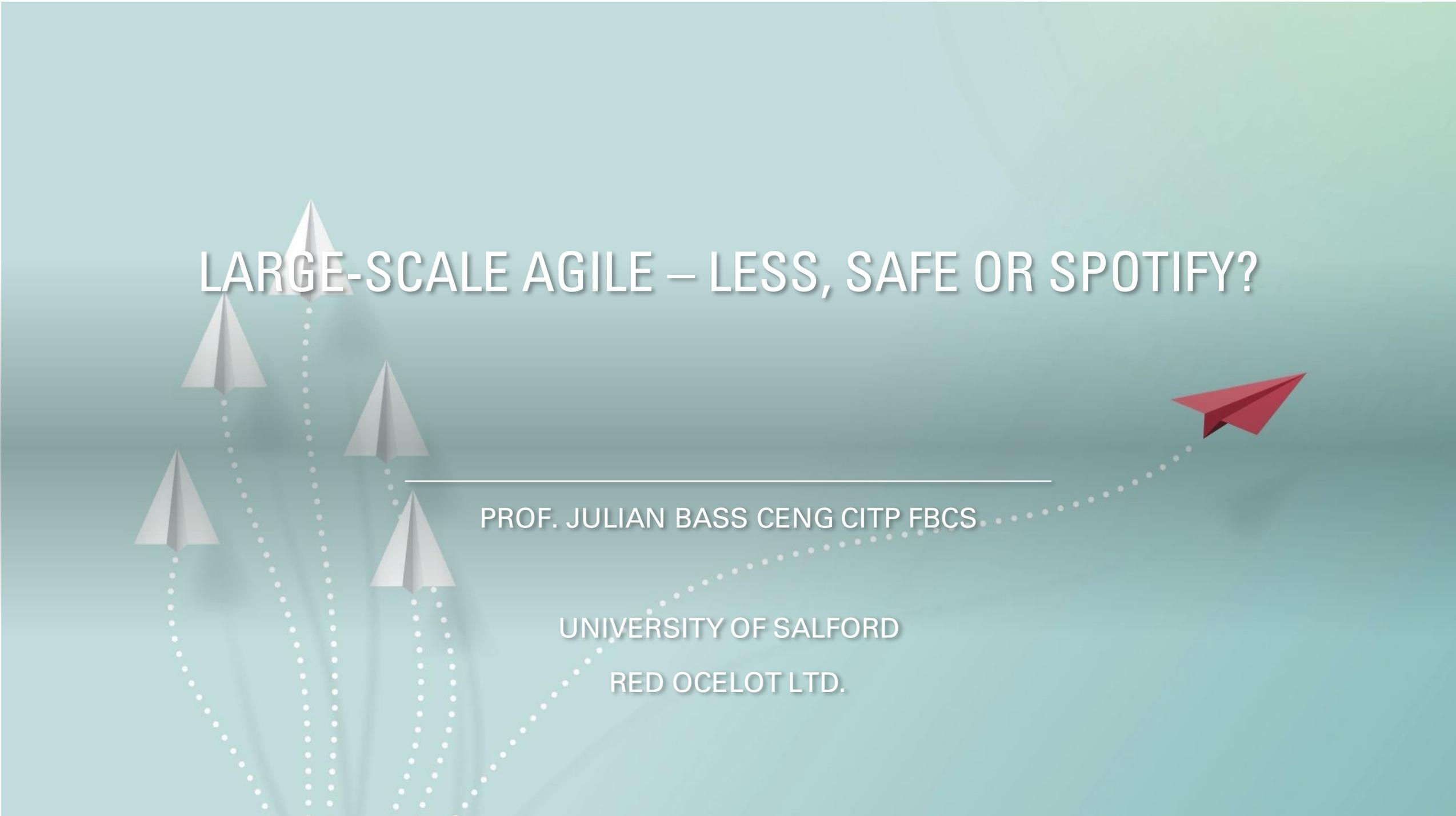


LARGE-SCALE AGILE – LESS, SAFE OR SPOTIFY?

The background features a teal-to-green gradient. On the left, several grey paper airplanes are shown in flight, each with a dotted white line trailing behind it, suggesting movement and direction. On the right, a single red paper airplane is shown in flight, also with a dotted white line trailing behind it, pointing towards the right side of the frame.

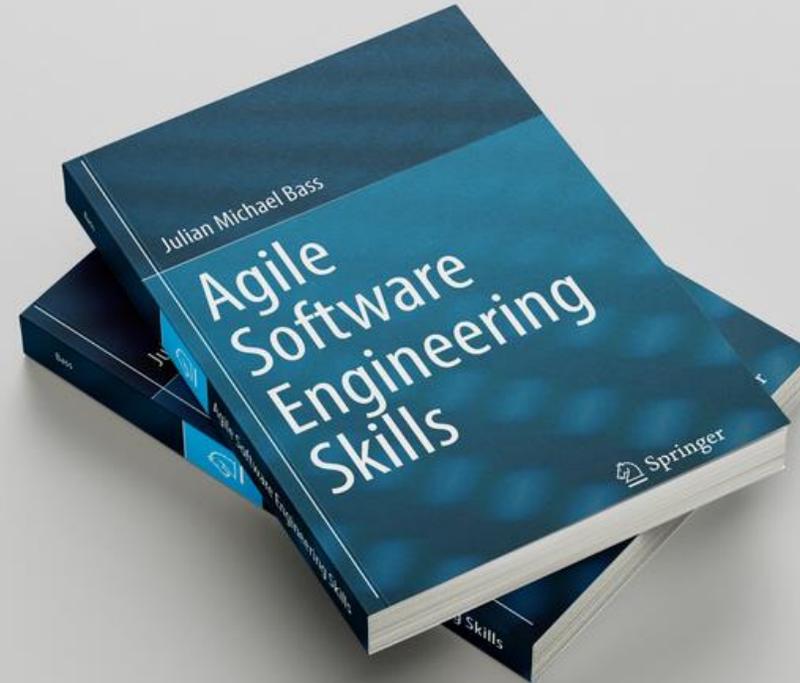
PROF. JULIAN BASS CENG CITP FBCS

UNIVERSITY OF SALFORD

RED OCELOT LTD.

CONTENTS

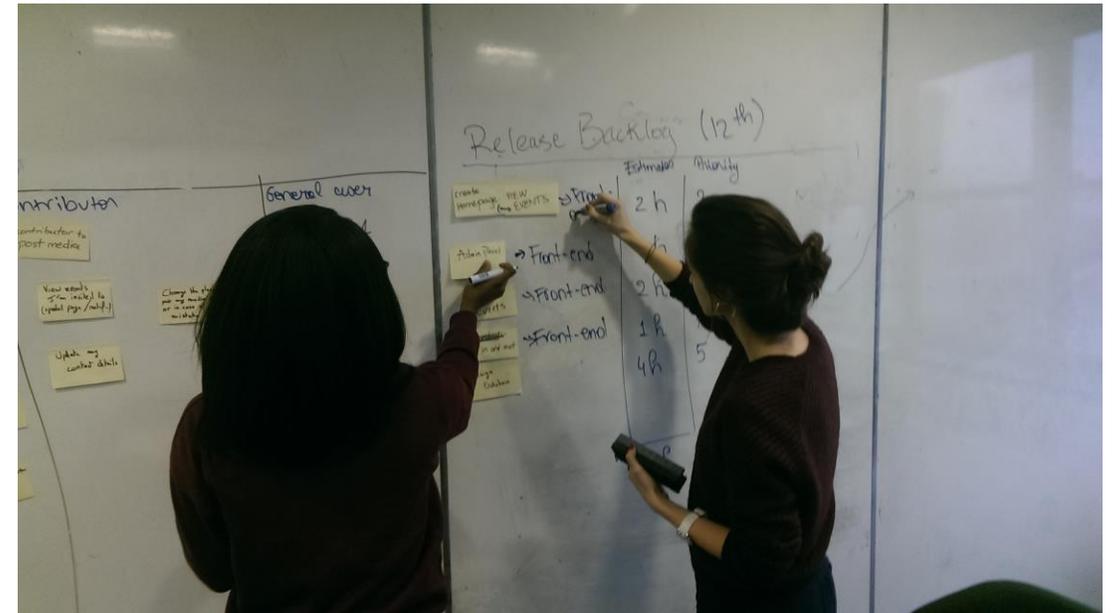
- Building Software without a Plan
- Scaling Agile
- Culture
- Frameworks
- Software Architecture



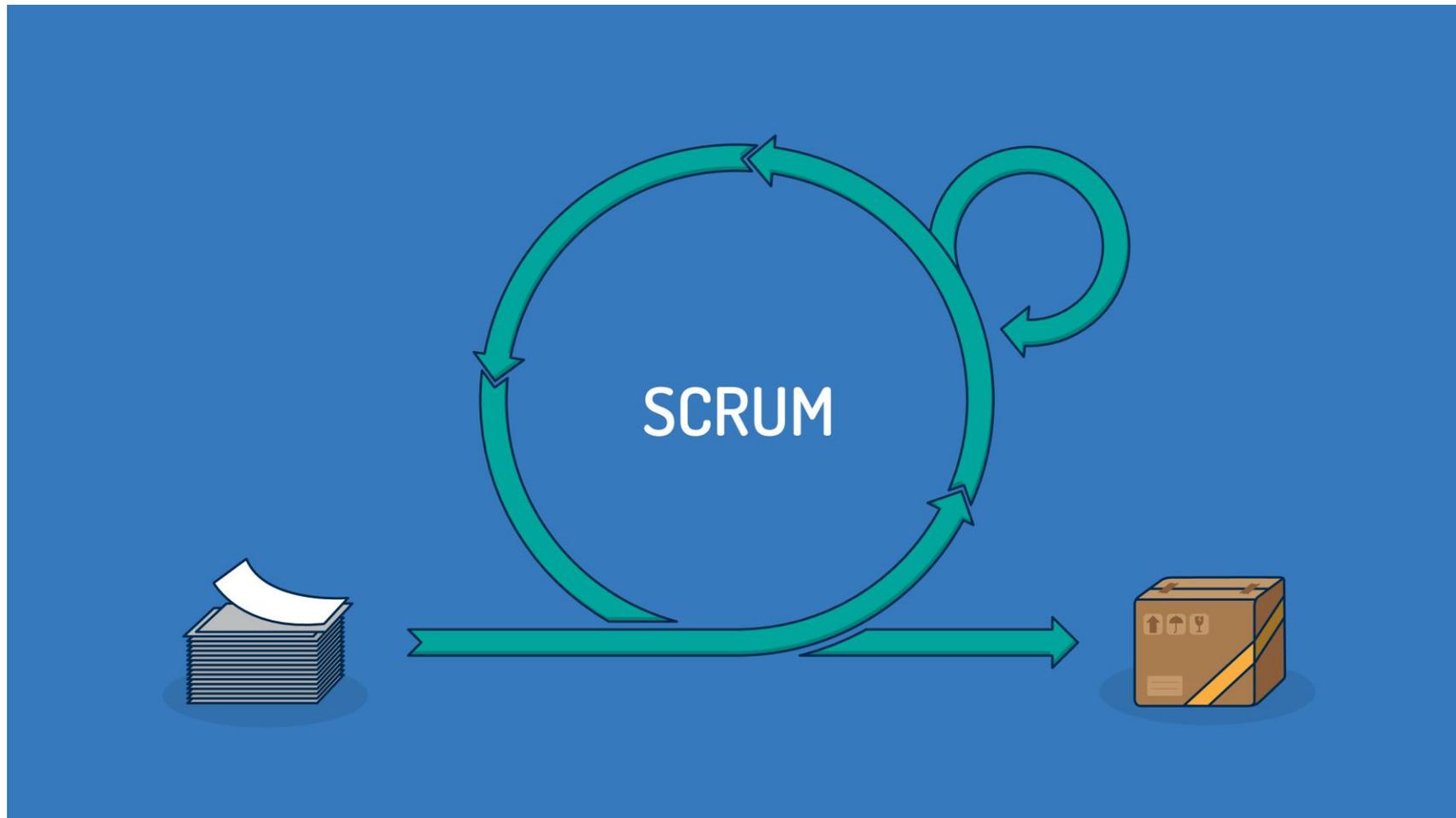
Julian M. Bass. (2022). *Agile Software Engineering Skills*. Springer. <https://www.agileskillsbook.com/> 2022, to appear.

BUILDING SOFTWARE WITHOUT A PLAN

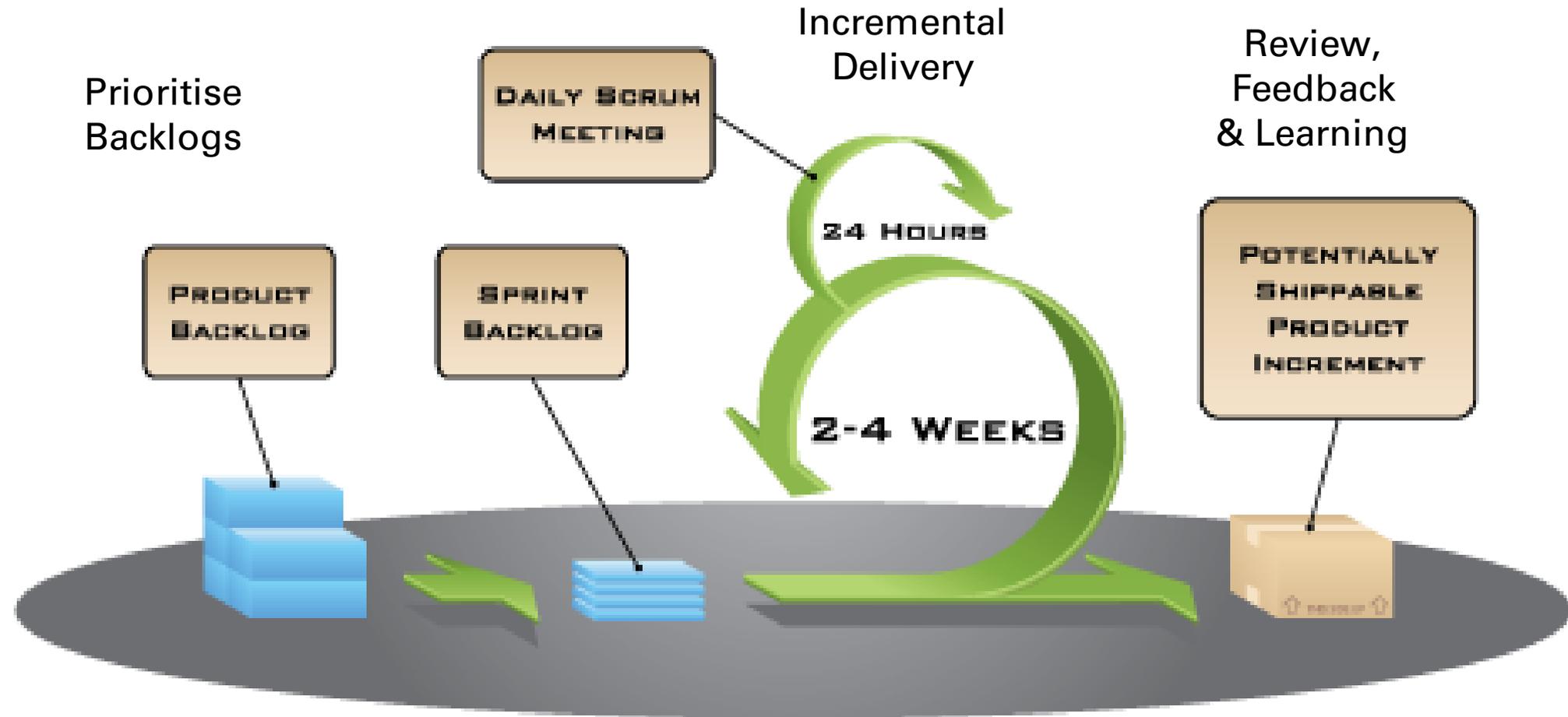
- Agile methods (different flavours) de facto approach in information systems development
- Not NO plan; but short(er) planning windows
- Focus on value, customer dialogue, collaboration
- Small multi-functional self-organising teams



AGILE – KEY FEATURES



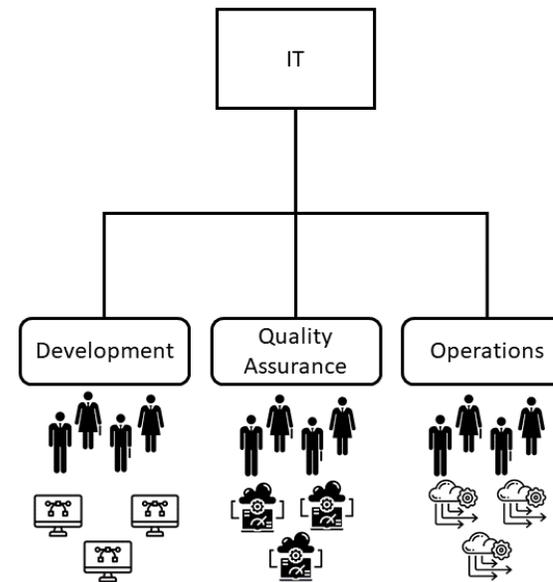
AGILE – KEY FEATURES



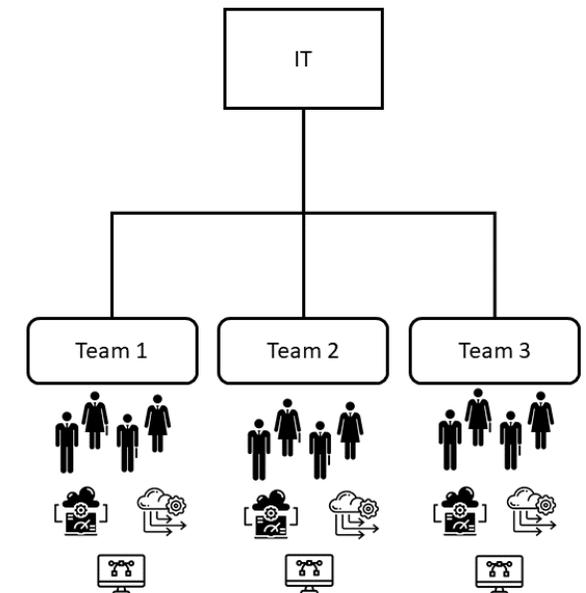
SCALING AGILE

- Small multi-functional self-organising teams
- How do you coordinate cooperating teams?
- Distance?
 - Geographical, temporal, cultural

A) Conventional Team Structure



B) Self-organising Team Structure

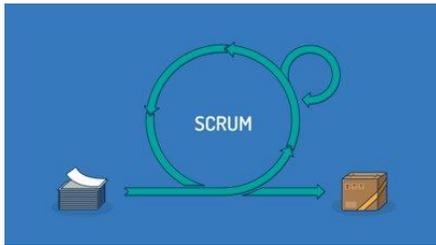


© Copyright, Julian M. Bass. (2022). *Agile Software Engineering Skills*. Springer. <https://www.agileskillsbook.com/> 2022, to appear.

CULTURE

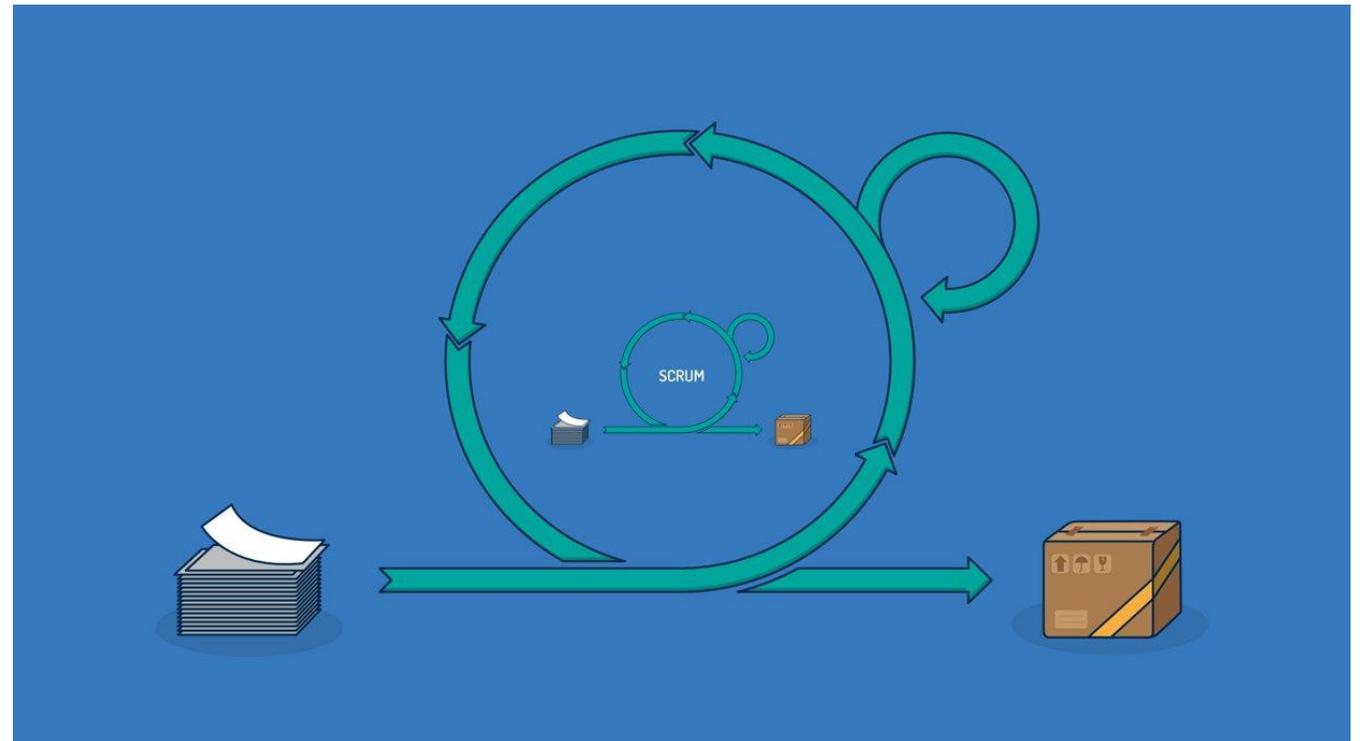
- Agile is a mindset, an approach
- Not a rule book or set of instructions
- Top down
 - "C" suite decision to go agile
- Bottom up
 - Teams themselves decide to collaborate
- Hybrid
 - Agile within annual budget cycles
- Lean
 - Commitment to quality
 - Flow
 - Minimise waste
 - End-to-end value

INTER-TEAM COORDINATION



Sprint Backlog

Potentially
Shippable
Product

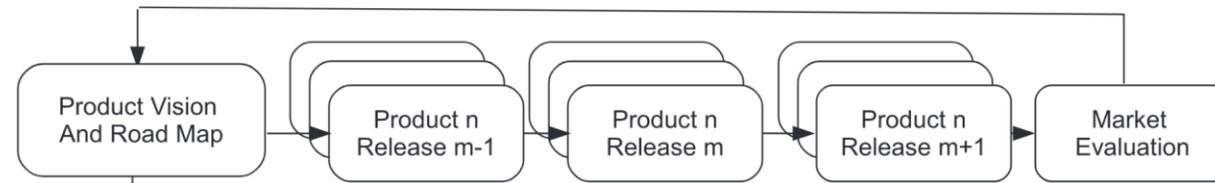


Product Backlog

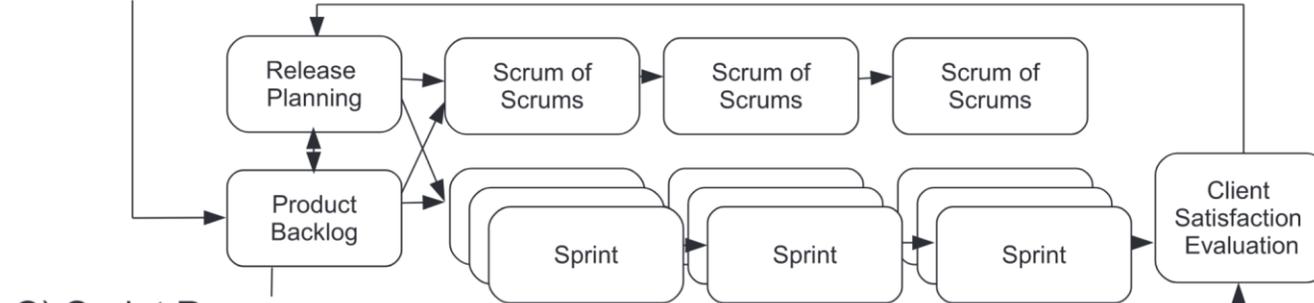
Product
Release

INTER-TEAM COORDINATION

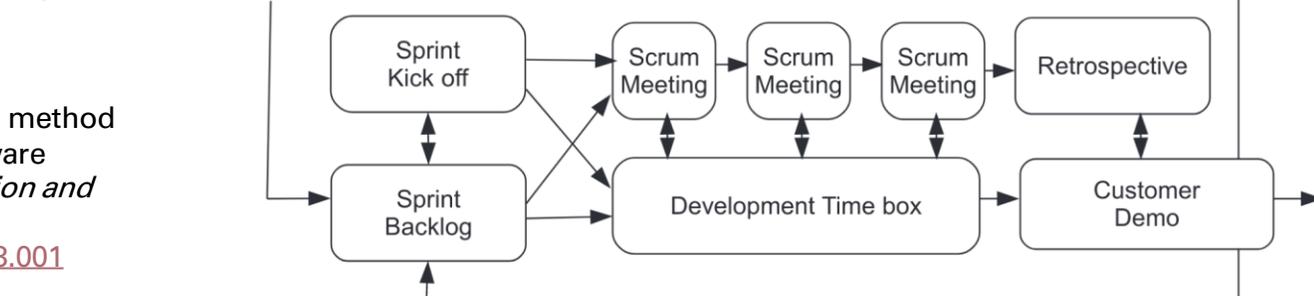
A) Development Programme Process



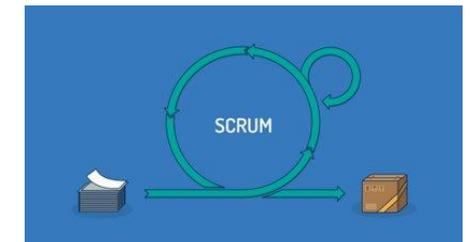
B) Product Release Process



C) Sprint Process

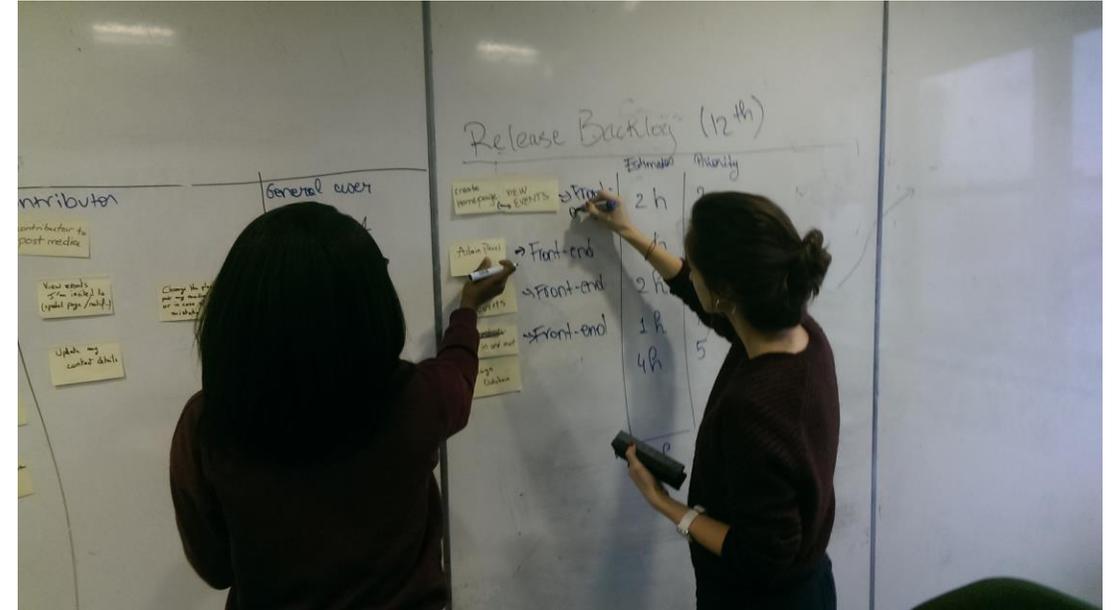


Bass, J. M. (2016). Artefacts and agile method tailoring in large-scale offshore software development programmes. *Information and Software Technology*, 75, 1–16.
<https://doi.org/10.1016/j.infsof.2016.03.001>



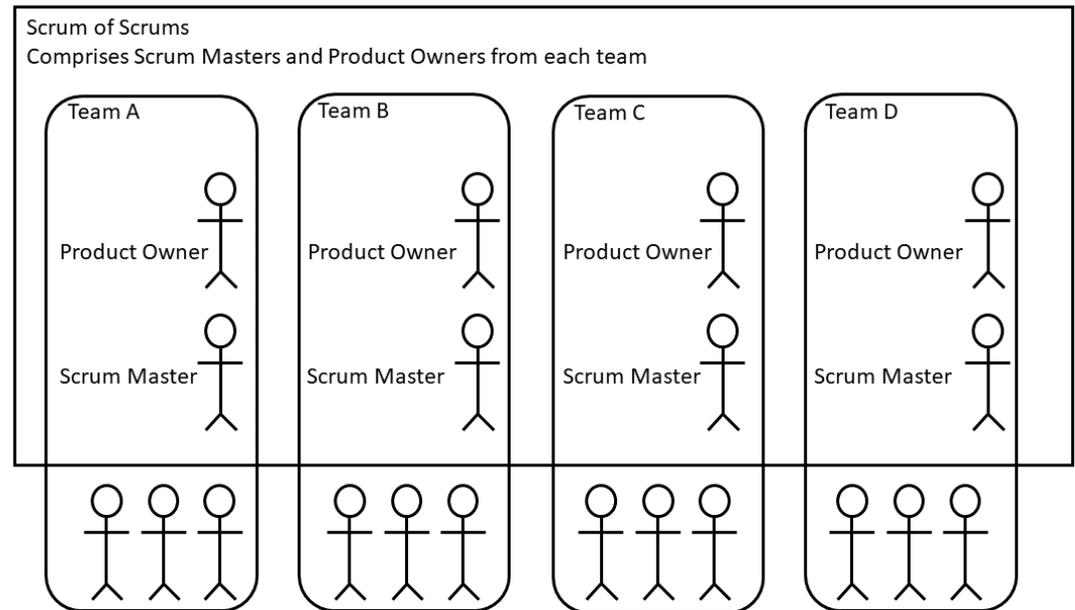
FRAMEWORKS

- Scrum of scrums
- SAFe
- LeSS
- Spotify (culture not a framework!)



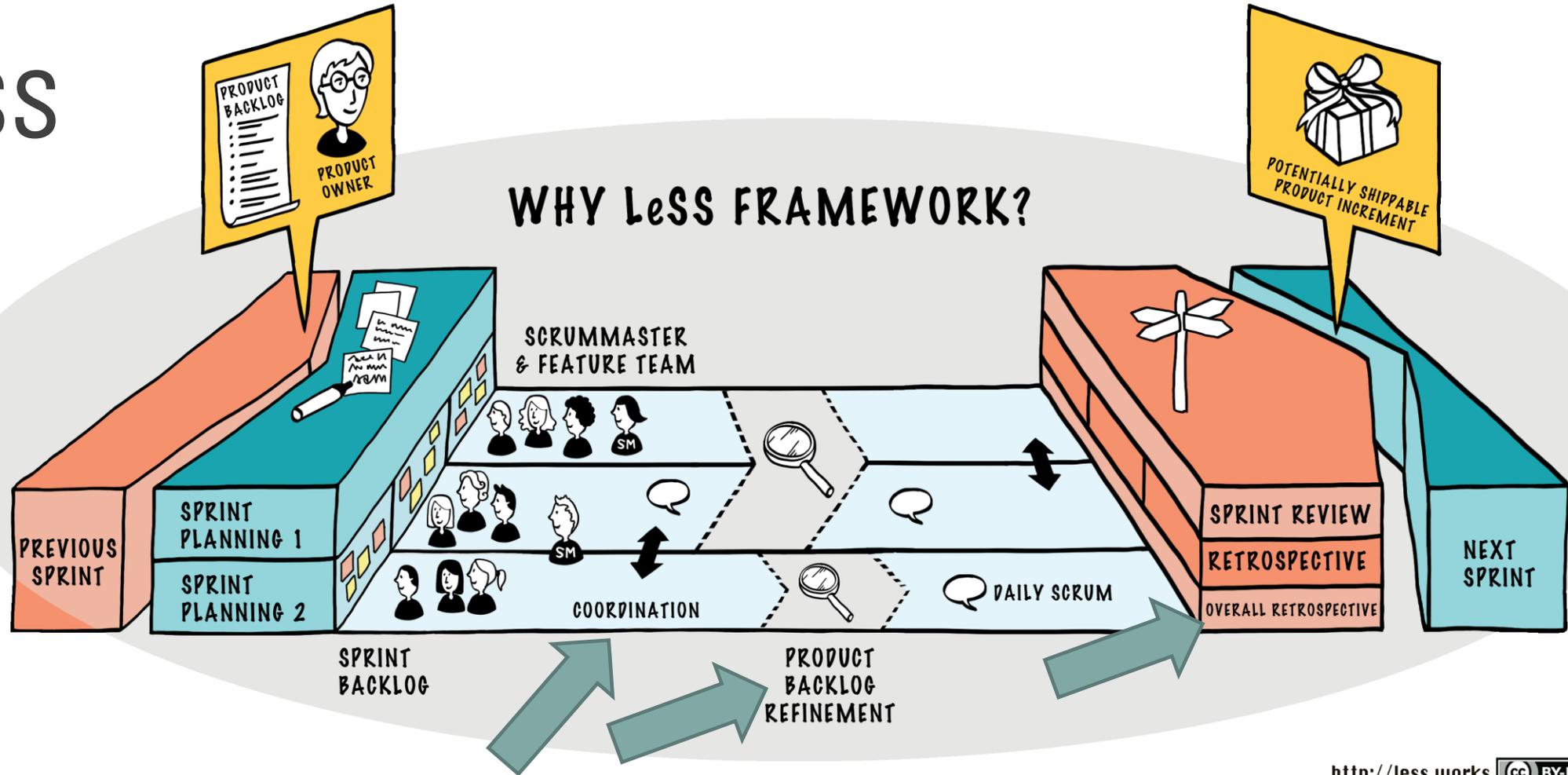
FRAMEWORKS

- Scrum of scrums
 - Create new team of Scrum Masters
 - But quickly get too big ¹
 - But quickly Scrum of Scrum meetings take too long
 - Coordination: "Let the teams figure it out"



¹ Bass, J. M. (2015). How product owner teams scale agile methods to large distributed enterprises. *Empirical Software Engineering*, 20(6), 1525–1557. <https://doi.org/10.1007/s10664-014-9322-z>

LESS



<http://less.works>

The LeSS Company B.V. (n.d.). *LeSS Framework*. Large Scale Scrum (LeSS). Retrieved 17 November 2022, from <https://less.works/less/framework>

FRAMEWORKS...



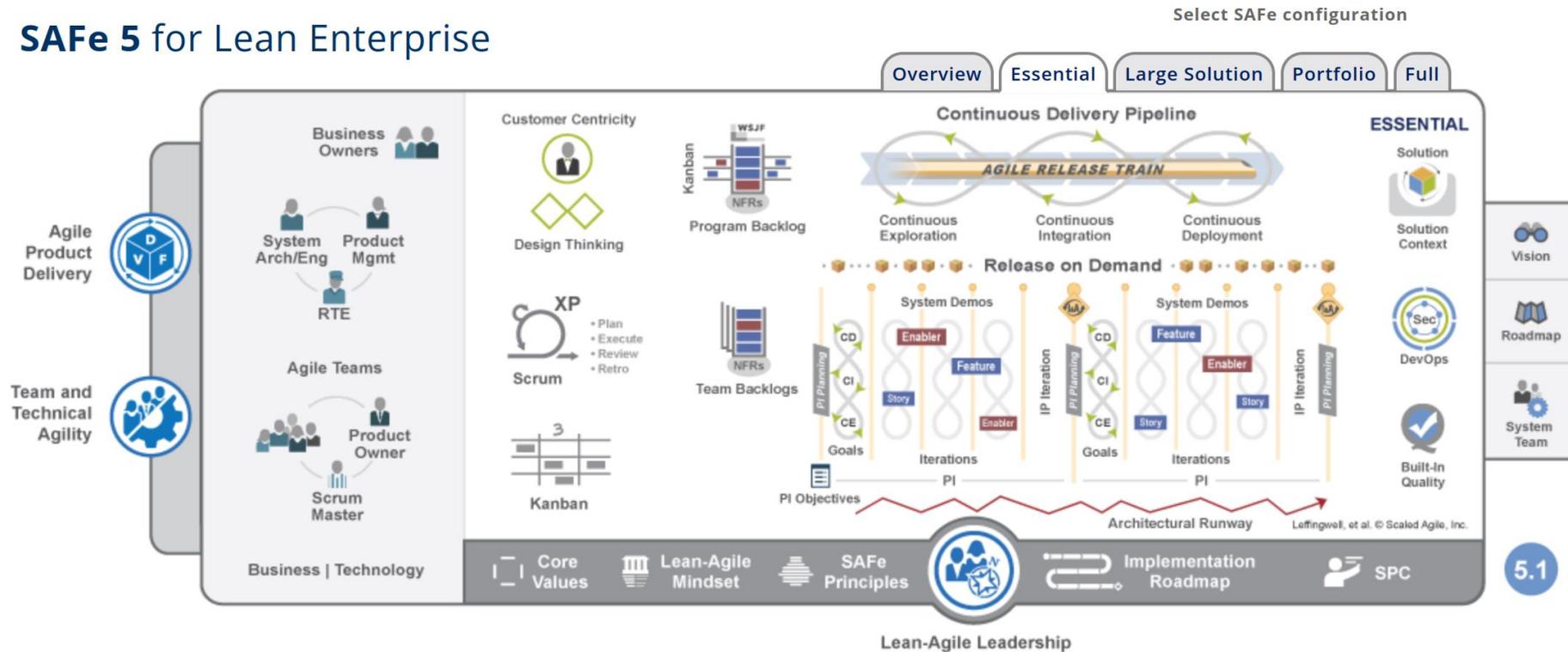
Not enough detailed advice?



Let's throw everything at it!

SAFE

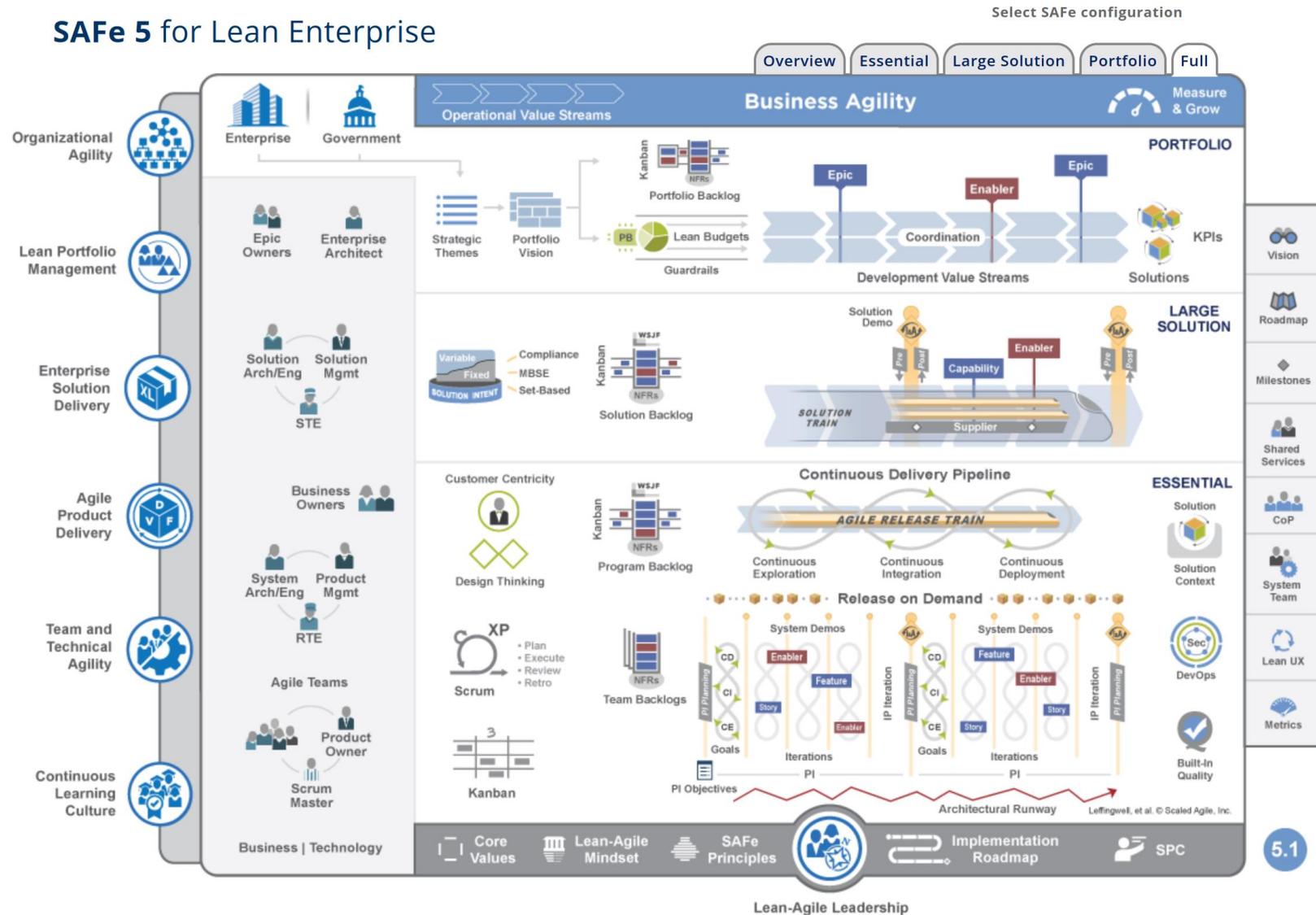
SAFe 5 for Lean Enterprise



Scaled Agile Inc. (2021). *SAFe 5.0 Framework*. Scaled Agile Framework.
<https://www.scaledagileframework.com/>

SAFe

SAFe 5 for Lean Enterprise



Scaled Agile Inc. (2021). *SAFe 5.0 Framework*. Scaled Agile Framework.
<https://www.scaledagileframework.com/>

FRAMEWORKS...



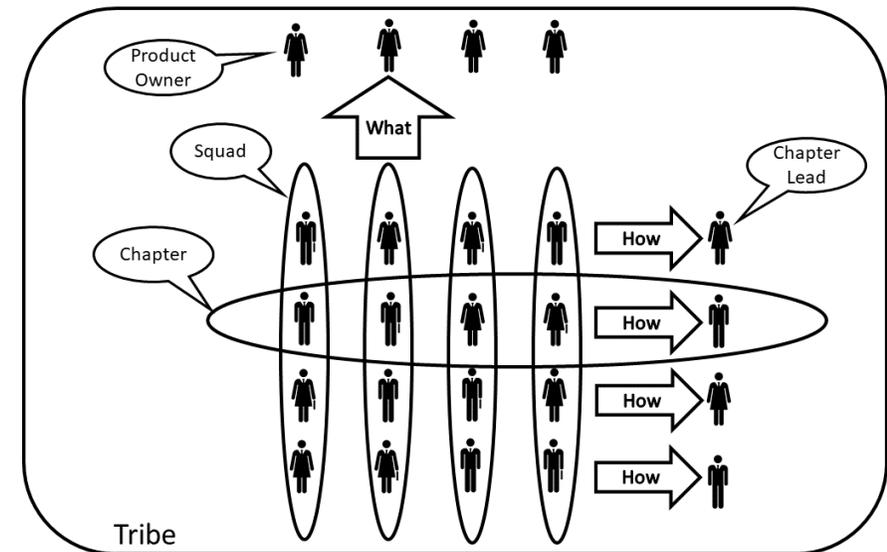
Too much detail?



Grow Your Own!

FRAMEWORKS

- Spotify Culture
 - Tribe works on product
 - Multi-functional squads
 - Chapters for skills specialisms (Requirements, test, DevOps)



Salameh, A., & Bass, J. (2018). Influential Factors of Aligning Spotify Squads in Mission-Critical and Offshore Projects – A Longitudinal Embedded Case Study. In M. Kuhrmann, et al. (Eds.), *Product-Focused Software Process Improvement* (Vol. 11271, pp. 199–215). Springer International Publishing. https://doi.org/10.1007/978-3-030-03673-7_15

Salameh, A., & Bass, J. M. (2021). An architecture governance approach for Agile development by tailoring the Spotify model. *AI & SOCIETY*. <https://doi.org/10.1007/s00146-021-01240-x>

SOFTWARE ARCHITECTURE

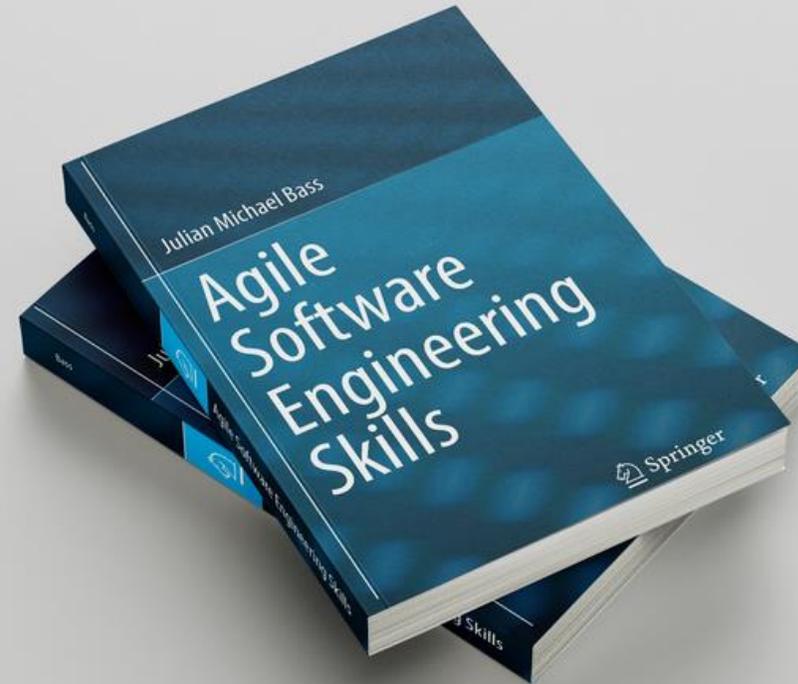
- Use architecture to loosely couple inter-team coordination
 - Siemens Healthineers, medical image processing API, used on all scanners
- Spotify model
 - Devolve architecture to mirror product owner team
 - Architecture governance team operating like scrum of scrums (architects from each team)

KEY TAKEAWAYS

- Grow your own
 - Empower participants to design processes
 - Fail quick – fail small
 - Incrementally adopt new practices
- Use vanilla role certifications
 - Plenty of training
- Growing Projects
 - Scrum of scrums
- Mid-sized or Large projects
 - LeSS
 - LeSS but not enough practices??
 - Spotify agile culture (not framework with rules)
- Enterprise Agile
 - SAFe but too many practices??

SUMMARY

- Building Software without a Plan
- Scaling Agile
- Culture
- Frameworks
- Architecture



Julian M. Bass. (2022). *Agile Software Engineering Skills*. Springer. <https://www.agileskillsbook.com/> 2022, to appear.