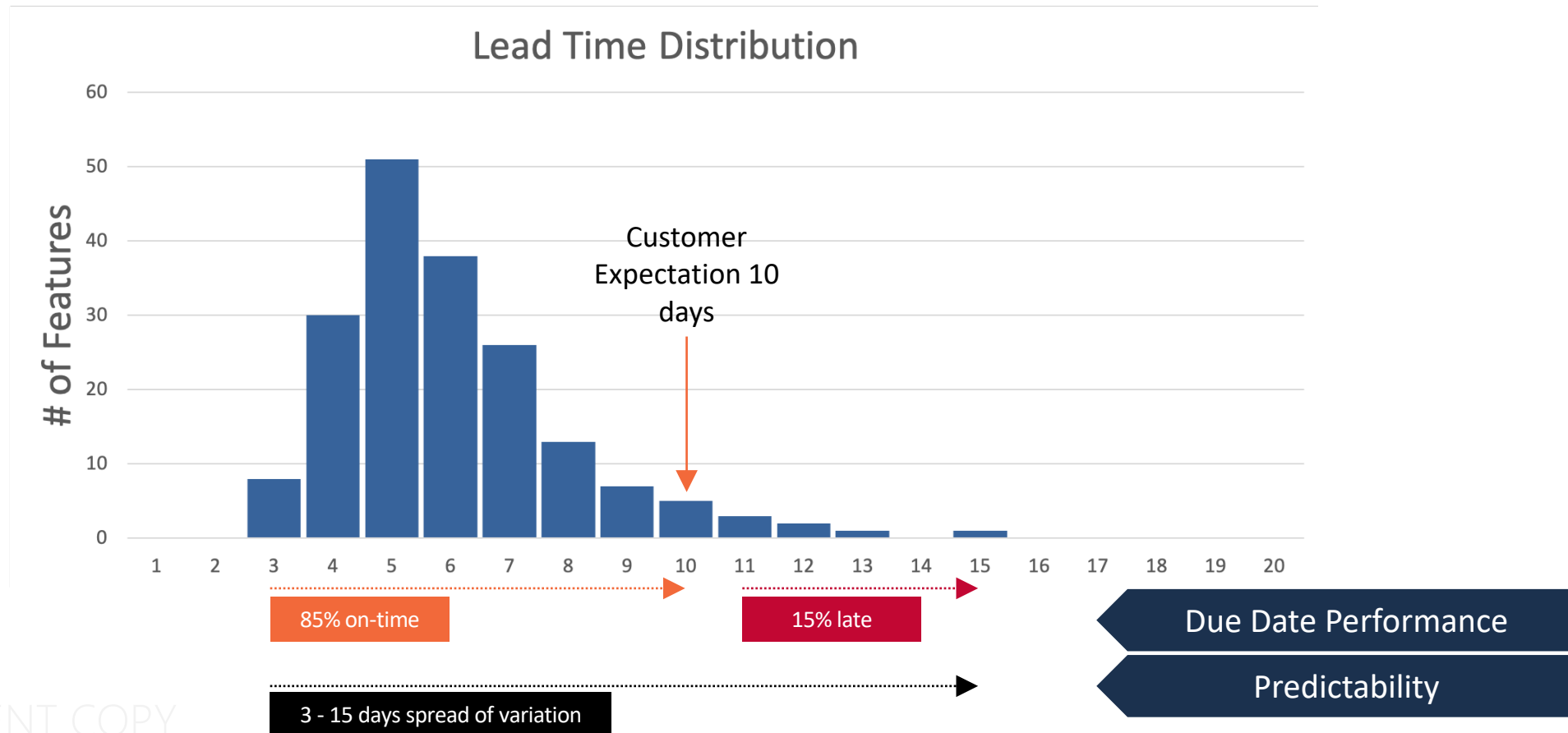
Allocate Capacity to Types of Work





Current range of capability
can provide accurate
delivery forecasts.

Use Lead Time Distribution to Evaluate Service Delivery Effectiveness



Exercise – Sources of Delay

(Part 1 of 2)

10 min

- Gather 5-10 sticky notes: Where in your organization does work wait (queue), and for how long?
- Cluster these sticky notes based on the source / cause for the delay!
Do dependencies cause delay? Which type?
Internal to your service, external to your service but internal to your business, external to your business?
- Is the length of the delay predictable or not? What is a typical lead time distribution?

Exercise – Sources of Delay (Part 2 of 2)

10 min

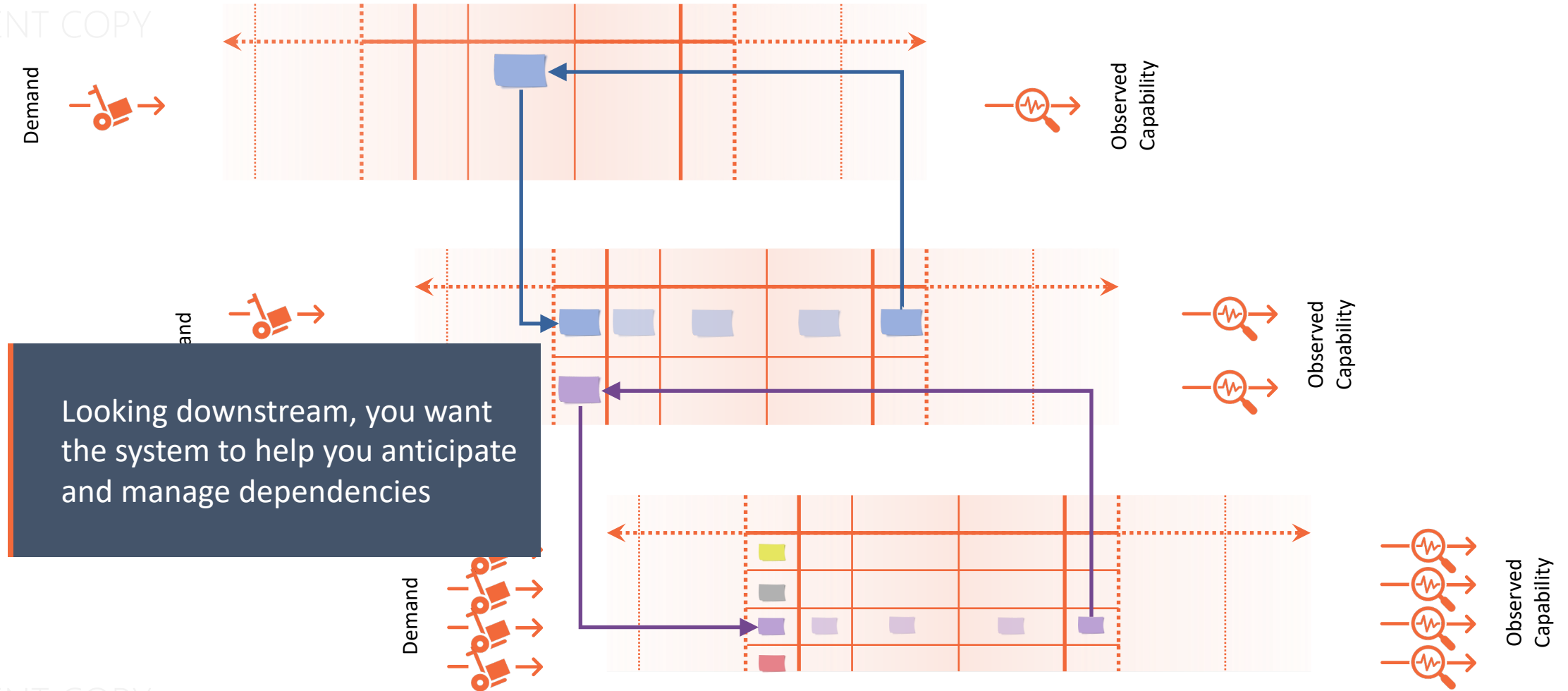
- On more sticky notes, write down any actions available to avoid or influence these different delays.
- Does avoiding delay change the risk in delivering the work?
- Can you imagine reducing the size of queues and length of queuing time? If so, what are the implications?
- Can you imagine circumstances where avoiding dependencies that cause delay would be acceptable?

Removing Delays

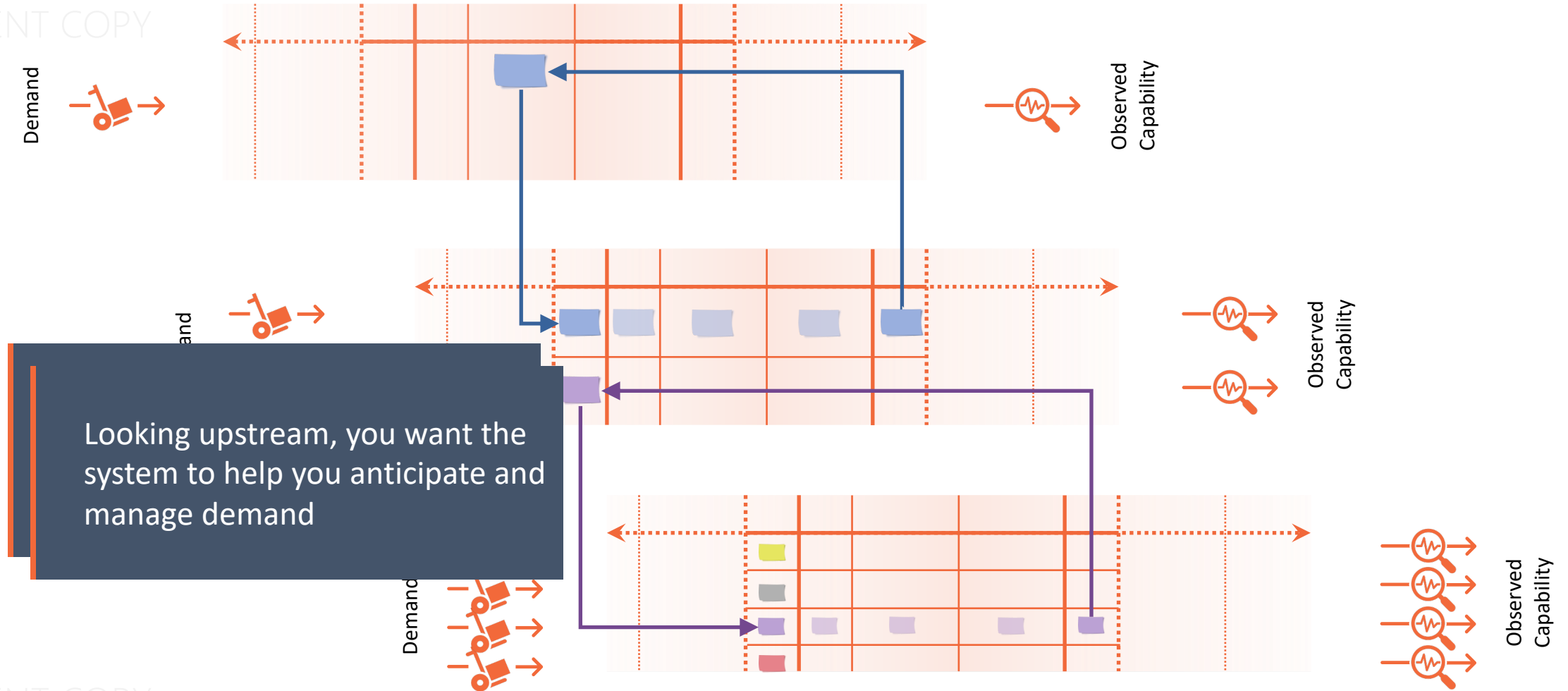


Be aware of dependencies,
model them, isolate and
measure them.

Some systems have dependencies on others

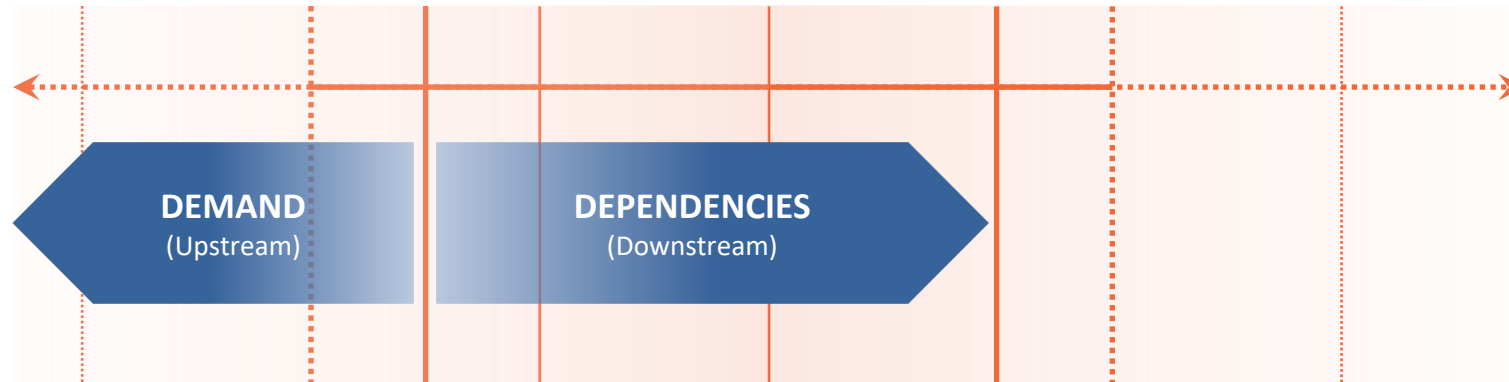


Some systems have dependencies on others



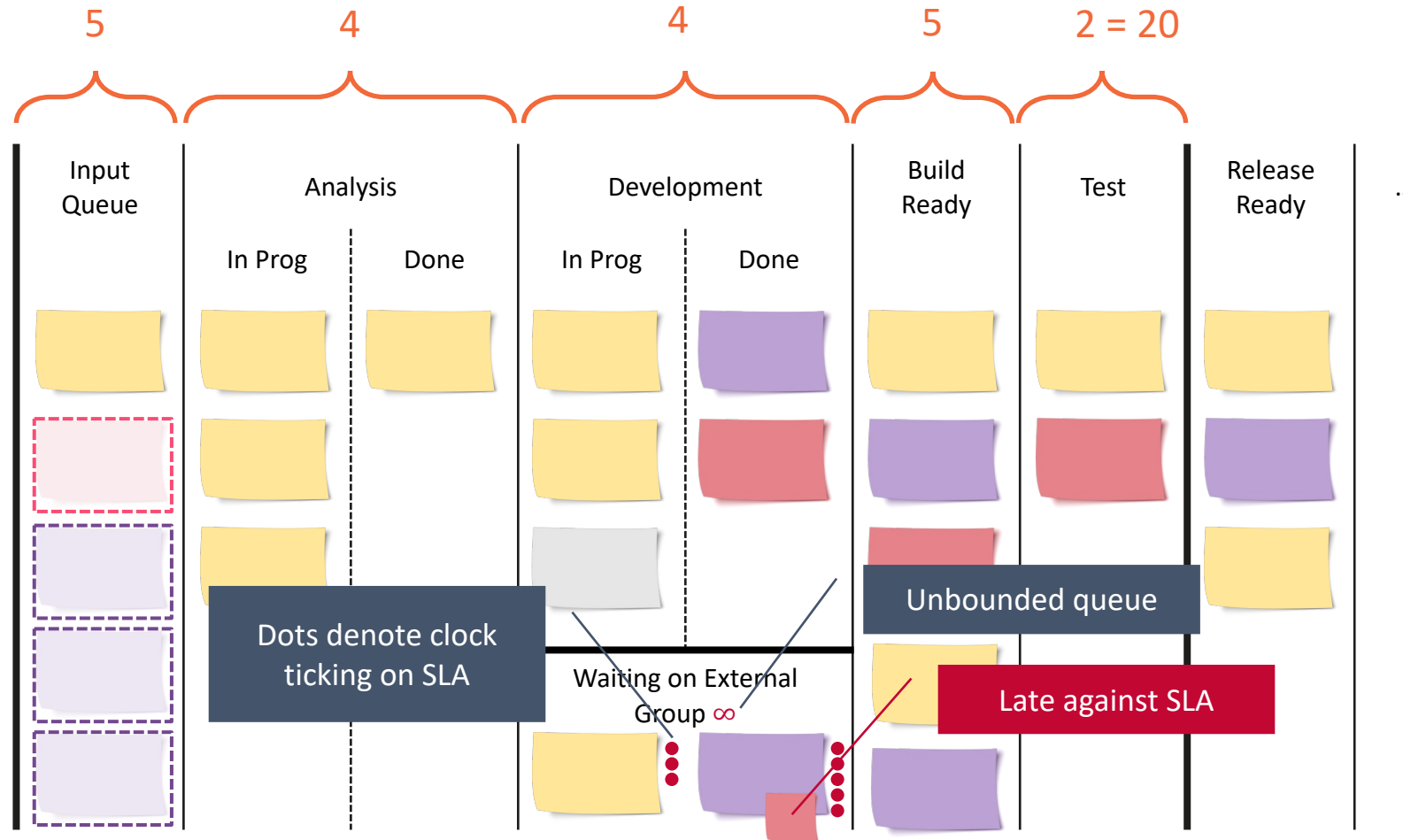
Summary: Manage Dependencies

The system should help you anticipate and manage ...



Combine the two, and across the organization you smooth flow end-to-end and help keep demand in balance with overall system capability.

Buffer dependencies, agree SLAs



Exercise – Dependencies (1 of 2)

1

On what service(s) do you depend, i.e., which ones do you call?

3

Can you predict when you will demand capacity on dependent services?

2

How do you identify in good time which work items will have dependencies on external services?

4

Where are you dependent on your customer(s)?



Exercise – Dependencies (2 of 2)

Walk in the dependent service(s)' shoes!

- How does demand look from that perspective?
 - How do they manage demand that is blocking or waiting?
 - Do they have multiple sources of demand?
 - Do they offer different classes of service?



Understanding Variability

Disruptions and Dependencies



Risk is an exception to what is expected. We can have deliberate strategies to mitigate risk. Understanding types of risk informs our actions.

Variation: “Lack of consistency or fixed pattern”

Common Cause (“Chance Cause”)

- Expected or unsurprising
- Inside of typical system parameters, “The noise within the system”



Special Cause (“Assignable Cause”)

- Unexpected and unpredictable
- Possible but outside of system control





Wimbledon comes in on time every year

How do event planners do it?

Except 2004 when it rained on Sunday and the final was on Monday ;-)

Scheduling Wimbledon isn't an exact science!

Games last different lengths of time and weather conditions can stop play altogether but the Men's Final always happens on the 2nd Sunday.

If only we could project manage like this!

Variation: “Lack of consistency or fixed pattern”

Common Cause (“Chance Cause”)

- Expected or unsurprising
- Inside of typical system parameters, “The noise within the system”



Special Cause (“Assignable Cause”)

- Unexpected and unpredictable
- Possible but outside of system control

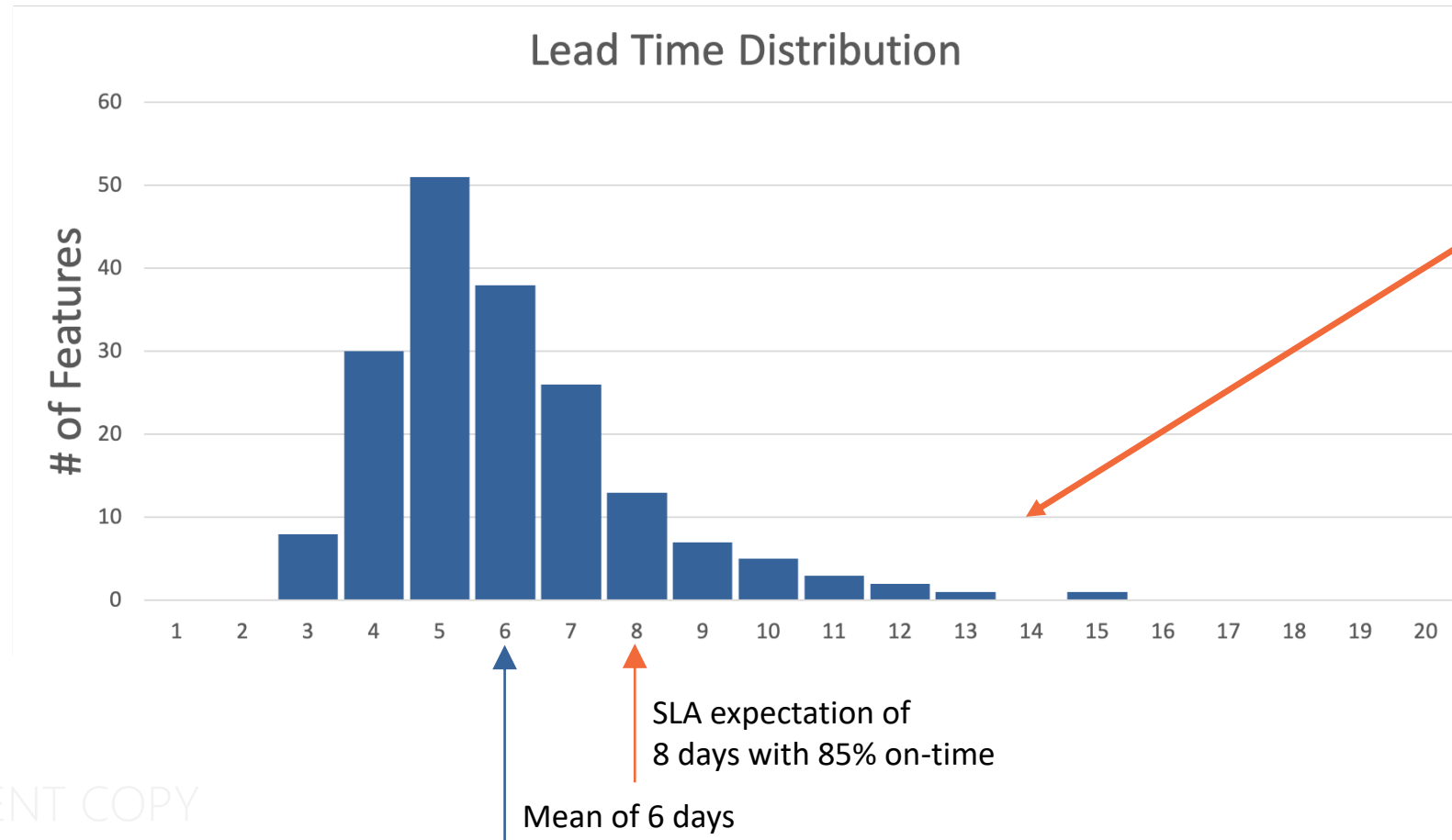


Risk Management trims the tail

Identify risks, their likelihood and impact (delay that extends lead time).

Eliminating risks or reducing their impact trims the tail on the distribution.

Risk Management trims the tail



Risks often cause long lead times

- Failure demand such as quality issues
- Dependencies
- Expedites
- Many different customers

Trimming the tail moves the mean to the left, increasing delivery rate!

Discussion — Variability

- Discuss policy changes that would left or right shift lead time distribution in your organization.
- Possible root cause analysis and risk mitigation and reduction ?
- Wider implications on service delivery (such as quality)?
- How to avoid local sub optimizations?



Managing Bottlenecks

Kanban can reveal bottlenecks.
Understanding the type and
location of bottlenecks informs
our actions.

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.
- Select some of the examples and add information about:
 - The cause of the bottleneck
 - The impact on you
 - How it has been dealt with / How it could have been dealt with

Bottlenecks are common in traffic



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

What is a “bottleneck”

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

Theory of Constraints

- Founded by Eliyahu M. Goldratt
- Based on the premise that a system's throughput is limited by at least one constraint
- The Five Focusing Steps:
 - Identify the system's constraint(s)
 - Decide how to exploit the system's constraint(s)
 - Subordinate everything else to the above decision(s)
 - Elevate the system's constraint(s)
 - Start all over!

The Five Focusing Steps

- In your groups, select a bottleneck situation from private or work lives.
- What is the typical response to this situation?
- Now, apply the 5 focusing steps to it.
- What insights did you gain? Did you discover other options you did not think about at first?

Bottleneck should always be downstream of the commitment point

Everything upstream of the commitment point is optional and easily discarded!

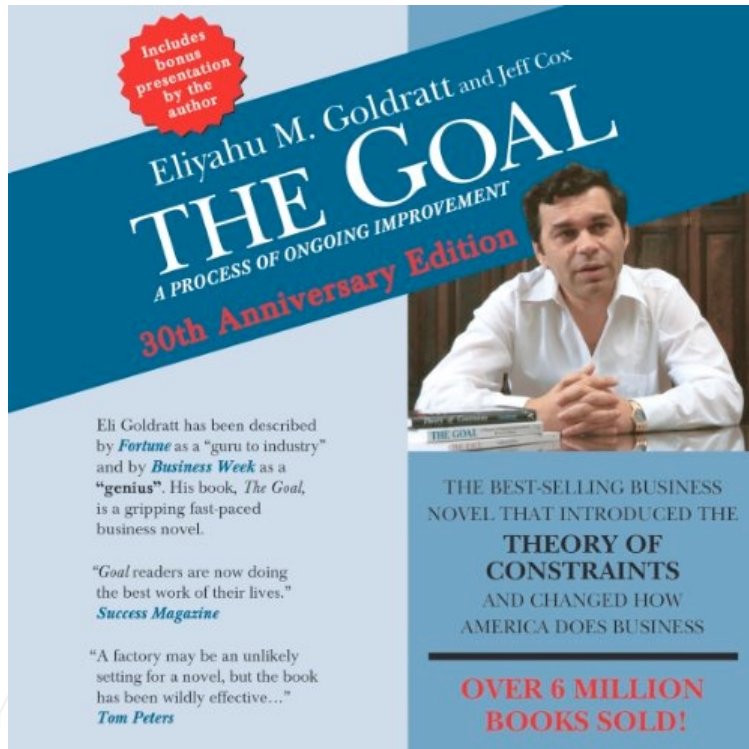
Everything downstream of the commitment point is committed – not easily abandoned!



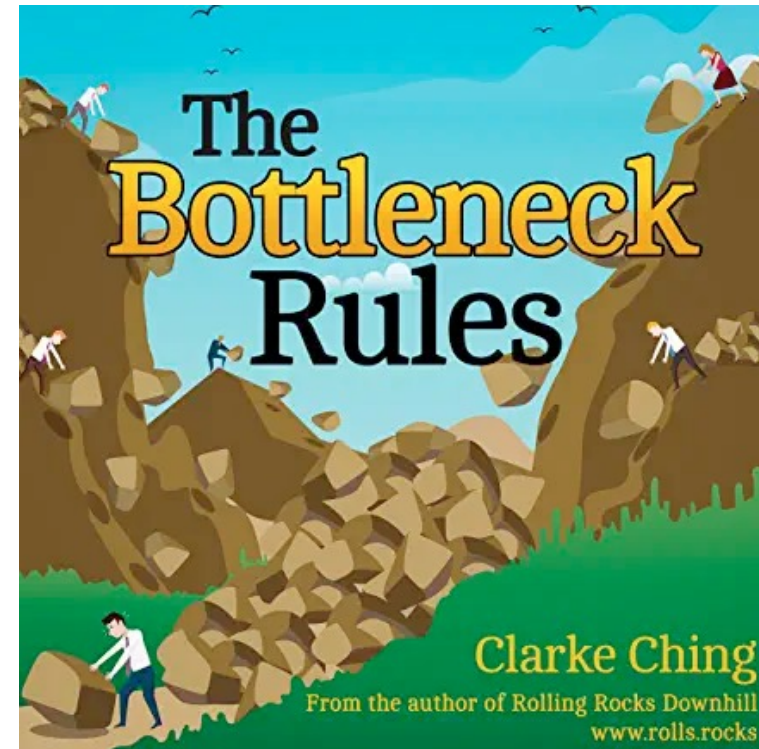
Bottleneck workers should never be asked to work on something that is optional and may be discarded. This includes any risk analysis (or estimation) that may be required to assess viability of an option.

Further reading

Eliyahu M. Goldratt: "The Goal"



Clarke Ching: "The Bottleneck rules"



Module 4

Evolutionary Change

“

How is Kanban so effective
for successful change
initiatives?

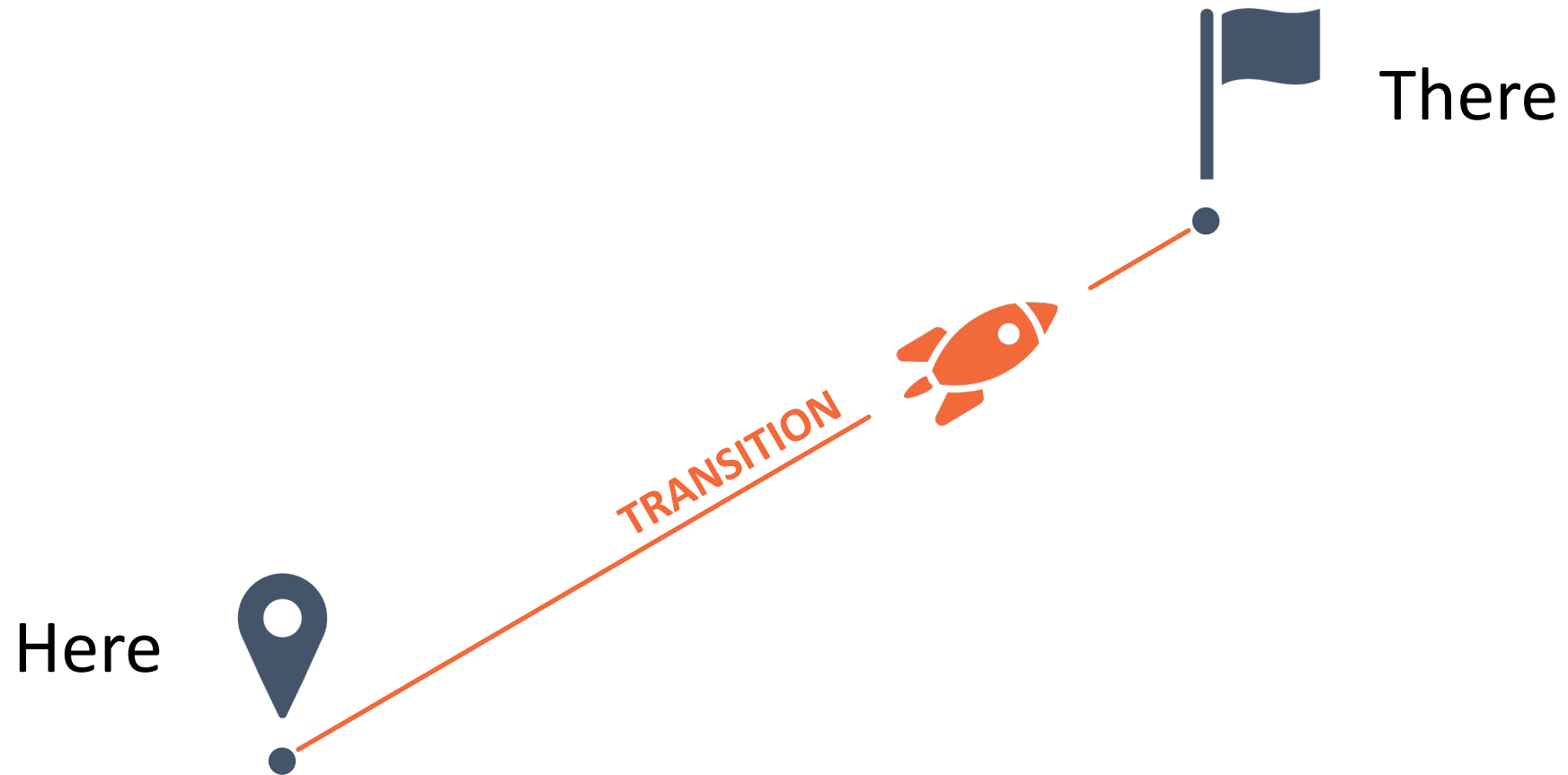
The Kanban Method

“Successful evolutionary change for your 21st century business.”

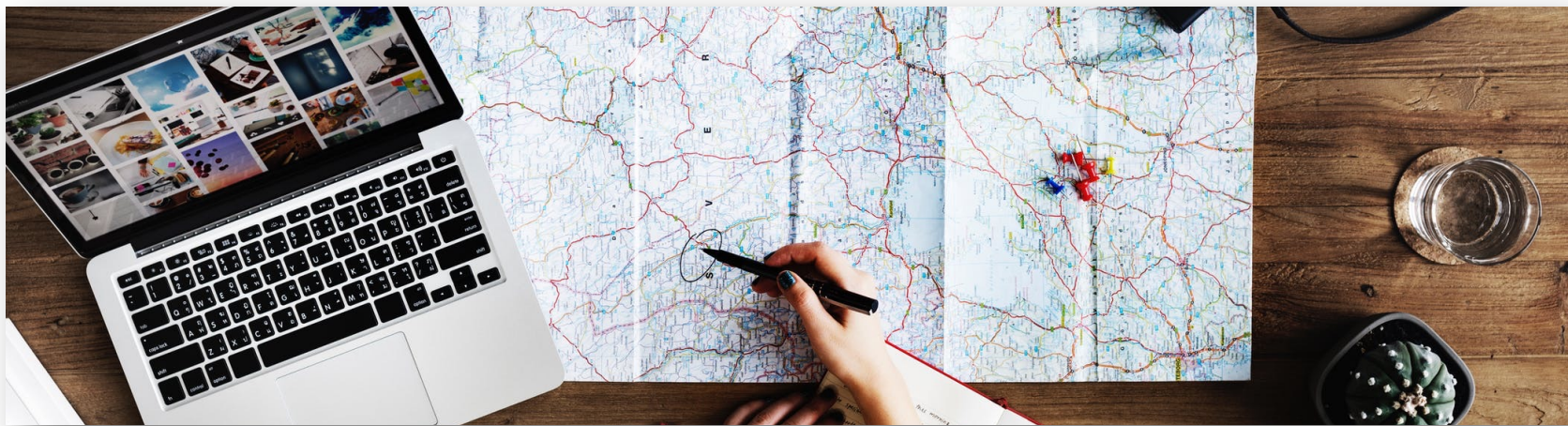
In order to successfully

- respond to market change
- survive in a rapidly changing market
- maintain fitness for purpose (without slow decay until a crisis punctuated by disruptive change initiatives)

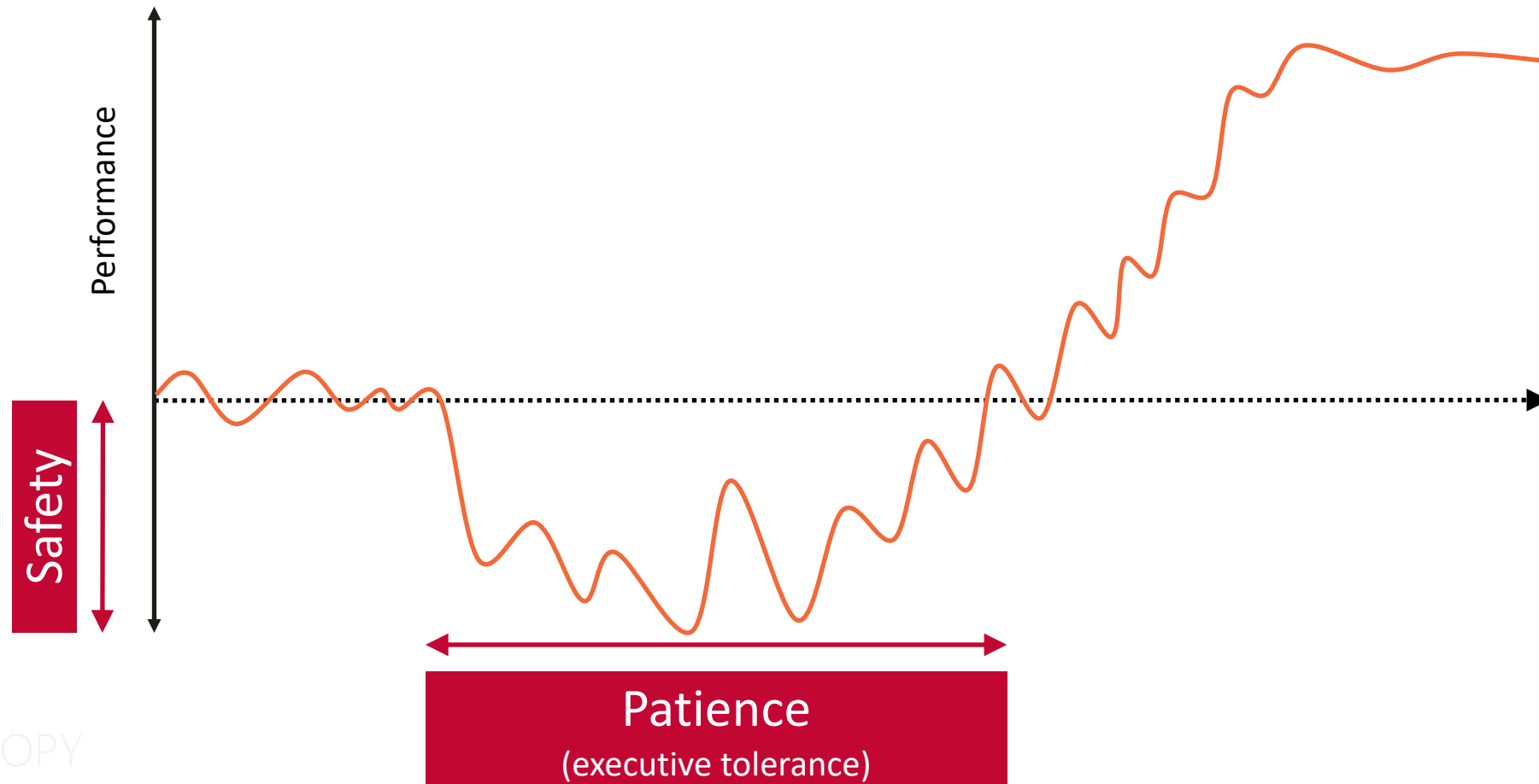
How we wish change worked



Traditional Change is an A to B Process



What Change Really Feels Like: The J Curve



Start with what you do now

- The Kanban Method evolved with the principle that it should “be like water” - enable change while avoiding sources of resistance.
- With Kanban you start with what you do now and "kanbanize" it, catalyzing the evolutionary process into action. Changes to processes in use will occur.
- Evaluating whether a change is truly an improvement is done using fitness criteria that evaluate an external outcome.

Fitness Criteria

Fitness criteria are metrics that measure observable external outcomes.



Fitness Criteria

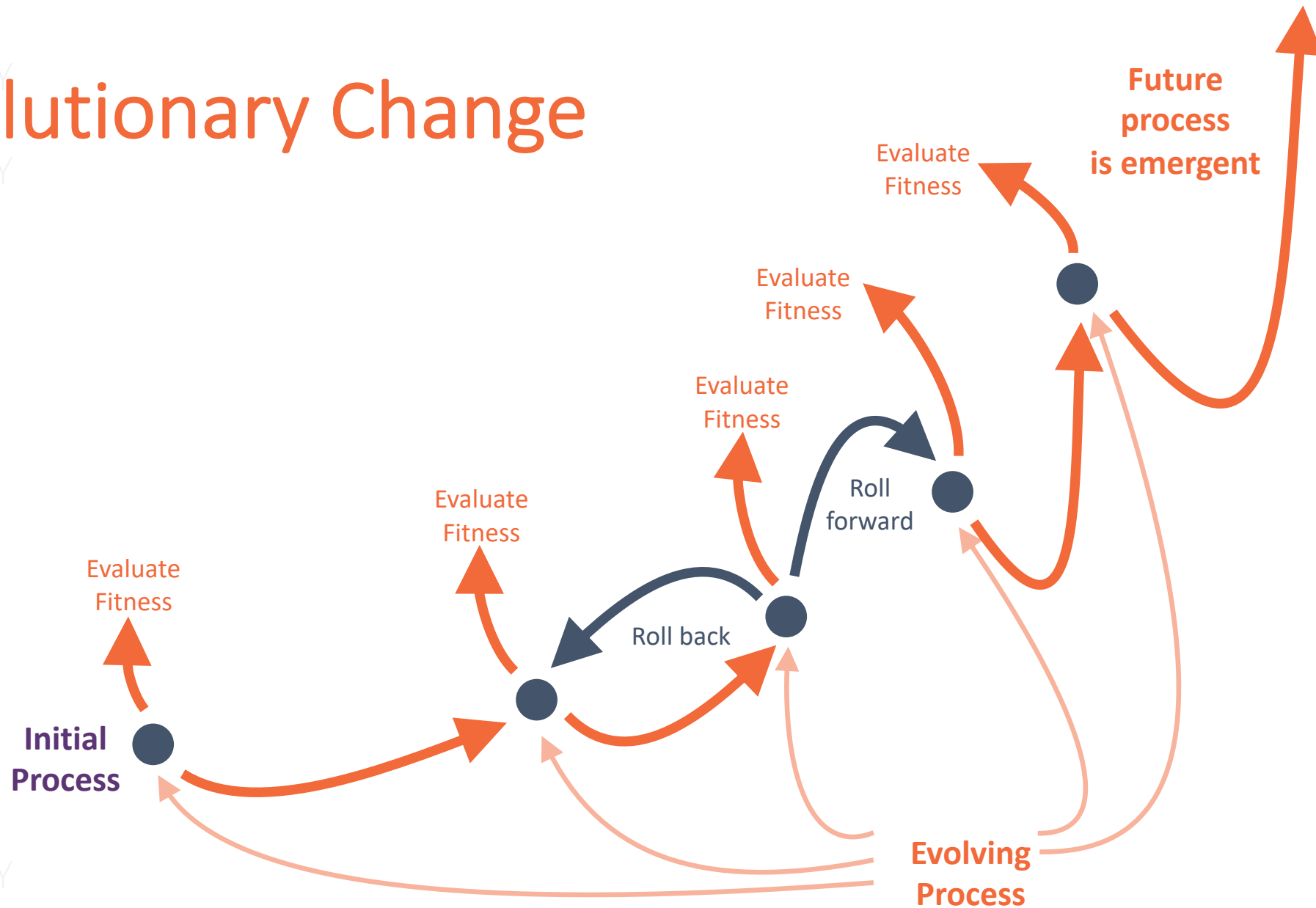
Things customers or other external stakeholders value:

- Delivery time
- Quality
- Predictability
- Safety (conformance to regulatory

Metrics that qualitatively assess actual outcomes such as:

- Customer satisfaction
- Employee satisfaction

Evolutionary Change



Closing Discussion: Let's do something about it!

- What will you do differently in your organization when you get back to your office next week?
- Do you have steps identified to establish or strengthen feedback loops (see the cadences)?
- What options do you have to implement practices, gather data and insights, share and reflect, and take further improvement actions?
- Is your organization ready for the Kanban Method? Or do you need the insights from the Change Leadership Masterclass or an experienced AKC to help gain acceptance for the necessary changes?



Closure of the class

Basic Learning Paths

“Practitioner-levels”

Enabling to apply selected concepts



Team Kanban Practitioner



“Alternative Path”

Kanban Practices to implement ML 2-3 systems to improve service delivery



Kanban System Design + Kanban Systems Improvement



“Improving Maturity”

Driving improvement initiatives with the use of the KMM as a playbook



Kanban Maturity Model + Kanban Coaching Practices



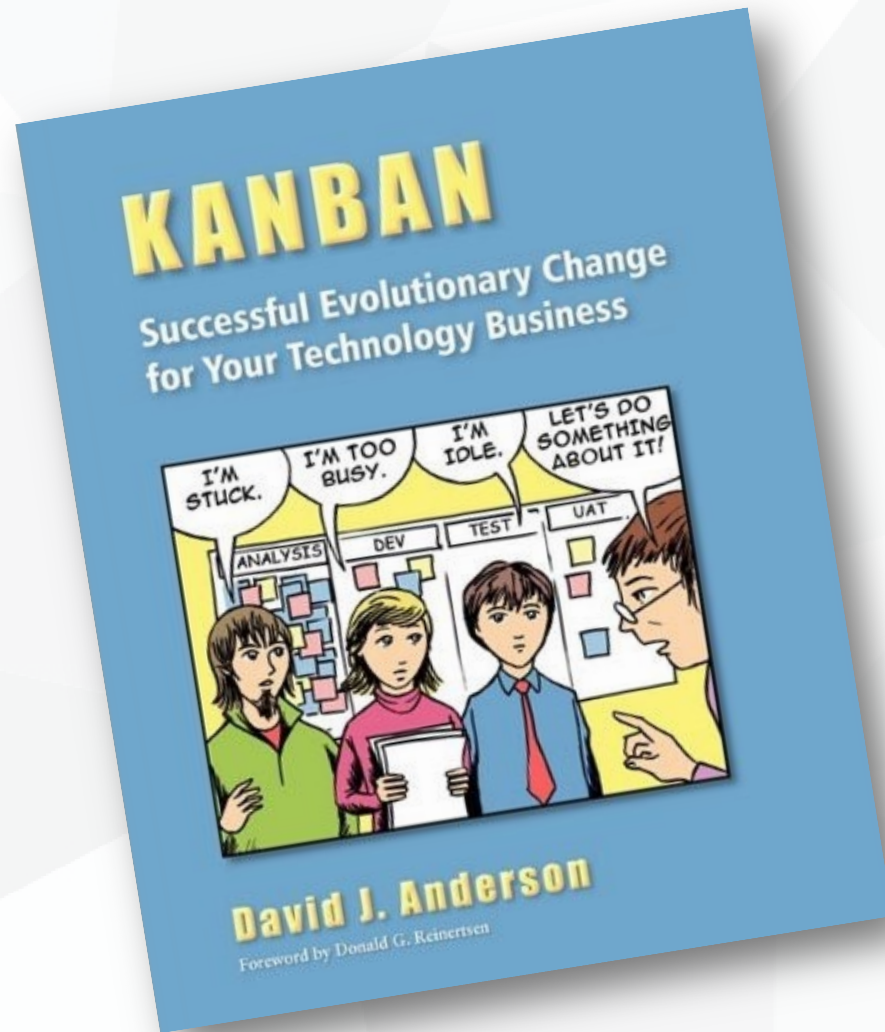
Able to explain Kanban basics and motivations and apply Kanban practices in a team

Able to design Kanban systems up to level 3 and to continuously improve service delivery

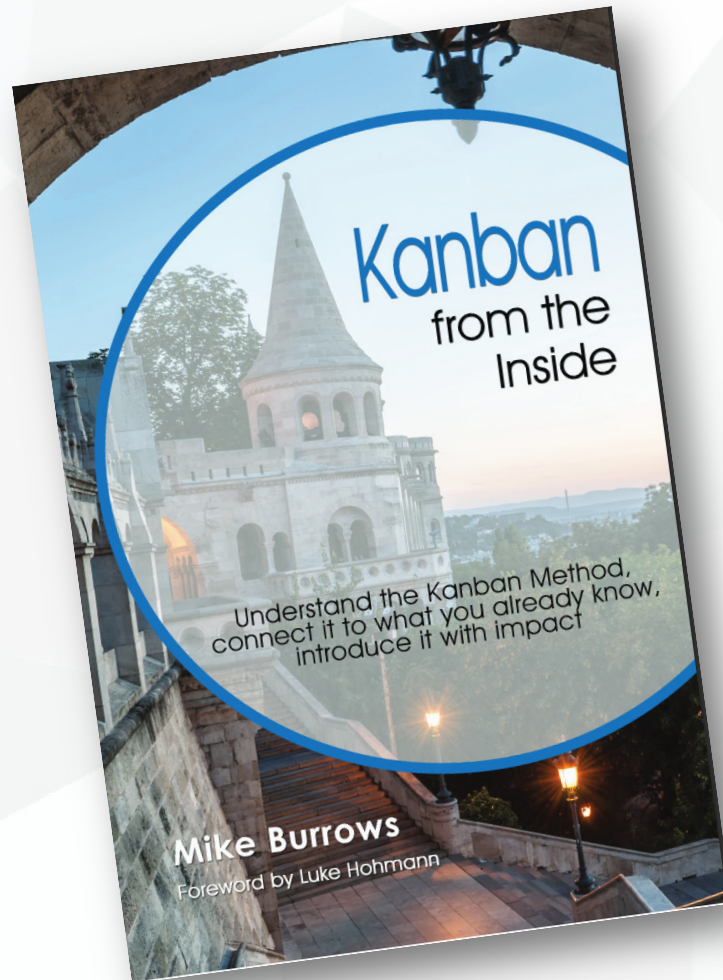
Able to apply the the KMM playbook to help evolve an organization to a higher maturity

E-Books and Kanban Tools

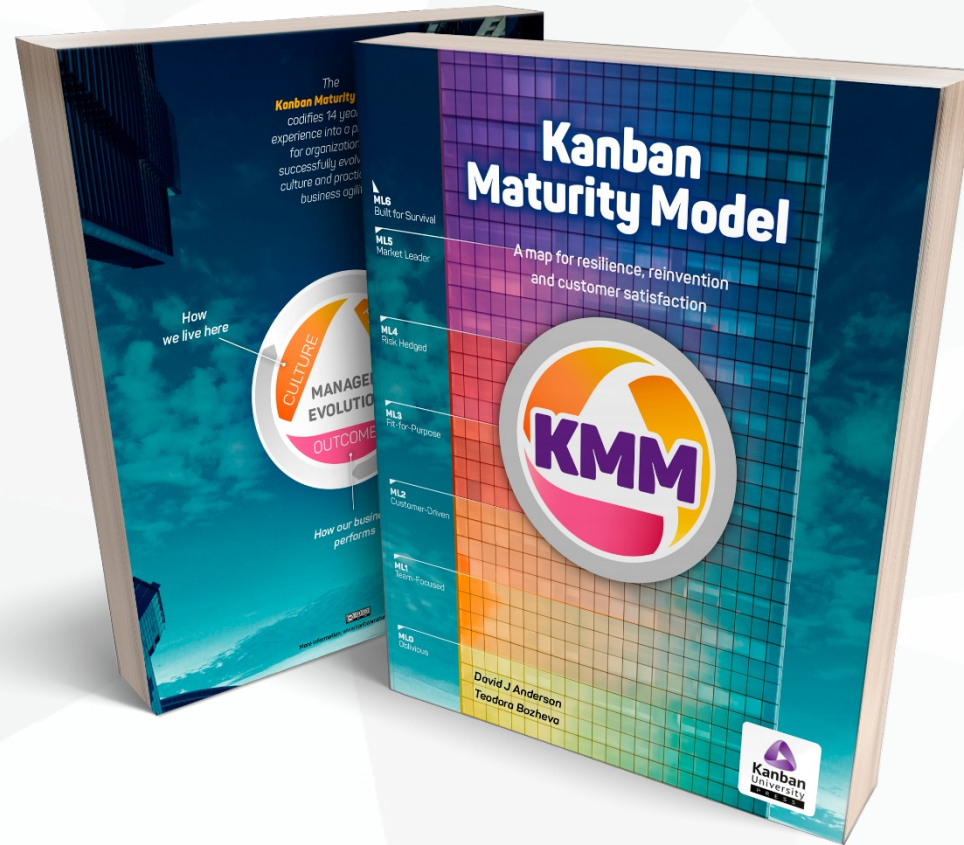
Kanban “Blue Book”



Kanban From the Inside



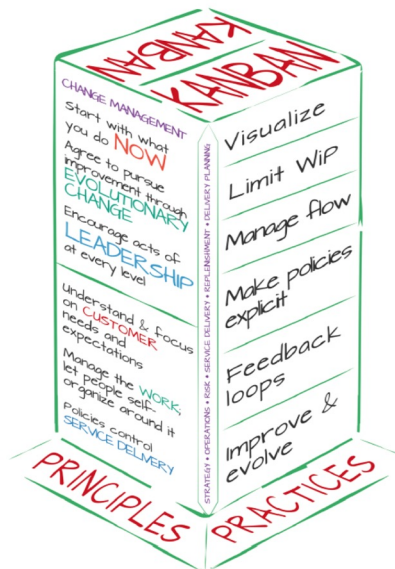
Kanban Maturity Model



Essential Kanban Guides

Also available in Spanish,
Portuguese, Polish,
French, and German.

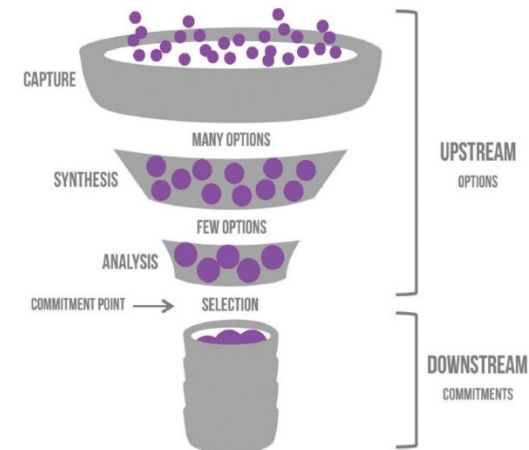
ESSENTIAL KANBAN CONDENSED GUIDE



DAVID J ANDERSON

ANDY CARMICHAEL

ESSENTIAL UPSTREAM KANBAN

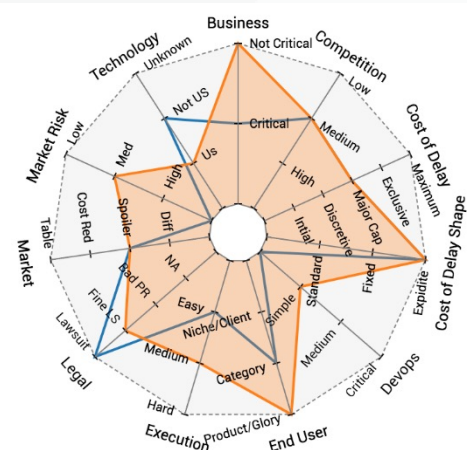
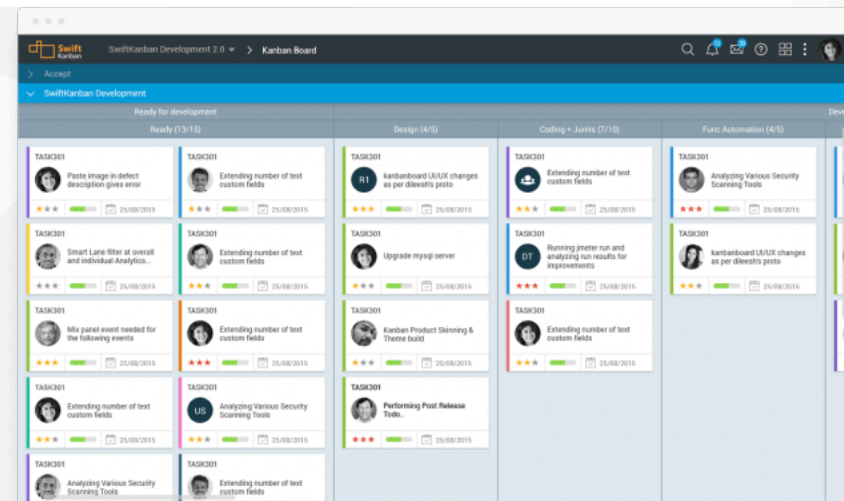


PATRICK STEYAERT

Download for free at <https://www.kanbanbooks.com/>



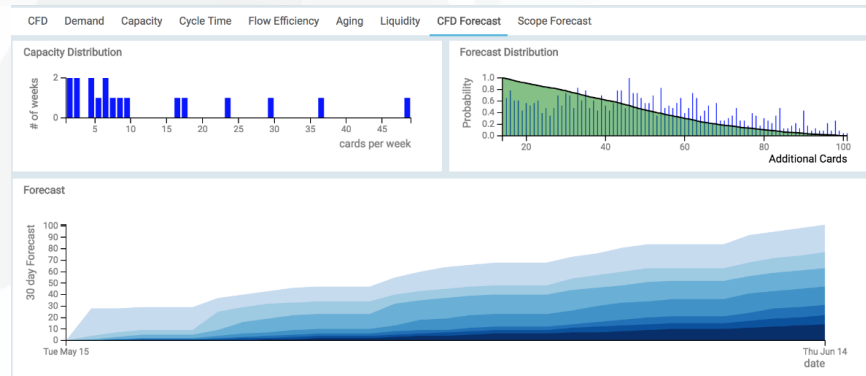
Swift
Kanban
from digité



ESP Edition available!

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

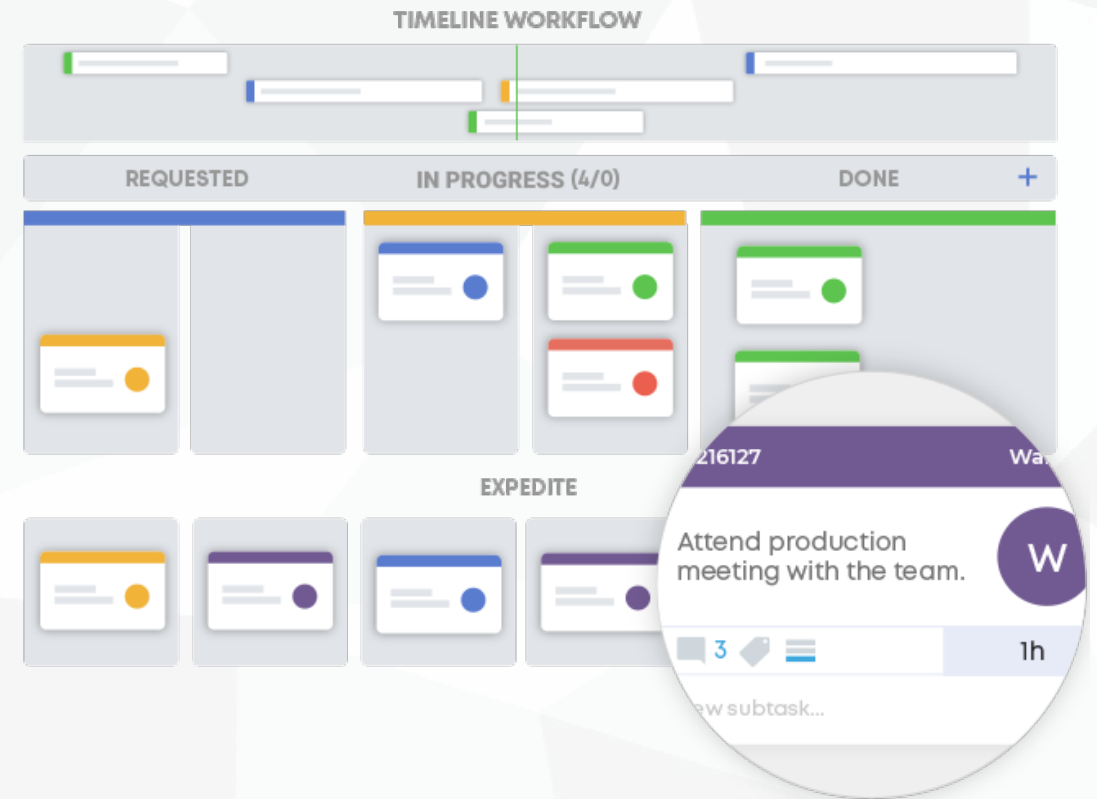
Digité's SwiftKanban helps remote/distributed teams across business functions with their collaboration and work management needs. It enables you to do Kanban the right way - YOUR way - with robust analytics and support for Team, Portfolio and Upstream Kanban, Scrum/Scrumban and Enterprise Services Planning





Gain visibility across all projects, connect planning with execution and deliver 3x faster with Kanbanize.

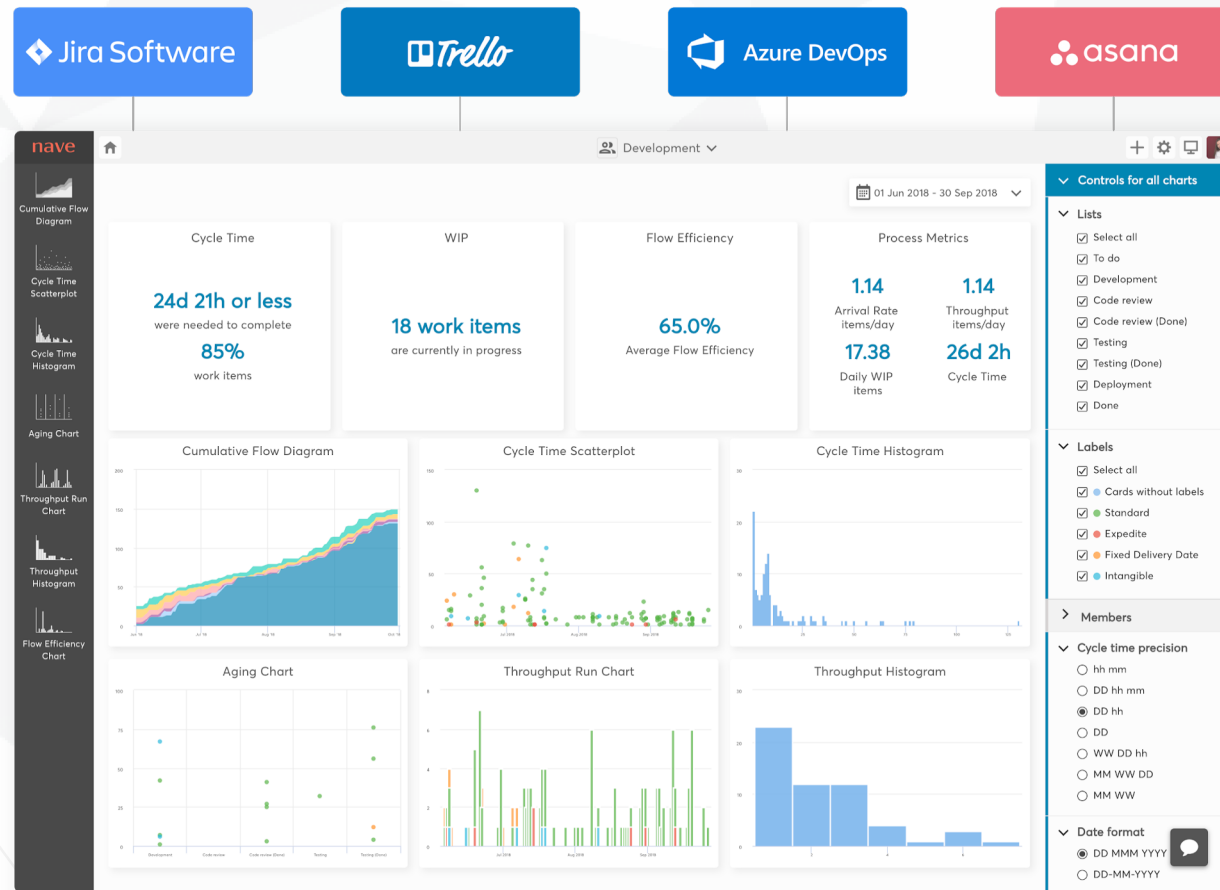
Managing dependencies and tracking the overall status has become the major time-eater for most of the managers and their teams. Having flexible Kanban Boards and built-in Business Rules, you automate all existing processes, dependencies, and interactions. This makes status always accurate, and nothing falls through the cracks.



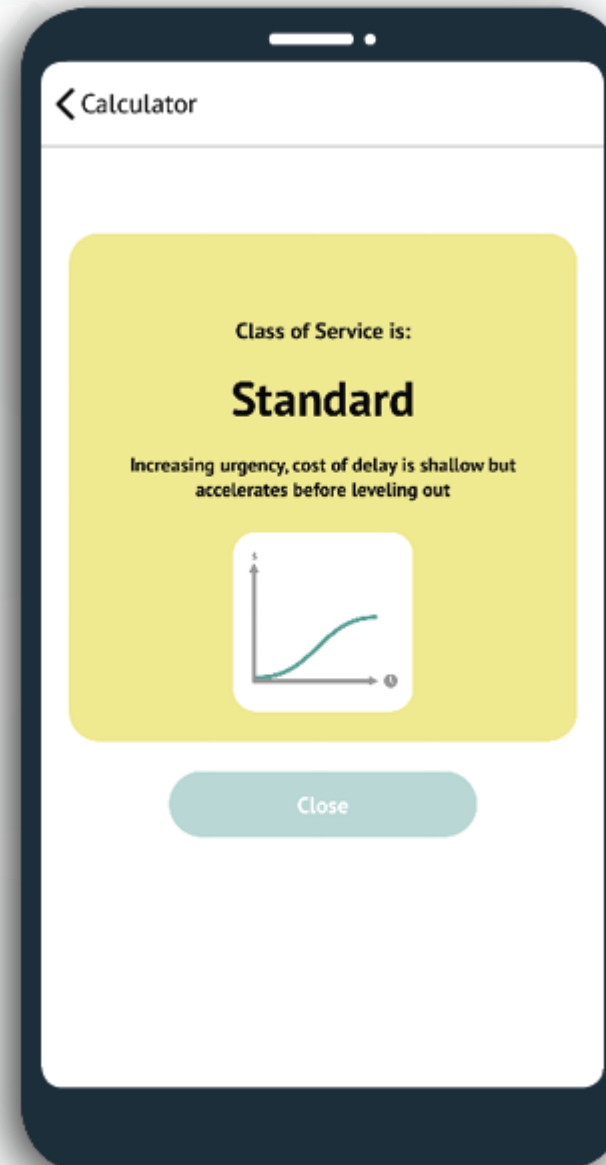
Nave (getnave.com)

nave

Kanban Analytics on Your Preferred Tool

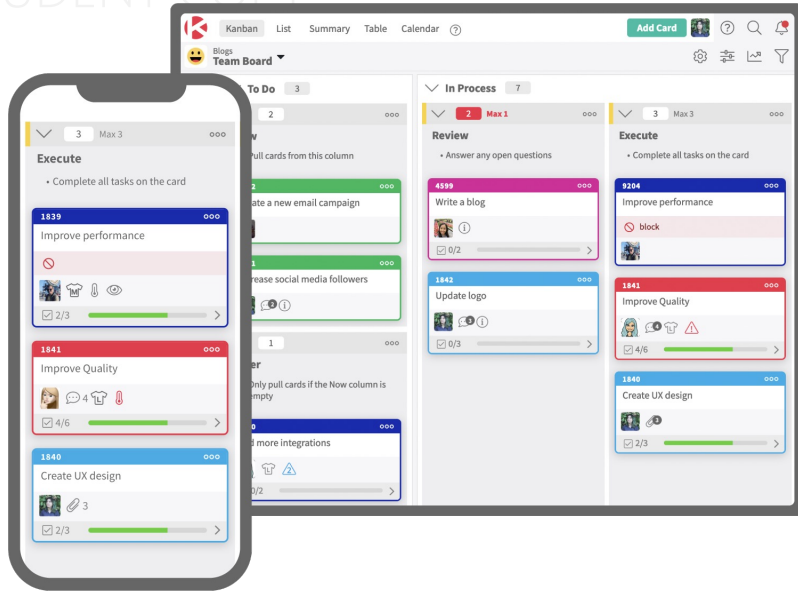


- Evaluate your workflow performance
- Analyze lead times and cycle times
- Monitor how long work stays in progress
- Identify bottlenecks as they occur
- Calculate your work delivery rate
- Make probability-based forecasts

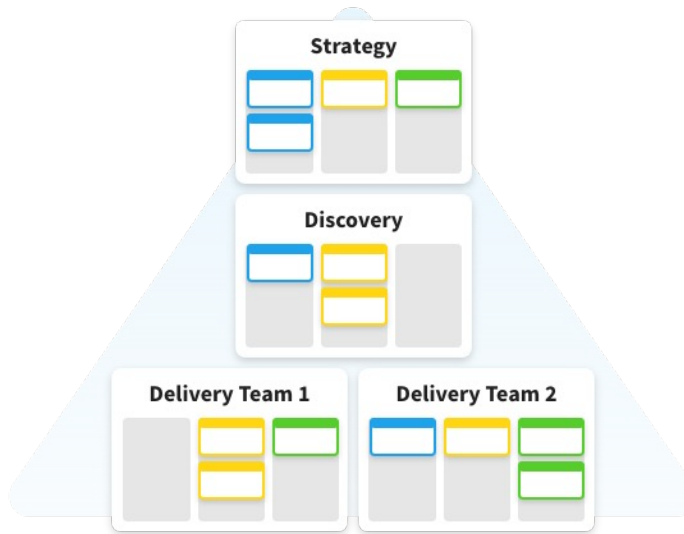




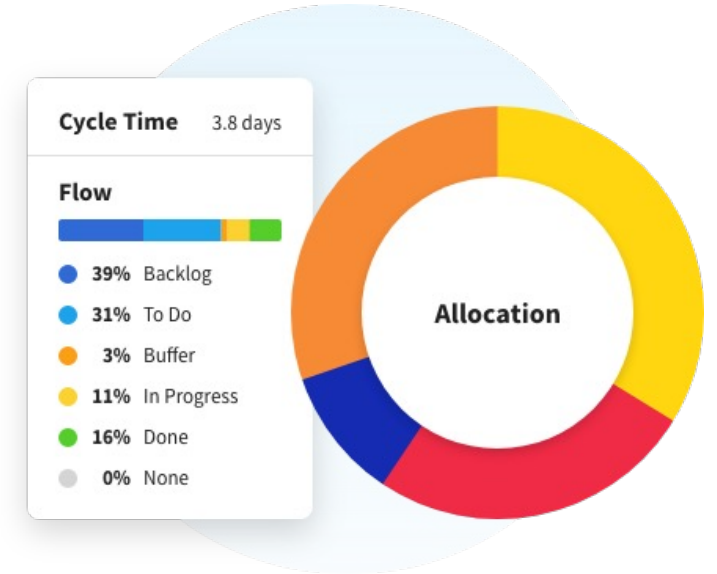
Kanban Zone enables organizations to visualize, measure, and efficiently deliver goals using the Kanban method.



Responsive Design



Portfolio Kanban



Kanban Metrics

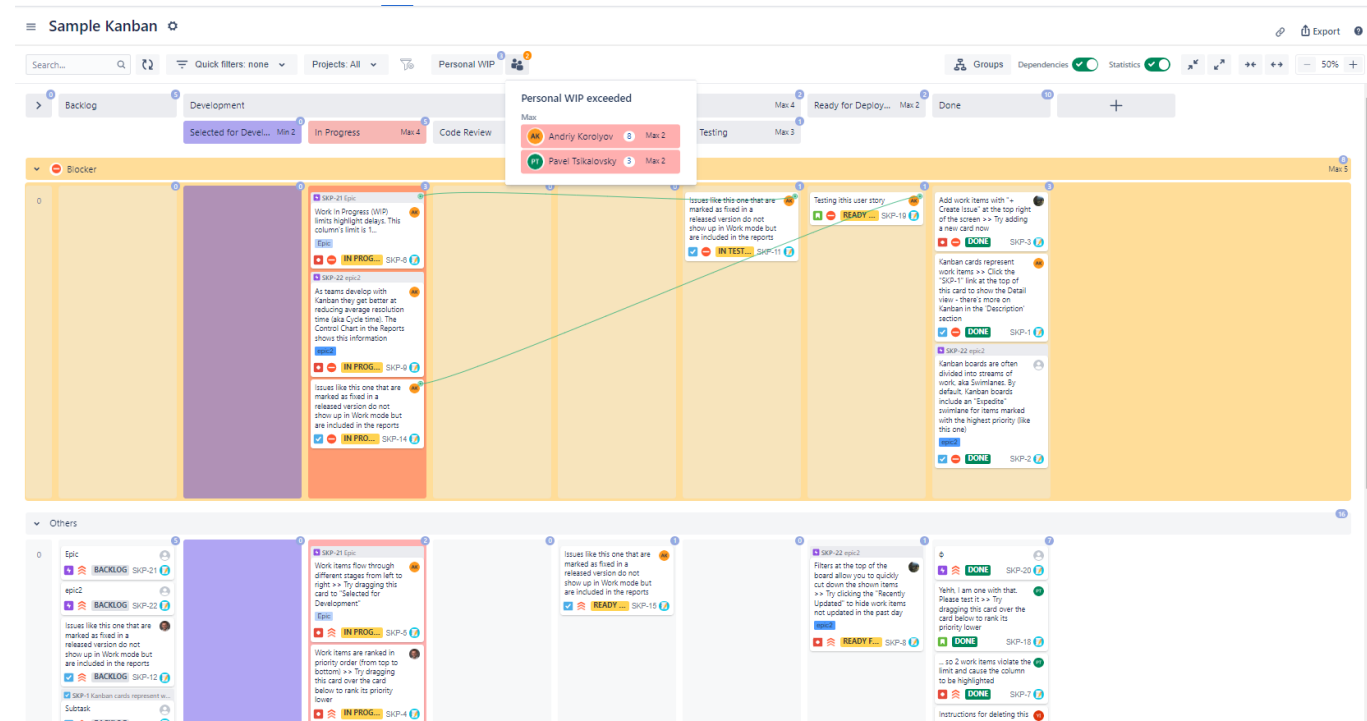
The most **Flexible** way to **Visualize** and **Connect** every aspect of your organization for an effective **Kanban system**.



Advanced Agile & Kanban Boards

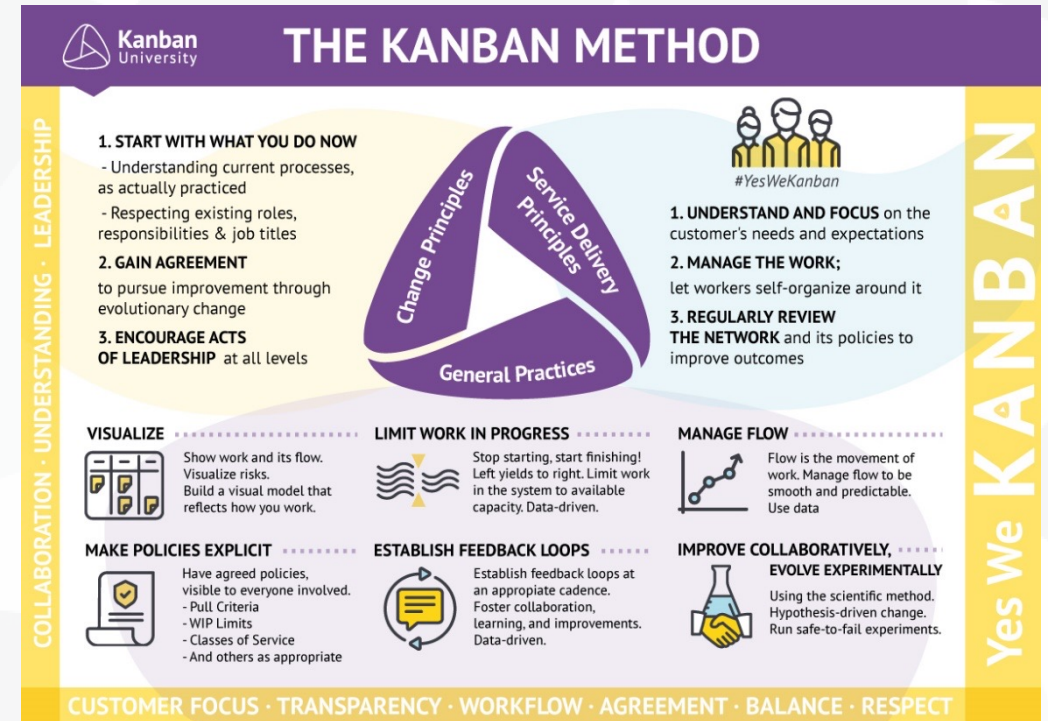
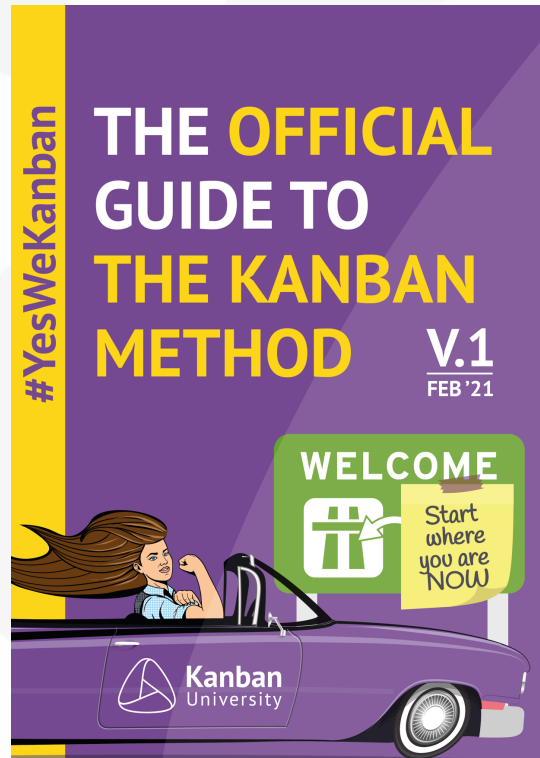
Atlassian Marketplace Partner App for Jira by Release Management

- **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.



[Learn more](#)

The Official Guide to the Kanban Method



YES

WE

KAN

BAN

