

Best Practices of Agile Teams

...

v5.0.1

Today:
Which practices separate great
agile teams from others?

Practicalities

Not actually a Scrum talk: it's just common

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Questions welcome

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Not actually a Scrum talk: it's just common

Questions welcome

QR-code for slides at the end

Who am I



Jakob Buis

~~Developer~~

~~Team lead~~

~~Engineering Manager~~

Management consultant

Professional team builder

www.jakobbuis.nl (now with blogging!)

1. Measure **actual usage**

There is **nothing** so useless
as doing with great efficiency
that which **should not be done** at all.

Peter Drucker



Add tracking tables

feature_foo_clicks		
id	user_id	timestamp
1	1	2025-03-10T14:30:10Z
2	2	2025-03-10T14:31:23Z
3	1	2025-03-11T09:16:00Z
4	3	2025-03-12T04:10:59Z

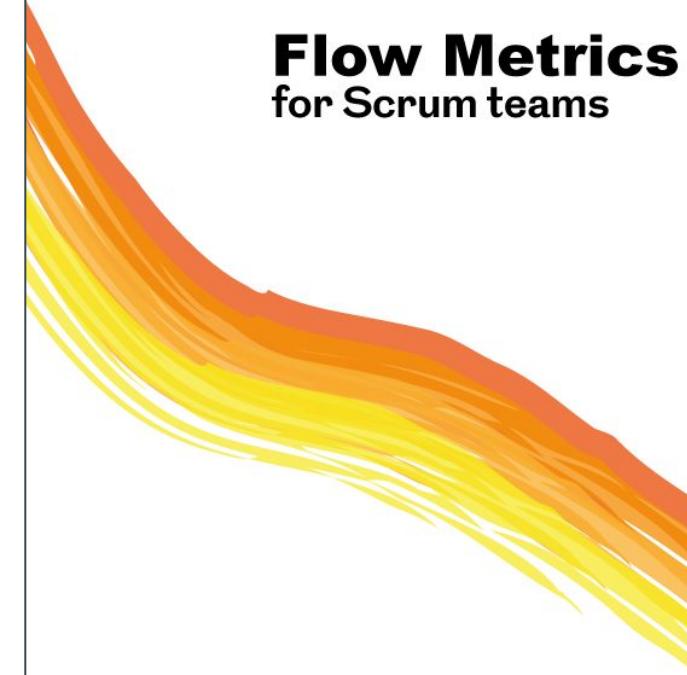
Board expansion

1. Options (Backlog)
2. Discovery
3. Building
 - a. Not started
 - b. Coding
 - c. Code Review
 - d. Ready for release
4. Validating
5. Done



ProKanban.org

Flow Metrics for Scrum teams

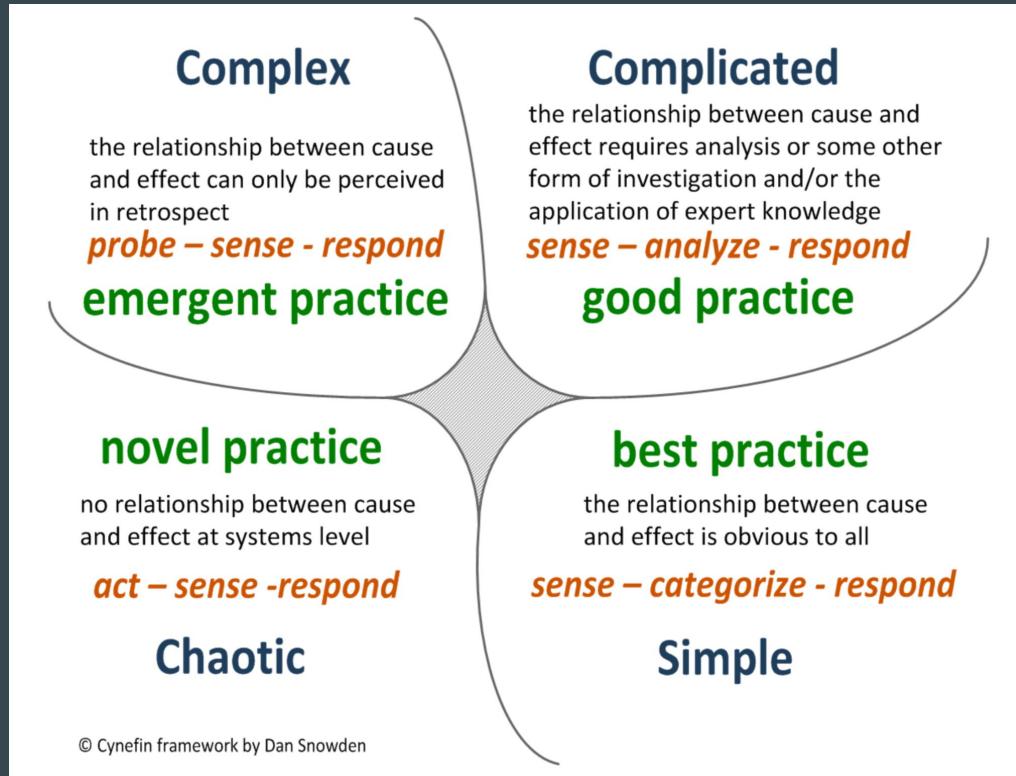


Will Seele & Daniel Vacanti

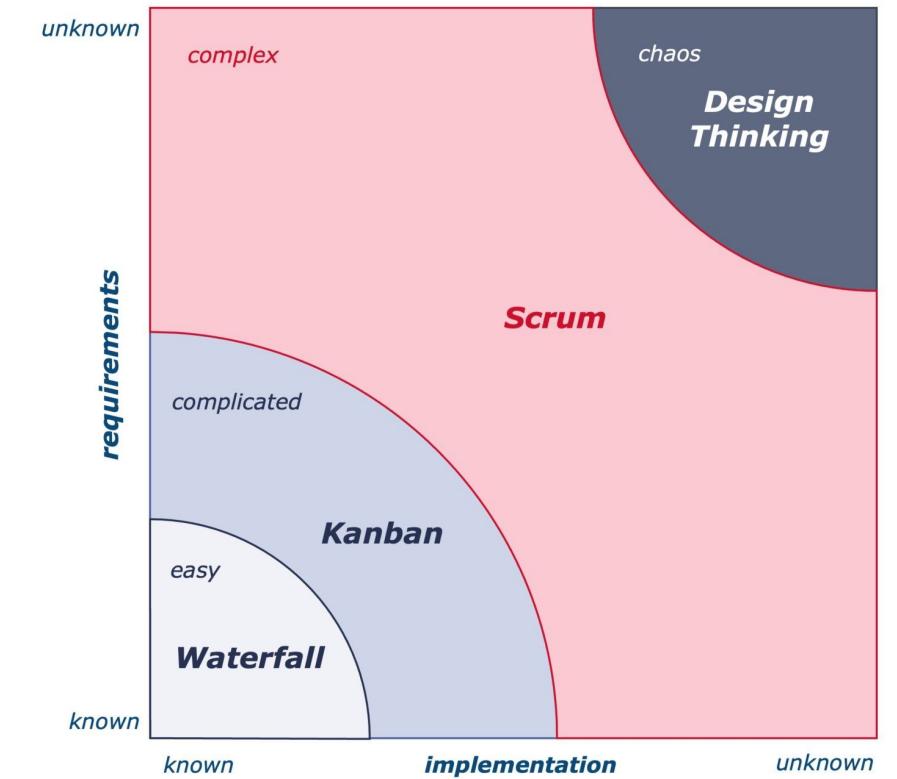
1. Measure **actual usage**

2. Working, tested software **every sprint**

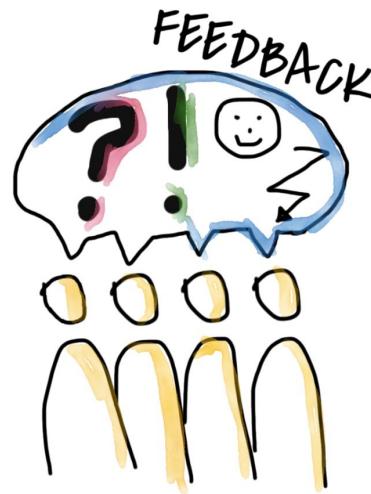
Software development is complex work



Stacey Matrix



SPRINT REVIEW



Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it.

Through this work we have come to value:

- Individuals and interactions** over processes and tools
- Working software** over comprehensive documentation
- Customer collaboration** over contract negotiation
- Responding to change** over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Kent Beck	James Grenning	Robert C. Martin
Mike Beedle	Jim Highsmith	Steve Mellor
Arie van Bennekum	Andrew Hunt	Ken Schwaber
Alistair Cockburn	Ron Jeffries	Jeff Sutherland
Ward Cunningham	Jon Kern	Dave Thomas
Martin Fowler	Brian Marick	

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Twelve Principles of Agile Software

[View Signatories](#)

[About the Authors](#)

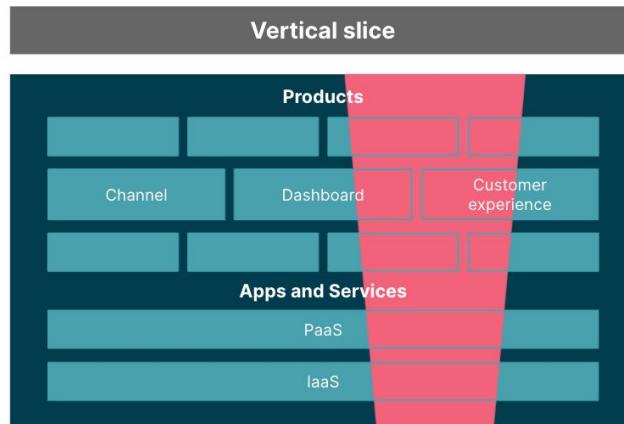
[About the Manifesto](#)

Principle 1:
Our highest priority is to
satisfy the customer through
early and continuous delivery
of valuable software.

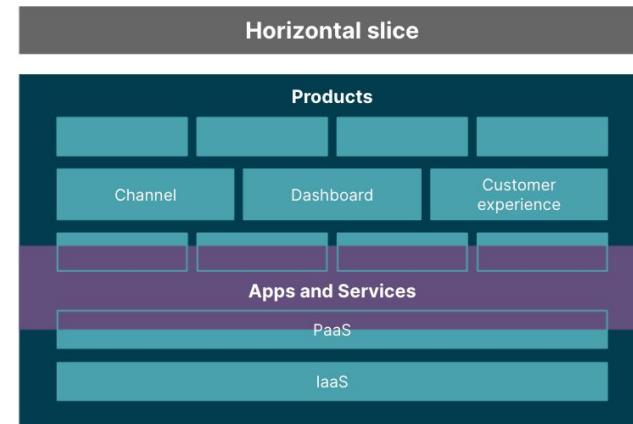
Principle 7:
Working software is the
primary measure of **progress.**

Deliver functional slices

Delivering early with “Thin Vertical Slices”



✓ Desirable ✓ Usable ✓ Functional



✗ Desirable ✗ Usable ✓ Functional

Working tested software, every sprint

Erase all dependencies

- encode manual stage-gates earlier & shift left
- decoupling architecture
- release yourself
- team layout changes (Team Topologies)

Working tested software, every sprint

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Better habits

- Avoid big-design up-front
- Incur (some) technical debt
- Don't optimize for personal productivity

2. Working, tested software **every sprint**

3. Data-driven estimation

This guy is a software engineer,
you can tell by his awesome
estimation skills



Subject to biases

Optimism bias

Confirmation bias

Group-think / bandwagon

Flaw of averages

Re-estimation bias

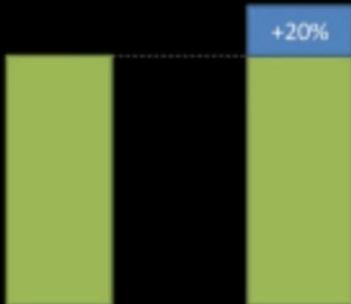
#NoEstimates

After just 3 sprints

Story Points predictive power

The true output:
349,5 SPs
completed

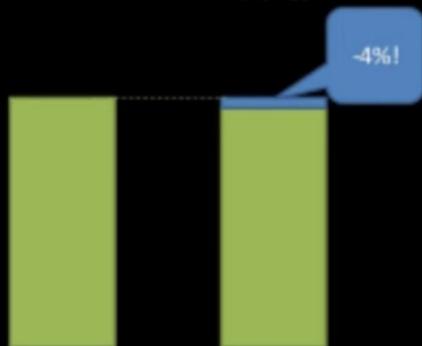
The predicted
output: 418 SPs
completed



of Stories predictive power

The true output:
228 Stories

The predicted
output: 220
Stories



#NoEstimates (Allen Holub)
<https://www.youtube.com/watch?v=QVBInCTu9Ms>

Improving estimation

Good:

make items smaller

multi-point estimates

same-sizing everything: "1 story point" and "too big"

<https://mdalmijn.com/p/roman-estimation-a-simple-easy-and>

Improving estimation

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Better:

use data

Monte Carlo simulation

Record throughput per day:

0 7 2 6 6 3 7 2 9 1 13 0 0 2 4

Monte Carlo simulation

Record throughput per day:

0 7 2 6 6 3 7 2 9 1 13 0 0 2 4

Sample next 5 days:

2 0 2 7 0

Monte Carlo simulation

Record throughput per day:

0 7 2 6 6 3 7 2 9 1 13 0 0 2

Sample next 5 days:

2 0 2 7 0 = 11

Next week, we'll finish **11 stories**

Simulation controls

Start Date
15 Sep 2018

End Date
15 Oct 2018

Trials
10000

Lists

- Select all
- To do
- Development
- Code review
- Code review (Done)
- Testing
- Testing (Done)
- Deployment
- Done

Labels

- Select all
- Cards without labels
- Expedite
- Fixed Delivery Date
- Intangible
- Standard

Members

Percentiles

- Select all
- 30%
- 50%



Cumulative Flow Diagram



Cycle Time Scatterplot



Cycle Time Breakdown Chart



Cycle Time Histogram



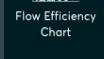
Aging Chart



Throughput Run Chart



Throughput Histogram



Flow Efficiency Chart

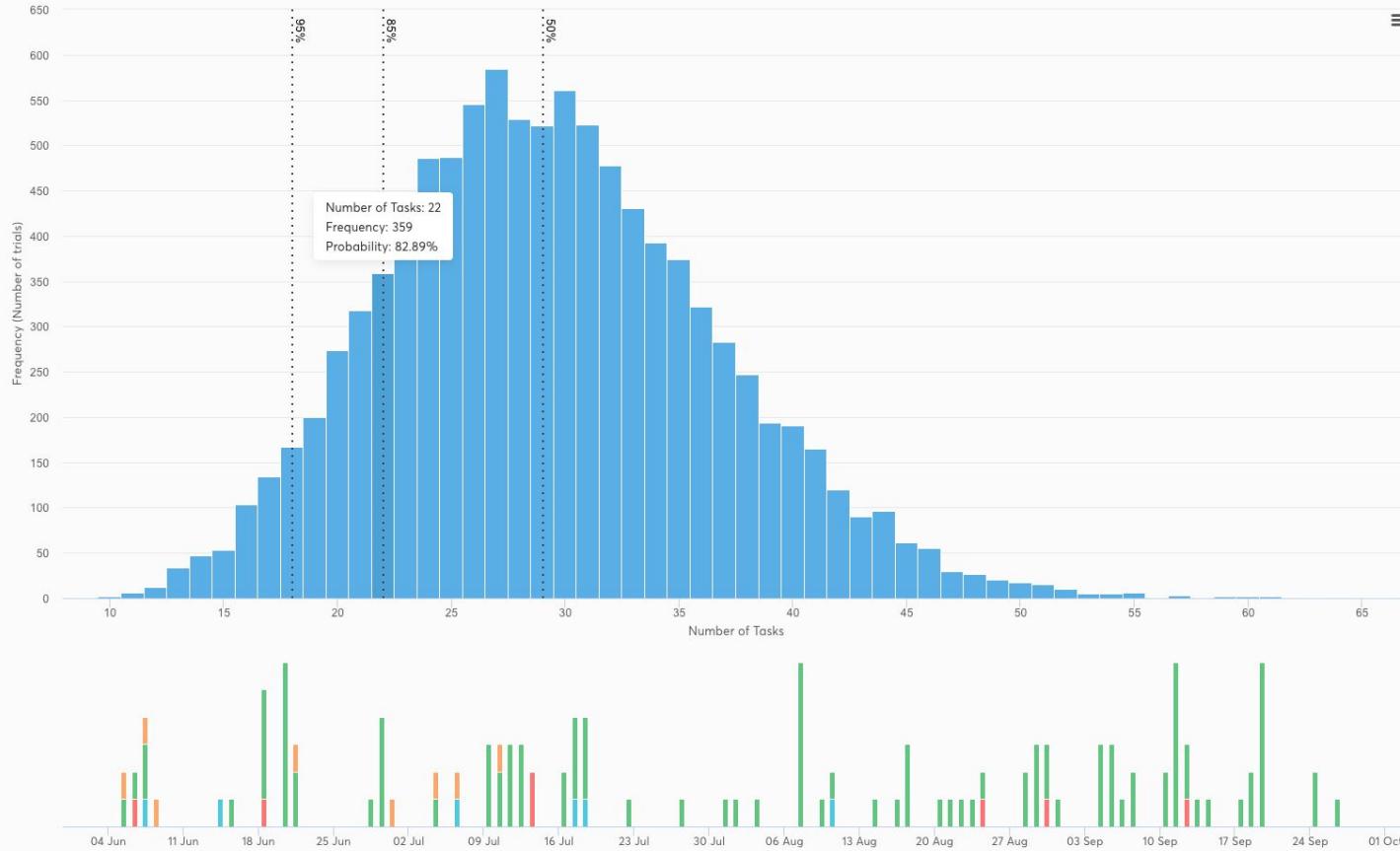


Monte Carlo: Delivery Date



Monte Carlo: Number of Tasks

Monte Carlo: Number of Tasks



Simulation controls

Start Date	15 Sep 2018
Items to complete	10
Trials	10000

Lists

- Select all
- To do
- Development
- Code review
- Code review (Done)
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- Testing (Done)
- Deployment
- Done

Labels

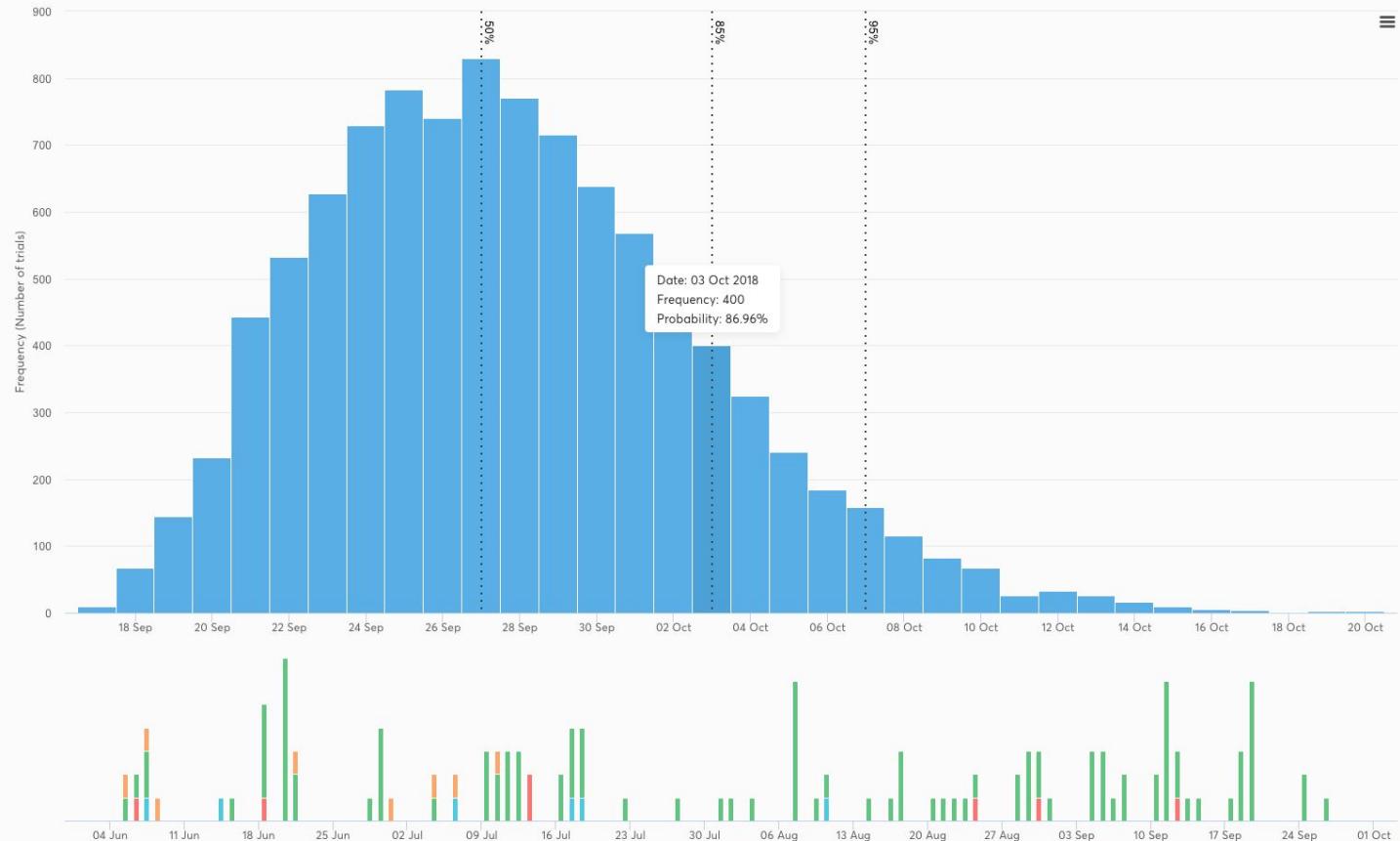
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Monte Carlo: Delivery Date



Cumulative Flow Diagram

Cycle Time Scatterplot

Cycle Time Breakdown Chart

Cycle Time Histogram

Aging Chart

Throughput Run Chart

Throughput Histogram

Flow Efficiency Chart

Monte Carlo: Delivery Date

Monte Carlo: Number of Tasks

Pitfalls

The future is dependent on the past



Pitfalls

The future is dependent on the past

100% certainty assholes



Pitfalls

The future is dependent on the past

100% certainty assholes

Weighted monte carlo



3. Data-driven estimation

4. Effective retrospectives



Make retrospectives effective

Inspect & adapt

1-2 high priority improvements,
implemented next sprint

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Escalate what you cannot solve

Make retrospectives effective

Inspect & adapt

1-2 high priority improvements,
implemented next sprint

Escalate what you cannot solve

Data-driven decision making

Software delivery performance metric	Elite	High	Medium	Low
Deployment frequency For the primary application or service you work on, how often does your organization deploy code to production or release it to end users?	On-demand (multiple deploys per day)	Between once per week and once per month	Between once per month and once every 6 months	Fewer than once per six months
Lead time for changes For the primary application or service you work on, what is your lead time for changes (i.e., how long does it take to go from code committed to code successfully running in production)?	Less than one hour	Between one day and one week	Between one month and six months	More than six months
Time to restore service For the primary application or service you work on, how long does it generally take to restore service when a service incident or a defect that impacts users occurs (e.g., unplanned outage or service impairment)?	Less than one hour	Less than one day	Between one day and one week	More than six months
Change failure rate For the primary application or service you work on, what percentage of changes to production or released to users result in degraded service (e.g., lead to service impairment or service outage) and subsequently require remediation (e.g., require a hotfix, rollback, fix forward, patch)?	0%-15%	16%-30%	16%-30%	16%-30%

<https://cloud.google.com/blog/products/devops-sre/using-the-four-keys-to-measure-your-devops-performance>

nave

- Process Improvement Dashboard
- Planning & Forecasting
- Prioritization & Dependency Management
- Flow Metrics & Analytics
- Home
- Cumulative Flow Diagram
- Cycle Time Scatterplot
- Cycle Time Breakdown
- Cycle Time Histogram
- Aging Chart
- Throughput Run Chart
- Throughput Histogram
- Flow Efficiency Chart
- Due Date Performance Chart
- Monte Carlo: Delivery Date
- Monte Carlo: Number of Tasks
- Executive View
- Executive Dashboard
- Executive Report

Development (CONWIP: 2 Planned + 1 Unplanned)
Last Updated by Sonya



Controls for all charts

Colors

- Issue Type
- Status
- Priority
- Severity of Impact

Cycle time precision

Filters (70 cards)

Statuses (1/4)

- Development
- Code Review
- Testing
- Deployment

Priorities (4/4)

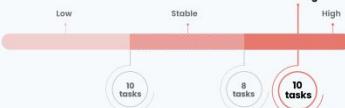
- Expedite
- Fixed Date
- Standard
- Intangible

Sprints (1/4)

- Sprint 01 - Launch Prep
- Sprint 02 - UI Improvements
- Sprint 03 - Bug Fixes
- Sprint 04 - UX Updates

Work in Progress

HIGH

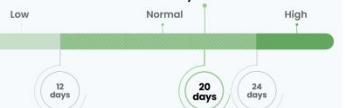


Your WIP is too high! Focus on moving current tasks along, especially the ones that are almost done:

- Under Review [DEV] 2222-738
- Ready for Review [DEV] 5302-730
- Ready for Review [DEV] 9983-283

Cycle Time

STABLE

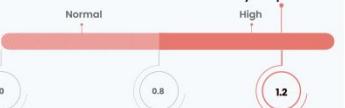


Your cycle time is stable! If you're still looking for improvement opportunities, consider reviewing the items with the longest cycle time:

- 16 days [DEV] 7382-849
- 12 days [DEV] 6638-839
- 12 days [DEV] 2673-098

Throughput

HIGH

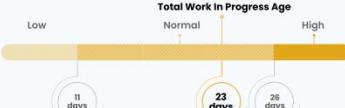


Your throughput is too high! Review these tasks to identify what factors contributed to this boost and assess if they can be sustained in the long run:

- Aug 4th [DEV] 8293-283
- Aug 4th [DEV] 8983-103
- Aug 4th [DEV] 8112-099

Work in Progress Age

AT RISK

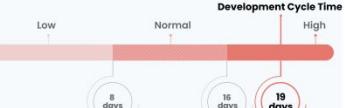


Your WIP age is at risk! Consider prioritizing the tasks with the highest work in progress age to bring your workflow back under control:

- 16 days [DEV] 1232-190
- 12 days [DEV] 3320-827

Cycle Time per Process Step

HIGH



Your Development cycle time is too high! Focus on assessing the issue that caused the delay to bring cycle time on that status back in line:

- 16 days [DEV] 8982-772

Flow Efficiency

STABLE

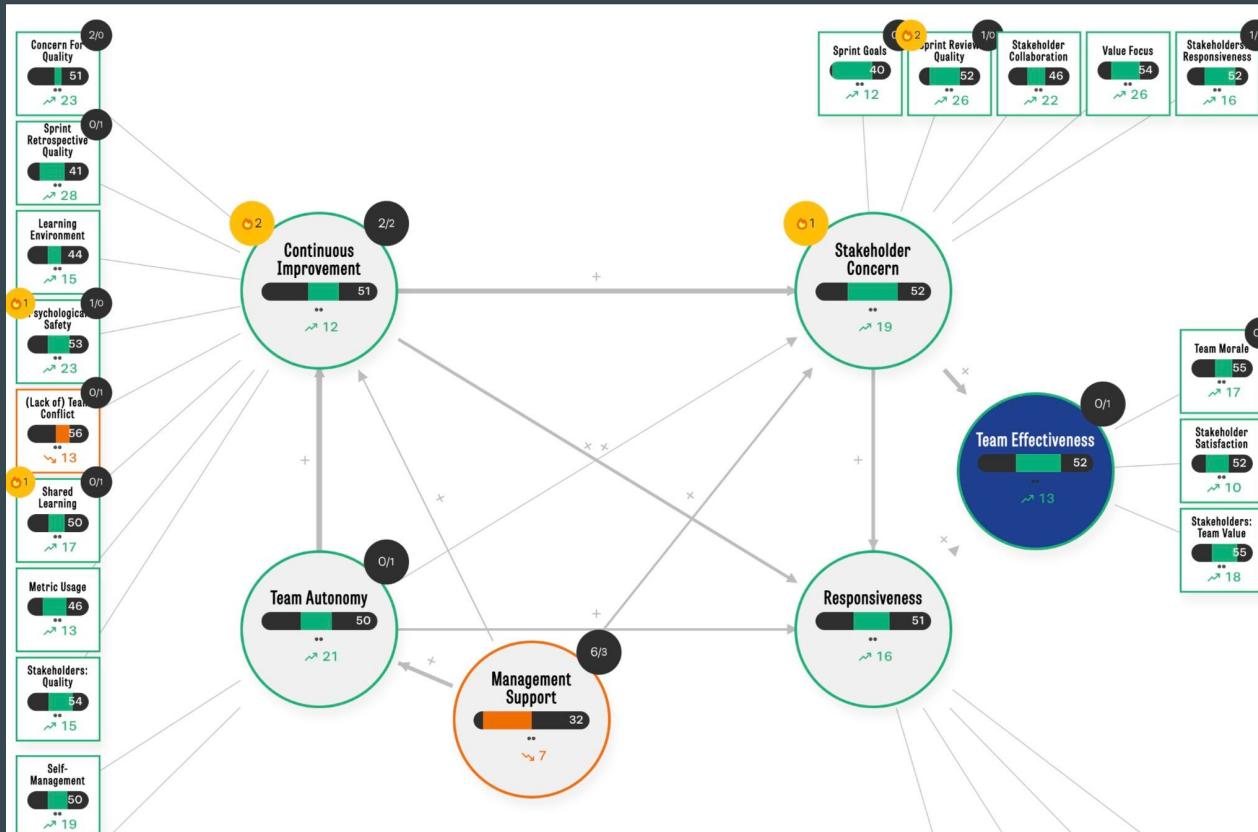


Your flow efficiency is stable! If you want to further reduce wait times, consider analyzing the following items with the lowest flow efficiency and highest cycle time:

- 16 days 23% [DEV] 537-009
- 12 days 26% [DEV] 346-098

getnave.com





4. Effective retrospectives

To do

To do:

1. Measure actual usage
2. Working tested software, every sprint
3. Data-driven estimation
4. Effective retrospectives

How to get started

RICHARD RUMELT

"A giant in the field of strategy"—*McKinsey Quarterly*

GOOD
STRATEGY
BAD
STRATEGY

The Difference
and Why it Matters

The kernel of a strategy
contains three elements:
a **diagnosis**,
a **guiding policy**,
and **coherent action**.

RICHARD RUMELT

"A giant in the field of strategy"—*McKinsey Quarterly*

GOOD
STRATEGY
BAD
STRATEGY

The Difference
and Why it Matters

That's all!

Contact, blog & slides @
www.jakobbuis.nl

