Why Kanban

Helps to discover flaws in our system

Indicates where to tune for customer value creation

Optimize value stream from commitment (to work on something) until delivery to the customer

Increase systems predictability (by building stable systems)

Locate problems looking at our system at whole?

A highly flexibly approach and without front heavy change

Focus on finishing work

Goal to create a fluent, flow based, value generating system showing what happens from idea to customer value generation

4 core Kanban principles

What

- Start with what you do know
- Respect current process, roles and responsibilities
- Agree to pursue incremental, evolutionary change
- Encourage acts of leadership at all levels

Why

- derive changes ... it will highlight issues soon
- to avoid change resistance
- to increase commitment do small changes to the way work is done
- to empower all involved to drive changes and get high adoption and commitment

How

- work with incremental, derived changes
- respect and value the current system and introduce logical changes
- evolutionary: analyse & understand current system and adjust necessary change step
- everyone fosters mindest of continuous improvement
- design system together

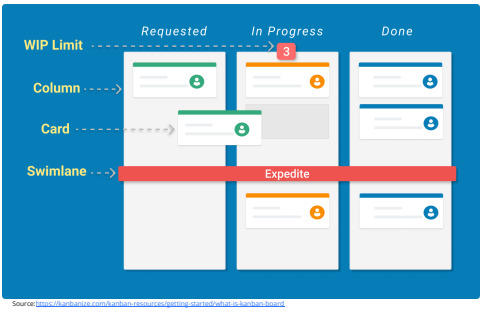
Kanban is the implementation of these core principles and practices

- Kanban is applied to an existing working process
- Focus on optimizing value generation (and customer satisfaction)

6 Kanban practices (that a successful implementation of Kanban present)

	Visualize the work(flow)	Limit Work in Progress	Manage Flow	Make process policies explicit	Implement Feedback loops	Improve collaboratively
What						
Why	everyone is on the same page e.g. reduces the need for extra status update meetings	see WIP	optimize for customer value delivery and not for people capacity utilization manage work not workers (this has a higher systemic impact)	to generate a common understanding	fast learning & adaptation to learn if a change works	adopt system to changing environment ensure learning and adaptation
How	visualize every piece of value creating work see Kanban Boards		WIP Limits	visualize workflow if a policy does not longer provide value, change it	recommended standups, replenishment, retrospectives metrics	recommended retrospectives

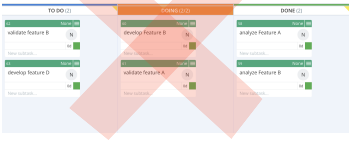
Kanban Board



Swimlanes: To separate different types of activities, teams, classes of services, ...

Source: https://kanbanize.com/kanban-resources/getting-started/what-is-kanban-board

Design columns by activities along the value stream



missing value delivery focus

tough to analyze value stream and flow

Column for activities where items spent some time

Should enable optimization and have an impact of predictability

Loops of activities should be combined to one activity

DOD by column

Flag Blockers on tickets

Create blocker clusters to enable learning

use verbs (to underline that it is an activity)

Units of work (UOW)

entities that generate value when passed several activities (e.g. in form of a user stories, features)

can be split to tasks

Work item types

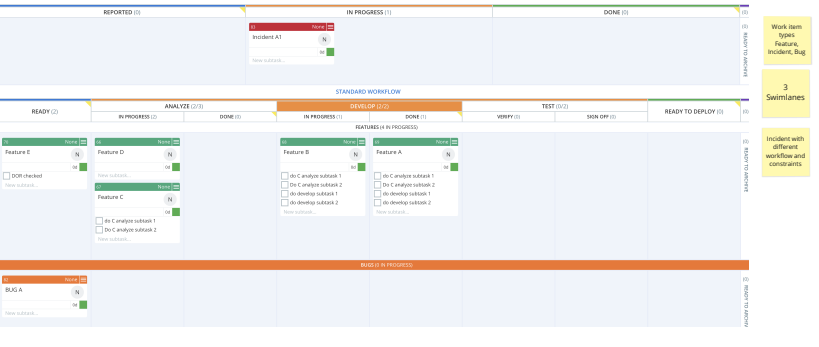
classes for work - e.g. user stories, features

classes might be different in activities to get units of work done

e.g. a UOW is of work item type User Story

e.g. a UOW is of work item type Bug

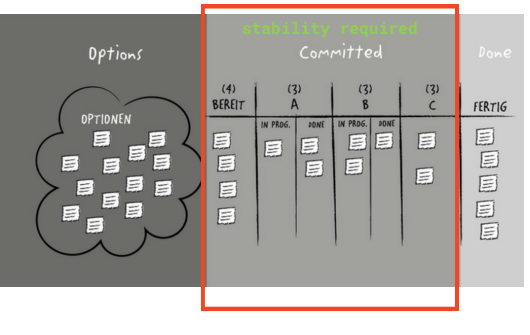
Example



Work item types: Feature, Incident, Bug

3 Swimlanes

Incident with different workflow and constraints



Work in Progress - WIP

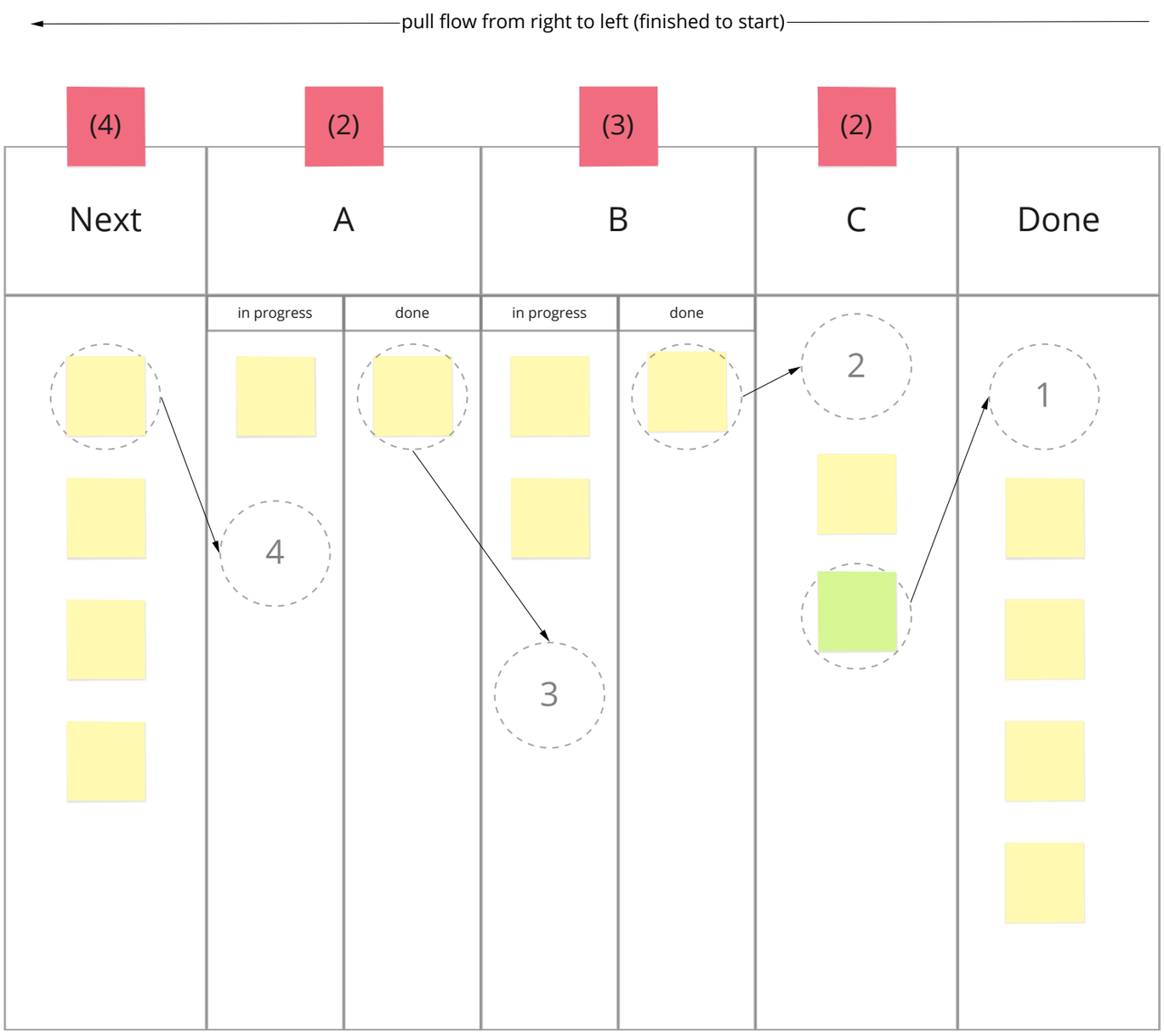
The number of items a team is currently working on

WIP Limits

Problem	limited capacity in each system	fluctuating WIP lowers system predictability						
For what?	used to manage the teams workflow	foster stop starting and start finishing of items	support implementing a pull system	limit bound capital in the system	enables focus	increases predictability	late commitment and increased flexibility to customer demand changes	
How?	on overall board level	on column level	on swimlane level	consider 3 cards per person as a magic starting point to tune from	apply on value generating units of work			

more details: https://medium.com/@thorbjorn.sigberg/how-to-succeed-with-wip-limits-b97868abe407

Pull principle by example



Metrics (a high level overview)

WIP

amount of work in the system (UOW and not Tasks)

troughput

amount of work finished per time unit

cycle time

how long do items need through our system (in calendar days!)

leadtime (time to market)

Cost of Delay

amount of money not earned by time unit

includes the economic perspective

Flow efficiency

time in active status divided by total time (often just around 15%)

continuous forecasting

simulating expected delivery dates based on past throughput

quantify waste

waste is any activity that consumes resources but brings no value to the end customer

more details: https://kanbanize.com/lean-management/value-waste/7-wastes-of-lean/

CFD

CFD

cycle time scatterplot

cycle time scatterplot

cost of delay divided by duration for comparison

min/max/average forecast

Current board snapshot

JIRA control chart

JIRA control chart

Monte Carlo simulation

CFD

needs to become stable (by limiting) in order to enable forecasting

cycle time histogram

cycle time heatmap

cycle time = avg WIP/avg throughout

Qualitative Cost of Delay

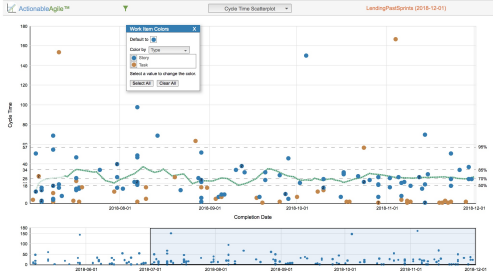
Value	Whenever	Soon..	ASAP
Killer	Medium	High	Very High
Boss	Low	Medium	High
"Meh"	Very Low	Low	Medium

Urgency

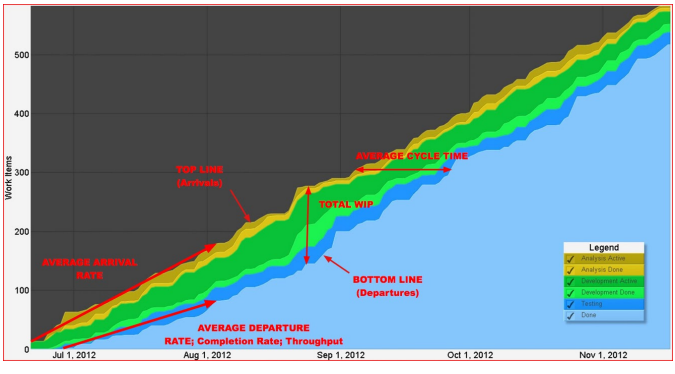
BLACK SWAN FARMING

Value/Urgency matrix (more details: https://www.ontheagilepath.net/2017/05/costs-of-delay-combined-with-how-to-measure-anything-a-presentation.html)

General	Software development
Transportation	Task switching and interruptions
Inventory	undelivered code/features
Waiting	Waiting for test complete, review,...
Overproduction	unused features
Over-processing	unnecessary complex algorithms for simple problems
Defects	Bugs and Incidents
Transportation	Transportation
Motion	unnecessary meetings, effort to find information



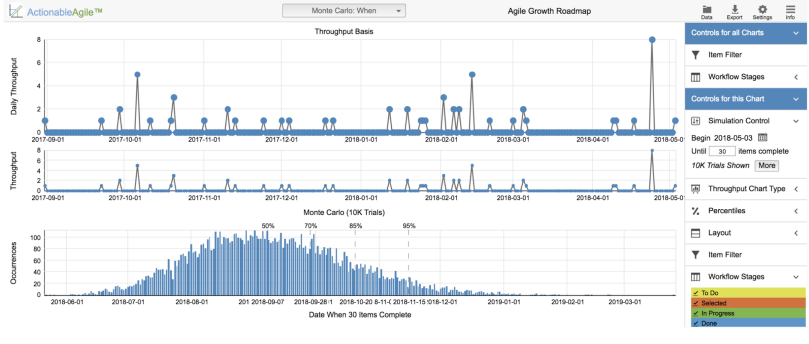
cycle time scatterplot example (more details: https://www.ontheagilepath.net/2019/01/cycle-time-scatterplot-by-example.html)



cumulative flow diagram example (more details: https://www.ontheagilepath.net/2015/04/unleash-predictability-by-using-actionable-agile-metrics-6-key-learnings-from-daniel-s-vacanti-s-awesome-book.html)

Example

- lets assume we are at position 30 in the backlog - we can use Monte Carlo When with 30 items and a begin dat from today (in this example 03 May 2018)



- shows that with 95% probability 30 items can be completed until 15.11.

Example of a Monte Carlo simulation done with a special JIRA plugin (details: https://analytics.actionableagile.com/)

Recommended ceremonies

Daily	board right to left	focus on getting things done		
Replenishment	on demand of fixed cadence	get UOW in shape and move into ready/selected	How might we ensure frequent backlog refinement and grooming in Kanban?	DOR
retrospective	on demand of fixed cadence	focus on optimizing the overall value delivery!	embed data from your metrics	add improvements to your Kanban board or update your policies or working agreements

Condensed Scrumban Overview

Emphasizes **applying Kanban systems within a Scrum context** and layering the Kanban Method alongside Scrum as a vehicle for evolutionary change.

It’s about aiding and amplifying the capabilities already inherent in Scrum as well as providing new perspectives and capabilities.

Slides
https://de.slideshare.net/sradics/scrumban-revolution-are-noestimate-and-nosprints-your-next-steps (Basti)

5 steps of evolution

No Estimates

No Sprints

Flow based Standups

Actionable Agile metrics

On Demand Retrospectives

Let's compare the 3 approaches

	Scrum	Kanban	Scrumban
Board/Artifacts	simple board product backlog sprint backlog product increment burndown chart	board mapped on the process	board mapped on the process
Ceremonies	daily Scrum sprint planning sprint review sprint retrospective	none required	daily Scrum other Scrum related ceremonies if needed
Prioritization	Part of backlog grooming. Done by PO	Out of the process. There should be a prioritized backlog.	Out of the process. There should be a prioritized backlog. Can be a grooming.
Who feeds the work in progress ("brings new work")	PO	Depends on defined roles and necessities	Depends on defined roles and necessities
Iterations	yes (sprints)	no (continuous flow)	not mandatory (continuous flow); could have sprints
Estimations	yes (in ideal days or story points)	no (similar work size items)	no (similar work size items)
Teams	recommended cross functional	cross functional or specialized	cross functional or specialized
Roles	Product Owner Scrum Master Team	as needed	Team + as needed
Teamwork	collaborative	based on pull approach	based on pull approach
WIP	planned for the duration of the sprint	controlled by workflow state	controlled by workflow state
changes to work scope	should wait for next sprint	added as needed (JIT)	added as needed (JIT)
Product backlog	prioritized list of user stories (estimated)	no (JIT)	no (JIT)
Impediments	addressed immediately	addressed immediately	addressed immediately
When does it fit?	Product development Small value adding increments development possible Requirements are in good shape	Support/maintenance work (operational level)	Product development (unclear vision) Evolving requirements (no clear roadmap) Need to include support/maintenance (event driven) work

Dive deeper

Scrumban

Slides https://de.slideshare.net/sradics/scrumban-revolution-are-noestimate-and-nosprints-your-next-steps (Basti)

The Scrumban revolution: http://scrumbanrevolution.com/#Home (Ajay Reddy)

What is ScrumBan - http://yuvalyeret.com/so-what-is-scrumban/ (Yuval Yeret)

What is Scrumban - https://www.agilealliance.org/what-is-scrumban/ - (Agile Alliance)

Recorded session about Scrumban https://www.ontheagilepath.net/2015/07/scrumban-revolution-of-scrum-recorded-presentation-from-the-berlin-scrum-meetup.html (Basti)

Kanban and Scrum - making the most of both worlds - https://www.infoq.com/minibooks/kanban-scrum-minibook/ (Henrik Kniberg)

Metrics

Actionable Agile (metrics) https://actionableagile.com/ (Daniel S. VacantI

#NoEstimates book - https://oikosofyseries.com/no-estimates-book-order (Vasco Duarte)

Lean

7 wastes article - https://kanbanize.com/lean-management/value-waste/7-wastes-of-lean

Toyota Kata

Kanban

Kanban (the original by David J. Anderson) https://www.amazon.com/David-J-Anderson-ebook/dp/B0057H2M70/ref=sr_1_1?dchild=1&keywords=kanban&qid=1592507771&sr=8-1

Kanban from the Inside (Mike Burrows) - https://www.amazon.com/Kanban-Inside-Understand-connect-introduce/dp/0985305193/ref=sr_1_21?dchild=1&keywords=kanban&qid=1592507820&sr=8-21