



Why 47% of Agile Transformations Fail

Jeff Sutherland, Co-Creator of Scrum and Creator of Scrum@Scale



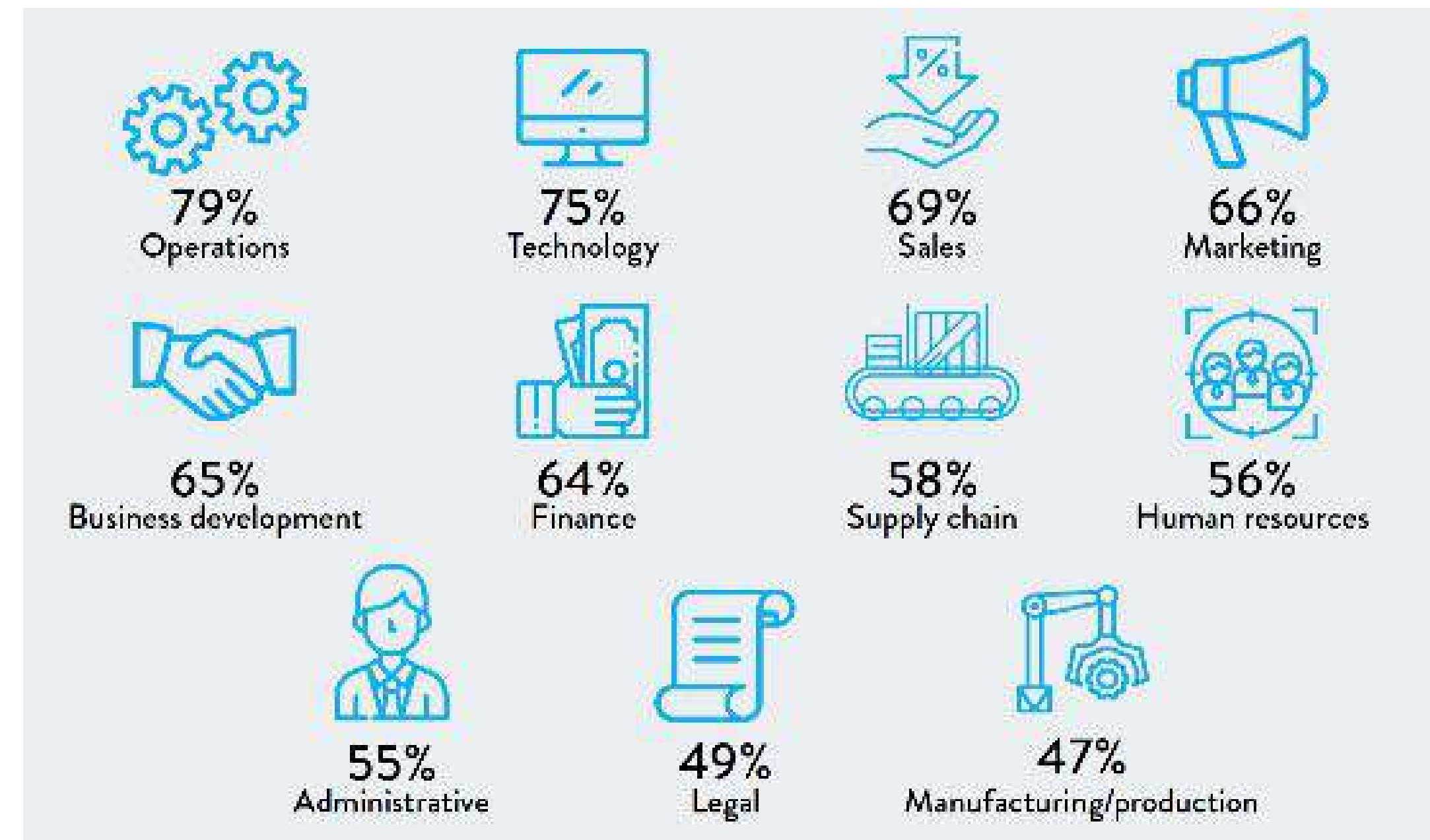
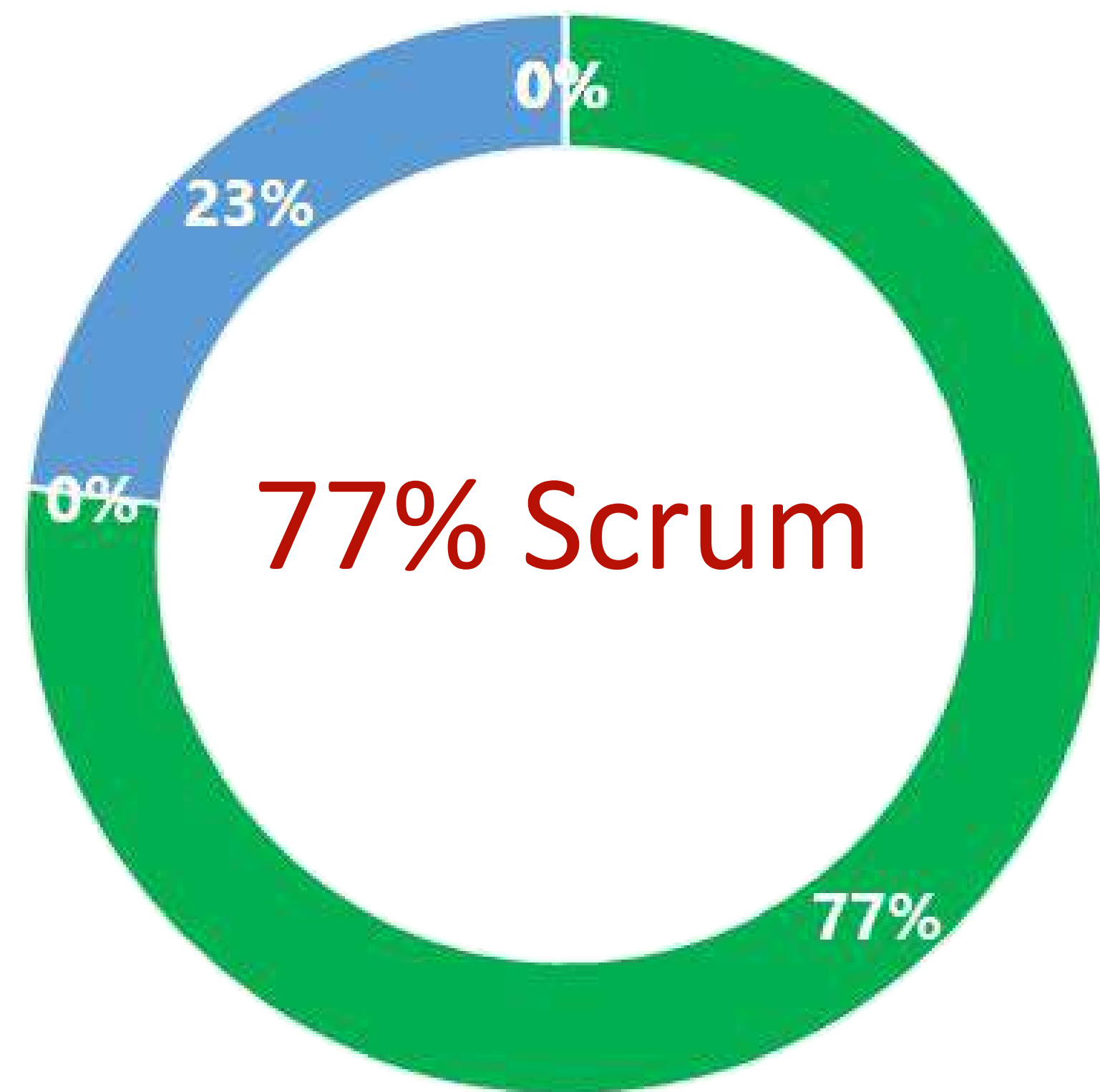
SCRUM INC HAS A HISTORY OF TRANSFORMING ORGANIZATIONS

AGILE AND SCRUM ARE CHANGING THE WORKPLACE. **WE PIONEERED THAT CHANGE.**

Scrum Inc. was founded in 2006 by Dr. Jeff Sutherland, co-creator of Scrum and Scrum@Scale and signer of the Agile Manifesto. We have helped hundreds of companies and thousands of teams fundamentally evolve to innovate faster, deliver value, and thrive in an ever-changing world. We have specialized courses for Scrum in Human Resources, Government, Construction, and Hardware in addition to Software. We have global trainer programs for Scrum and Scrum@Scale.



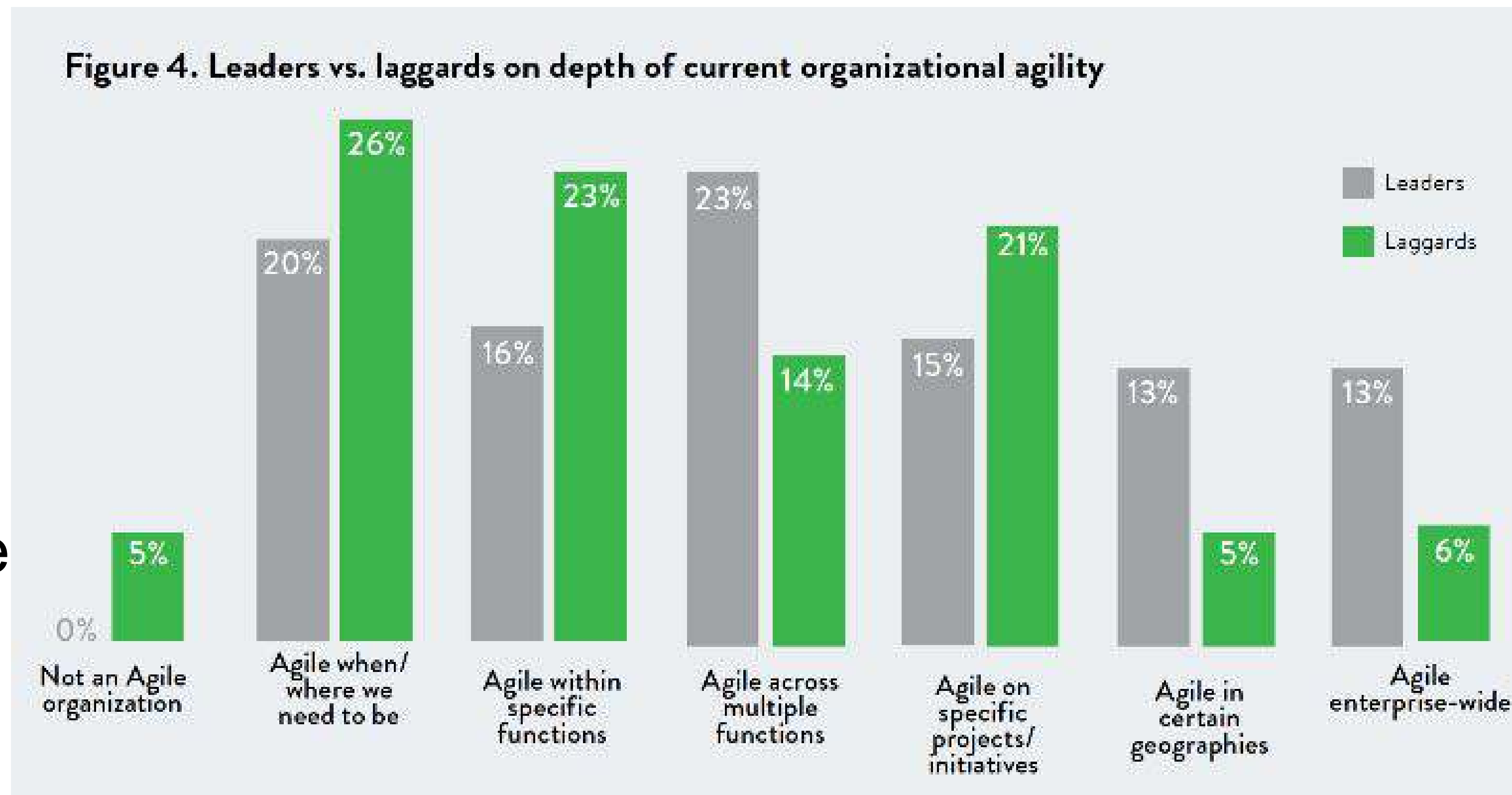
Agile Transformations are 77% Scrum



Deployed Widely Throughout the Enterprise

Source: THE ELUSIVE AGILE ENTERPRISE: How the Right Leadership Mindset, Workforce and Culture Can Transform Your Organization. Forbes 2018

Where Does Success Come From?



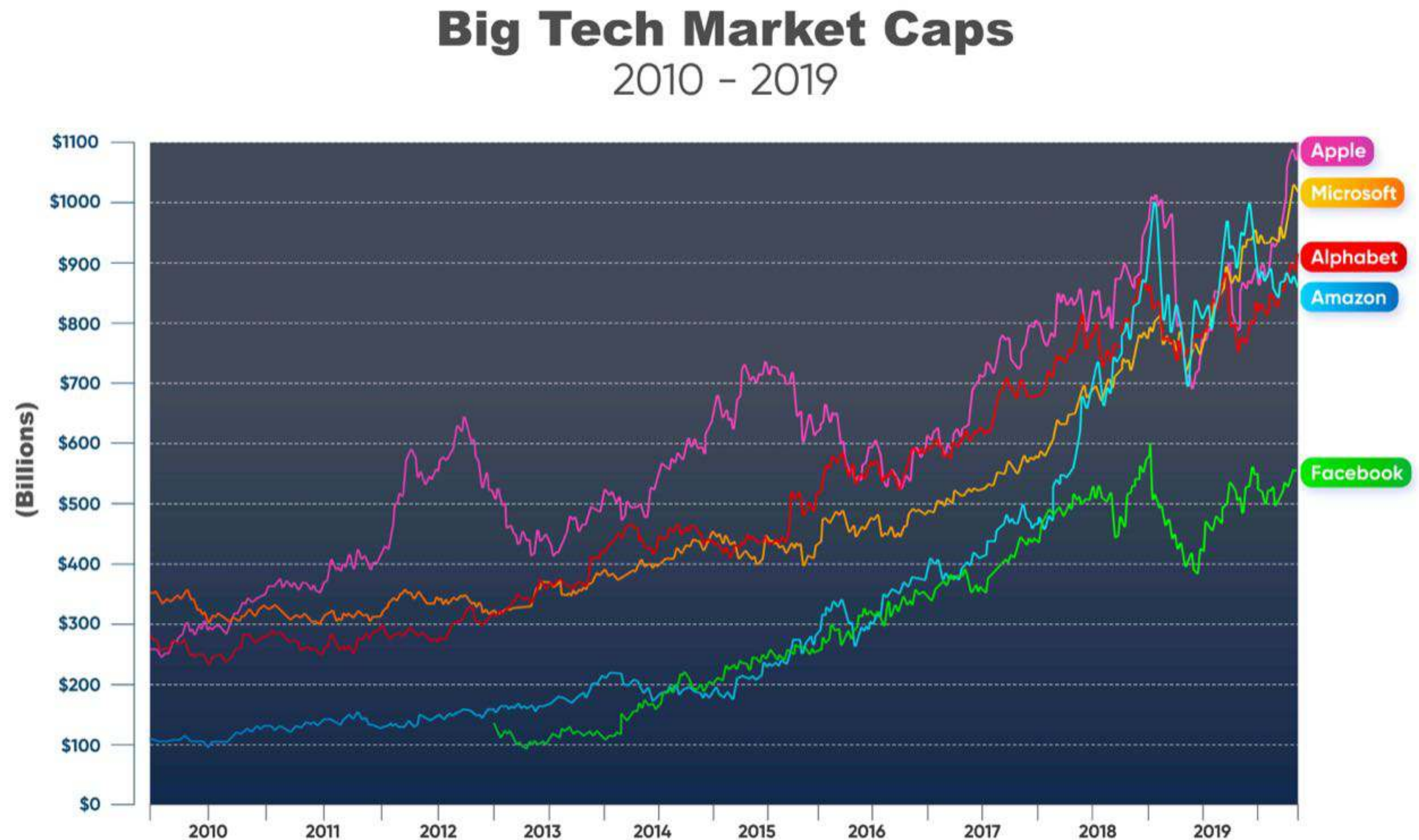
0% of leading companies are not agile!

The most successful companies deploy Scrum enterprise wide.

Source: THE ELUSIVE AGILE ENTERPRISE: How the Right Leadership Mindset, Workforce and Culture Can Transform Your Organization. Forbes 2018





















What Does Success Look Like?

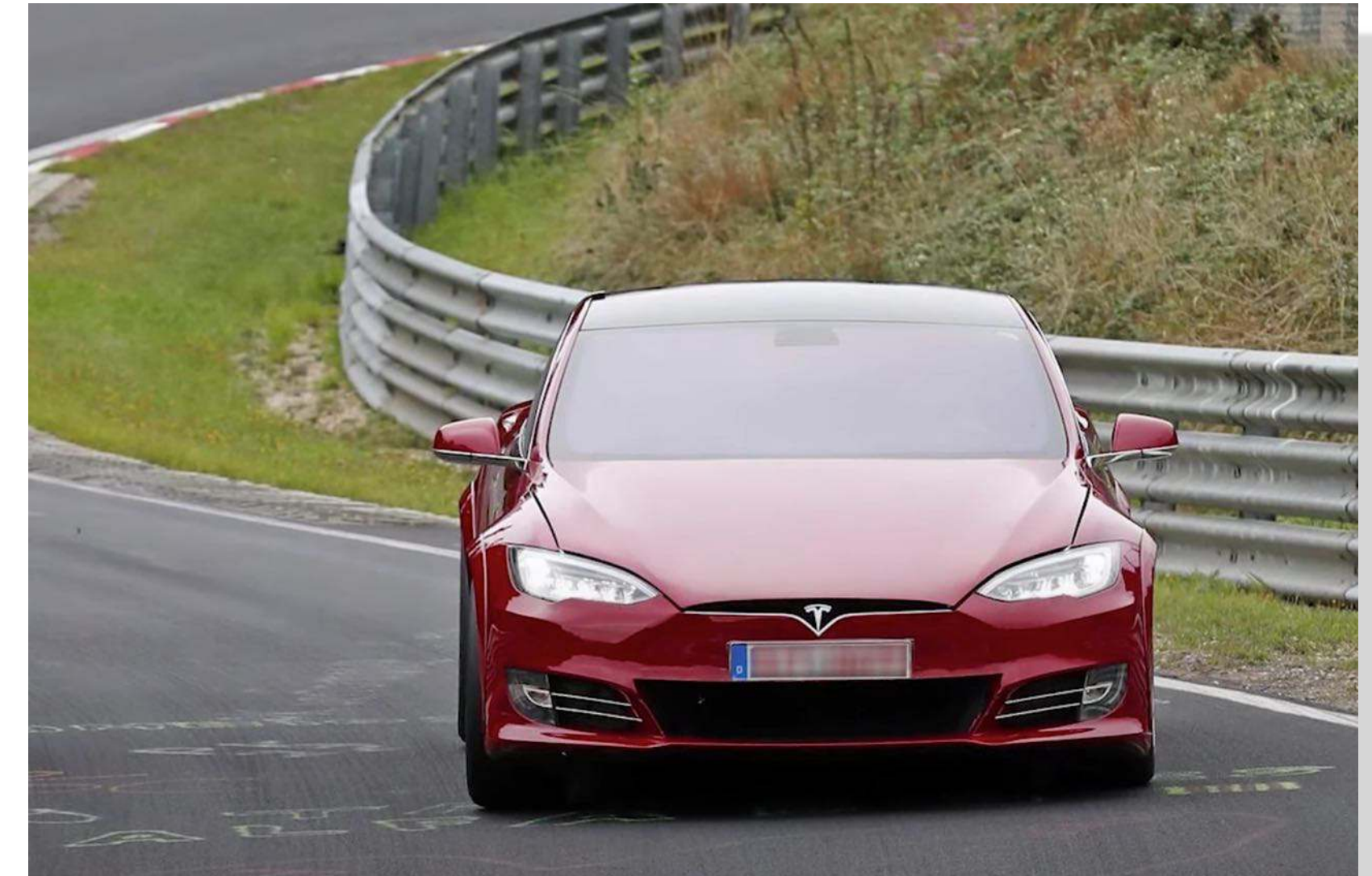
- In Aug. 2018, Apple became the first company in history to reach a \$1 trillion valuation. Hit \$2T on 18 Aug 2020.
- One month later, Amazon joined the club (though has since fallen back to the billions), and on April 2019, so did Microsoft.
- These are ALL Scrum companies



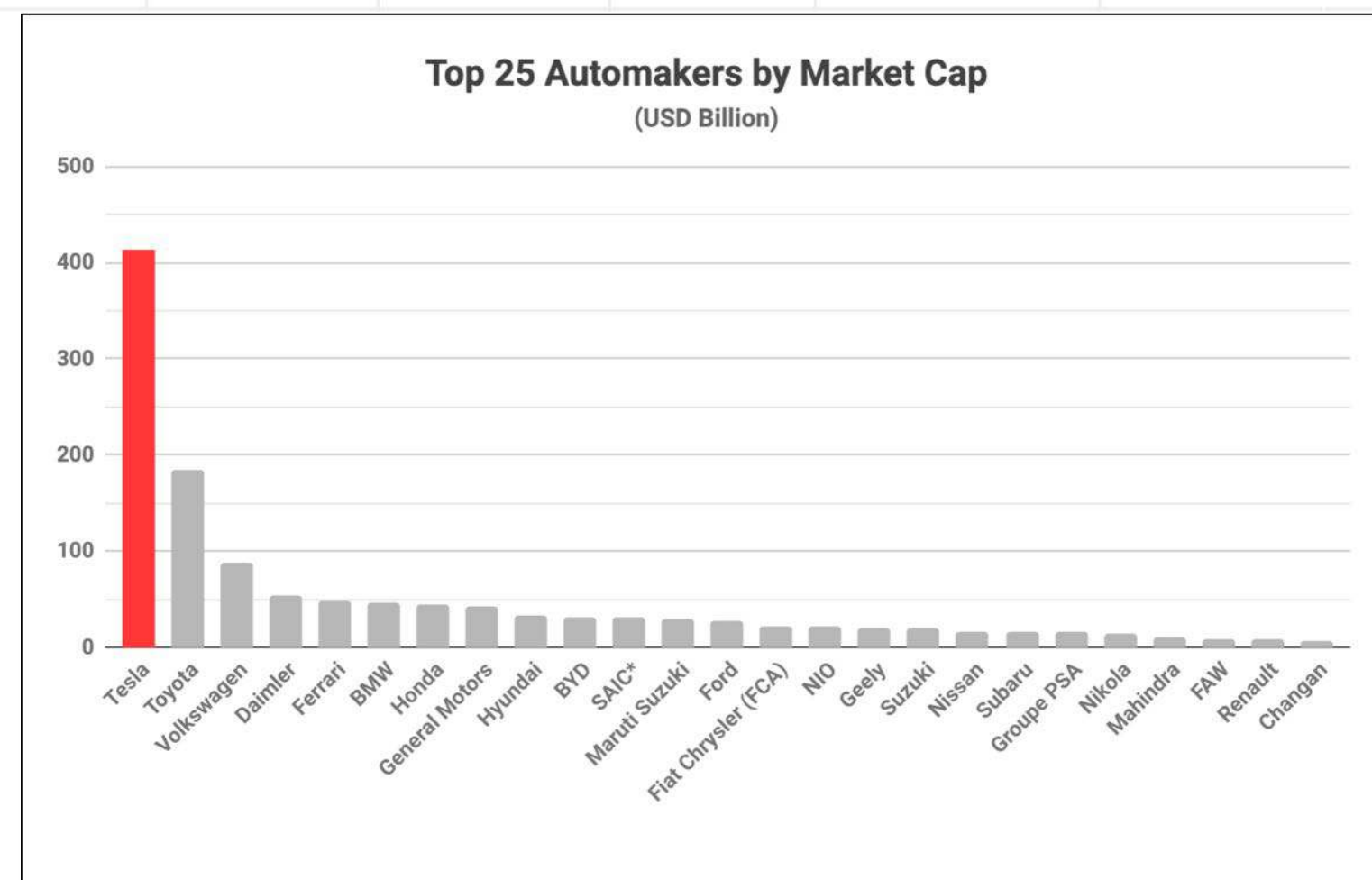
Agile is Disrupting All Domains

Tesla Effect impacts autos, utilities, and big oil

Rank	Company	Mkt Cap (USD \$B)	Change (USD \$B)	Chg %	Symbol	Price/Sh	Country
1	 Tesla	416.71	-0.50	-0.12%	TSLA	2,236.05 USD	 USA
2	 Toyota	185.01	0.18	0.10%	TM	133.69 USD	 Japan
3	 Volkswagen	88.64	-0.35	-0.39%	VOW.DE	152.20 EUR	 Germany
4	 Daimler	54.53	-0.15	-0.28%	DAI.DE	42.88 EUR	 Germany
5	 Ferrari	48.36	0.10	0.21%	RACE	195.92 USD	 Italy
6	 BMW	45.74	0.01	0.02%	BMW.DE	59.61 EUR	 Germany
7	 Honda	44.34	0.45	1.03%	HMC	25.62 USD	 Japan
8	 General Motors	42.98	0.49	1.15%	GM	30.03 USD	 USA
9	 Hyundai	34.18	1.69	5.20%	005380.KS	172,000 KRW	 South Korea
10	 BYD	32.11	-0.40	-1.22%	1211.HK	77.15 HKD	 China



Tesla Model S crushes Porsche Taycan's Nürburgring record.



The Machine that Builds the Machine

- **Process efficiency** on Tesla automotive assembly lines will be improved by at least 1000% and maybe 10000%. Elon Musk, Automotive News Daily Drive, 31 Jul 2020

SpaceX Disruption - DARPA Launch Challenge

- **DARPA Launch Challenge ended 2 March 2020 with a single participant remaining – Astra.**
- Despite time, weather, and location limitations, Astra produced a rocket and set up launch operations at Pacific Spaceport Complex - Alaska (PSC-A) after having received final target orbit information only 30 days before launch and payload upon arrival.
- Todd Master, DARPA Launch Challenge program manager said, "The preferred outcome was for us to see Astra accomplish two successful launches from two different locations within a short period of time. However, with Astra rapidly making it to launch day with minimal infrastructure and little knowledge of their launch conditions, we view the Challenge as achieving many of its goals."
- **Astra is a totally Scrum company trained by Scrum Inc. in Scrum@Scale Their goal is to build rockets 100 times faster than SpaceX.** Former SpaceX employees produce a new rocket every night with 3D printing and test new rockets every day at their Alemada test facility.



US Government Photo:
<https://www.darpa.mil/news-events/2020-03-03>

Leading Companies Must Improve Agility

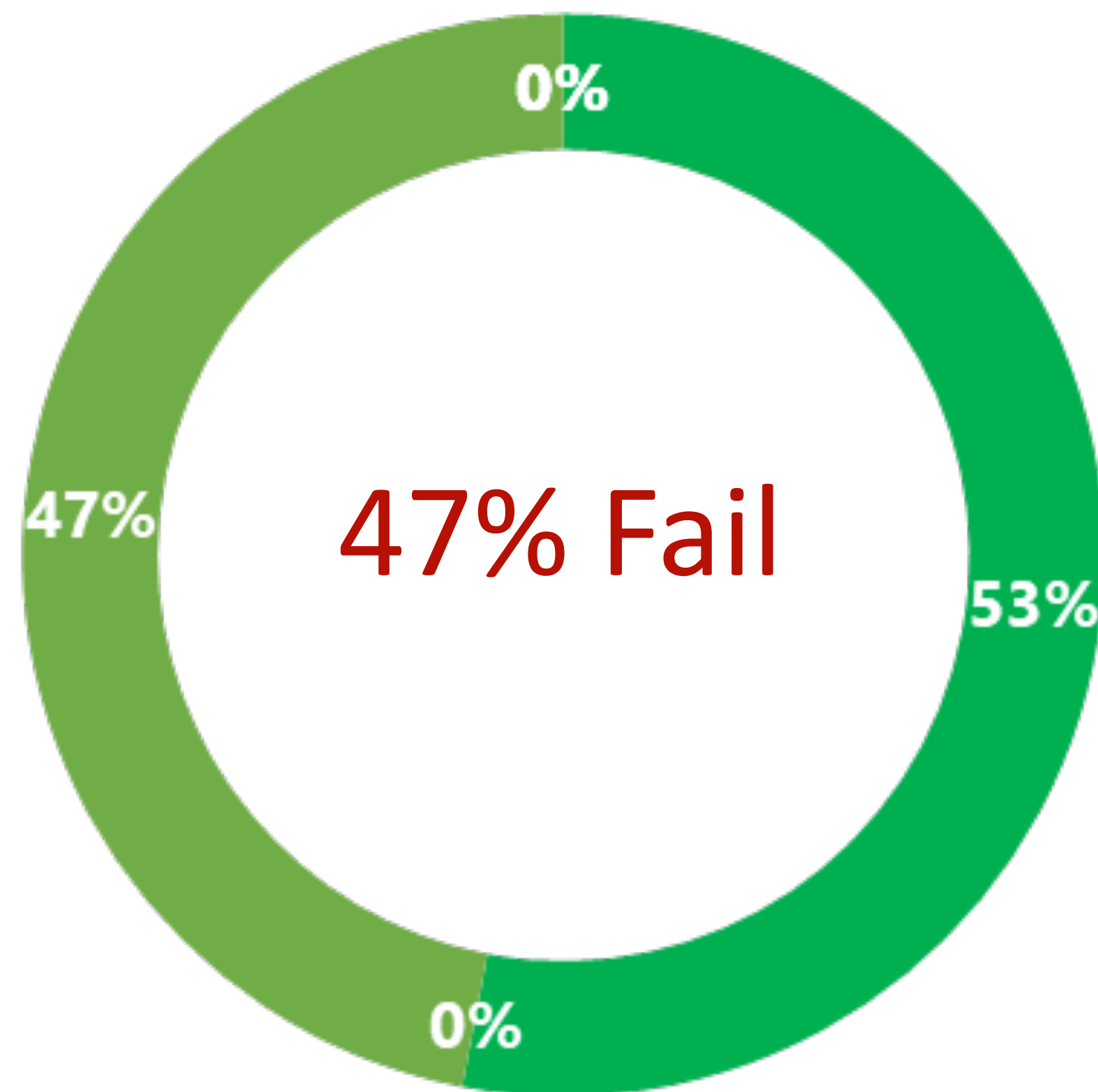
Only 17% of leading companies will be leaders 5 years from now.

“These companies — including organizations like Apple and Alphabet — continually find new sources of competitive advantage by reinventing their businesses and adapting to evolving market conditions.”

MIT Sloan Management Review [Research Highlight](#) January 09, 2020

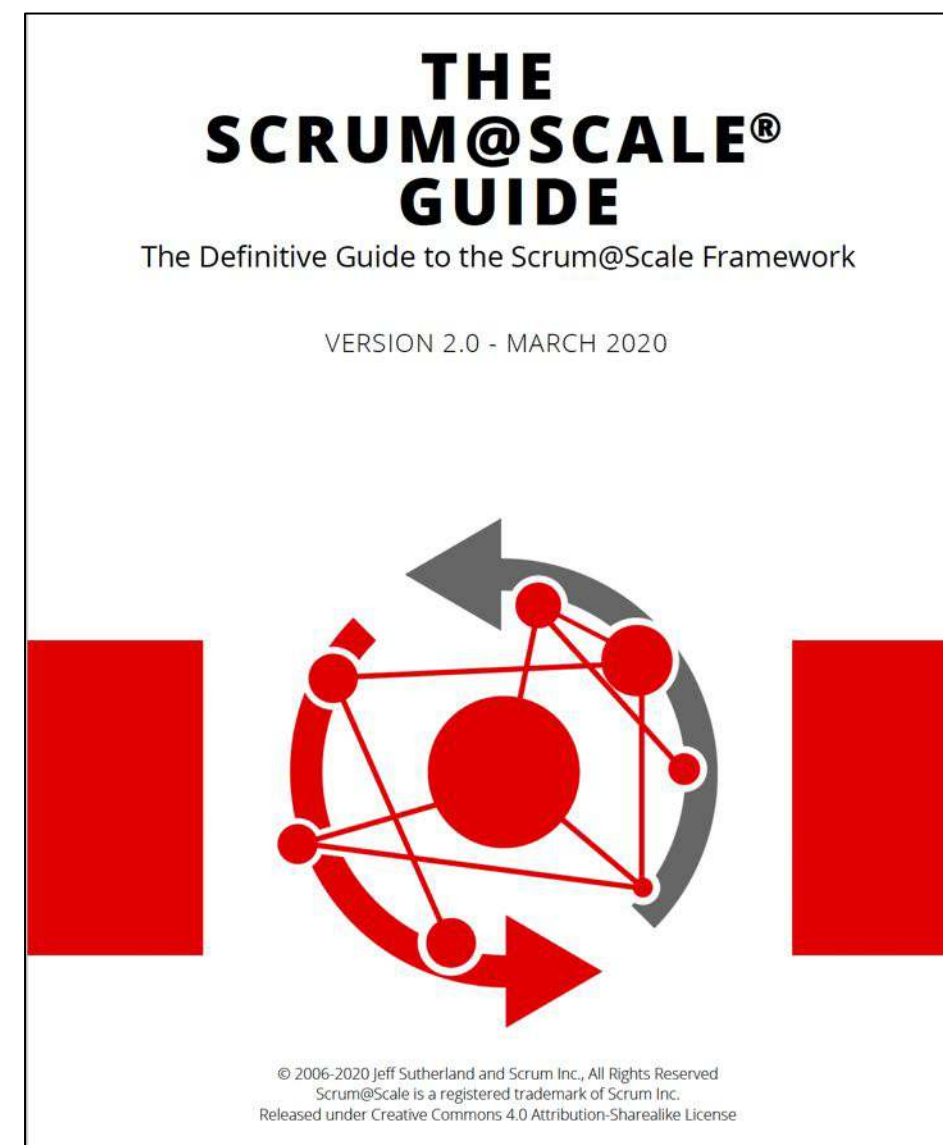
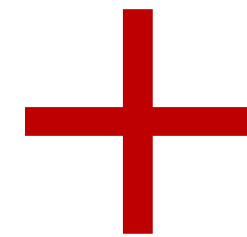
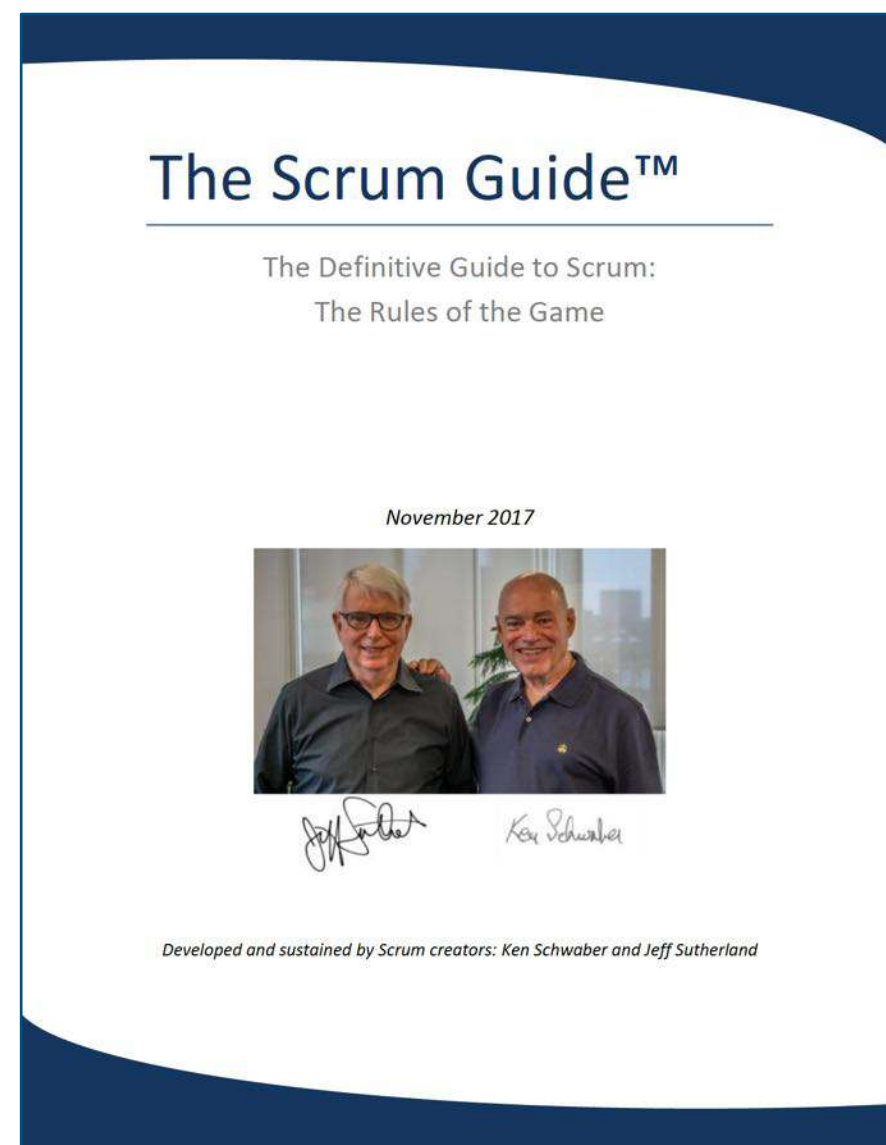


Agile Transformation Failure



Source: Forbes Insights and MIT Sloan Management Review

Introducing the Scrum@Scale Guide

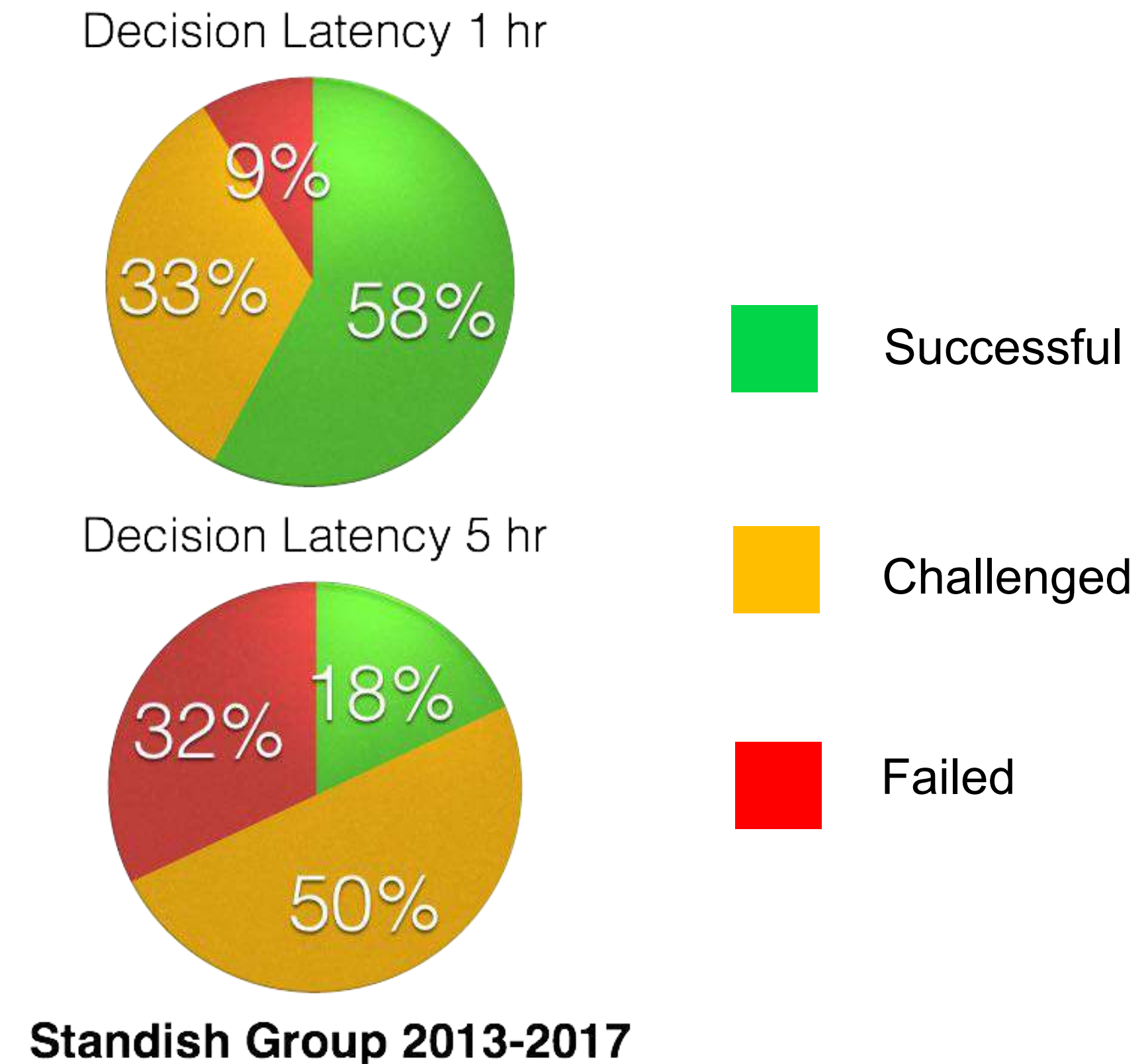
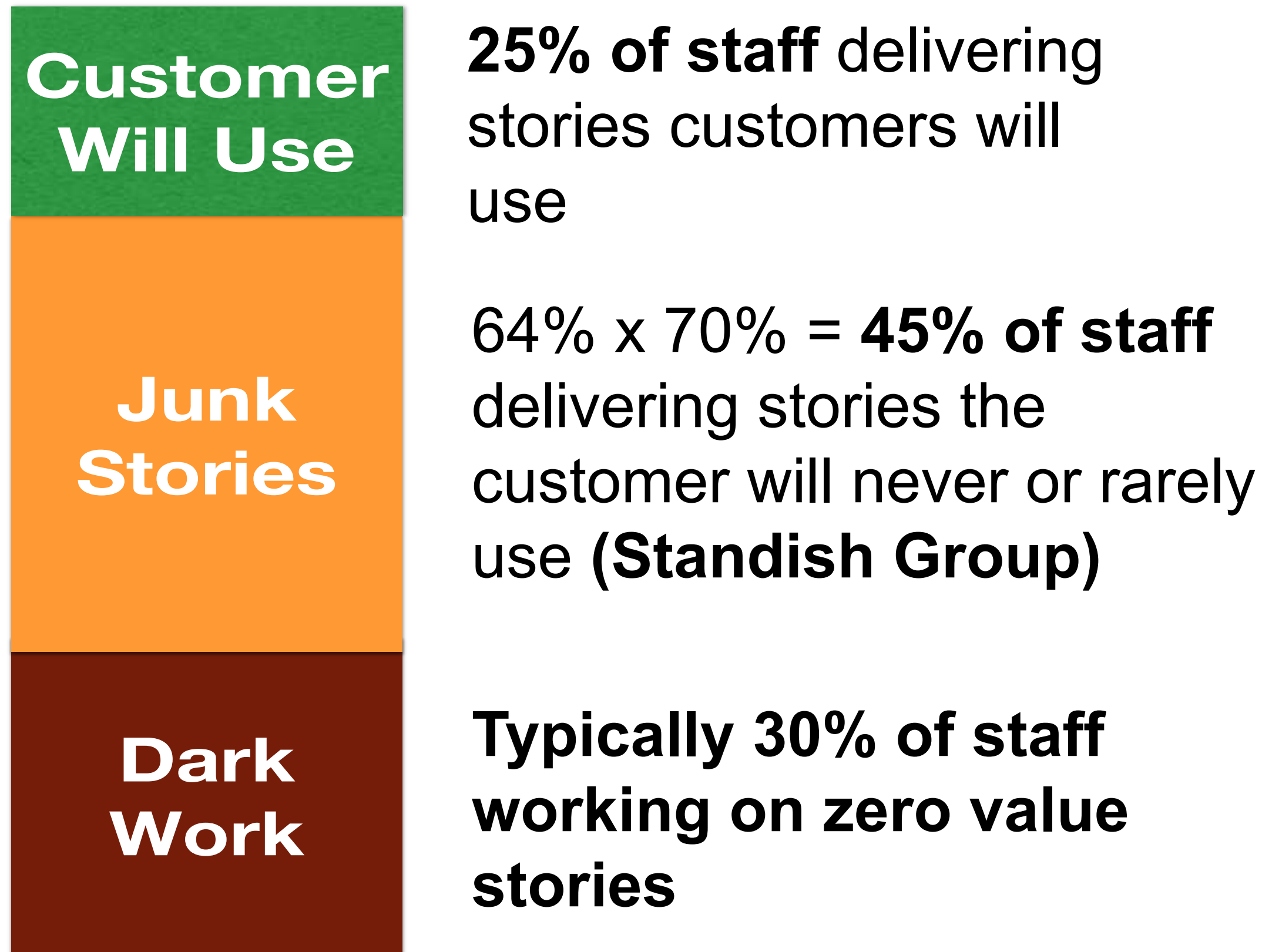


Addresses the three Mega-Issues:

- **#1 Prioritize:** Limited resources, ability to focus
- **#2 Deliver:** High-quality, working product is primary measure of progress
- **#3 Refactor:** Ability to change fast – product AND organization

Scrum@Scale Enables Focus Across the Organization

Reduce WIP, eliminate dark work, and focus on value / outcomes

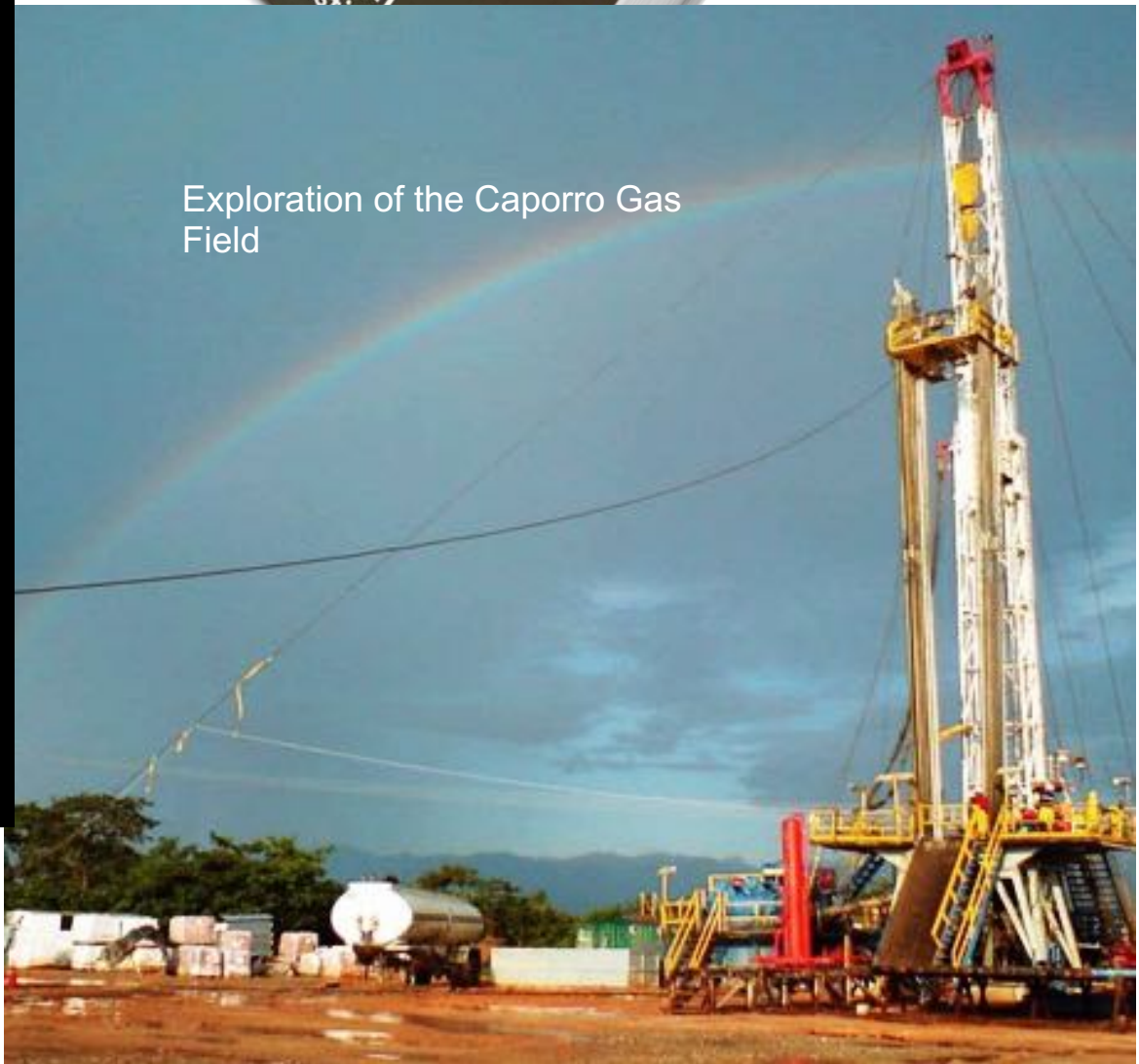
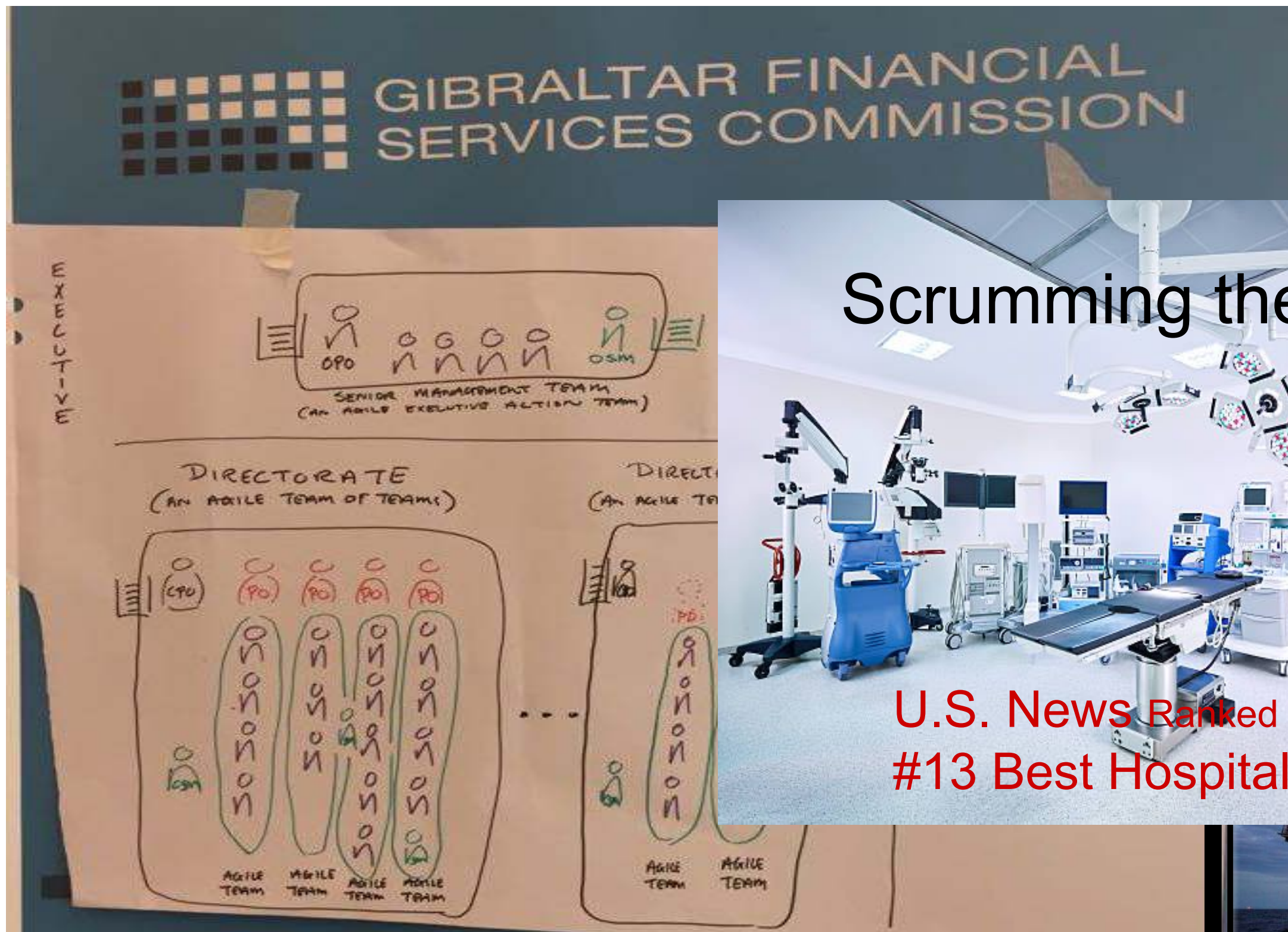


Source: Dr J Sutherland, Scrum.inc based on research by the Standish Group

Lack of direction causes staff to make up work.
Unwillingness to prioritize proliferates useless projects.
Delayed decision-making is the primary driver of project failure and budget overrun.

Genuinely generally applicable

For any type of work

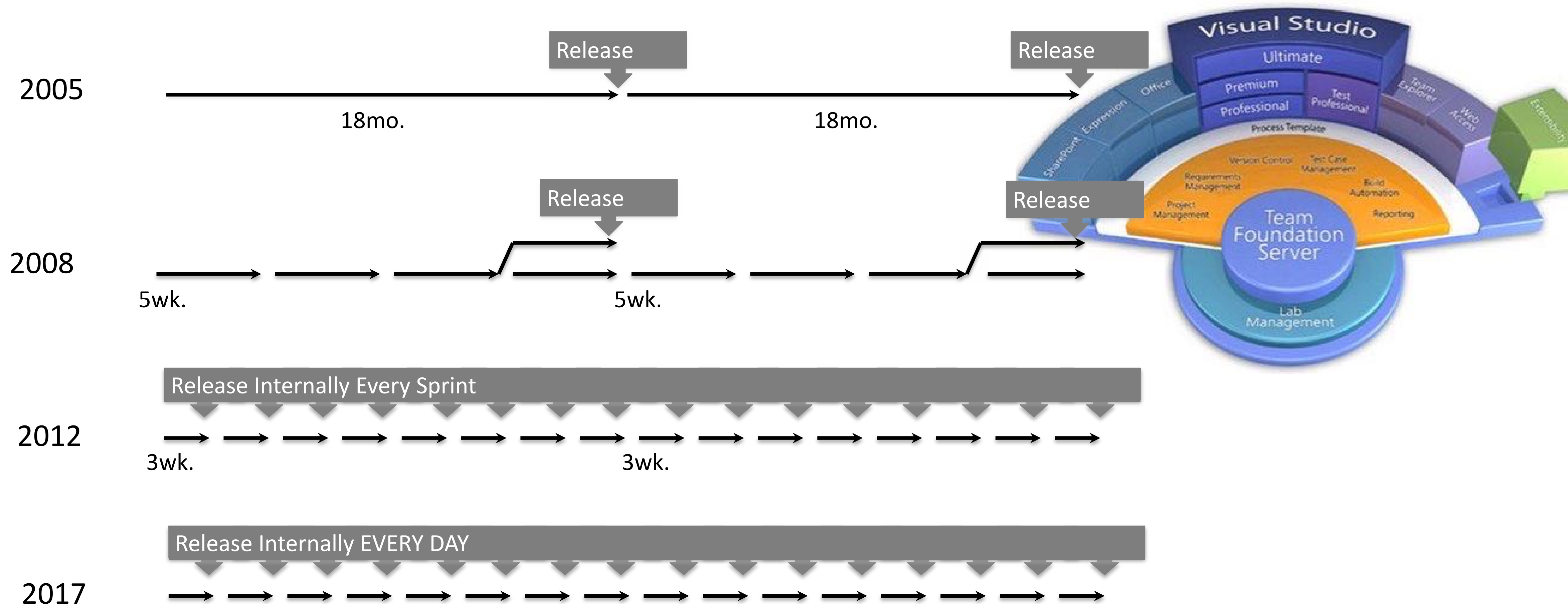


GIBRALTAR FINANCIAL SERVICES COMMISSION

Agile Financial Regulation

Agile Transformation that Works:

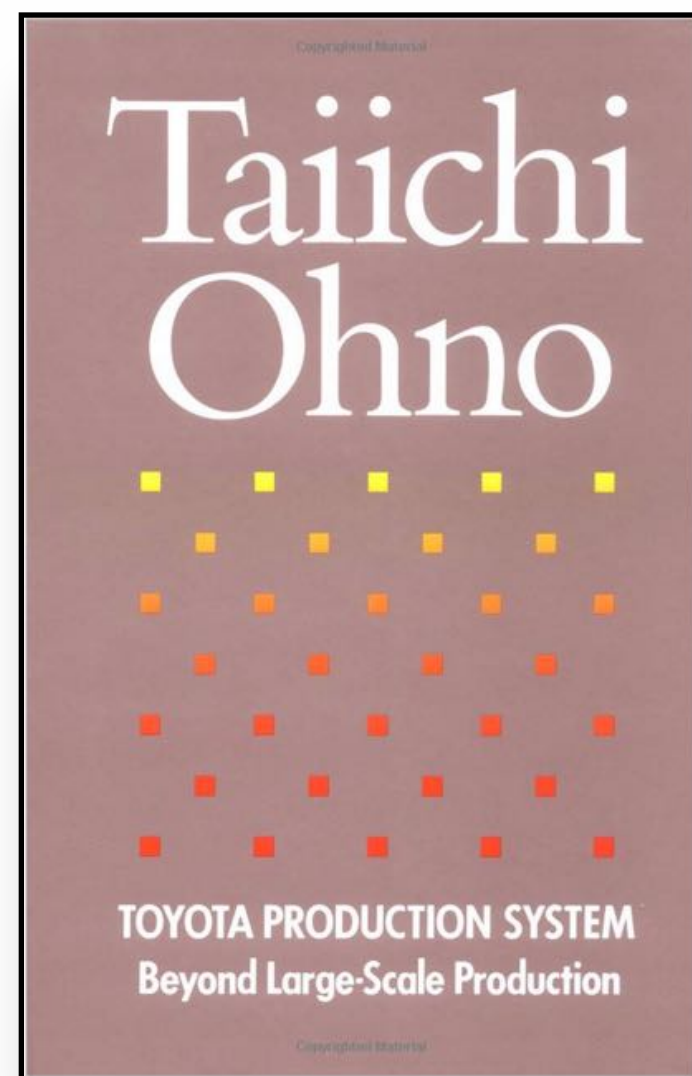
Microsoft Development Tools >3000 people



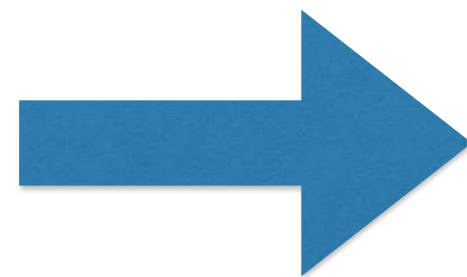
Source: Sam Guckenheimer and Neno Loje. Agile Software Engineering with Visual Studio. Microsoft Press, 2012.

Lean, Scrum, and Agile: The Connection

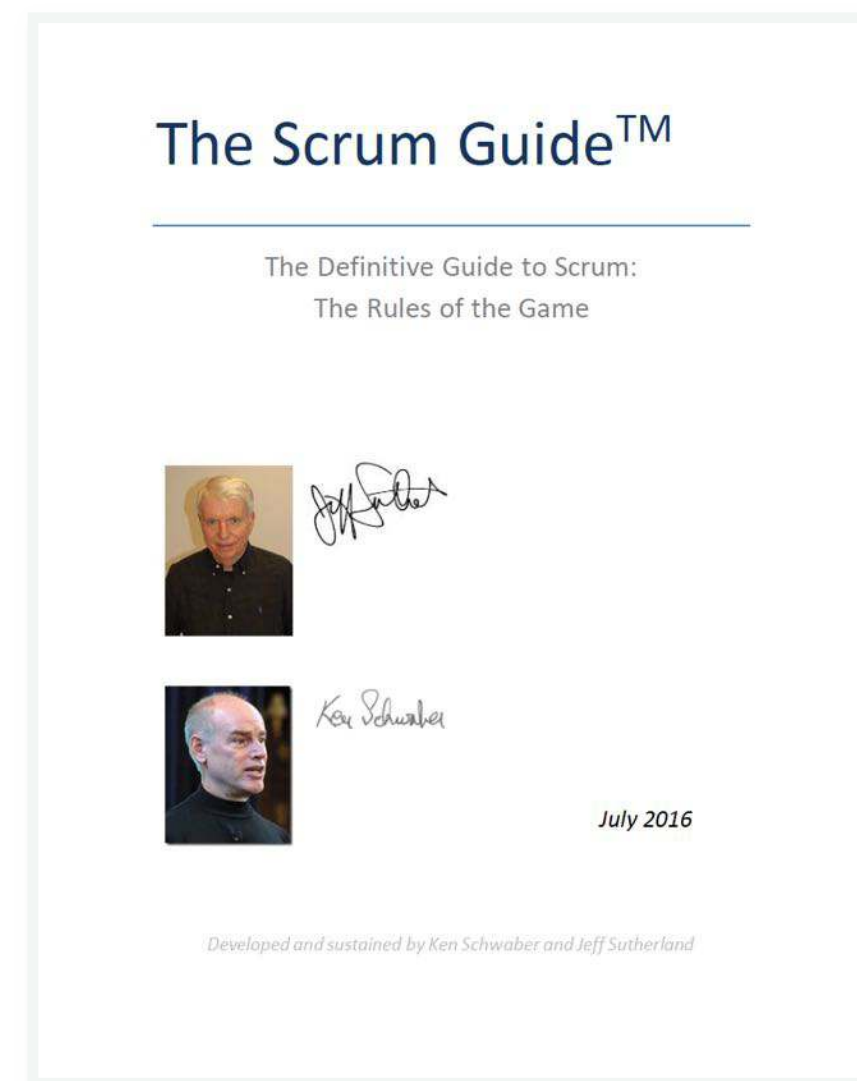
TPS 1950's



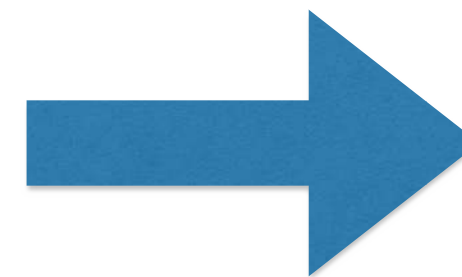
Inspired



Scrum 1990's



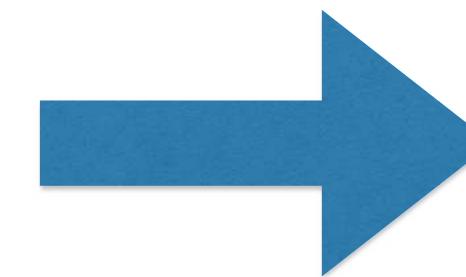
One Parent



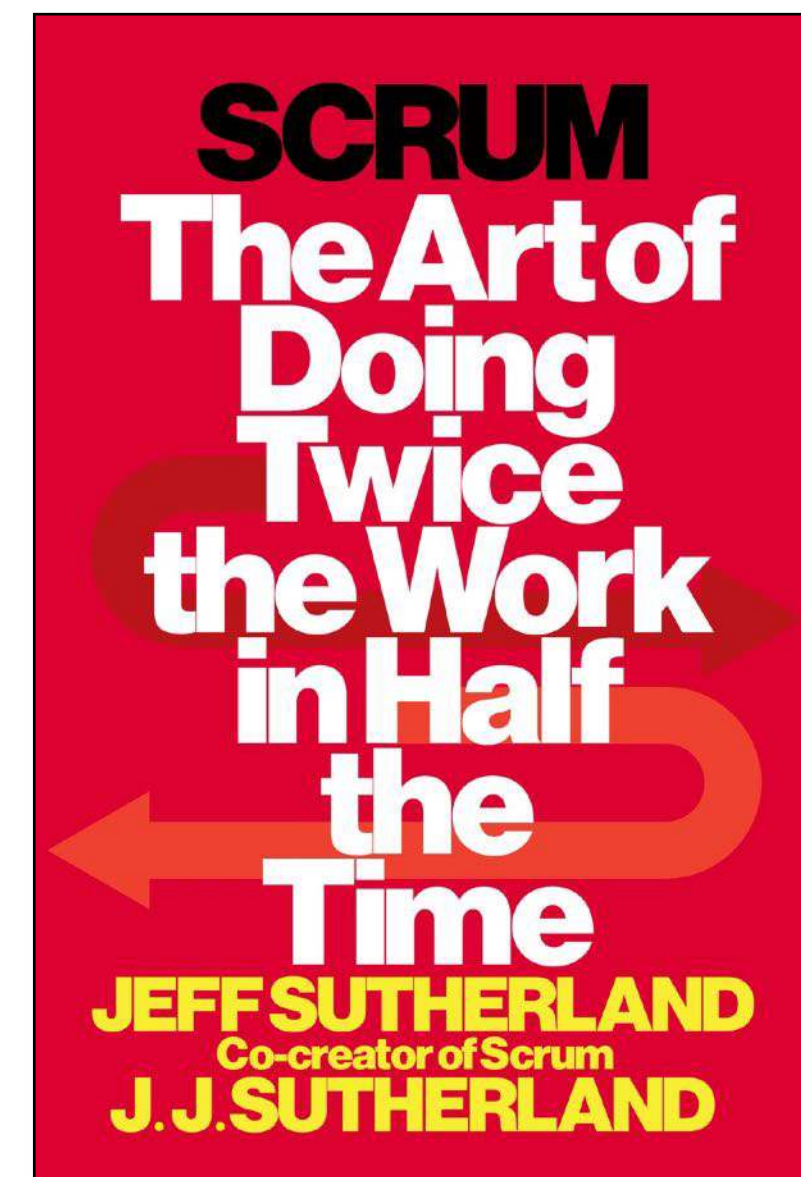
Agile 2001



Implementation



2014



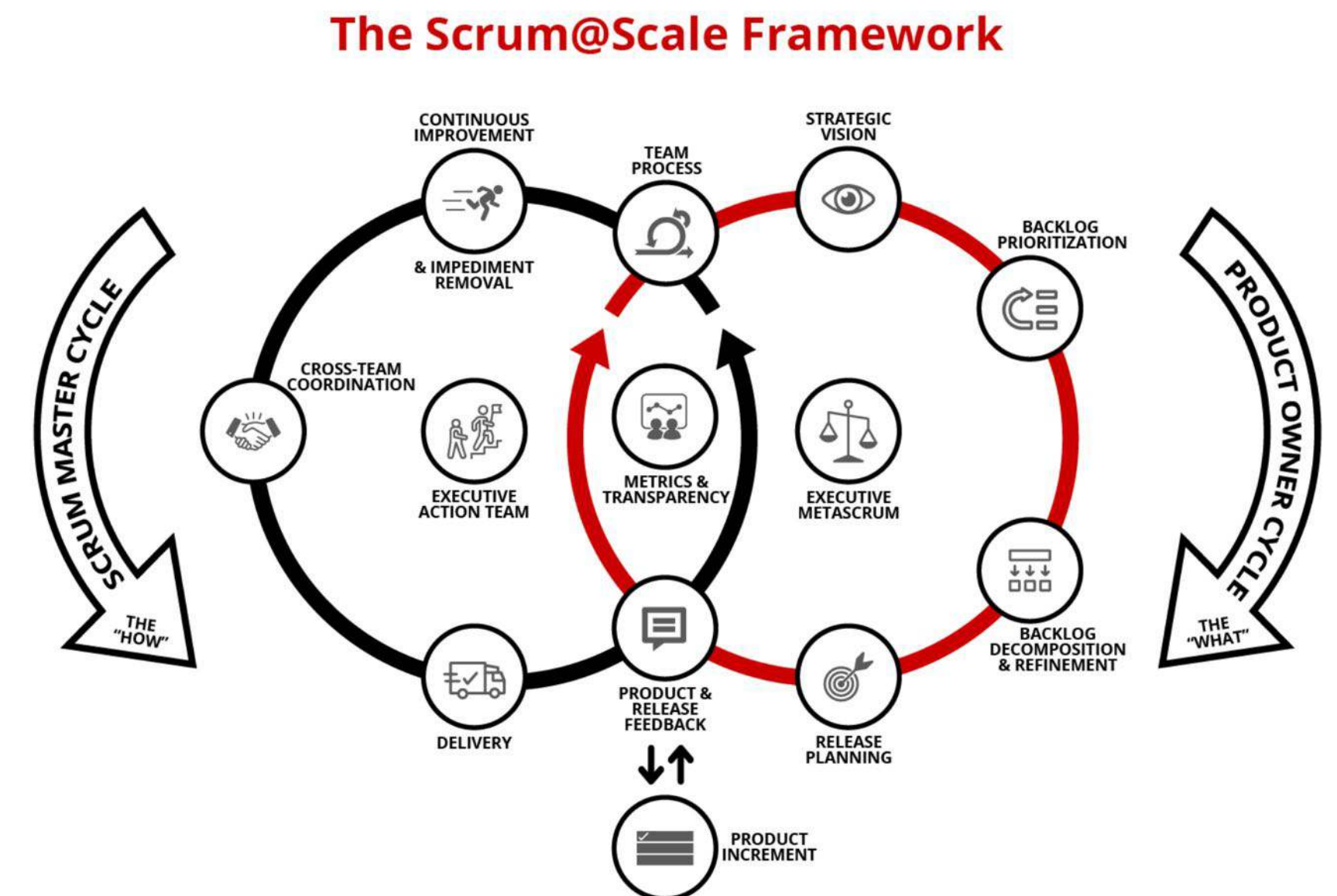
Delivering On the Promise

The Scrum Framework

Patterns (essential for performance)

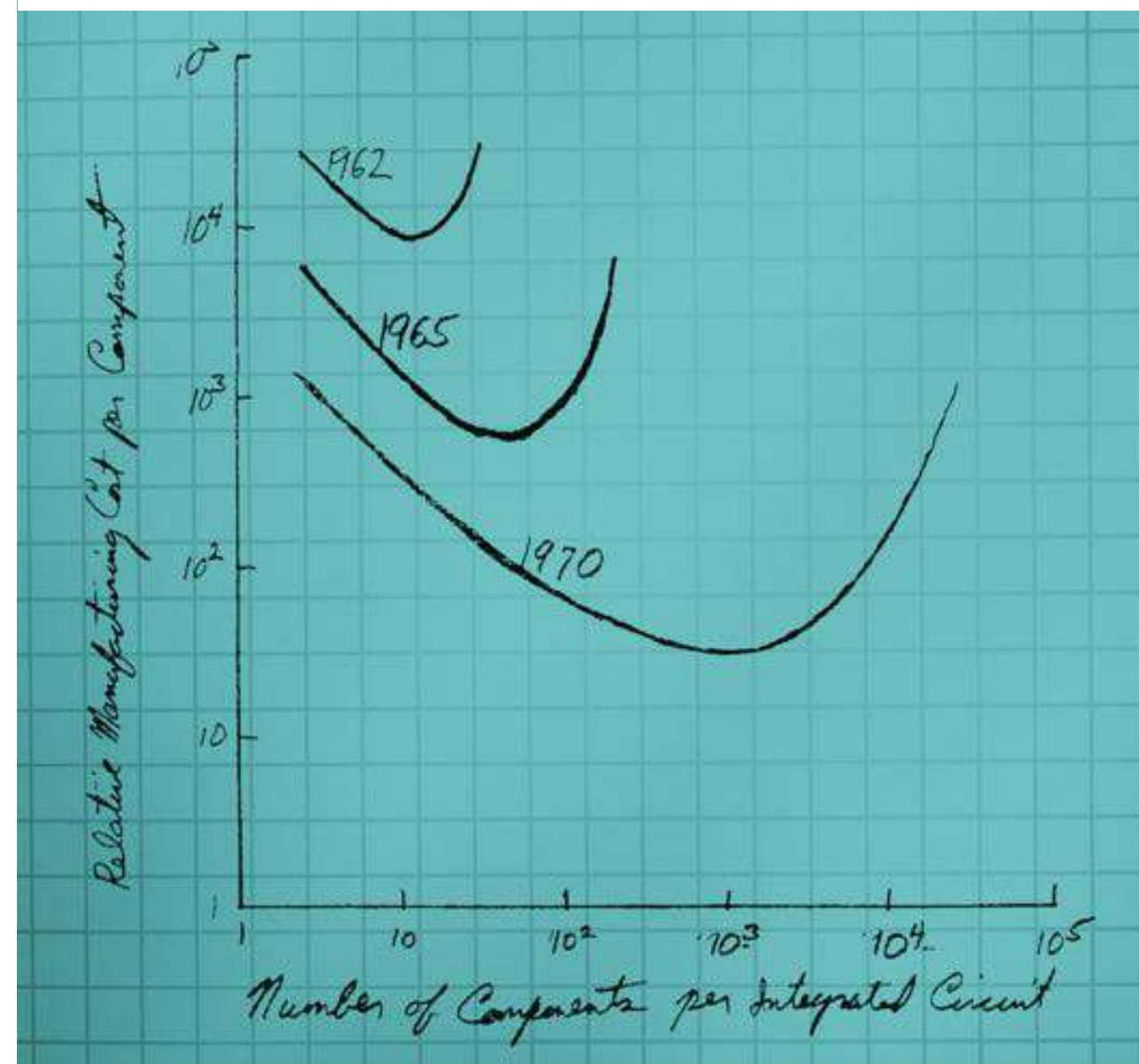
Lean tools (necessary for problem solving)

Scrum@Scale (critical for more than one team)



Scrum: Moore's Law Applied

Transistors on a Chip



Moore, Gordon E. 1965
Cramming More Components
on Integrated Circuits.
Electronics 38:8

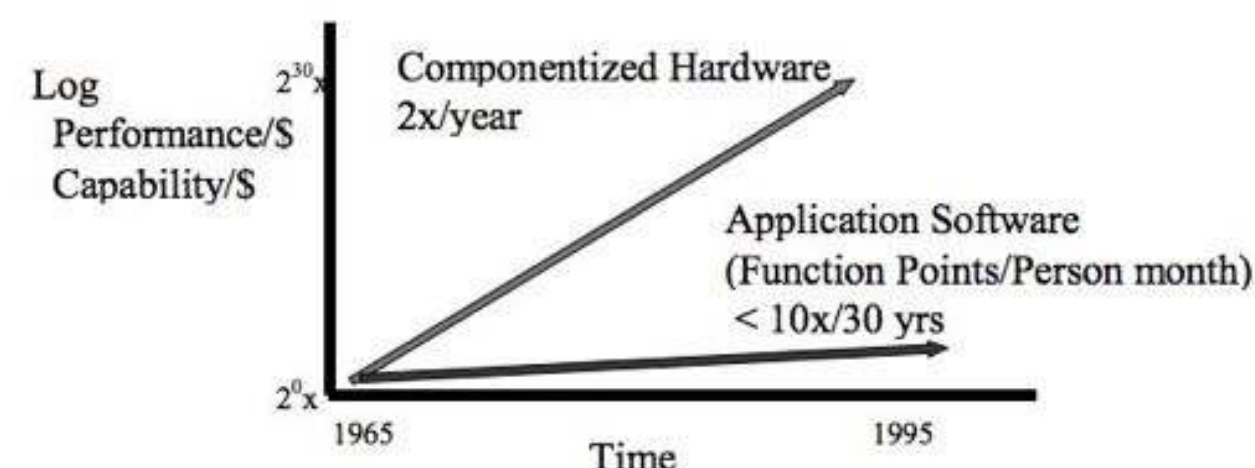
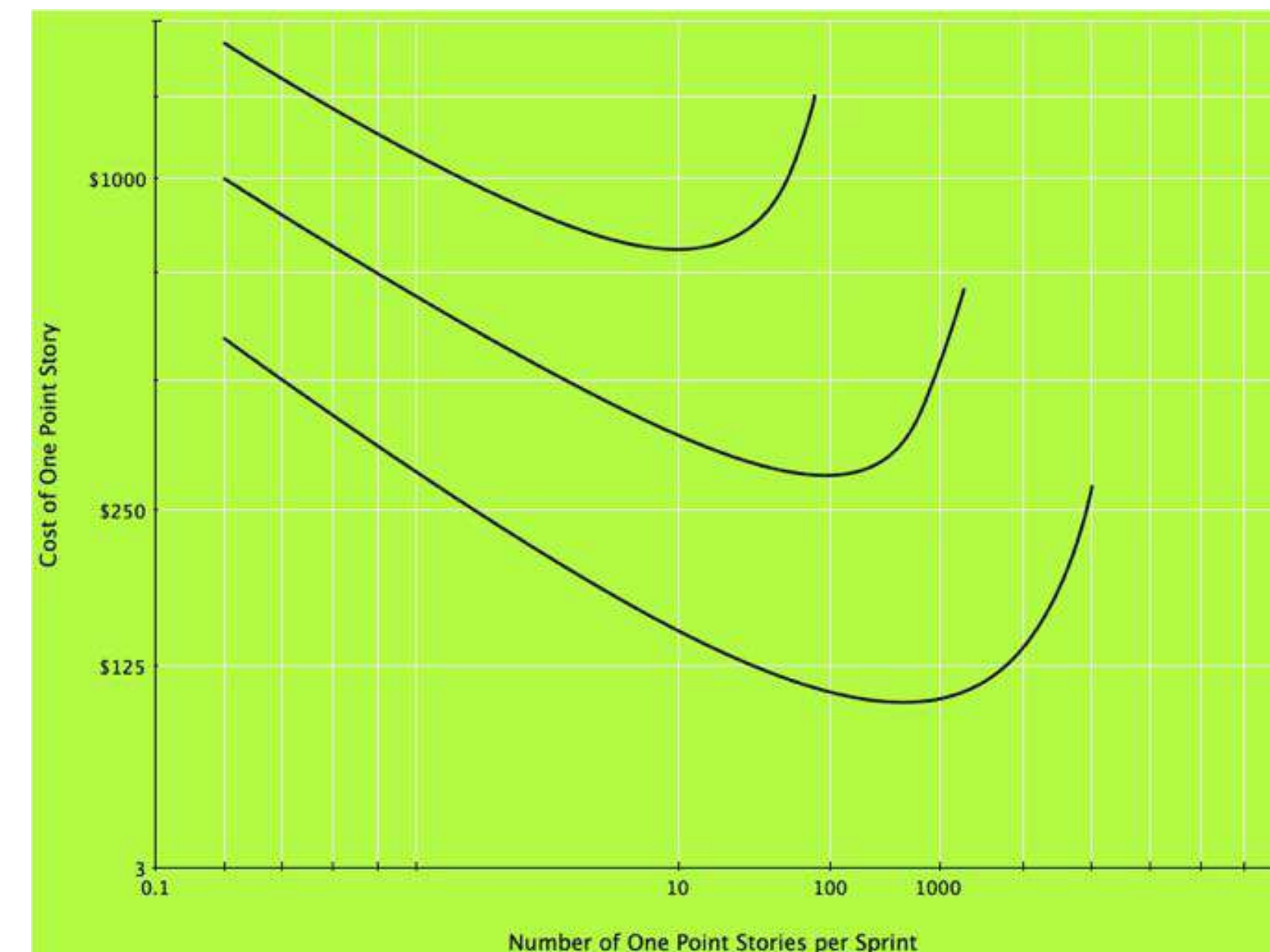


Figure 1: Hardware Price/Performance vs. Software Price Performance⁹

Stories in a Sprint



**Why I Love the OMG:
Emergence of a Business
Object Component Architecture**

Jeff Sutherland (2009) ACM
StandardView: Volume 6 Issue
1, March 1998

Brook's Law Makes It Difficult To Scale

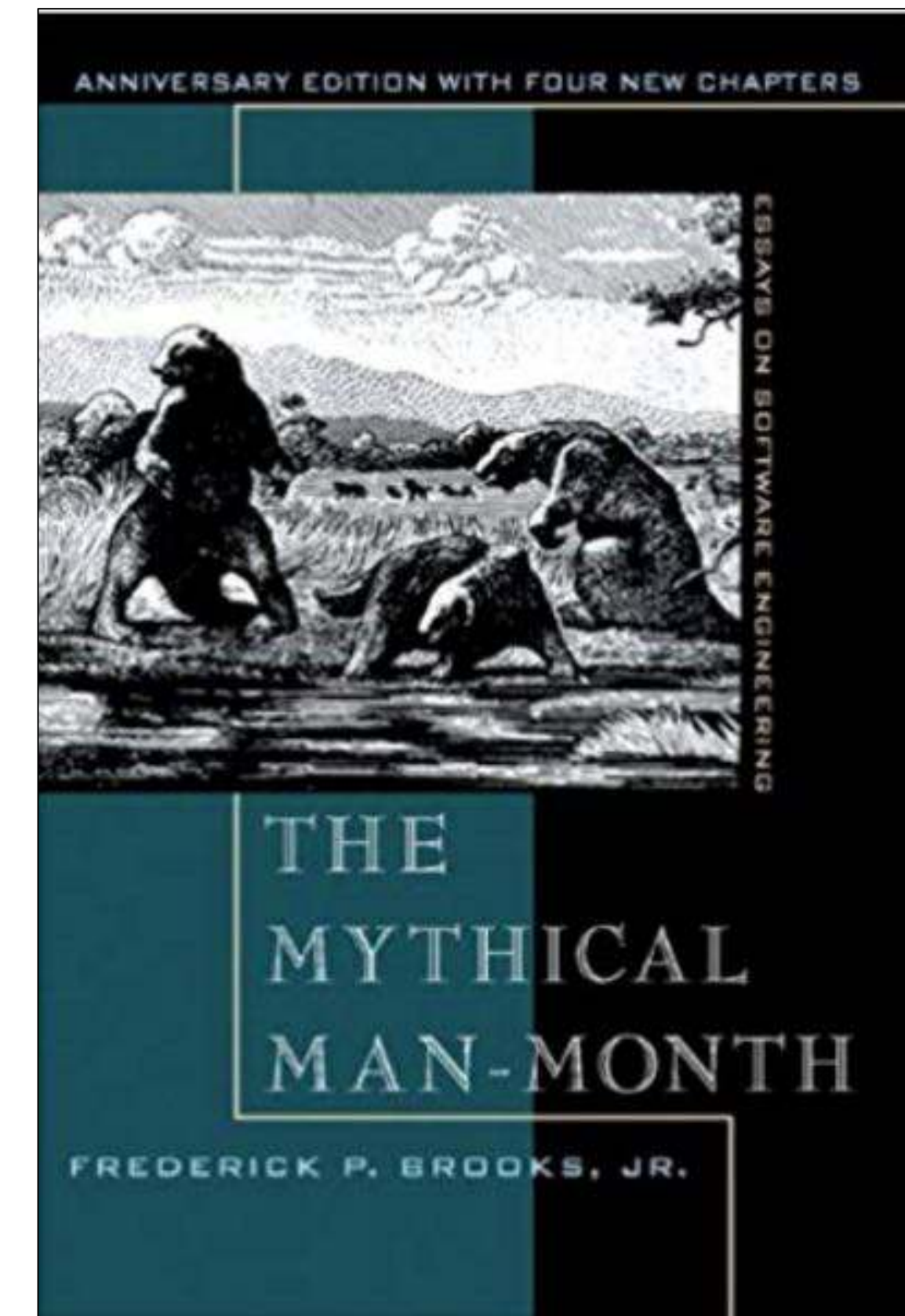
"Adding people to a late project makes it later." *Fred Brooks*

Communication overhead explodes when adding more people to a project reducing productivity per person.

If a 6 person team takes 11 months to finish a project, a 10 person team takes 17 months.

https://www.qsm.com/process_improvement_01.html

The same phenomenon occurs at the team level. Adding teams reduces productivity per team.



The First Published Project to Overcome Brook's Law

Proceedings of the 40th Hawaii International Conference on System Sciences - 2007



Distributed Scrum: Agile Project Management with Outsourced Development Teams

Jeff Sutherland, Ph.D.
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jeff.sutherland@computer.org

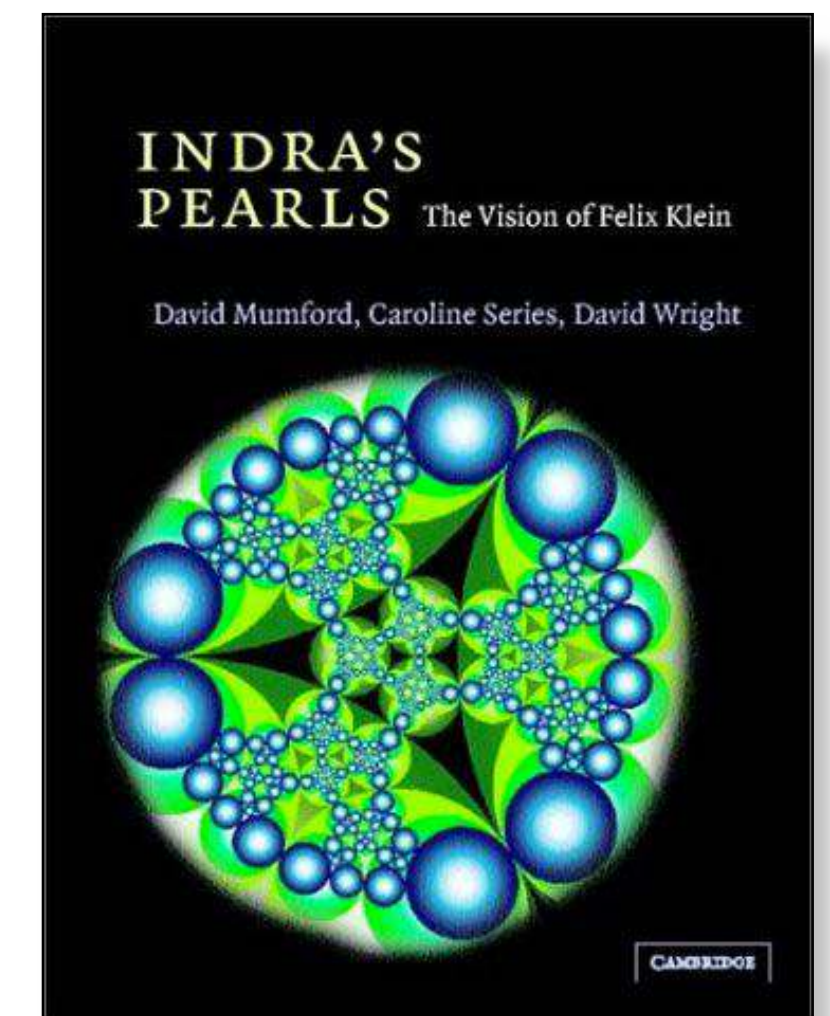
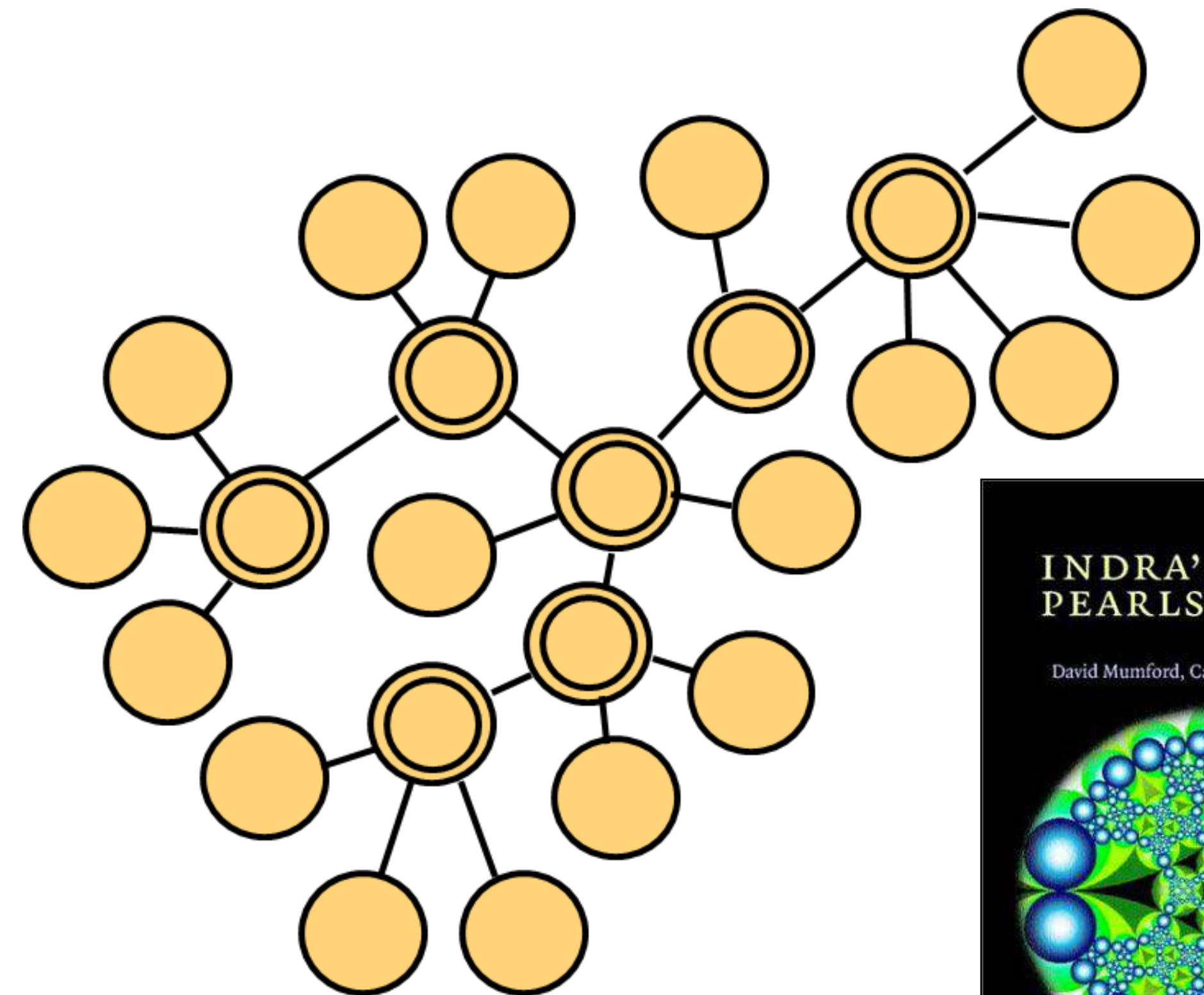
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Scaling Without Losing Productivity Per Team is Called Linear Scalability

- Requires a fractal-like design. Every component looks like every other component.
- Small teams with object-oriented information hiding radically reduces communication paths.
- Network design with information transparency. Everyone can see what is going on at all levels.
- These architectures are seen everywhere in nature, social networks, and chip design. They are called scale free architectures.



Using Patterns to Overcome Brook's Law

- It took a decade of meetings of Scrum experts to create the patterns book.
- Throughout this work, our Product Owner, Jim Coplien, repeated asserted "there are no scaling patterns."
- Scrum@Scale was created with this in mind.



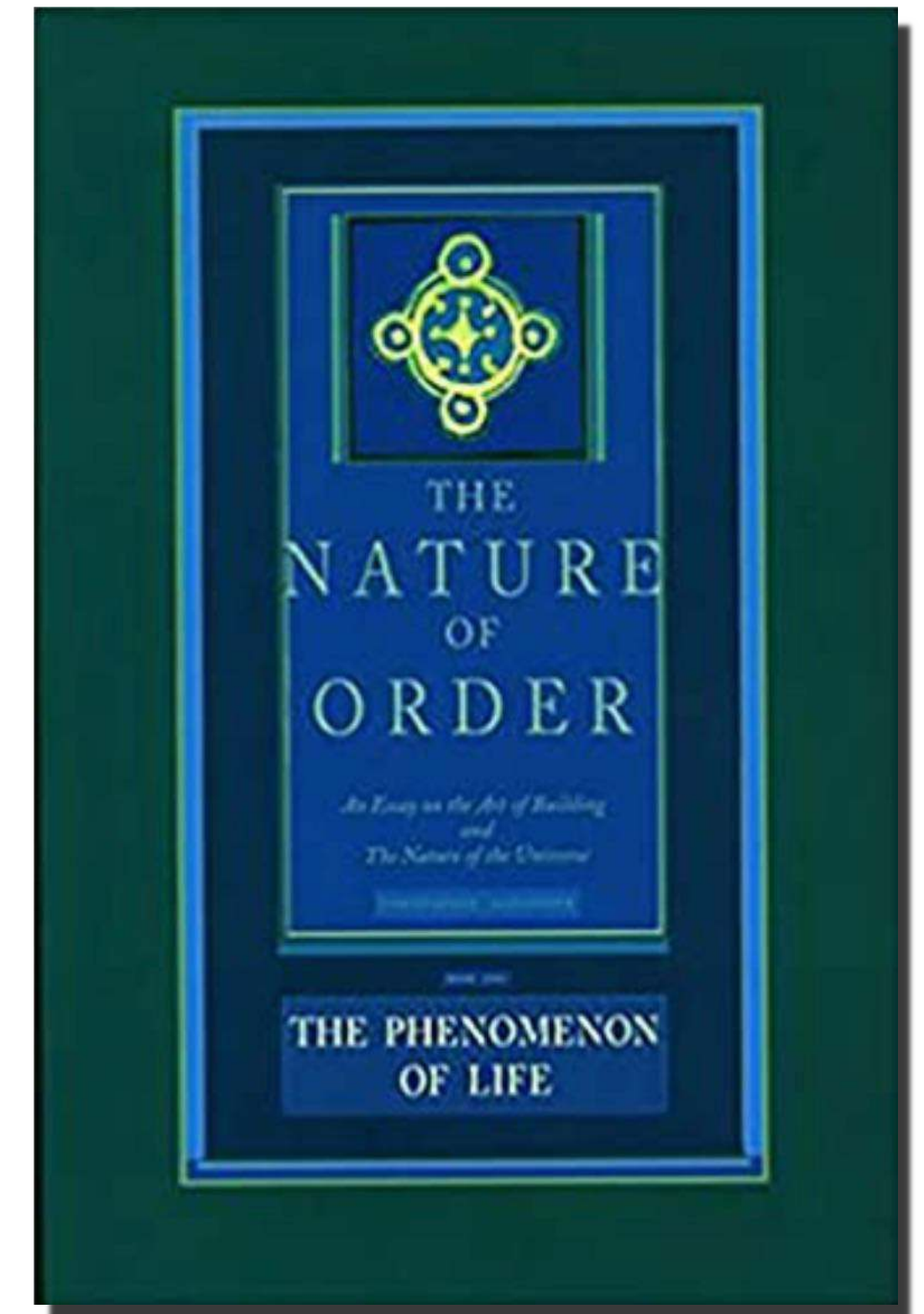
Patterns are Generative

A Pattern Language by Christopher Alexander is believed to be the most widely read architectural treatise ever published.

Alexander believes “[t]here is a central quality which is the root criterion of life and spirit in a man, a town, a building, or a wilderness. This quality is objective and precise, but it cannot be named” (Alexander [1979](#), p 19)

Alexander proposed several descriptors for this quality—‘beauty’, ‘alive’, ‘whole’, ‘comfortable’, ‘free’, ‘exact’, ‘egoless’, and ‘eternal’

Software developers call it QWAN – the Quality Without a Name!

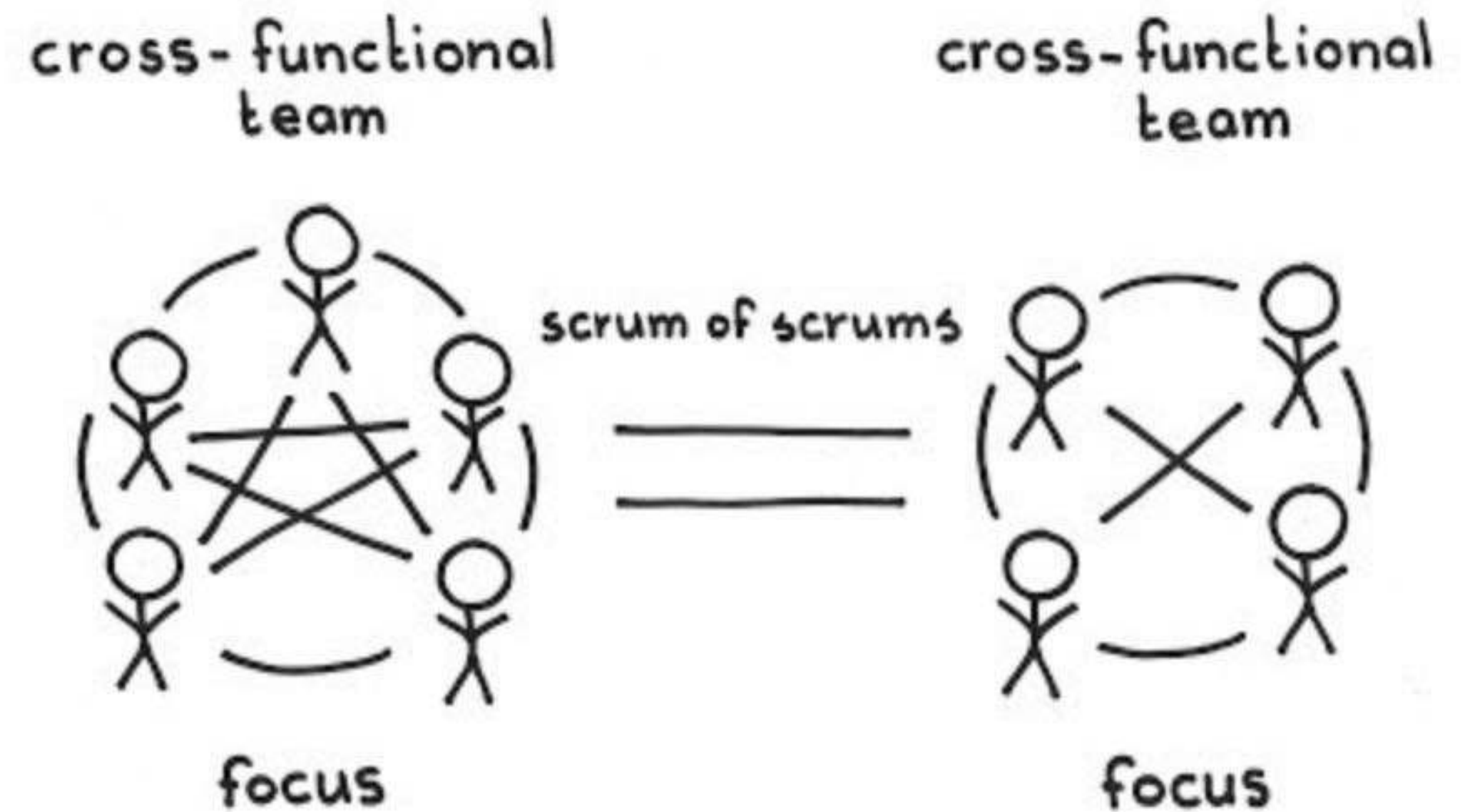


Mitosis – Splitting a Team

One should grow a [SCRUM TEAM](#) in an incremental, piecemeal fashion, but eventually the team just becomes too large to remain efficient.

Differentiate a single large [DEVELOPMENT TEAM](#) into two small teams after it gradually grows to the point of inefficiency—about seven people in the old team.

Members of separate teams should continue to coordinate with each other informally, and as necessary, through the daily rhythm of [SCRUM OF SCRUMS](#) events.



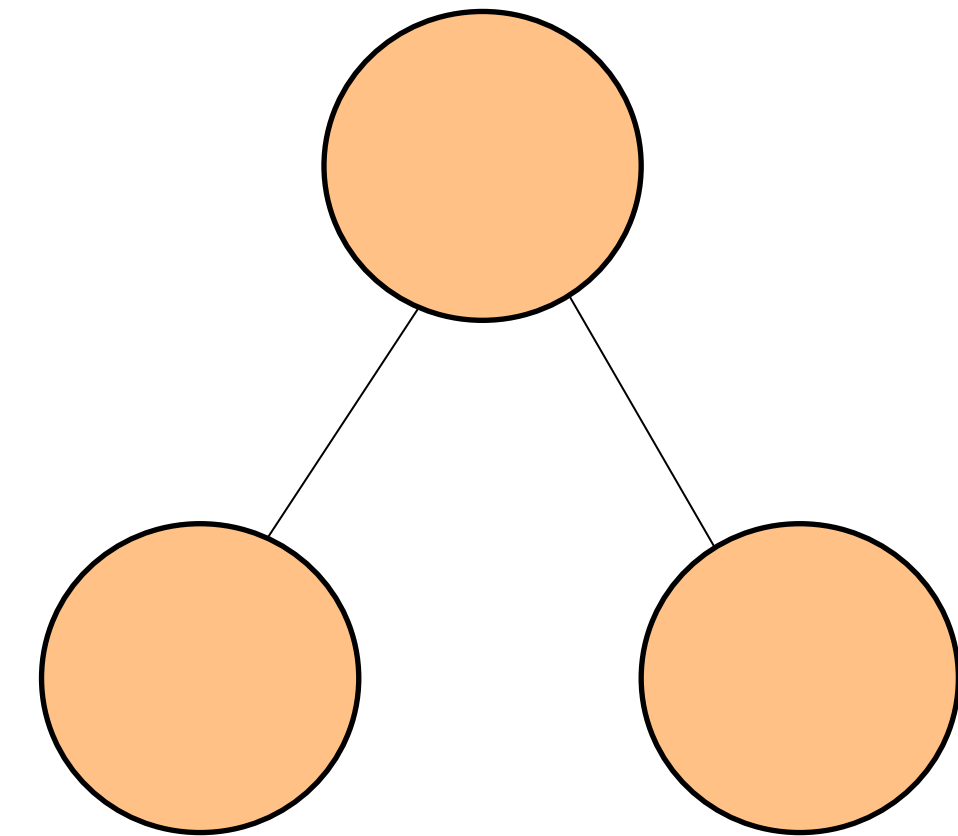
Pattern: Scrum of Scrums

When multiple teams work independently of each other they tend to focus myopically on their own concerns and lose sight of any common goals.

Therefore:

Give the right and the responsibility to collaborate on delivering common goals identified by the [Product Owner](#) to the [Development Teams](#) themselves. Permit the teams to figure out the best way to coordinate their efforts.

- Sprinting together—at the same cadence, at the same time, using [Organizational Sprint Pulse](#)
- Maintaining a common [Definition of Done](#)
- Common [Sprint Planning](#), [Sprint Reviews](#) and other mandatory Scrum events
- Holding [Backlog Refinement](#) events in common
- Creating semi-formal optimizing networks of [Birds of a Feather](#), utilizing common competencies such as architecture across the teams to proactively handle issues that are known in advance
- Establish a regular [Scrum of Scrums](#) event, perhaps daily, after the teams' [Daily Scrum](#) events, to resolve emergent dependencies and issues, and to get things to *Done*.



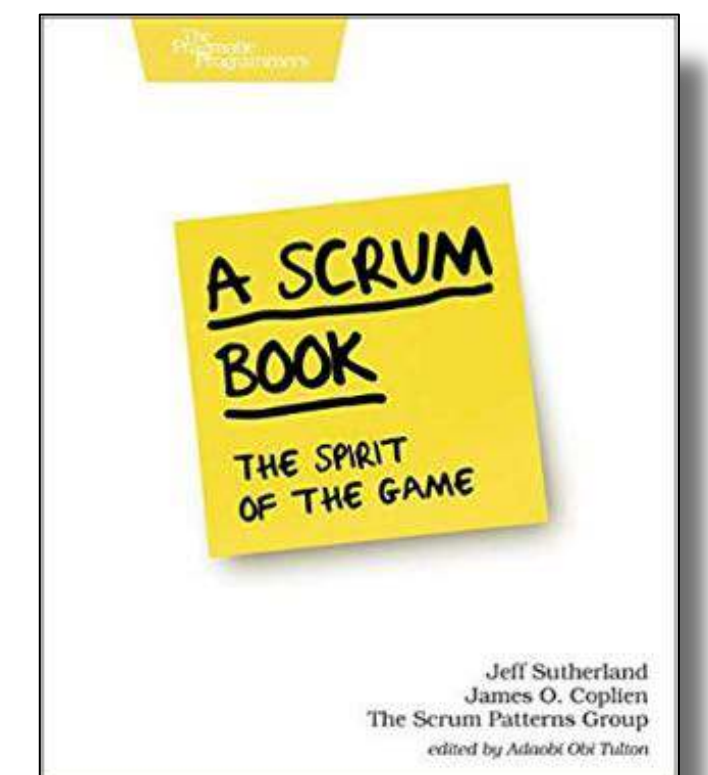
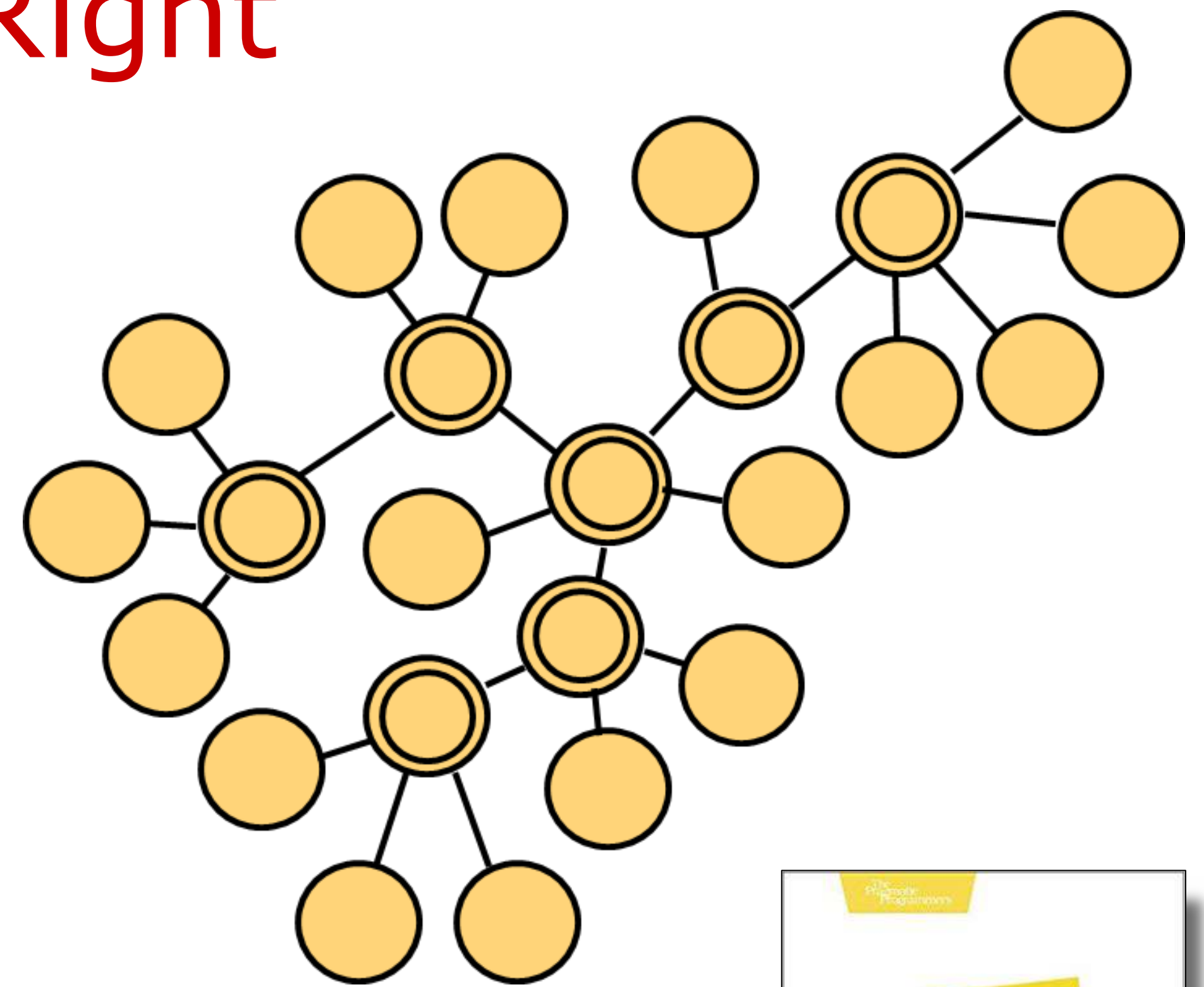
Scrum of Scrums Done Right

The Scrum of Scrums is a set of teams that delivers a product increment at the end of a sprint.

The IDX Scrum of Scrums that is the origin of the pattern is a release team.

The Scaled Daily Scrum requires many experts other than Scrum Master to deliver a product increment.

The IDX Scrum of Scrums was responsible for creating a potentially shippable increment of product at least once a sprint and deploying on a regular cadence.



Scaled Daily Scrum

“Establish a regular [Scrum of Scrums](#) event, perhaps daily, after the teams’ [Daily Scrum](#) events, to resolve emergent dependencies and issues, and to get things to *Done* (see [Definition of Done](#)).

“The [SCRUM OF SCRUMS](#) is a well-established pattern, first implemented at IDX Systems (now GE Healthcare) in 1996. Jeff Sutherland was Senior Vice-President of Engineering, with Ken Schwaber on board as a consultant to help roll out Scrum. There were eight business units, each with multiple product lines. Each product had its own [SCRUM OF SCRUMS](#).”



The first Scrum of Scrums



Product Owner Team

The **PRODUCT OWNER** has more to do than a single person can handle well

Therefore:

Create a **PRODUCT OWNER TEAM**, led by the Chief Product Owner, whose members together carry out product ownership.

The **PRODUCT OWNER TEAM** realizes the **VISION** by ordering the **PRODUCT BACKLOG ITEMS** through a single **PRODUCT BACKLOG**.



Source: Sutherland and Coplien (2019) A Scrum Book: The Spirit of the Game

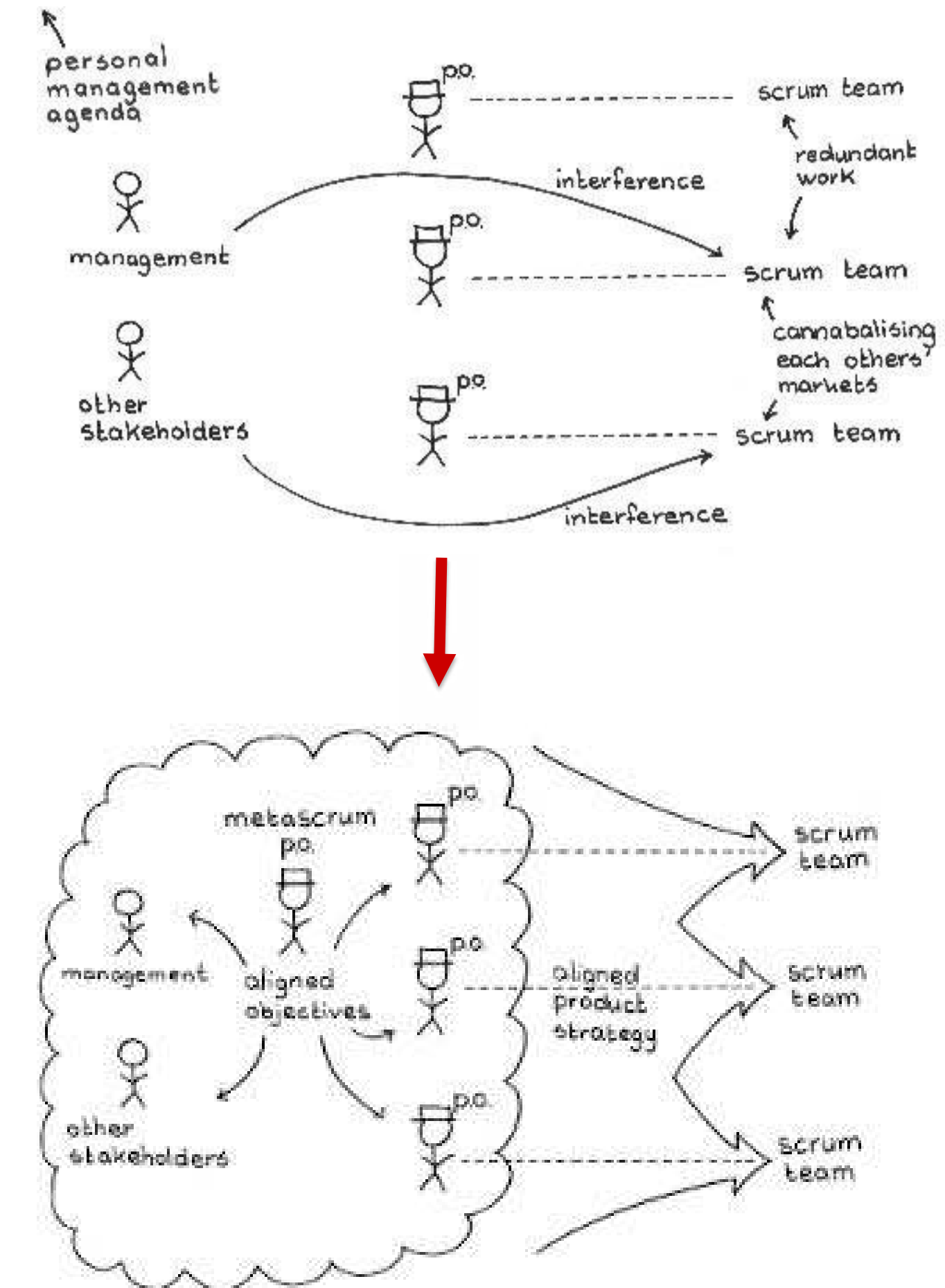


Metascrum

SCRUM TEAMS are in place, but direction (or the threat of interference) from legacy management structures causes confusion about the locus of control over product content and direction.

Therefore:

Create a **METASCRUM** as a forum where the entire enterprise can align behind the *Product Owners'* backlogs at every level of Scrum in the organization.

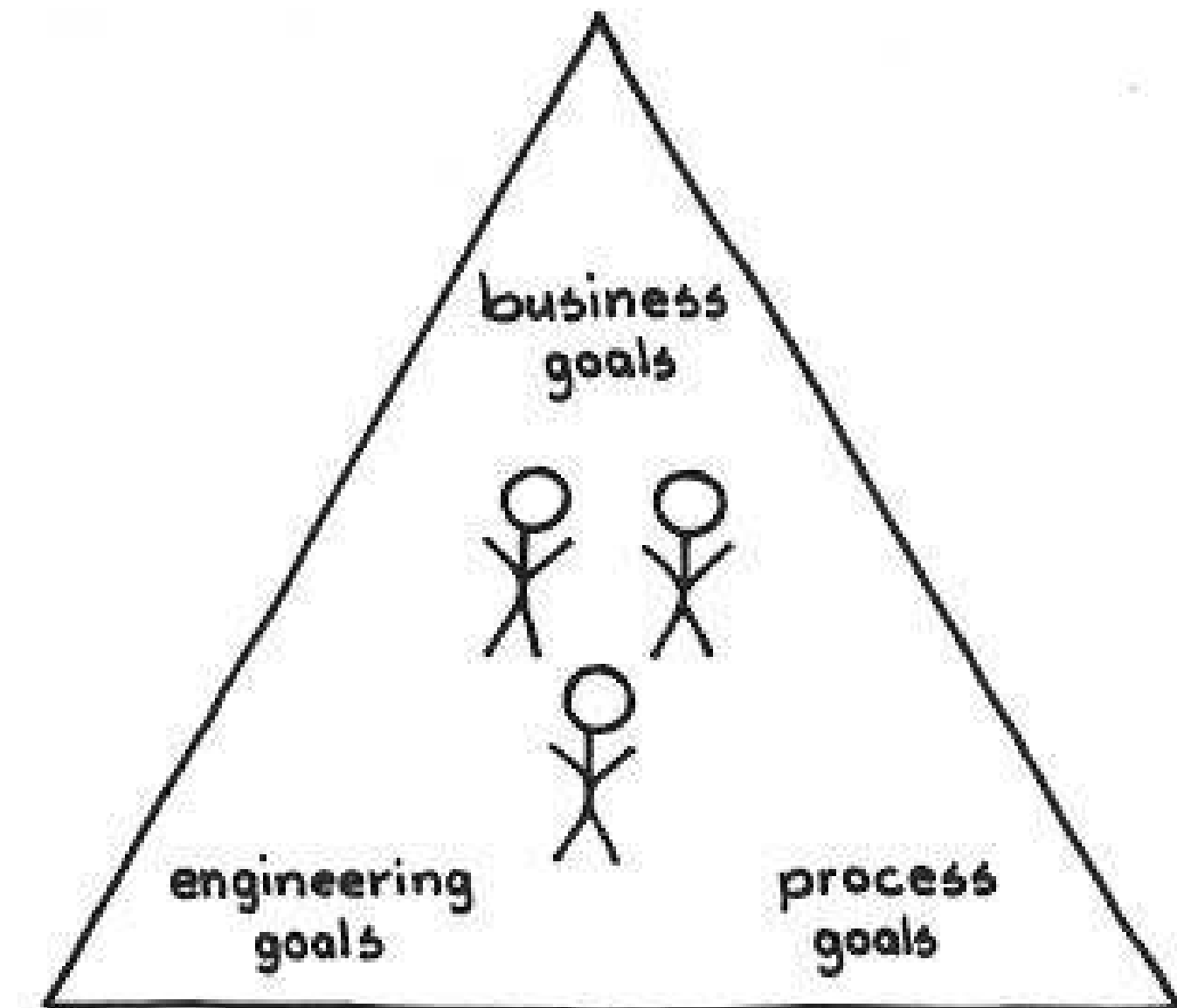


A Scrum Team: Executive Action Team

Many great VISIONS are beyond the reach of solo efforts, and to achieve such a VISION you need to build the complex product, bring it to the market and leverage feedback. In this case the Product is an Agile Organization.

Therefore:

Form a team that has all the necessary competencies: the people who can make and deliver the product (a DEVELOPMENT TEAM), a PRODUCT OWNER who guides product direction, and a SCRUMMASTER who facilitates learning.



Minimal Viable Bureaucracy

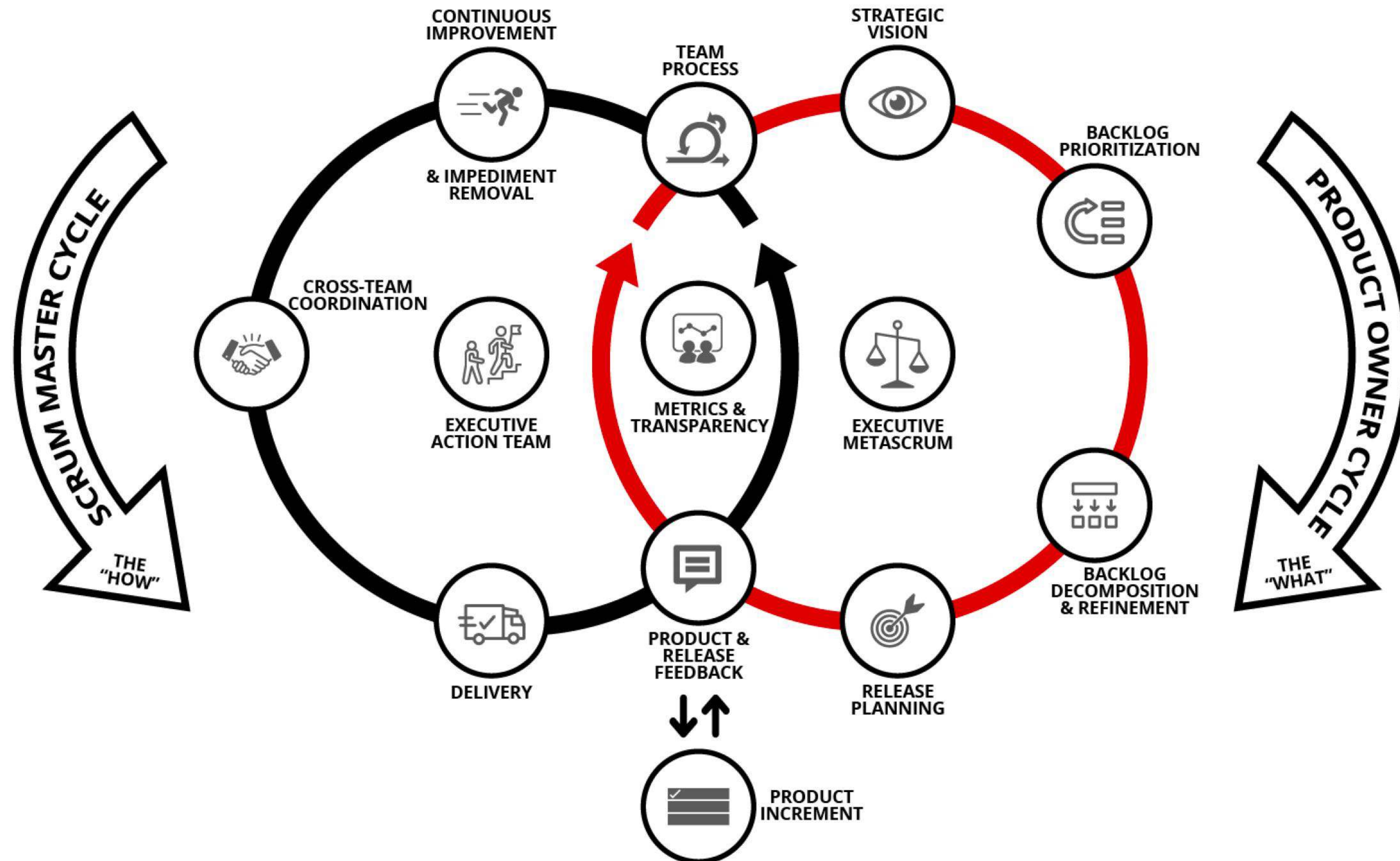
Mitosis
Scrum Team
Scrum of Scrums
Product Owner Team
MetaScrum
Executive Action Team

There is a Scrum Team that owns the agile implementation called an Executive Action Team (EAT)

There is a Product Owner Team called an Executive MetaScrum Team (EMT) that owns the organization's backlog.



Scrum@Scale Framework



Twice the Work in Half the Time at Scale

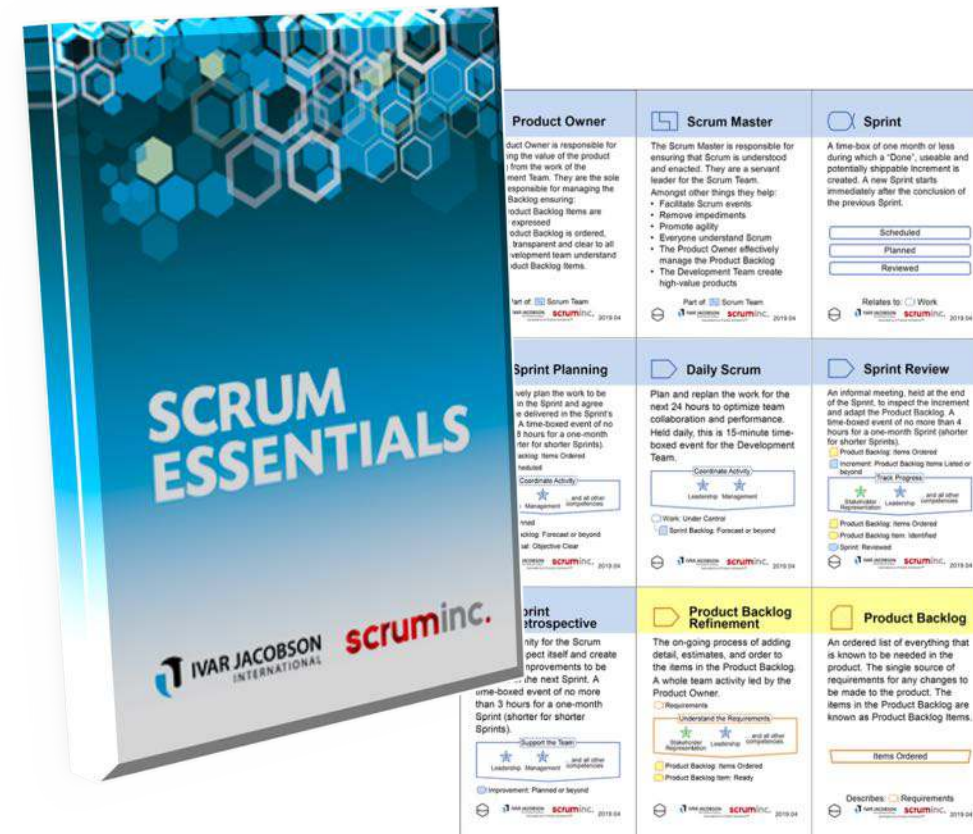
- Quicken Loans (Rocket Mortgage) is the largest mortgage loan provider in the U.S.
- Implemented scaled agile framework with 26 release trains for 17000 people
- Cycle time for feature development dropped from 86 days to 42 days.
- The Brand Marketing release train, the digital storefront deployed scaled scrum patterns.
- Scaled scrum patterns amplified reduction in average cycle time to 21 days which was 340% better than the rest of the company.



Scrum@Scale on Essence Cards

The essence of Scrum and Scrum@Scale distilled on to a set of cards

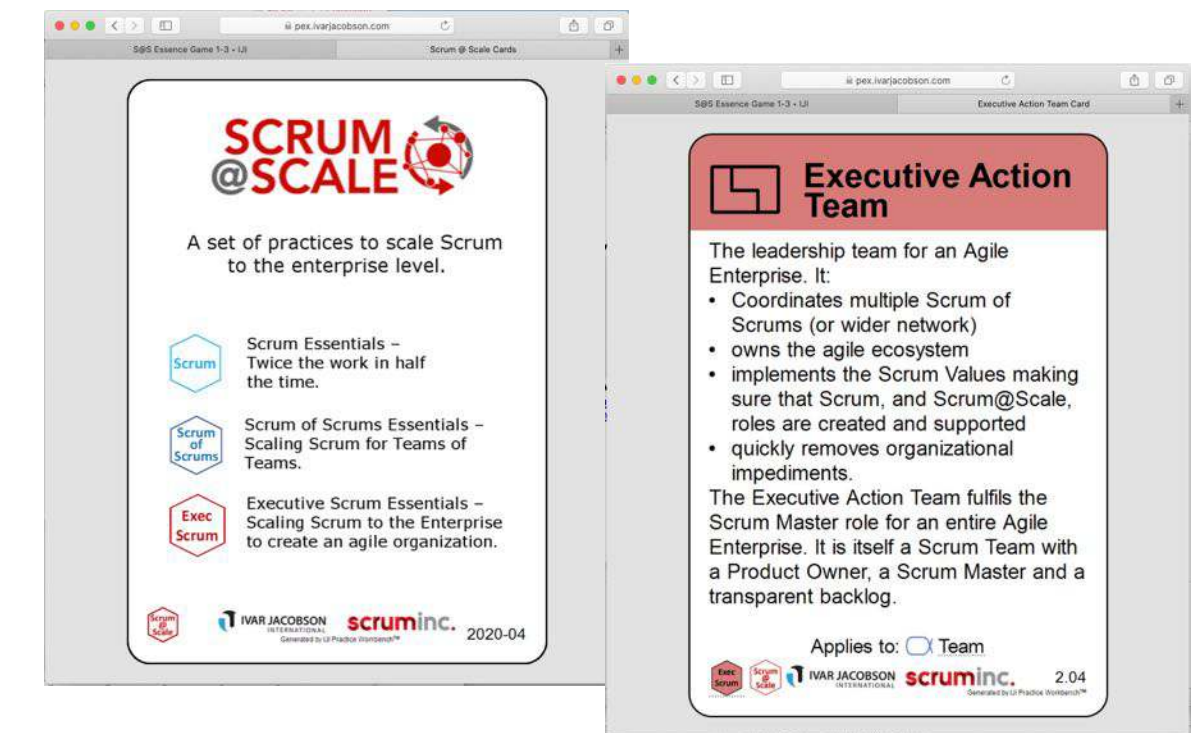
In your hands



on your phone



in your browser



https://pex.ivarjacobson.com/sites/default/files/practice/scrum_at_scale_cards.html

Use as a handy reference

Play games in classes and workshops:

Learn the elements of Scrum and Scrum@Scale

Configure Scrum and Scrum@Scale for your teams

Liven up retrospectives & workshops



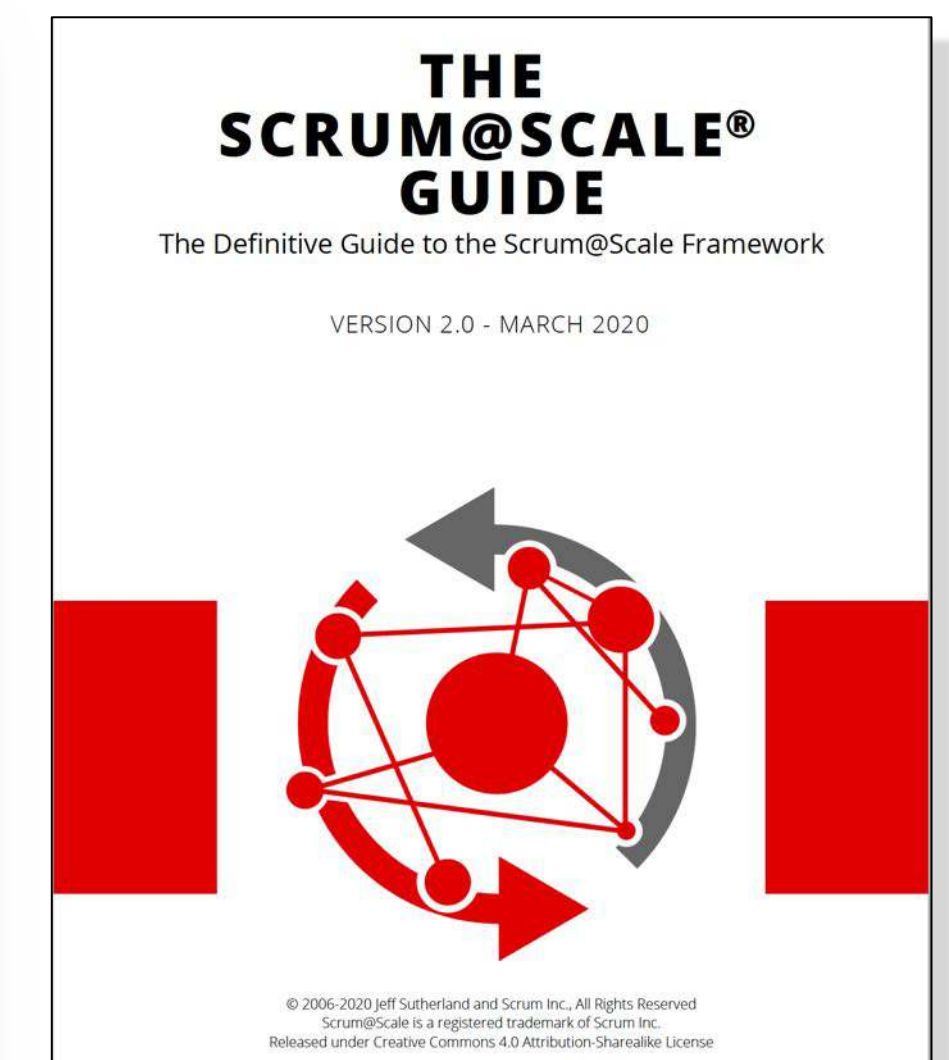
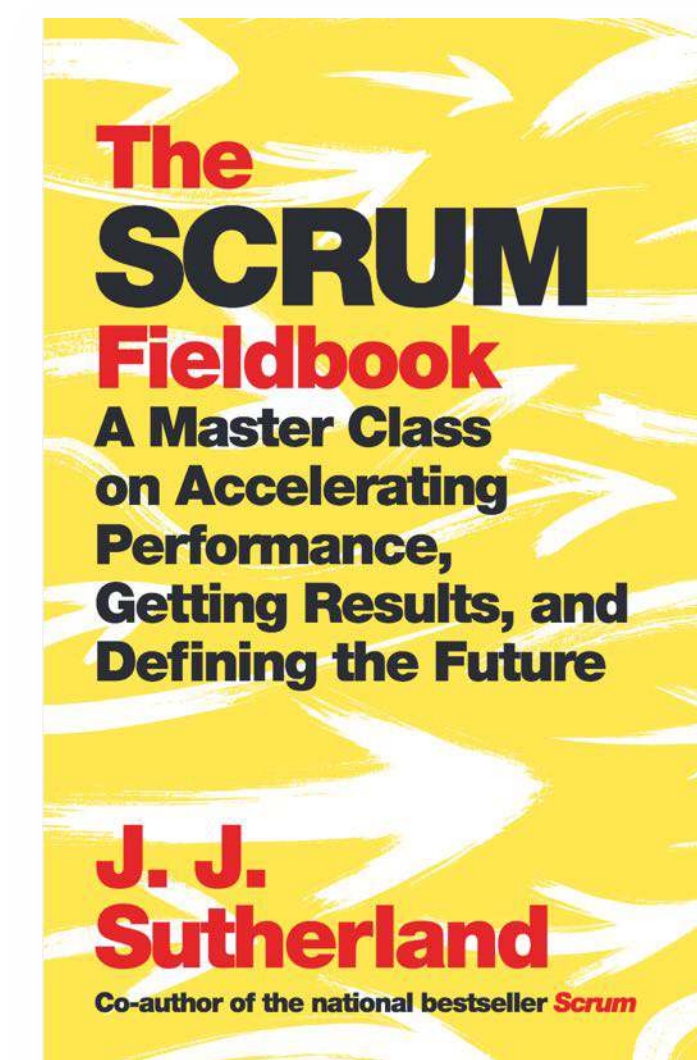
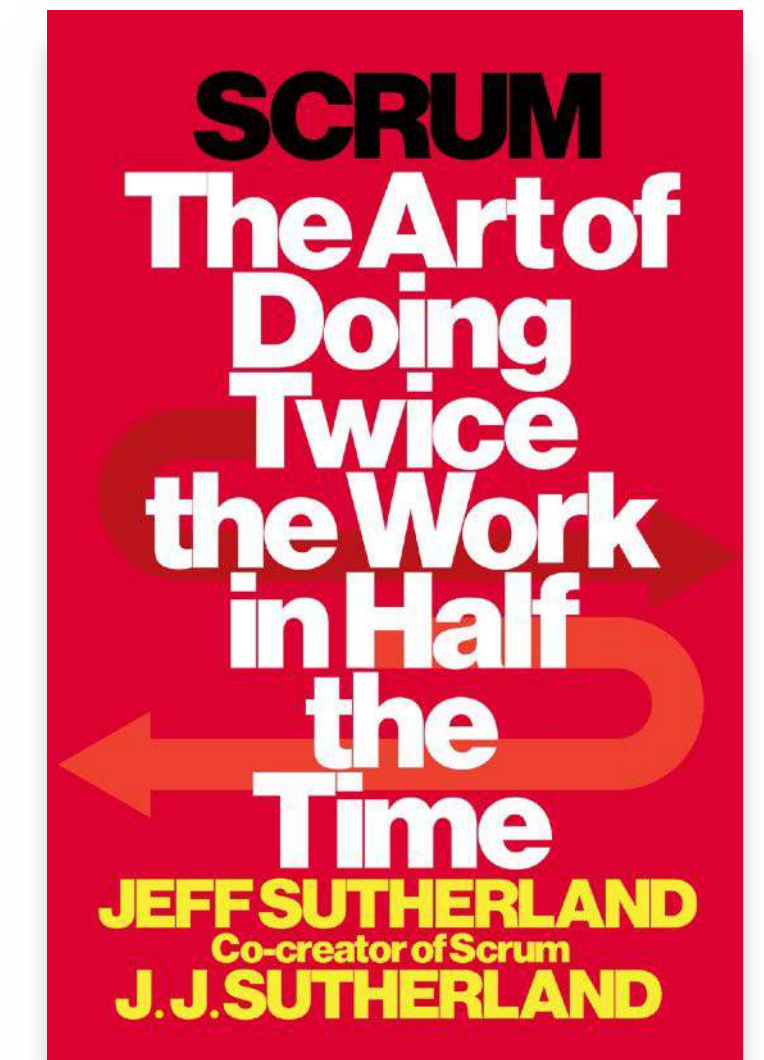
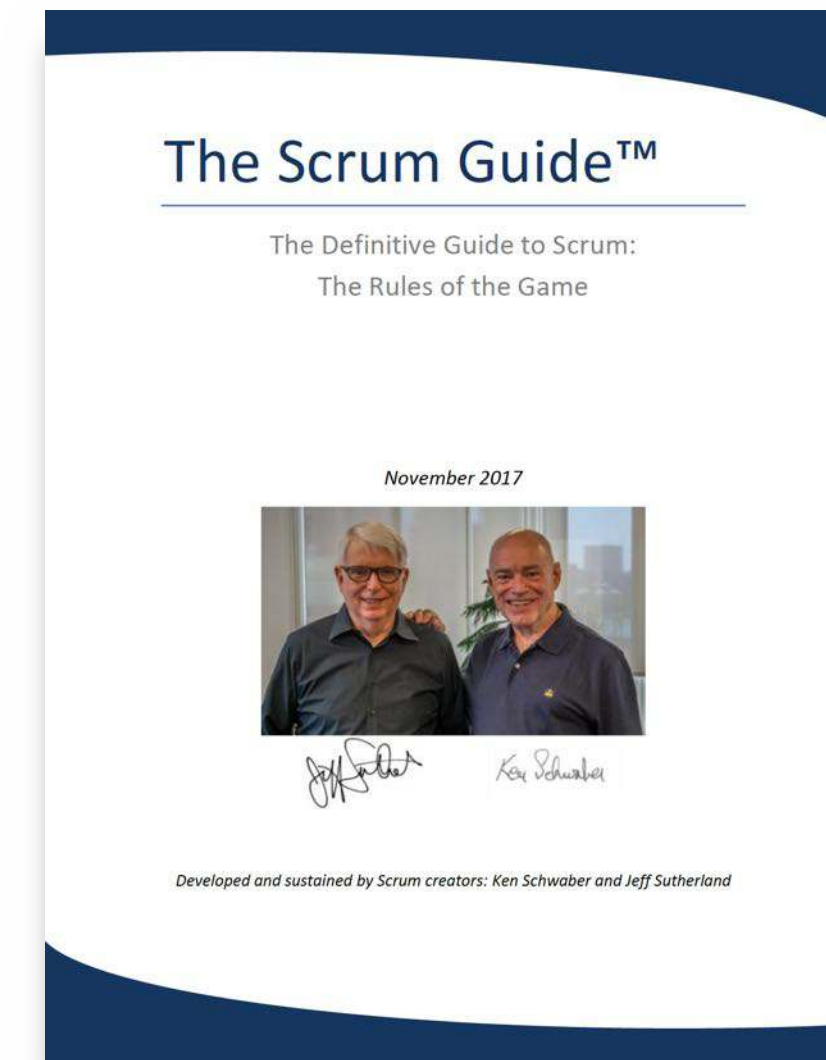
Survival Depends on Successful Agile Transformations

**Minimum Viable Bureaucracy
overcomes Brooks Law to
achieve linear scalability**

**This means no decrease in performance per team
when adding teams**

**MVB radically reduces Agile
Transformation failure
while delivering twice the
value in half the time**

**The secret to the future
survival of your company**



Current Sources of ScrumInc Training

Akihito Fujii Deputy General Manager Solution Business Planning General Manager, Cloud Services, KDDI CORPORATION, formerly Google and Sun Microsystems, Silicon Valley – request on 24 August 2016

We want the True Scrum, the Scrum of the Grandfathers in Japan!

[Takeuchi and Nonaka \(1986\) The New New Product Development Game. Harvard Business Review](#)

Our major investors are Toyota and Kyocera. They want Agile/Scrum. KDDI and EMS want to create a joint venture – *ScrumInc Japan*

The True Scrum is Lean

The True Scrum is Hyperproductive

The True Scrum achieves Linear Scalability

ScrumInc Japan coaches and trains Toyota Research and Toyota IT in Toyota City.



Essentials of ScrumInc Training

Lean

Systematic, a lean CMMI Level 5 company taught us that a strong Definition of Done doubles productivity and a strong Definition of Ready doubles it again. This led to the Scrum Pattern – Good Housekeeping

[Scrum and CMMI - Going from Good to Great: Are You Ready Ready to Be Done Done](#)

C. Jakobsen and J. Sutherland, in *Agile 2009*, Chicago, 2009.

Hyperproductive

Happier people are more productive and to be hyperproductive, the team needs to be really happy. The only way is through the hyperproductive patterns.

[Teams that Finish Early Accelerate Faster: A Pattern Language for High Performing Scrum Teams](#)

J. Sutherland, N. Harrison, and J. Riddle, *IEEE HICSS 47th Hawaii International Conference on System Sciences*, Big Island, Hawaii, 2014

Linear Scalability

Only a Minimum Viability Bureaucracy will achieve linear scalability. This is done through the Scrum Patterns – Mitosis, Scrum of Scrums, Product Owner Team, Metascrum, and an Executive Scrum Team.

[A Scrum Book: The Spirit of the Game](#)

J. Sutherland, J. Coplien, and the Scrum Patterns Group. Pragmatic Bookshelf 2019

