



Eberhard Wolff  
@ewolff

# Why Continuous Delivery Doesn't Work

**INNOQ**

**EBERHARD WOLFF**

Fellow at INNOQ Deutschland GmbH

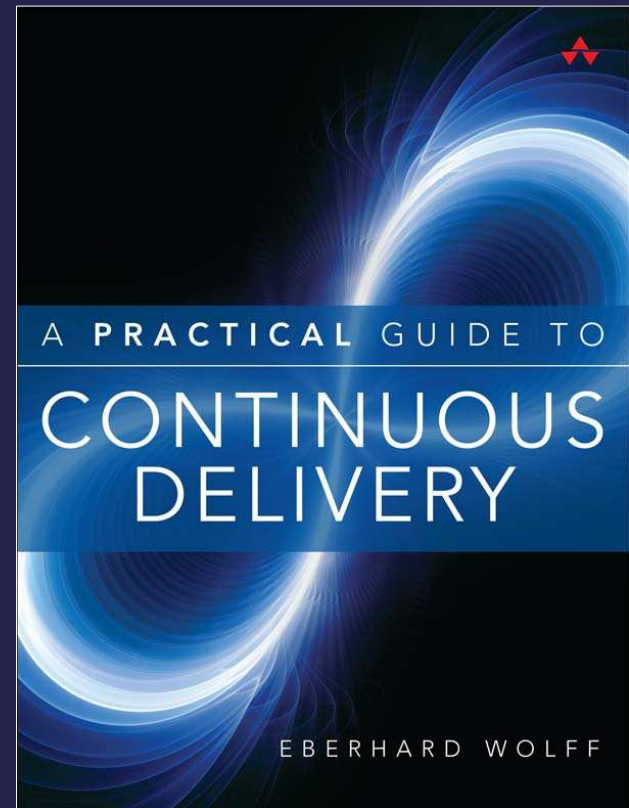
**@ewolff**

**[www.ewolff.com](http://www.ewolff.com)**



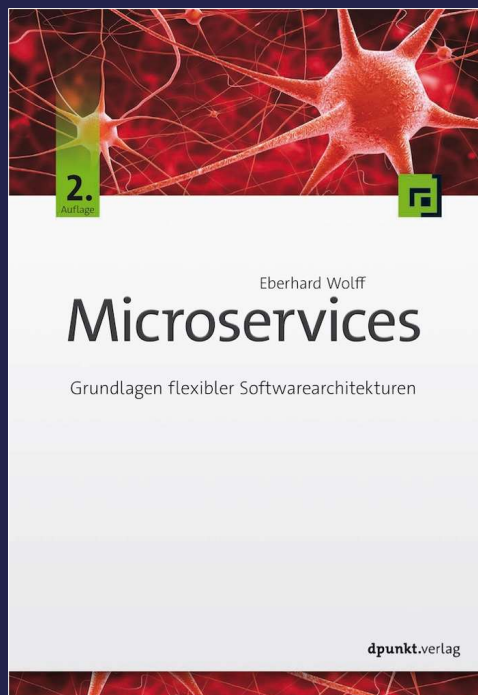


[www.continuous-delivery-buch.de](http://www.continuous-delivery-buch.de)

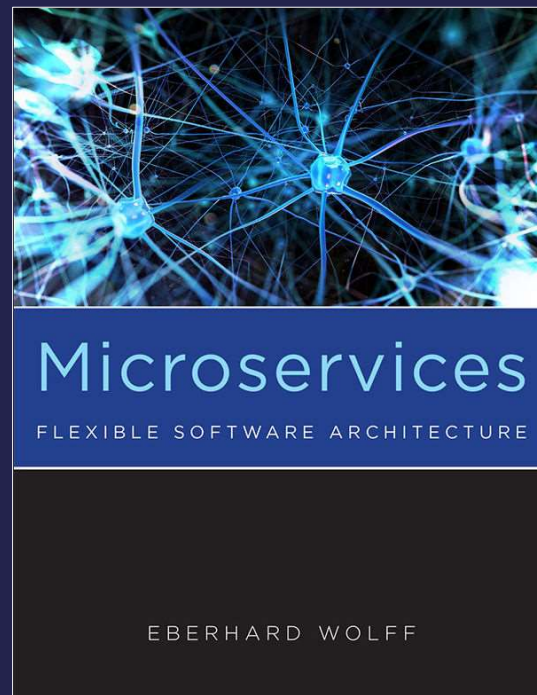


[www.continuous-delivery-buch.de](http://www.continuous-delivery-buch.de)

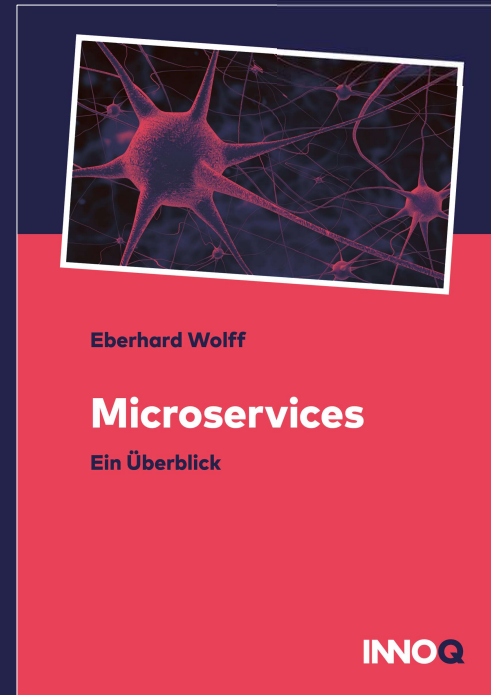
# FREE



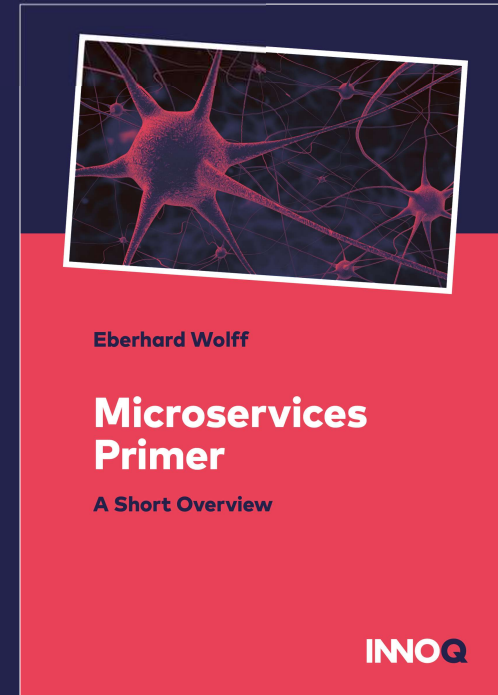
[microservices-buch.de](http://microservices-buch.de)



[microservices-book.com](http://microservices-book.com)

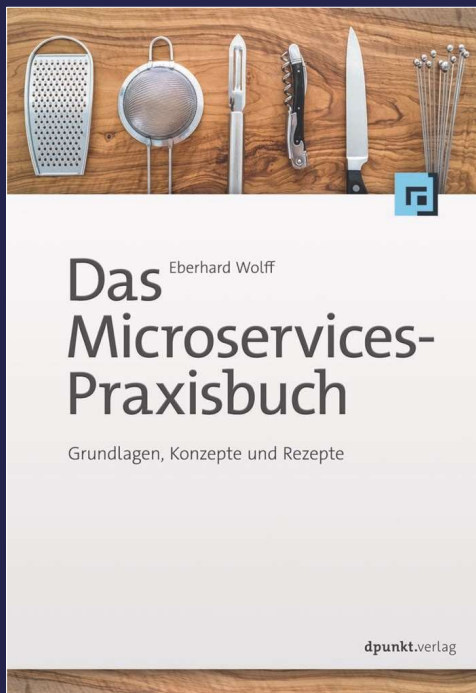


[microservices-buch.de/  
ueberblick.html](http://microservices-buch.de/ueberblick.html)

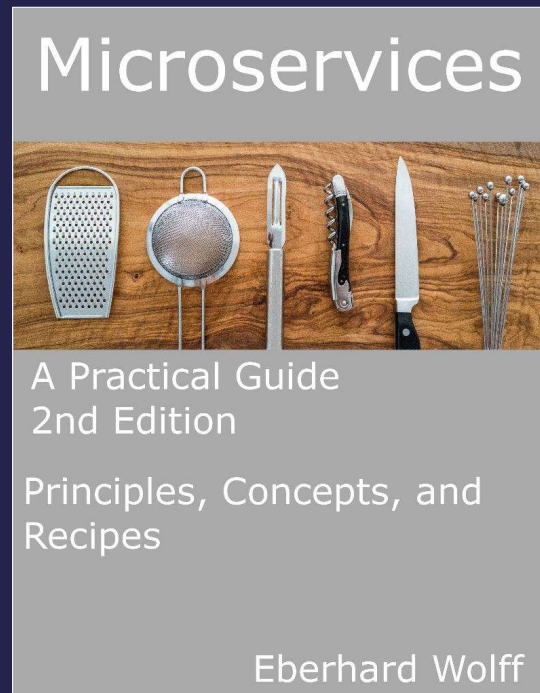


[microservices-book.com/  
primer.html](http://microservices-book.com/primer.html)

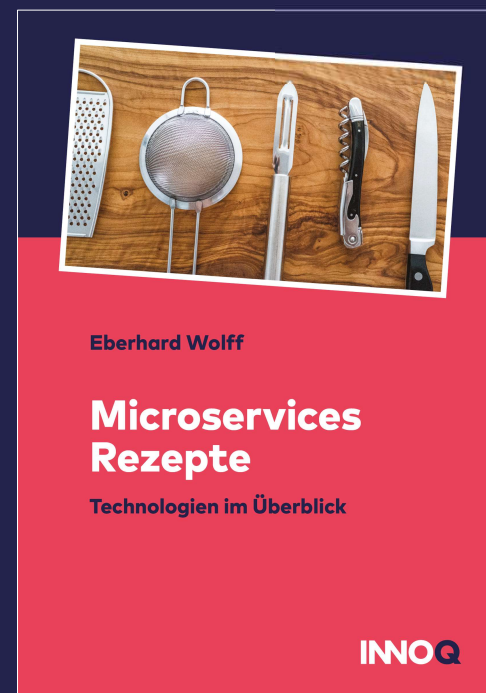
# FREE



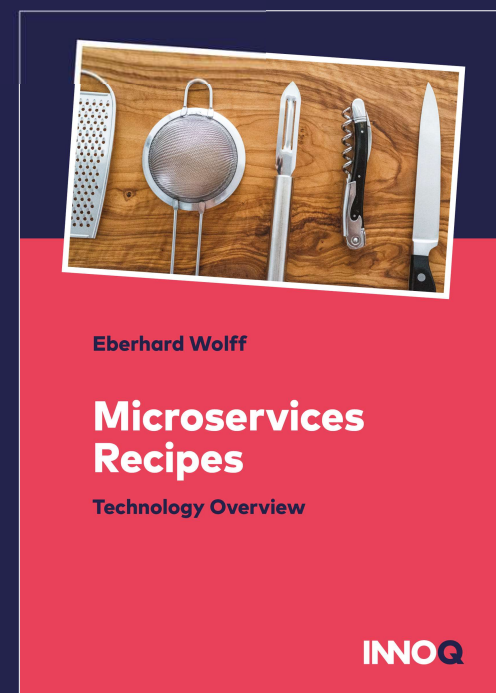
[microservices-praxisbuch.de](http://microservices-praxisbuch.de)



[practical-microservices.com](http://practical-microservices.com)



[microservices-praxisbuch.de/  
rezepte.html](http://microservices-praxisbuch.de/rezepte.html)



[practical-microservices.com/  
recipes.html](http://practical-microservices.com/recipes.html)



#SoftwareArchitektur

 @ewolff



 ebrwolff

Freitags 12:00 live + Aufzeichnung  
<http://software-architektur.tv>

**10 Years of  
Continuous Delivery  
– Still Struggling!**

# Why Continuous Delivery?



**Lead time =  
faster time to  
market**



<https://puppet.com/resources/whitepaper/state-of-devops-report>

**30.000 survey  
responses**



**Dr. Nicole Forsgren** is Co-founder, CEO, and Chief Scientist at [DevOps Research and Assessment \(DORA\)](#) and co-author of the book [Accelerate: The Science of Lean Software and DevOps](#). She is best known for her work measuring the technology process and as the lead investigator on the largest DevOps studies to date. She has been a professor, sysadmin, and performance engineer. [Nicole's work](#) has been published in several peer-reviewed journals. Nicole earned her PhD in Management Information Systems from the University of Arizona, and is a Research Affiliate at Clemson University and Florida International University.

---

**Jez Humble** is co-author of [Accelerate](#), [The DevOps Handbook](#), [Lean Enterprise](#), and the Jolt Award-winning [Continuous Delivery](#). He has spent his career tinkering with code, infrastructure, and product development in companies of varying sizes across three continents, most recently working for the U.S. government at [18F](#). He is currently researching how to build high-performing teams at his startup, [DevOps Research and Assessment](#), and teaching at [UC Berkeley](#).



**Gene Kim** is a multiple award-winning CTO, researcher, and author. He was founder and CTO of Tripwire for 13 years and is the co-author of *The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win*, *The DevOps Handbook*, and the newly-released *Accelerate*. Since 2014, he has been the organizer of the [DevOps Enterprise Summit](#), studying the technology transformations of large, complex organizations.

# High Deployment Frequency

Multiple times per day

On Demand

# **High Deployment Frequency: Result**

Better lead time

Better time to restore service

Lower change failure rate

# **High Deployment Frequency: Result**

Less unplanned work and rework

Less work on remediating security issues

Less work on defects identified by end user

Less customer support work

2/3 more new work (e.g. new features)



# **Deployment Frequency: Results**

Culture of psychological safety

Less burnout

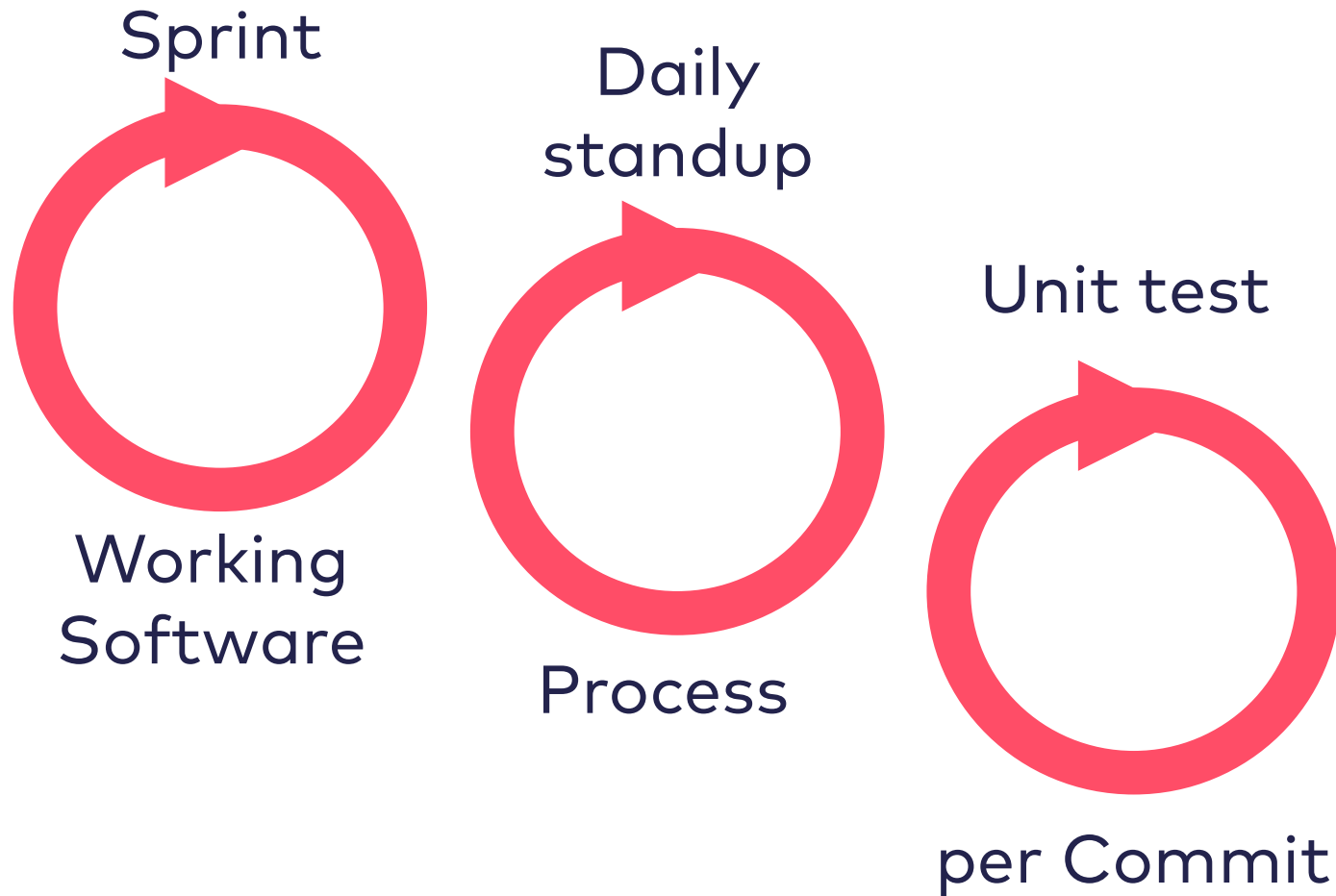
2019 study

**Better live through  
Continuous Delivery!**

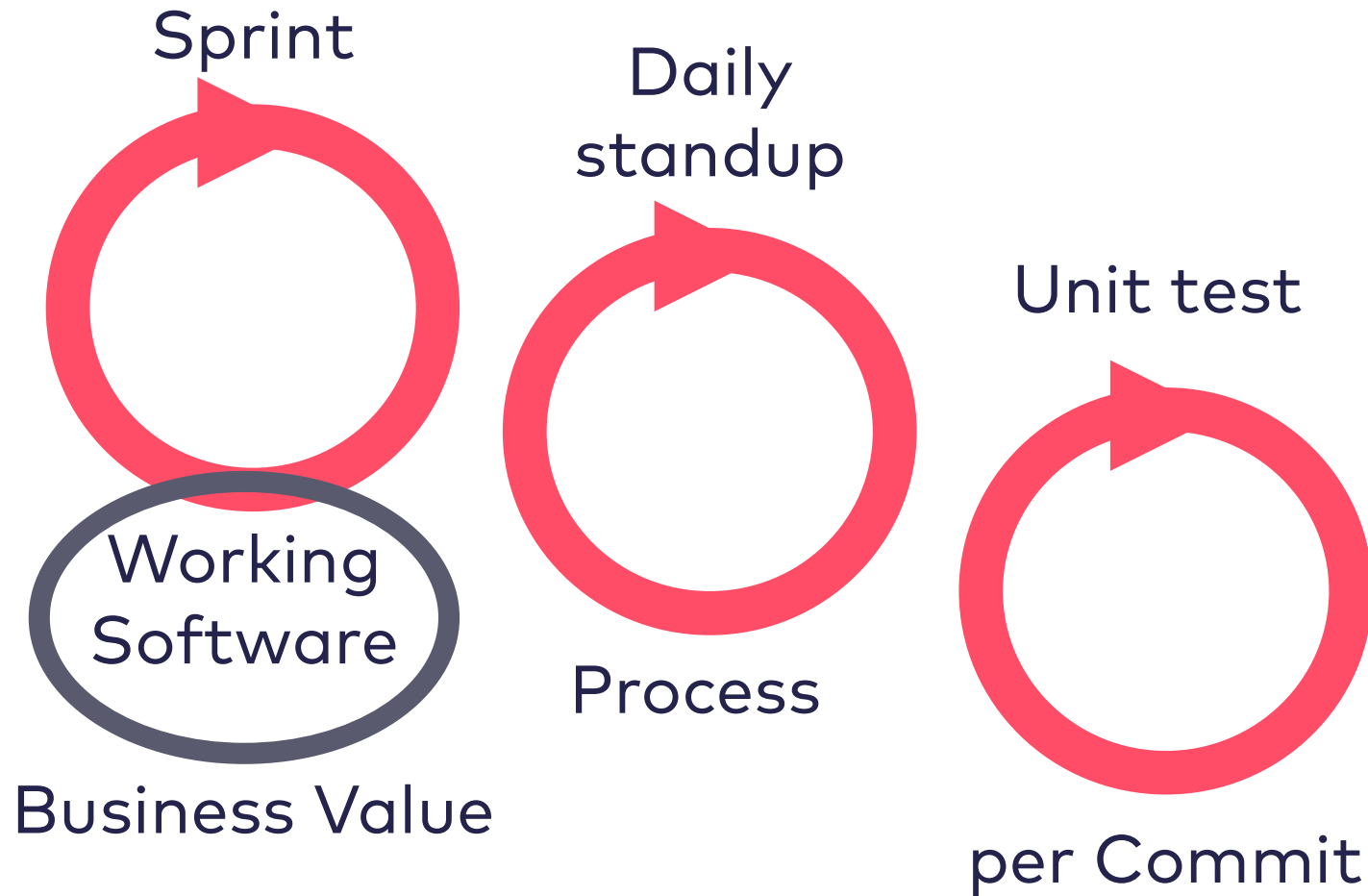
**Deployment: not  
necessarily new  
features**

**Actually it's about  
feedback!**

# Feedback Loops



# Feedback Loops



# Experiments

Working software should be experiments

What works / what doesn't?

Metric-based feedback about software

Conversion funnel

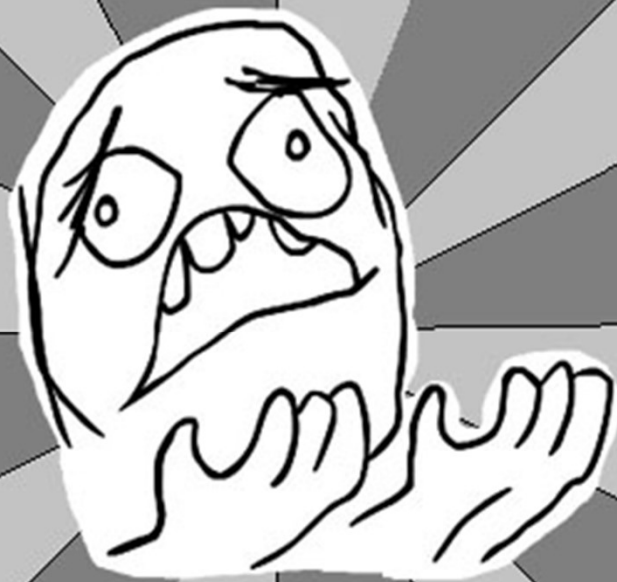
A/B testing

<https://www.innoq.com/de/podcast/053-metric-driven-development/>



**Continuous Delivery  
provides a way to do  
more experiments.**

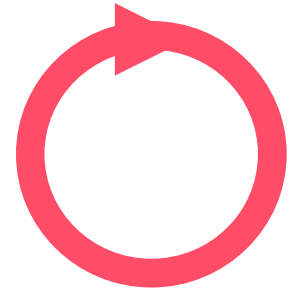
**FEEDBACK**



**Y U NOT WANT IT???**

memegenerator.net

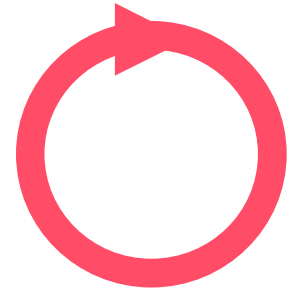
# Feedback



Feedback is only valuable  
...if you had a bad concept about reality.

It is hard to admit your concept is wrong  
...in particular if it is **your** plan for **your**  
product.

# Feedback



Feedback is only valuable

...if you had a bad concept about reality.

...basically a mistake

Life is easier without reminder about mistakes.

60%– 90% of ideas do not improve the metrics they were intended to improve

Ronny Kohavi

Former Head Data Mining and Personalization group

Amazon

Source: Lean Enterprise, Humble et al

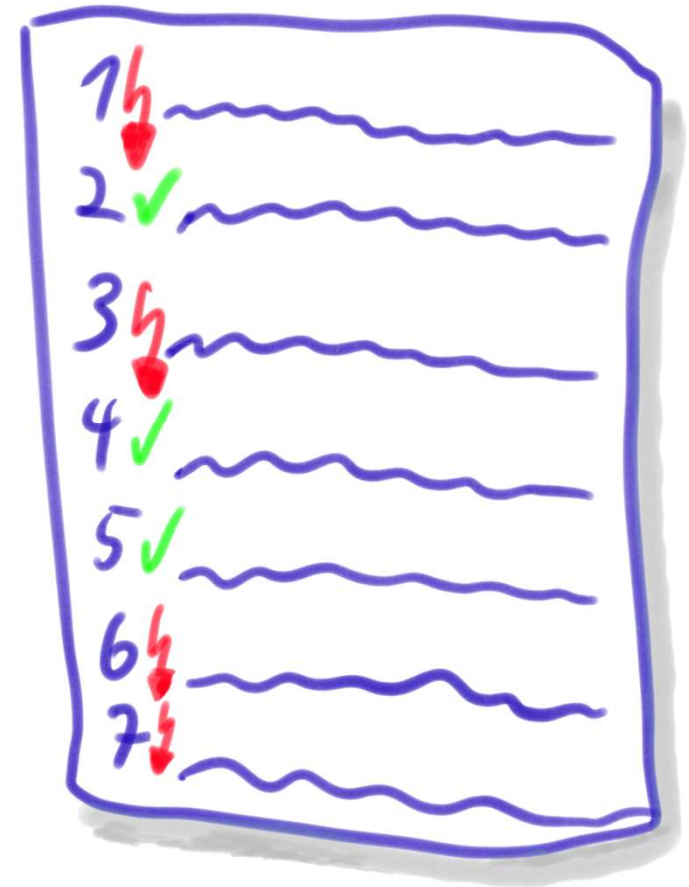
# Product Managers

Lots of mistakes

More than half of the features are worthless...

...or hurt business goals.

Many businesses don't even know the KPIs.

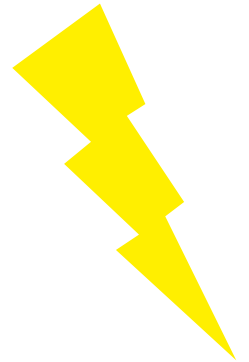


# Mistakes

Managers or employees might be fired because of mistakes.

So better make none

So better don't seek feedback

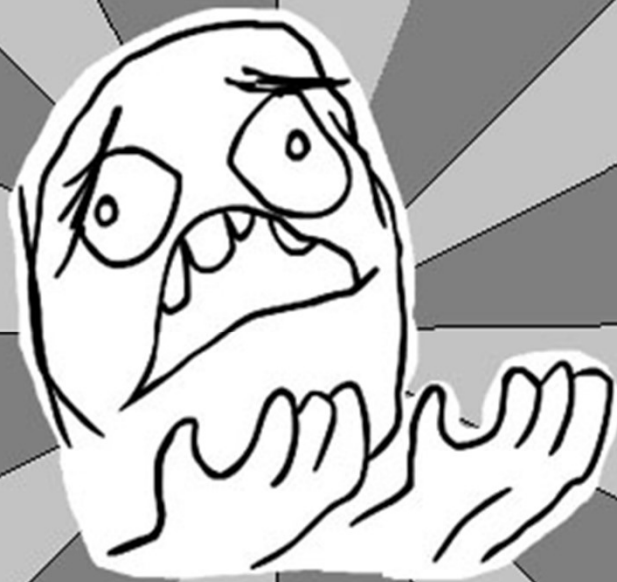




**But we need to train  
users!**

**But users don't want  
new features!**

**BETTER TOOLS!**



**Y U NOT WANT?**

memegenerator.net

**Culture**

# Nummi Plant



Ellen Levy Finch [https://commons.wikimedia.org/wiki/  
File:NUMMIplantMissionPeakPanorama\\_3199.jpg](https://commons.wikimedia.org/wiki/File:NUMMIplantMissionPeakPanorama_3199.jpg)

# Nummi Plant



# **Nummi Plant**

Founded 1962 as the GM Fremont Assembly

"Worst workforce in the US automobile industry"

Alcohol

Absence so line would shut down

Sabotage



# **Nummi Plant**

Management didn't consider workers' perspective

Quantity over quality

# **Nummi Plant**

1984 New United Motor Manufacturing

Joint venture GM / Toyota

Rehired 85% of work force

Some sent to Japan to learn the Toyota  
Production System

Achieved same productivity and defect rate  
as Toyota Japan

# **Toyota Production System**

Continuous improvement

Respect for people

Long-term philosophy

Right process will produce the right results

Add value to the organization by developing your people and partners

Continuously solving root problems drives organizational learning

# **Nummi Plant: Drivers for Change**

Emphasis on teamwork

...and quality

Same uniform,

parking,

cafeteria for all levels of employment

No-layoff policy

# **Nummi Plant: Drivers for Change**

Built-in process quality

Employee suggestion program

Continuous improvement

Consensus decision making

<https://en.wikipedia.org/wiki/NUMMI>

# **Nummi Plant: The End**

By 1998 GM still couldn't do Lean successfully in the rest of the US.

2009 GM ended joint-venture

2010 Toyota closed the plant

# Nummi Plant Today: Tesla



Stephen Pace <https://www.flickr.com/photos/stephenpace/6213130855>

# **Lessons to Learn**

Lean production is not reducing inventory

Key is a different culture

...that an existing workforce can learn.

Continuous Delivery is not a pipeline.

Culture is key!



# Lessons to Learn

Culture is key

...to accept feedback

...to deal with mistakes

...to make users appreciate better tools

...and demand better tools

**How?**

**Management can't  
order a cultural  
change to happen!**

**Commercial failure  
makes the problem  
obvious but hard to  
solve.**

**Pressure won't help.**

# External Consultants

External consultants can point out optimizations

...and help to understand the situation

But they cannot really change it.

**Management can  
do it!**



We have delays  
...more delays  
...again.

OK.

How can I help?

Wow!



# Jidōka

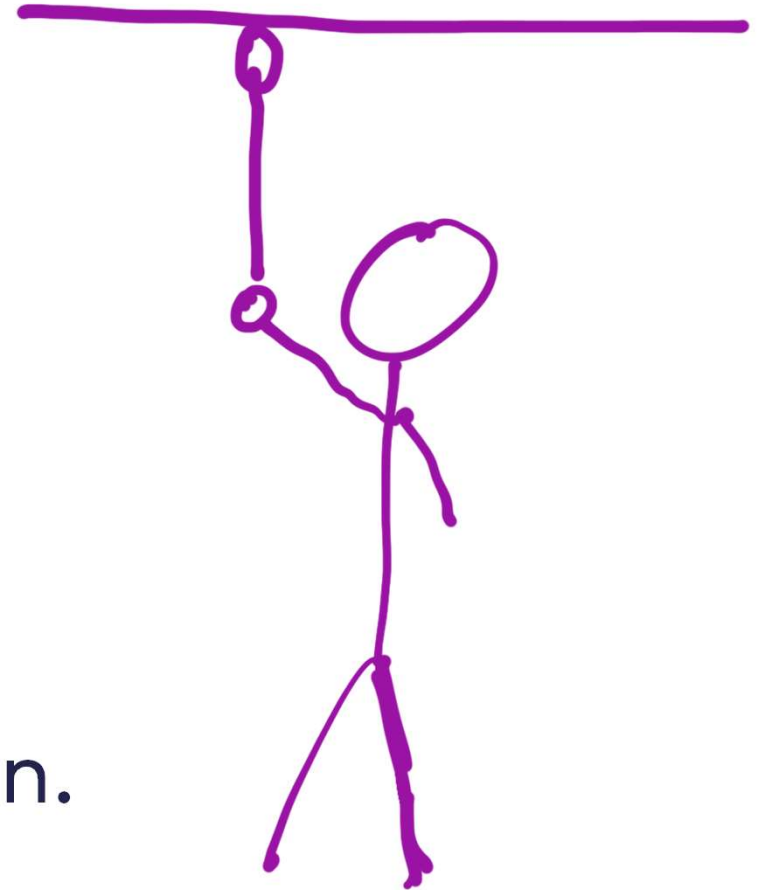
If there is an issue

...stop the line!

...and people will help

Can cause considerable  
financial loss

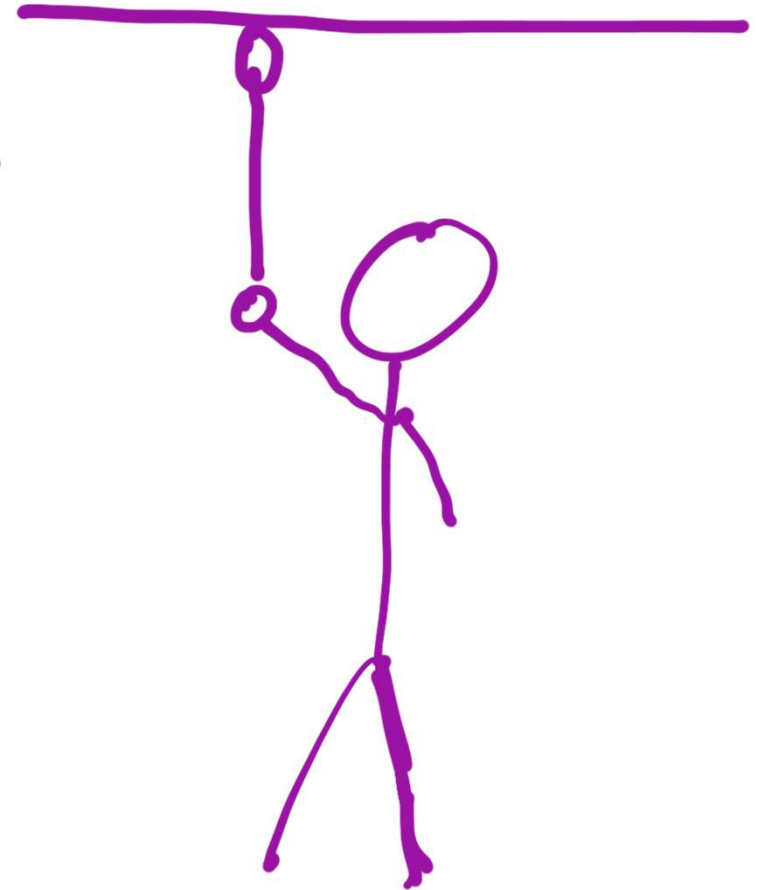
...but efficient in the long run.



# Jidōka

Empowerment of employee

Serious about quality



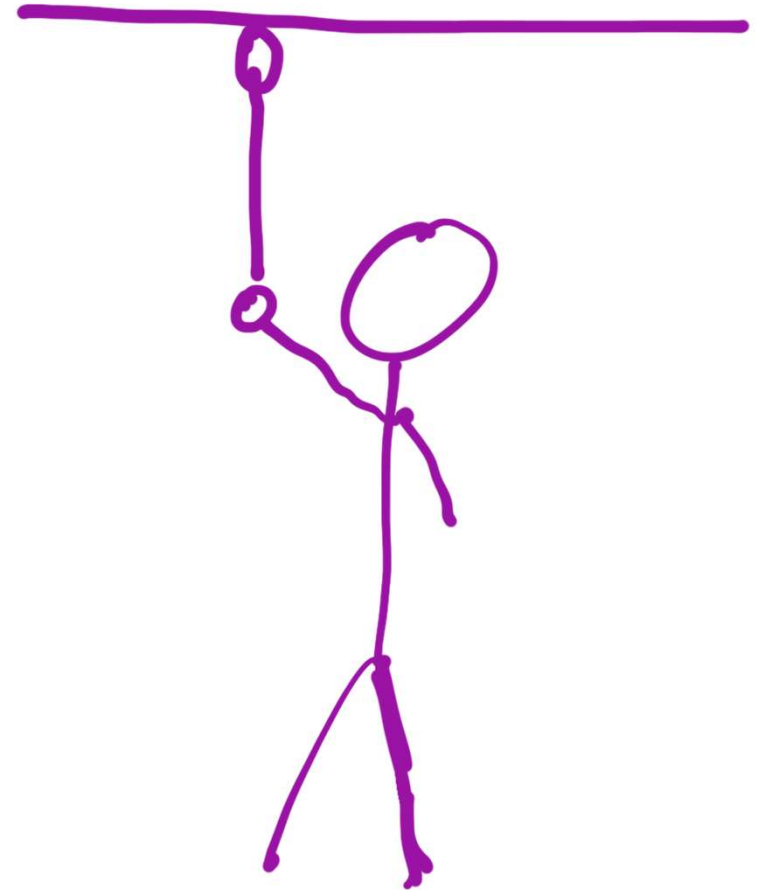
# Jidōka

Automation

= automation with a  
human touch

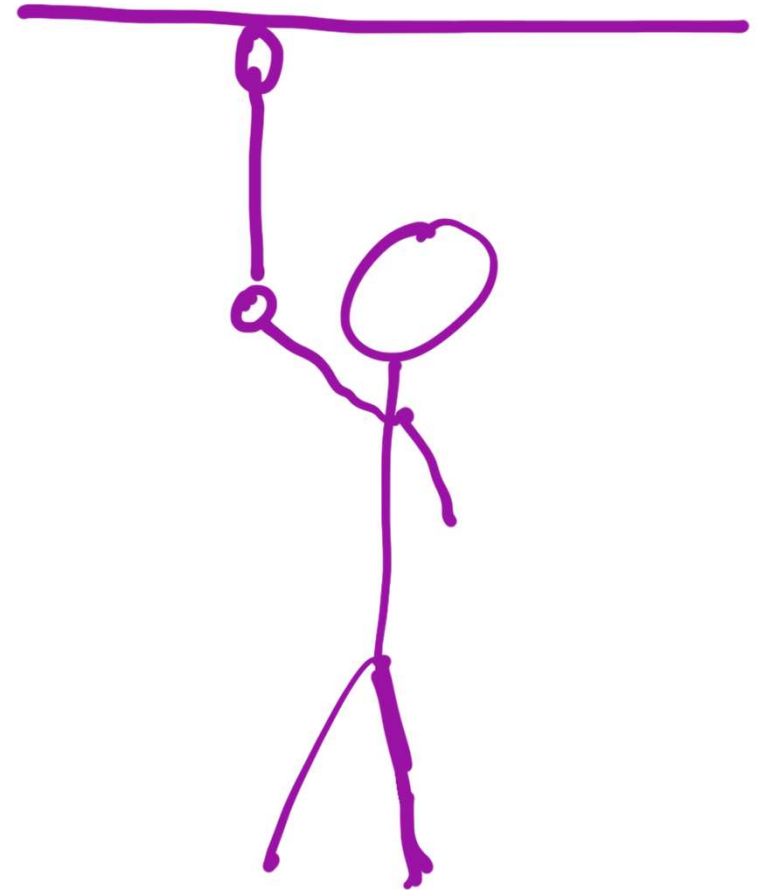
A way to optimize  
automation

...by attacking root causes.



# Jidōka

For continuous delivery:  
Give everyone the right to  
make the team gather  
...and solve a problem  
...in particular if the  
continuous delivery pipeline  
is red



# **Find Your Own Way!**

A cultural shift heavily depends on the environment.

Human interactions are hard to predict.

You cannot expect a simple concept to make everything work.

# **Find Your Own Way!**

Stepwise

Seek feedback

The Lean way to do Lean...

Separate team

Cultural shift

Continuous  
Delivery

Microservices

...

Current  
organization

Separate team



Current  
organization



Separate team

Rest of organization  
will move at the end!



# Continuous Delivery & Agile

# **Continuous Delivery & Agile**

Continuous Delivery is a core concept of Agile

Feedback is a core concept of Agile

Agile has a cargo cult problem

Adapt Scrum ceremonies – done!

# Agile Issue

Transparent progress only works if feedback is welcomed.

Must welcome feedback from production

Project success should be a common goal

...but often it is just the career.

<https://www.innoq.com/en/blog/the-problem-with-agility/>

**Agile, too, only  
works if culture  
changes.**

**Continuous Delivery  
is just the technical  
side of Agile**

# Conclusion

# Conclusion

Continuous delivery can improve time-to-market

...and your life!



# Conclusion

We are still learning the Toyota Production System.

Don't cargo cult!

It's about culture!

It's about open feedback!

# Conclusion

Improve stepwise!

There is no final goal

...and there is no universal truth about what works.

Software engineering is really social science.

# Send email to **swkchemnitz2020@ewolff.com**

## Link to Dropbox

- Slides
- Service Mesh Primer EN
- Microservices Primer DE / EN
- Microservices Recipes DE / EN
- Sample Microservices Book DE / EN
- Sample Practical Microservices DE/EN
- Sample of Continuous Delivery Book DE

## Powered by Amazon Lambda & Microservices

- Email address logged for 14 days, wrongly addressed emails handled manually