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Kanban

An Alternative Path to Agility

Presenter
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CEO, Lean Kanban Inc.

Agile Days Moscow
March 2014
Release 1.0

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The Meaning of Agile

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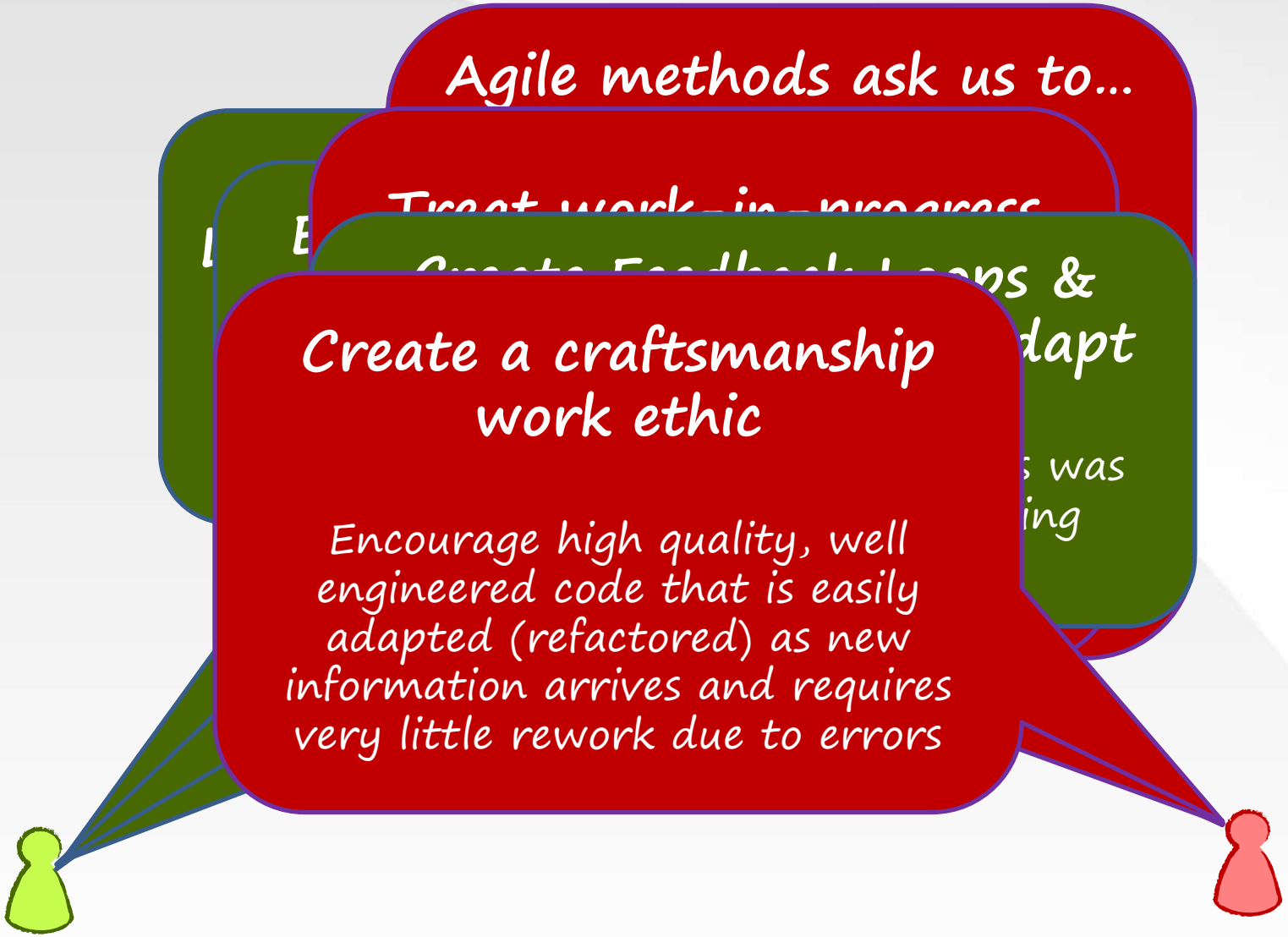
What Agile Methods Seek to Achieve



The Kanban Method – an alternative path to agility!

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Kanban Method

A management & cultural approach to improvement

View creative knowledge work as a set of services

Encourages a management focus on demand, business risks and capability of each service to supply against that demand

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The Kanban Method is not…

A project management or software development lifecycle process

Nor, does it encourage a process-centric approach to improvement!

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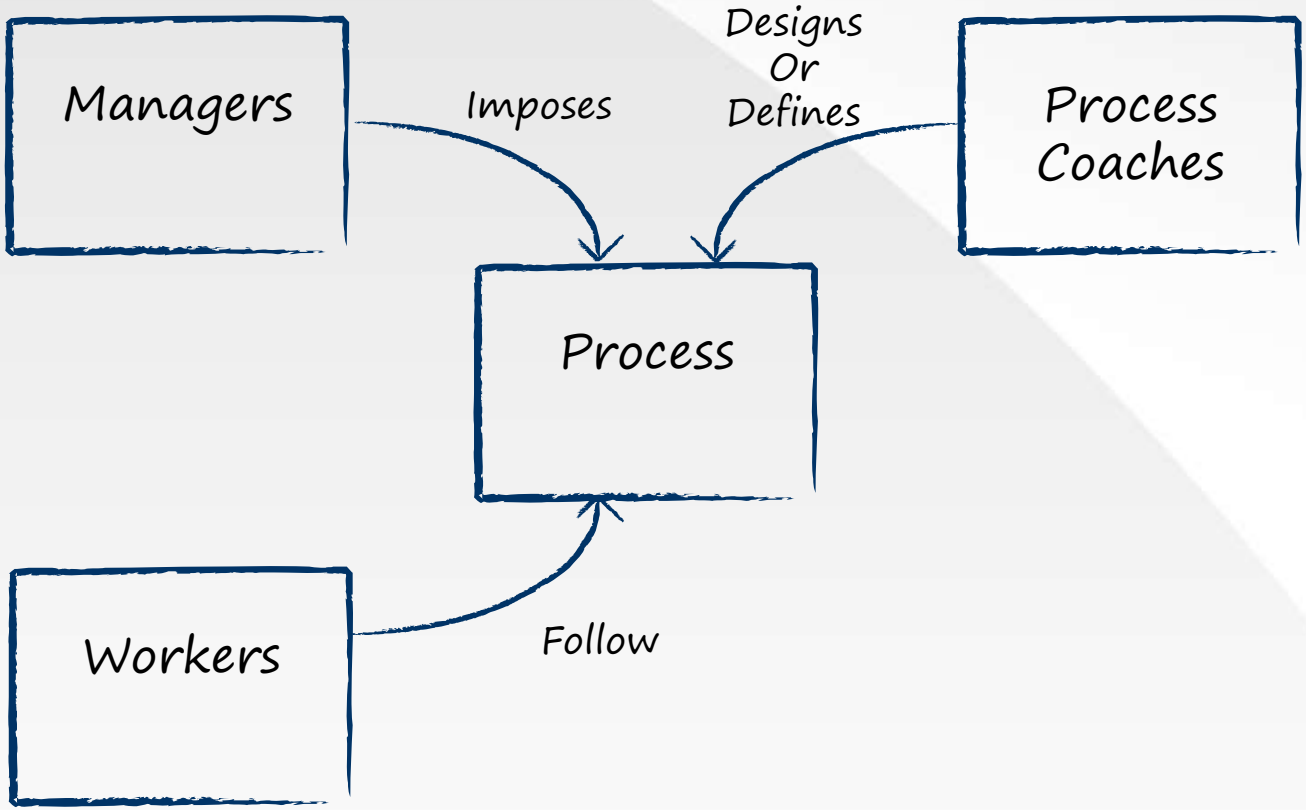
Don’t do this!...


Managers
Imposes
Designs
Or
Defines
Process
Coaches
Process
Workers
Follow

Kanban Method

Uses large boards to visualize invisible work and virtual signal card systems

Creates an adaptive capability in your organization

Enables adaptability in your business processes to respond successfully to changes in your business environment

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Kanban Method

- "**Kanbanize**" your existing process
- Provoke existing processes to change and service delivery to improve
- Each workflow will evolve a uniquely tailored process solution, "**fitter**" for its context
- Customer & employee satisfaction will improve

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Kanban has two meanings

- Kanban has two meanings in Japanese. Both meanings are incorporated into the Kanban Method
- Kanban written in Kanji (Chinese characters) 看板 means "visual (or sign) board"
- Kanban written in Japanese alphabet, hiragana, かんばん means signal cards(s)
- In Chinese, only the 看板 version exists. Hence, in Chinese, kanban can only mean "sign board" but the method was actually inspired by the signal cards system used in Japan.

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6 Practices for Adaptive Capability

The Generalized Version

Visualize (with a kanban board (看板))
Limit Work-in-progress (with kanban (かんばん))
Manage Flow
Make Policies Explicit
Implement Feedback Loops
Improve Collaboratively, Evolve Experimentally
(using models & the scientific method)

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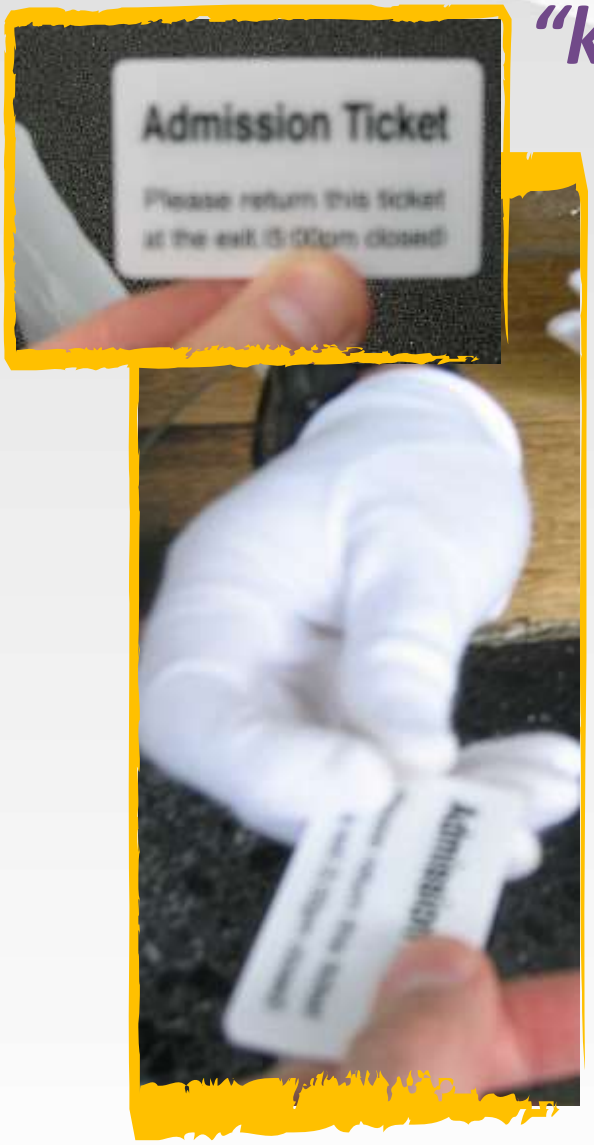
What is a kanban system? (かんばん)

A Kanban Systems consists of *"kanban"* (かんばん) signal cards in circulation



Using a virtual kanban system

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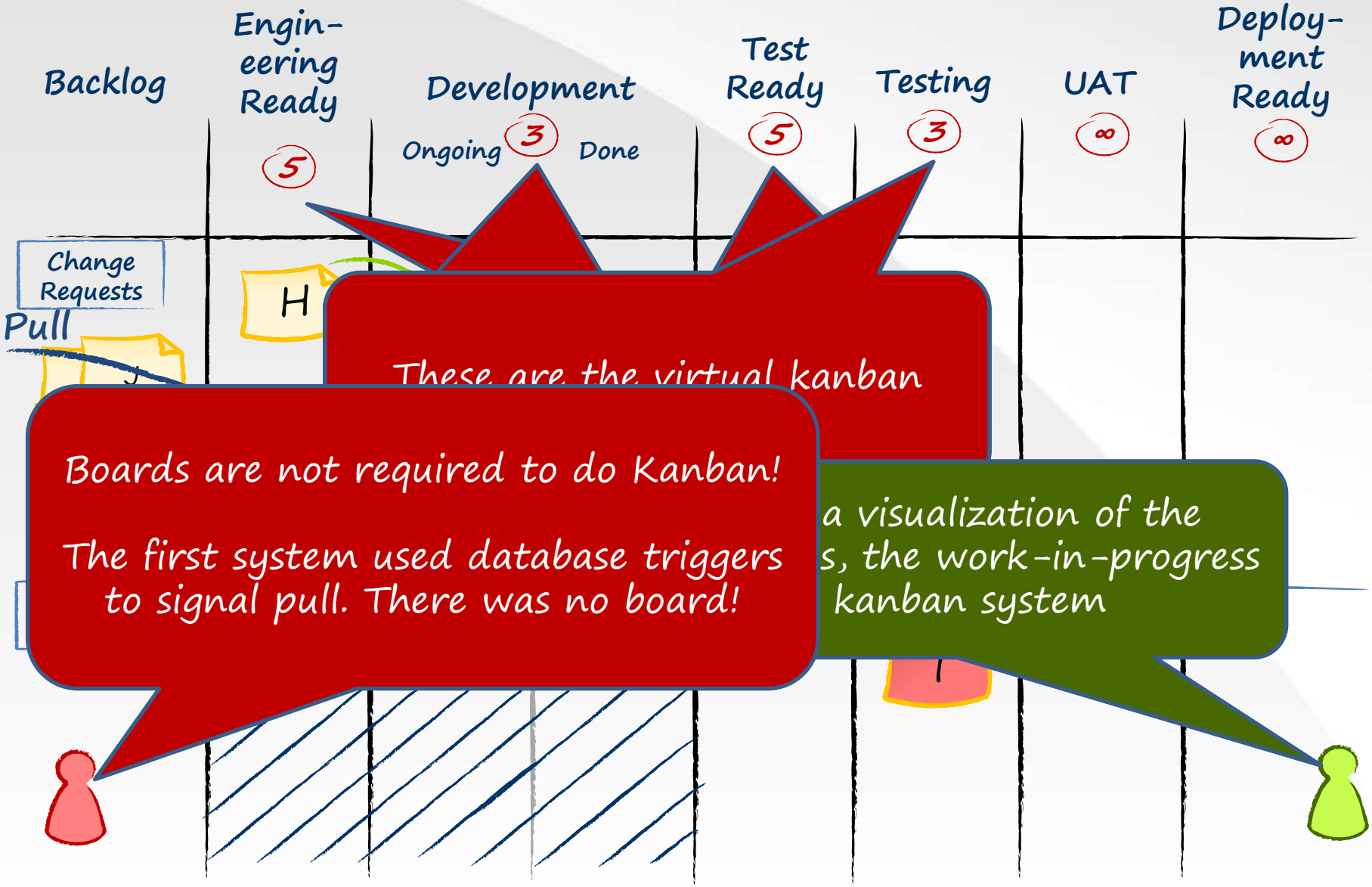
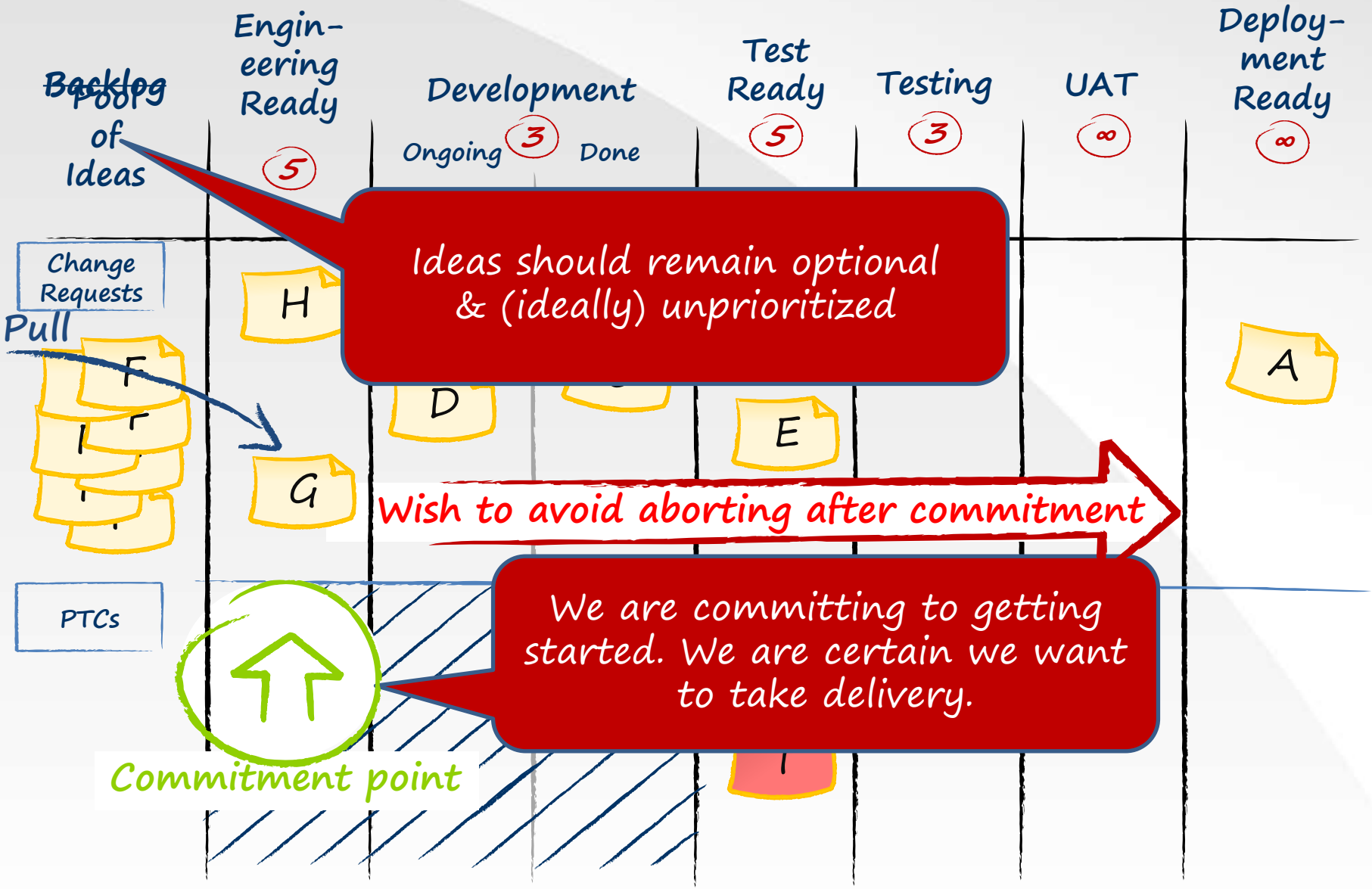
Kanban are virtual!



Commitment is deferred



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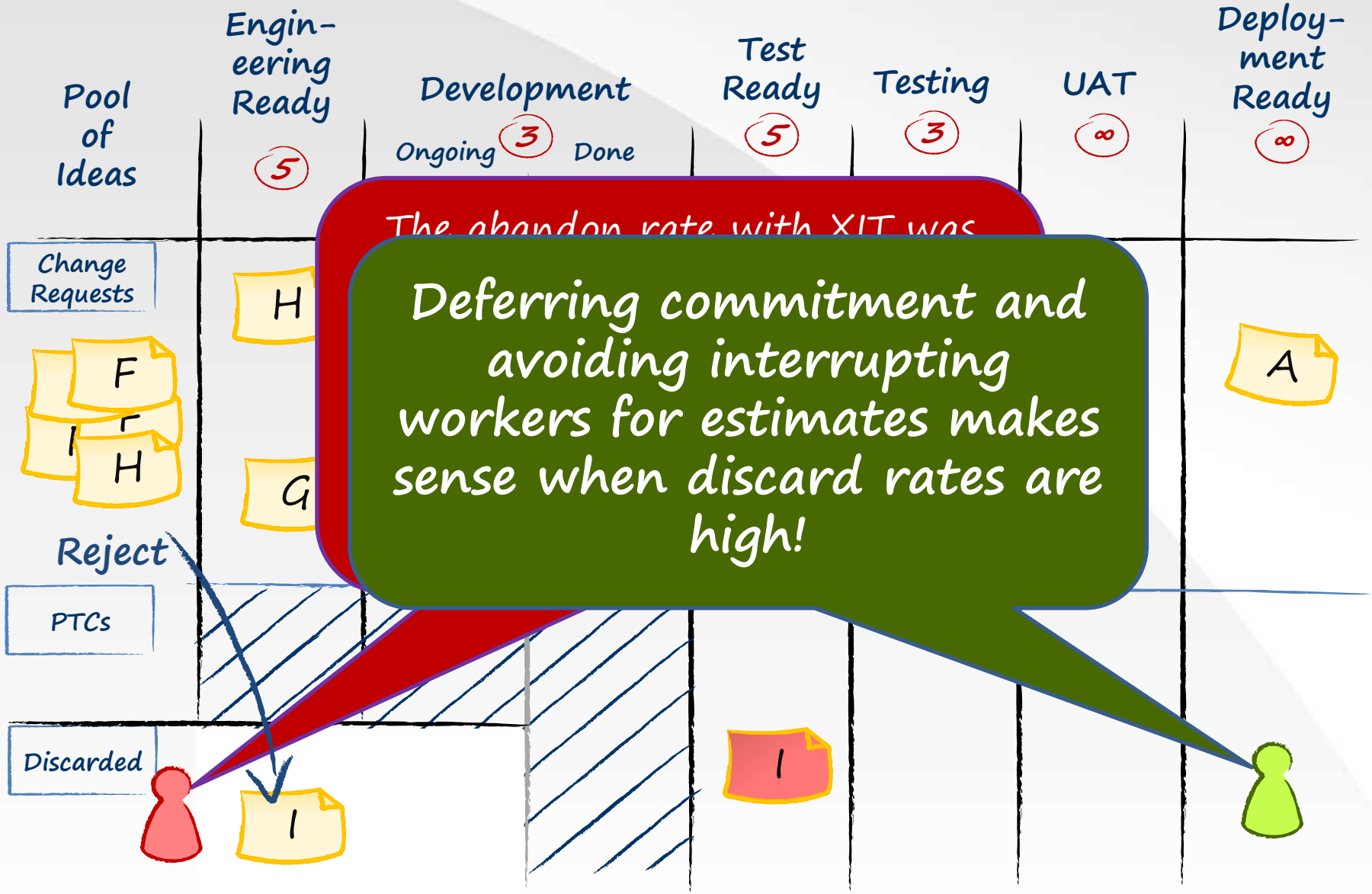
Abandonment rates are often high



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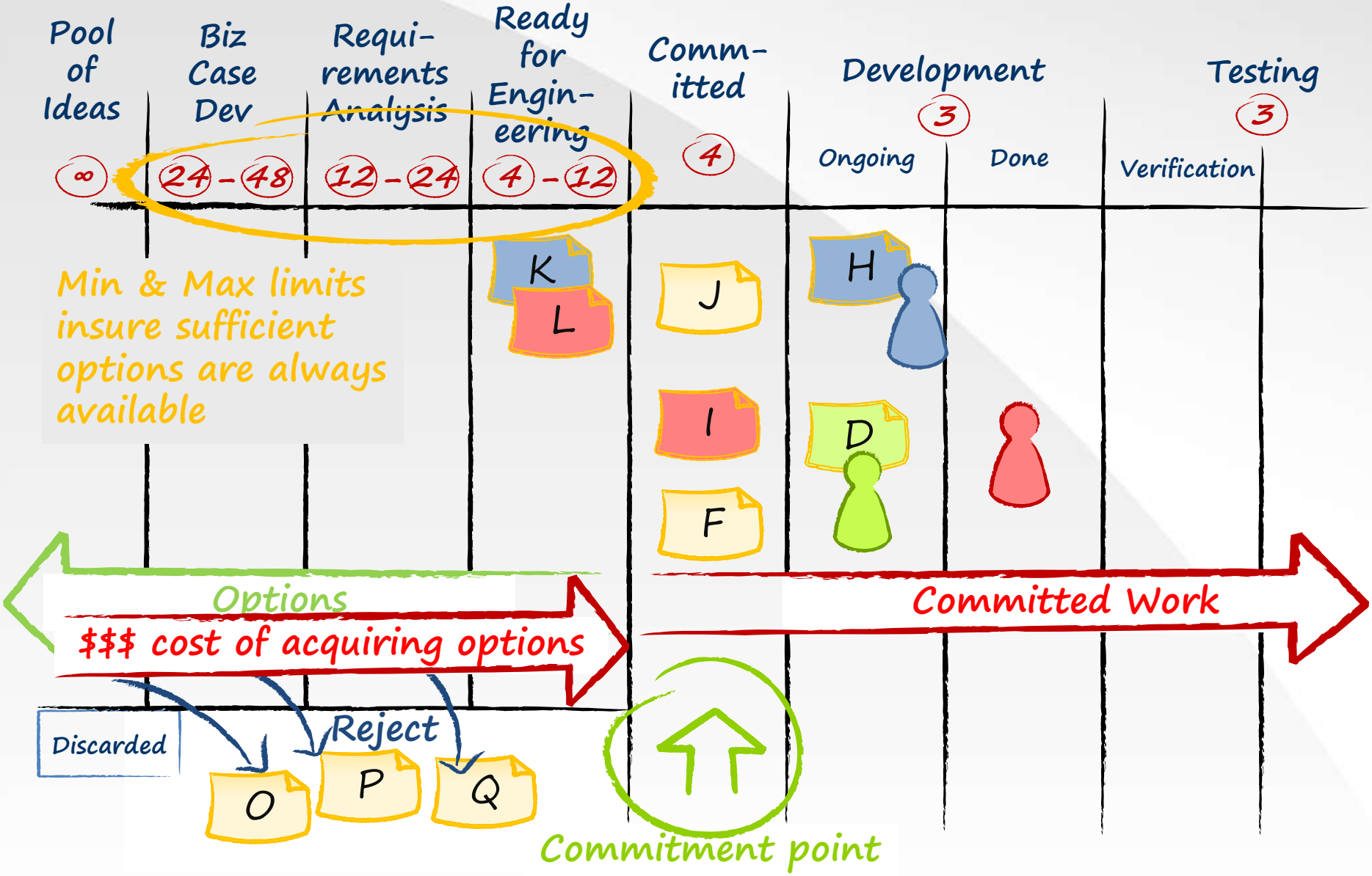
Upstream Kanban Prepares Options



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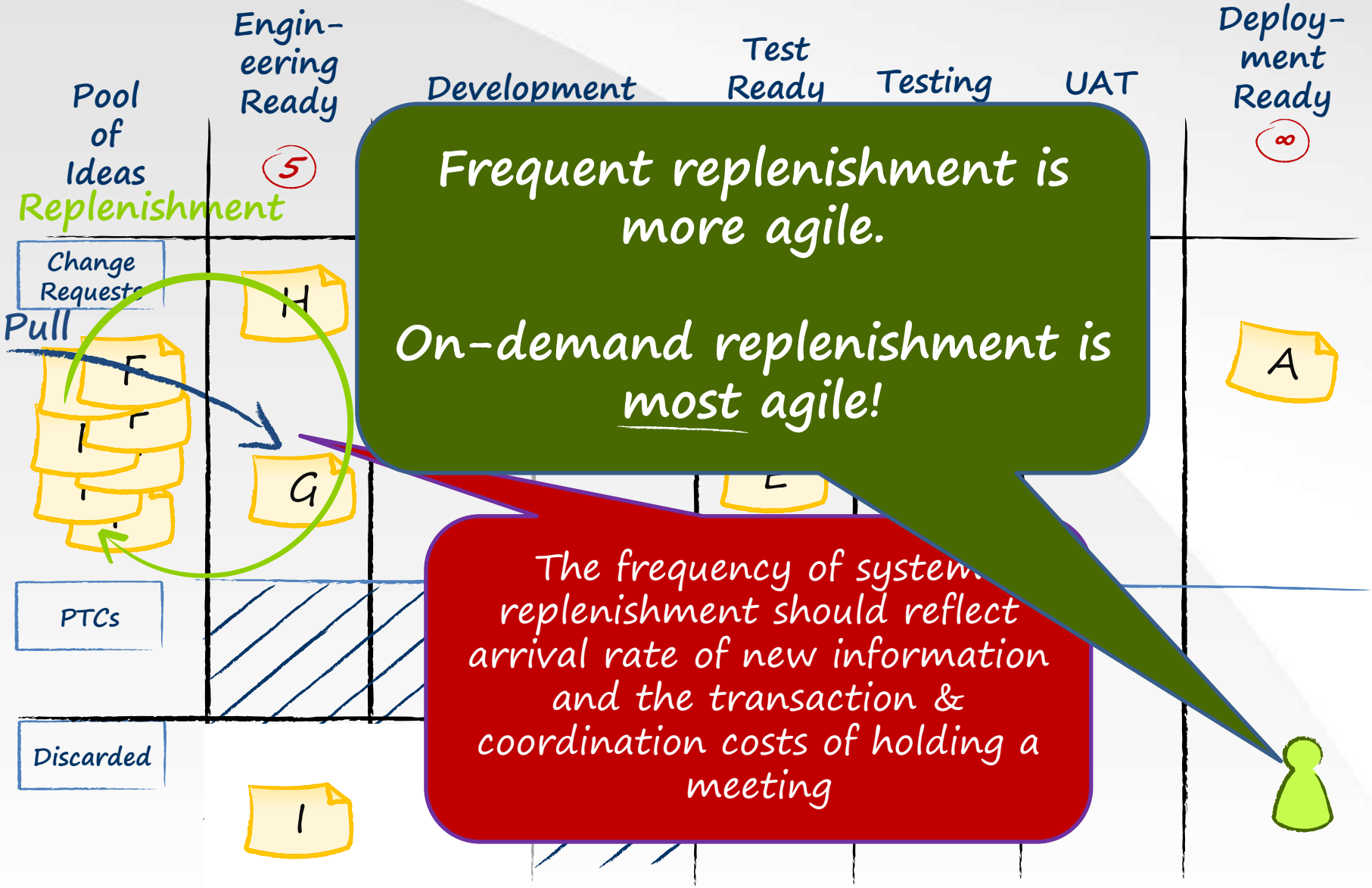
Replenishment Frequency



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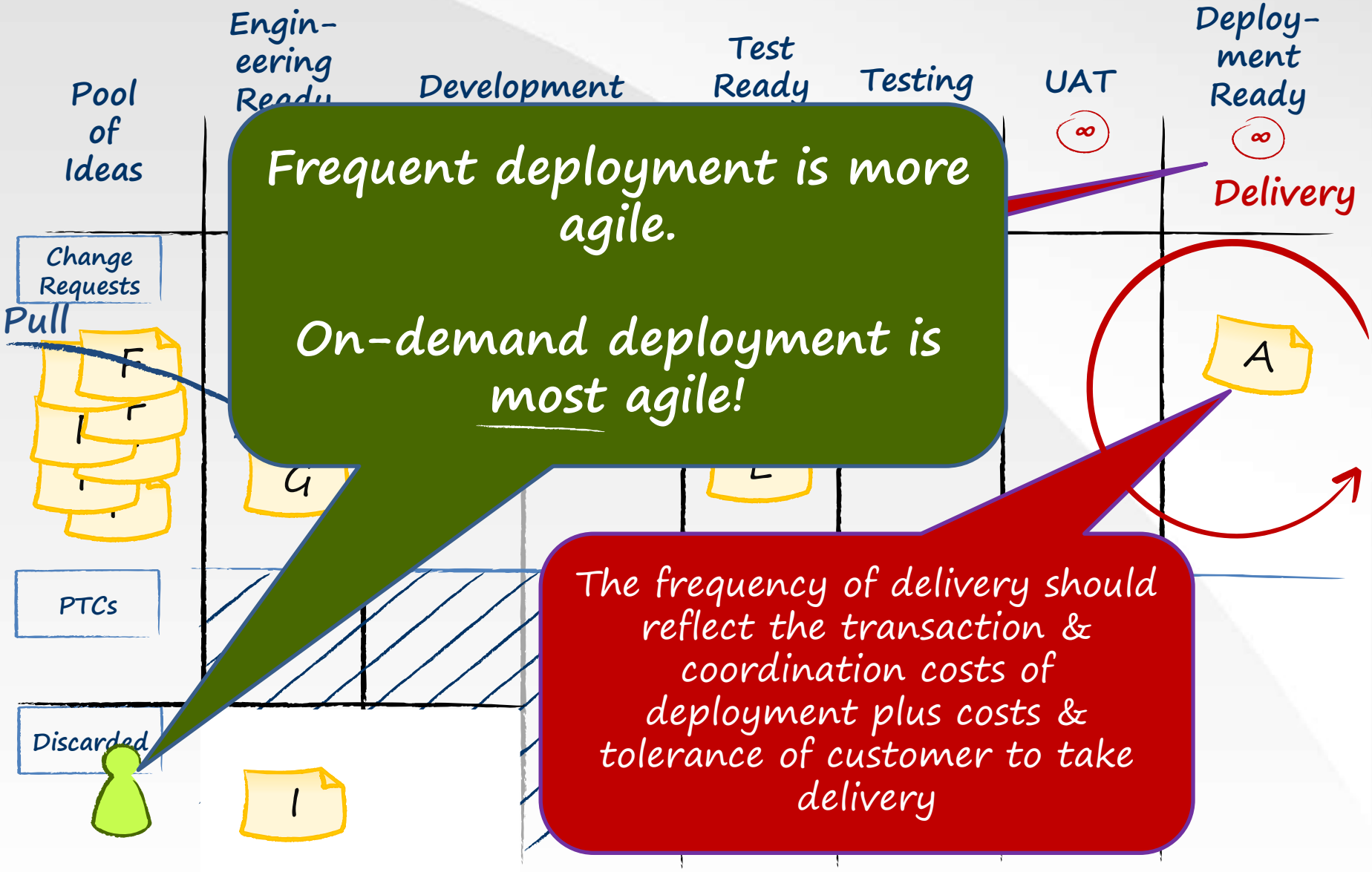
Delivery Frequency



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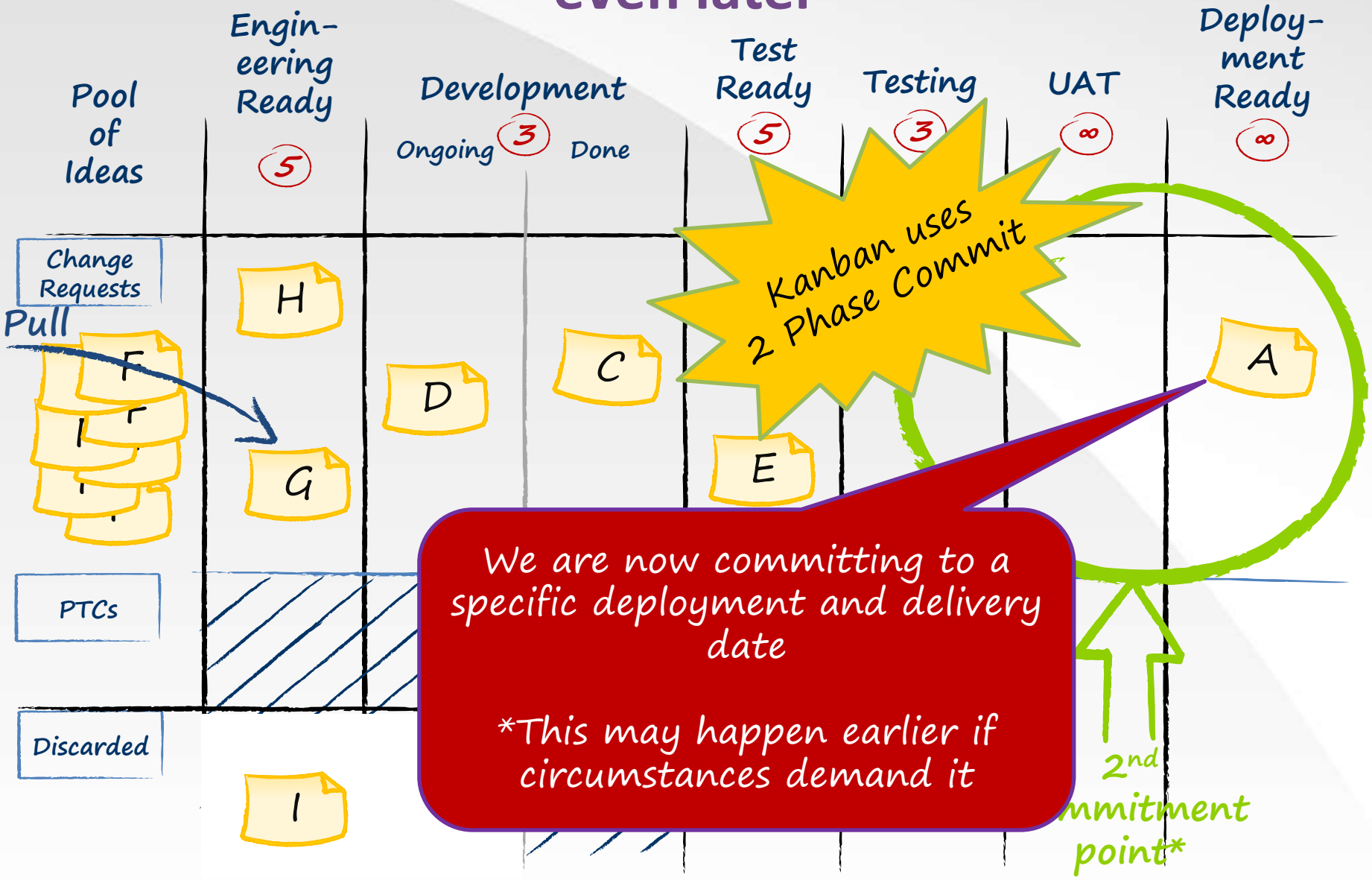
Specific delivery commitment may be deferred even later



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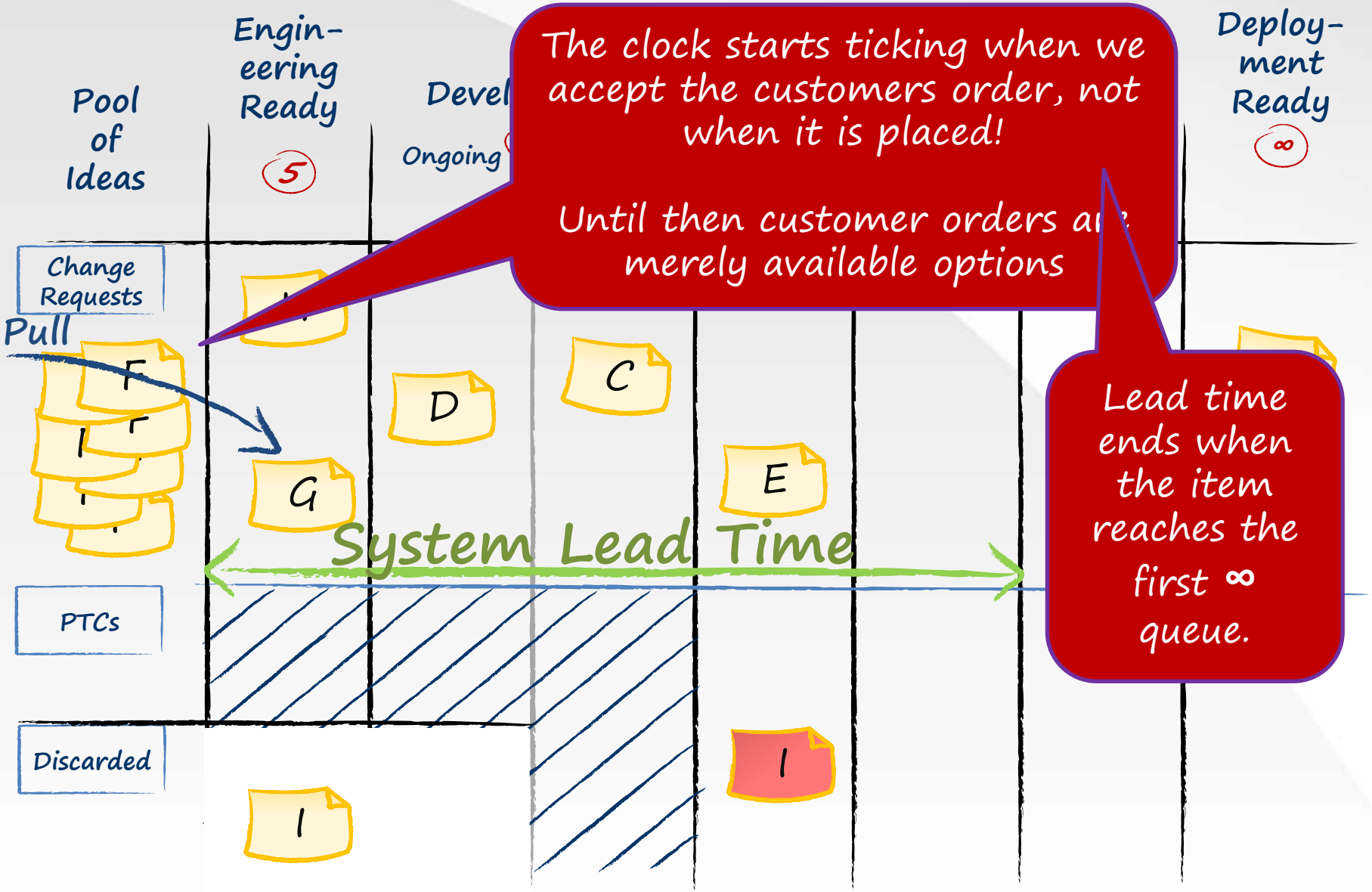
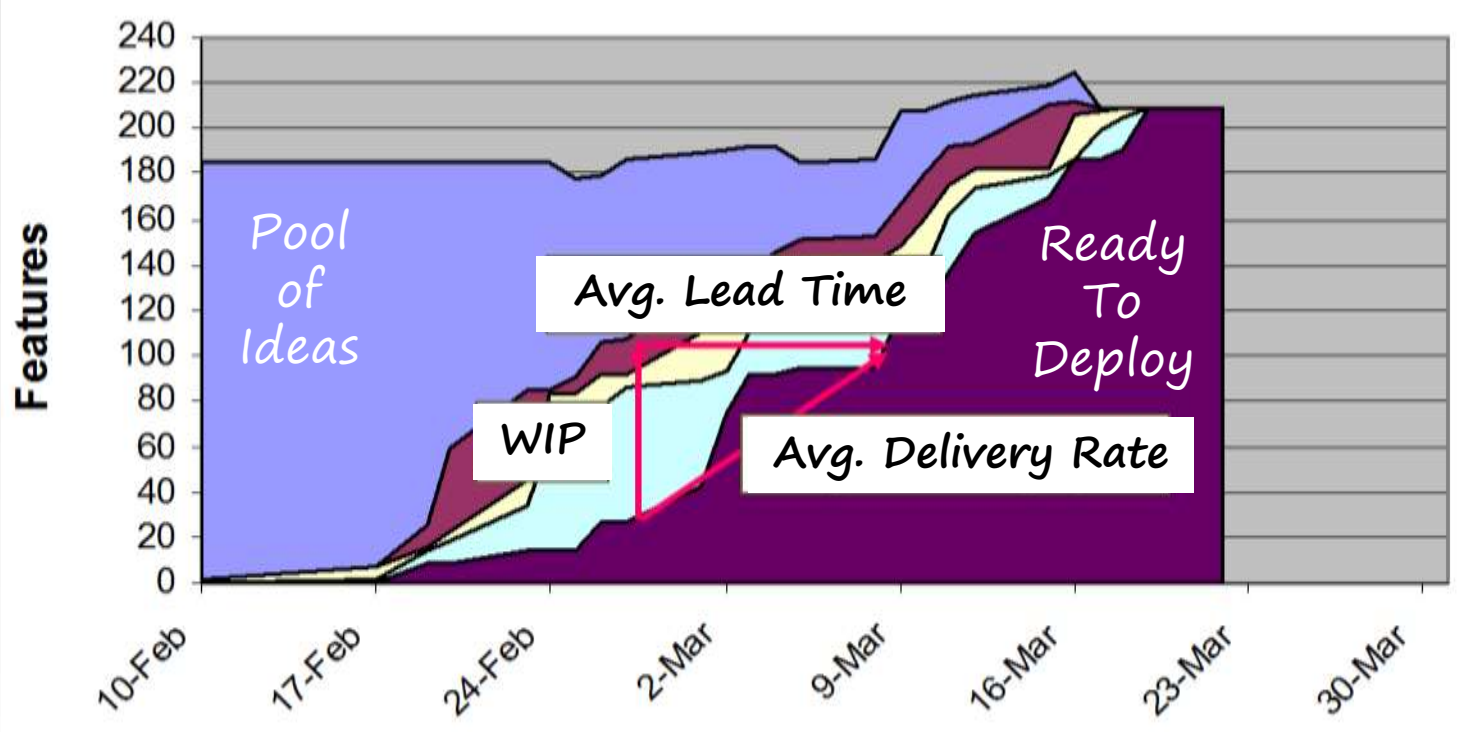
Defining Kanban System Lead Time



Little's Law & Cumulative Flow

$$\frac{\text{WIP}}{\text{Delivery Rate}} = \frac{\text{WIP}}{\frac{}{\text{Lead Time}}}$$



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Flow Efficiency

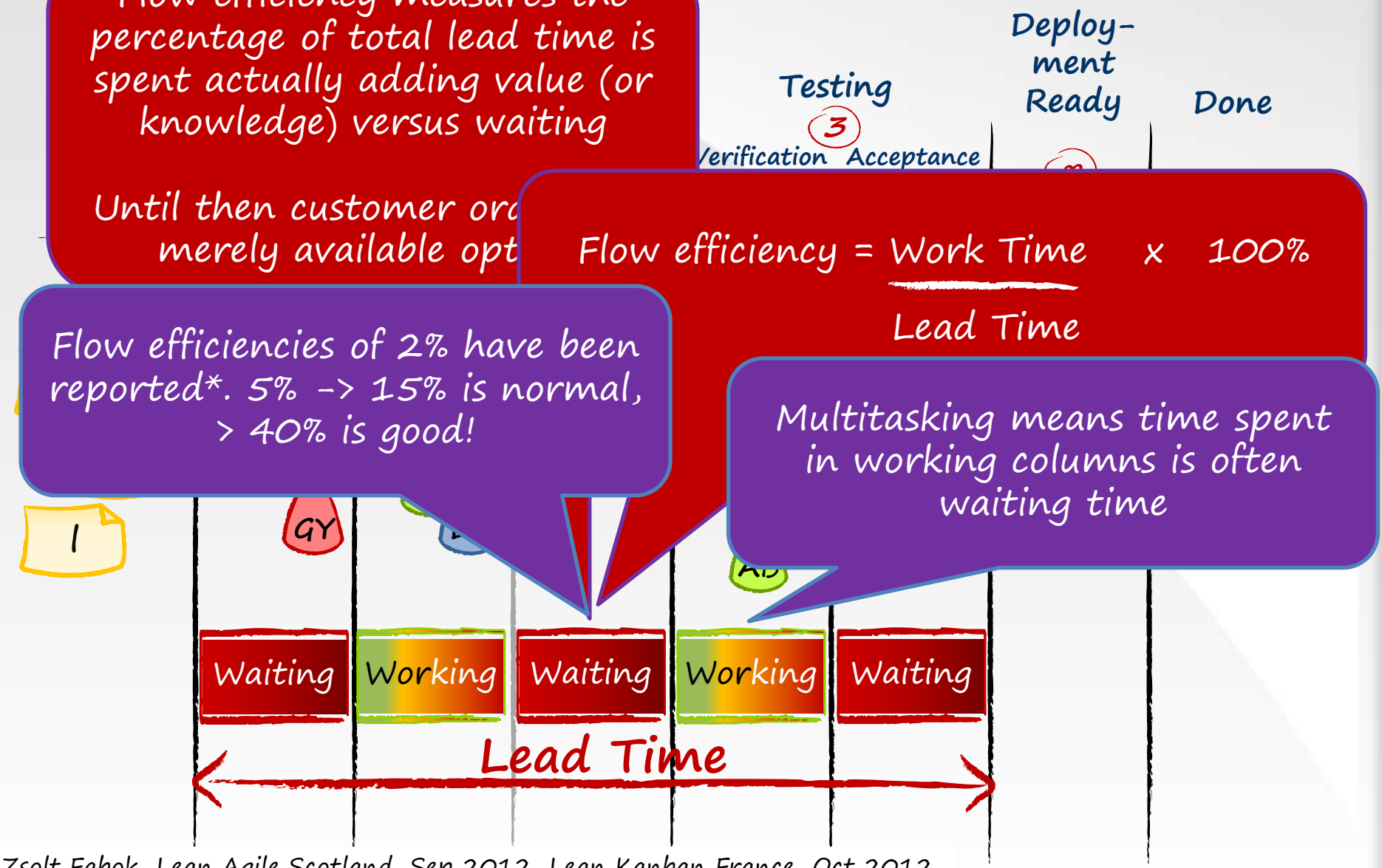
Flow efficiency measures the percentage of total lead time is spent actually adding value (or knowledge) versus waiting

Until then customer orc
merely available opt

Flow efficiency = Work Time / Lead Time x 100%

Flow efficiencies of 2% have been reported*. 5% -> 15% is normal, > 40% is good!

Multitasking means time spent in working columns is often waiting time



* Zsolt Fabok, Lean Agile Scotland, Sep 2012, Lean Kanban France, Oct 2012

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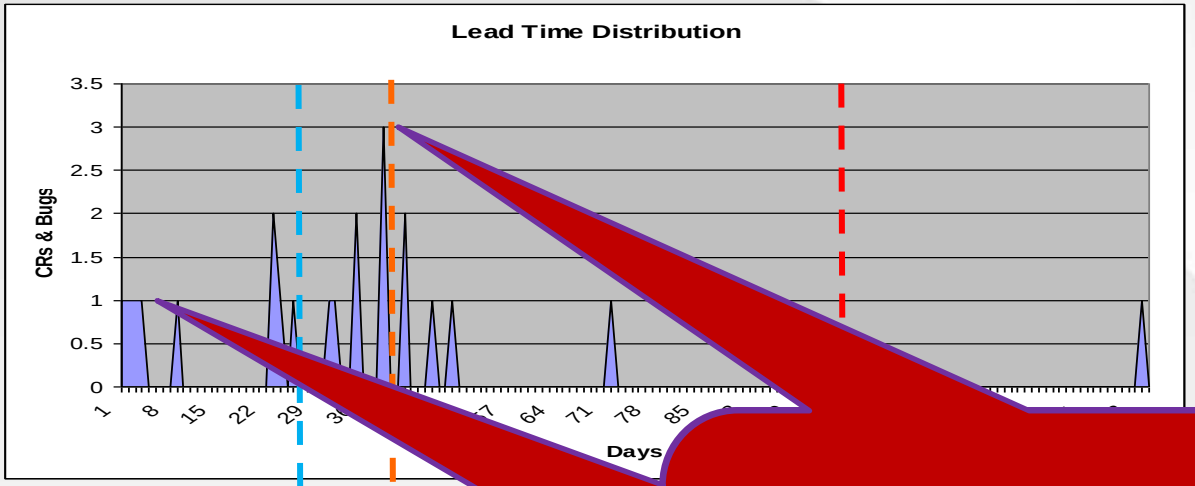
Observe Lead Time Distribution as an enabler of a Probabilistic Approach to Management



Mean of 31 days

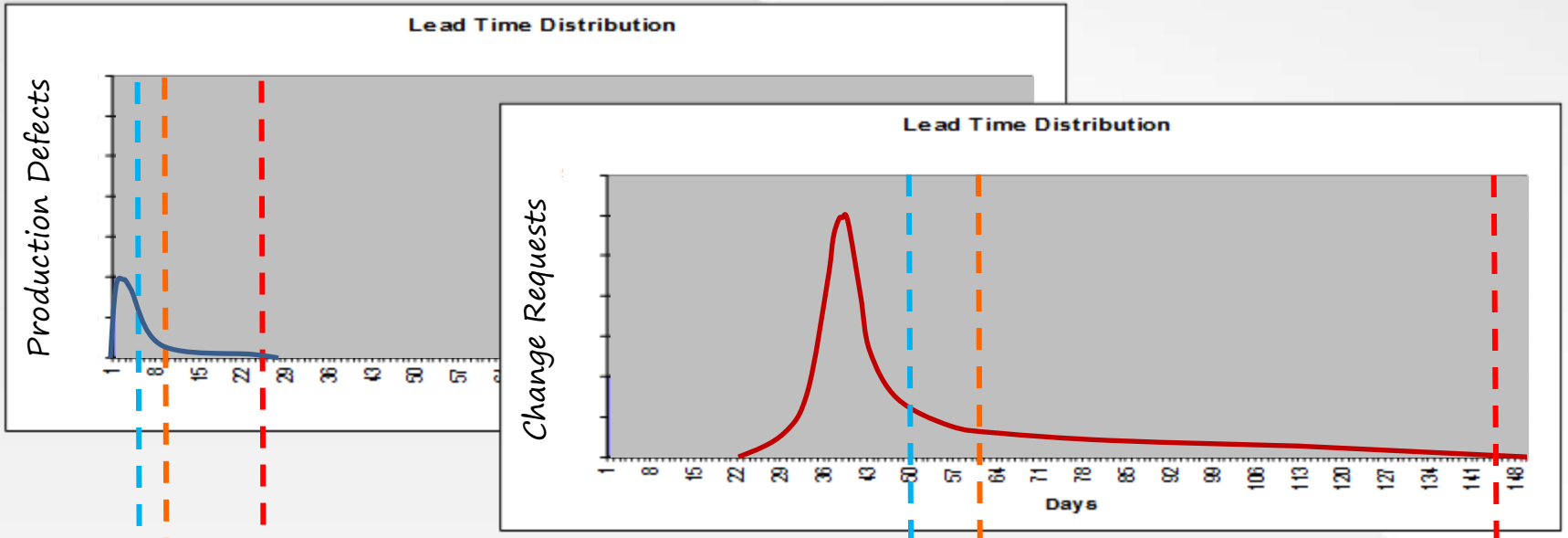
This is multi-modal data!

The work is of two types: Change Requests (new features); and Production Defects

n-time

SLA expectation of
44 days with 85% on-time

Filter Lead Time data by Type of Work (and Class of Service) to get Single Mode Distributions



Mean
5 days

98% at
25 days

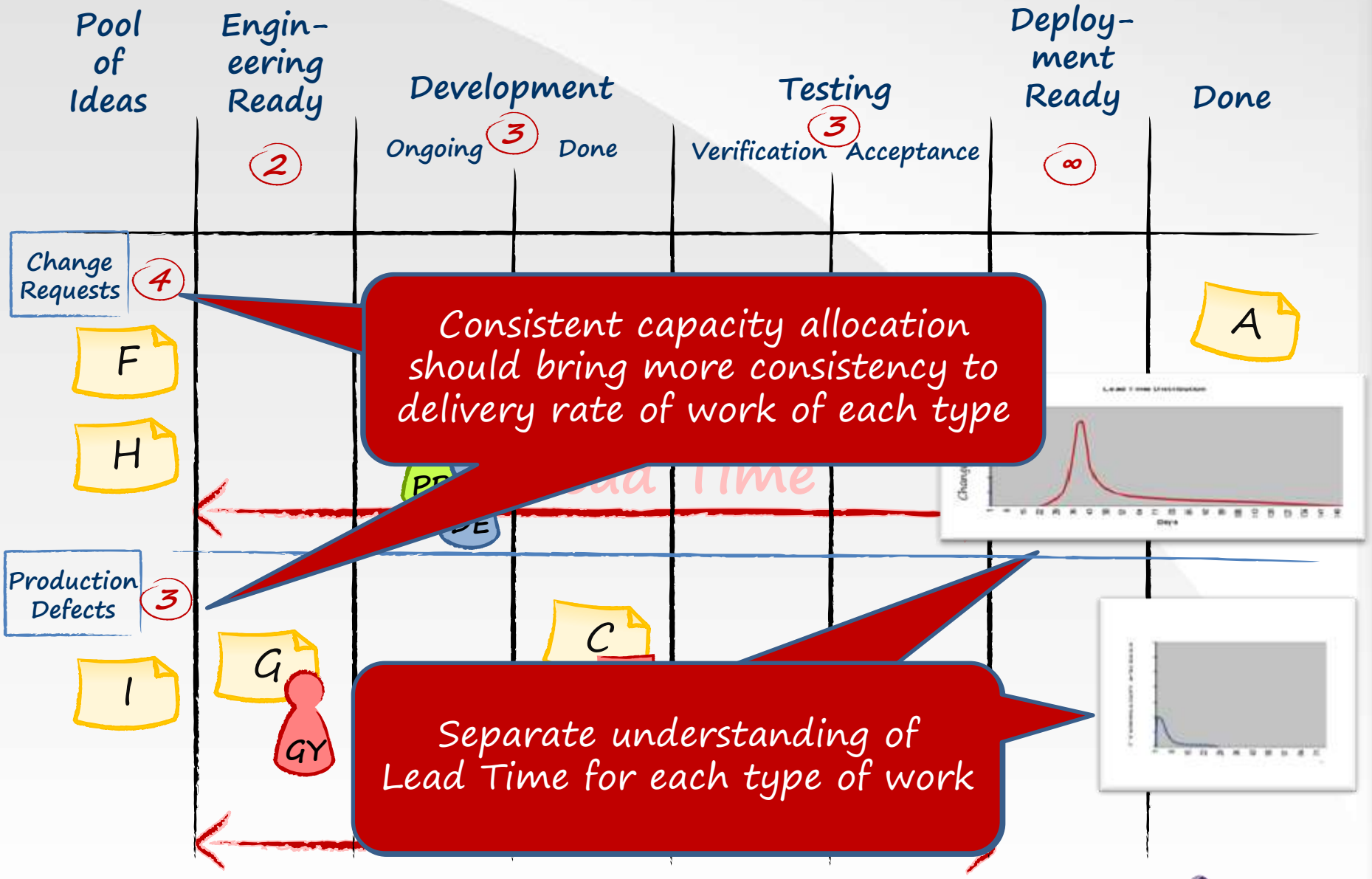
85% at
10 days

Mean
50 days

85% at
60 days

98% at
150 days

Allocate Capacity to Types of Work

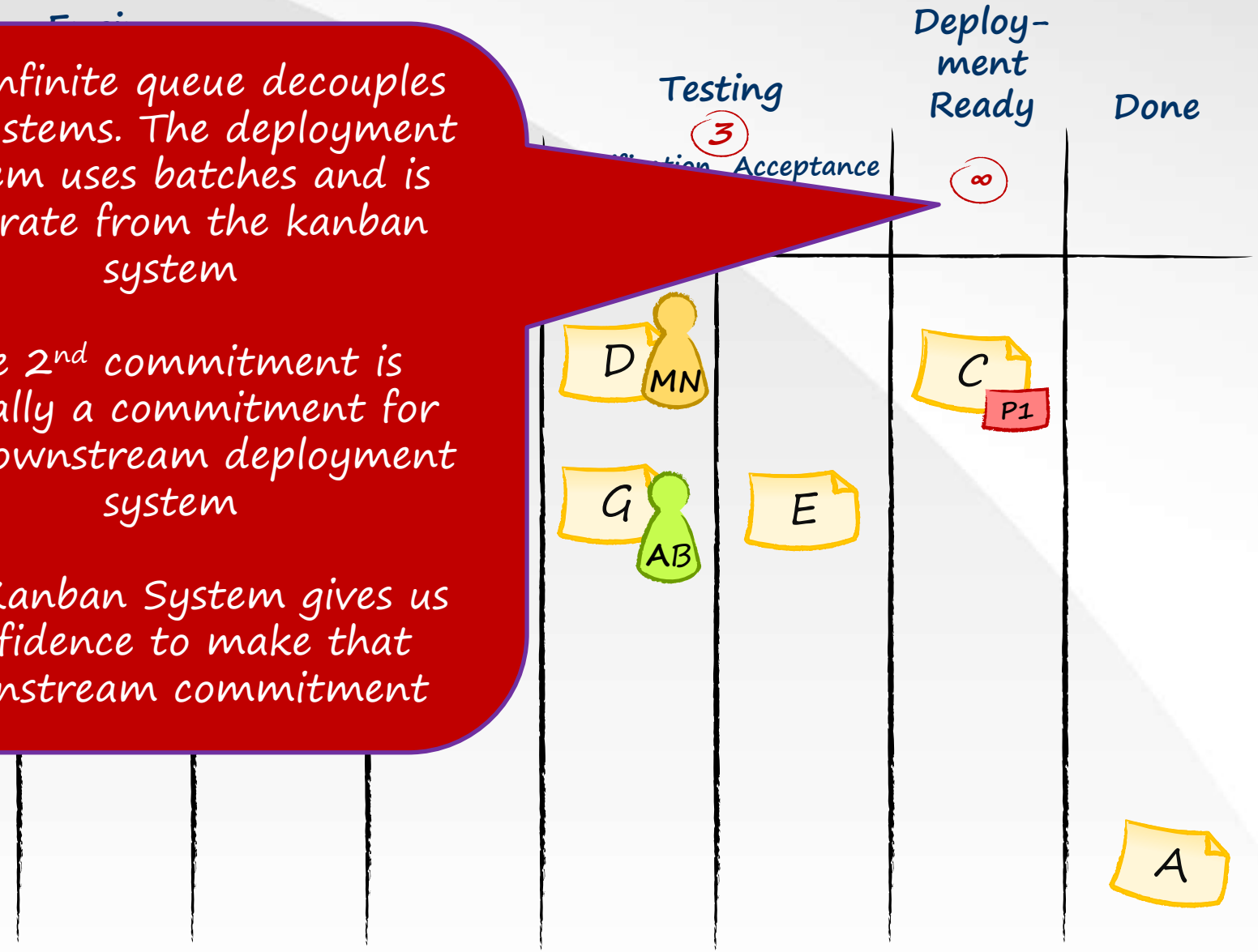


Infinite Queues Decouple Systems

The infinite queue decouples the systems. The deployment system uses batches and is separate from the kanban system

The 2nd commitment is actually a commitment for the downstream deployment system

The Kanban System gives us confidence to make that downstream commitment



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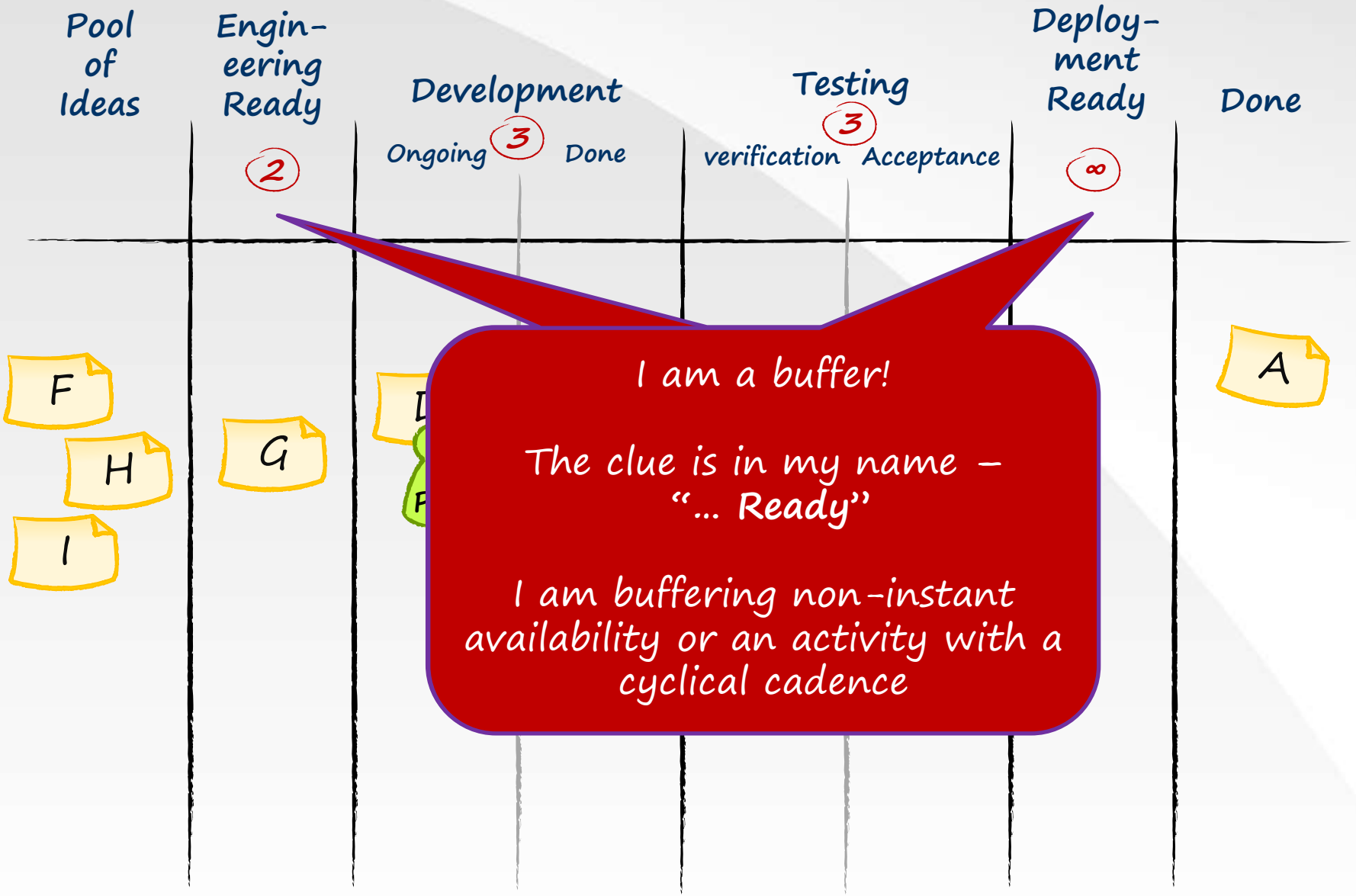
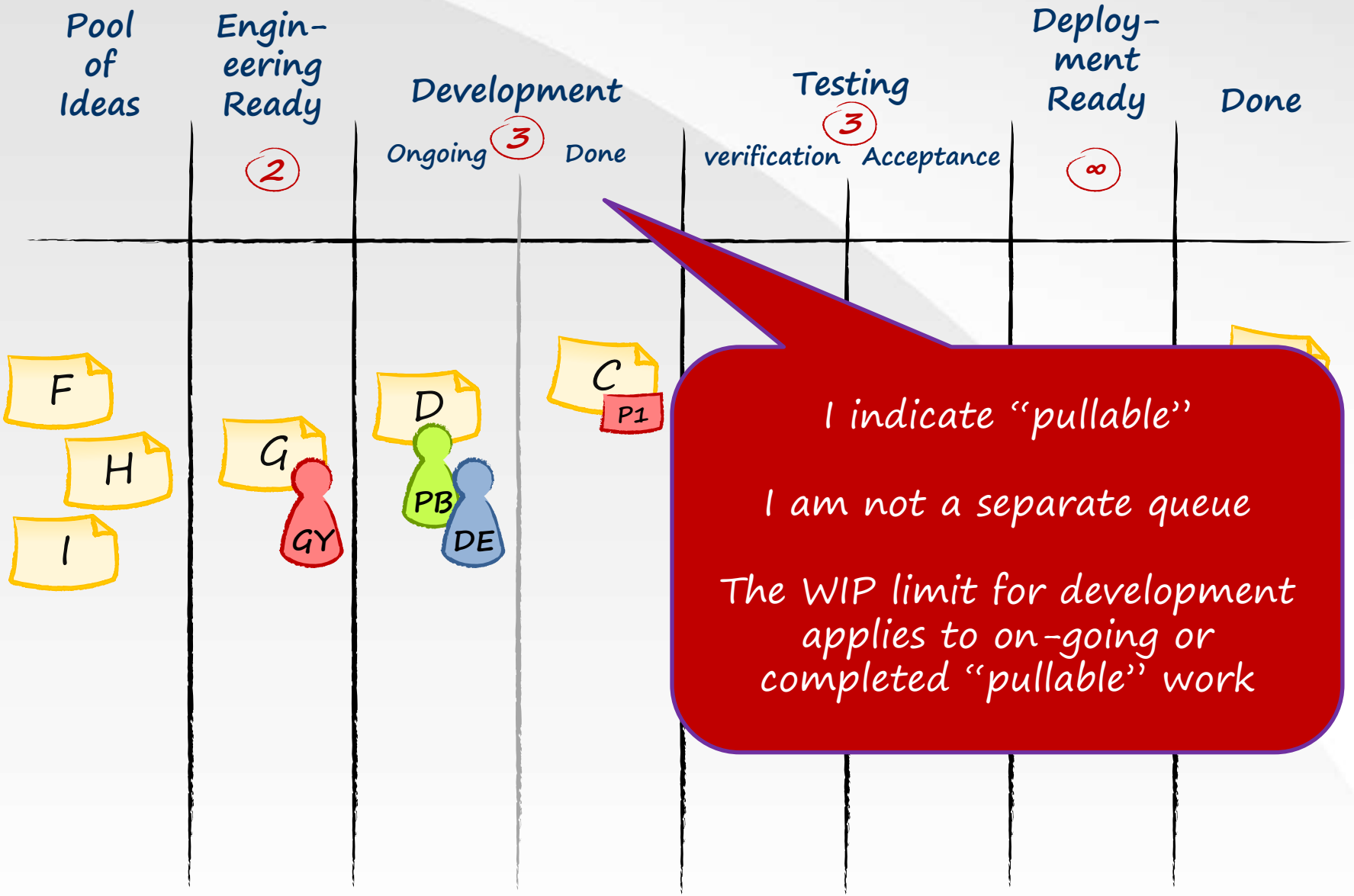
Identifying Buffers



Visualizing Pull Signals



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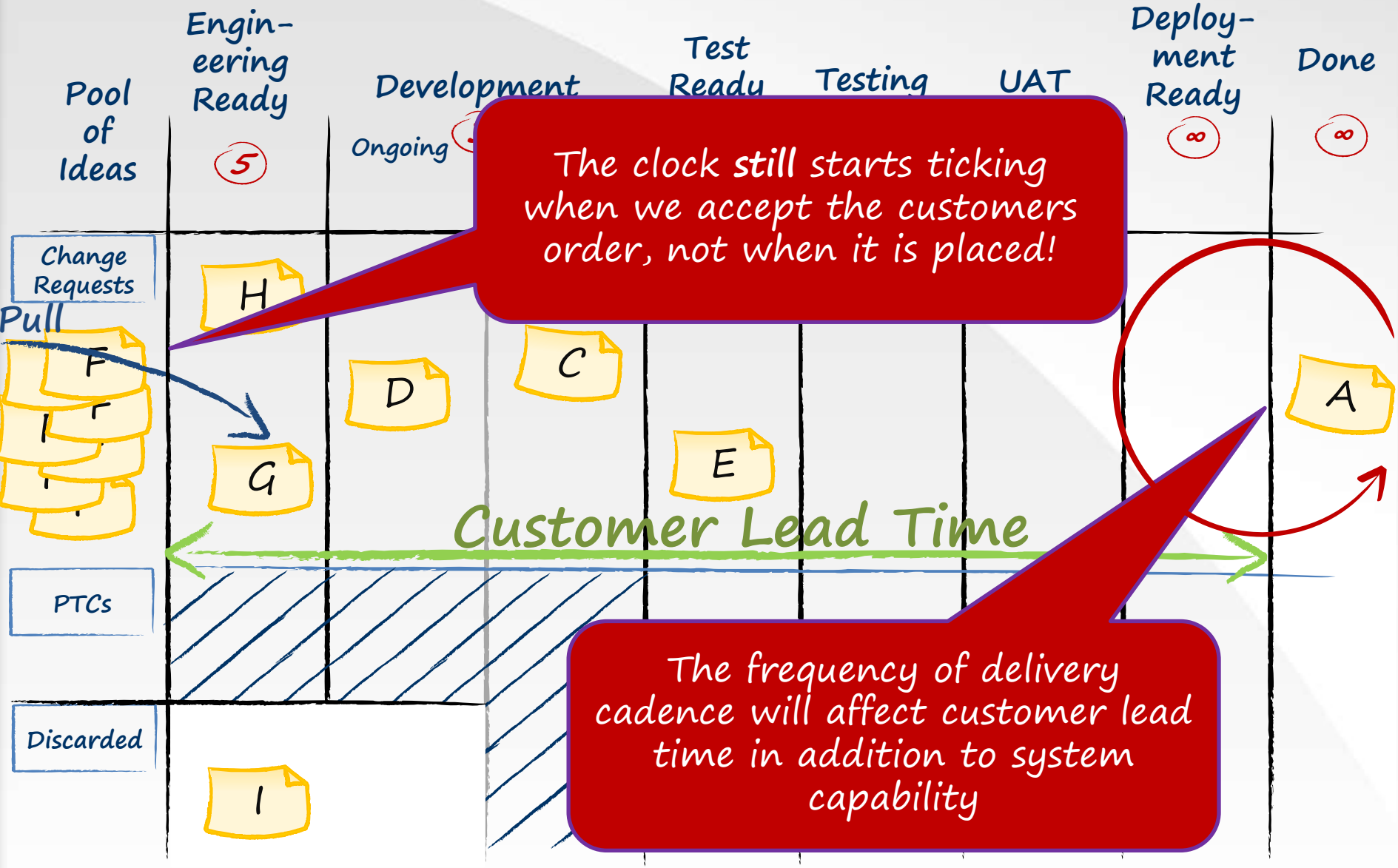
Defining Customer Lead Time



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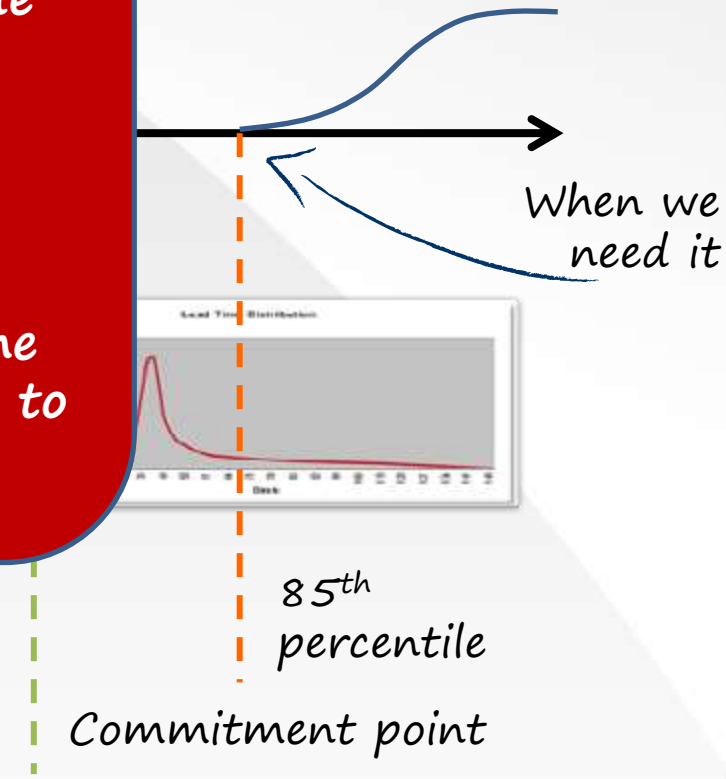
The Optimal Time to Start

If we start too early, we forgo the option and opportunity to do something else that may provide value.

If we start too late we risk incurring the cost of delay

With a 6 in 7 chance of on-time delivery, we can always expedite to insure on-time delivery



Metrics for Kanban Systems

Cumulative flow integrates demand, WIP, approx. avg. lead time and delivery rate capabilities

Lead time histograms show us actual lead time capability

Flow efficiency, value versus failure demand (rework), initial quality, and impact of blocking issues are also useful

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Implementing a Virtual Kanban System

Do not copy an existing (virtual) kanban system!

Each system must be designed from 1st principles using the system thinking approach to implementing kanban

A study of demand including business risks & capability is essential to design an appropriate (virtual) kanban system for any given knowledge work service

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Reminder…

The Kanban Method is not….

A project management or software development lifecycle process

Nor, does it encourage a process-centric approach to improvement!

You must "kanbanize" your existing processes and workflows!

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Kanban Kata

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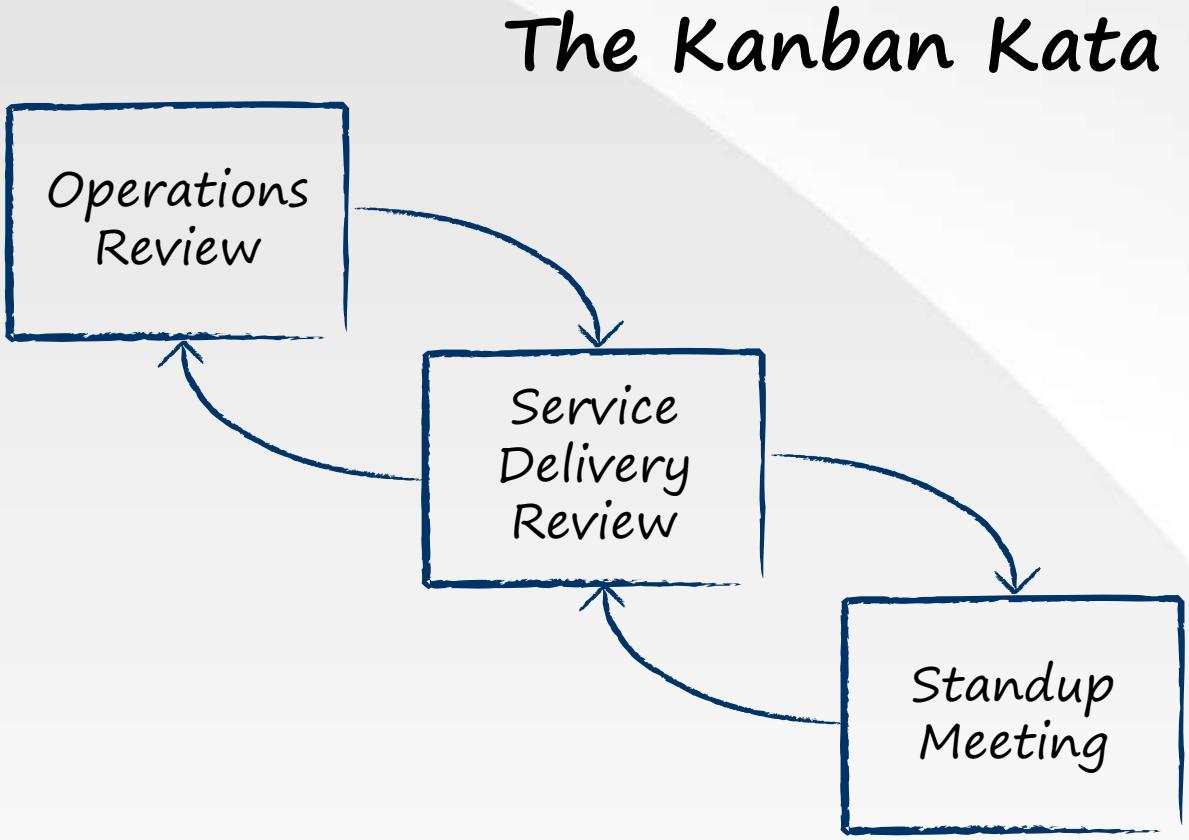
Feedback Loops



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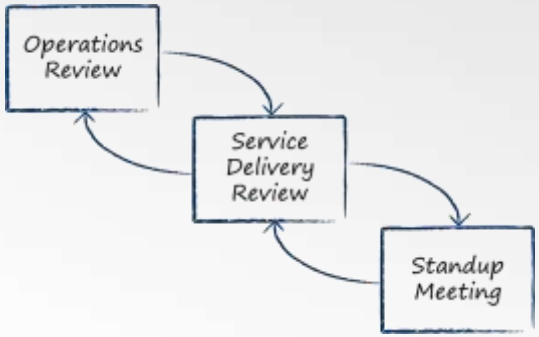
Standup Meeting



Disciplined conduct and acts of leadership lead to improvement opportunities

Improvement discussions & process evolution happen at ***after meetings***

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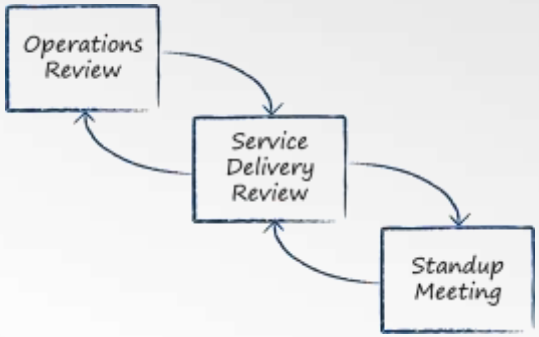
Improvement Kata



A mentor-mentee relationship

Usually (but not always) between a superior and a sub-ordinate

A focused discussion about system capability

Definition of target conditions or desired outcomes

Agreement upon counter-measures – actions taken to improve capability – resulting in process evolution

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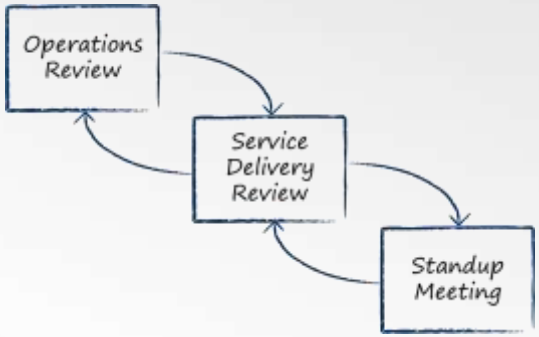
Operations Review



Monthly meeting

Disciplined review of demand and capability for each kanban system

Provides system of systems view and understanding

Kanban system design changes & process evolution suggested by attendees

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The Kanban Method

Prescriptive Practices

Visualize work, workflow & business risks
(using large physical or electronic boards in communal spaces)
Implement Virtual Kanban Systems
Manage Flow
Make Policies Explicit
Implement Kanban Kata
Educate your workforce to enable collaborative evolution of policies & ways of working
based on models of workflow from bodies of knowledge such as Theory of Constraints, Deming's Profound Knowledge, Lean, Risk Management ideas such as Real Option Theory & Liquidity

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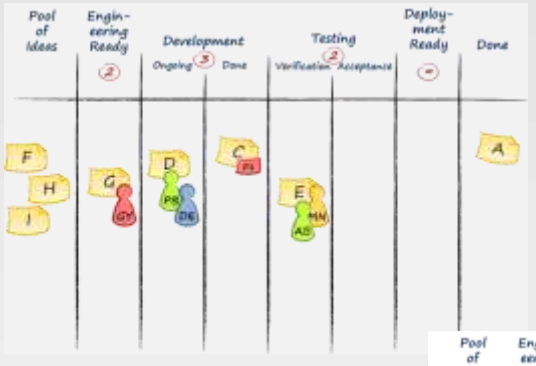
Scaling out across an organization

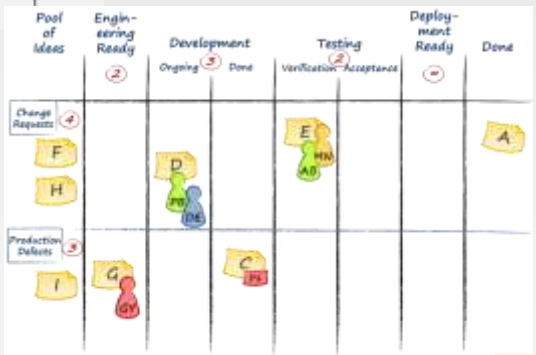
Treat each service separately

Demand



Observed Capability

Demand

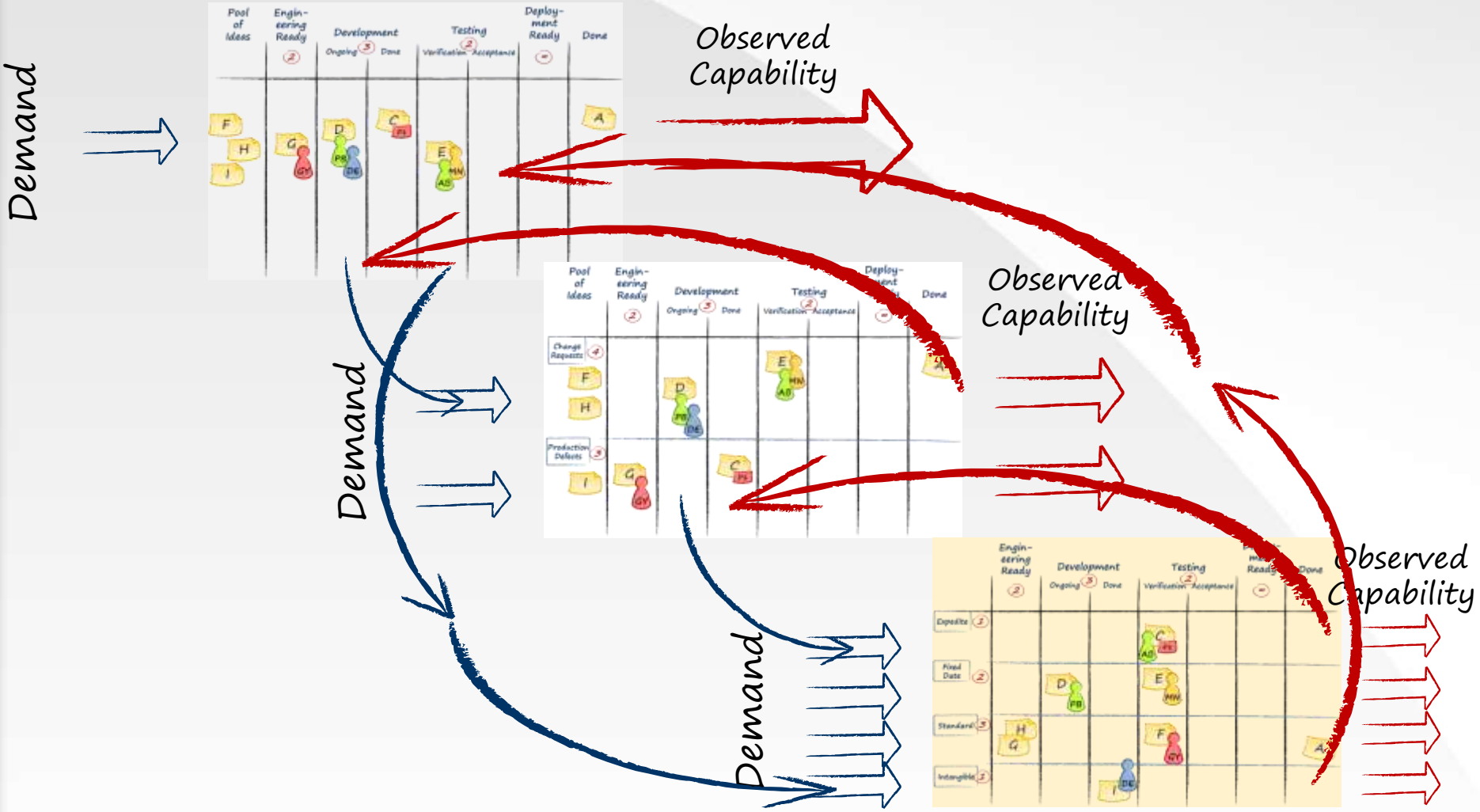


Observed Capability

Demand

Observed Capability

Some systems have dependencies on others



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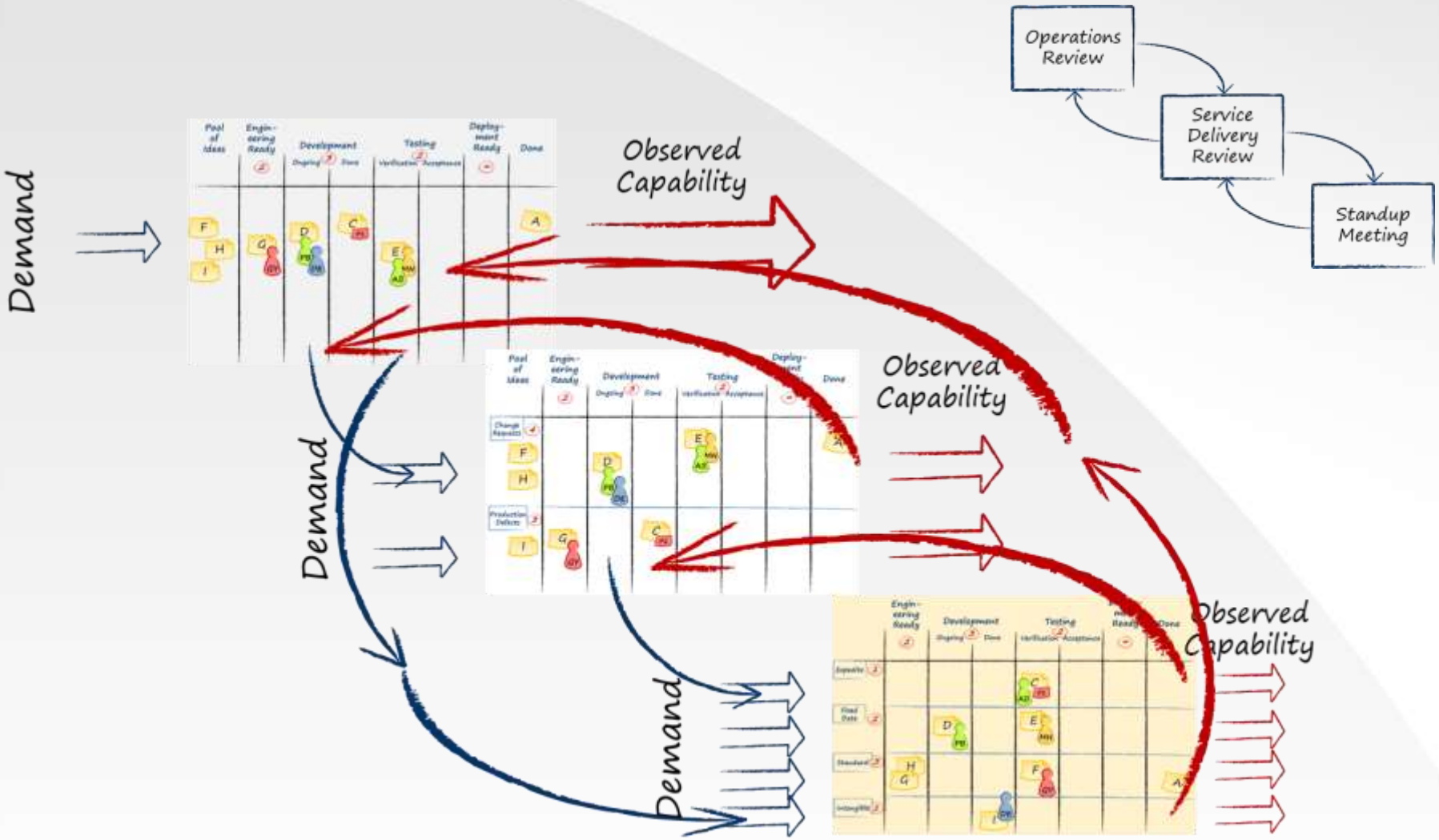
Organizational Improvements Emerge



Scaling Kanban

Each Kanban System is designed from first principles around a specific service

Scale out in a service-oriented fashion

Do not attempt to design a ***grand solution*** at enterprise scale

The Kanban Kata are essential!

Allow a better system of systems to emerge over time. **Let evolution work!**

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Summary of Benefits

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Collaboration Benefits

Shared language for improved collaboration

Shared understanding of dynamics of flow

Emotional engagement through visualization and tactile nature of boards

Greater empowerment (without loss of control)

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Tangible Business Benefits

Improved predictability of lead time and delivery rate

Reduced rework

Improved risk management

Improved agility

Improved governance

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Organizational Benefits

Improved trust and organizational social capital

Improved organizational maturity

Emergence of systems thinking

Management focused on system capability through policy definition

Organizational Adaptability
(to shifts in demand and business risks under management)

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Change Management Benefits

Significantly reduced resistance to change

Processes uniquely tailored to business environment and risk under management

Evolutionary changes reduce impact during change and lower risk of failure

Change led from the middle and enacted by the workforce. Reduced need for coaching and process specialists

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Kanban Improves Agility

- Lead times gradually reduce
- Predictability of delivery gradually improves
- Organizational social capital improves

- Governance, risk management are improved

- Empowerment without loss of control

- Improves are often dramatic!
  - 700% increase in delivery rate at BBC
  - On-time delivery often greater than 90%
  - Delivery times often reduced by up to 90%

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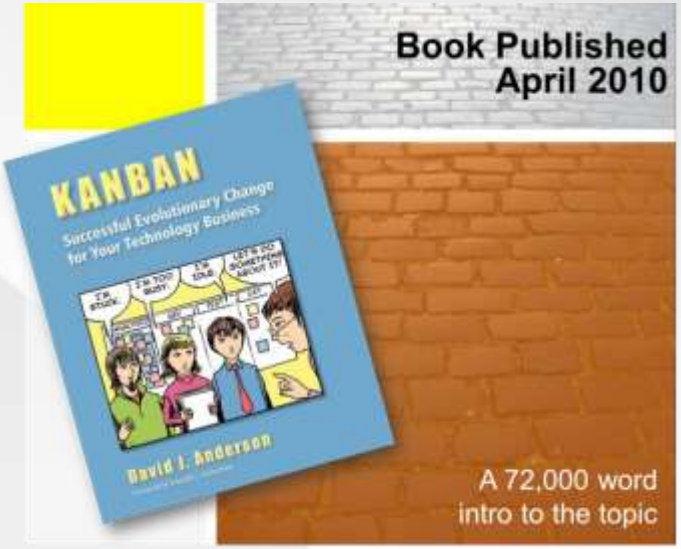
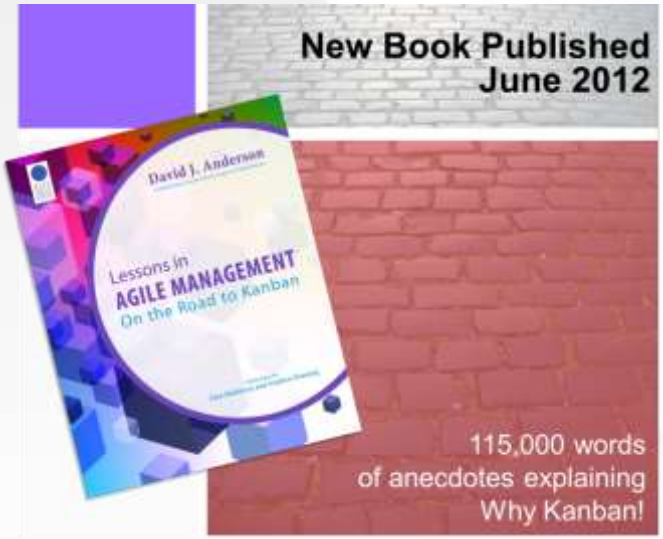


- Yahoo! Groups
  - Kanbandev
  - Kanbanops
- Limited WIP Society
  - Local meetup groups

Limited WIP Society.org

http://www.limitedwipsociety.org



- Meldstrong (http://meldstrong.org)

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Upcoming Training in Europe

Leading Change & Managing Risk Masterclasses
Stockholm March 24-28
http://djaa.com/kcpm-022014b
Vienna March 31 – April 4
http://www.djaa.com/kcpm-05201401
Berlin May 19-23
http://www.djaa.com/kcpm-05201401

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About

David Anderson is a thought leader in managing effective software teams. He leads a training, consulting, publishing and event planning business dedicated to developing, promoting and implementing sustainable evolutionary…

He has 30 years experience in the high technology industry starting with computer games in the early 1980's. He has led software teams delivering superior productivity and quality using innovative agile methods at large companies such as Sprint and Motorola.

David is the pioneer of the **Kanban Method** an agile and evolutionary approach to change. His latest book, published in June 2012, is, **Lessons in Agile Management** – *On the Road to Kanban.*

David leads **Lean Kanban Inc.**, a global management training, events & publishing business dedicated to offering high quality, innovative, modern management training for the creative knowledge worker industries of the 21st Century.

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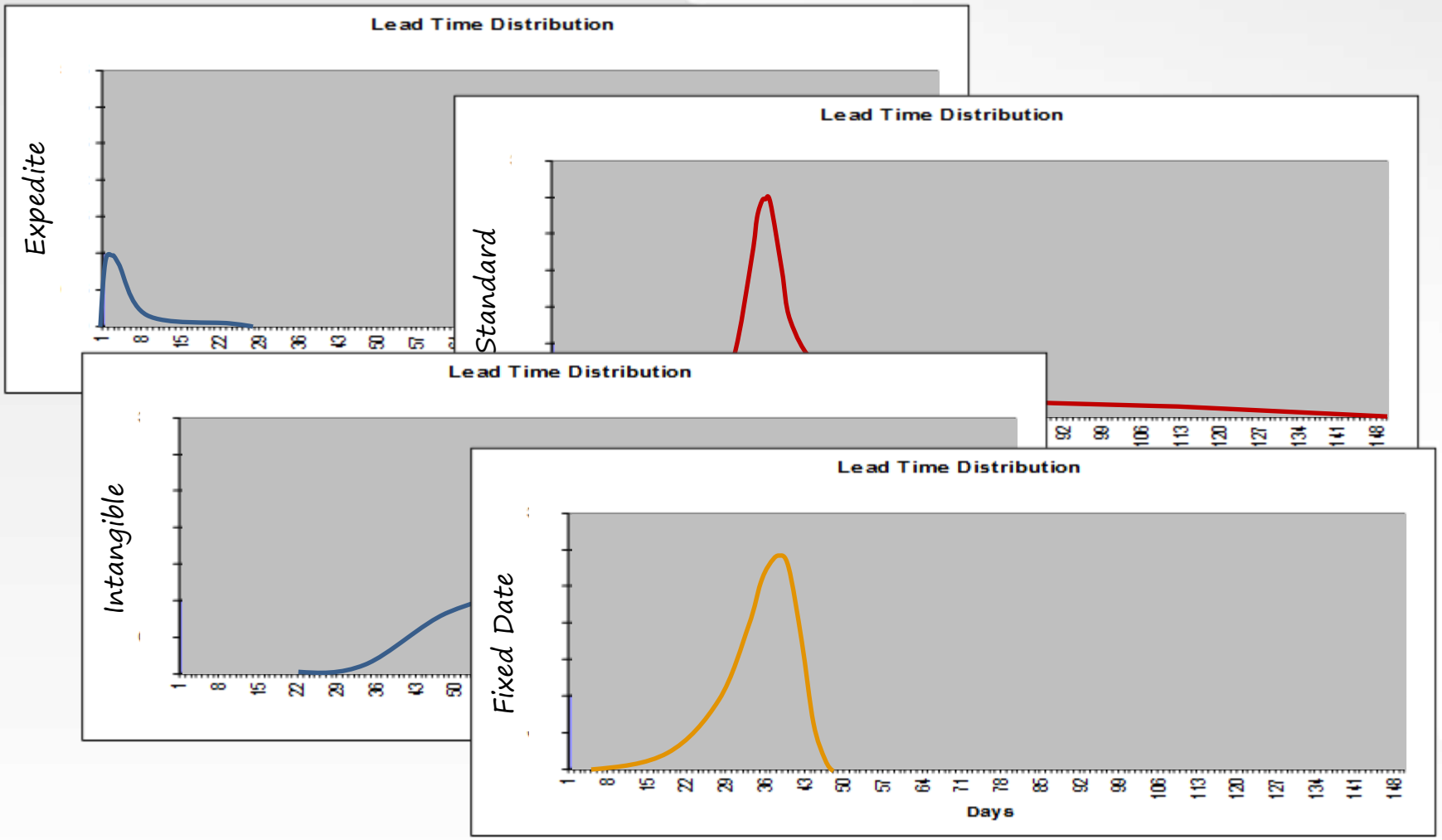
Acknowledgements

The data on slide 15 was provided by **Raymond Keating** of CME Group.

Troy Magennis has pioneered the use of Douglas Hubbard's statistical techniques in conjunction with Kanban and introduced Monte Carlo simulation to replace the 3-phase Z-model presented here

Klaus Leopold has been pioneering the use of blocker clustering to encourage project managers to focus on the greater added value of risk management and managing average lead time by curbing opportunity for long tail distributions

Example Distributions



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