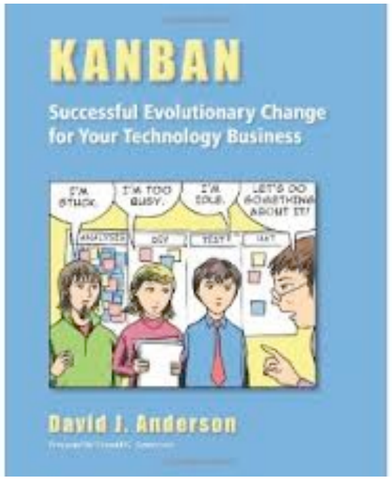
MADS
S12: Kanban
(Bloque 4 - Lean y Kanban)

Introducción a Kanban

Historia de Kanban

- Entre 2003 y 2010 trabajo de David J. Anderson en los equipos de desarrollo de Microsoft y Corbis para adaptar estos sistemas al desarrollo de software
- Presentación en sociedad en la conferencia Agile 2007 en Washington
- Crece el interés: 6 presentaciones en Agile 2008 en Toronto
- Publicación del libro de David J. Anderson en 2010
- Aceptación por la comunidad ágil e integración con la metodología más aceptada en este momento: Scrum

David J. Anderson

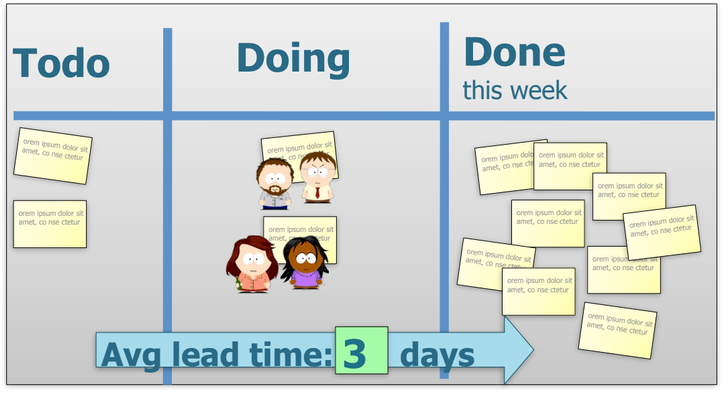


Motivaciones

- Conseguir un ritmo de trabajo sostenible en el desarrollo de software
- Visualizar en todo momento la carga de trabajo del equipo de desarrollo (WIP: *Work In Progress*, trabajo en progreso)
- Visualizar y estandarizar el flujo de trabajo de las historias de usuario
- Políticas explícitas (*definition of Done*, *límites WIP*, etc.)

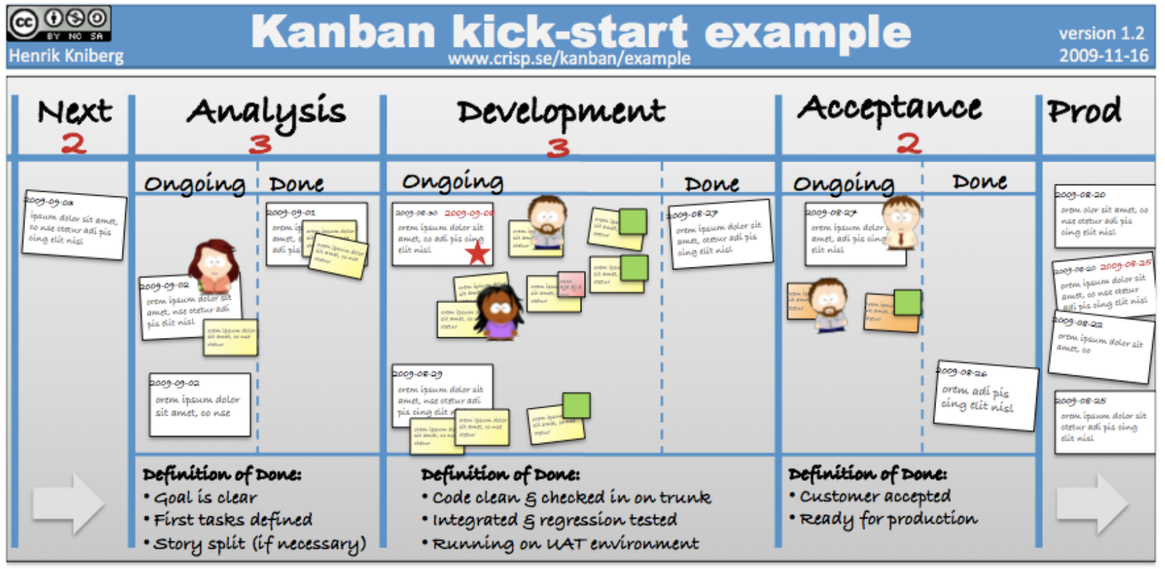
- Kanban nos ayuda a cambiar el prisma de ¿Qué hacen las personas? a **¿Cómo va el trabajo?**

¿Qué equipo necesita mejorar?



Kanban in a nutshell

- **Visualizar** el **flujo de trabajo**
  1. Dividir el trabajo en **pequeñas partes**, escribir cada elemento en una tarjeta y ponerla en un tablero
  2. Crear un **tablero** compartido por el equipo, dividido en columnas que identifican en qué parte del flujo de trabajo se encuentra el elemento



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- **Limitar el WIP** (*Work In Progress*, trabajo en progreso): asignar un límite al número de elementos que puede haber en cada estado del flujo de trabajo

- Medir el **tiempo medio de terminación de un elemento** (llamado *lead time* o *cycle time*) y optimizar el proceso para hacerlo tan pequeño y predecible como sea posible

More prescriptive

RUP (120+)

- Architecture Reviewer
- Business Designer
- Business-Model Reviewer
- Business-Process Analyst
- Capsule Designer
- Change Control Manager
- Code Reviewer
- Configuration Manager
- Course Developer
- Database Designer
- Deployment Manager
- Design Reviewer
- Designer
- Graphic Artist
- Implementer
- Integrator
- Process Engineer
- Project Manager
- Project Reviewer
- Requirements Reviewer
- Requirements Specifier
- Software Architect
- Stakeholder
- System Administrator
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- Tool Specialist
- User-Interface Designer
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XP
(13)

- Whole team
- Coding standard
- TDD
- Collective ownership
- Customer tests
- Pair programming
- Refactoring
- Planning game
- Continuous integration
- Simple design
- Sustainable pace
- Metaphor
- Small releases

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Scrum (9)

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- Team
- Sprint planning meeting
- Daily Scrum
- Sprint review
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- BUrndown chart

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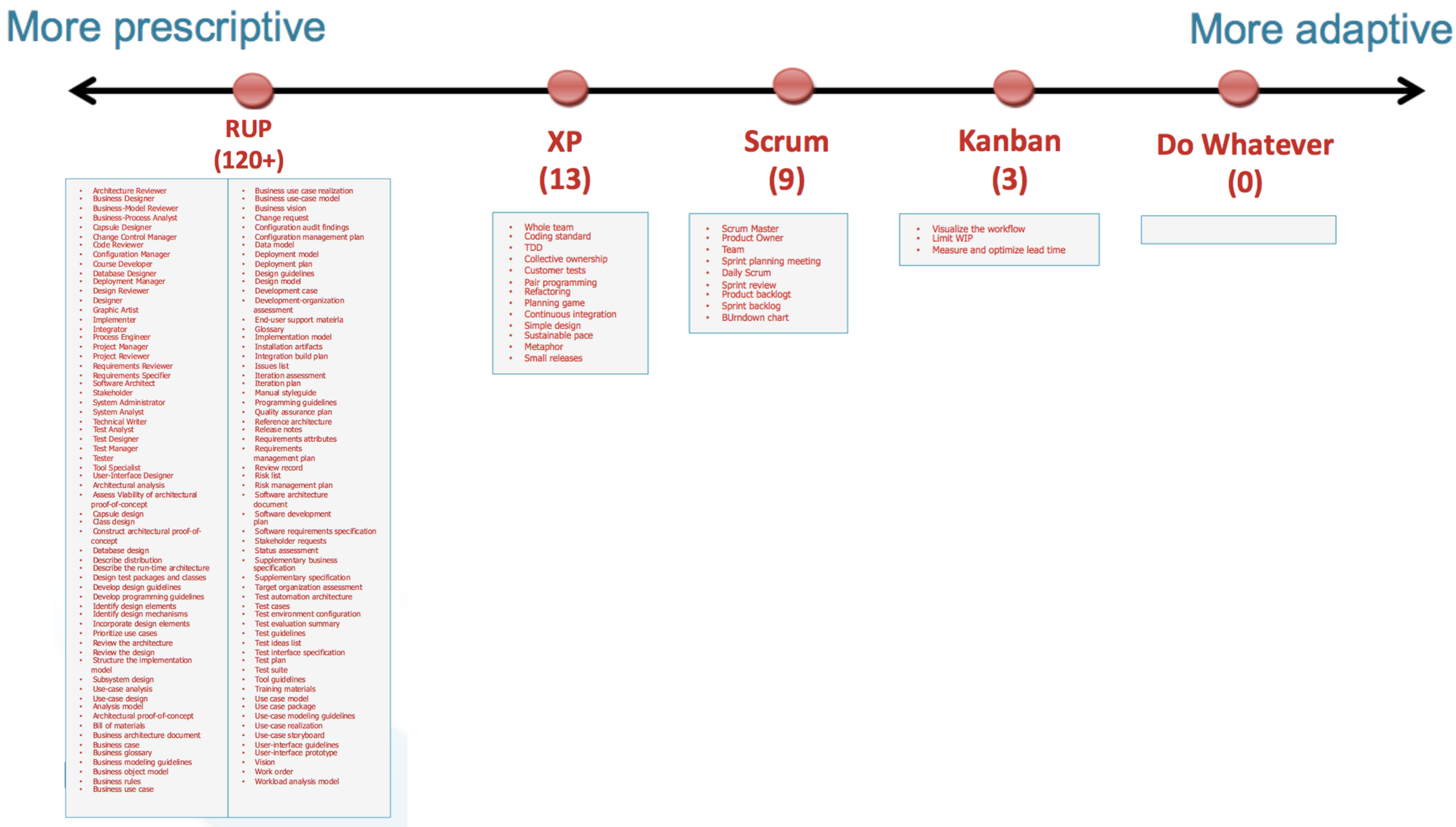
Do Whatever (0)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Scrum
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Sprint review
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BUrndown chart
Kanban
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Do Whatever
(0)

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XP (13)

Scrum (9)

Do Whatever (0)

Kanban (3)

- Visualize the workflow
- Limit WIP
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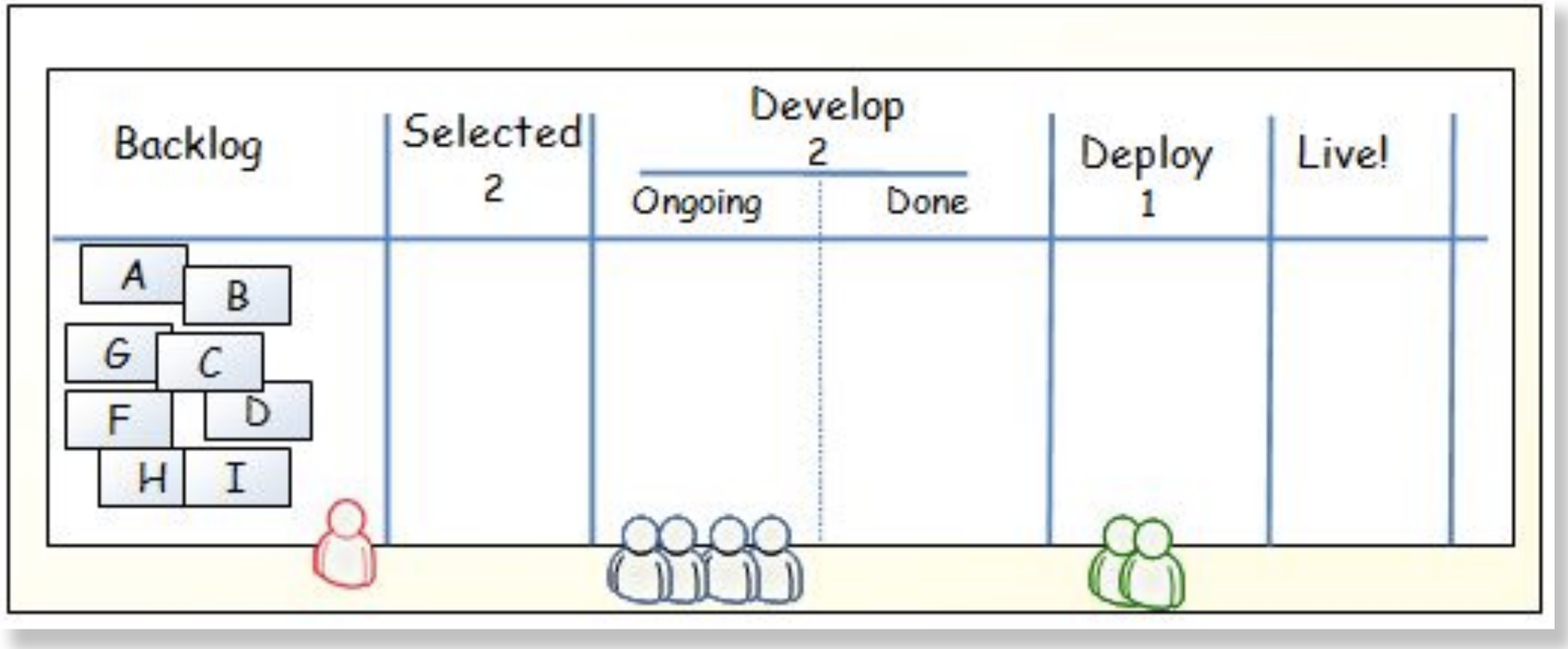
One day in Kanban land

One day in Kanban land (© Henrik Kniberg)



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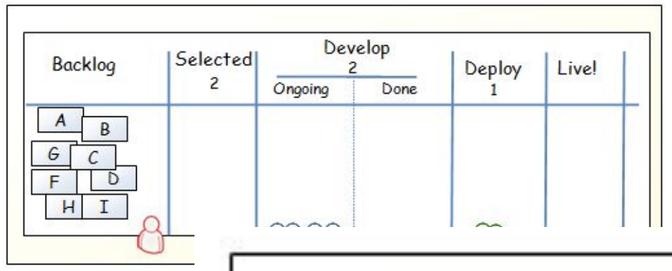

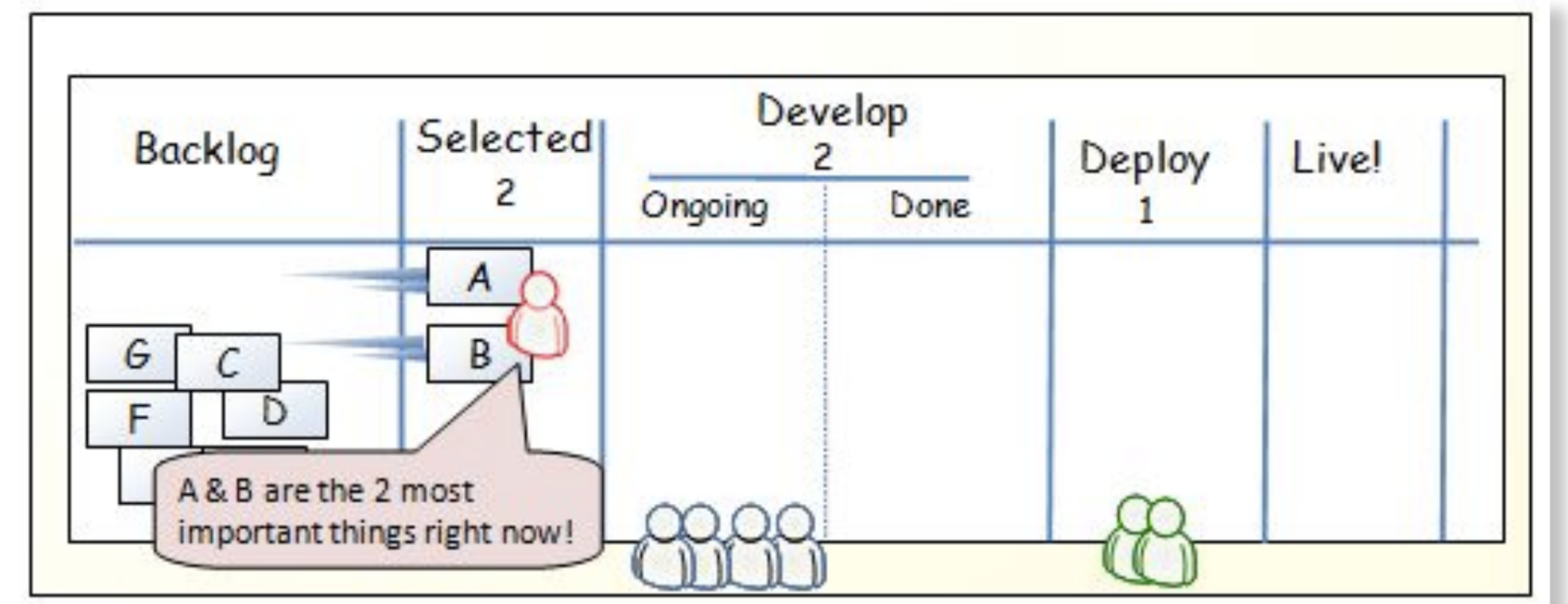

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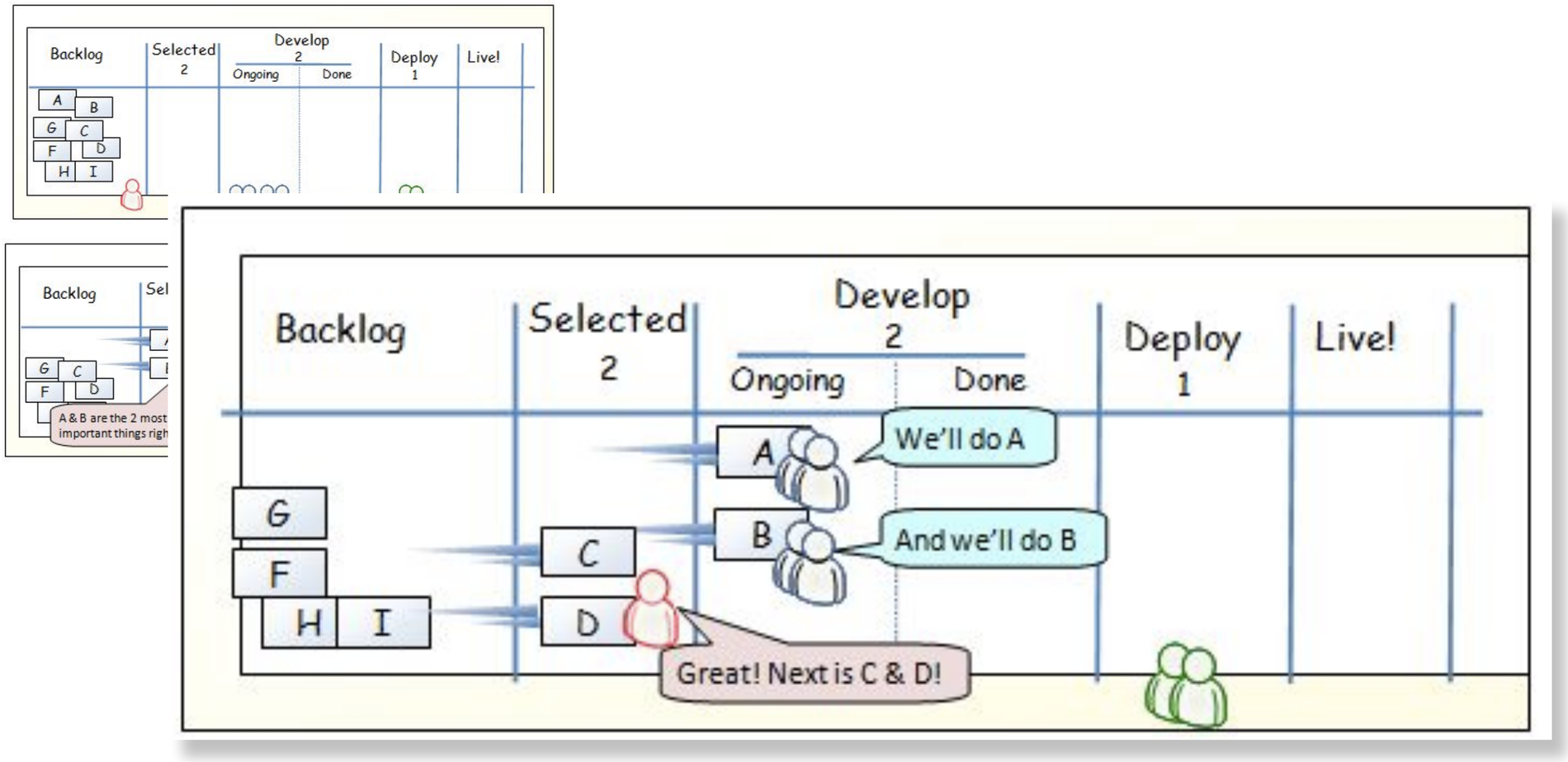

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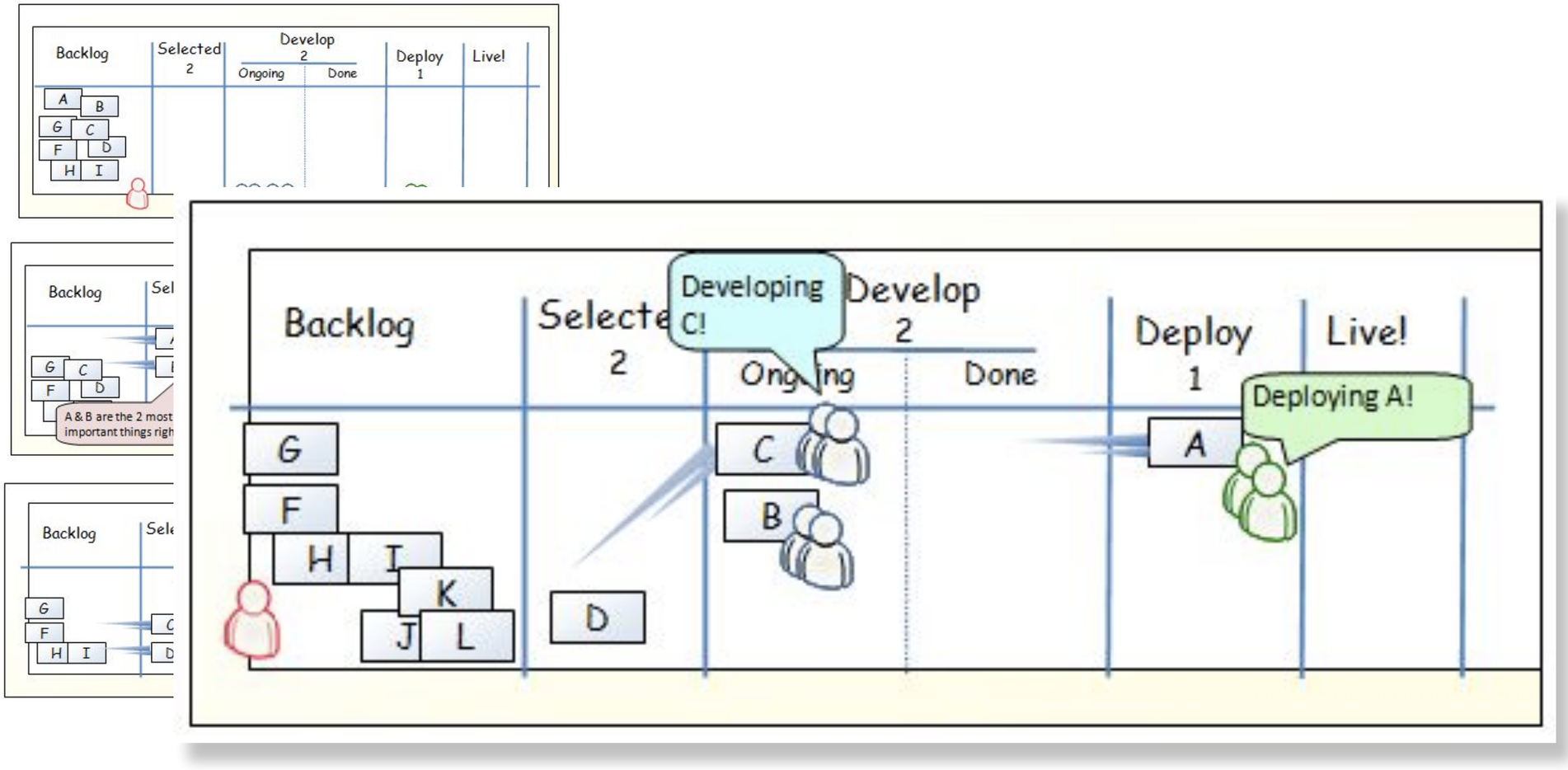

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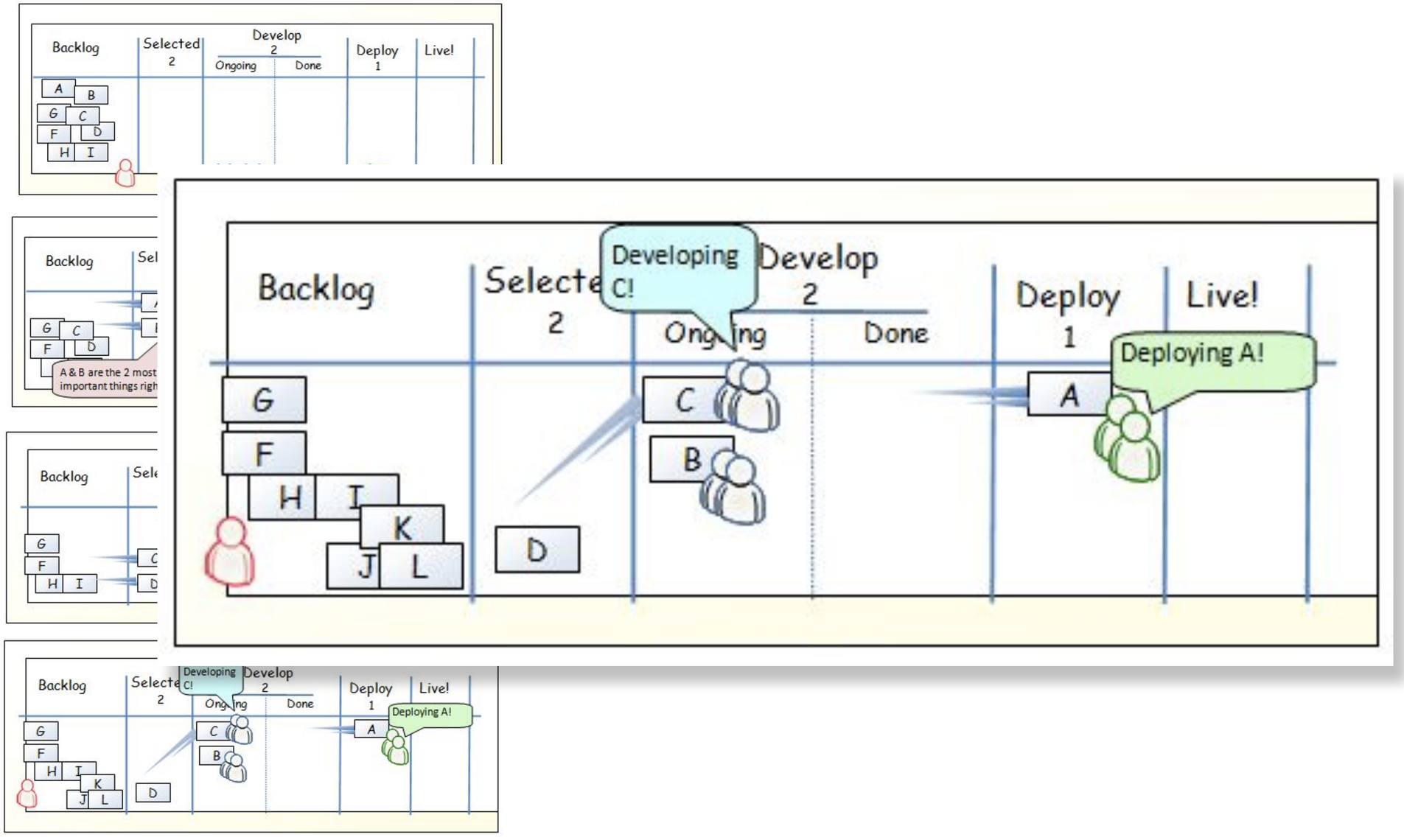

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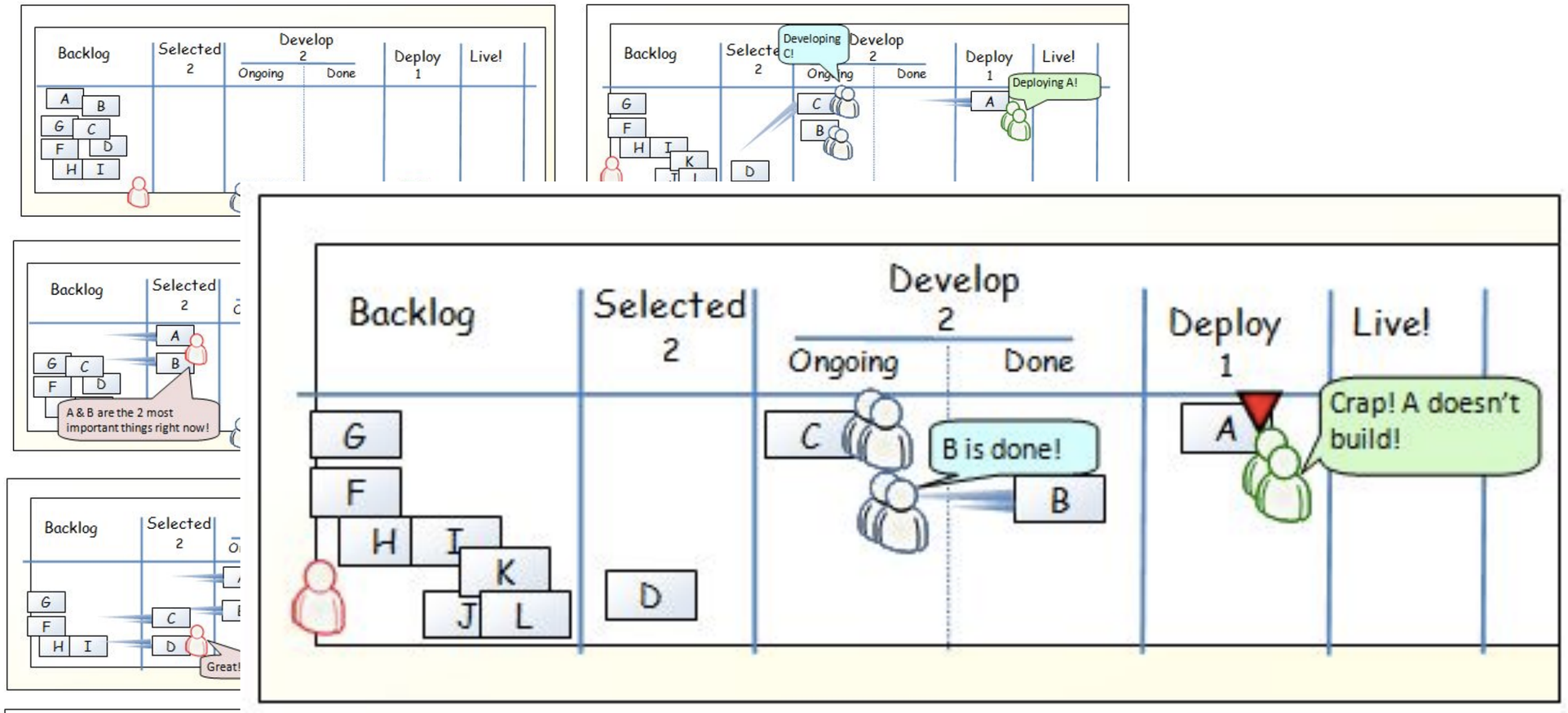
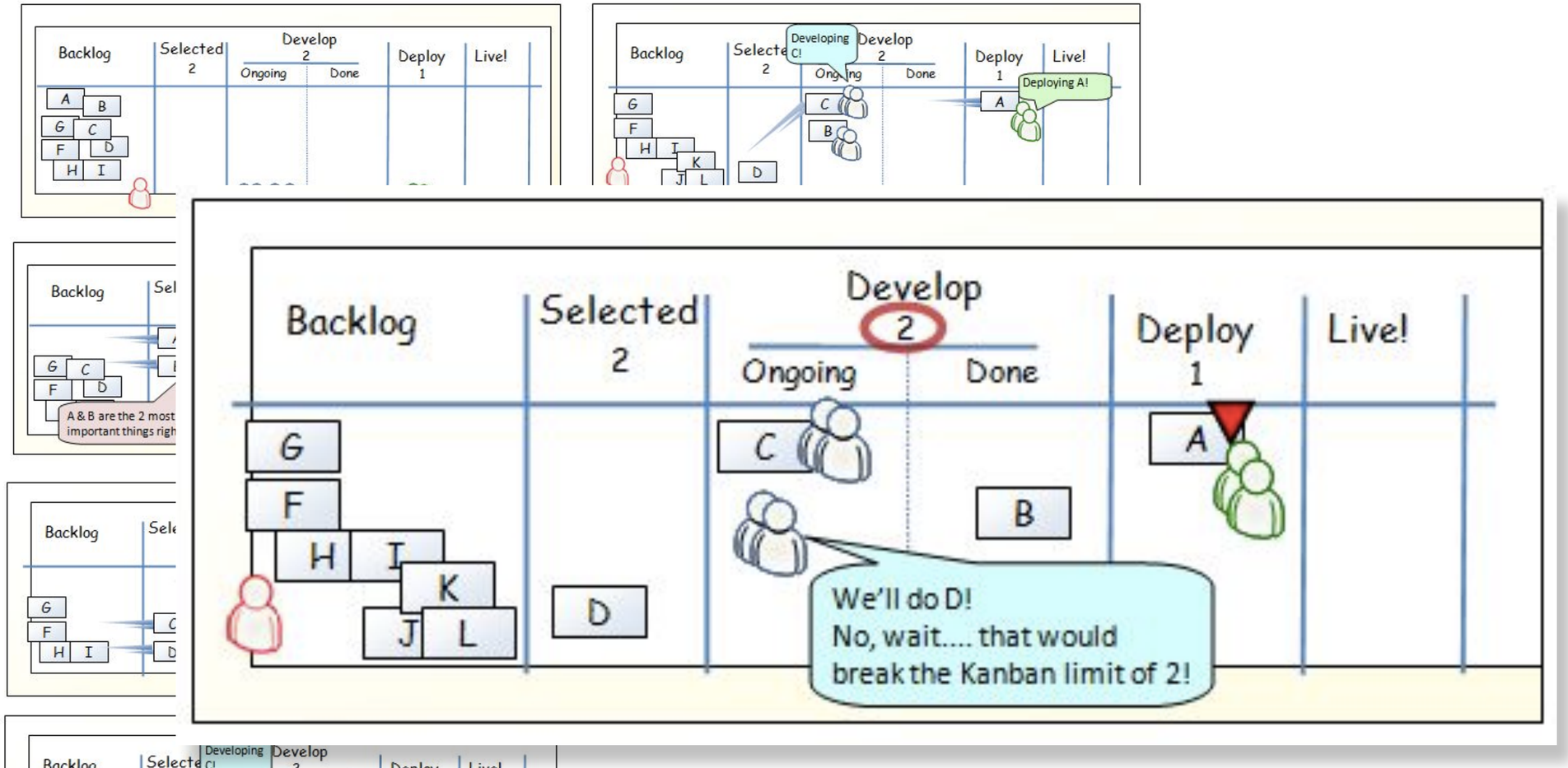
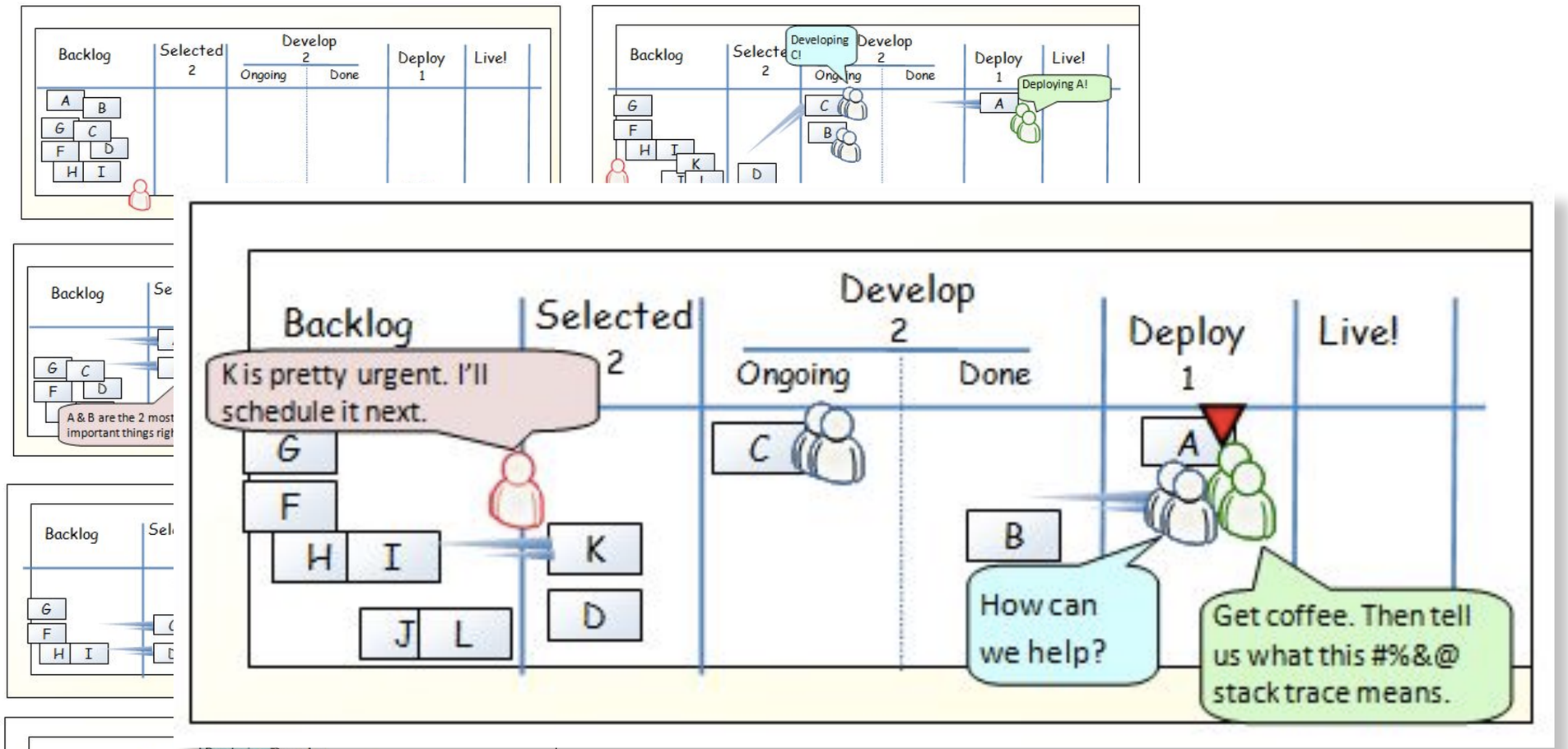


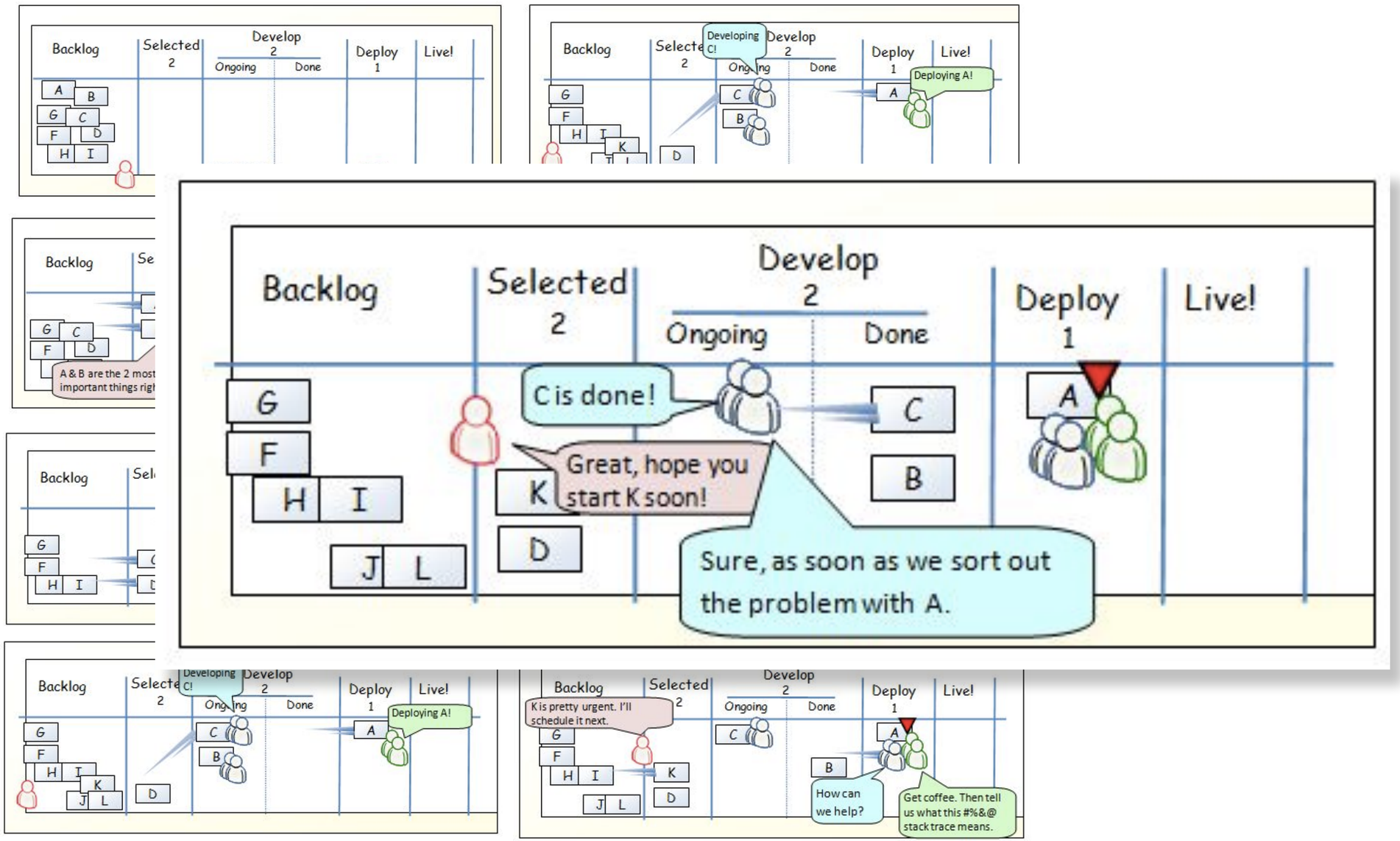
One day in Kanban land (© Henrik Kniberg)



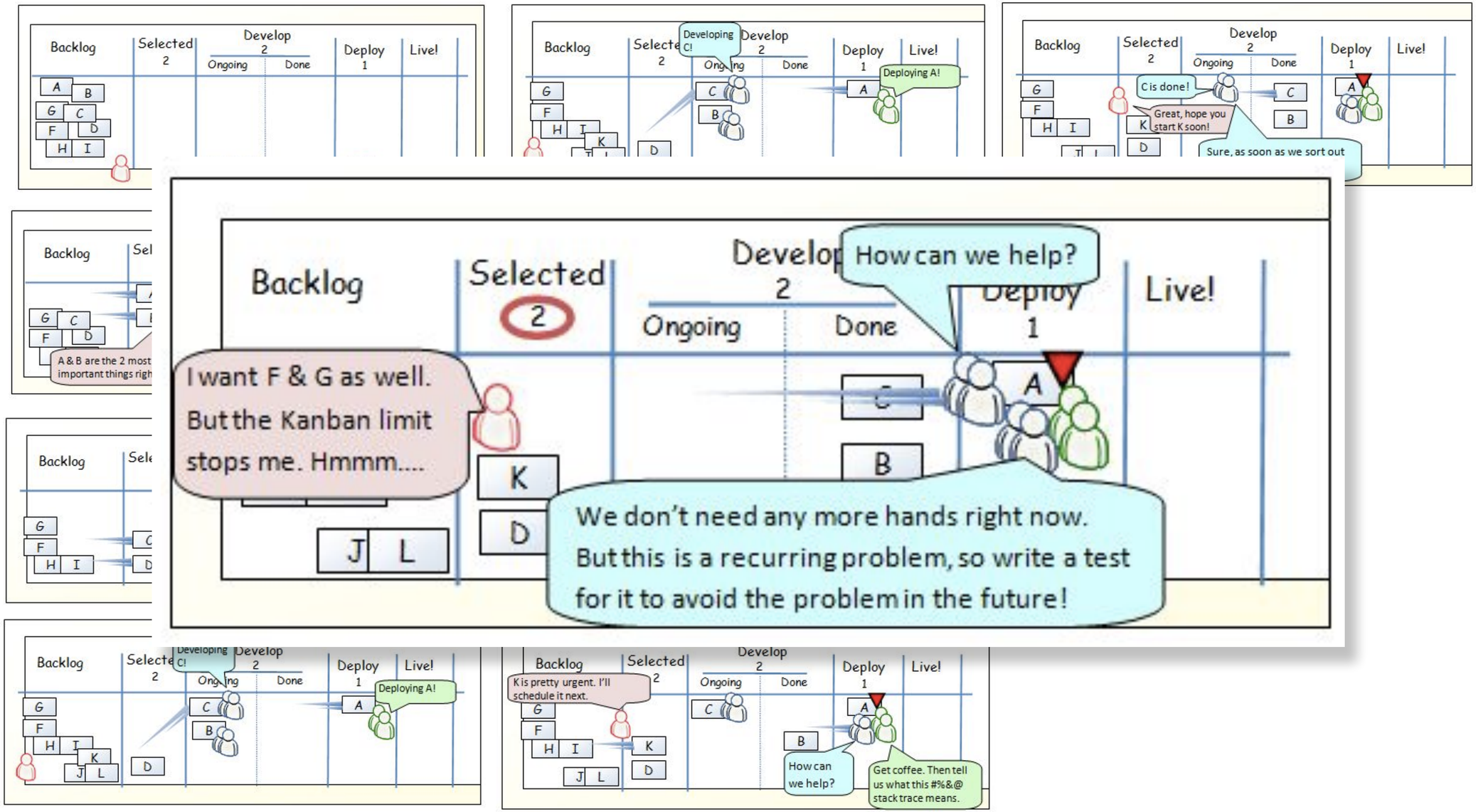
One day in Kanban land (© Henrik Kniberg)



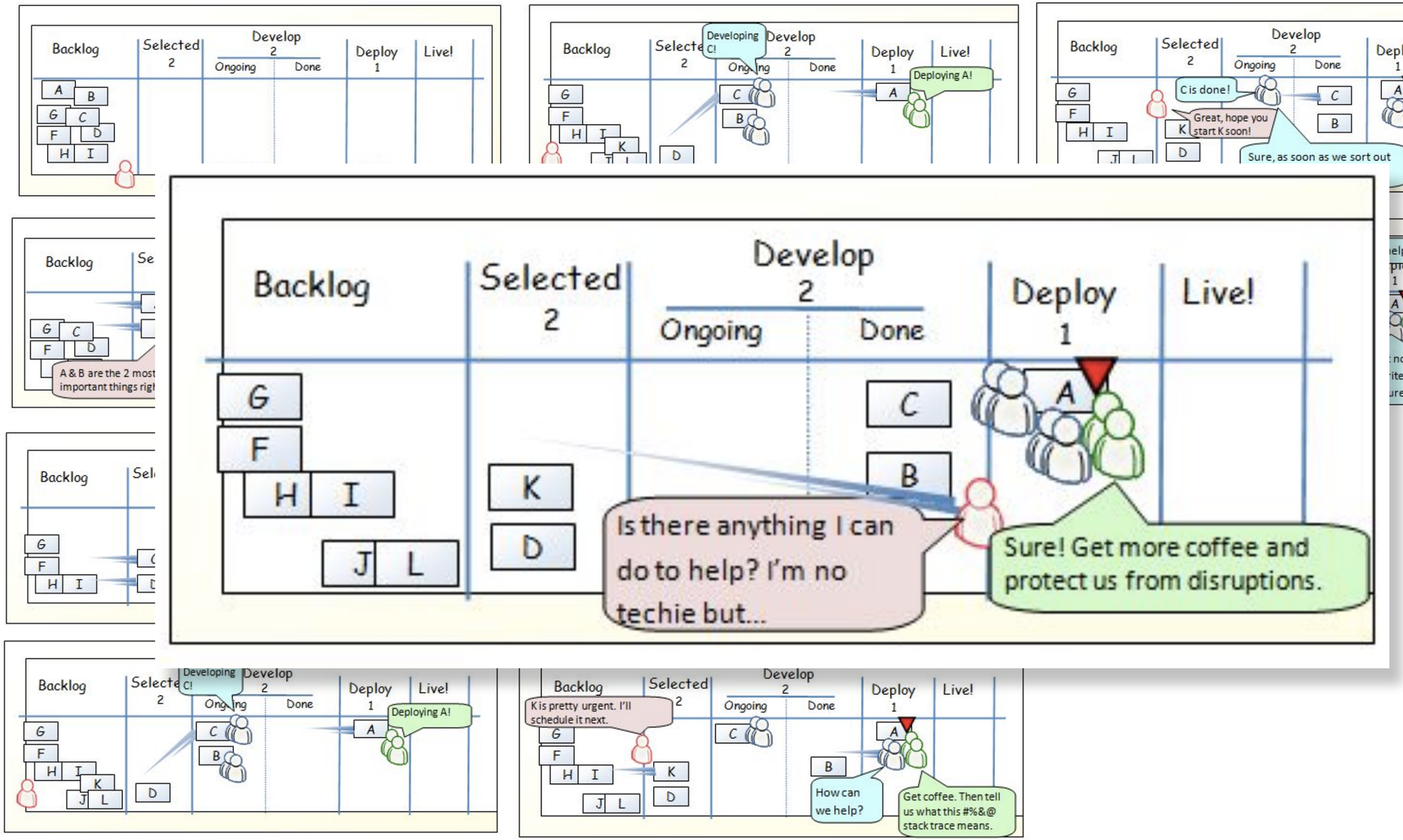
One day in Kanban land (© Henrik Kniberg)



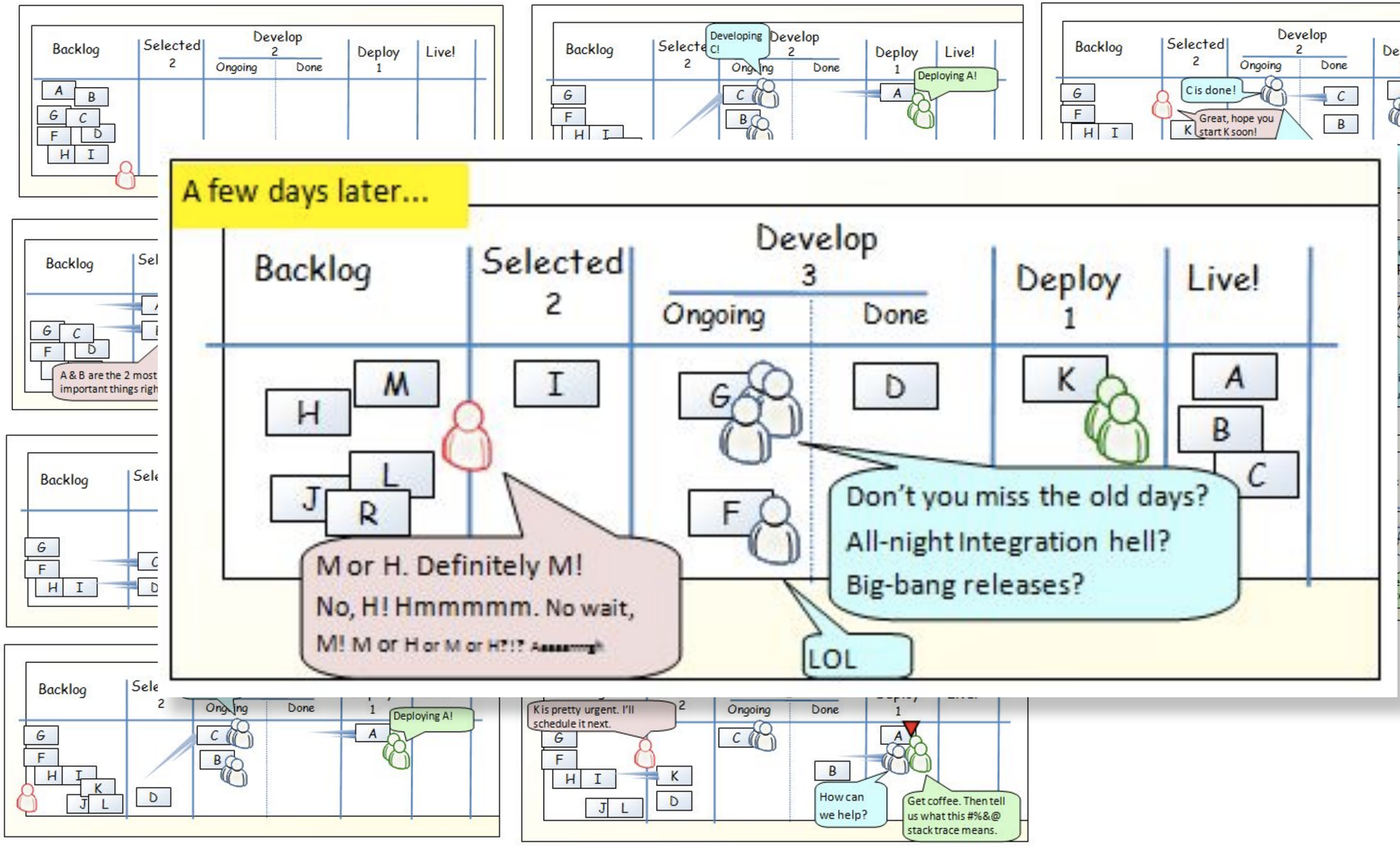
One day in Kanban land (© Henrik Kniberg)



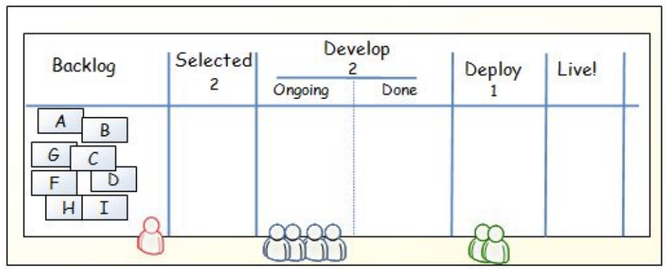
One day in Kanban land (© Henrik Kniberg)

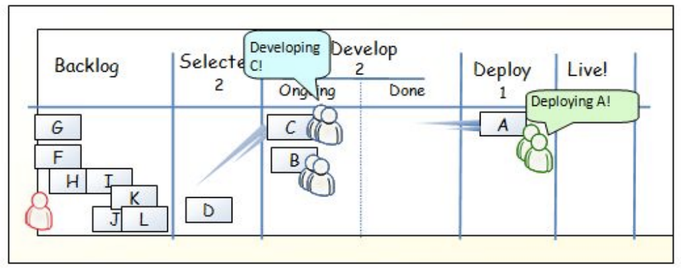


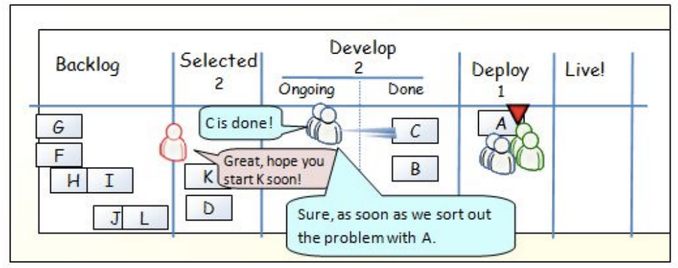
One day in Kanban land (© Henrik Kniberg)

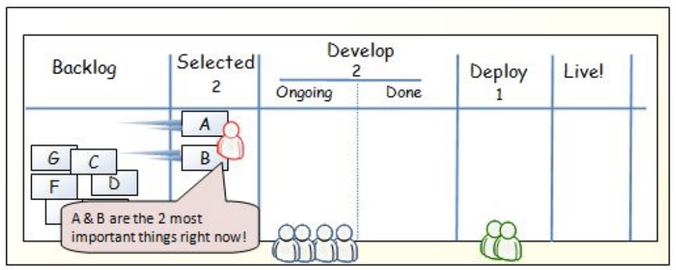


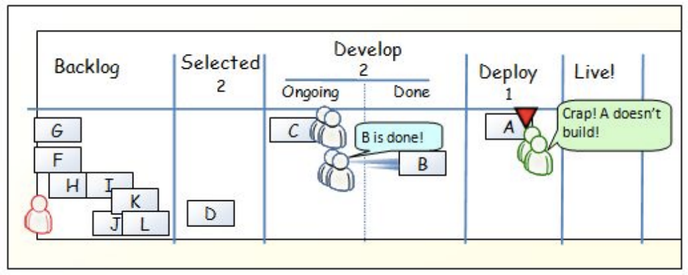
One day in Kanban land (© Henrik Kniberg)

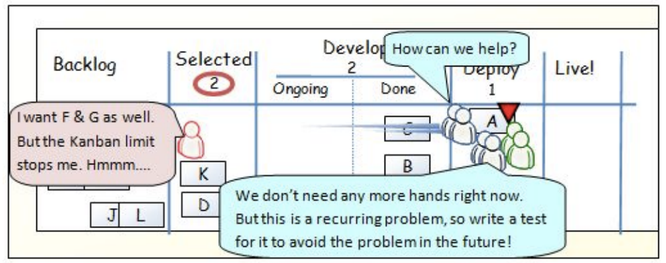


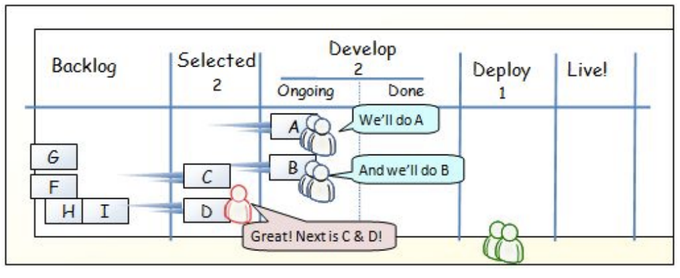


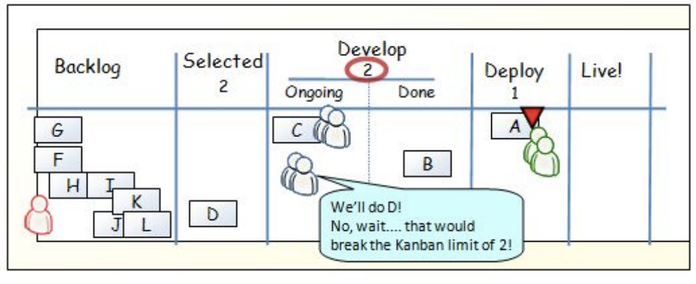


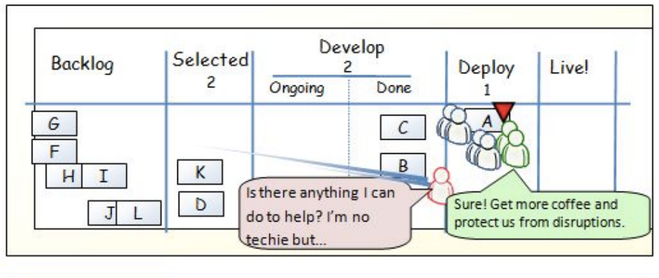


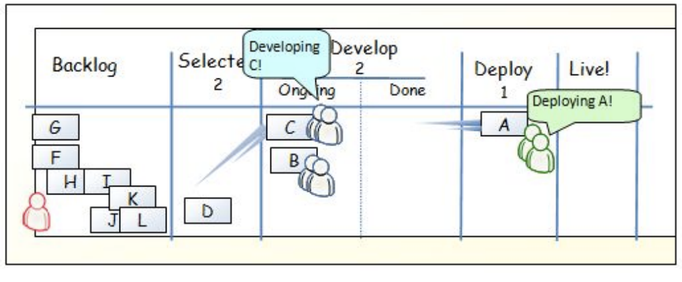


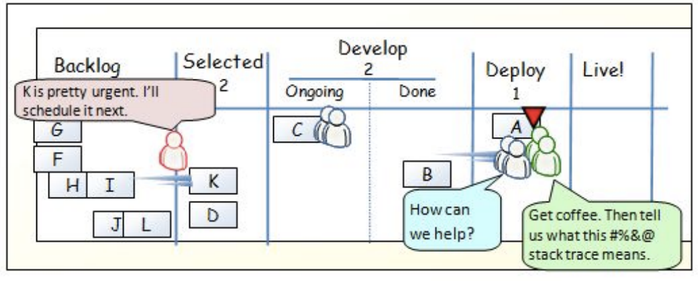


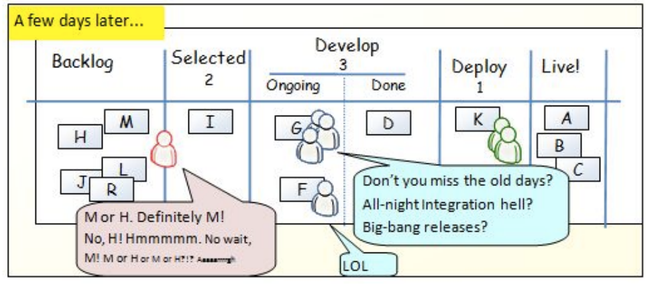












1. Visualizar el flujo de trabajo

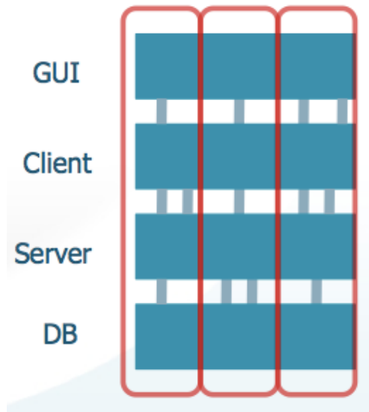
Flujo de trabajo

- Cada empresa de desarrollo de software tiene su propio flujo de trabajo
- Para aplicar Kanban debemos empezar identificando el flujo de trabajo
  - ¿Qué son los ítems de trabajo (*work items*)?
  - ¿Por qué fases pasan?
  - ¿Existen distintos tipos de ítems?
  - ¿Su tamaño tiene mucha variabilidad?

Historias de usuario e ítems de trabajo

- Si las historias de usuario tienen un tamaño demasiado grande, las debemos dividir en tareas más pequeñas
- Todas las historias deben ir acompañadas de criterios de aceptación (lo primero que debemos hacer si desarrollamos con TDD)
- Dividiremos las tareas en ítems de trabajo que representaremos como etiquetas que pegaremos en el tablero Kanban
- Los ítems de trabajo sí que pueden ser partes “horizontales” del proyecto
- Los ítems de trabajo tampoco pueden ser demasiado pequeños

Una historia no se resuelve con un método de un API.
Debemos implementar todos sus aspectos: interfaz de usuario, código de cliente, servidor, base de datos, etc.

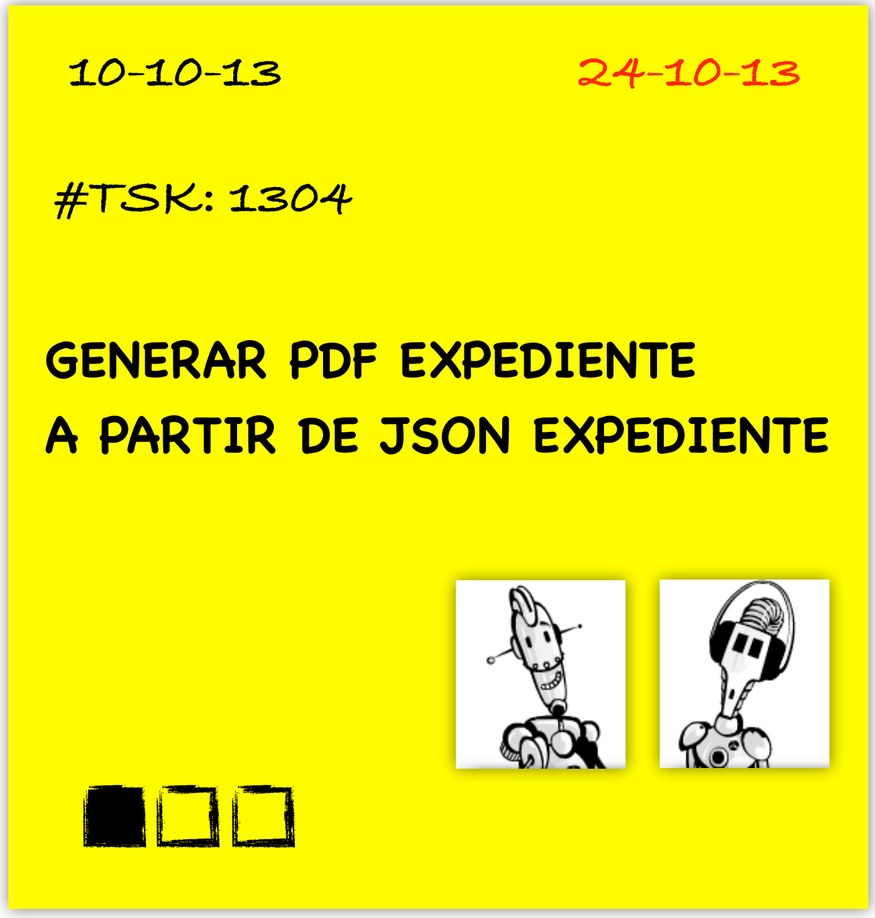


Independent
Negotiable
Valuable
Estimable
Small
Testable

Acrónimo creado por Bill Wake
www.xp123.com

Post-it con el ítem de trabajo

- Descripción del ítem de trabajo. Concisa, precisa y entendible por todos los miembros del equipo.
- Fecha de comienzo
- Quién está trabajando en el ítem. Lo ideal sería un avatar pegado encima de la etiqueta.
- Plazo de finalización
- Código de identificación con el que podemos encontrar más información sobre el ítem en otro lugar (Google Docs, etc.)
- Indicador de progreso (cuánto se ha avanzado en el ítem)

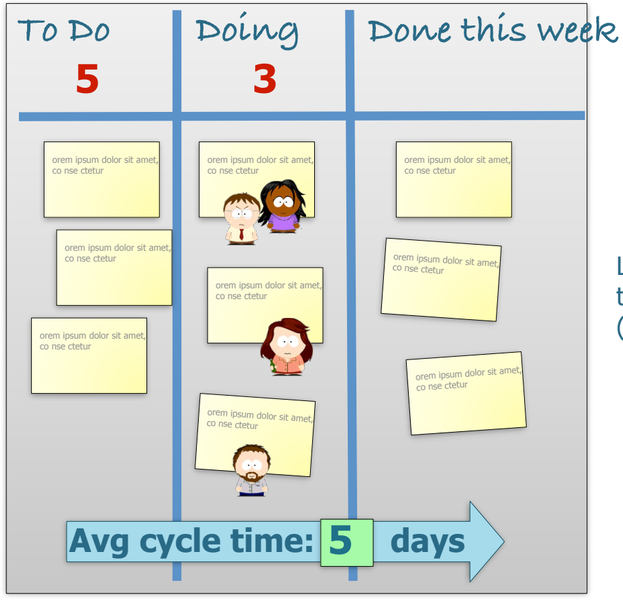


@ Avatars: [nitsnets]

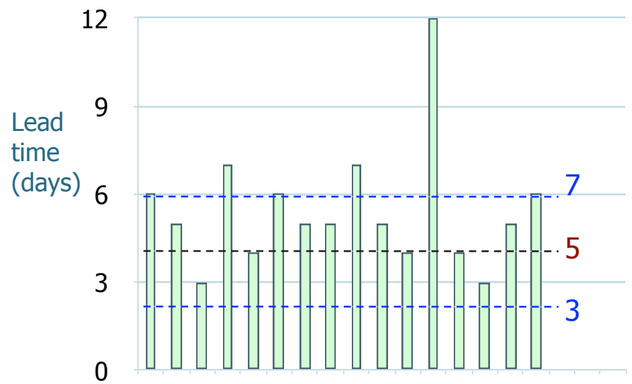
El tablero Kanban

- El objetivo principal del tablero Kanban es mostrar visualmente en qué está trabajando el equipo en un momento dado
- Principales utilidades:
  - Elemento fundamental para la reflexión, la comunicación y la discusión en las reuniones de pie diarias
  - Medir distintas métricas relacionadas con el flujo: número de ítems terminados por semana, WIP
  - Definir políticas estrictas de flujo de trabajo y de terminación (*Definition of Done*)

Un sistema Kanban sencillo



Migrate invoicing reports to the new format



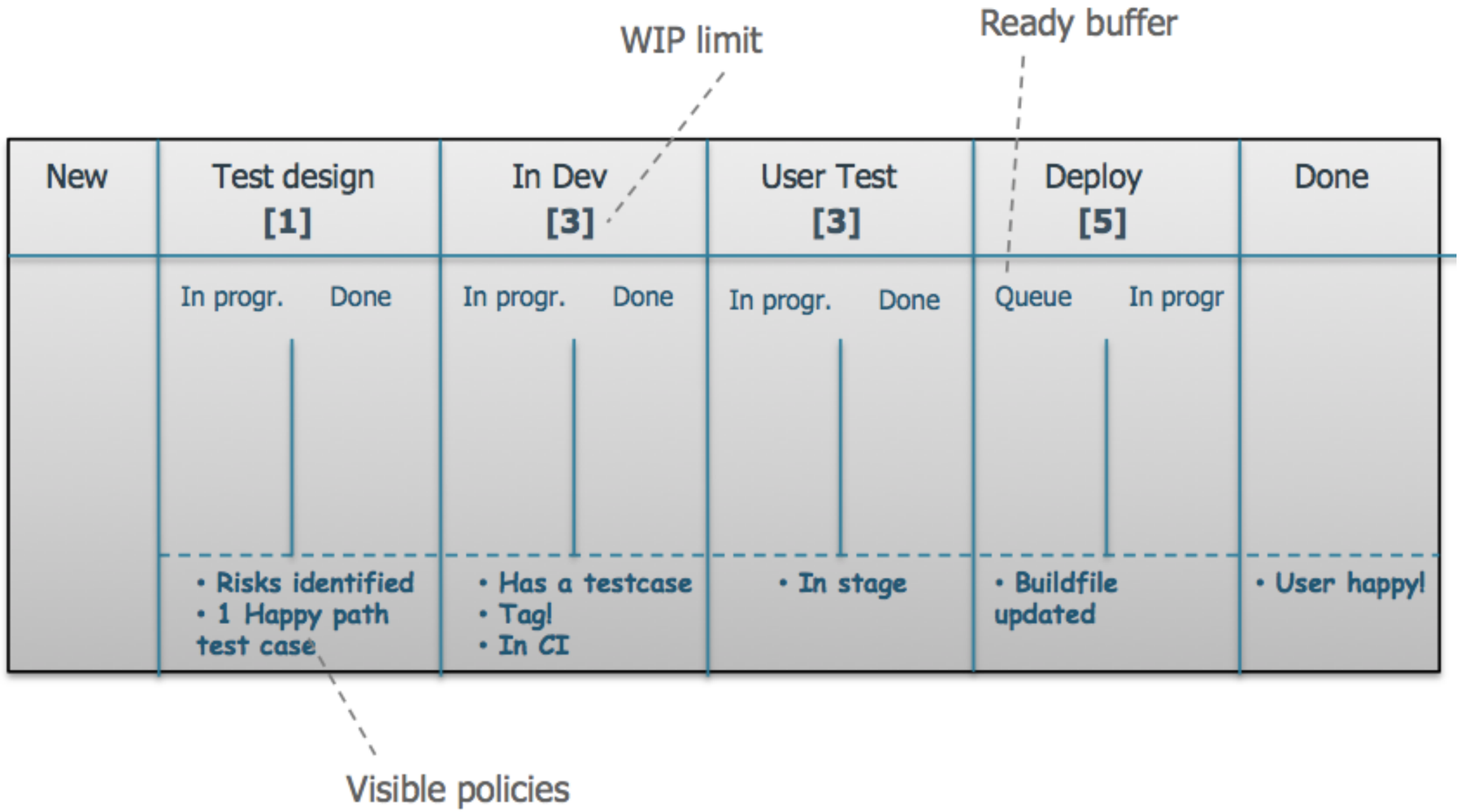
w1	w2	w3	w4	w5	w6		
8	10	7	7	9			

Ejemplos de tableros Kanban

Context

Development team
combined with specialists

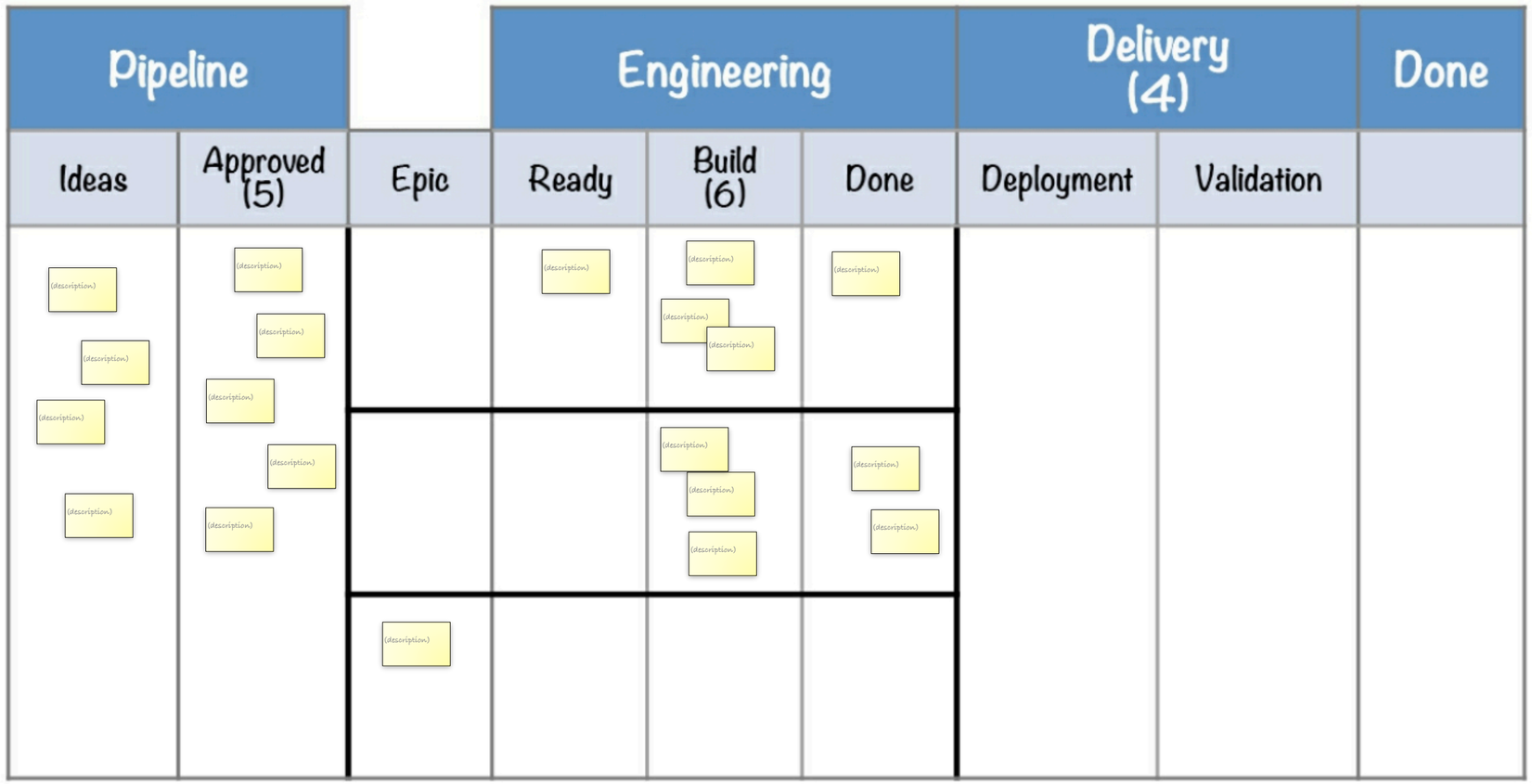
Stakeholders:
- Product owner / Project manager



© Mattias Skarin, [10 kanban boards and their context]

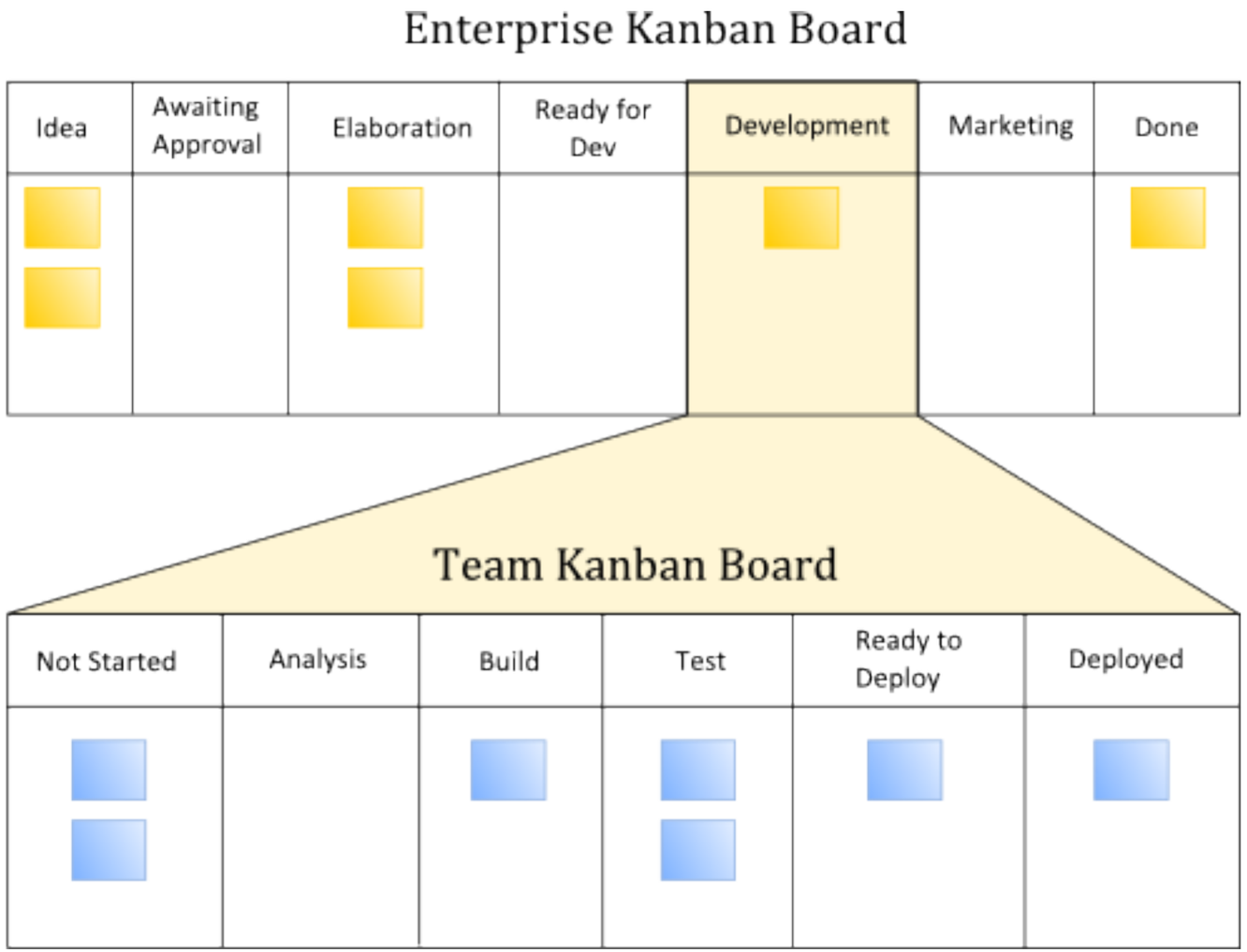
Tableros para features y tareas

- ¿Cómo representar en un mismo tablero features (historias de usuario) y las tareas en las que se descompone?
- Una solución es la propuesta que hace Mike Burrows en su libro "Kanban from the Inside" de tablero multi-nivel que usa el patrón expandir-colapsar. Llama "Epic" a lo que nosotros denominamos feature o historia de usuario.



Ejemplos de tableros Kanban

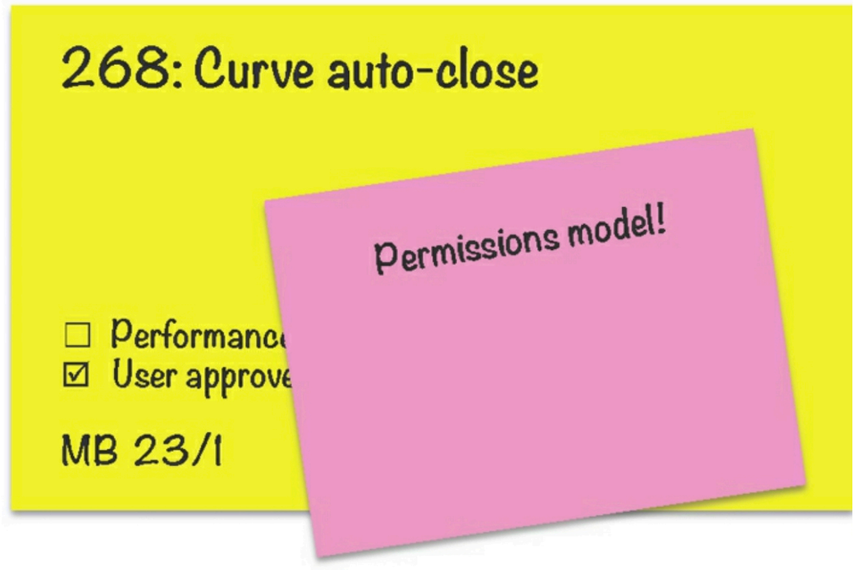
- Tableros Kanban **multi-nivel**



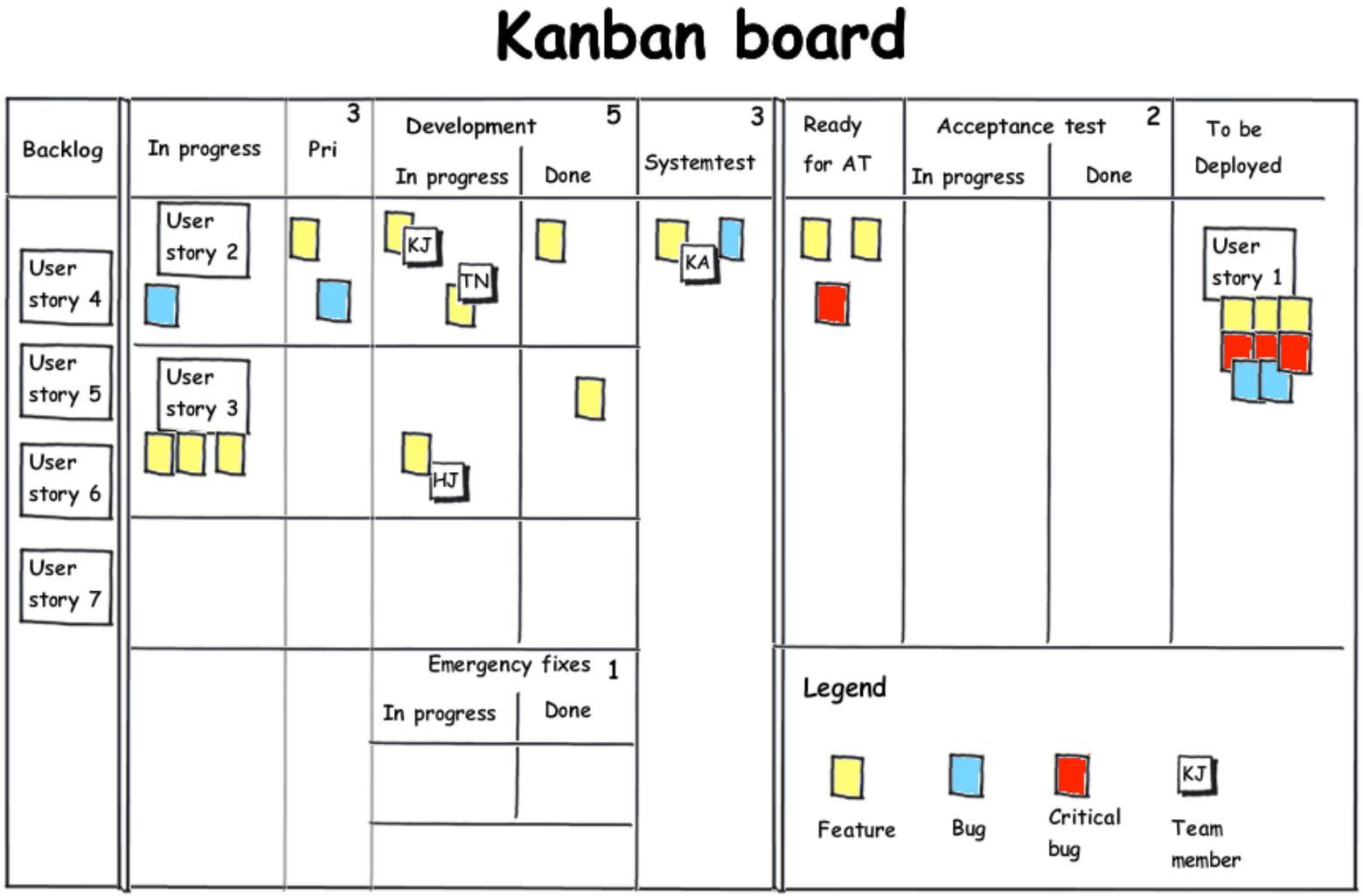
Estados en paralelo

- En todos los ejemplos que hemos mostrado los ítems cambian de estado de forma secuencial.
- Es posible incorporar cambios de estado paralelos mostrando los estados como tickets dentro del ítem de trabajo.

- También se puede mostrar un estado (por ejemplo: defectuoso) con un pos-it sobre el ítem de trabajo.
- De esta forma un ítem con un defecto lo podemos dejar visible en su columna actual, sin volverlo a llevar a columnas retrasadas.
- También se puede al mismo tiempo crear un nuevo ítem de trabajo de tipo *bug* para resolver el error.

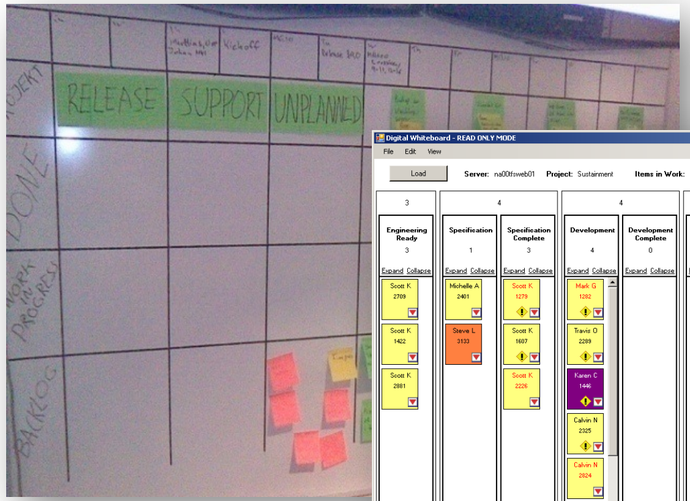


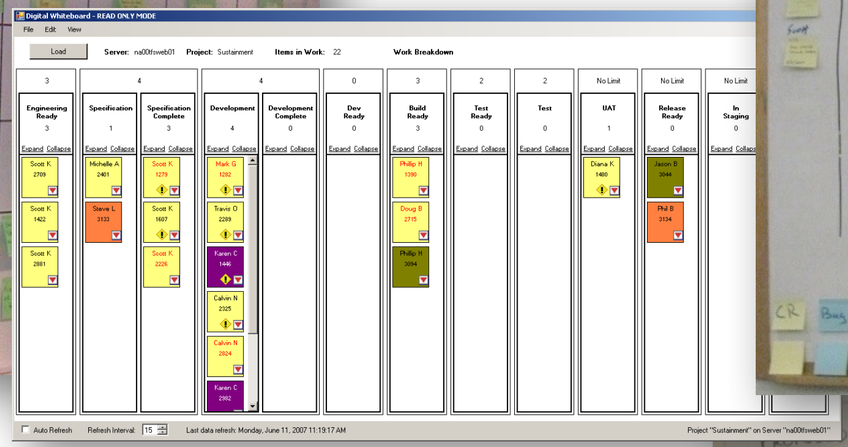
Tablero Kanban muy completo

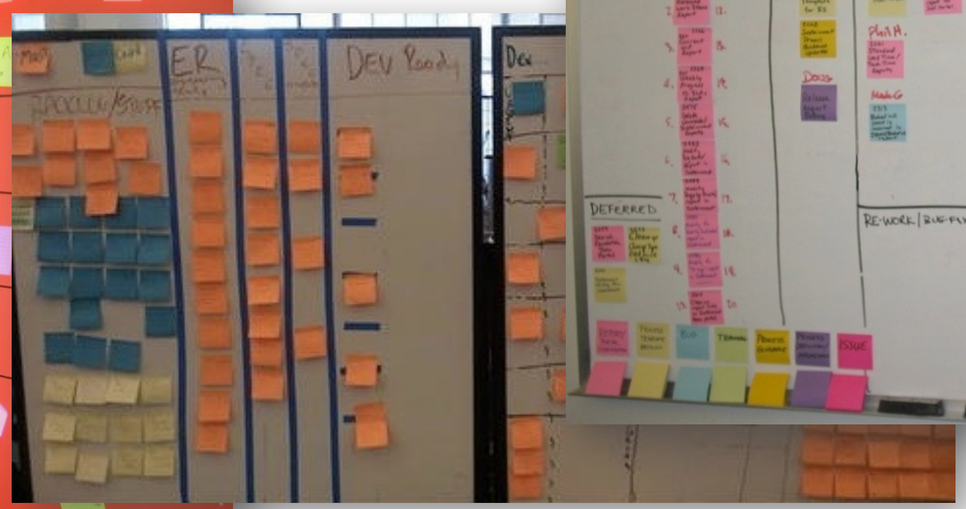


http://ketiljensen.wordpress.com/2009/10/31/kanban-the-next-step-in-the-agile-evolution/

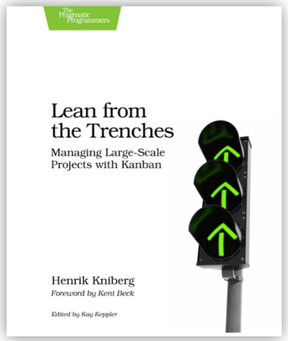
Kanban evoluciona en cada equipo

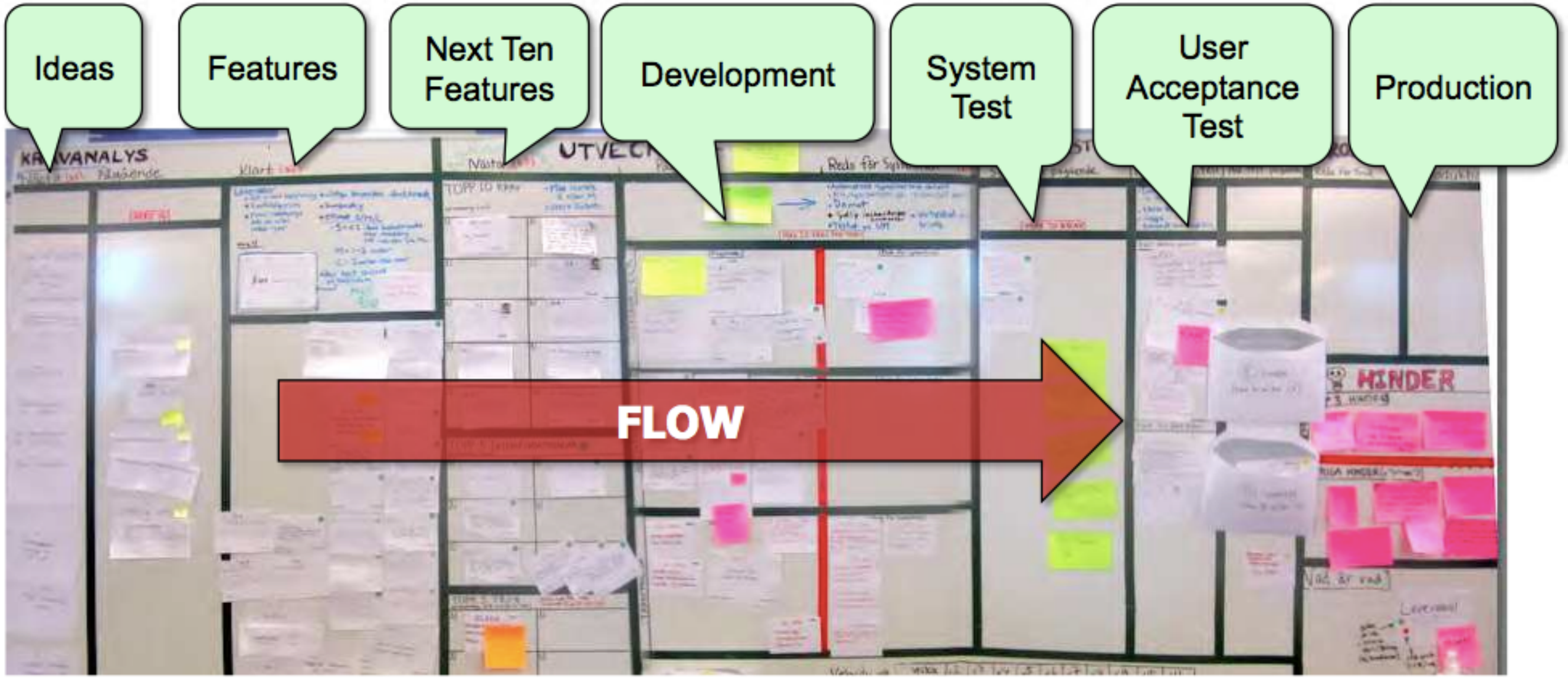






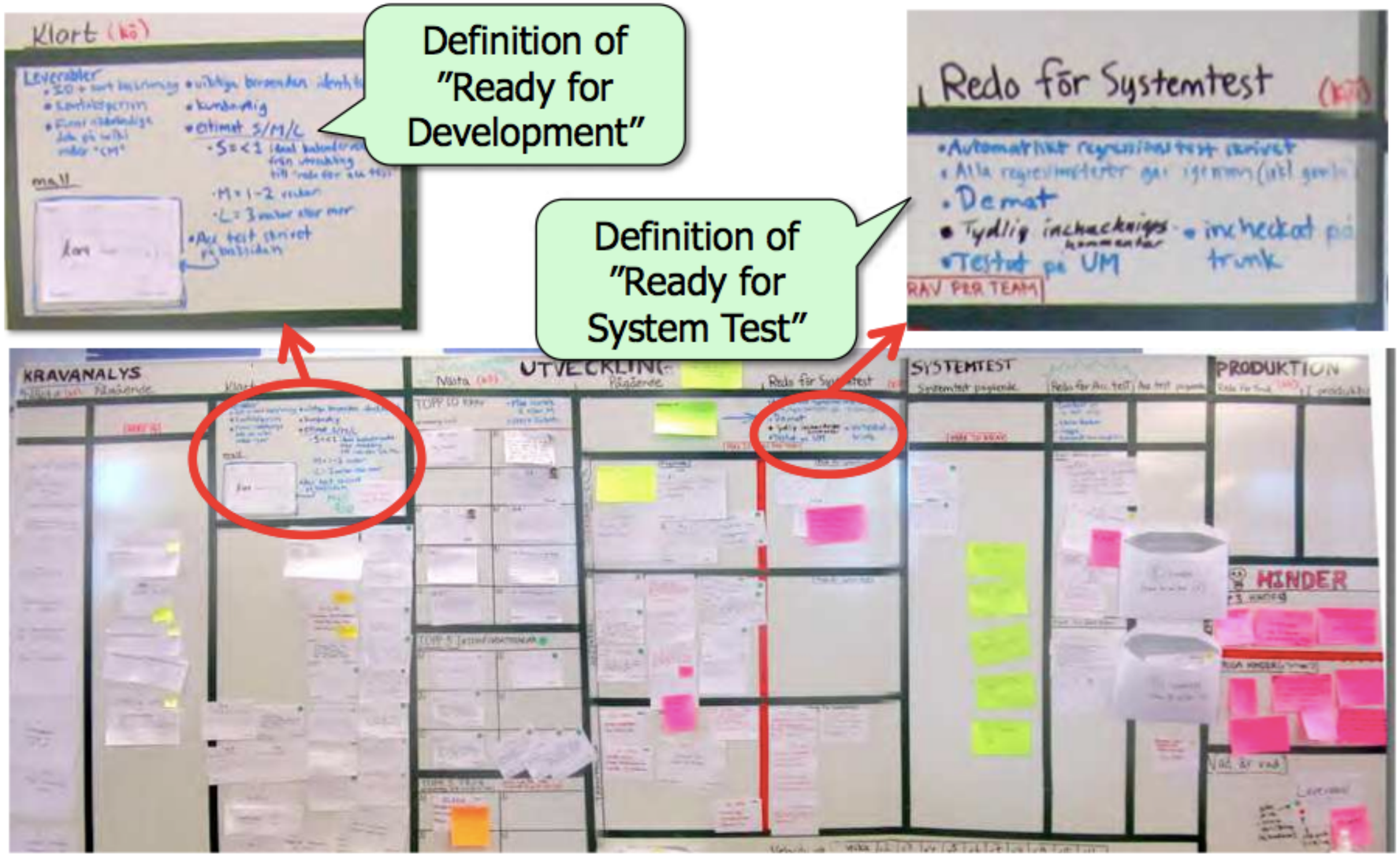
Un ejemplo de tablero - Lean from the Trenches





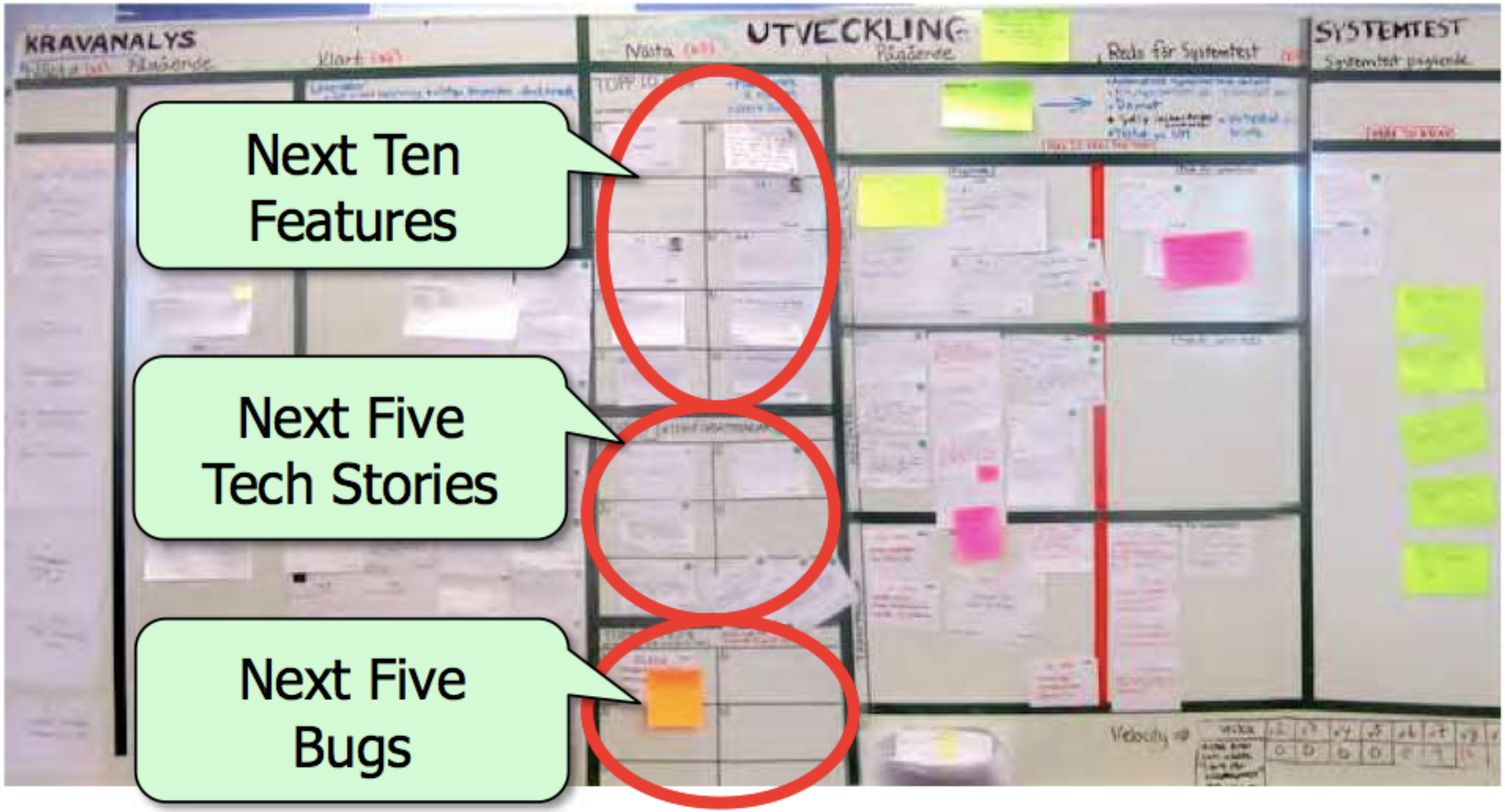
Henrik Kniberg, [Lean From the Trenches]

Políticas en el tablero



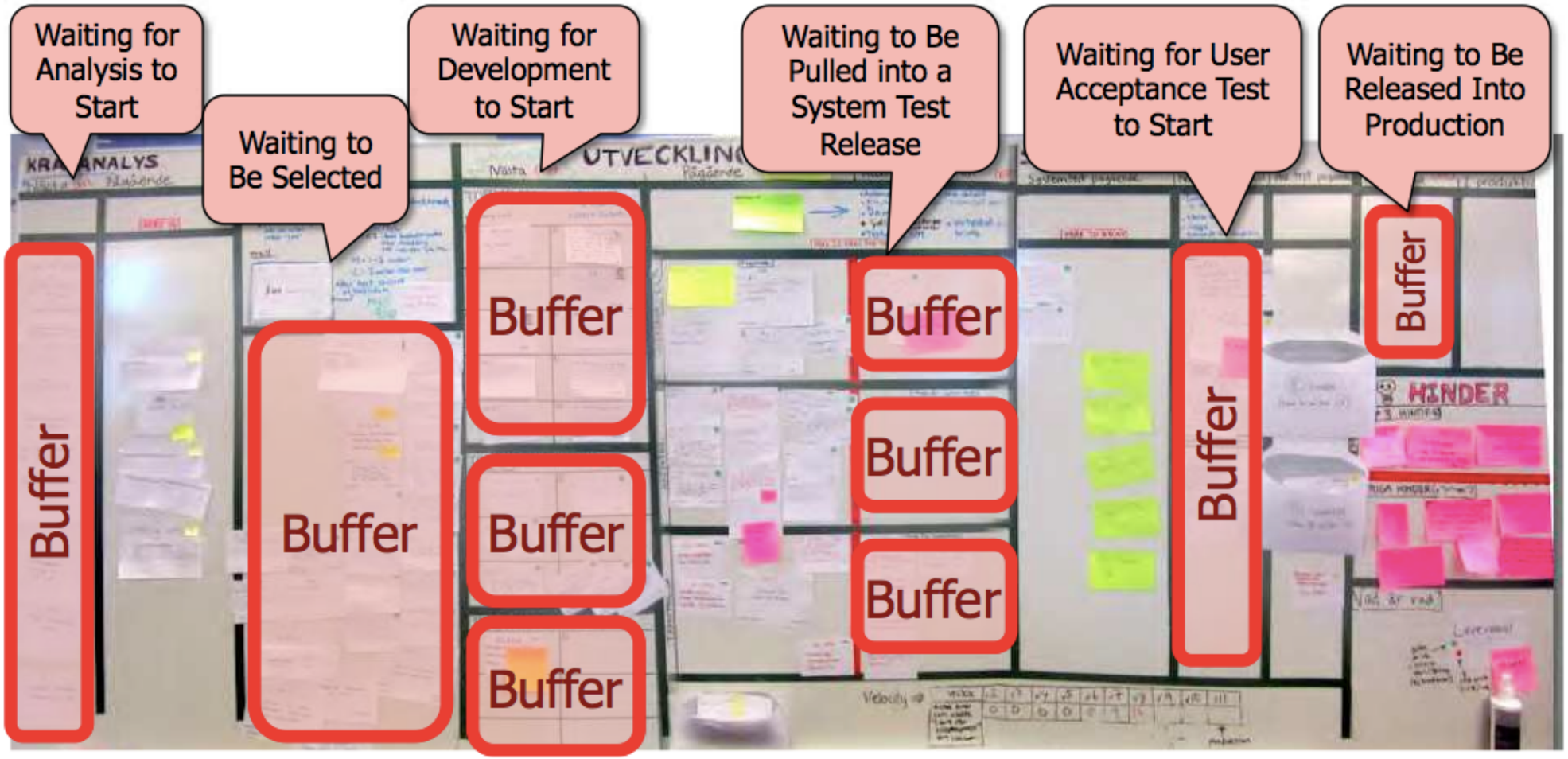
Henrik Kinberg, [Lean From the Trenches]

Diferentes tipos de trabajo



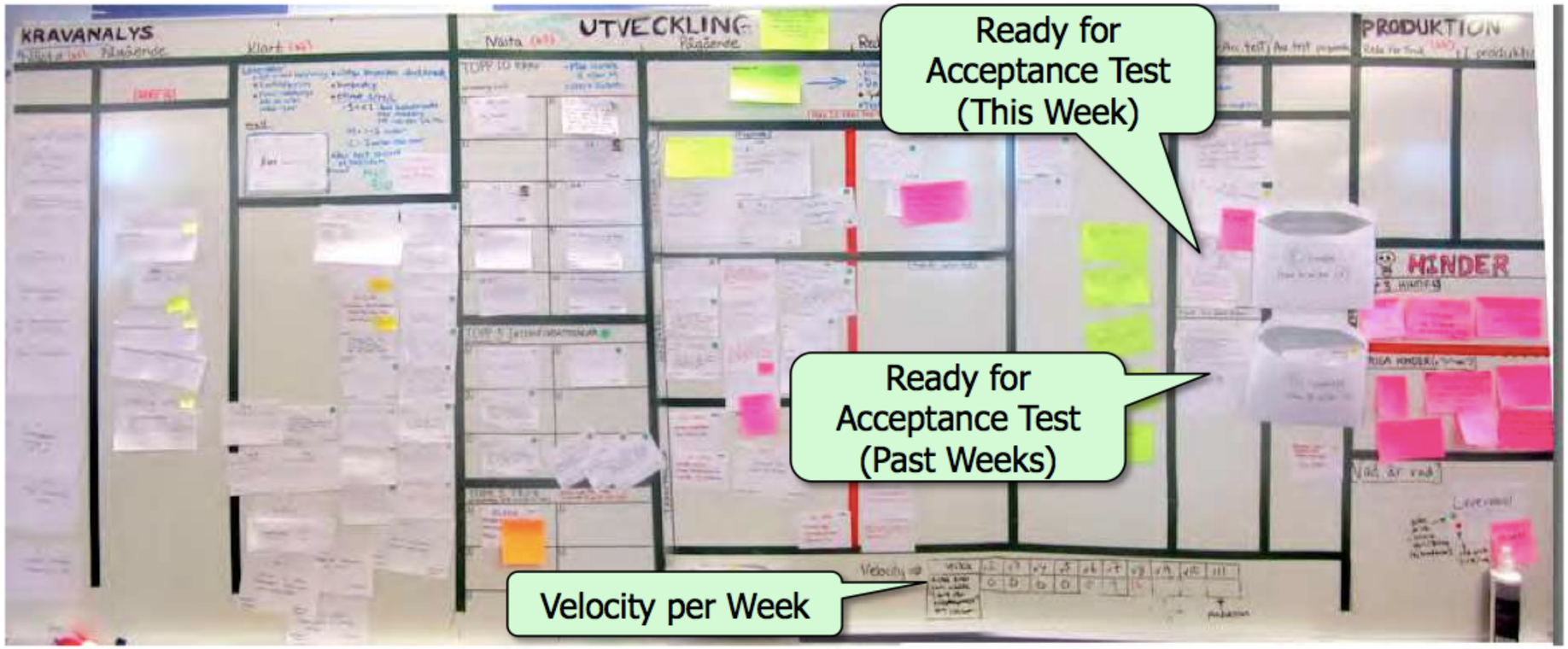
Henrik Kniberg, [Lean From the Trenches]

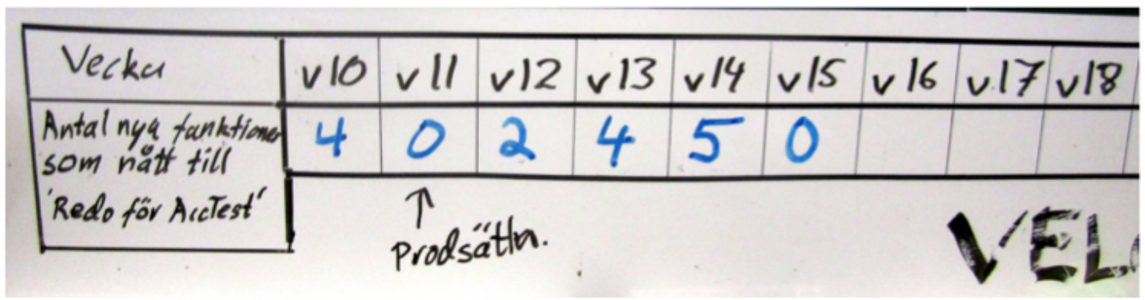
Buffers

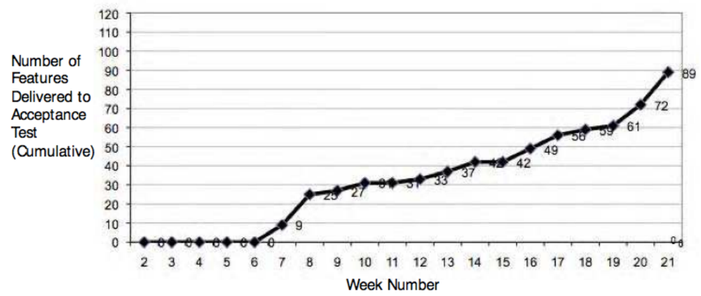


Henrik Kniberg, [Lean From the Trenches]

Estadísticas

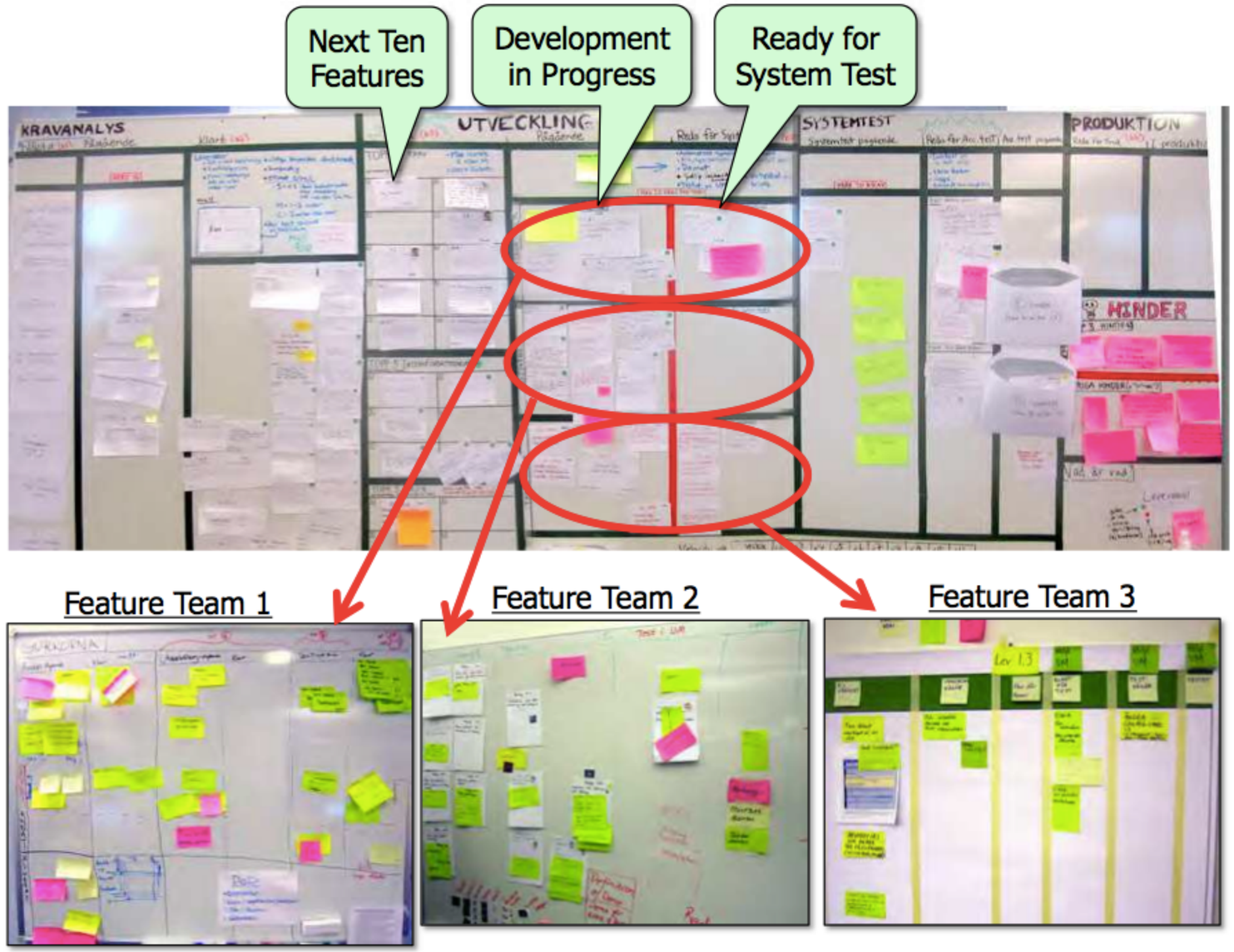






Henrik Kniberg, [Lean From the Trenches]

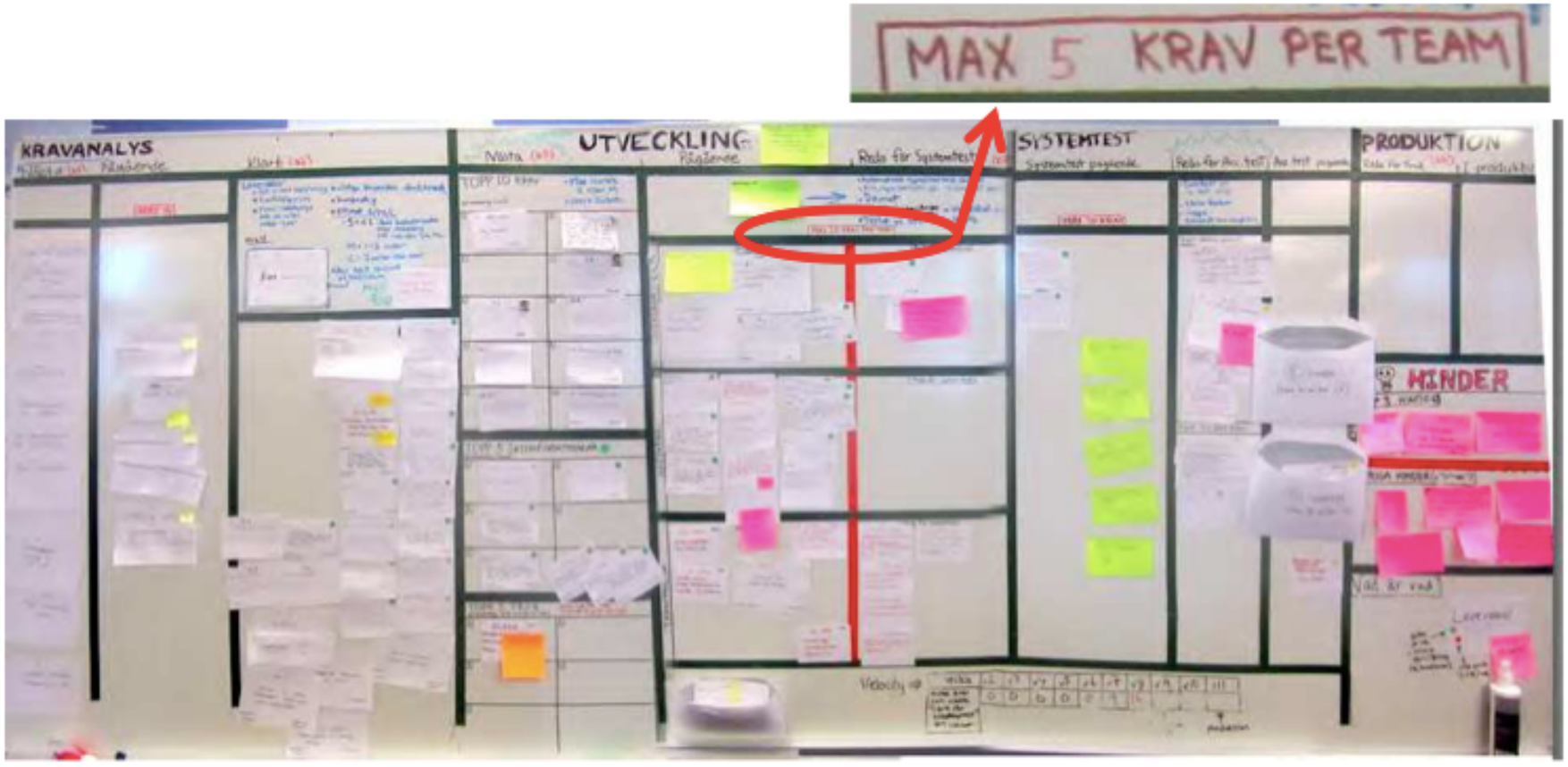
Escalar el tablero: tres equipos trabajando en el mismo proyecto



Henrik Kniberg, [Lean From the Trenches]

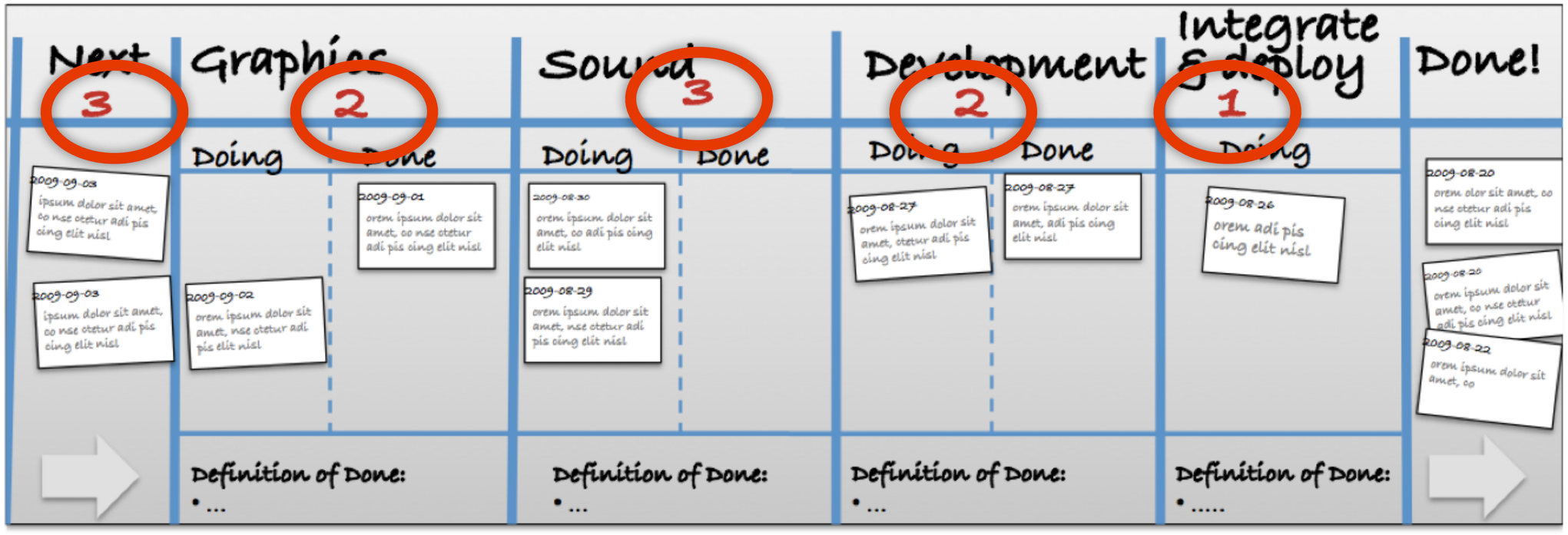
2. Limitar el WIP

Límite de trabajos en progreso



Henrik Kniberg, [Lean From the Trenches]

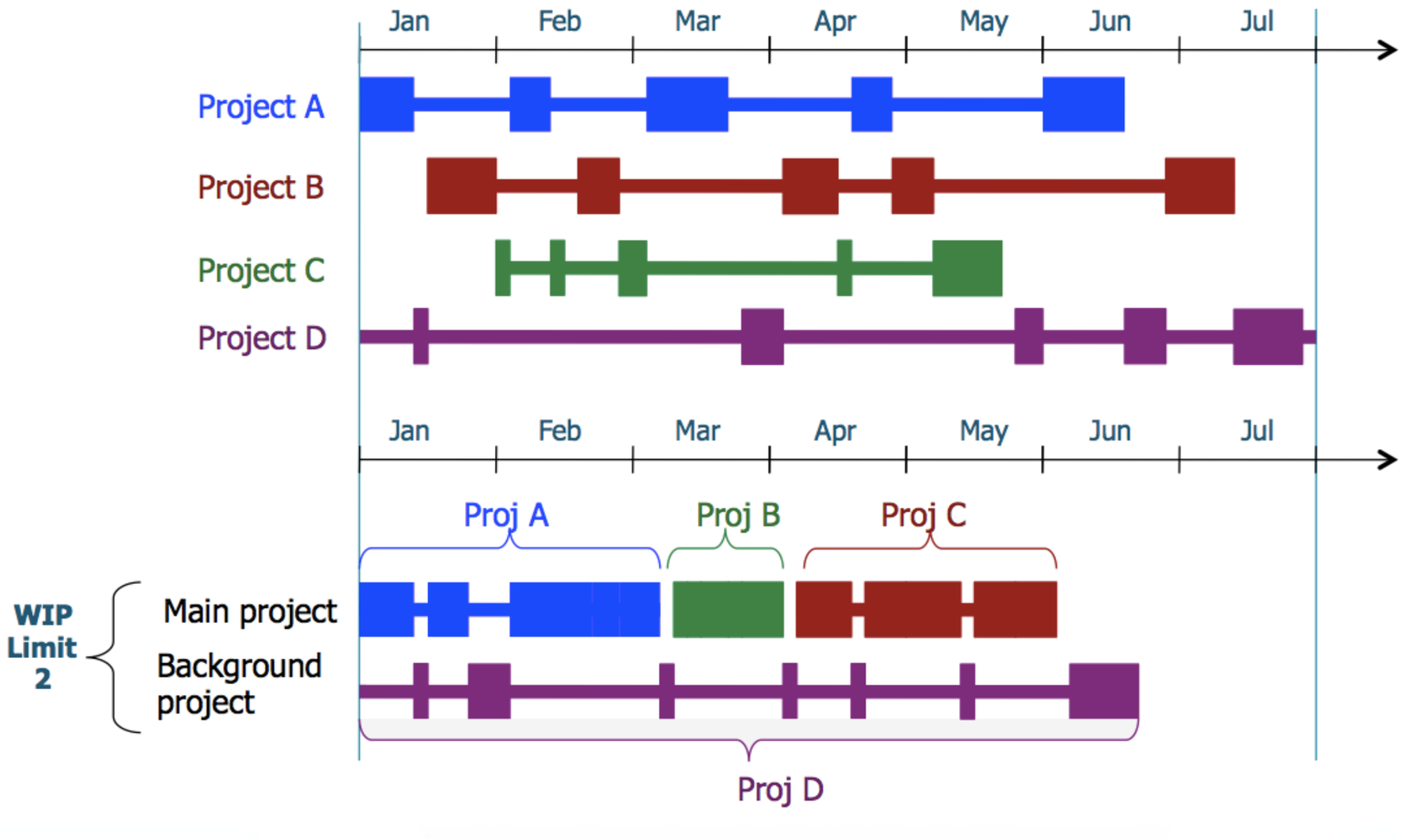
Un límite por estado del flujo



¿Por qué limitar el WIP?

- Evitar exceso de multitarea
- Evitar sobrecargas en las siguientes partes de la cadena de proceso (*downstream*)
- El límite del WIP debe establecerse por consenso entre todos los implicados en el proyecto
- La tensión creada por establecer un WIP obliga a discusiones y análisis beneficiosos para el equipo y el proyecto

Limitando el WIP se aumenta el *throughput*

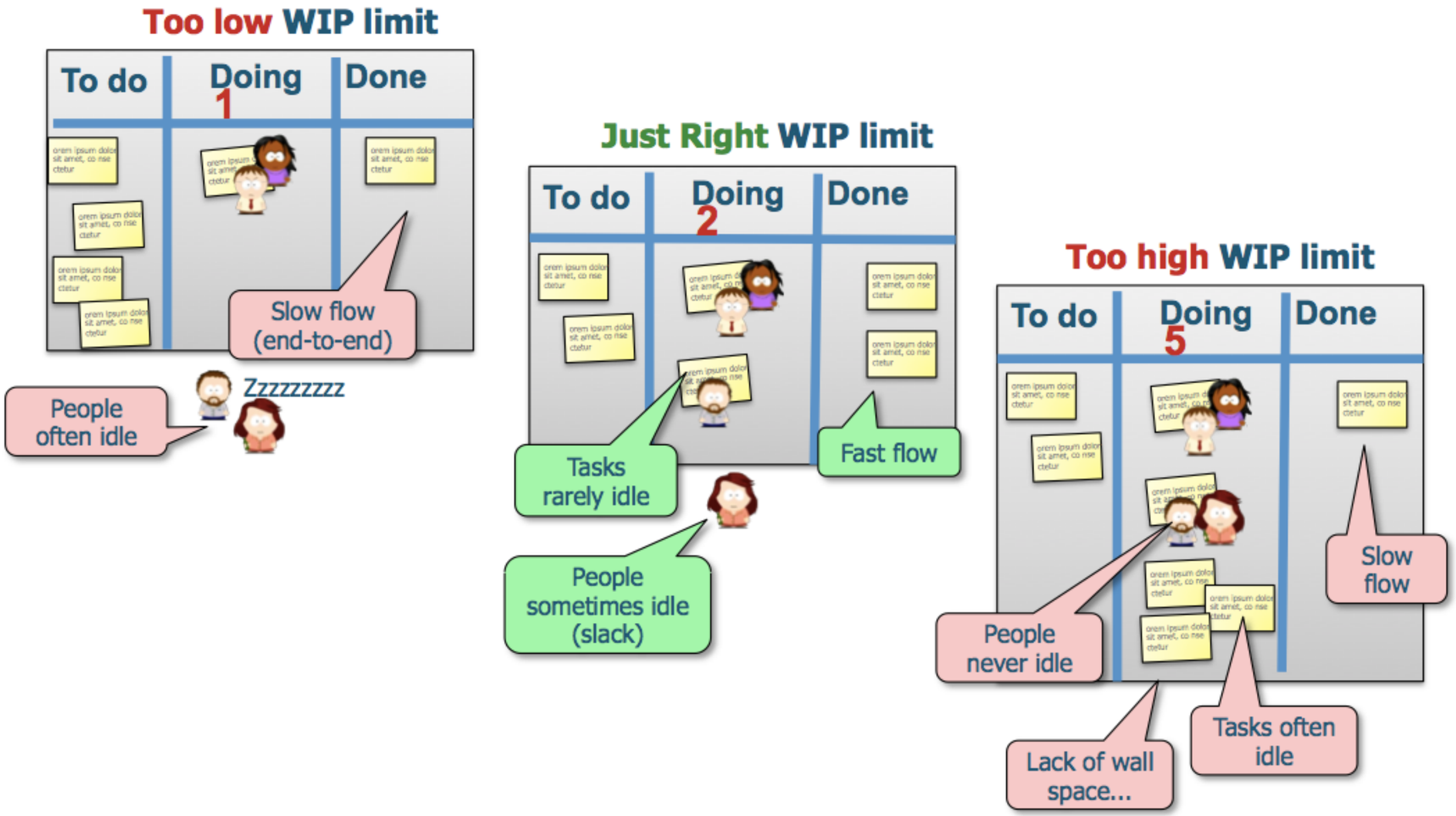


© [Henrik Kniberg]

¿Cuál es el límite óptimo?

- Se obtiene midiendo, experimentando y mejorando
- Empezar usando alguna regla sencilla: 2n-1, siendo n el número de personas trabajando en esa fase
- Estudiar el flujo y optimizar el límite (Kanban es un proceso empírico)

Optimizar el límite de WIP



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El límite de WIP obliga a terminar

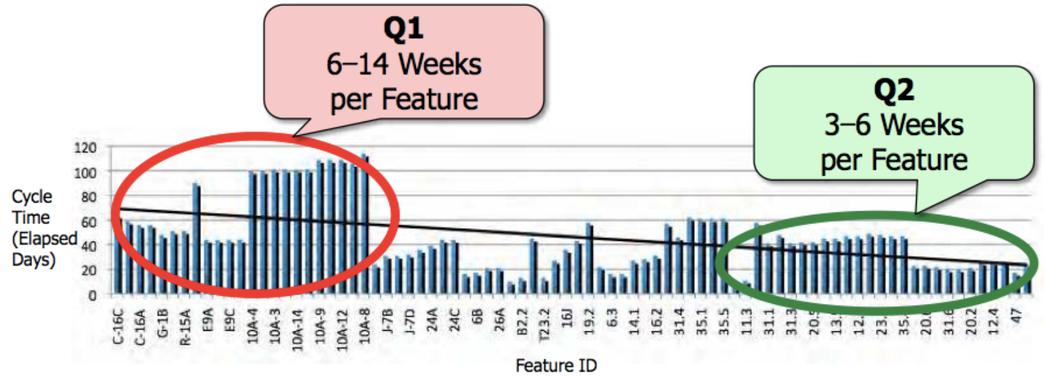
- Frase importante en Kanban

- El límite de WIP obliga al equipo a centrarse en terminar tareas antes de poder acometer nuevas

3. Medir y optimizar el flujo (tiempo medio de terminación)

Tiempo medio de terminación (cycle time o lead time)

- Tiempo medio que tarda un ítem de trabajo en ser procesado en cada paso
- Equivalente al número de ítems terminados por unidad de tiempo
- Se suele analizar su evolución a lo largo del proyecto usando lo que se denomina diagrama de flujo acumulativo
- Su cálculo es muy sencillo: basta una hoja de cálculo (o incluso una pizarra)



Henrik Kniberg, Lean from the Trenches

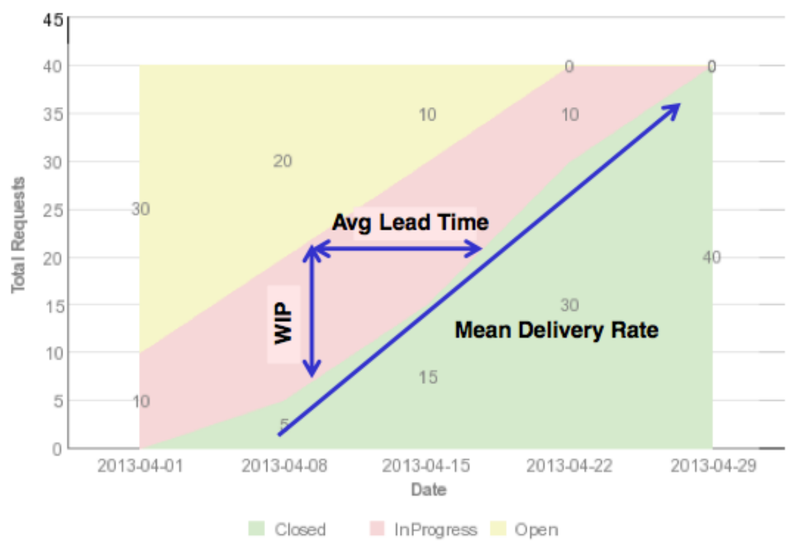
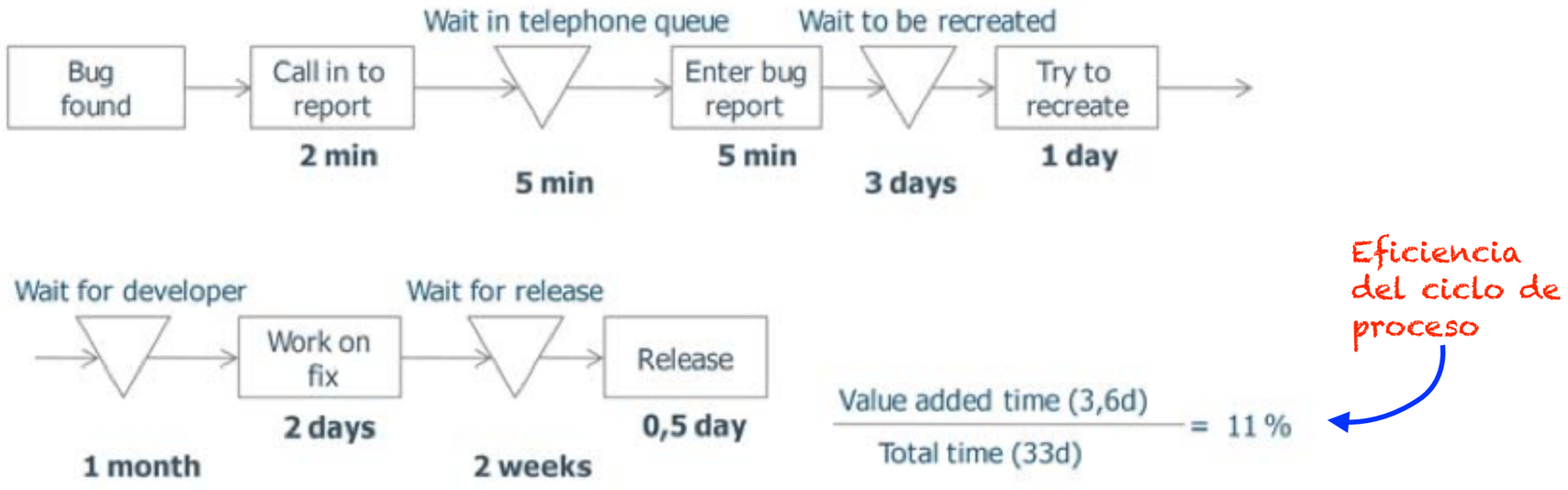


Diagrama de fujo acumulativo

Cadena de valor

- La definición de la cadena de valor (*value chain)* por la que pasan los ítems de trabajo es importante tanto para analizar el flujo y detectar cuellos de botella



Henrik Kniberg & Mattias Skarin, Kanban and Scrum, InfoQ

Resumen prácticas Kanban

1. Visualizar el flujo de trabajo
2. Limitar el *Work In Progress*
3. Medir y optimizar el flujo (el tiempo de ciclo o *lead time*)

4. Hacer explícitas las políticas
   - *Definition of Done* (Definición de Hecho)
   - *Classes of Service* (Clases de servicios)
   - *Service Level Agreement* (Acuerdos de nivel de servicios)

5. Retroalimentación y mejora continua
   - Ritmo y cadencia
   - *Daily Standups* (Reuniones diarias)
   - Retrospectivas

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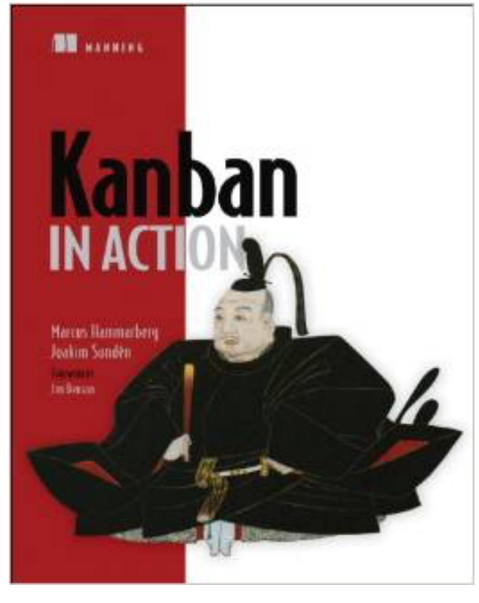

- Libros avanzados
  - Mike Burrows, Kanban from the inside
  - David J. Anderson, Kanban