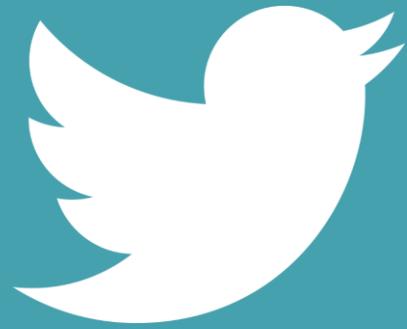


## How we changed our world

Dr. Carola Lilienthal | [cl@wps.de](mailto:cl@wps.de) | [@cairolali](https://twitter.com/cairolali)

**CAROLA**

**LILIENTHAL**



**@caiolali**





Universität Hamburg

DER FORSCHUNG | DER LEHRE | DER BILDUNG





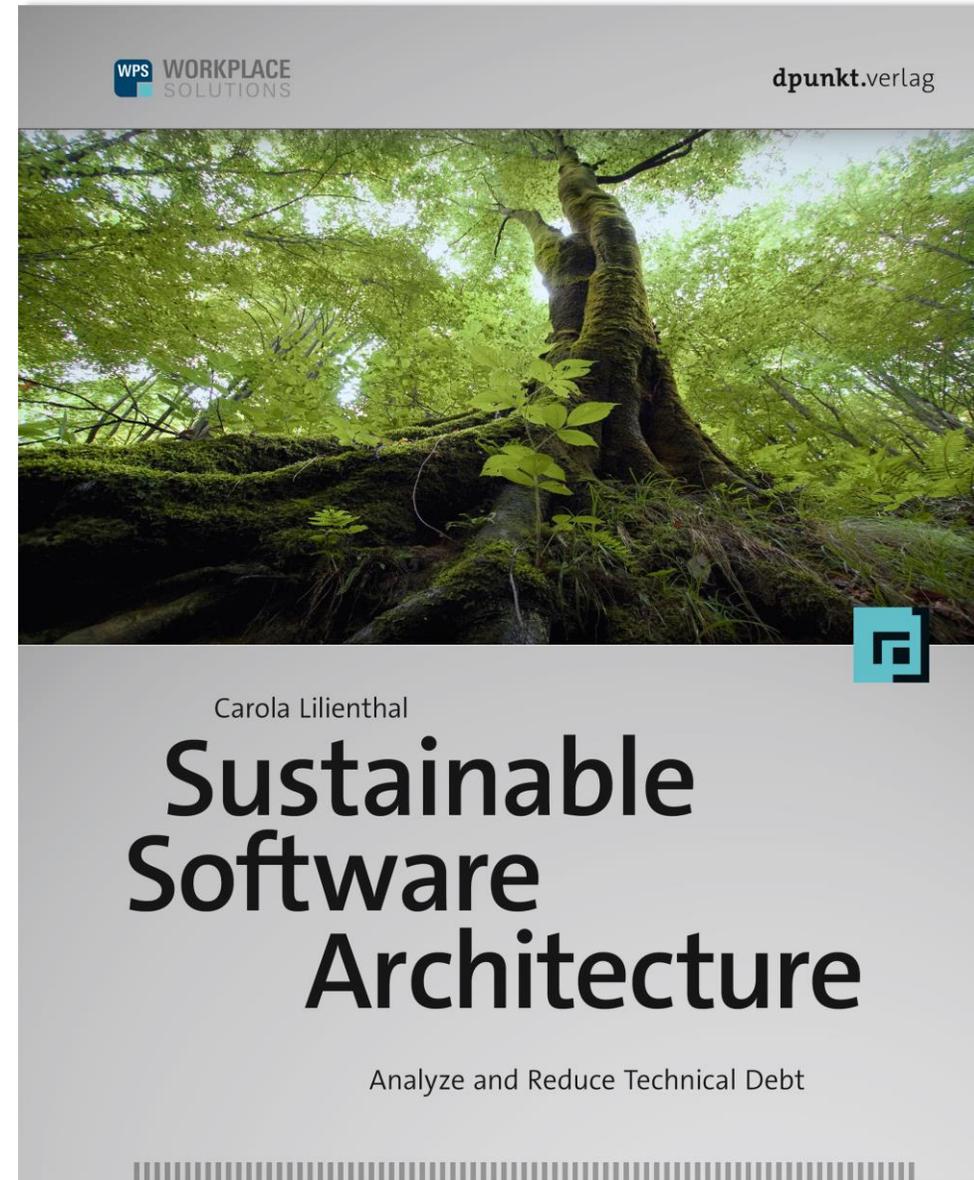




**ARCHITEKTIN**



[www.llsa.de](http://www.llsa.de)



 [@cairolali](https://twitter.com/cairolali)

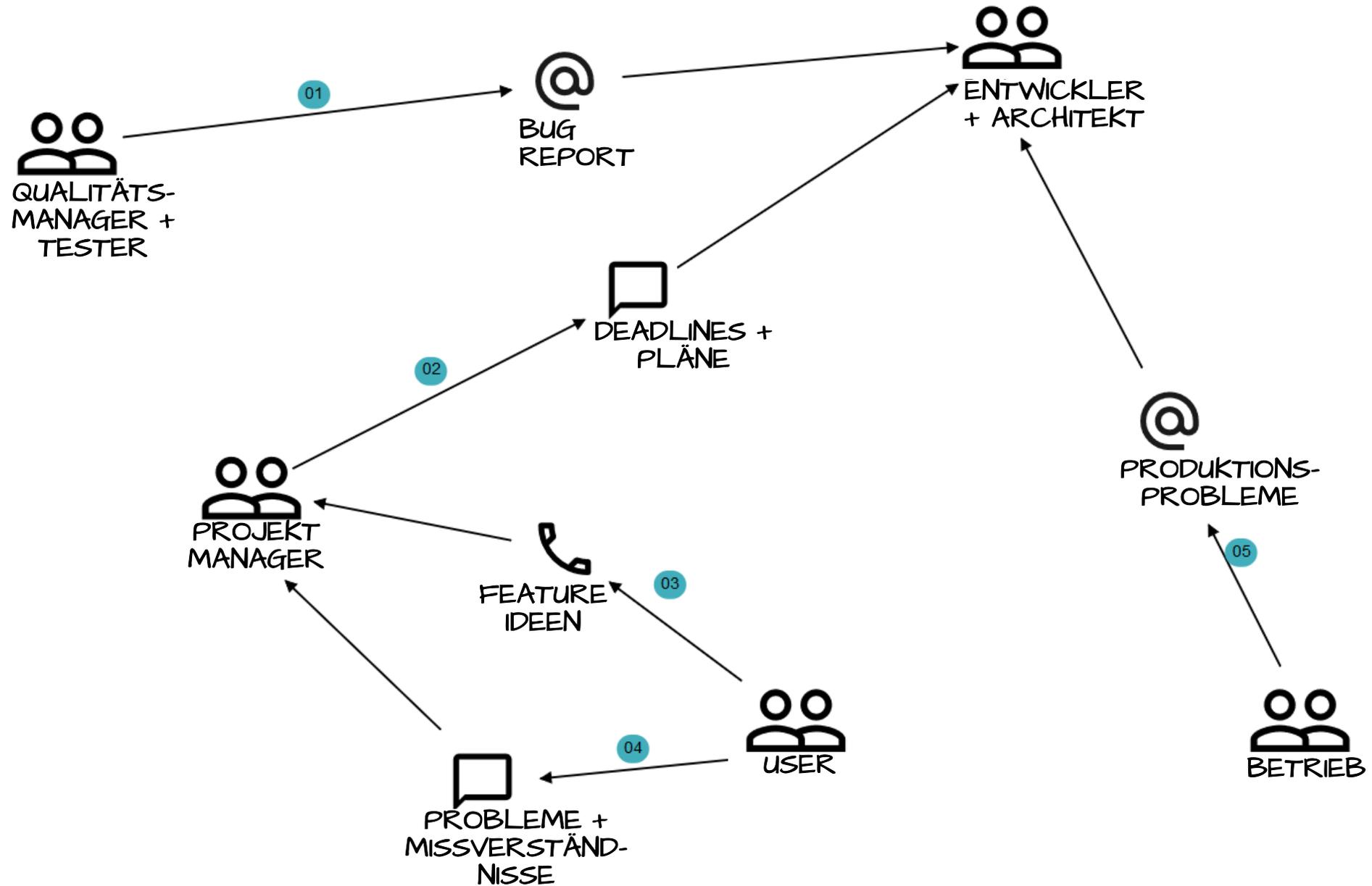


# WORKPLACE SOLUTIONS





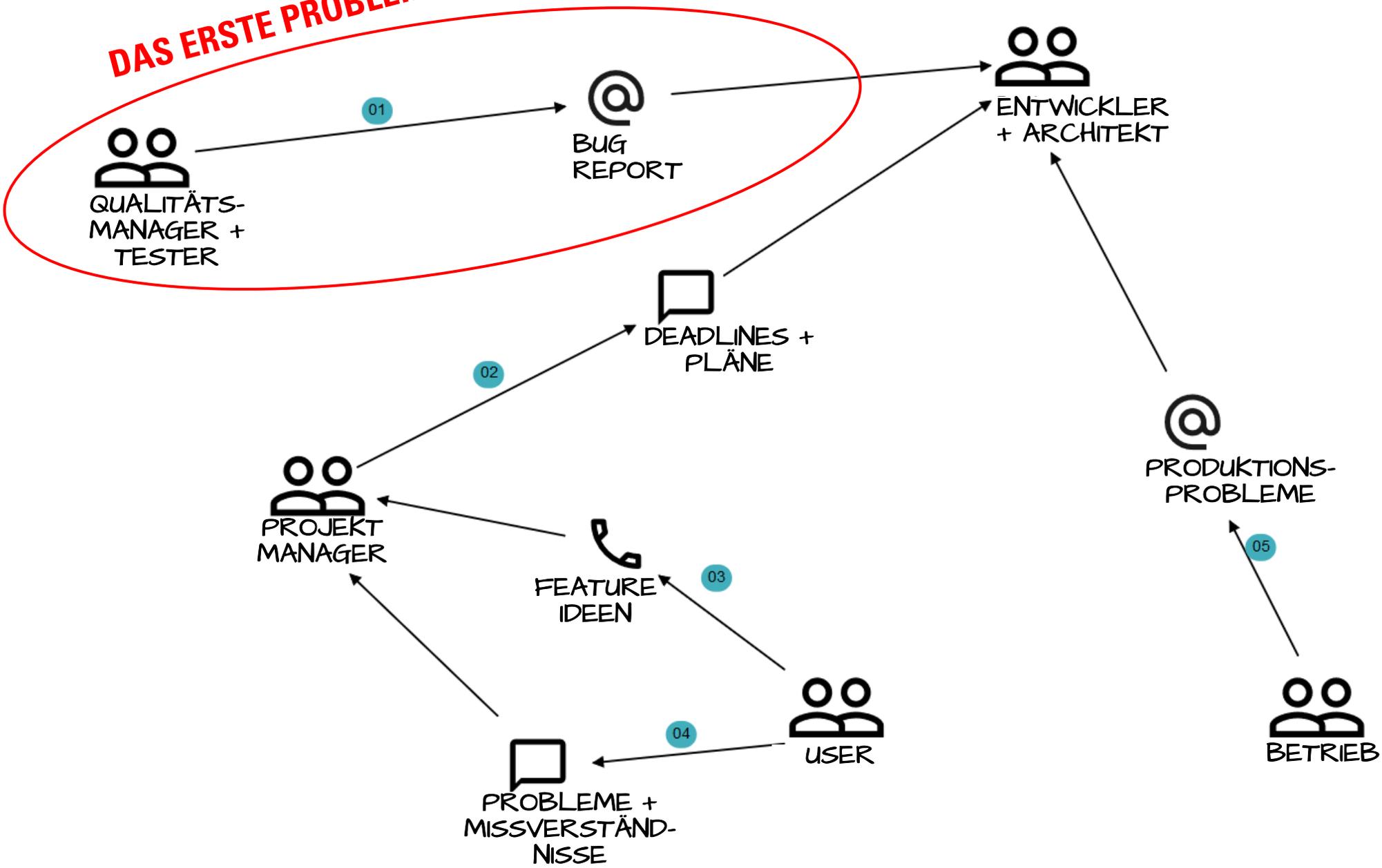






→ Solution  
Problem

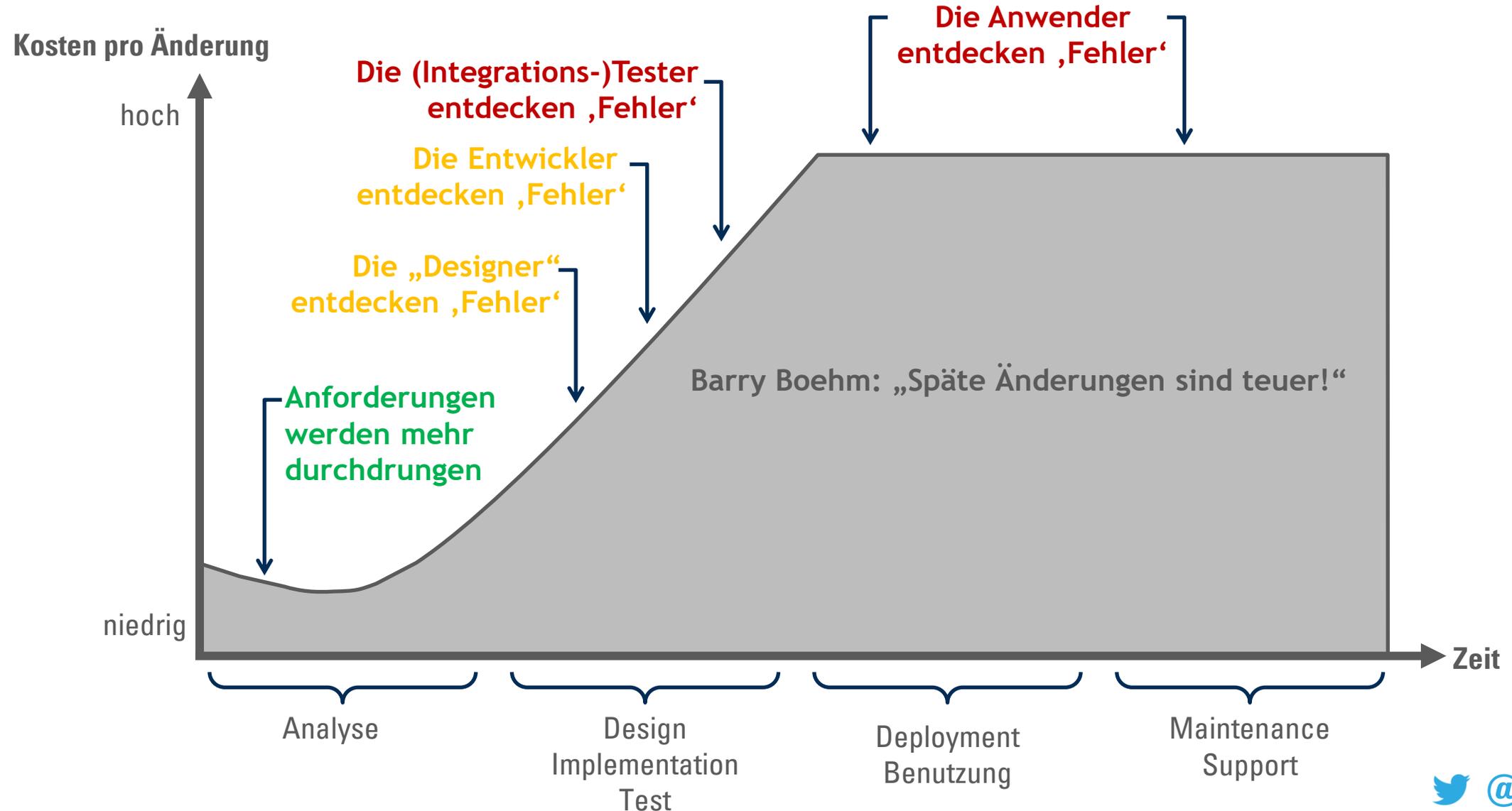
# DAS ERSTE PROBLEM





**Being a software tester  
is like being a detective**

# DIE KOSTEN KURVE



Package E Plug-ins Type Hier JUnit

Finished after 0.018 seconds

Runs: 2/2 Errors: 1 Failures: 1

de.vogella.junit.first.MyClassTest [Runner: JUnit 4] (0.004 s)

- testMultiplyException (0.002 s)
- testMultiply (0.001 s)

Failure Trace

java.lang.AssertionError: Expected exception: java.lang.Illeg

Project Explorer JUnit

Finished after 0.369 seconds

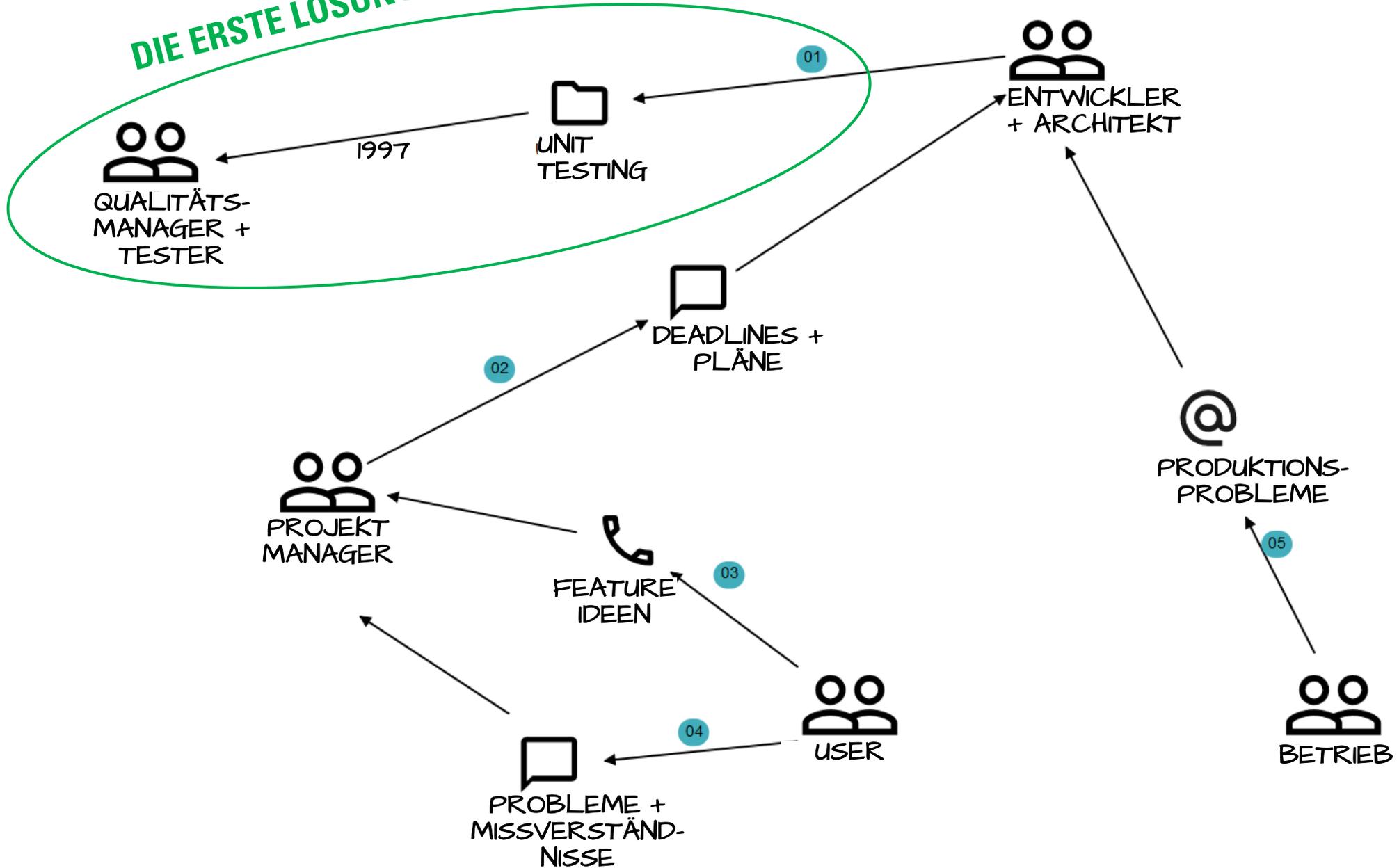
Runs: 2/2 Errors: 0 Failures: 0

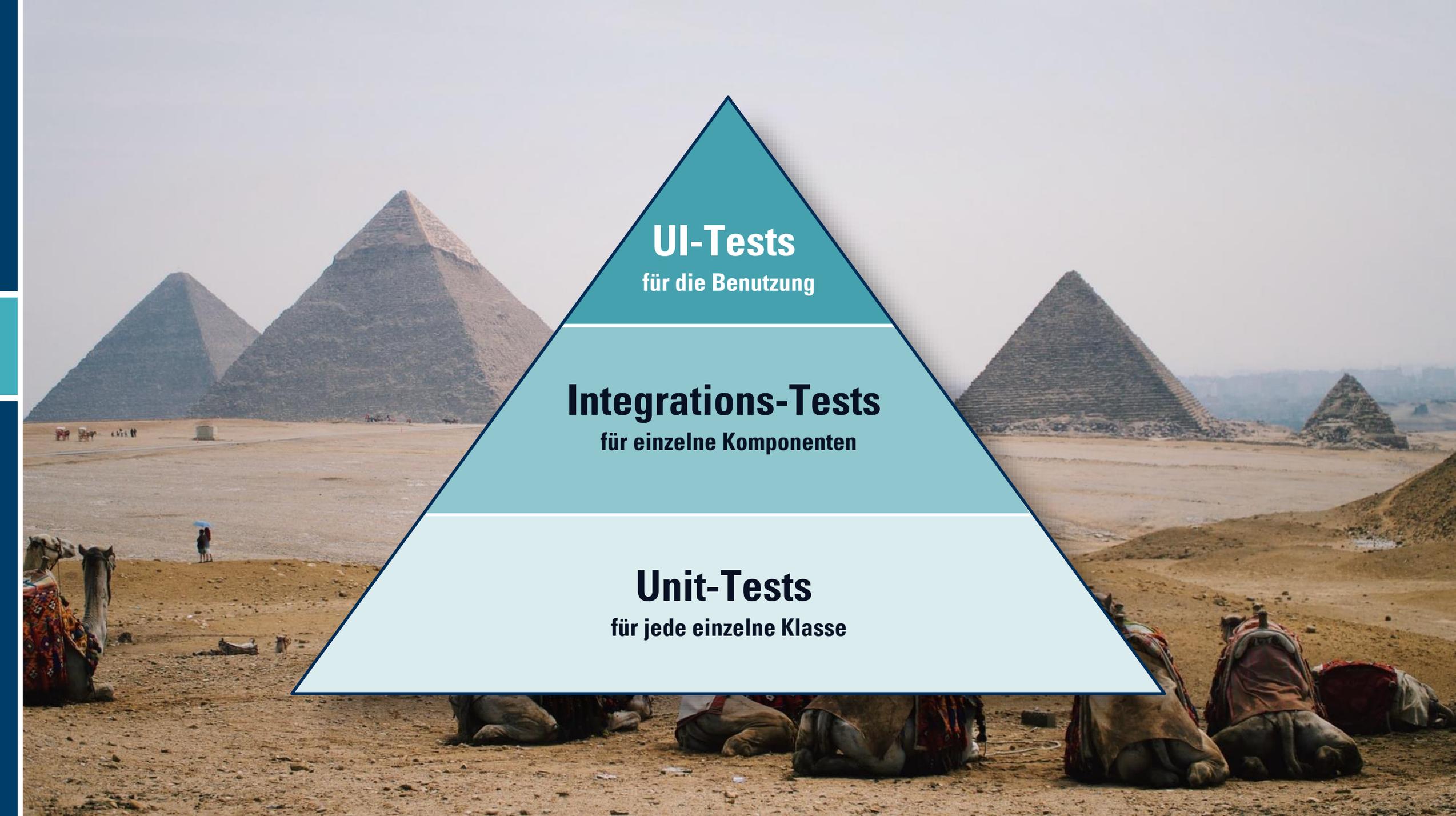
guru99.junit.TestSuiteExample [Runner: JUnit 4] (0.000 s)

- guru99.junit.MyFirstClassTest (0.000 s)
  - myFirstMethod (0.000 s)
- guru99.junit.MySecondClassTest (0.000 s)
  - mySecondMethod (0.000 s)

Failure Trace

## DIE ERSTE LÖSUNG

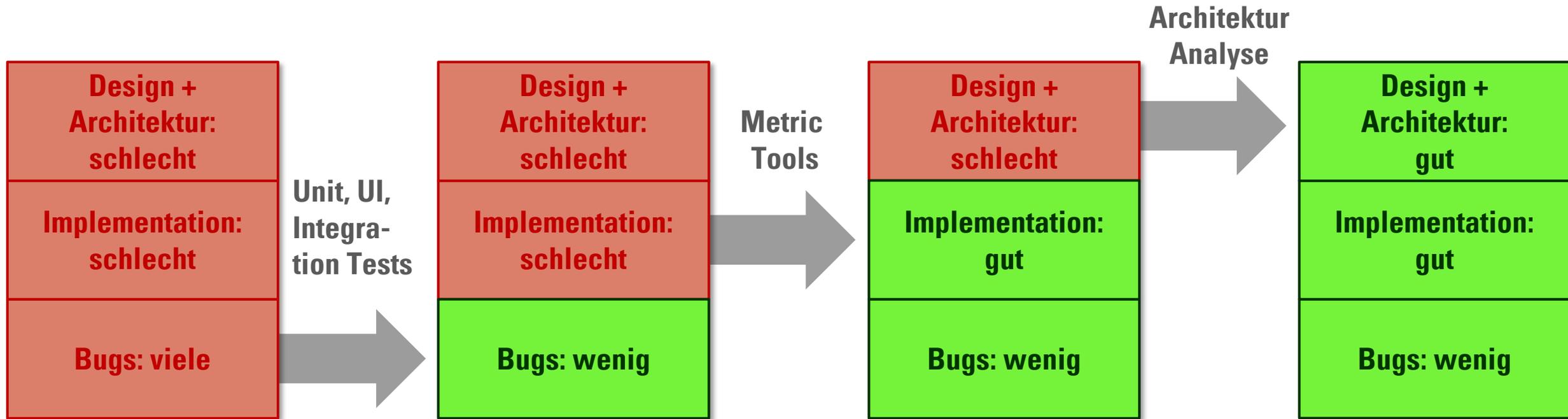




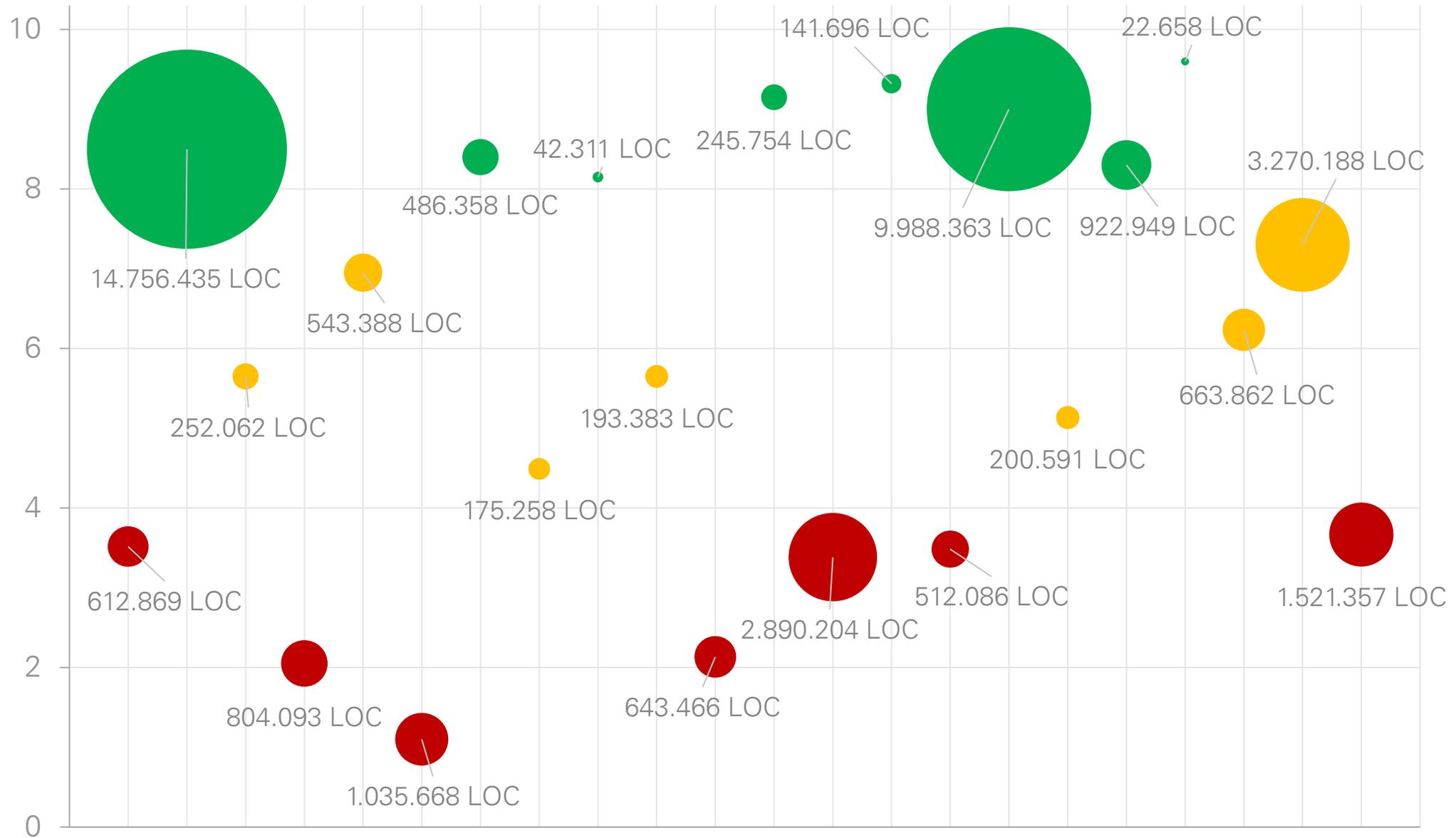
**UI-Tests**  
für die Benutzung

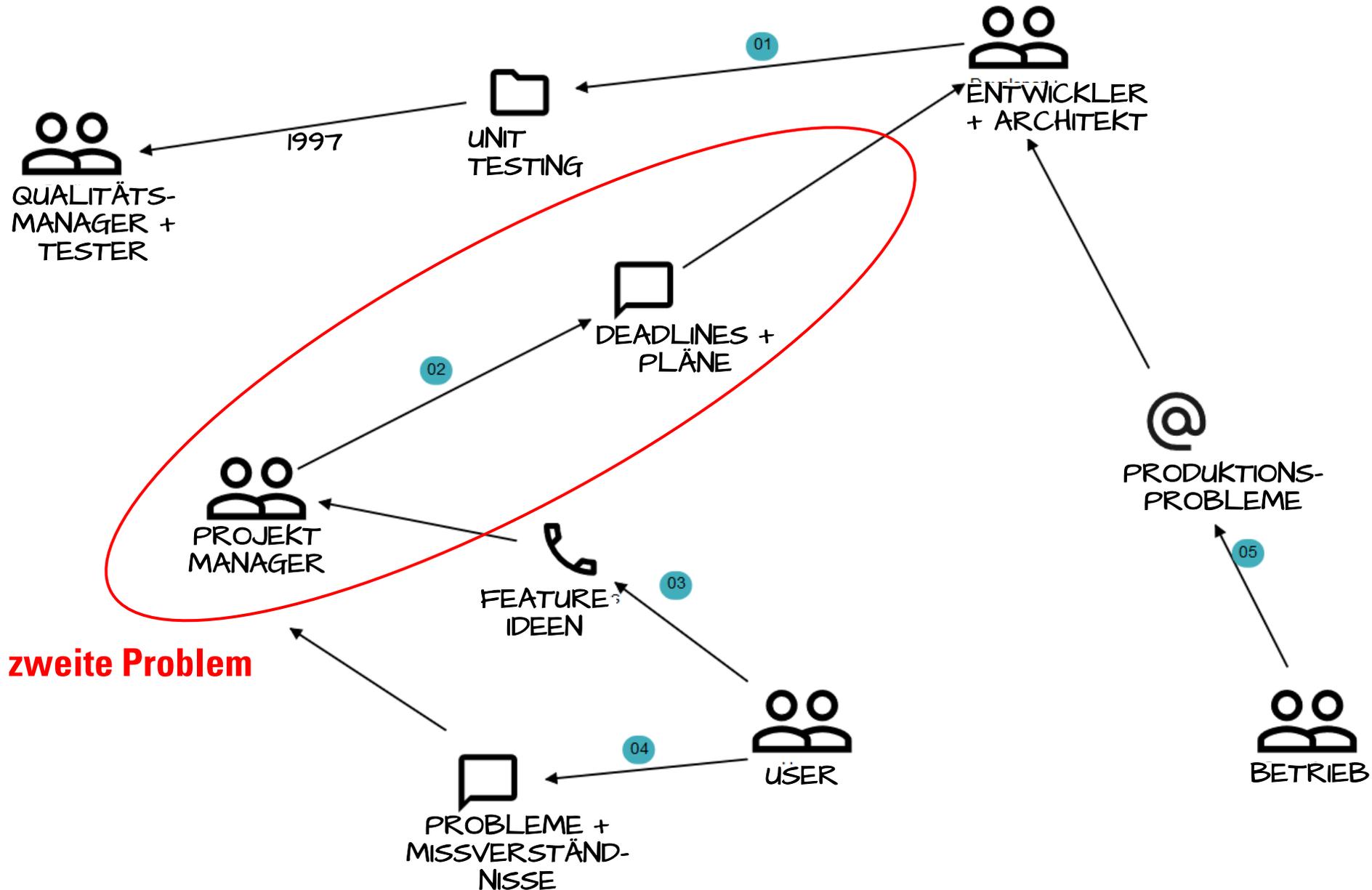
**Integrations-Tests**  
für einzelne Komponenten

**Unit-Tests**  
für jede einzelne Klasse



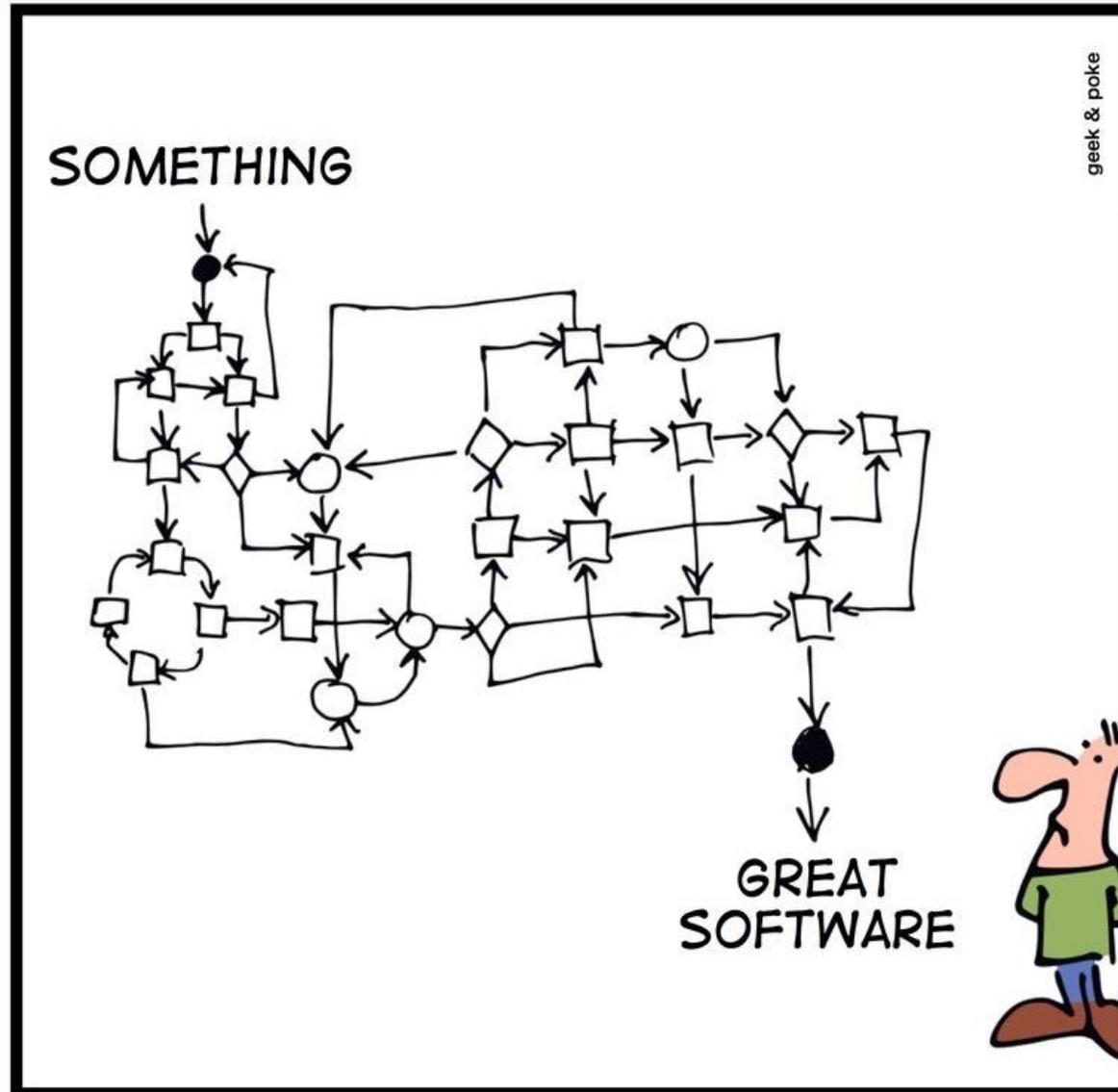
# MODULARITY MATURITY INDEX (MMI)



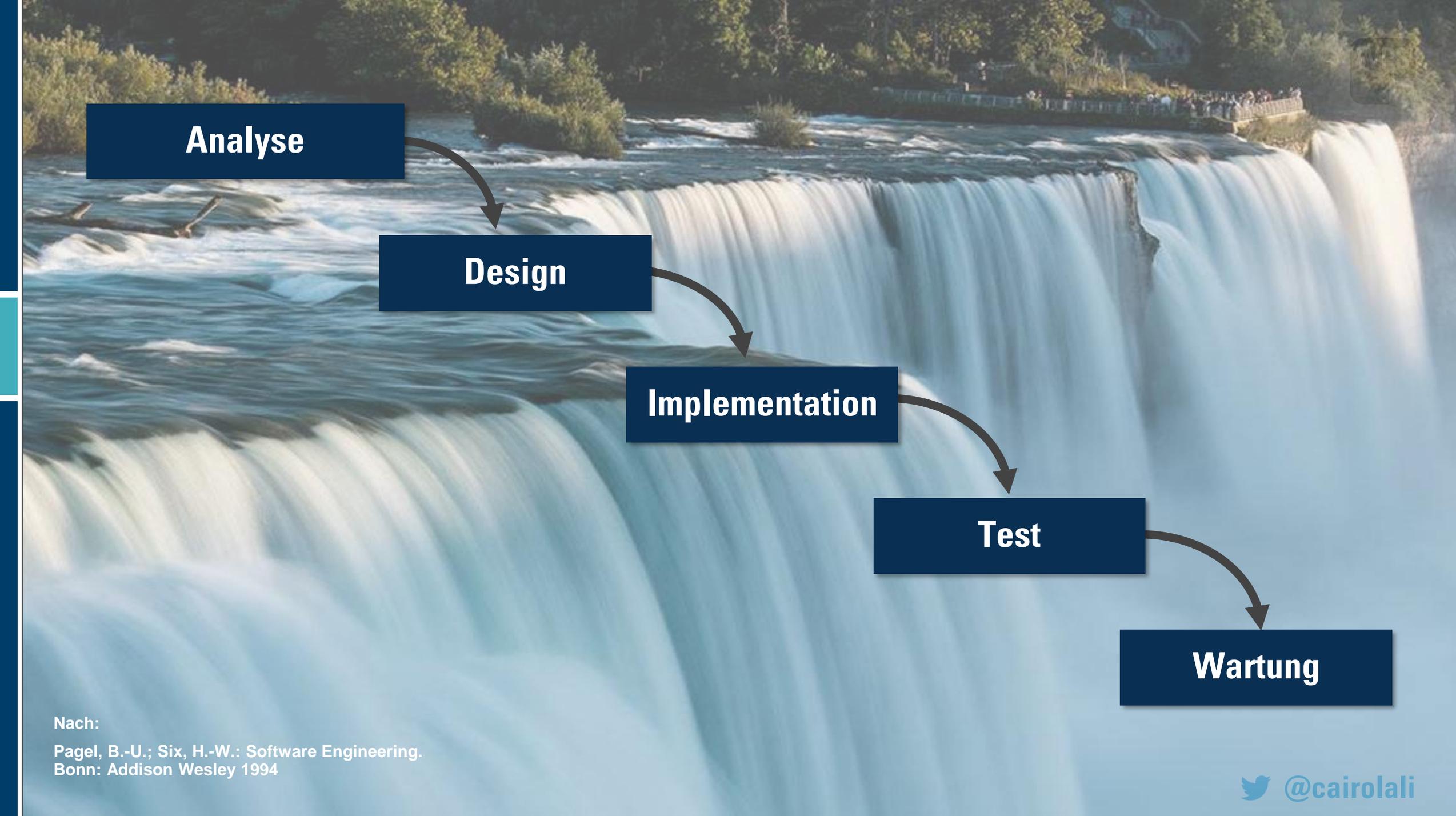


**Das zweite Problem**

# SIMPLY EXPLAINED



DEVELOPMENT PROCESS

A waterfall diagram overlaid on a background image of a waterfall. The diagram consists of five dark blue rectangular boxes, each containing a white text label. The boxes are arranged in a descending staircase pattern from top-left to bottom-right. Curved arrows connect the bottom-right corner of one box to the top-left corner of the next box below it. The background image shows a wide waterfall with white water cascading over a rocky ledge, surrounded by green trees and a wooden walkway with people in the distance.

**Analyse**

**Design**

**Implementation**

**Test**

**Wartung**

Nach:

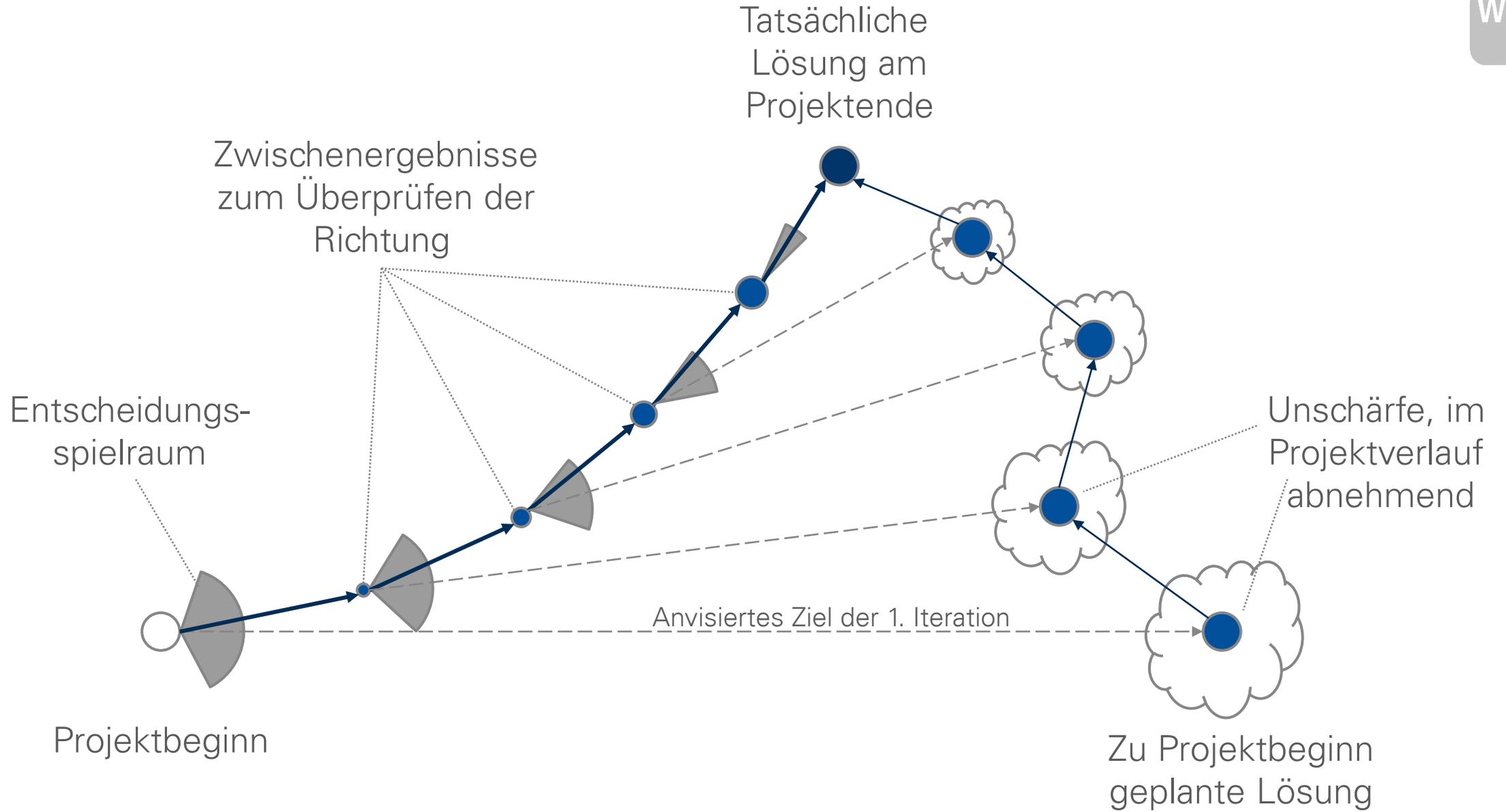
Pagel, B.-U.; Six, H.-W.: Software Engineering.  
Bonn: Addison Wesley 1994

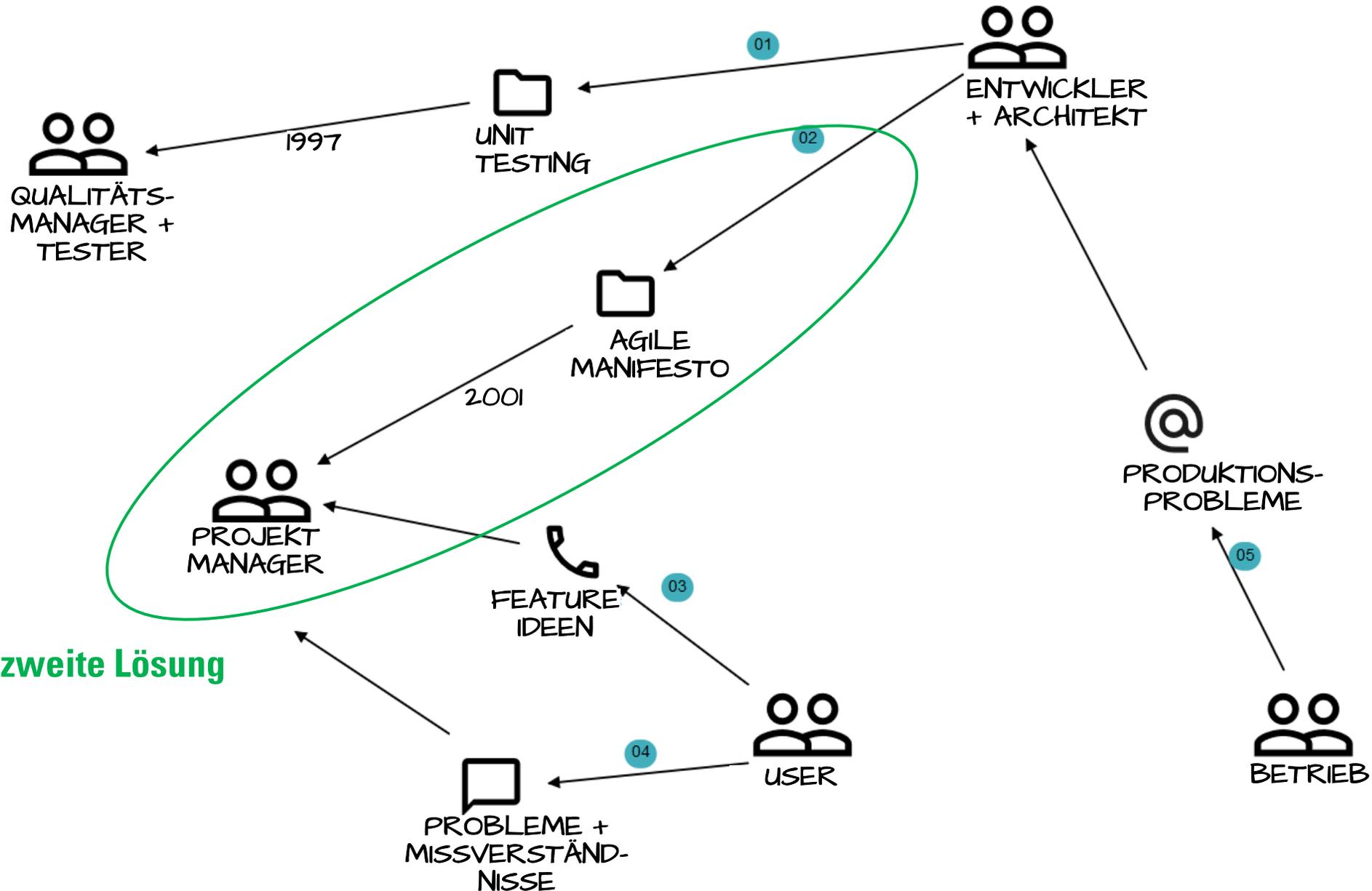
# THE AGILE MANIFESTO

Individuals and interactions	over	Processes and tools
Working software	over	Comprehensive documentation
Customer collaboration	over	Contract negotiation
Responding to change	over	Following a plan

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

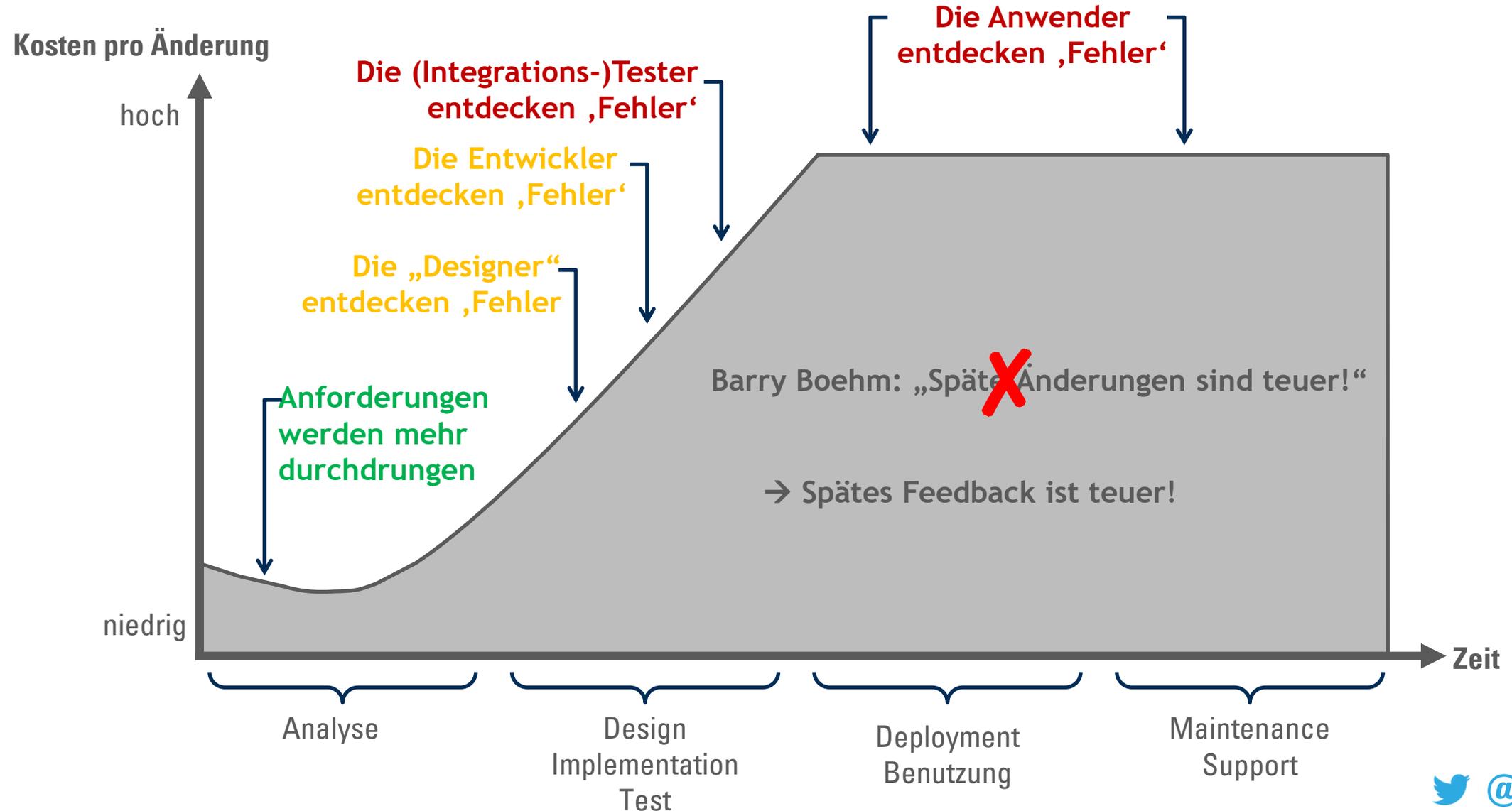




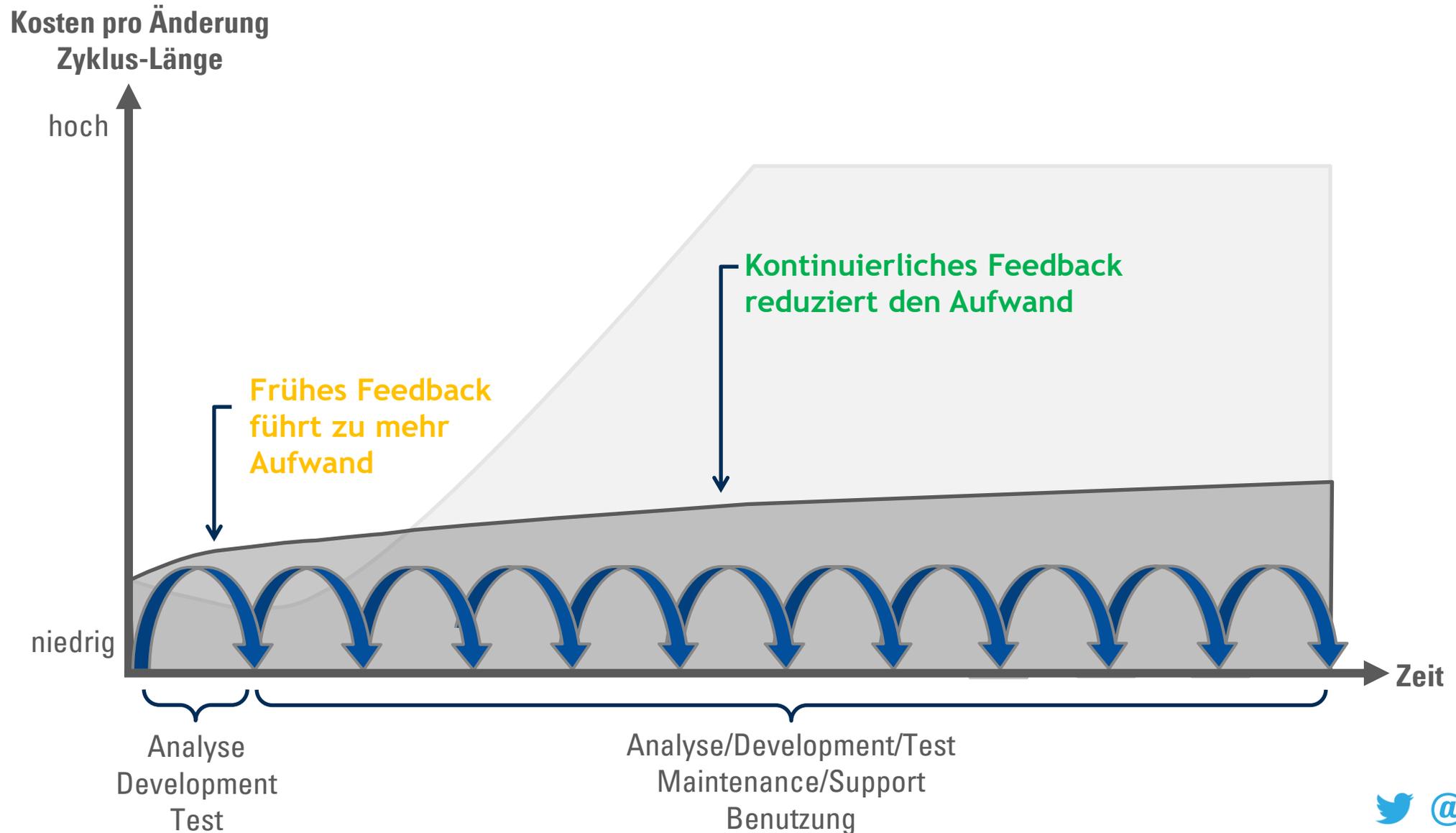


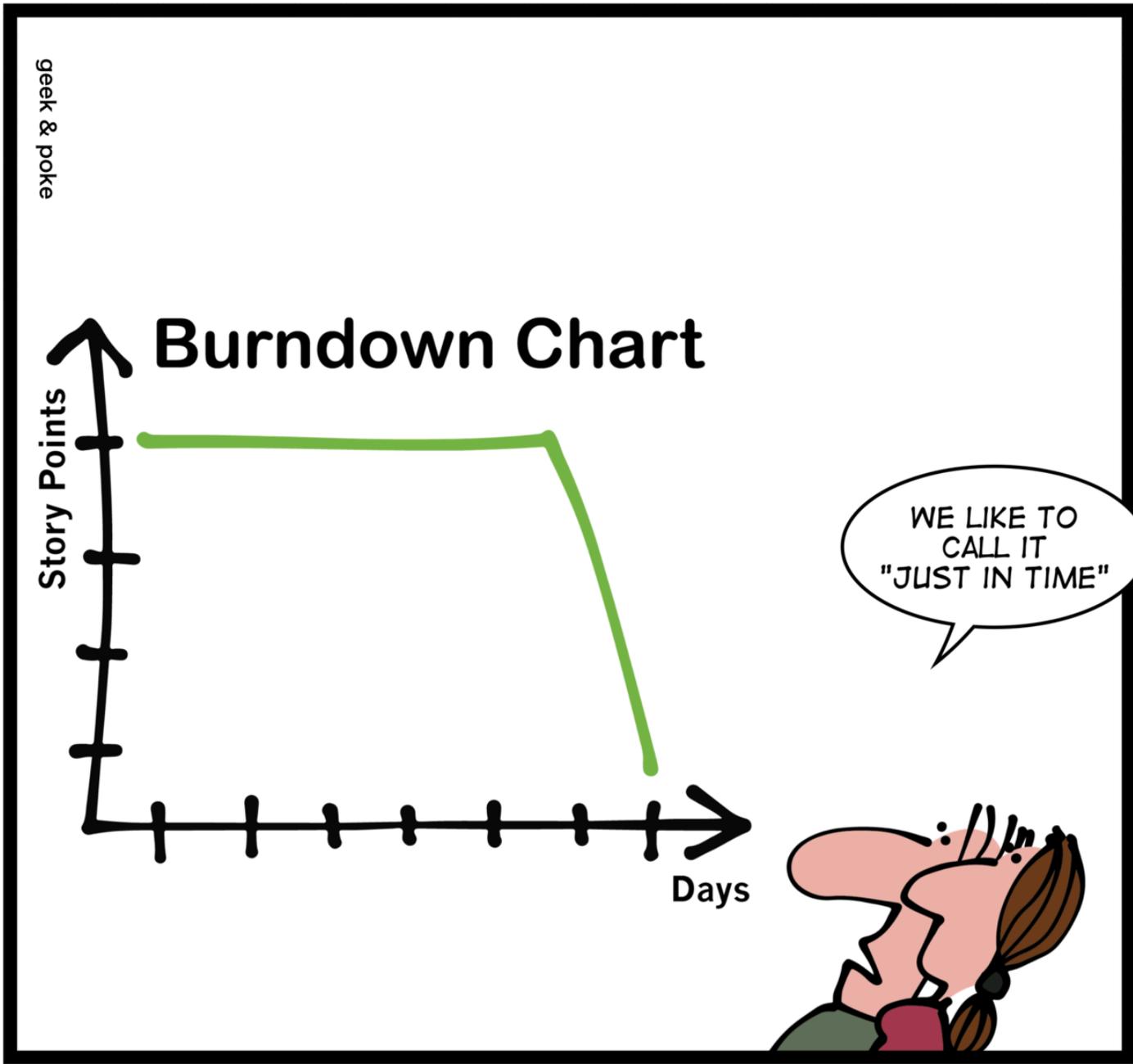
Die zweite Lösung

# DIE KOSTEN KURVE



# KOSTEN KURVE BEI AGILER ENTWICKLUNG





# WANN MAN ZWISCHENERGEBNISSE NUR PRÄSENTIERT



1. Release

4. Iteration



3. Iteration

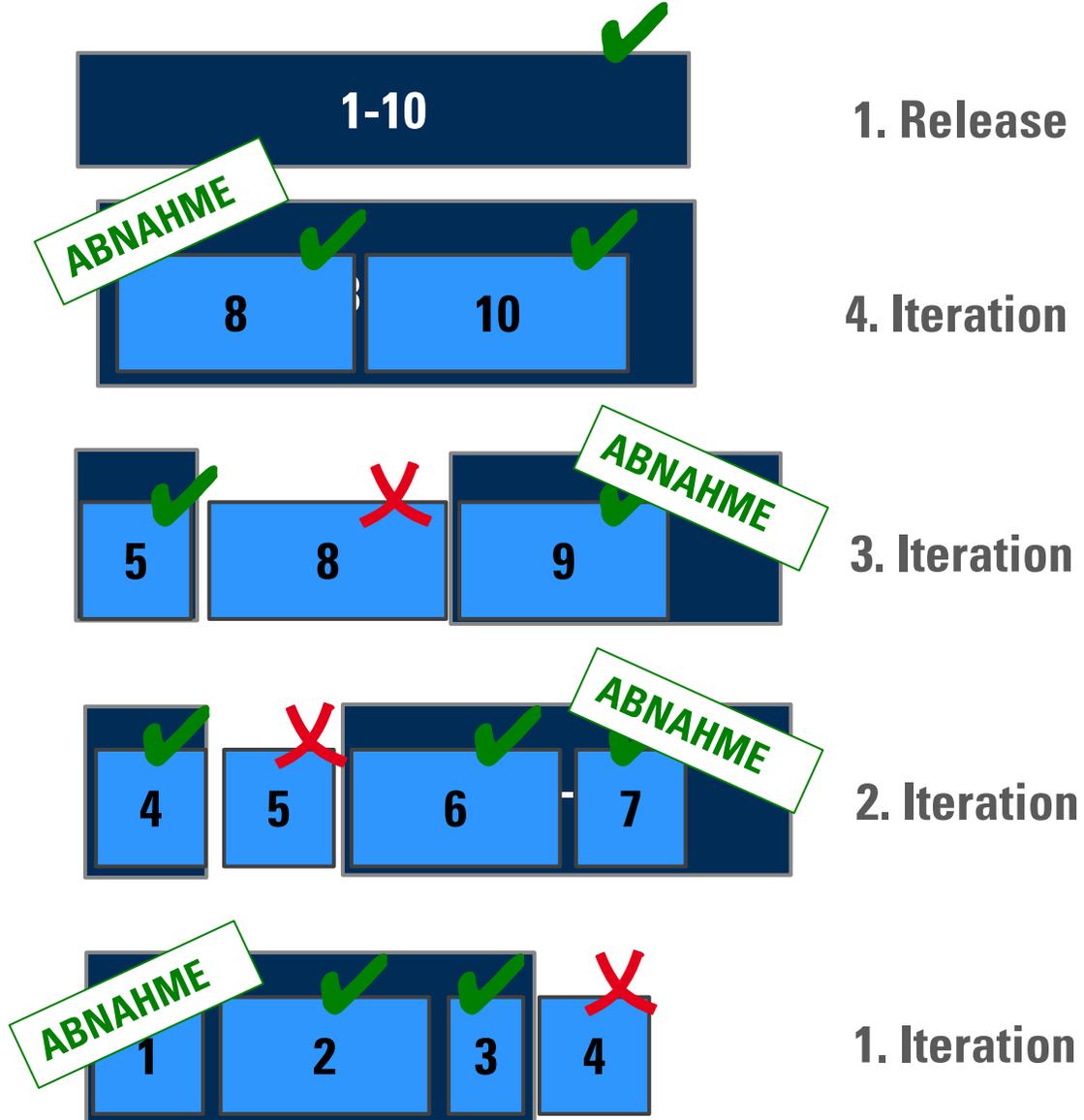


2. Iteration

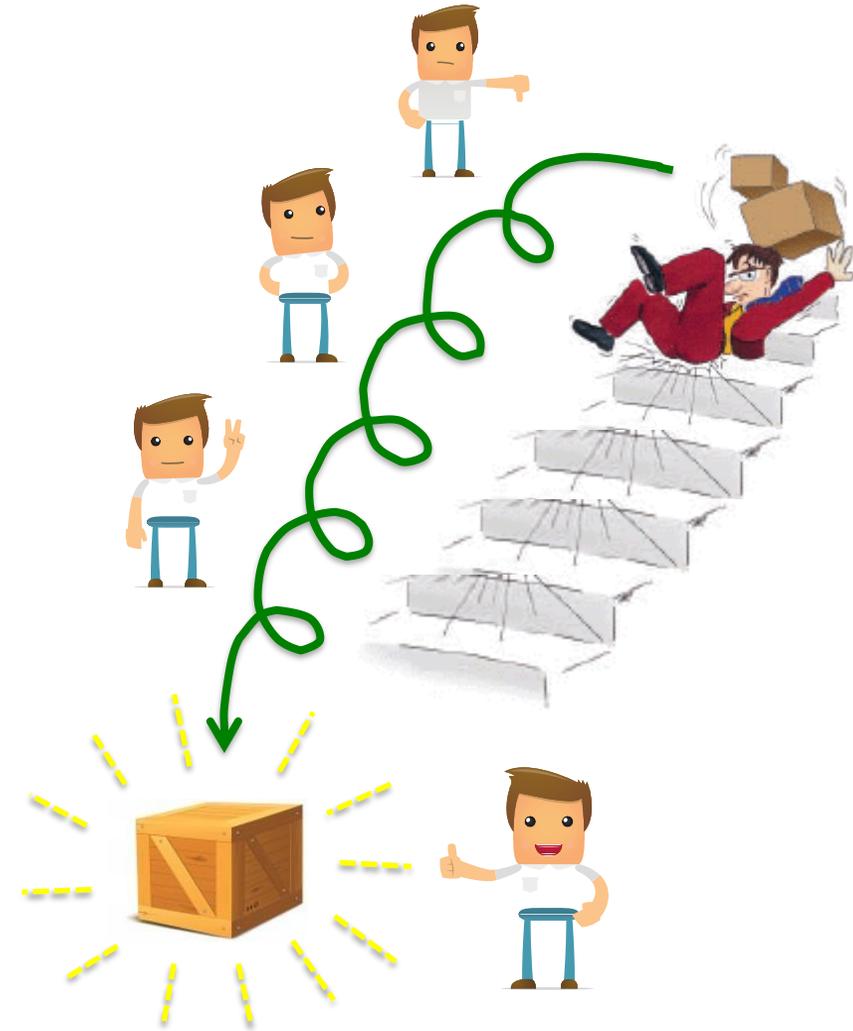


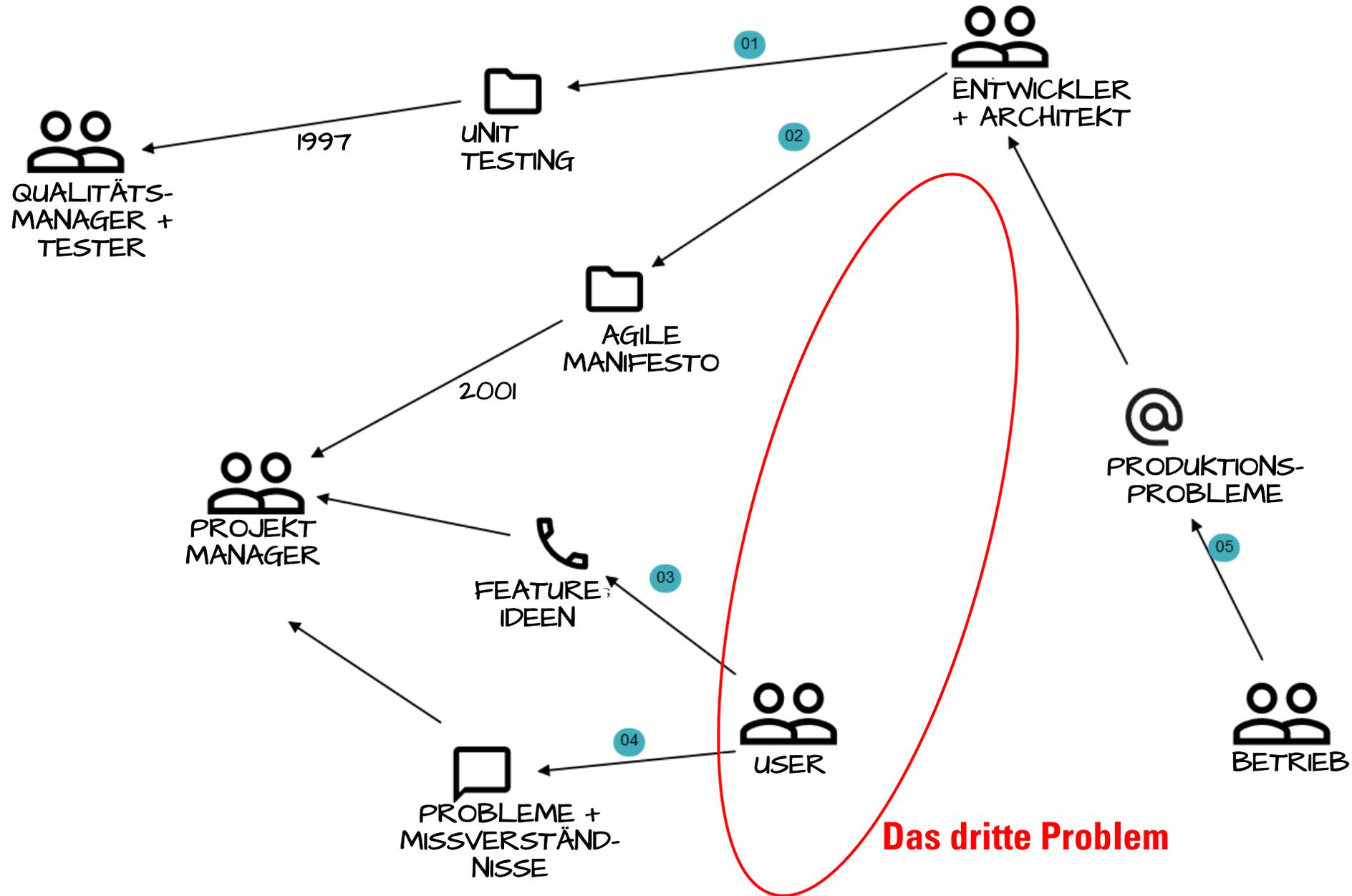
1. Iteration

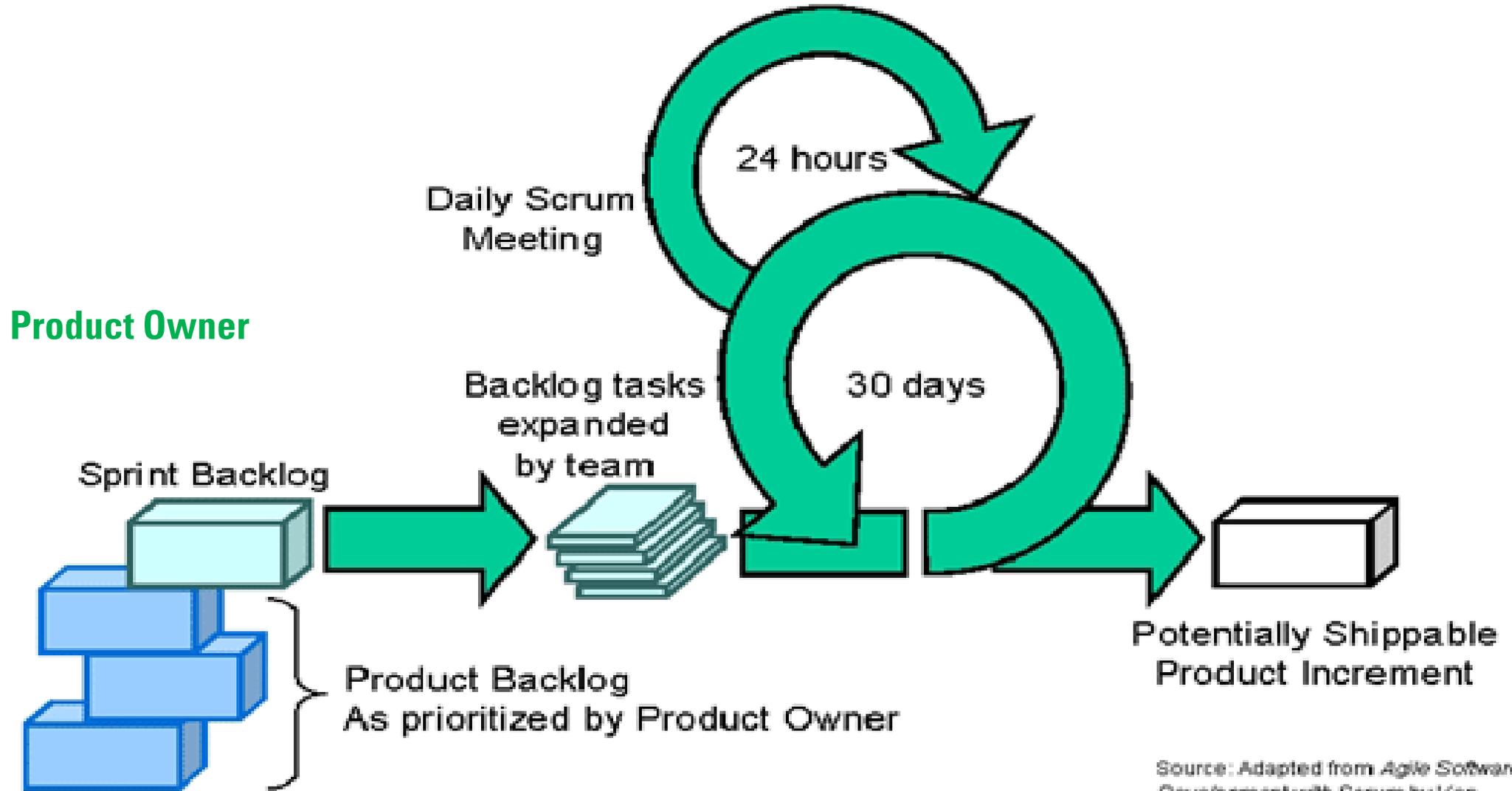
# WENN MAN ZWISCHENERGEBNISSE ABNEHMEN LÄSST



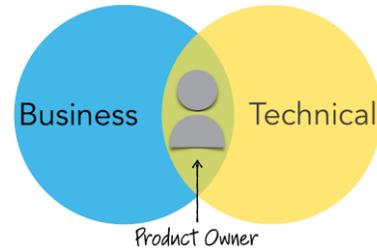
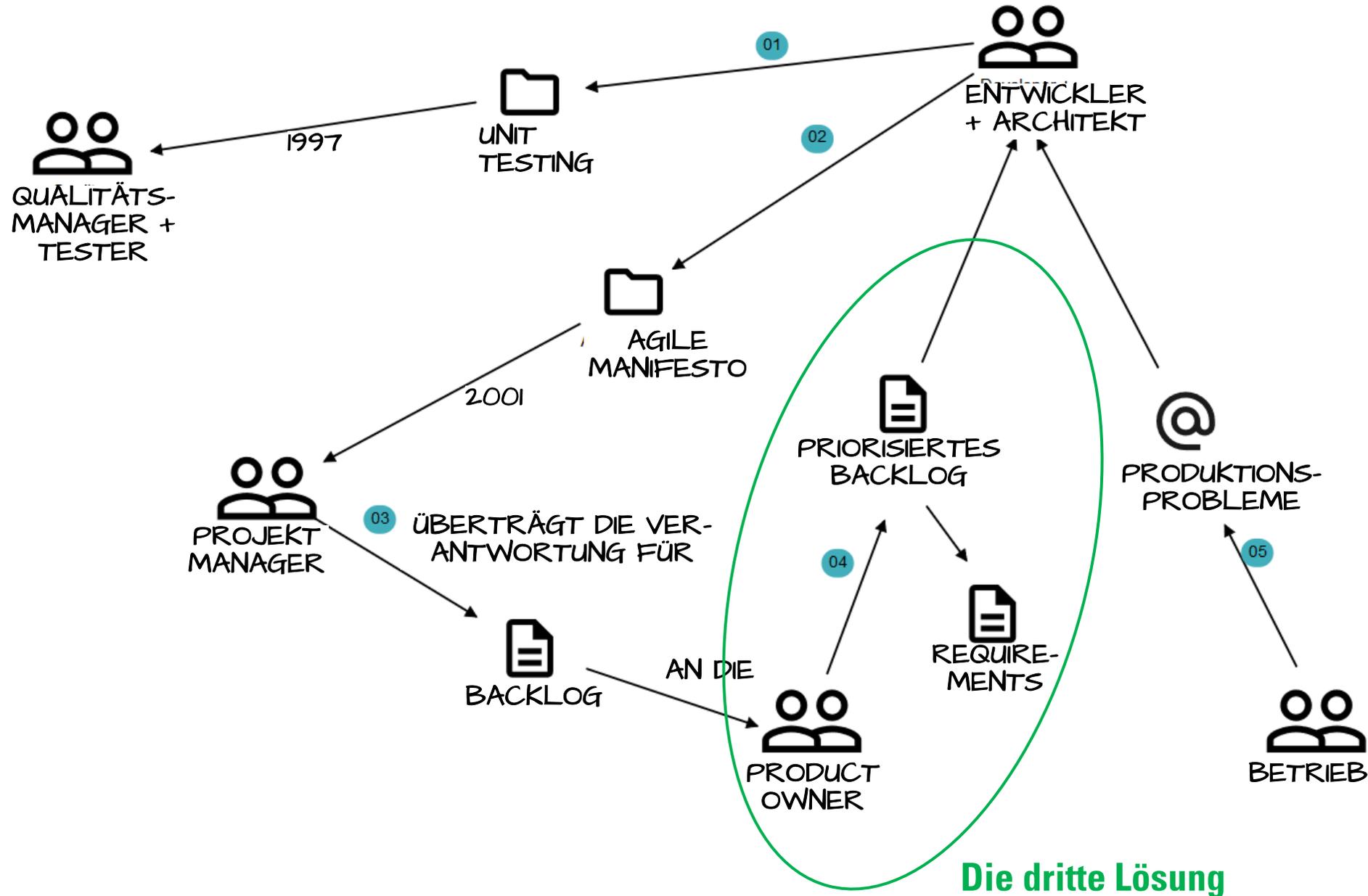
# ES TUT IMMER WEH! DIE FRAGE IST NUR WANN







Source: Adapted from *Agile Software Development with Scrum* by Ken Schwaber and Mike Beedle.



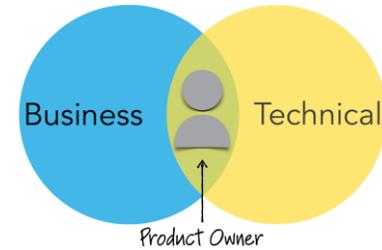
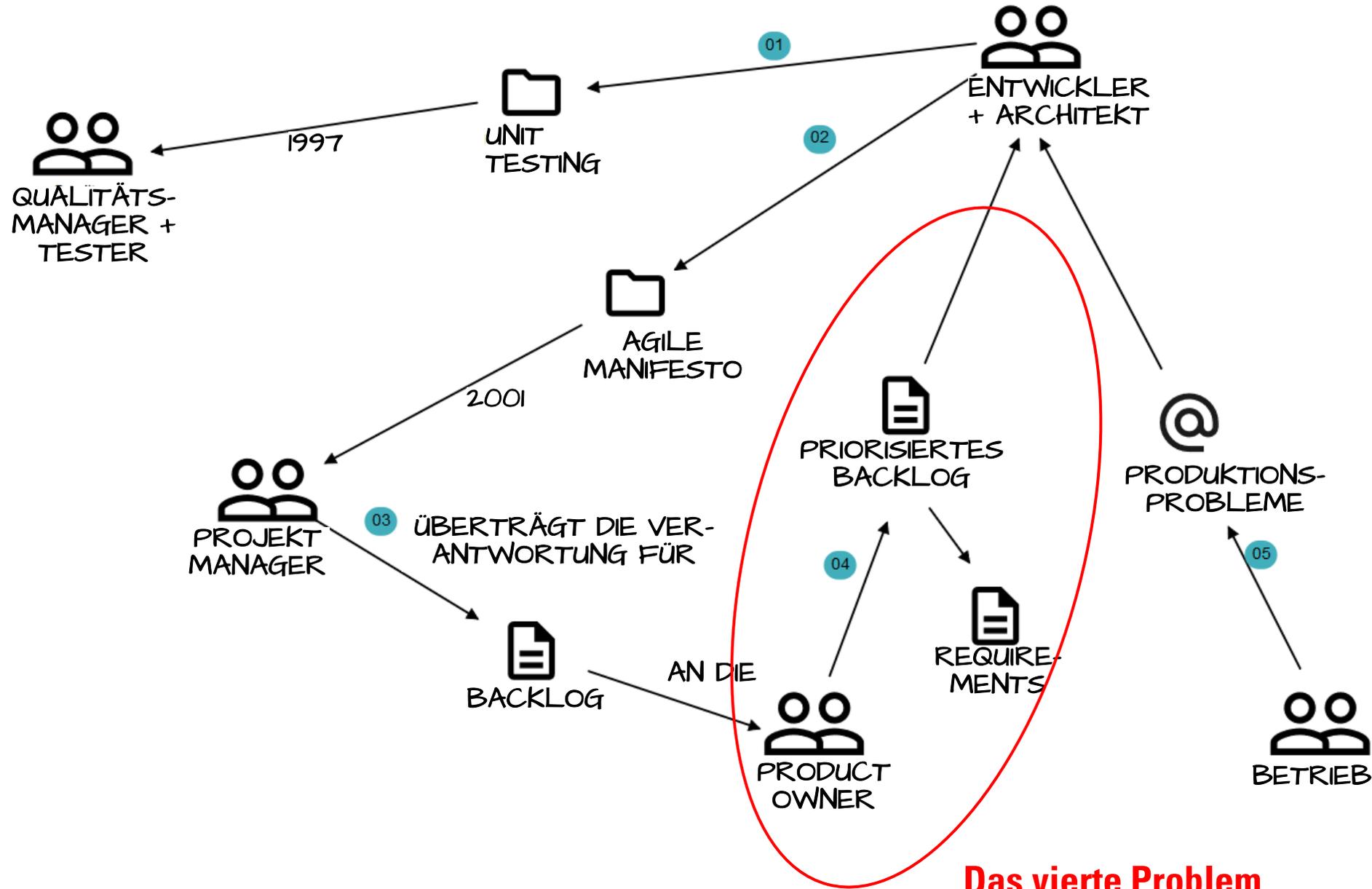
@J.K.PAS  
Modern Analyst



*Don't get discouraged.  
Complex projects are like  
onions: you have to  
peel the requirements one  
layer at time.*

*Yes, and they  
also make  
you cry.*



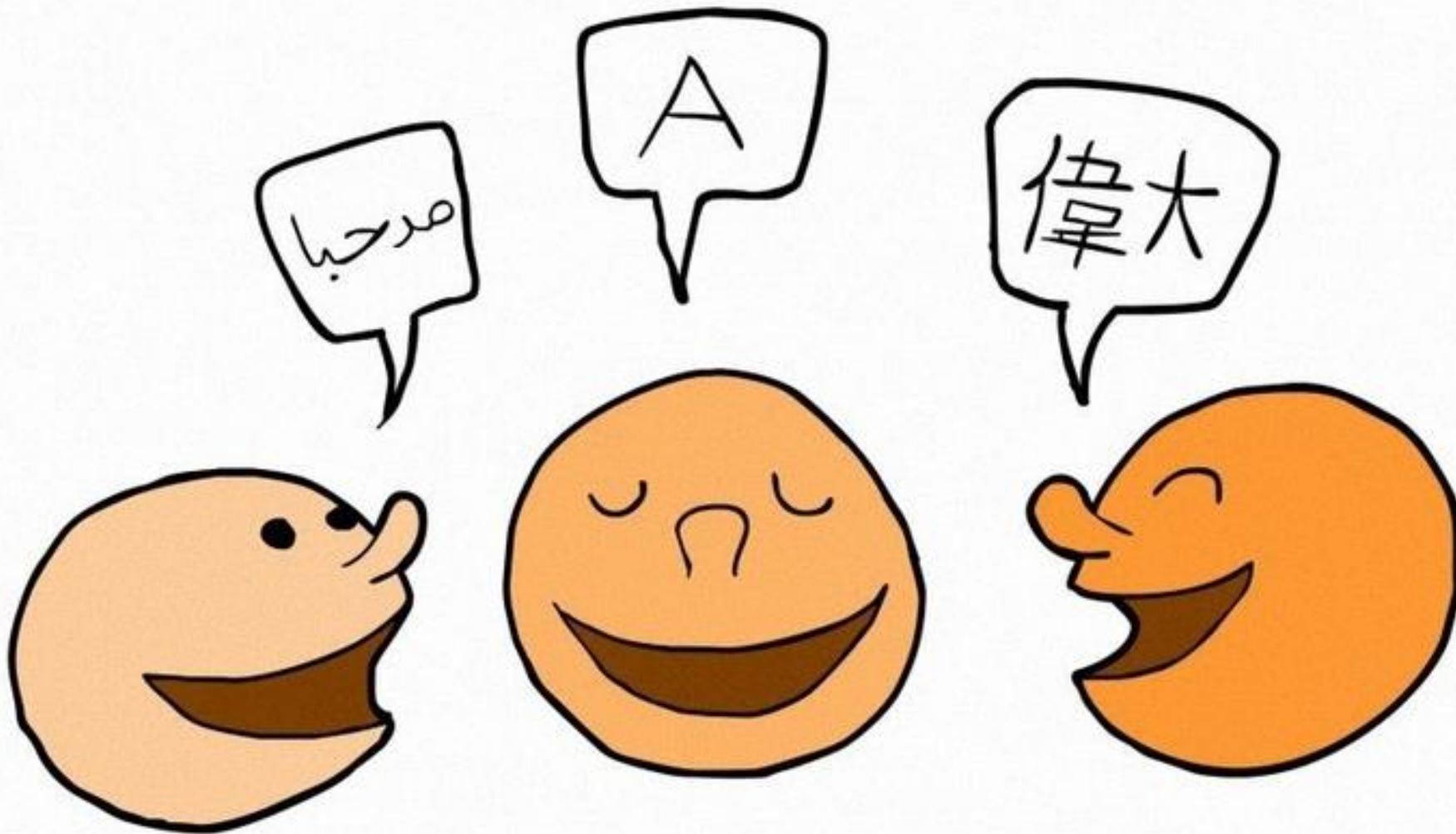


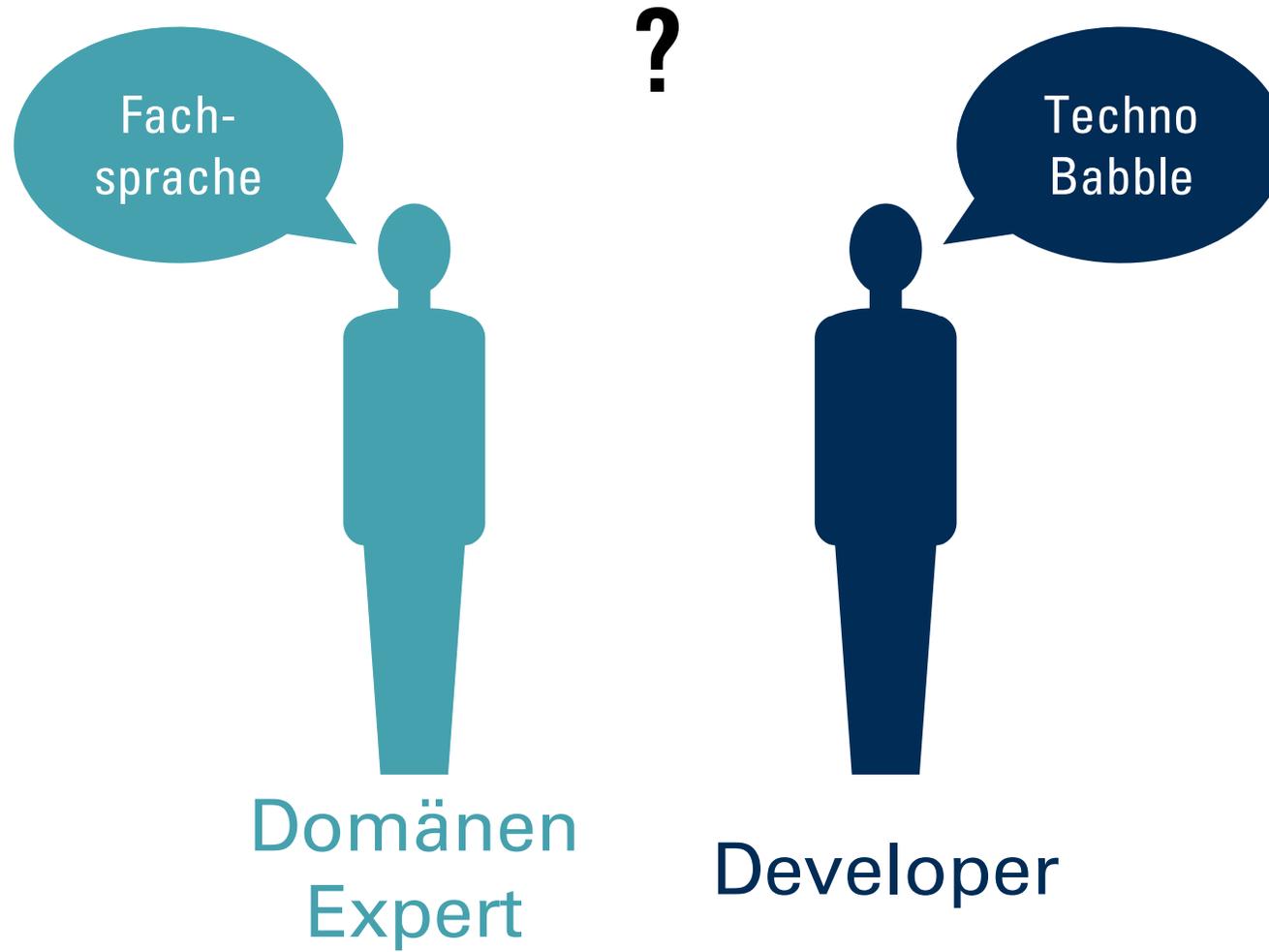
Der Source code enthält nur das **Verständnis** der Entwickler\*innen nicht die in **backlog items** beschriebenen Anforderungen.

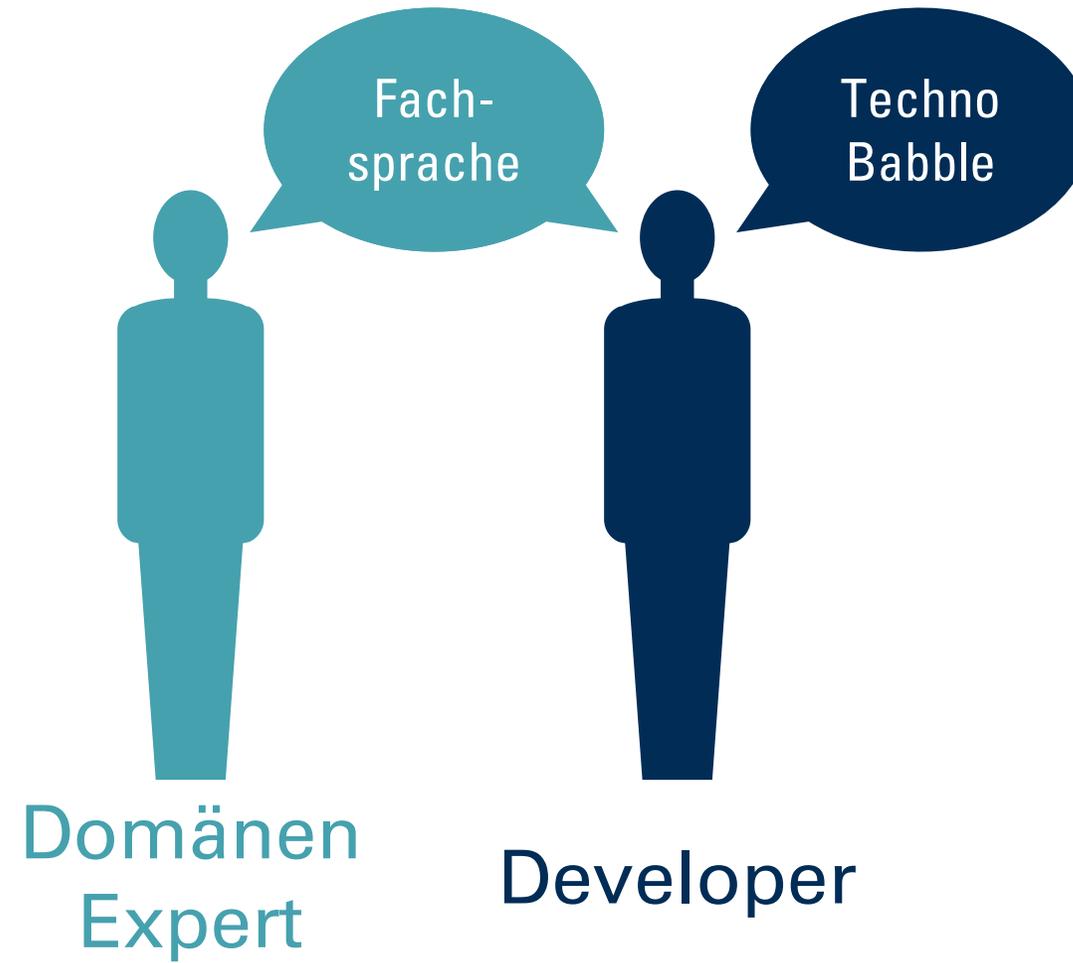
Domain-Driven

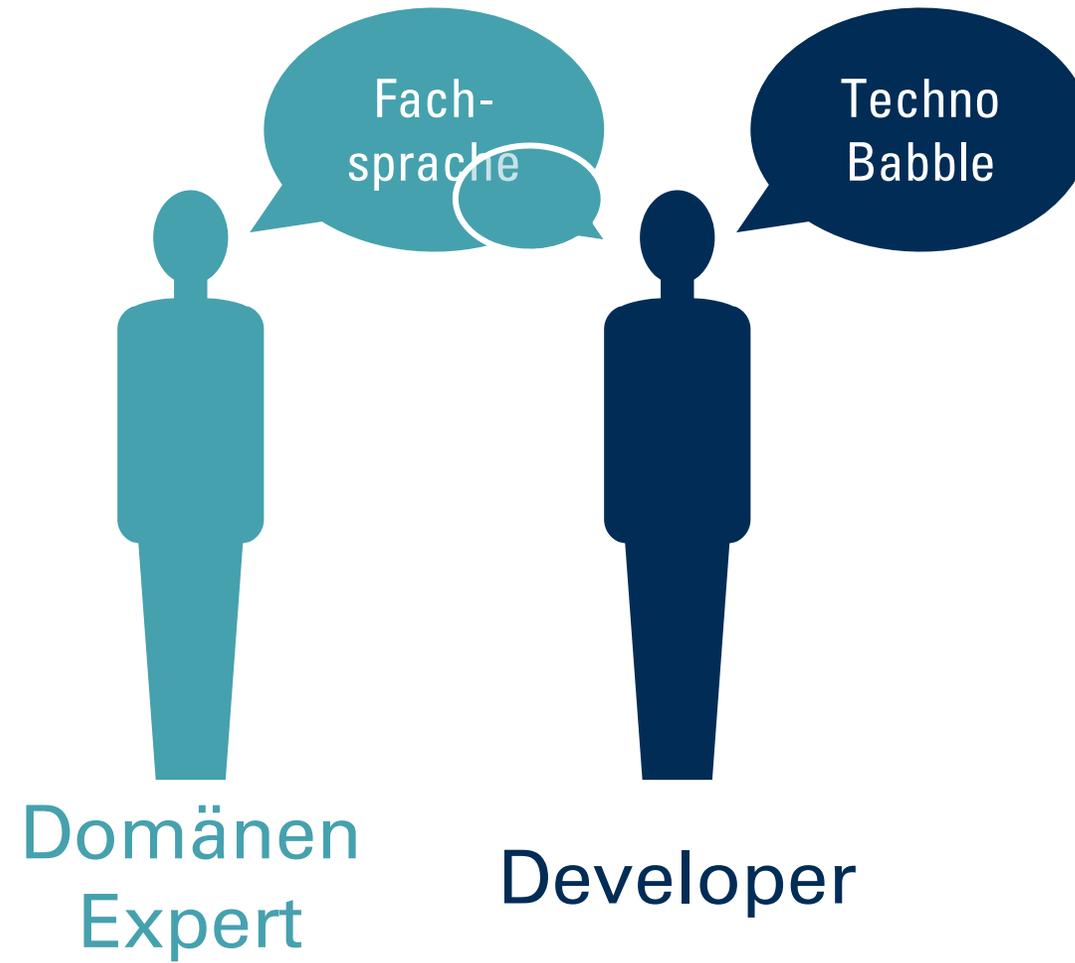
DESIGN

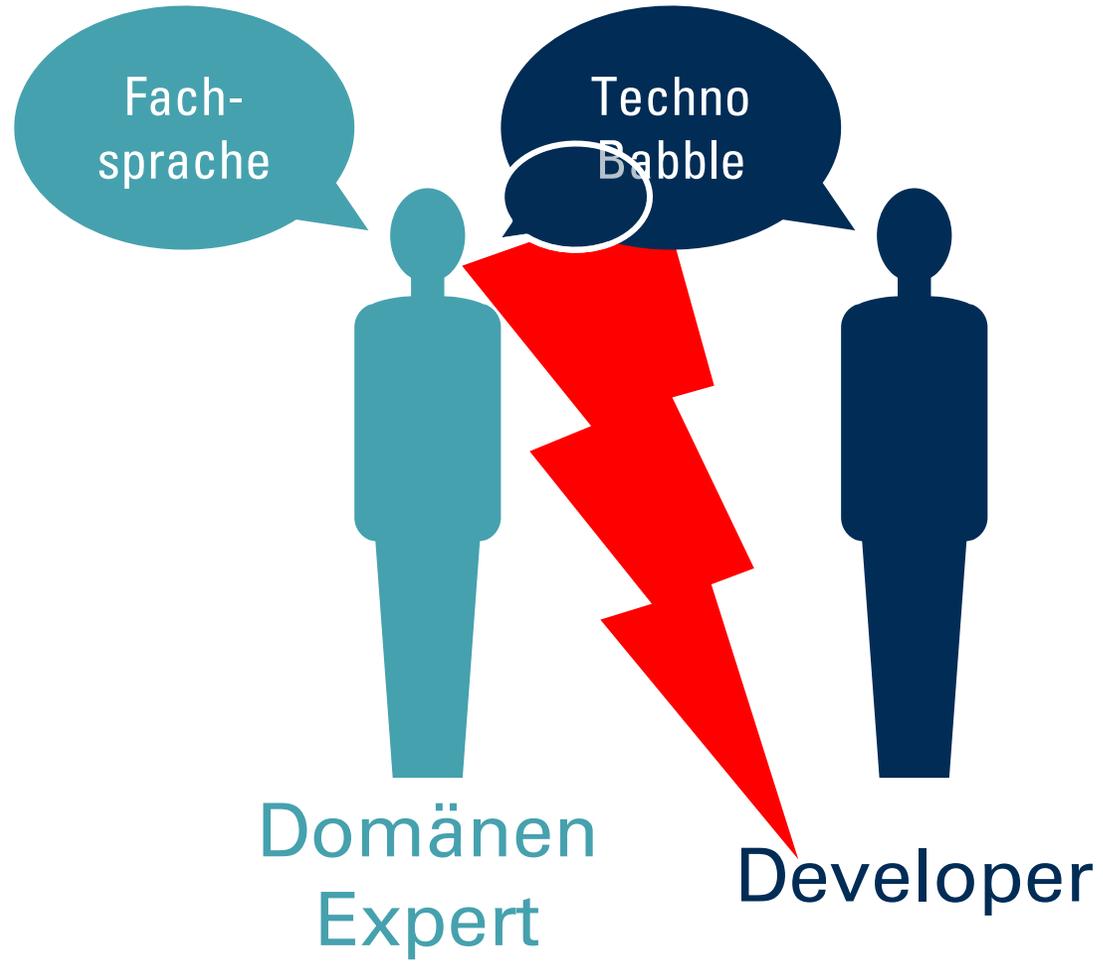


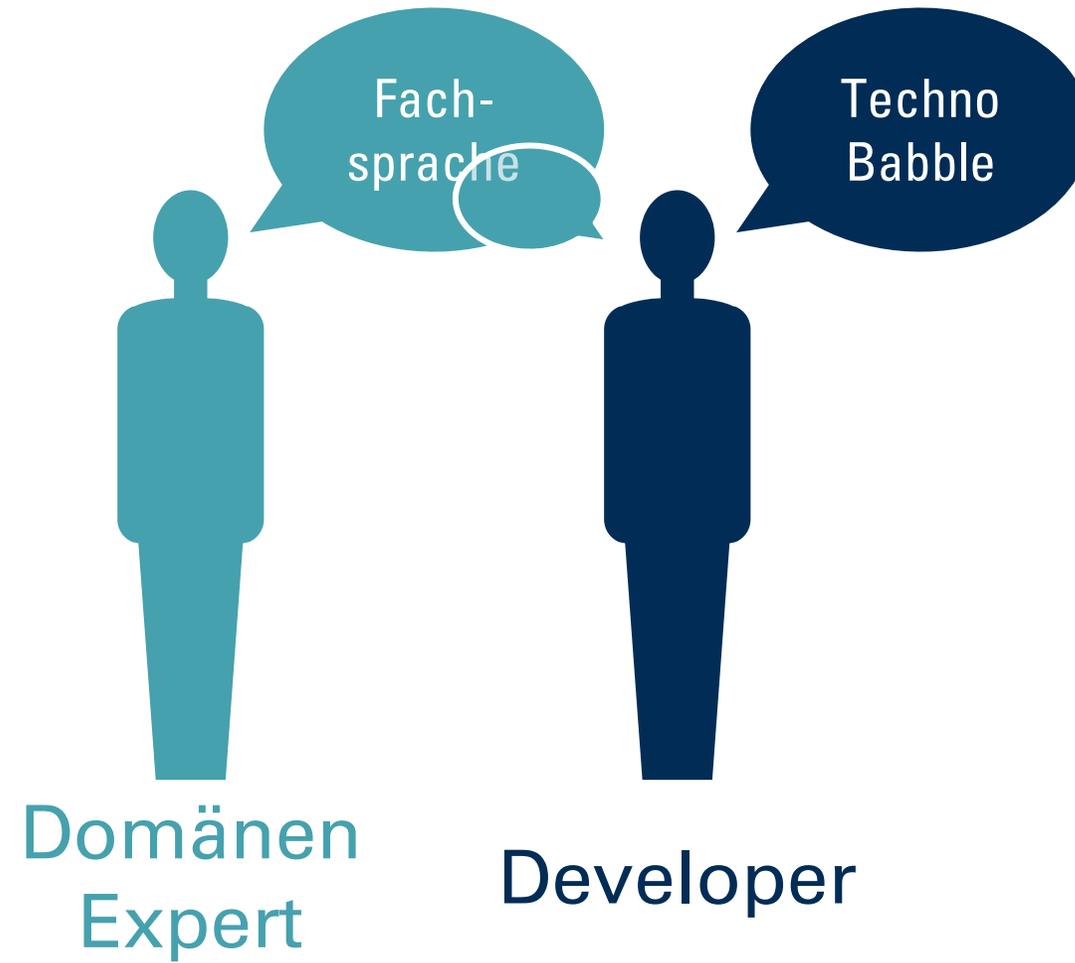


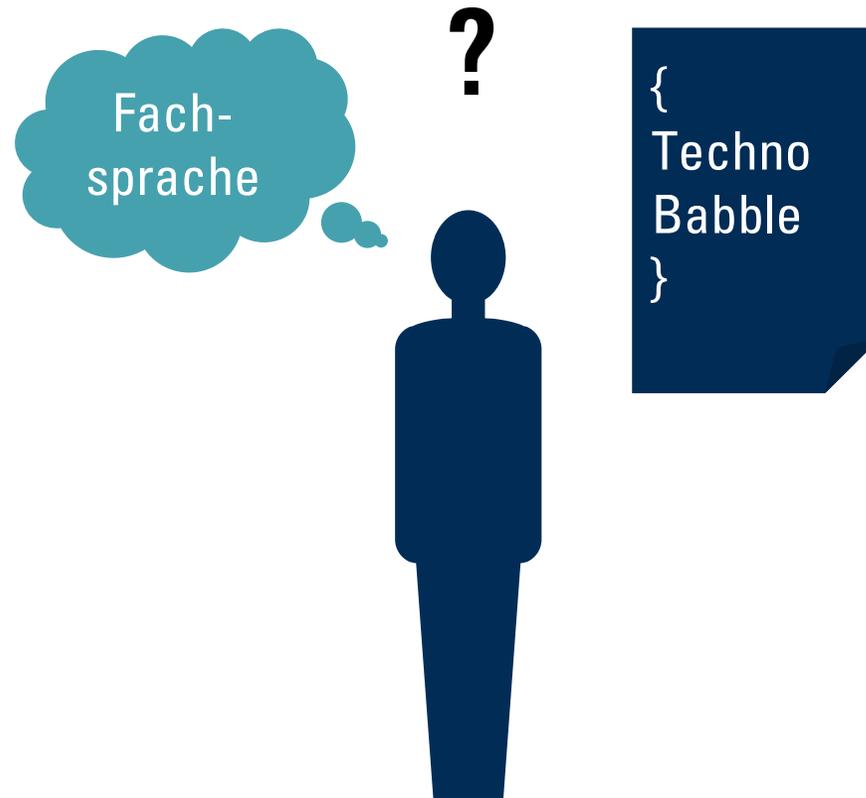




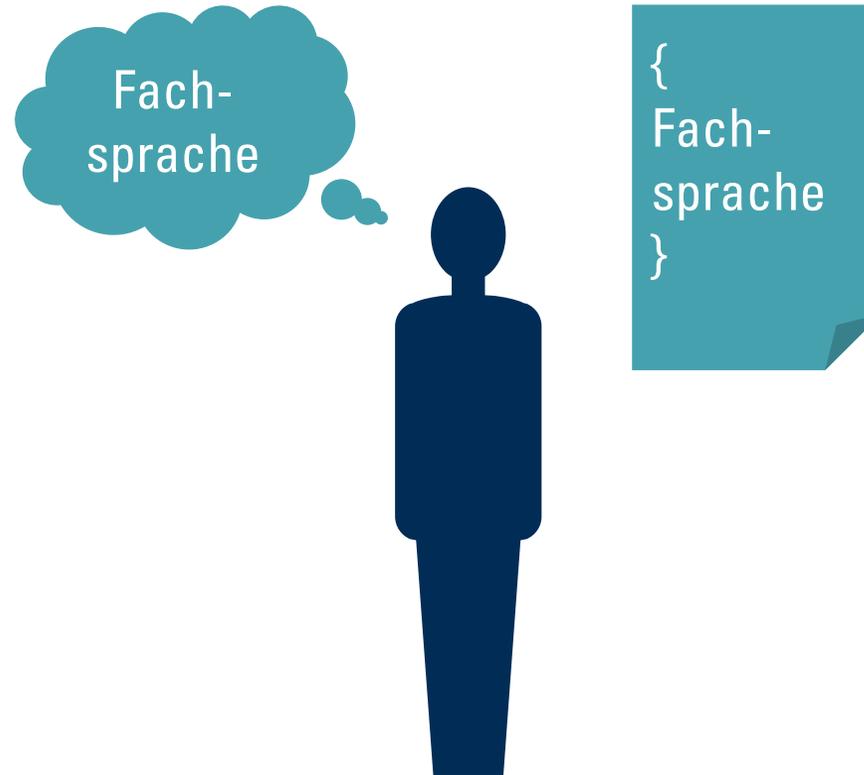








Developer



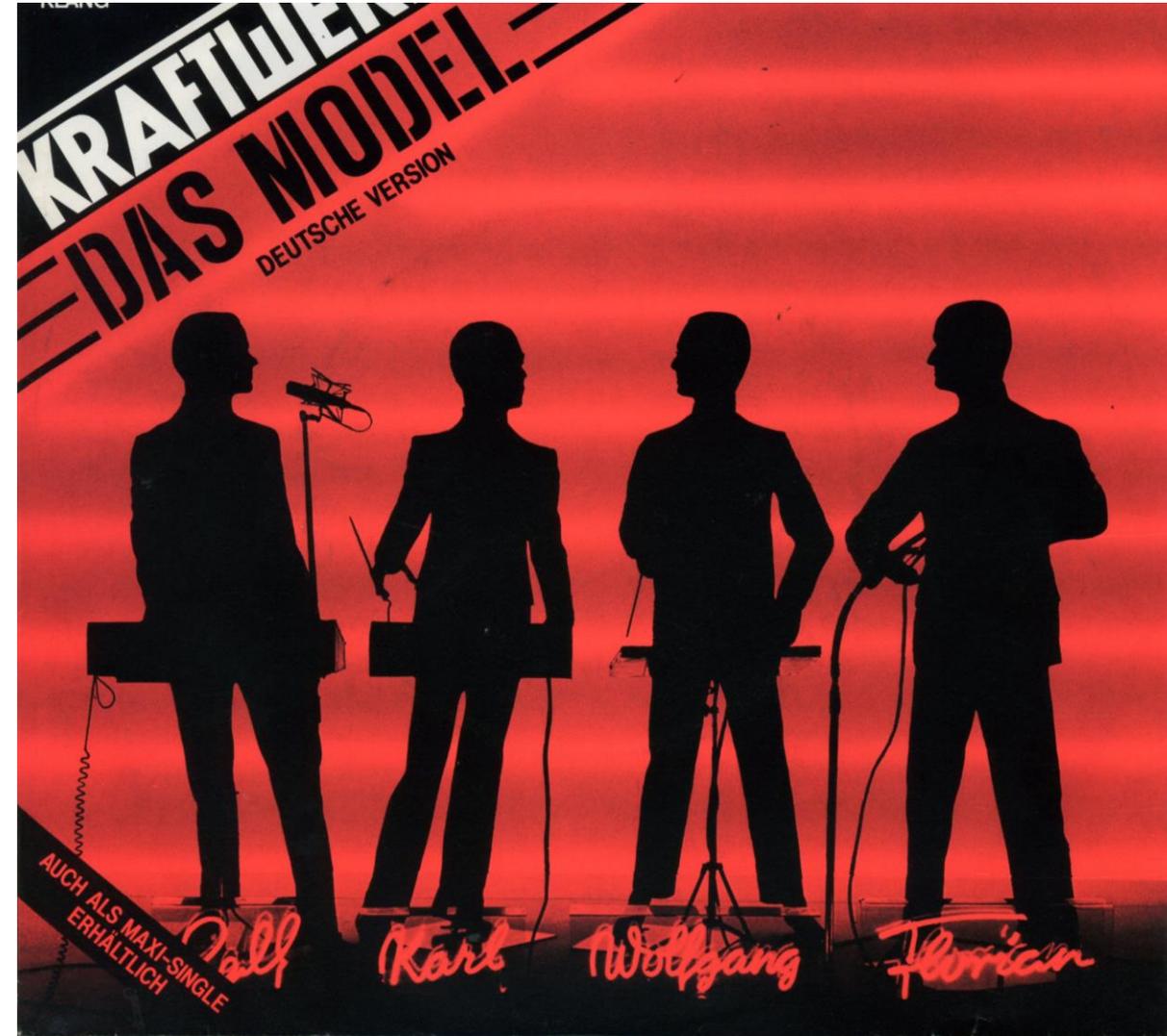
Developer

# DAS MODELL KOMMUNIZIEREN



- Das Modell muss **aus unserem Kopf raus**
  - Wir müssen unser **Wissen teilen**:
    - Graphisch
    - Schriftlich
    - im Gespräch
- ➔ Es ist wichtig eine Sprache zu haben, um das Modell auszudrücken
- ➔ In DDD heißt diese Sprache:

**Ubiquitous Language**





# EVENT STORMING

*Alberto Brandolini*



# DOMAIN Storytelling



GOING TO THE MOVIES  
(COURSE GRAINED)

BUY

FROM

RESERVATION

RESERVE

with

SELECT MOVIE

FROM

REFRESHMENTS

SENTENCE

SITS ON

SHOW

TICKET

TO

WHIR

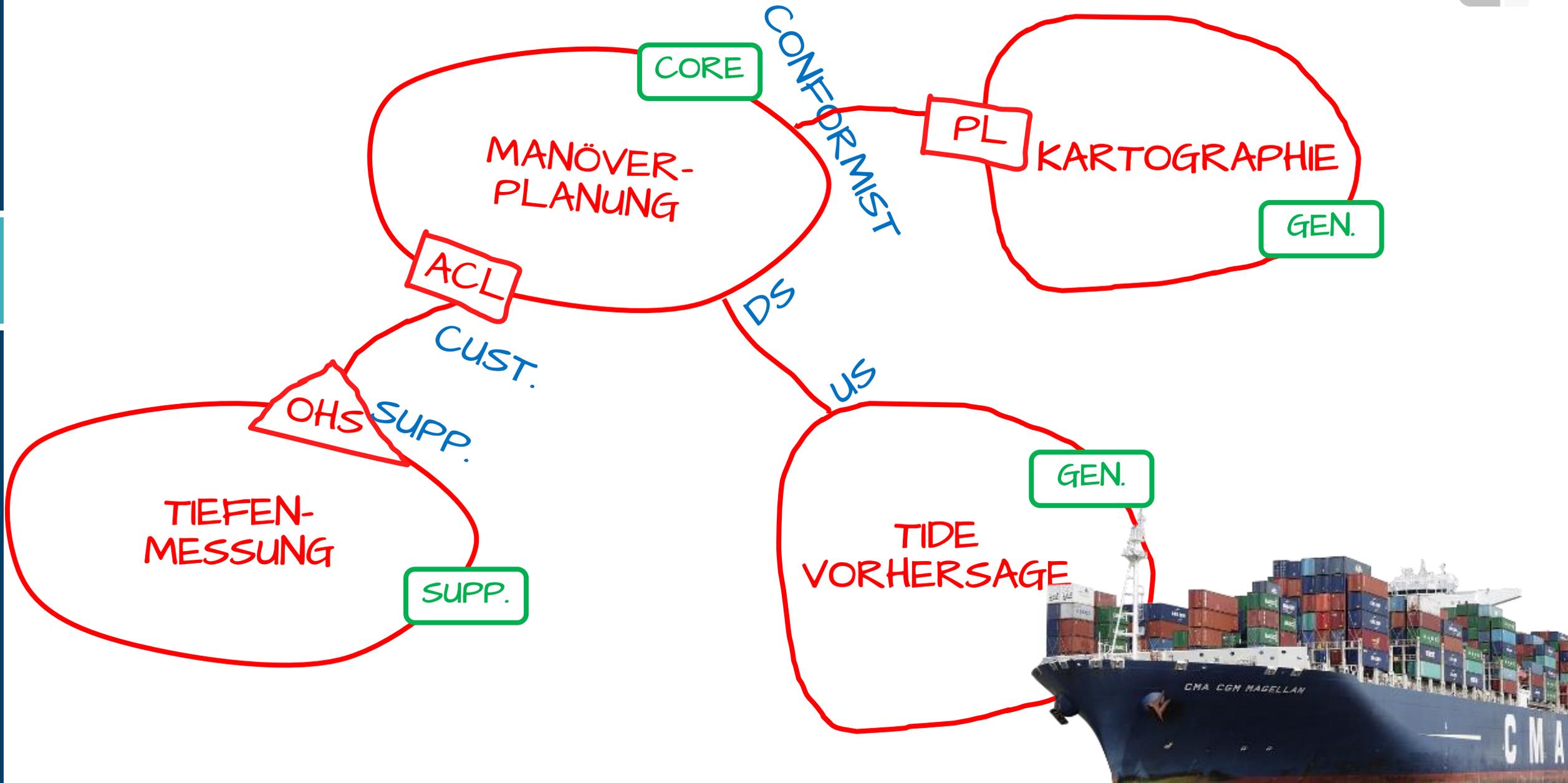
PUNCH

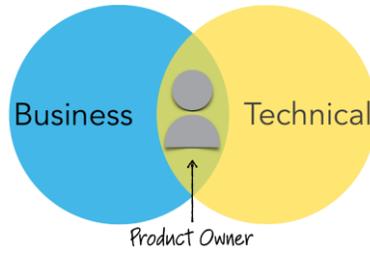
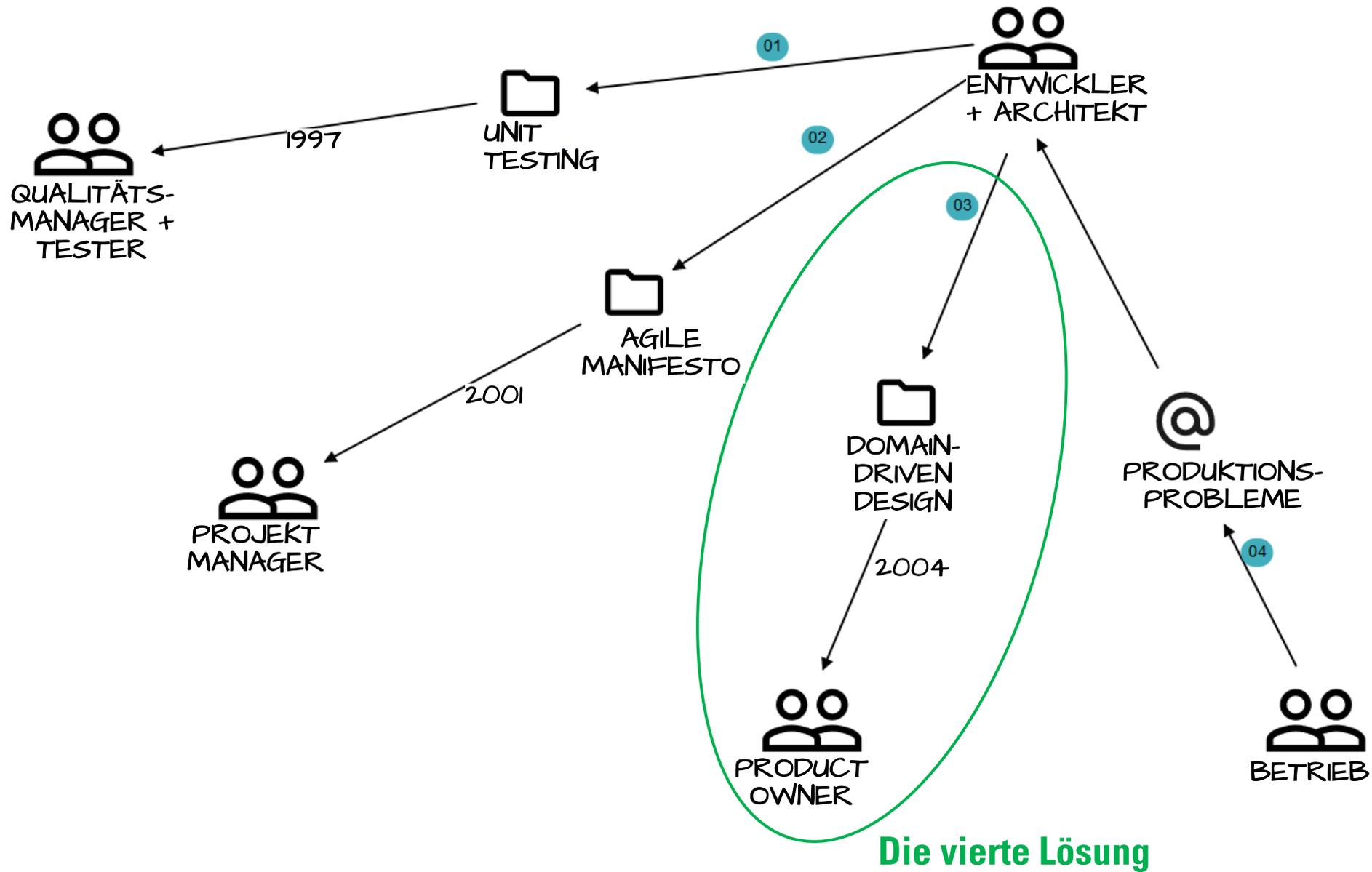
TICKET

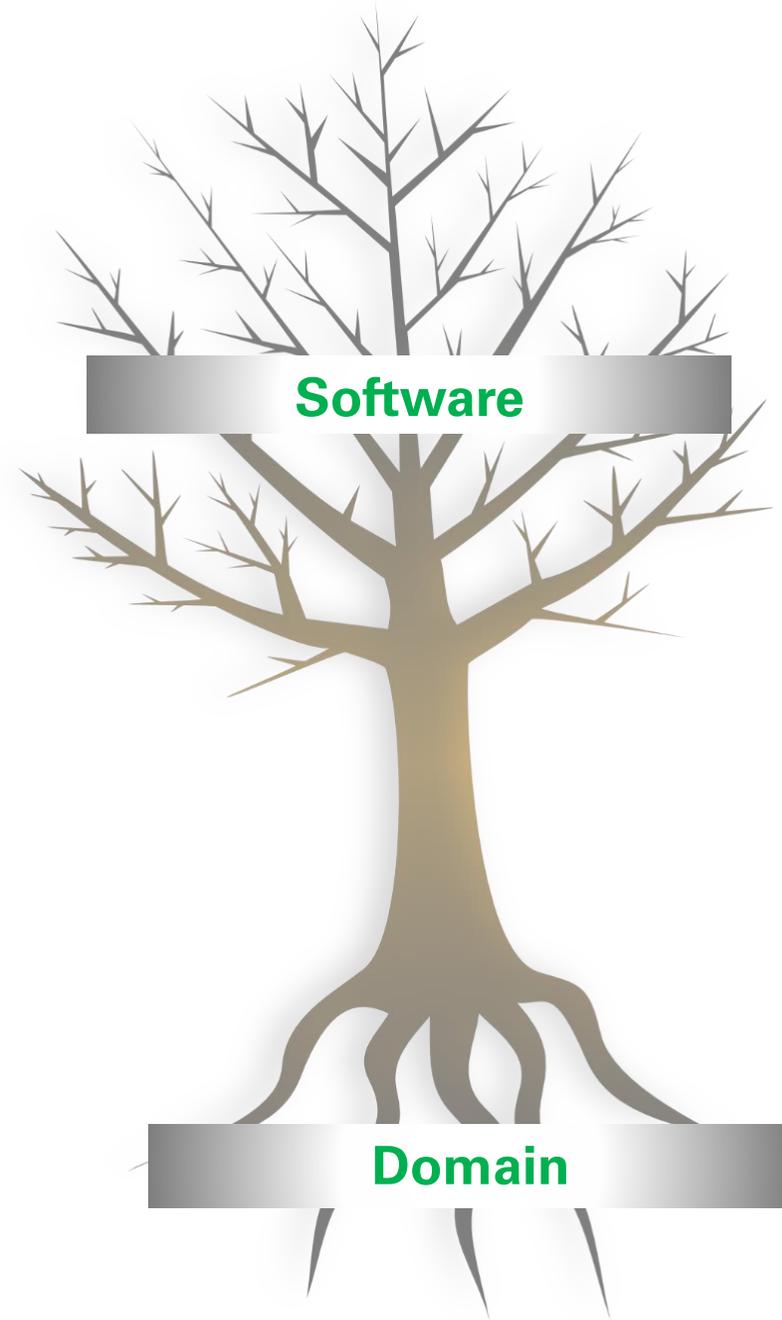
THEATRE ACCESS

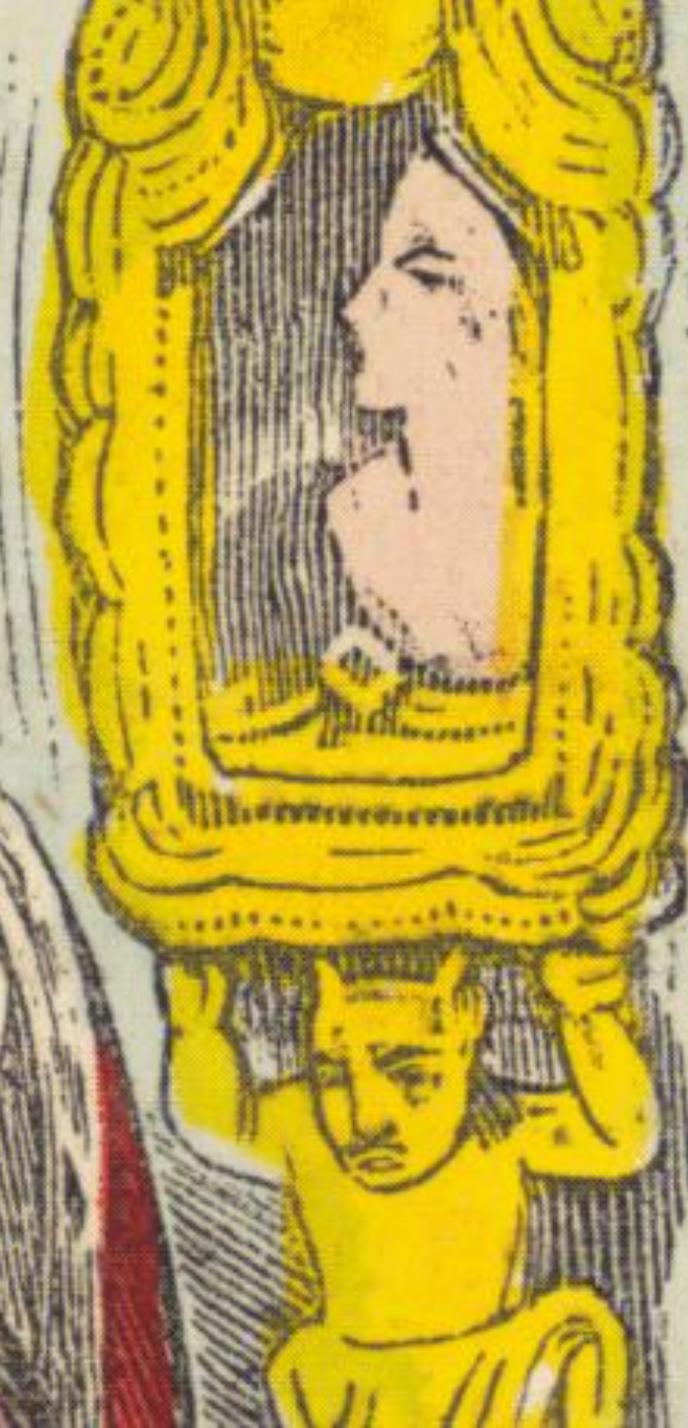
WHAT STAYS:  
LOOK IN M  
- LOOK @ D

# CONTEXT-MAPPING

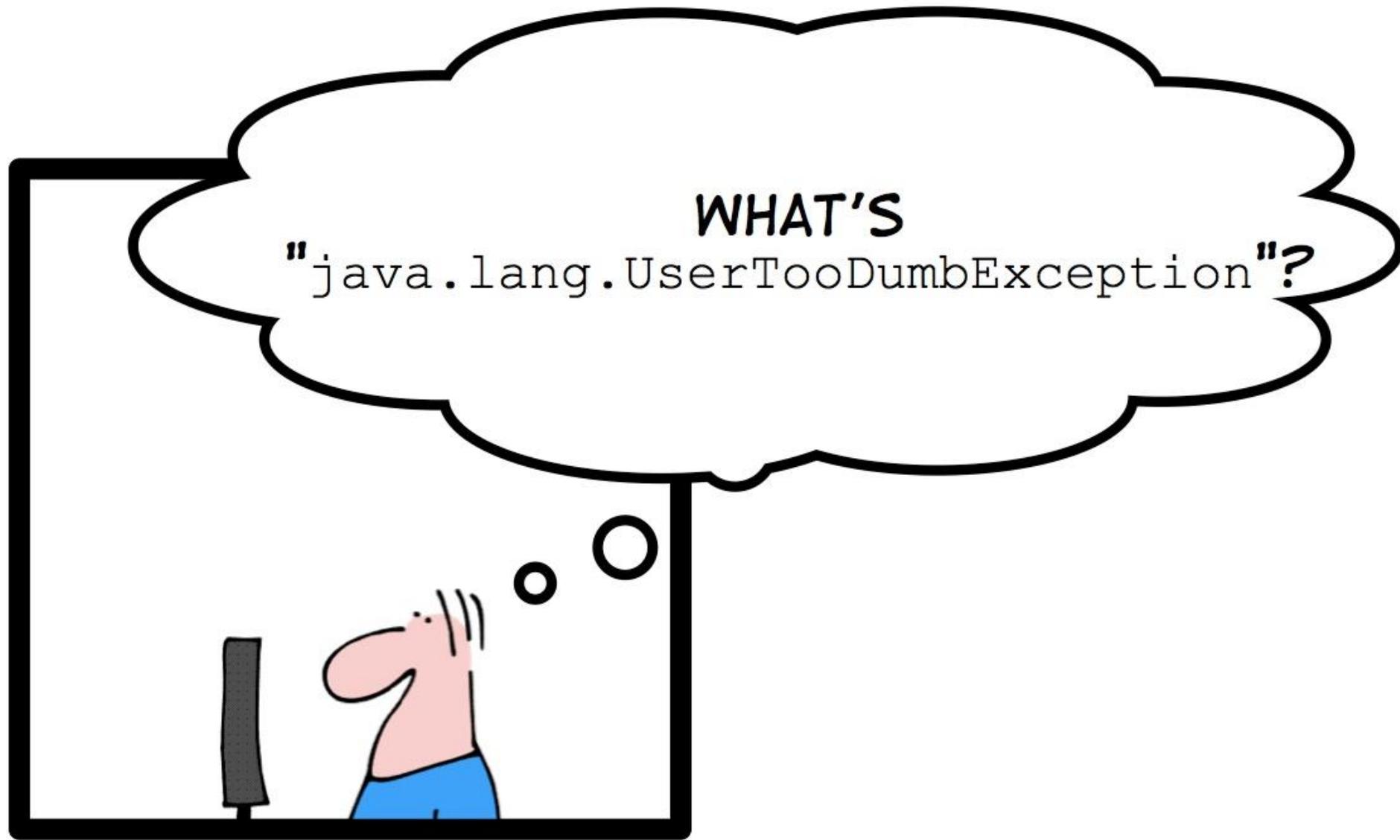




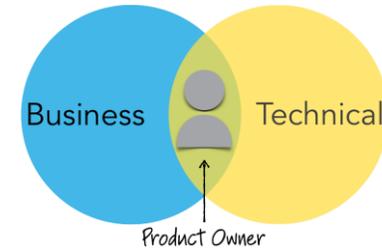
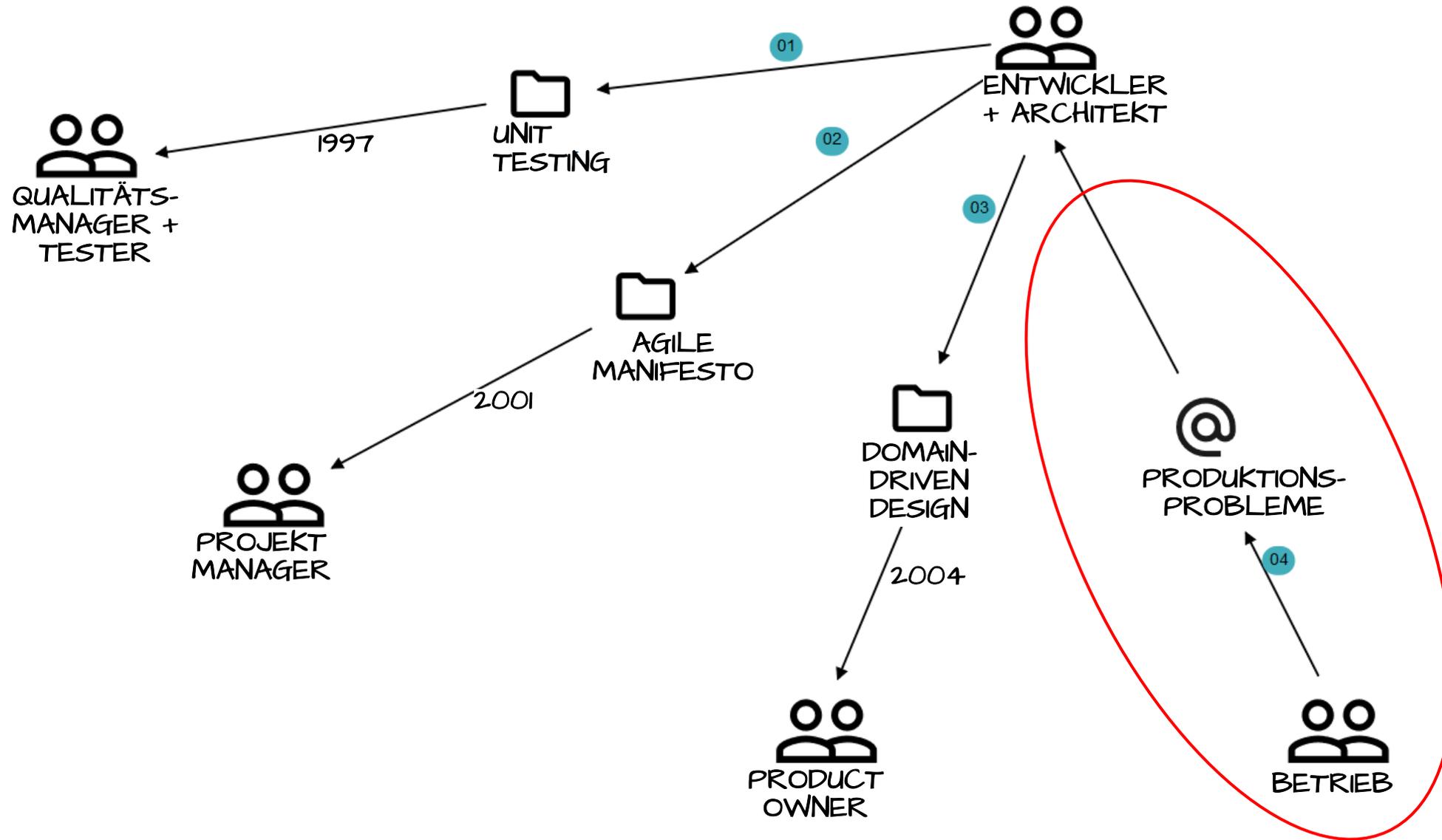




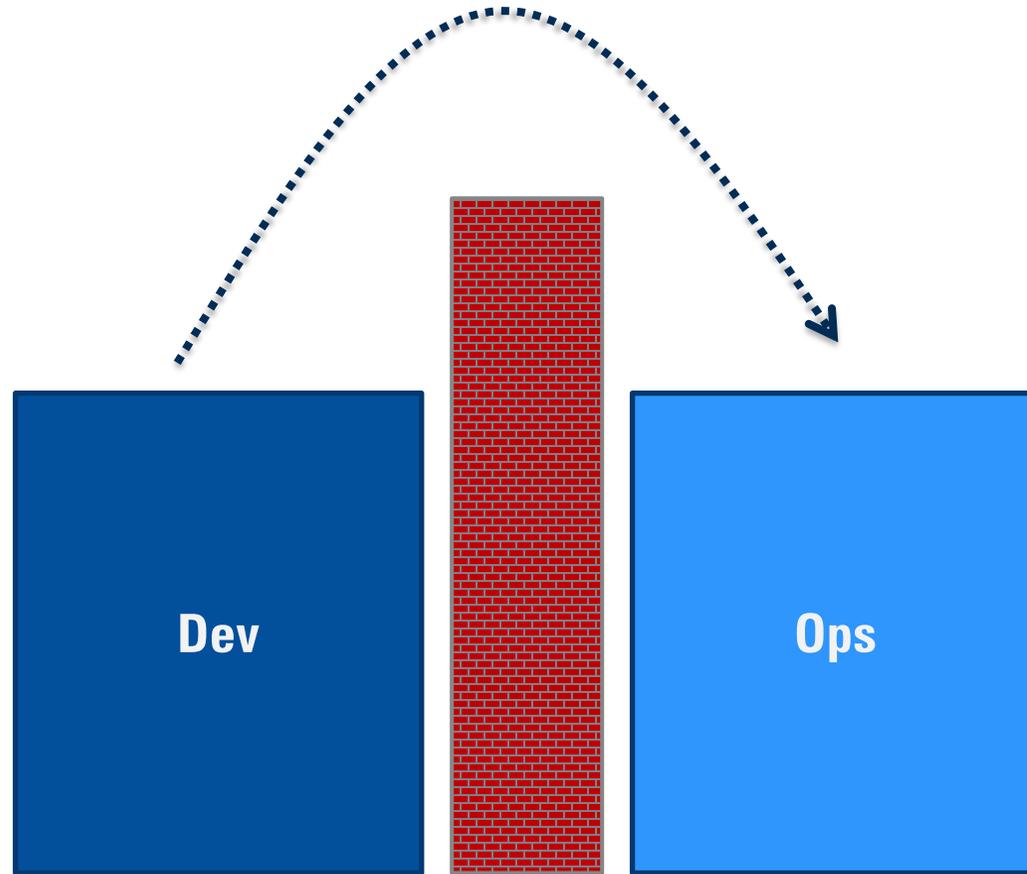
geek & poke

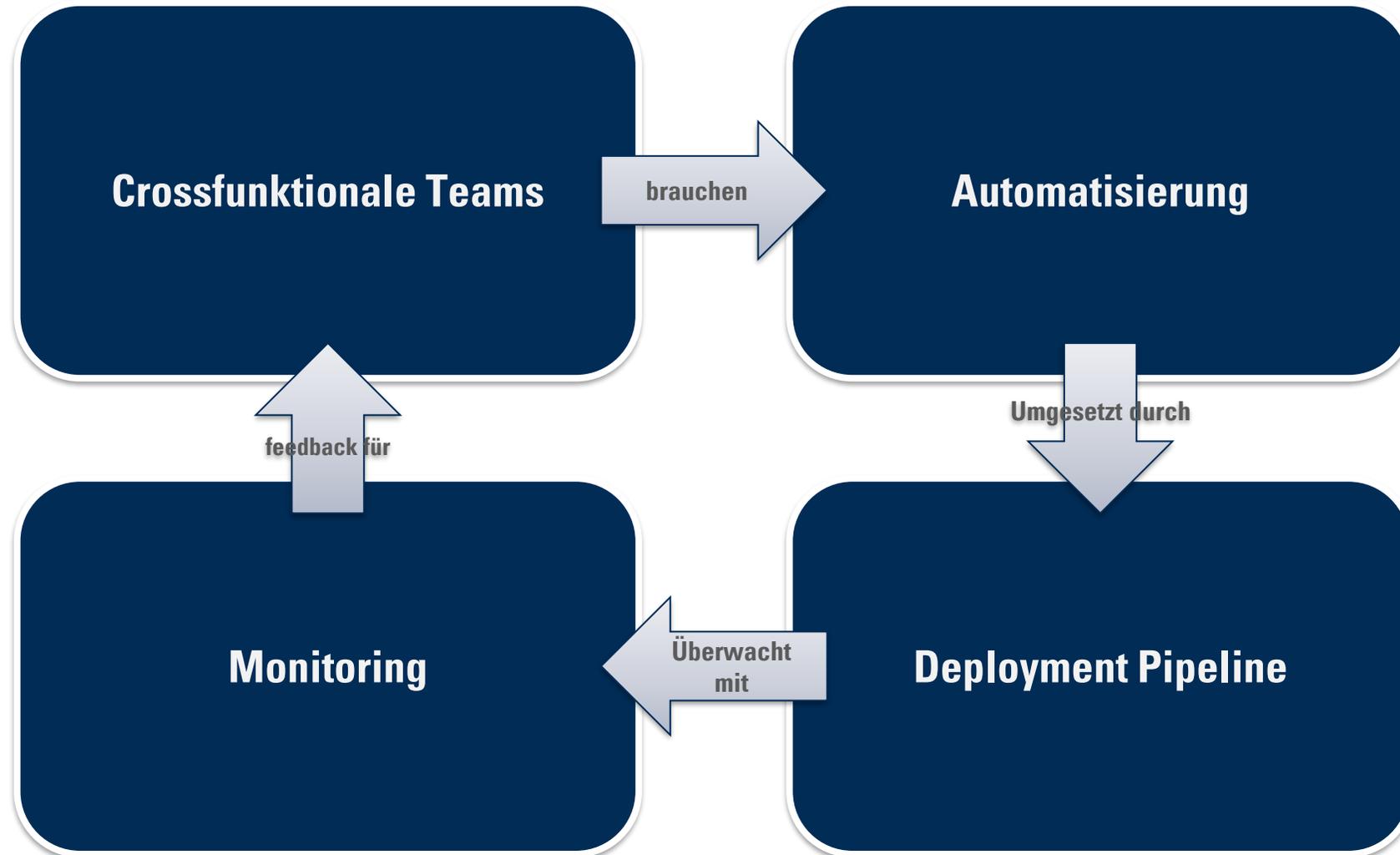


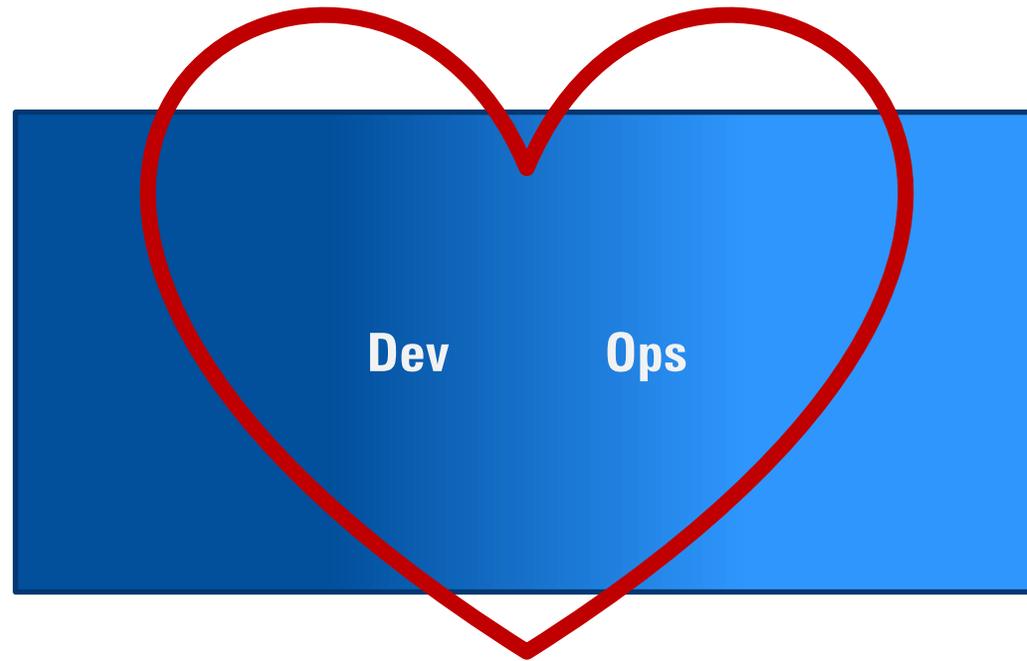
*CODER'S REVENGE*

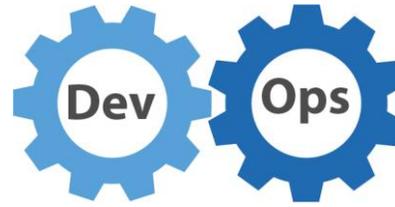
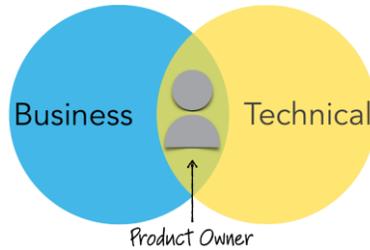
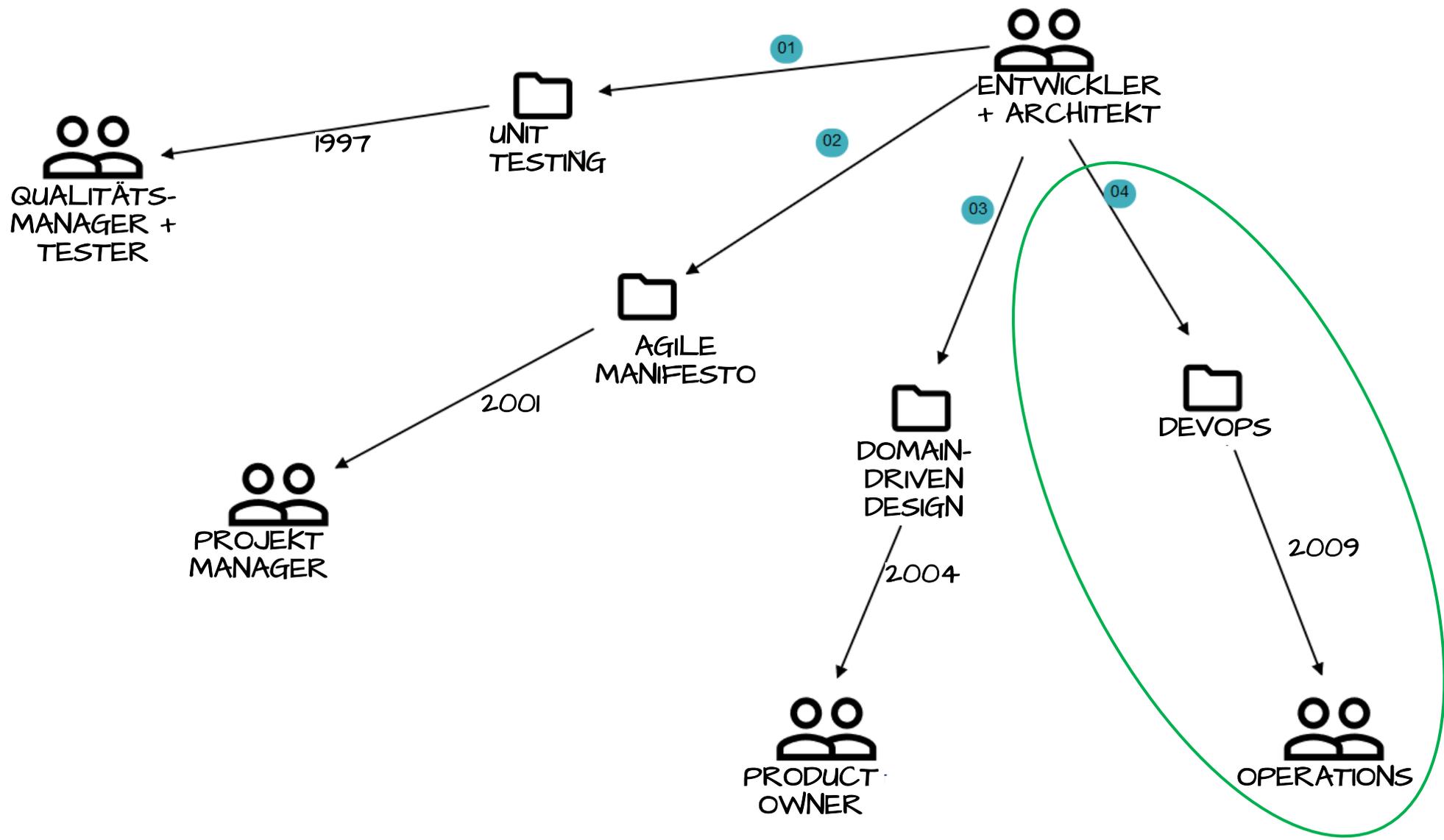


**Das fünfte Problem**









Die fünfte Lösung



**GEGENWART**

**ZUKUNFT**

**VERGANGENHEIT**

A detailed view of a BMW M Power engine. The engine cover is black with the 'M Power' logo and the BMW roundel. The engine block is silver and features a large, prominent air intake filter. Various hoses, belts, and components are visible, including a black plastic reservoir with a cap and a silver metal bracket. The engine is mounted in a car's engine bay, with various mechanical parts and wiring visible in the background.

von innen  
betrachtet

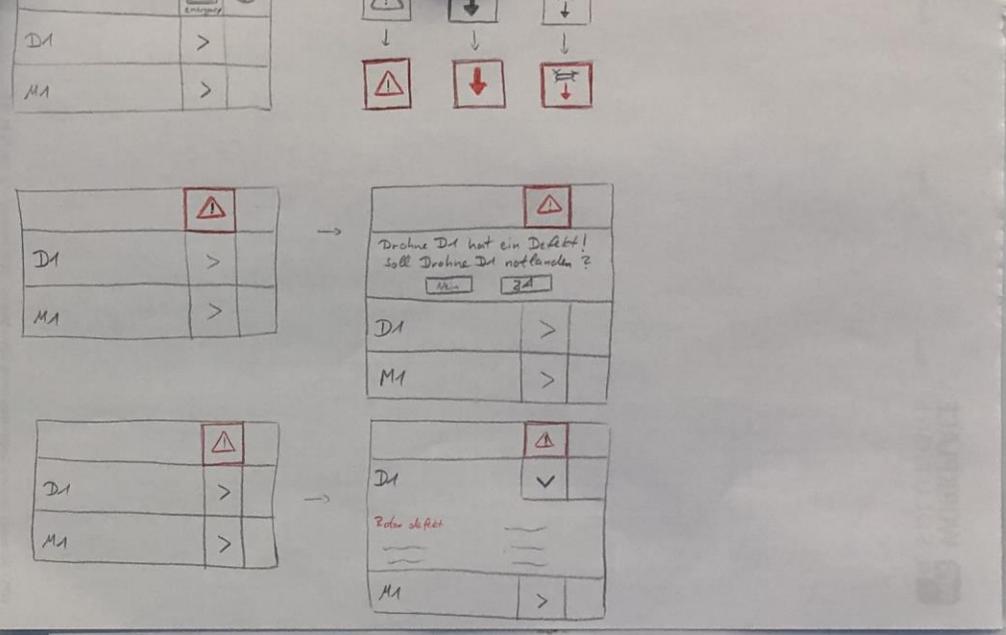
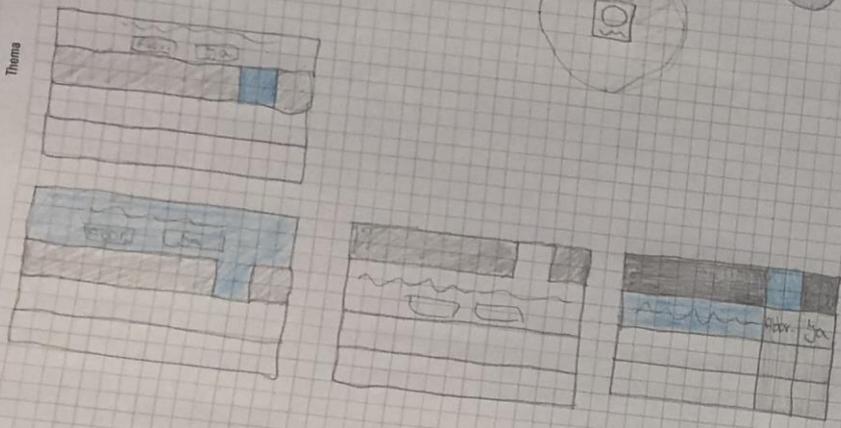
von außen  
betrachtet



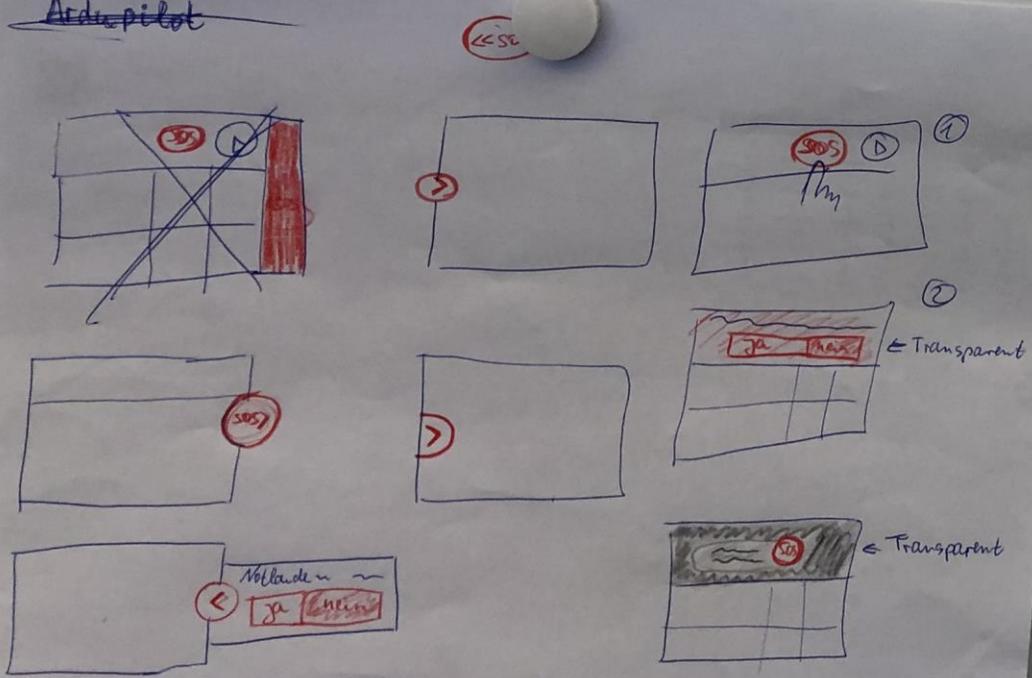


Name

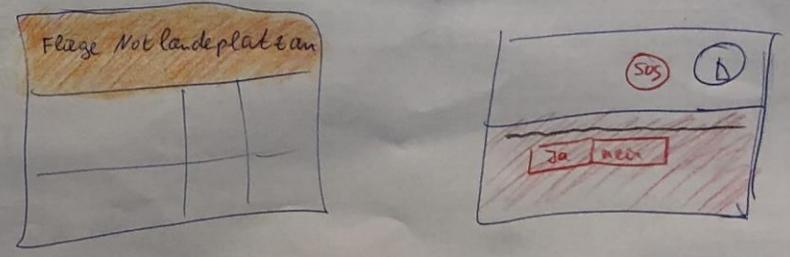
Thema



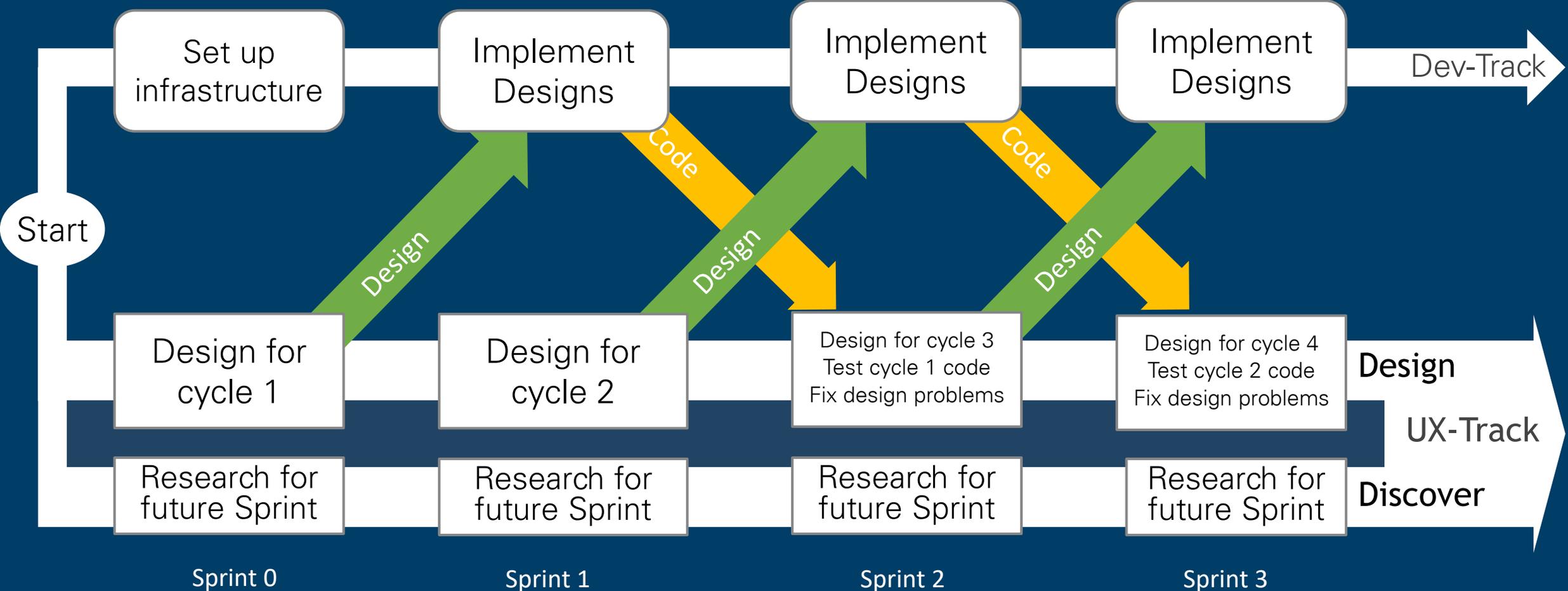
Arbeitspilot

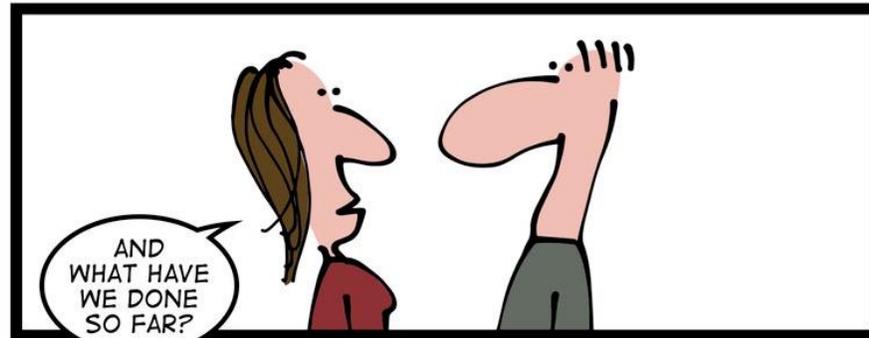
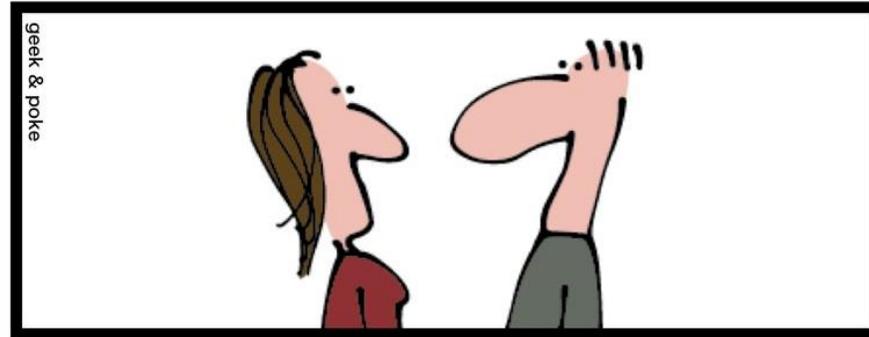


Nach Emergency, pressed

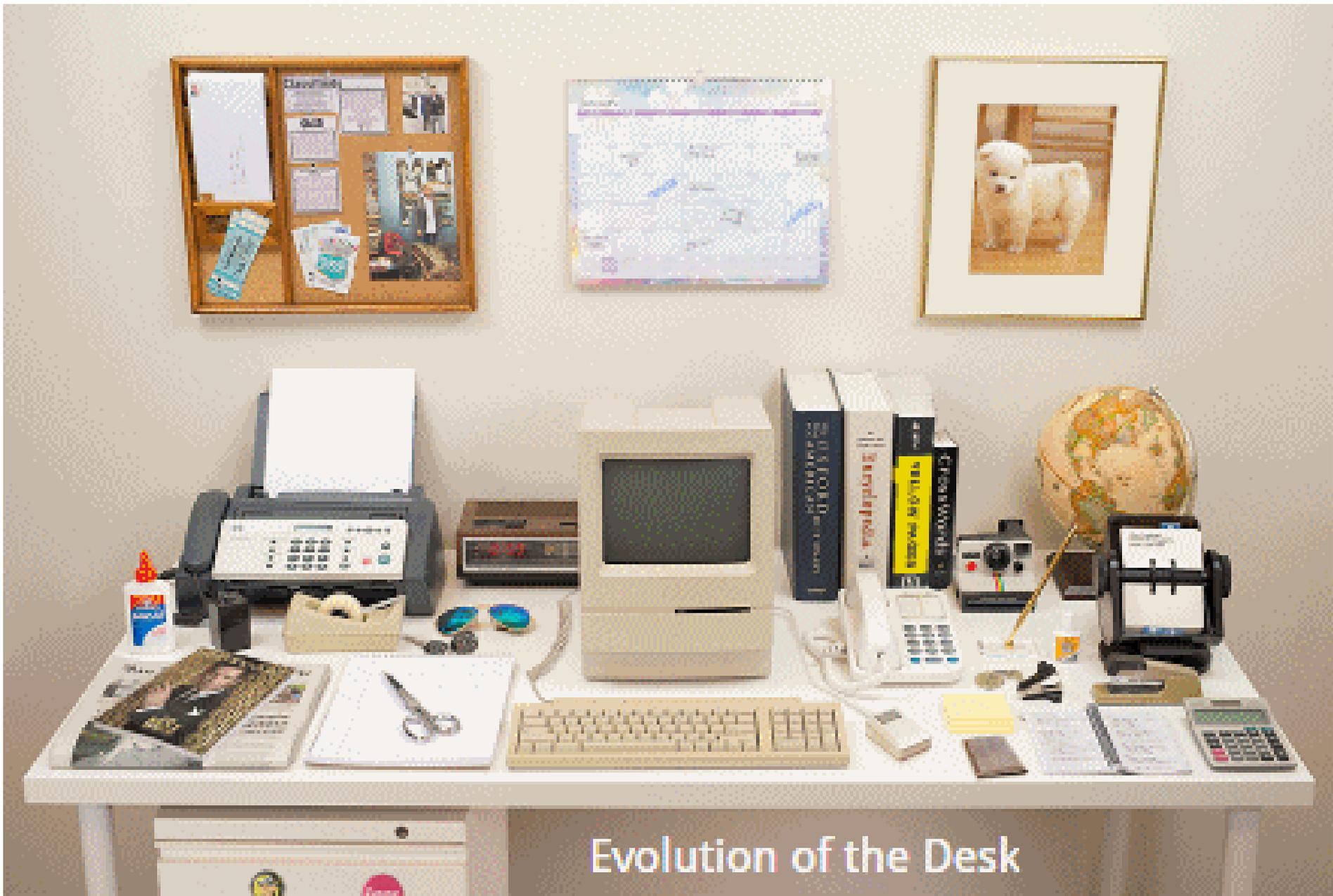


# DUAL TRACK SCRUM





THE HYPE IS A CYCLE



Evolution of the Desk

1980



2014

@caiolali

# VIELEN DANK FÜR EURE AUFMERKSAMKEIT!



**WPS WORKPLACE SOLUTIONS**

Diplom-Informatikerin  
**Dr. Carola Lilienthal**  
Geschäftsführerin

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22085 Hamburg

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Mobil +49 170 184 77 11

cl@wps.de  
www.wps.de

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Carola Lilienthal

## Sustainable Software Architecture

Analyze and Reduce Technical Debt

3. Auflage

Carola Lilienthal

## Langlebige Software-Architekturen

Technische Schulden analysieren, begrenzen und abbauen

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@caiolali  
cl@wps.de  
www.lisa.de

Vaughn Vernon

## Domain-Driven Design kompakt

→ Aus dem Englischen übersetzt von Carola Lilienthal und Henning Schwentner

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[www.sustainable-software-architecture.com](http://www.sustainable-software-architecture.com)

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