



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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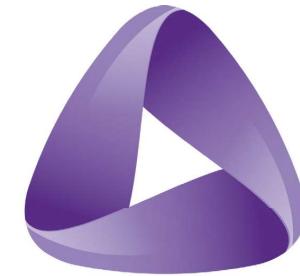
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Power in Simplicity!



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Pragmatic, actionable, evidence-based guidance!

Something you can take away and implement next Monday

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Introduction

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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

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What is your purpose
for being in this class?

What are your
objectives?

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Purpose of this Class

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- 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

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Overview of the Course Modules



Kanban as
Evolutionary
Change Method



Kanban for the
Enterprise



Feedback
Loops



Improvement
Techniques



Evolutionary
Change and
Closure

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Module 1

Kanban as an Evolutionary Change Method

Motivation for the Kanban Method

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Motivation for the Kanban Method



Why Kanban instead of traditional change methods?

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Traditional Change is an A to B Process

Current
Process



TRANSITION



Future
Process



defined / designed in advance



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How Humans Process Information

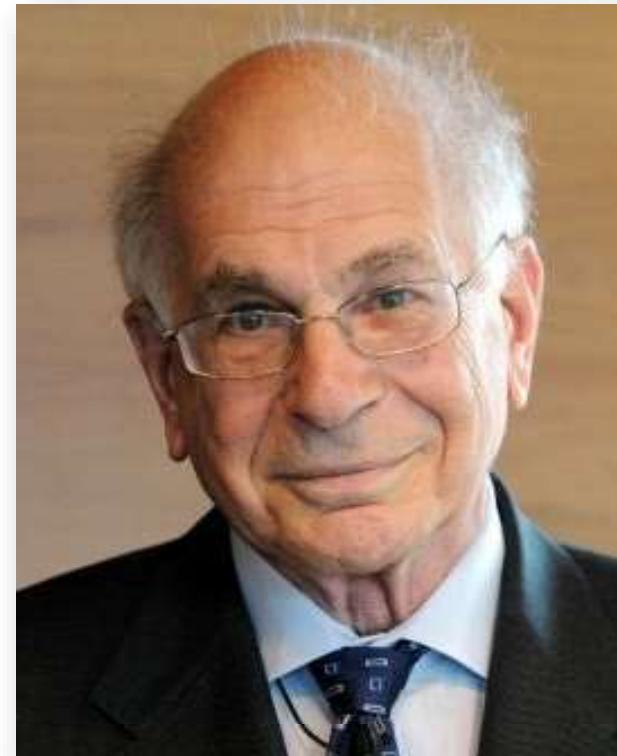
Learning by Experience

FAST!

But slow to learn.

System 1

Sensory Perception
Pattern Matching



Learning by Theory

SLOW!

But fast to learn.

System 2

Logical Inference
Engine

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How We Process Change

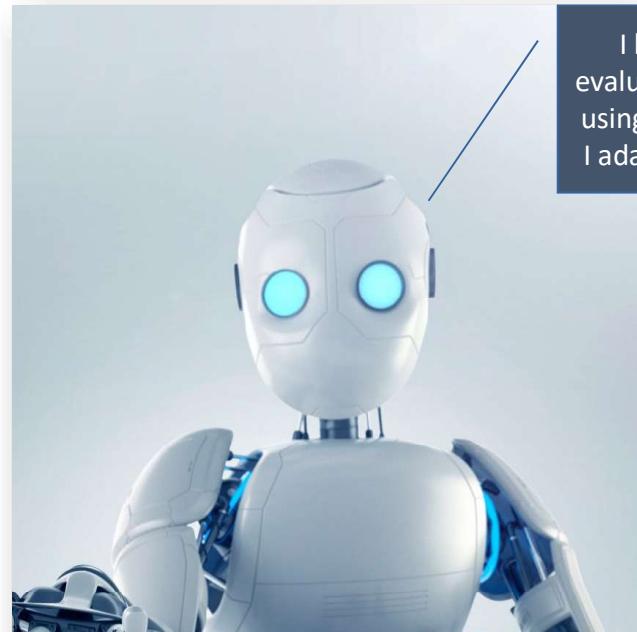
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I feel change emotionally using System 1. I adapt slowly.



Carbon-based life form

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



Silicon-based life form

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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

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

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The Kanban Method ...

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- 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

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The Kanban Method ...

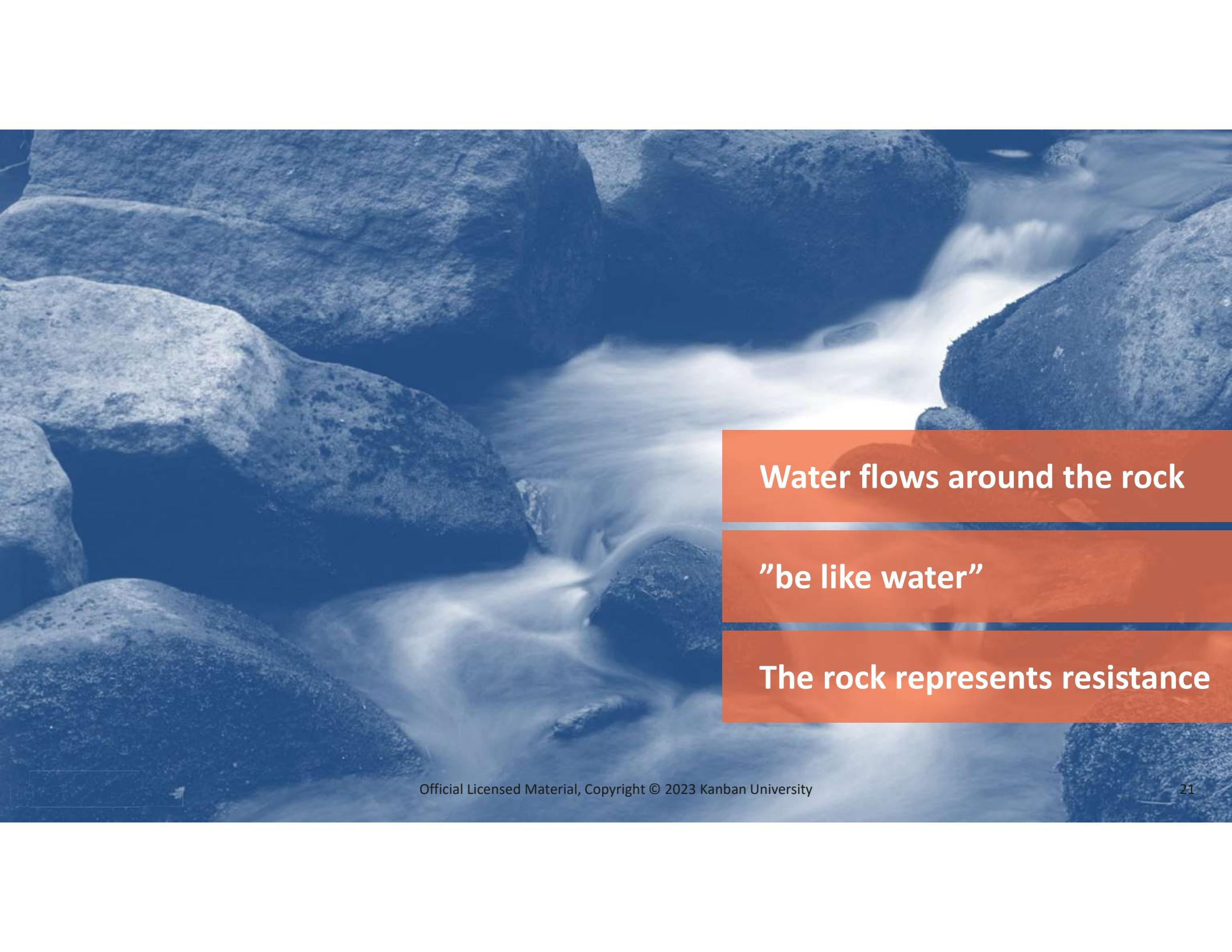
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- Catalyzes improvement through use of Kanban systems and visual boards
- Takes its name from the use of kanban signals but it is just a name
- Anyone who thinks Kanban is just about Kanban (boards and systems) is truly mistaken

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Water flows around the rock

"be like water"

The rock represents resistance

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15 min

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Exercise 1

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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
PERCEIVING LESS WORK DONE (LESS WORK IN PARALLEL)	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 TEAMWORK

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There are different types
of Kanban!

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Evolutionary Change

A Case Study

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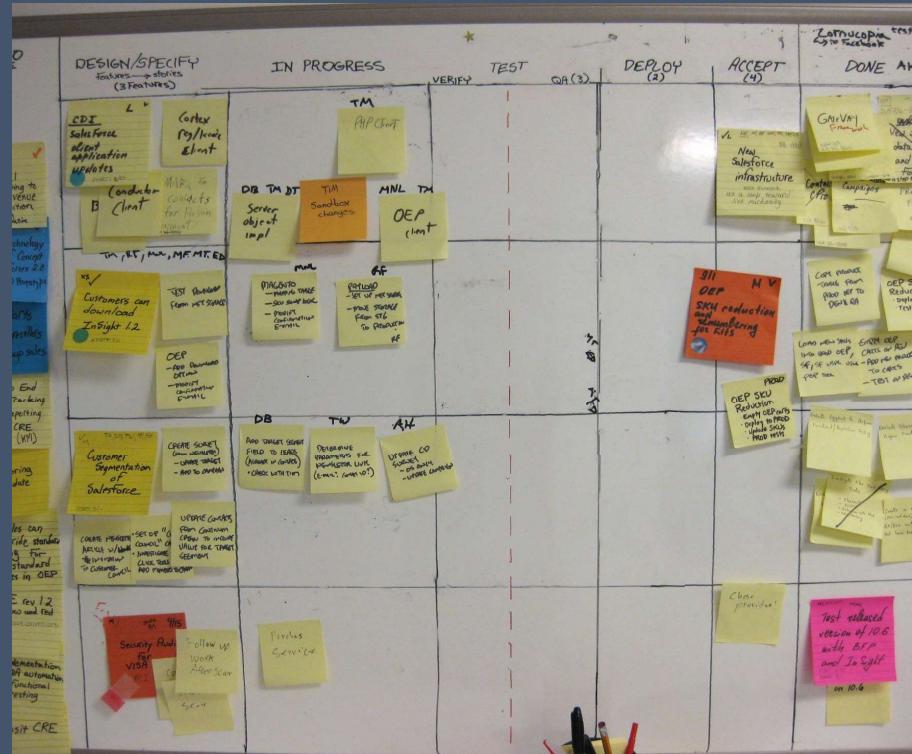
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10 min

Posit Science Case Study Review

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- 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?



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Kanban Maturity Model

KMM

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The purpose of the KMM

It is a **model of Organizational Maturity**

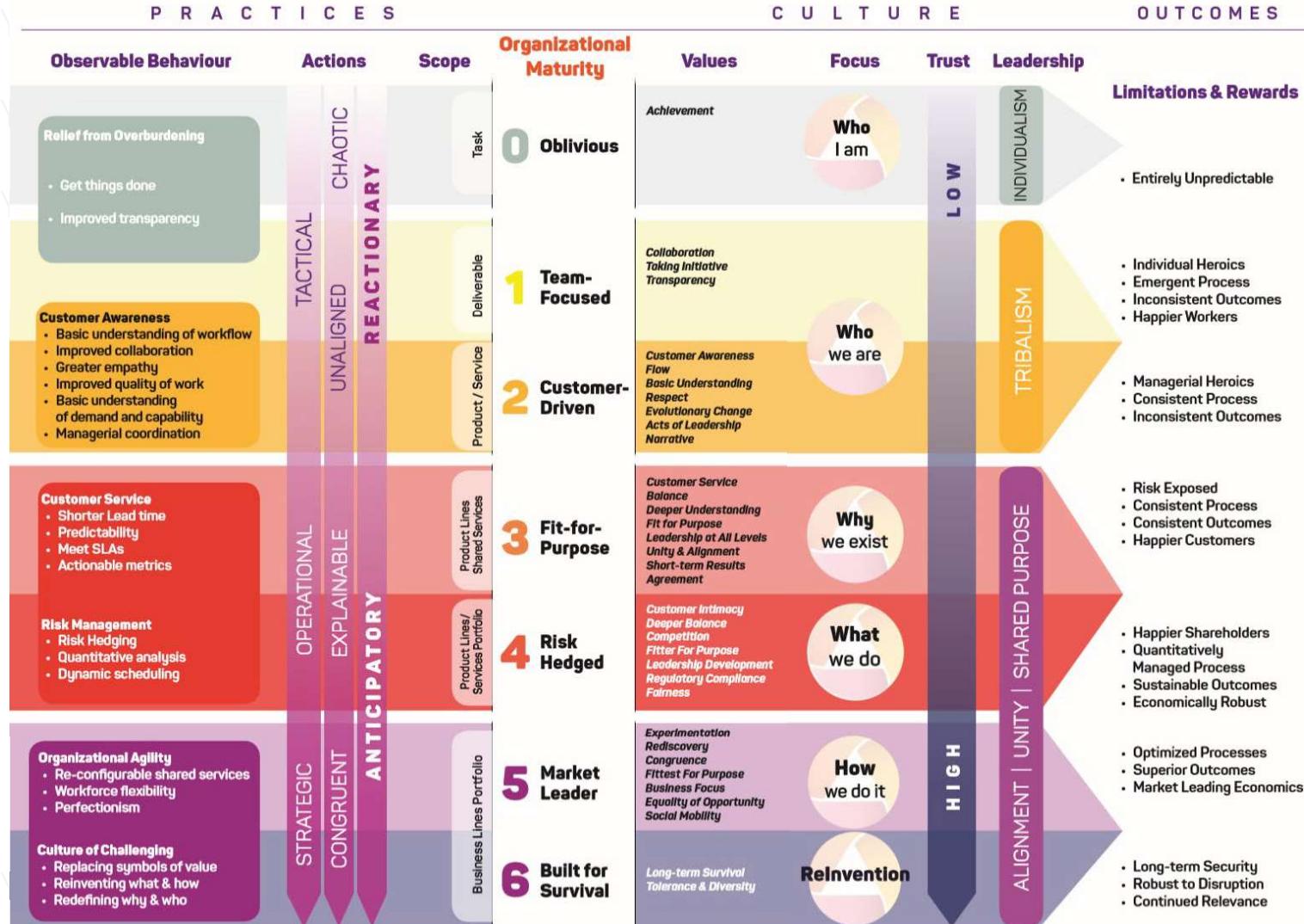
...provides a **map** for appropriate practice adoption

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

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

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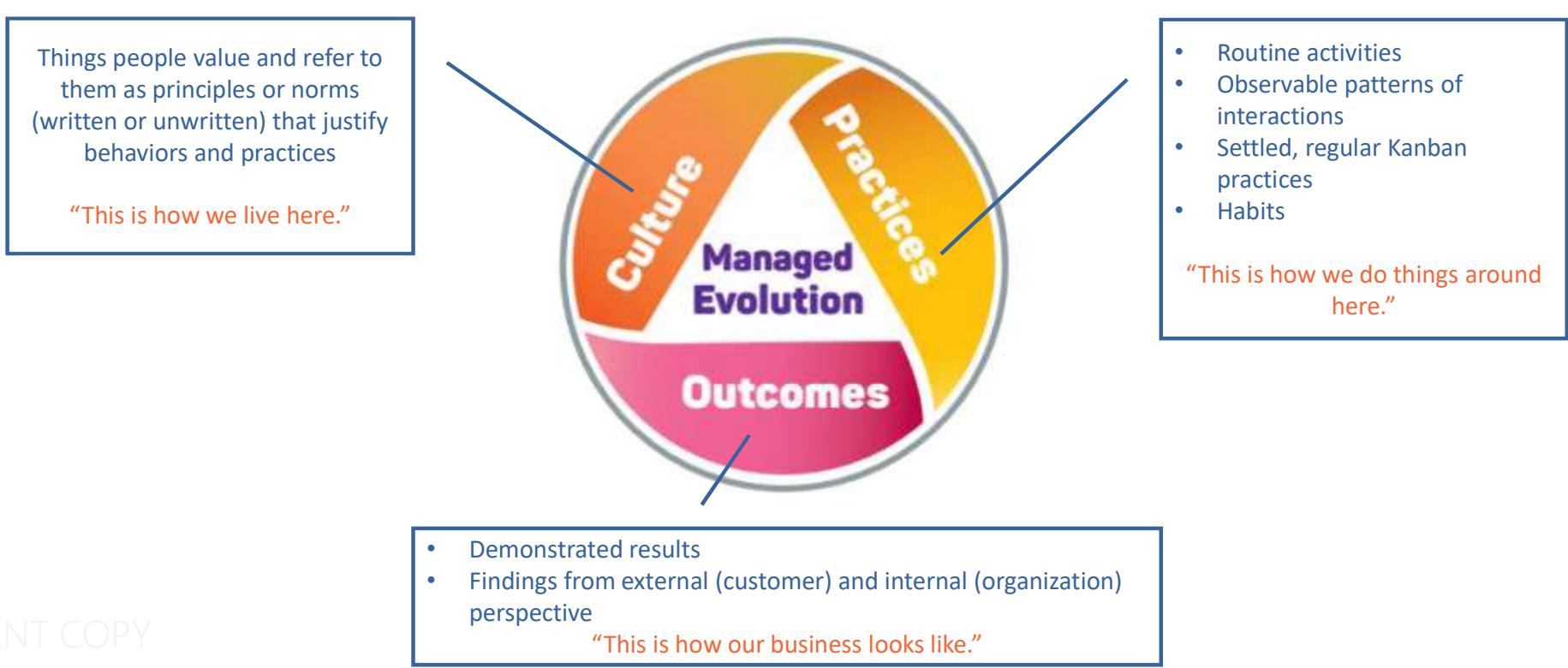


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Three Aspects of KMM

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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

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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

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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

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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

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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

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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

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15 min

A KMM view of Posit Science

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- 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?

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10 min

Reflection: Maturity Levels

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- 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?

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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

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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.

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Module 2

Kanban for the Enterprise

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

The Kanban Method

A Review

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30 min

Teach Backs: The Kanban Method

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Teach-back the core Kanban knowledge:

- Use items from the list on the next slide.
- Summarize the item.
- Explain why it is important.
- Use your own experience to illustrate the item.

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The Kanban Method – list of items

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- ✓ The Kanban Method
- ✓ Kanban agendas
- ✓ Change management principles
- ✓ Service delivery principles
- ✓ Service orientation
- ✓ General practices
- ✓ STATIK
- ✓ Kanban Board
- ✓ Pool of options
- ✓ Commitment point
- ✓ 2 phase commitment
- ✓ Deferred commitment
- ✓ Discard rates
- ✓ Delivery frequency
- ✓ Classes of Service
- ✓ Pull system
- ✓ WIP Limit
- ✓ System lead time
- ✓ Customer lead time
- ✓ Little's Law
- ✓ Cumulative Flow Diagram
- ✓ Flow Review
- ✓ Workflow replenishment meeting
- ✓ Workflow Kanban meeting

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What is a Service?

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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

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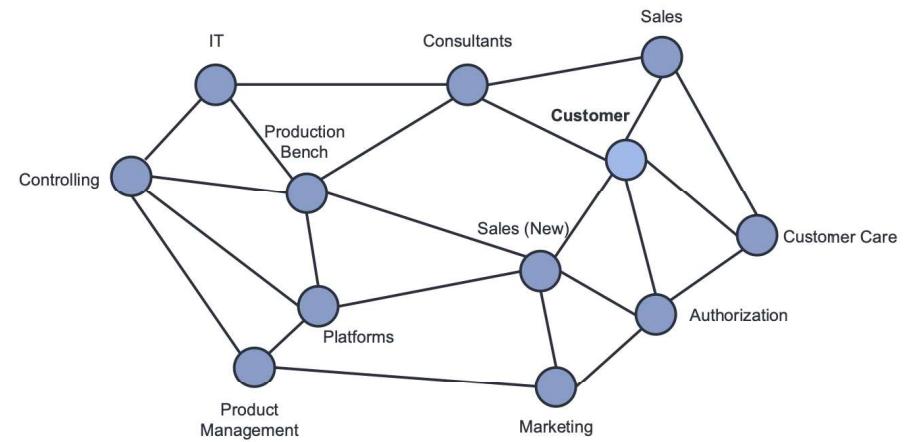
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Kanban Method: Service Delivery Principles

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



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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**

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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

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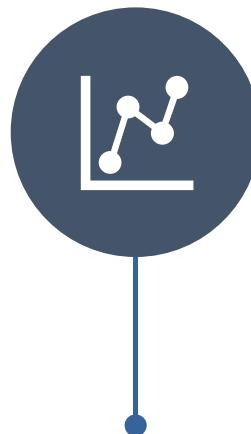
Kanban Method: General Practices



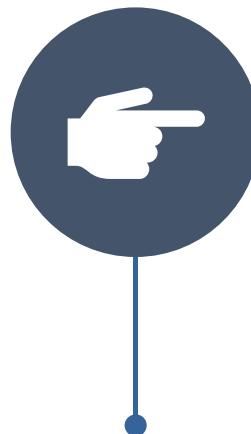
Visualize



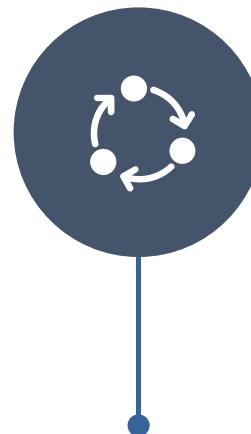
Limit WIP



Manage Flow



Make Policies
Explicit



Implement
Feedback
Loops



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

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Implementing Kanban for Service Delivery

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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)

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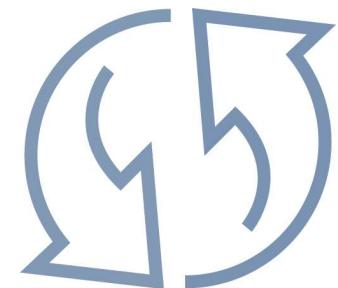
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STATIK (Systems Thinking Approach to Introducing Kanban)

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.

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

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Seeing Services

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The Kanban Lens

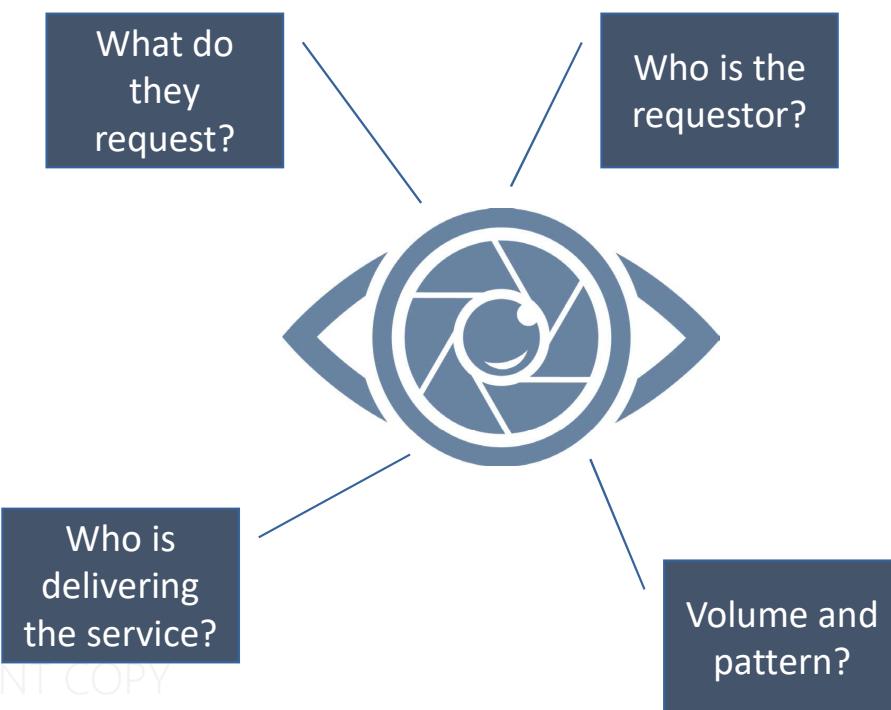
- See work as flow (from customer need to needs met)
- See workflow as a series of actions applied to the work
- See knowledge work as a service
- See your organization as a network of services



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Identifying Enterprise Services Through the Kanban Lens



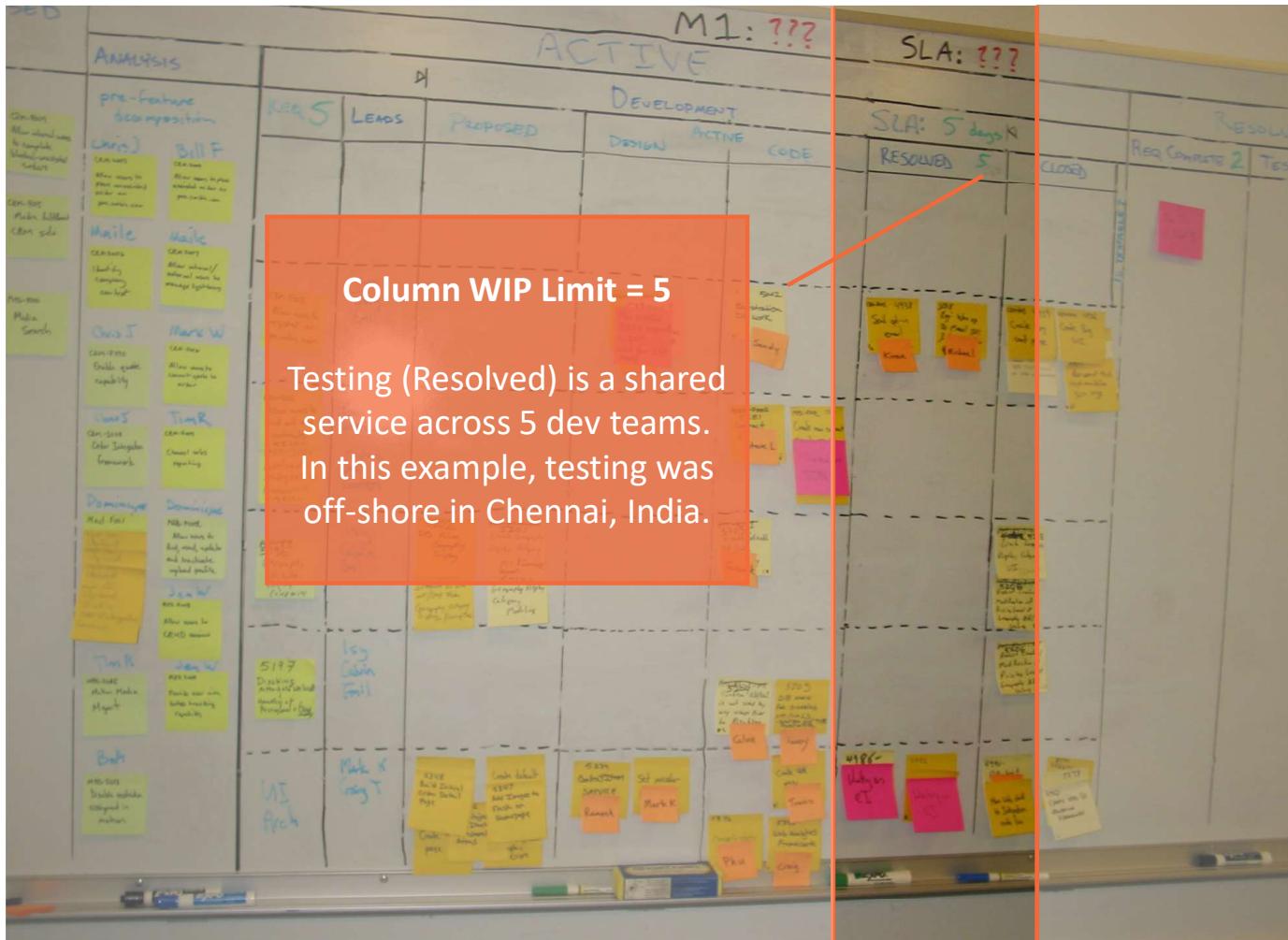
- See knowledge work as a service
- Perform STATIK per service
- See your organization as a network of services, e.g.,
 - Is the service “shared” across several requestors?
 - What other services are consumed or served?

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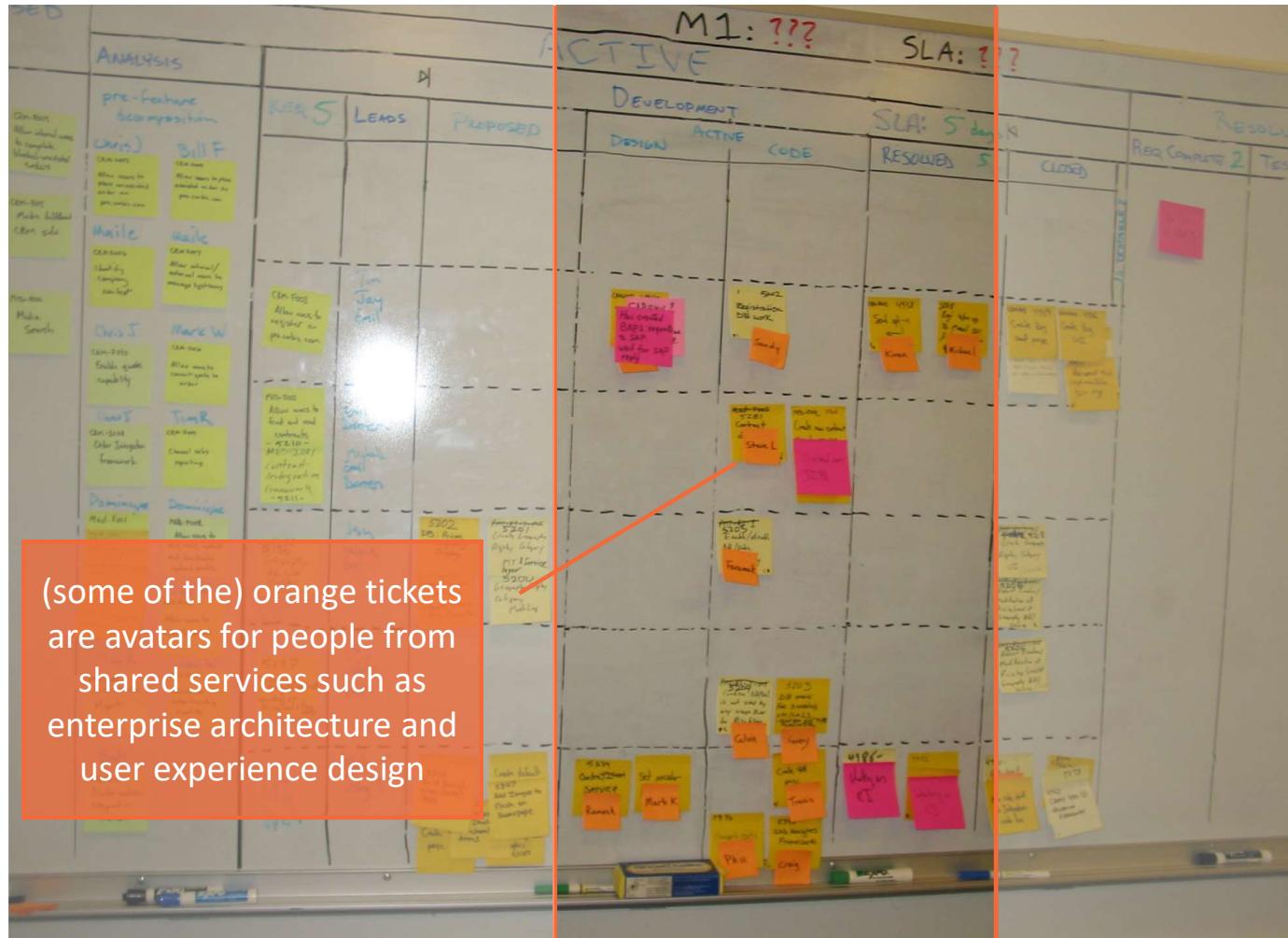
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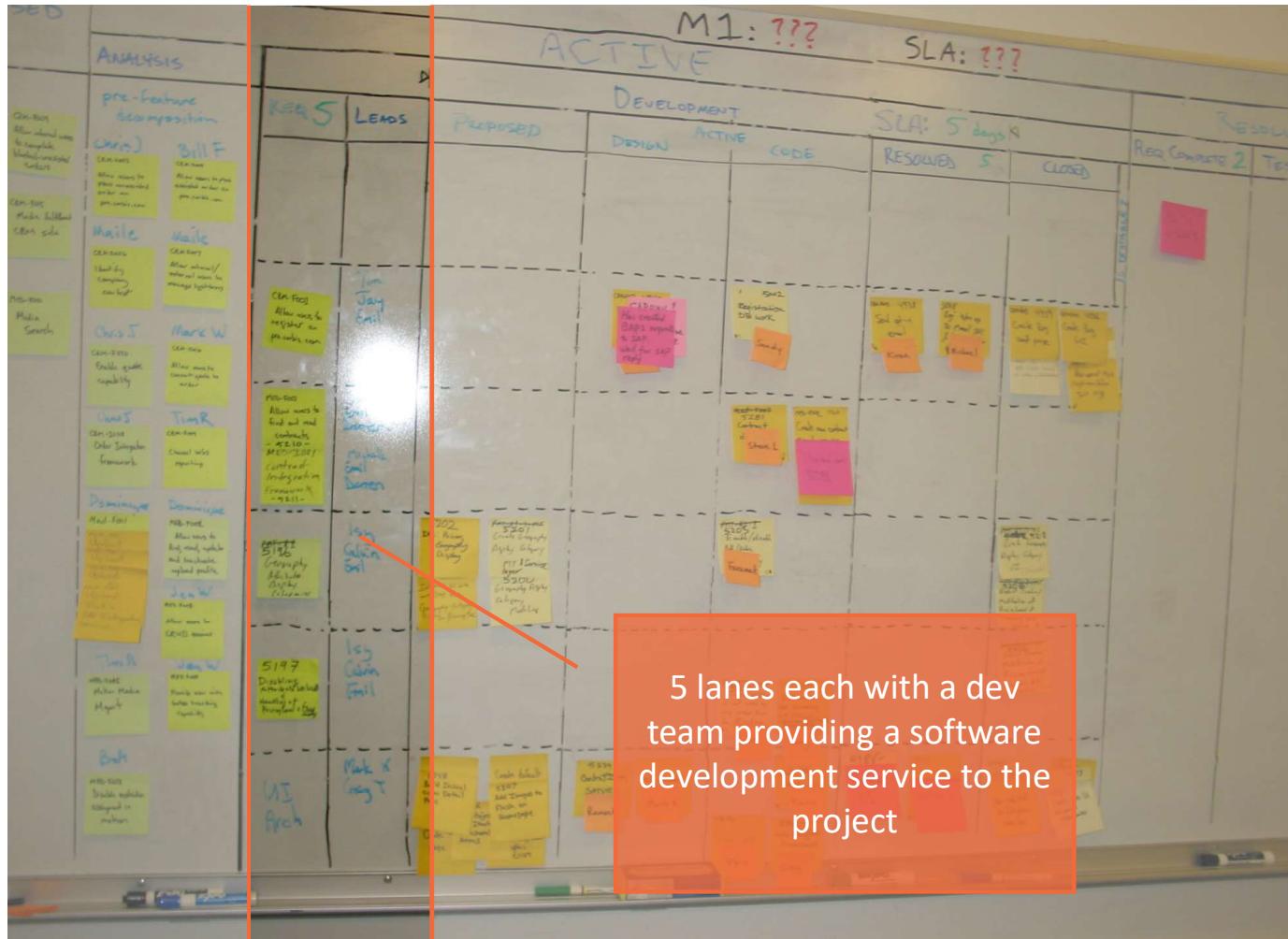
(some of the) orange tickets
are avatars for people from
shared services such as
enterprise architecture and
user experience design

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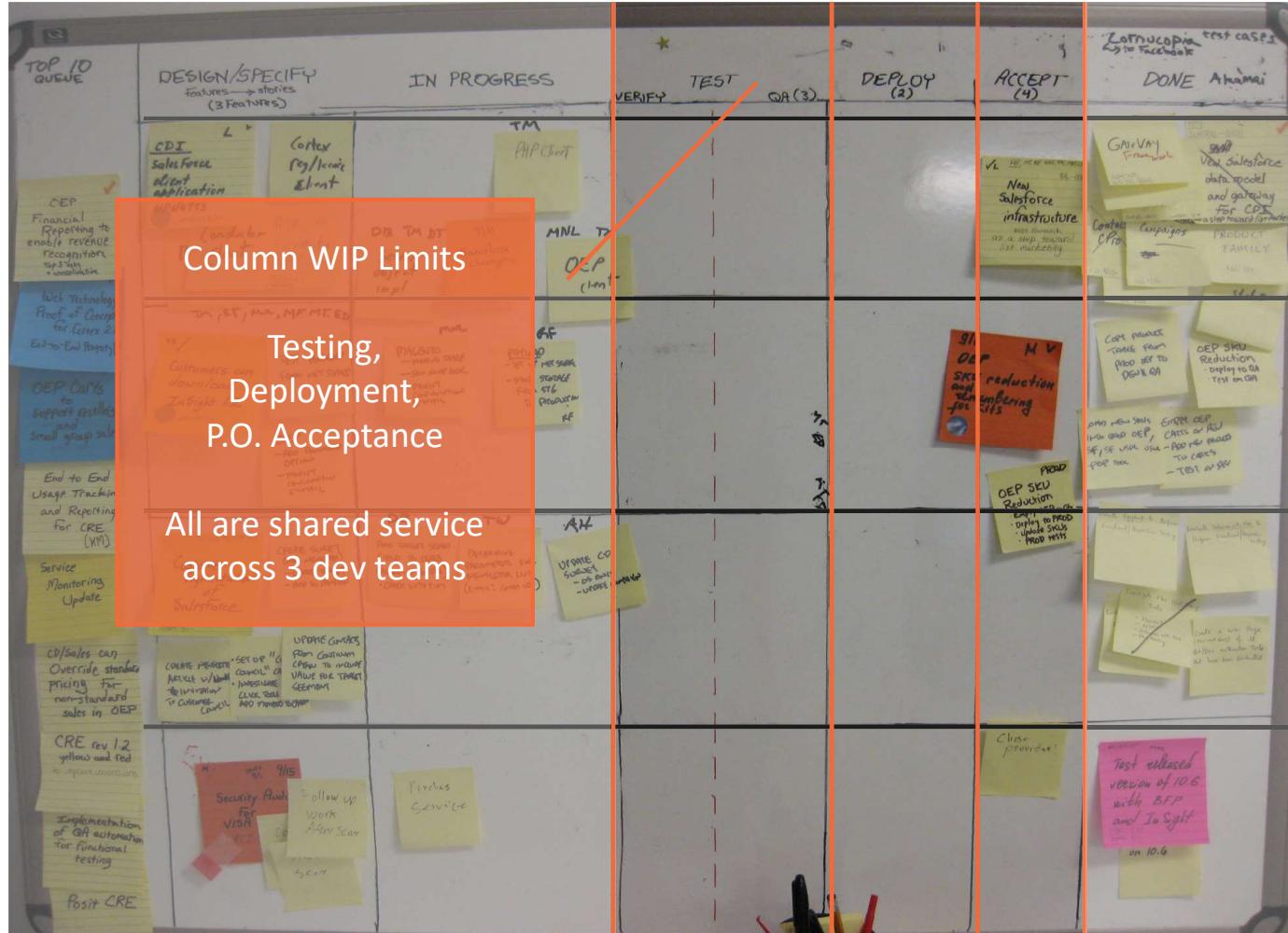
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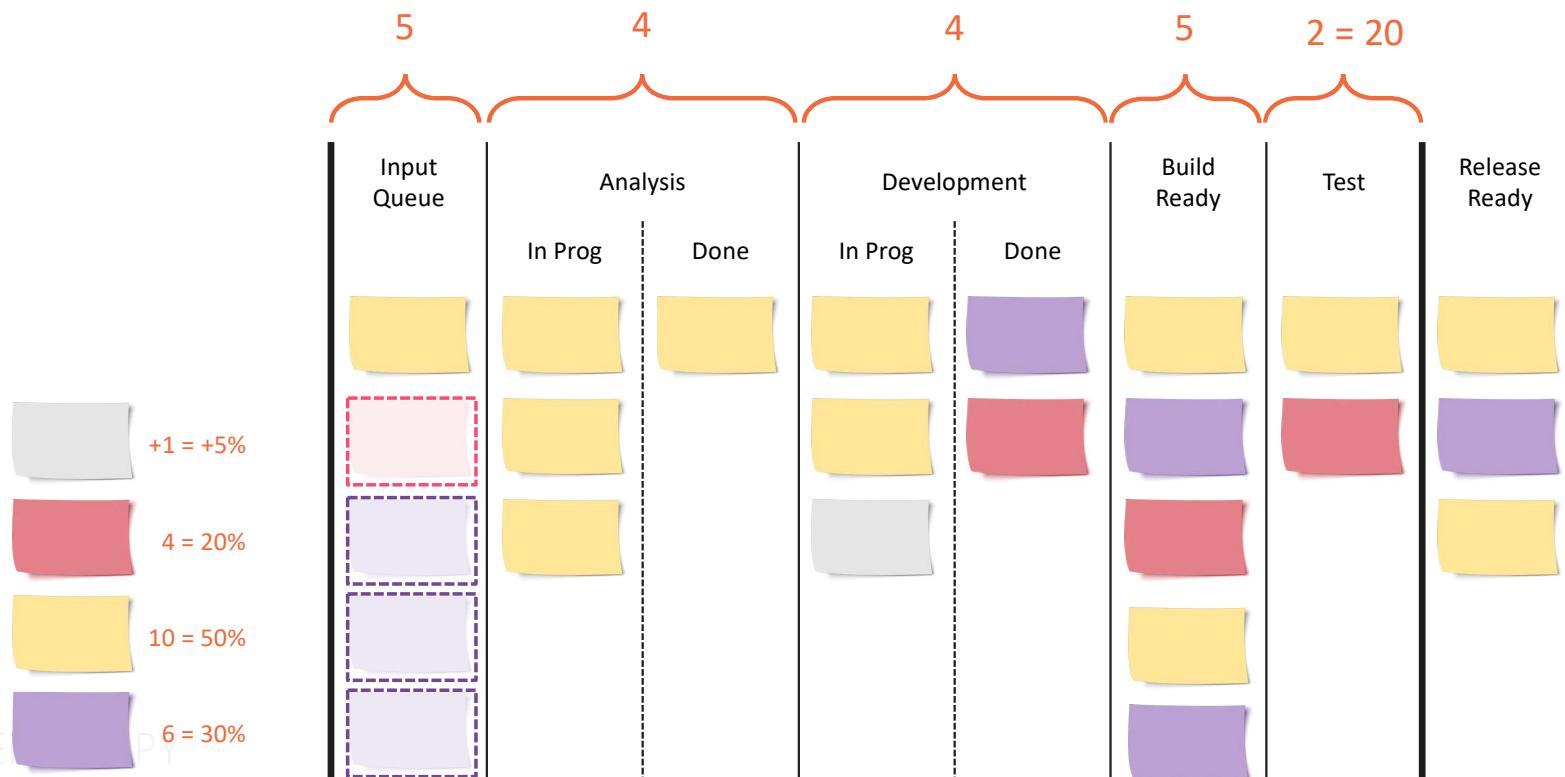
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Single Service, Multiple Classes of Service

Allocate capacity with Kanban limit per color



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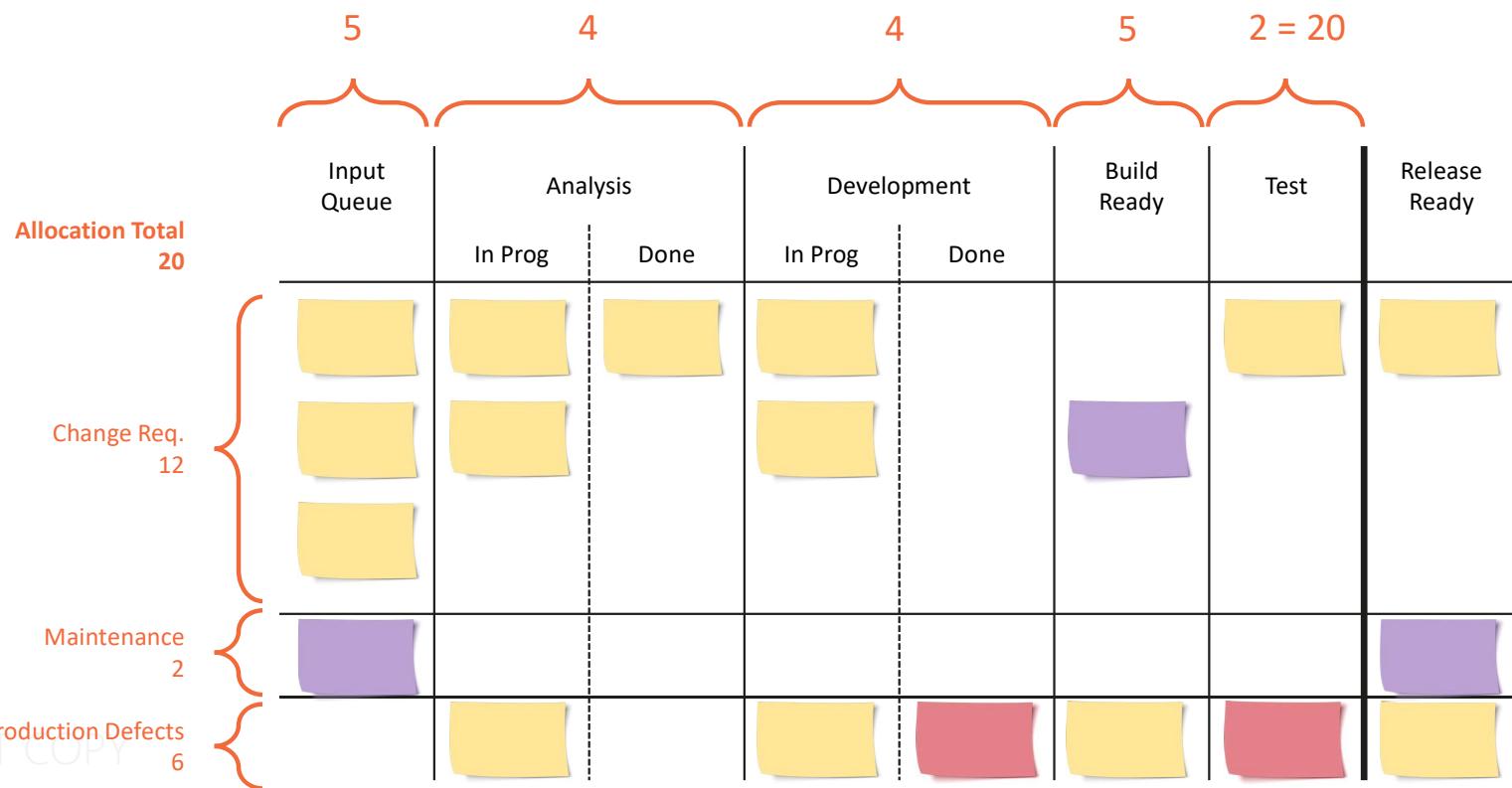
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Three Services Aggregated Together



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10 min

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Exercise – Seeing Services

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- 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?

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Scaling out Across the Organization

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

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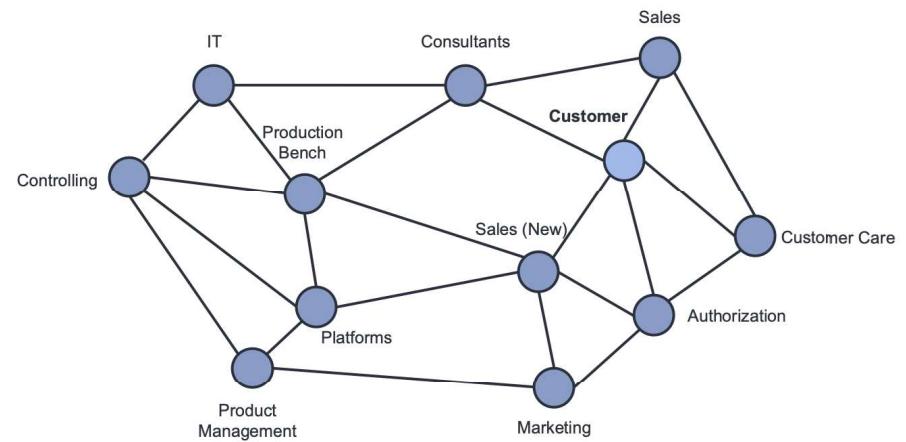
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Kanban Scaling Principles

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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.



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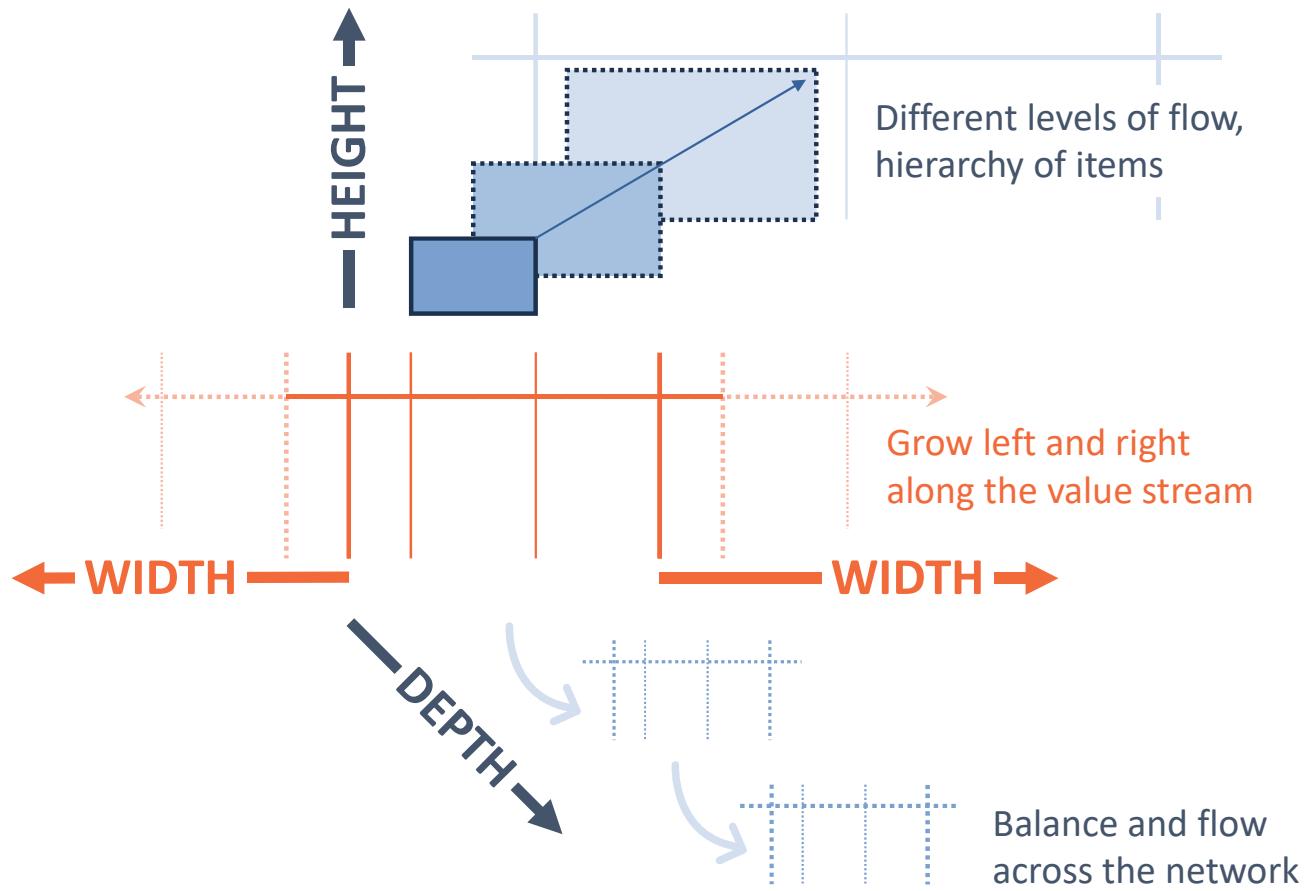
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Kanban Scaling Dimensions

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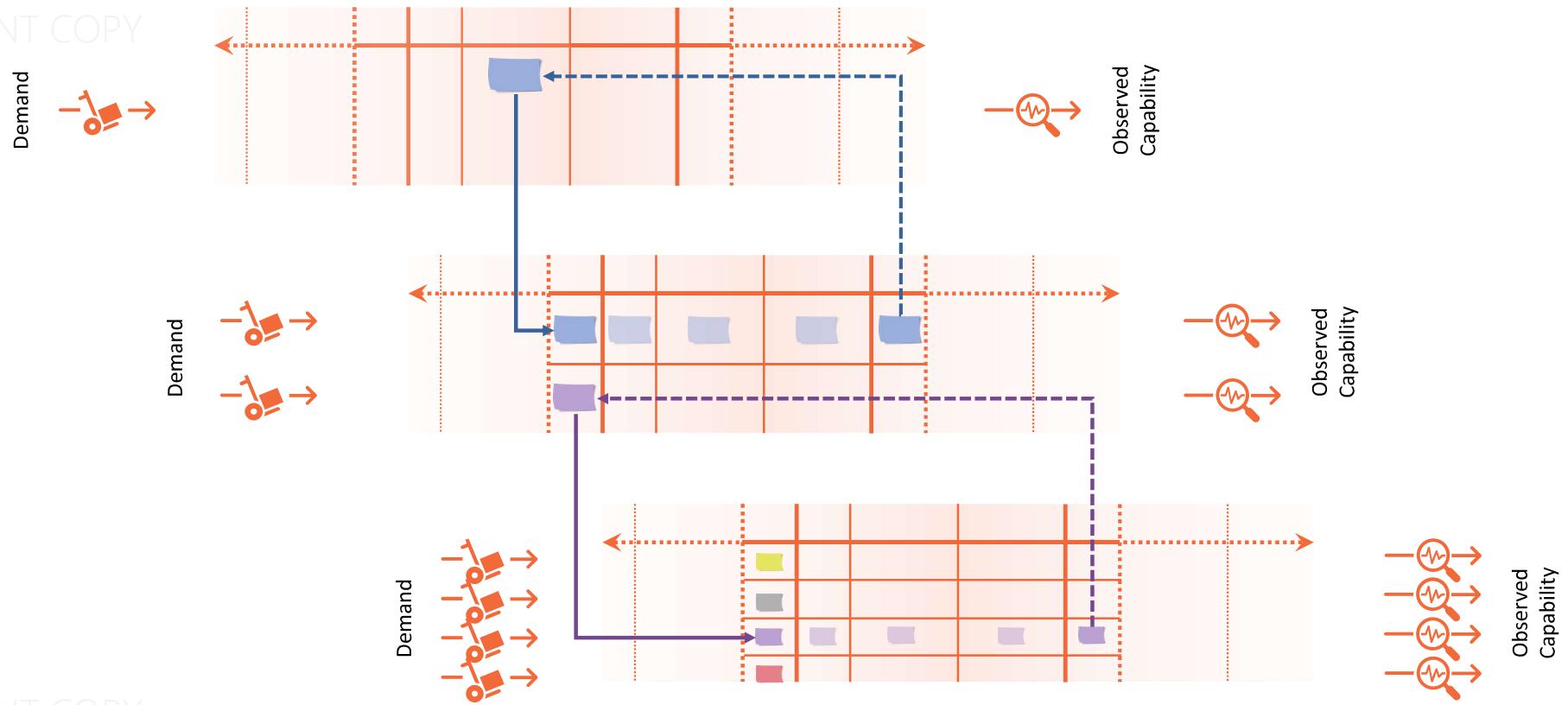


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Treat each service separately



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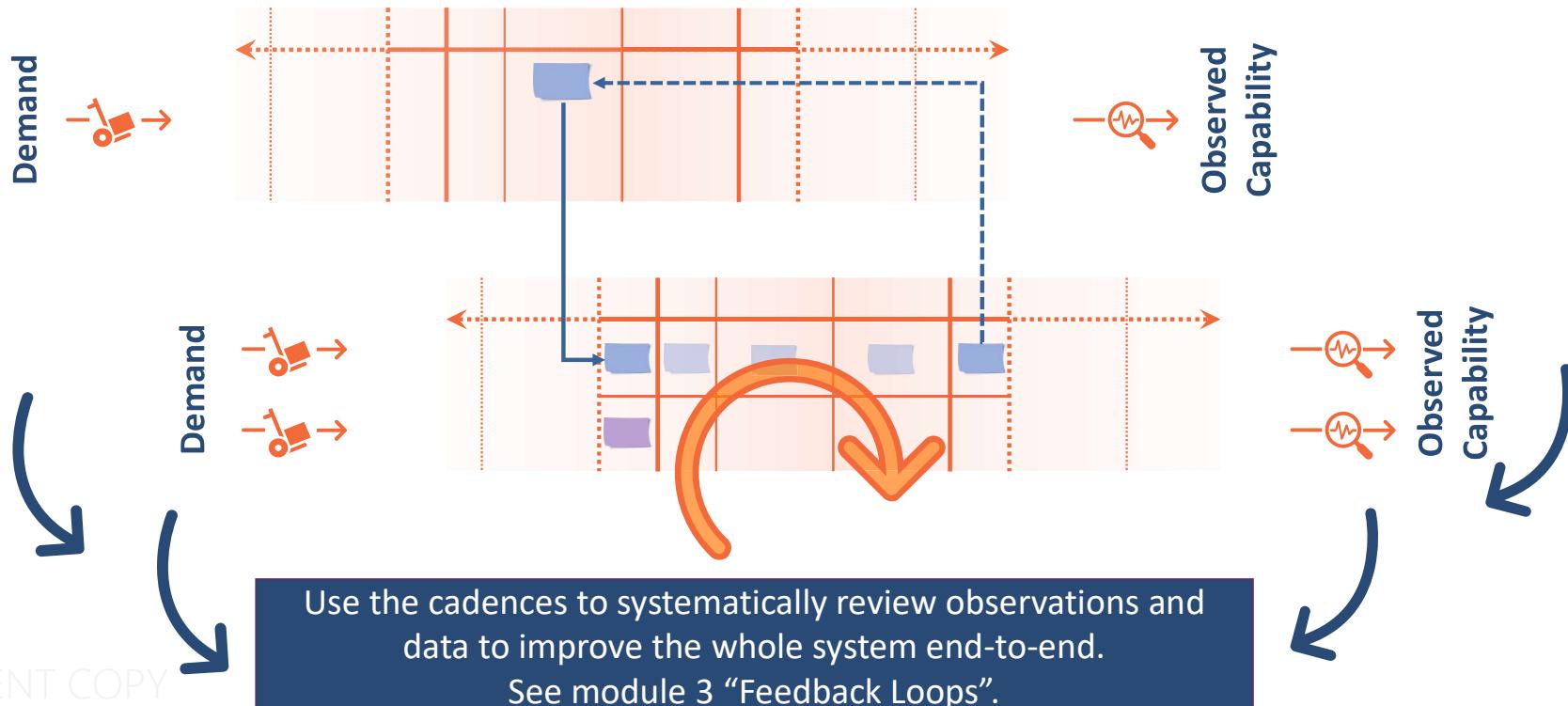
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Organizational Improvements Emerge



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Upstream Kanban

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Upstream acquires options.
Downstream (delivery)
converts options.

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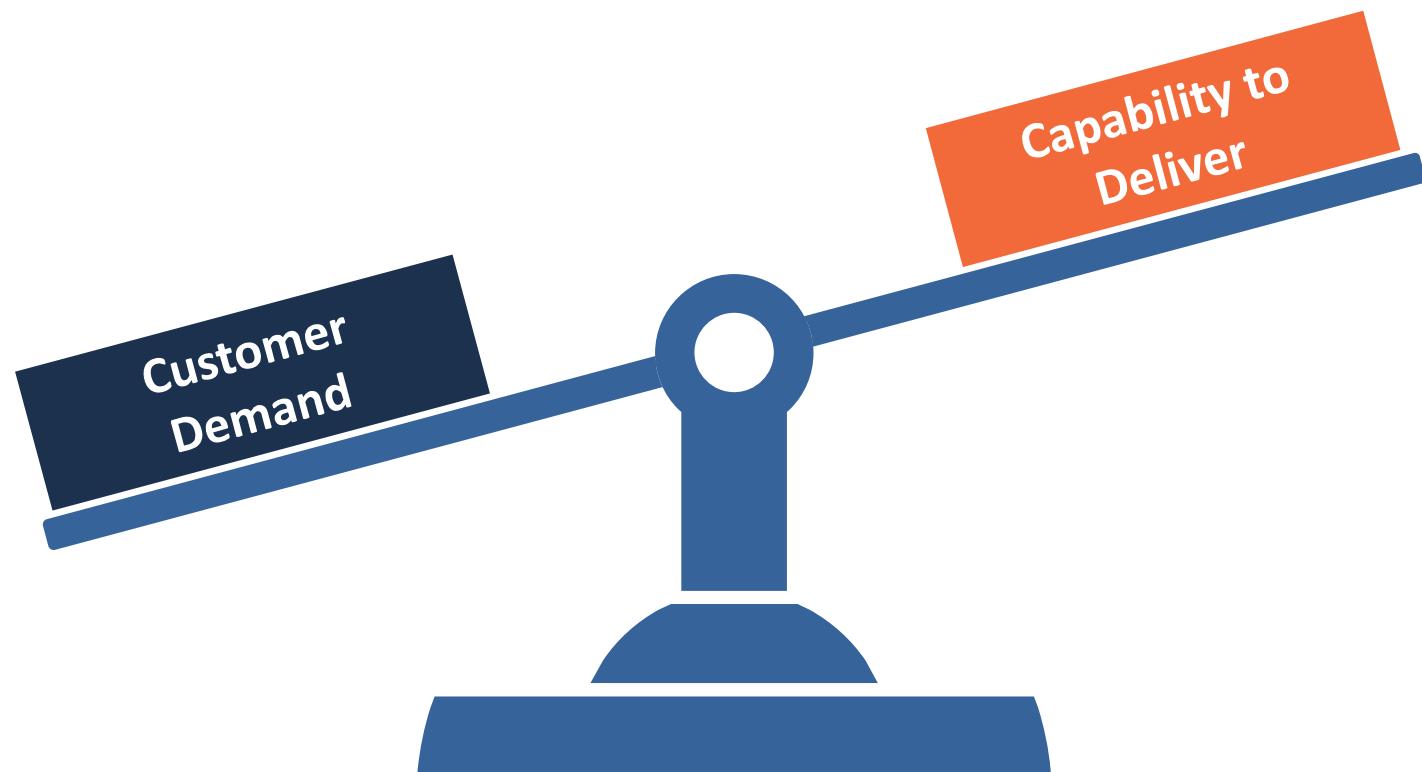
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Kanban Balances Demand and Capability

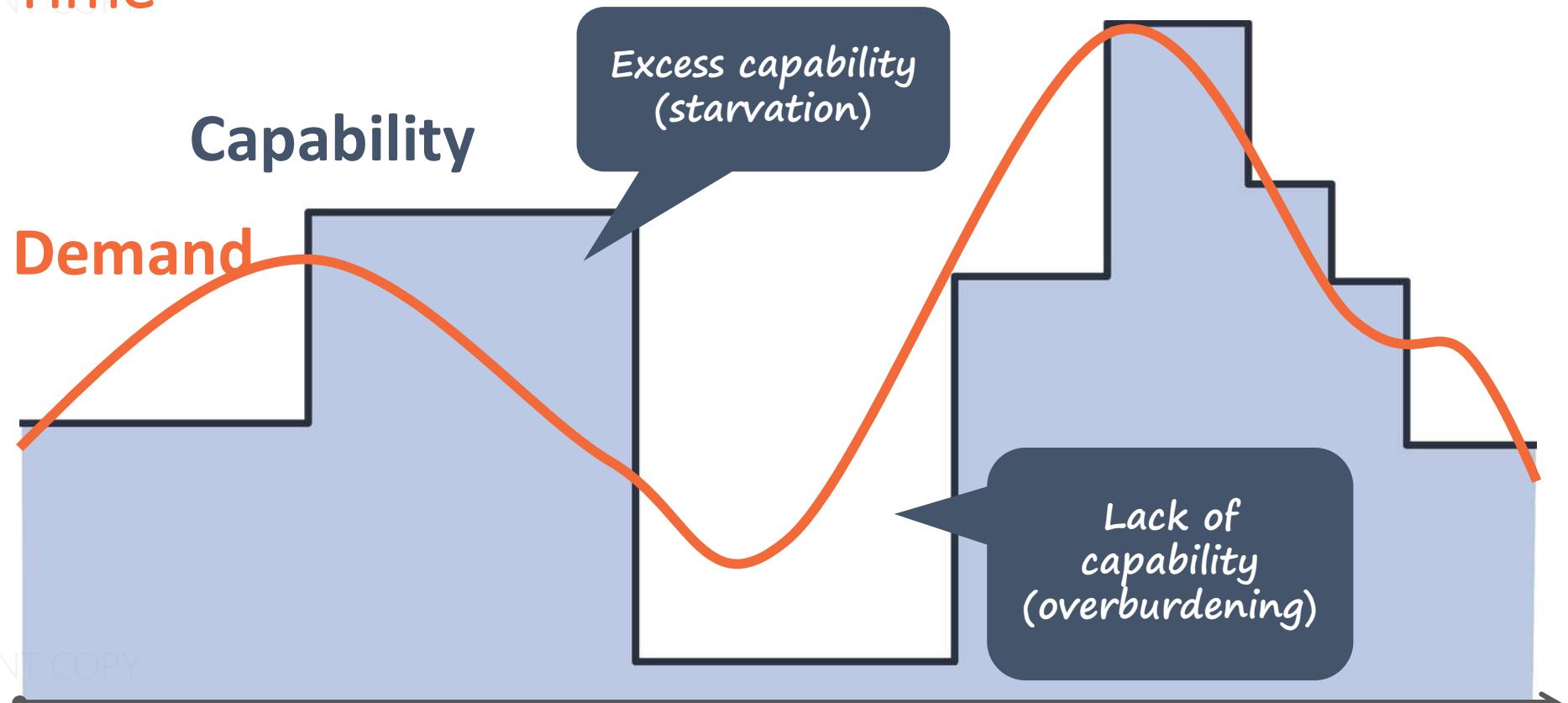


Kanban System
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The Balance of Demand and Capability shifts over Time



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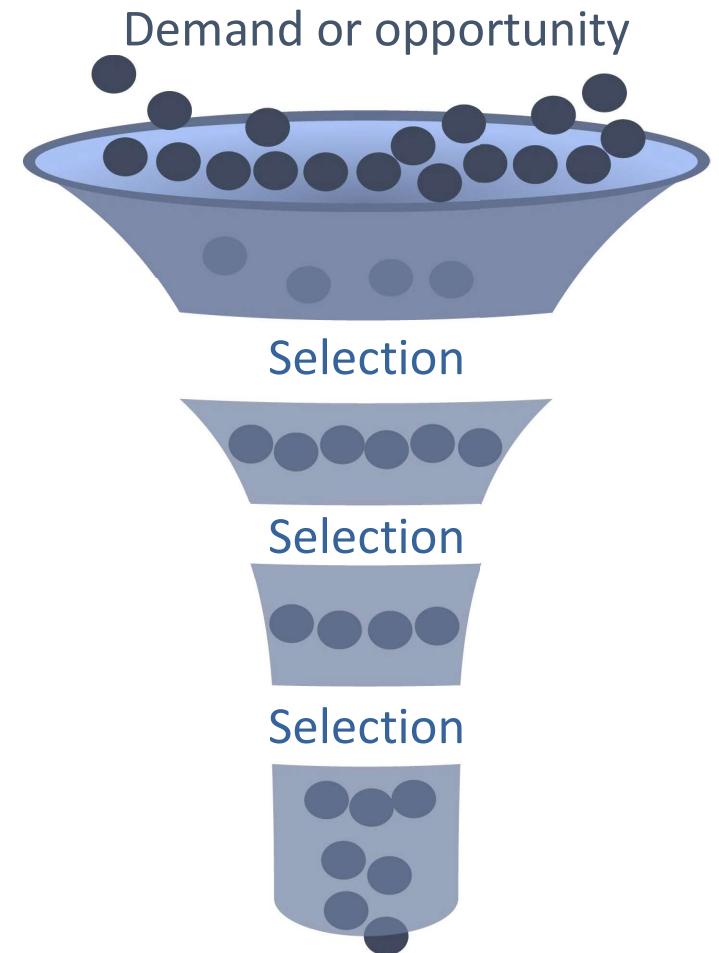
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The Upstream Challenge

- 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

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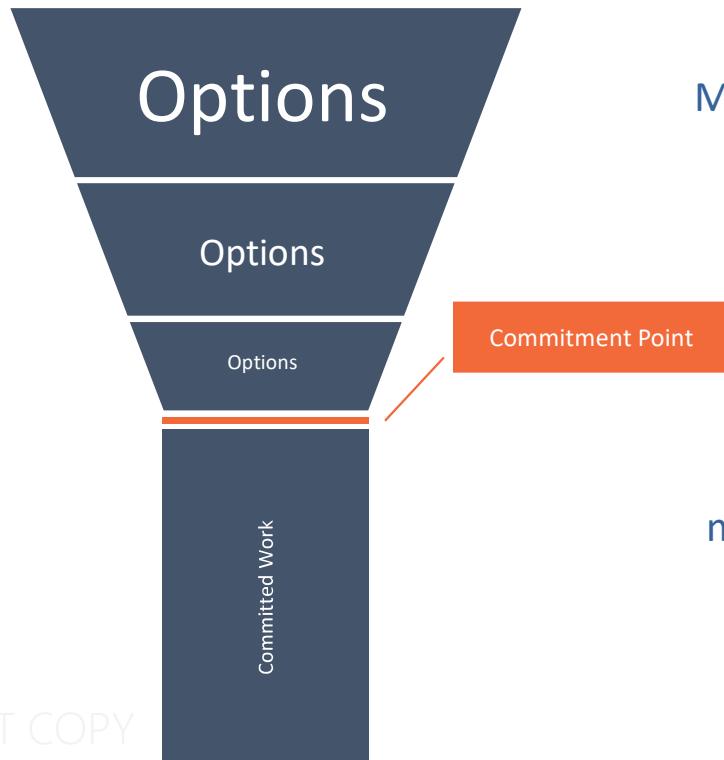
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Upstream vs. Delivery Kanban



Min and Max limits to ensure sufficient options are always available

■ 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

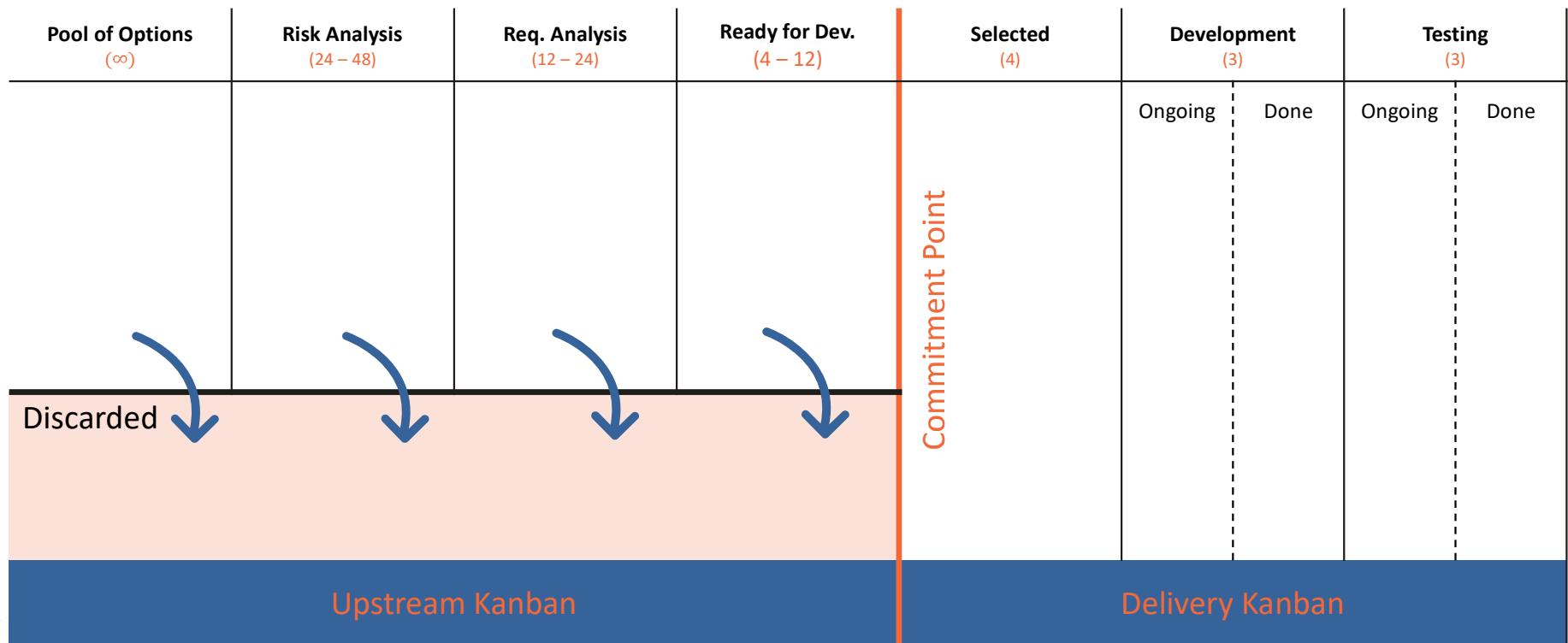
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Upstream Kanban Prepares Options

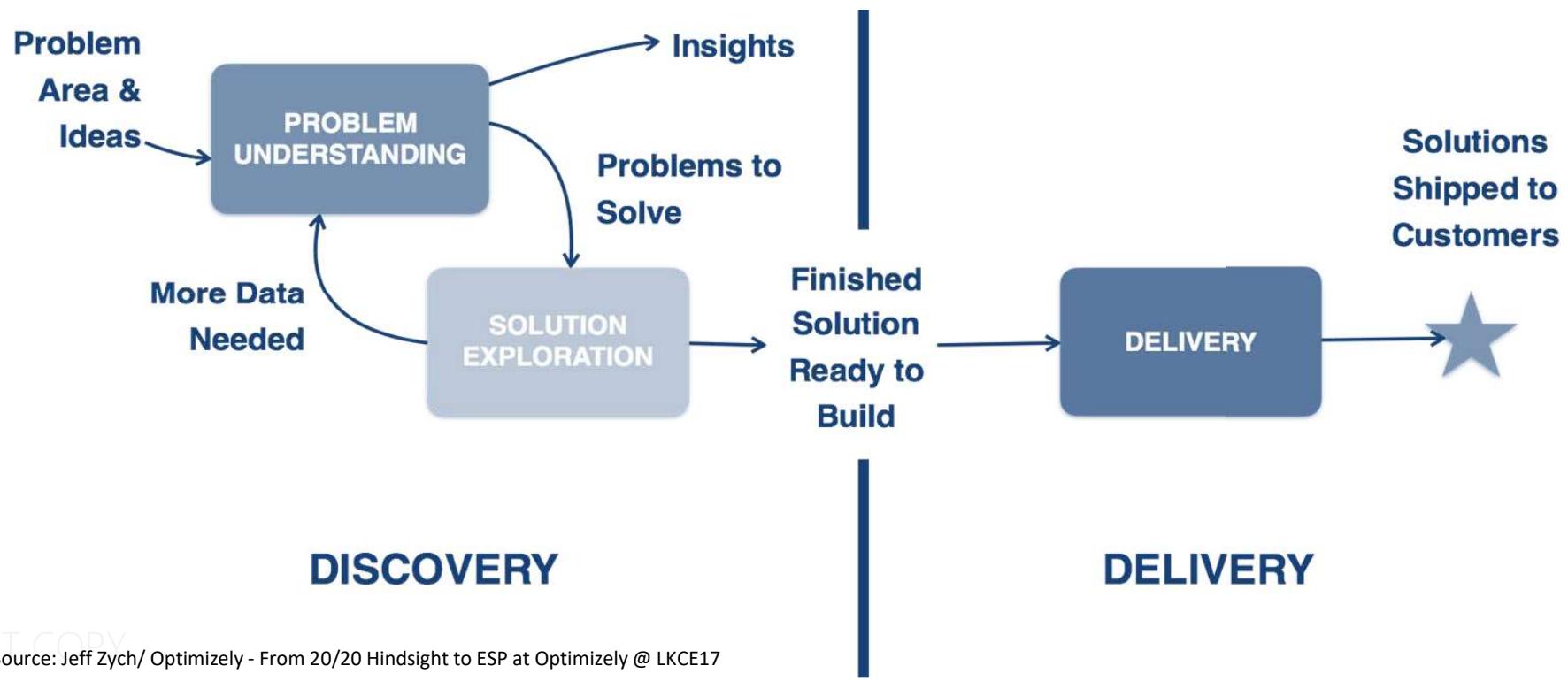


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A Real-world Example: Optimizely's Product Development Process



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

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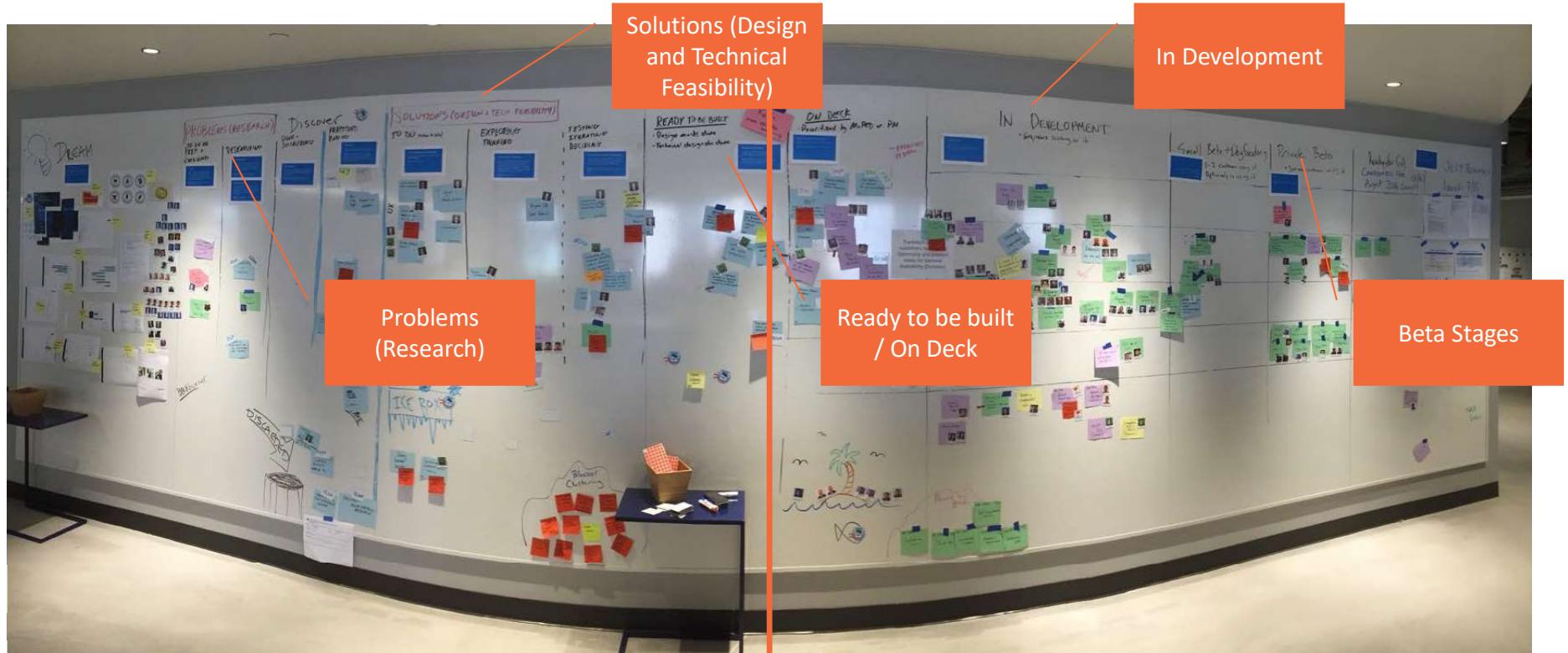
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Optimizely's End-to-End Board



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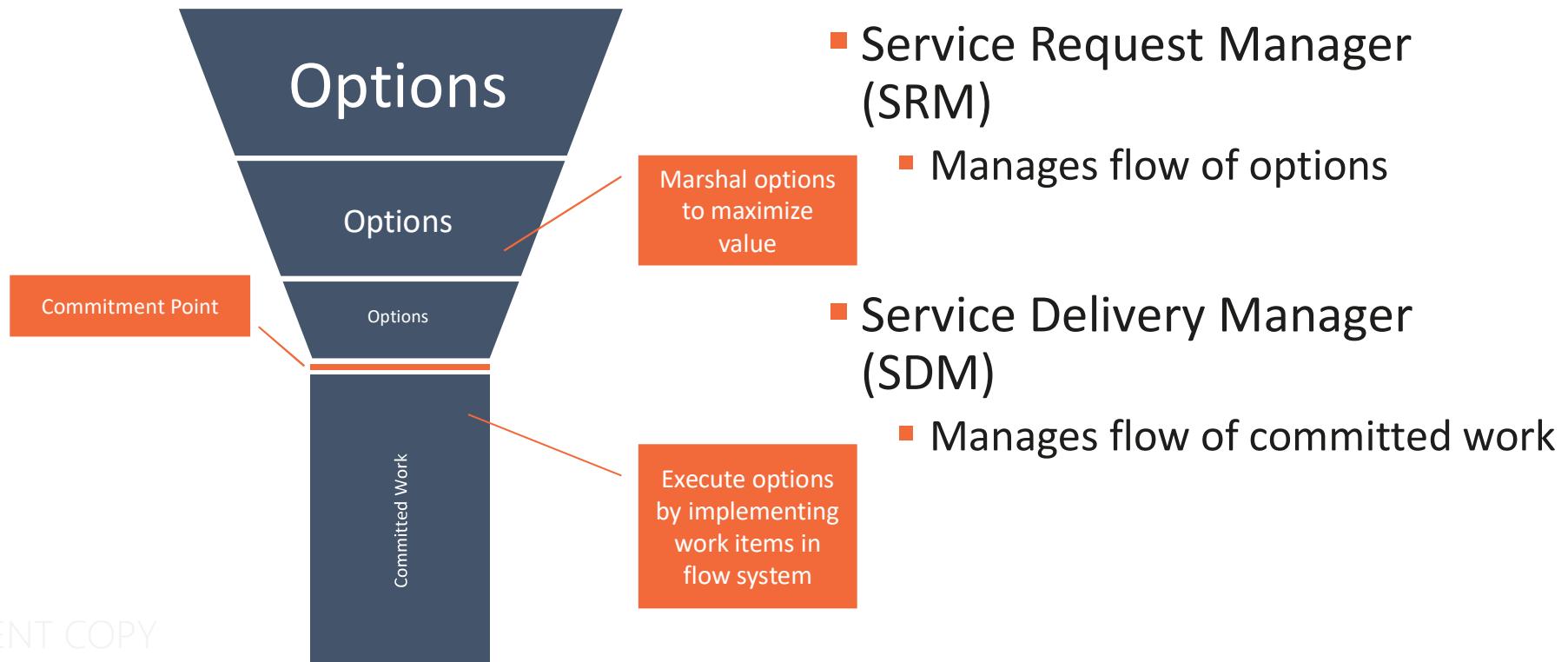
Emerging Roles

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Kanban Roles are Emerging



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