



THE ROCKY ROAD FROM MONOLITH TO MICROSERVICES

Bjoern Kimminich
Senior Manager IT Architecture
Kuehne + Nagel (AG & Co.) KG

Slides: <https://kuehne-nagel.github.io/monolith-to-microservices>
Source: <https://github.com/kuehne-nagel/monolith-to-microservices>



STARRING AS "THE MONOLITH"

KN Login

360° visibility.
Active control.

MARKETING FACTS

VISIBILITY



Keep track of your products, streamline operations and better manage your assets.

MONITORING



*Proactive control to help you maintain
your supply chain integrity and
efficiency.*

COLLABORATION



*Improves the communication and
collaboration with your supply chain
partners.*

INFORMATION MANAGEMENT



*Business intelligence tools that convert
your data into information for effective
decision making.*

SRP VIOLATION...

...detected on marketing level!

PROJECT FACTS

- Ongoing development since 2007
- More than 1.500.000 lines of code
- 197+ developers over time

HISTORICALLY GROWN SYSTEM...

...detected on application level!

TECHNICAL FACTS

- Self-made Java Web Framework
(by now out of commission)
- Multiple UI Technologies
(JSP/jQuery, Swing/ULC, GWT/GXT, JSF)
- Monolithic underlying database
(used for operations, visibility and reporting)

The background of the slide features a dark, textured surface. In the center, a hand wearing a dark leather glove holds a glowing red crystal ball. The light from the ball illuminates the surrounding area with a warm glow.

LEGACY SYSTEM...

...detected on architecture level!

A red-tinted photograph of a rocky path or surface. Three glowing red beacons, resembling sticks or small fires, are placed on the surface. One is at the top left, one is in the center, and one is at the bottom right. A faint white rectangular shape is visible on the left side.

THREE RED ALERTS

- Responsibility
- Maintenance
- Technology

A photograph of a winding road at sunset or sunrise. The sky is a gradient from blue to orange and yellow. The road curves through a landscape with green hills and mountains in the background. The lighting creates strong shadows and highlights on the asphalt.

HOW TO TURN THE CORNER...?

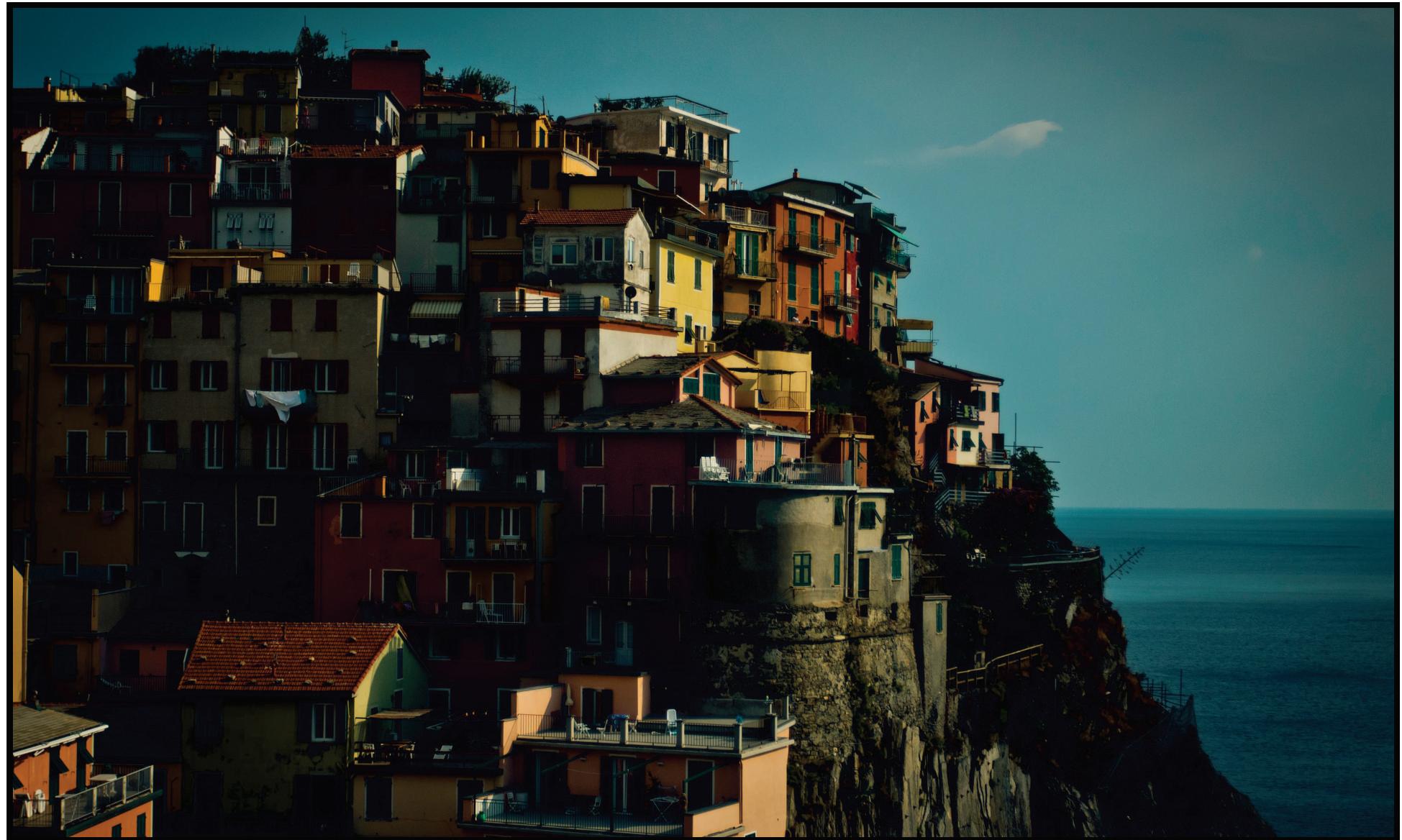
#1: RESTRAINT

Do not put more stuff into your monolith!

FIXES AND SMALL CHANGES ONLY!



NO MORE NEW BIG FEATURES!



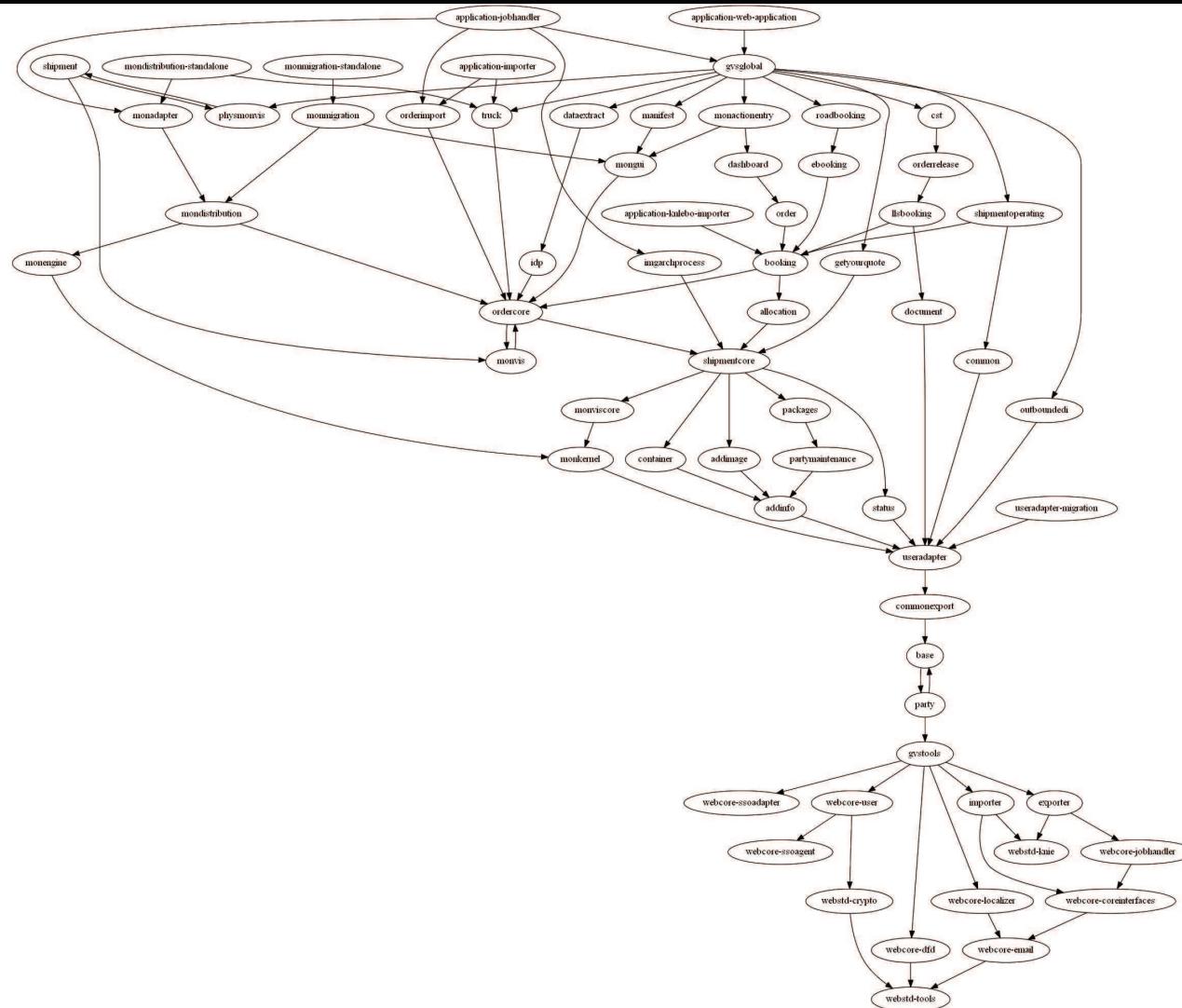
NO FACELIFT PROJECTS!



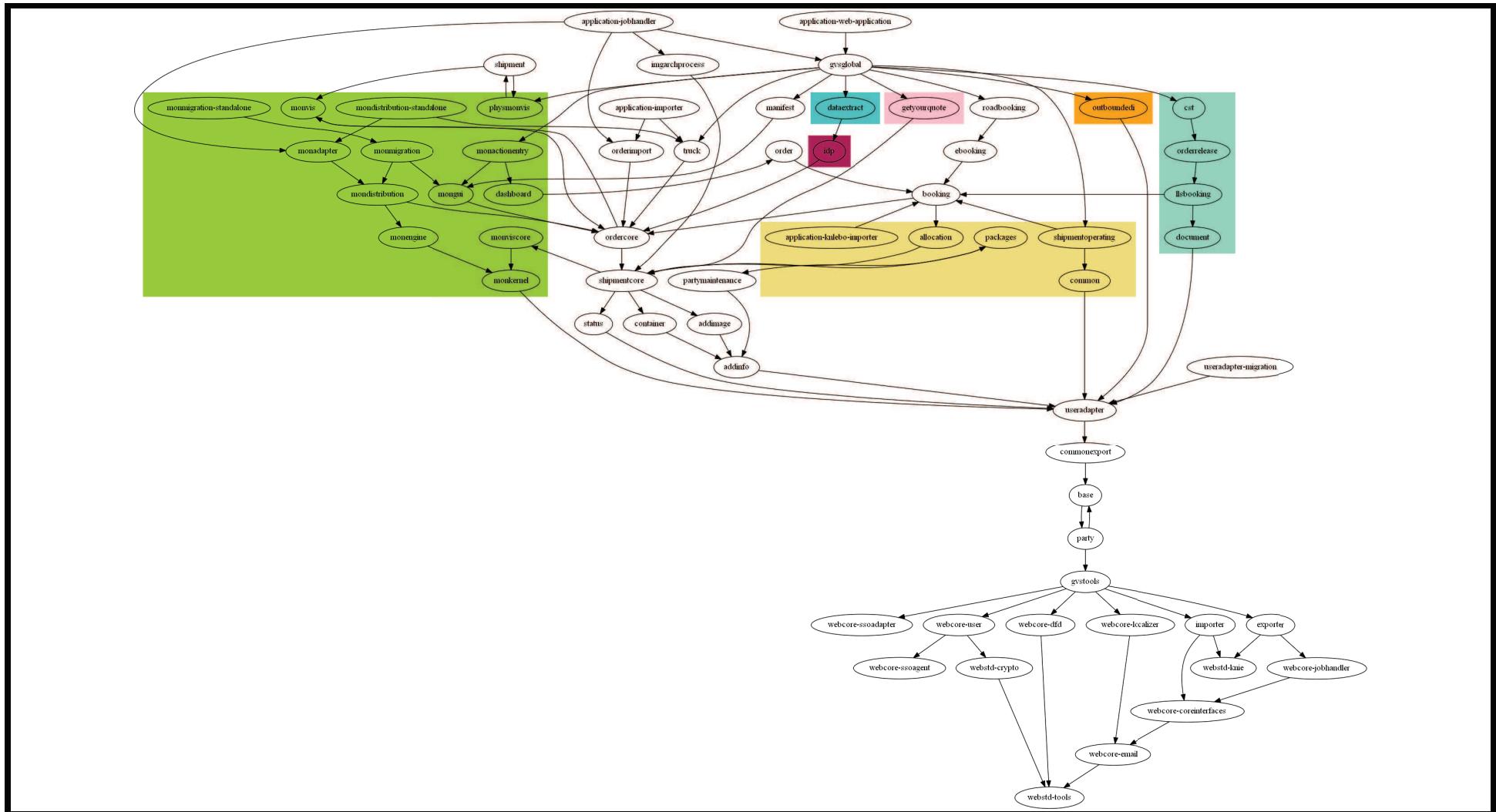
#2: RESEARCH

Find the **seams** in your monolith!

COMPONENTS OF KN LOGIN



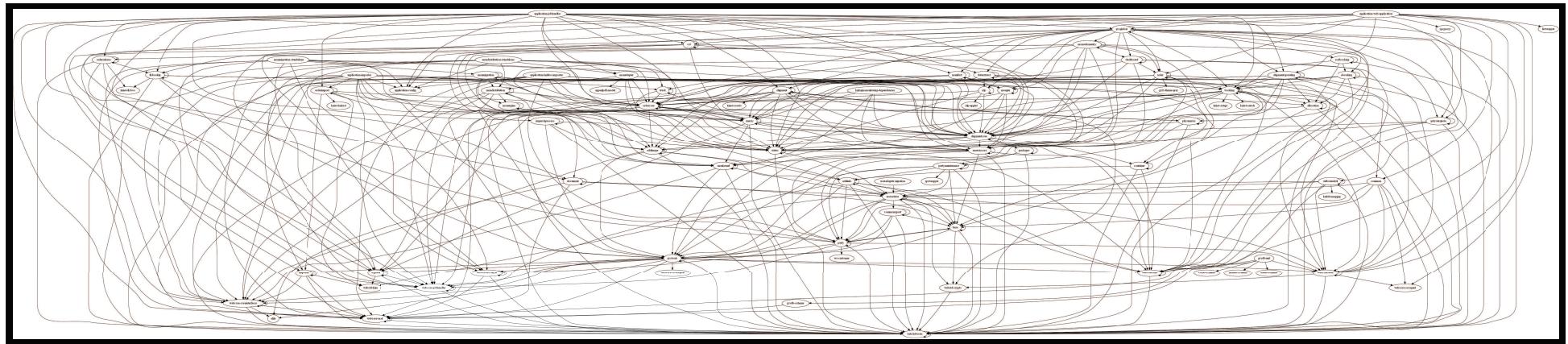
PRODUCT CLUSTERS



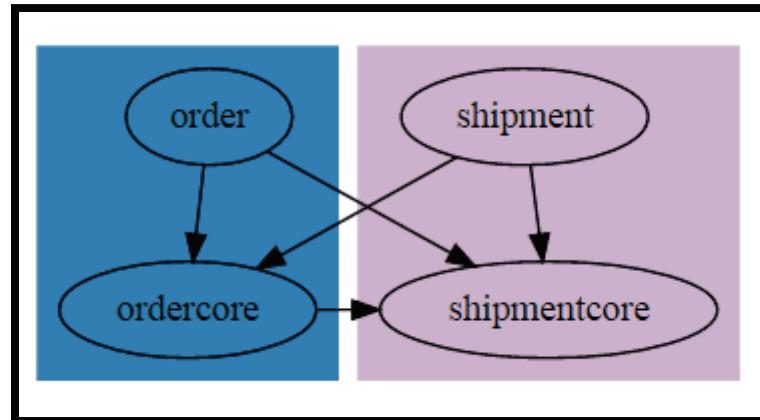
#3: REPERCUSSION

Realize that most of your **seams** are just wishful thinking!

TRANSITIVE DEPENDENCY HELL



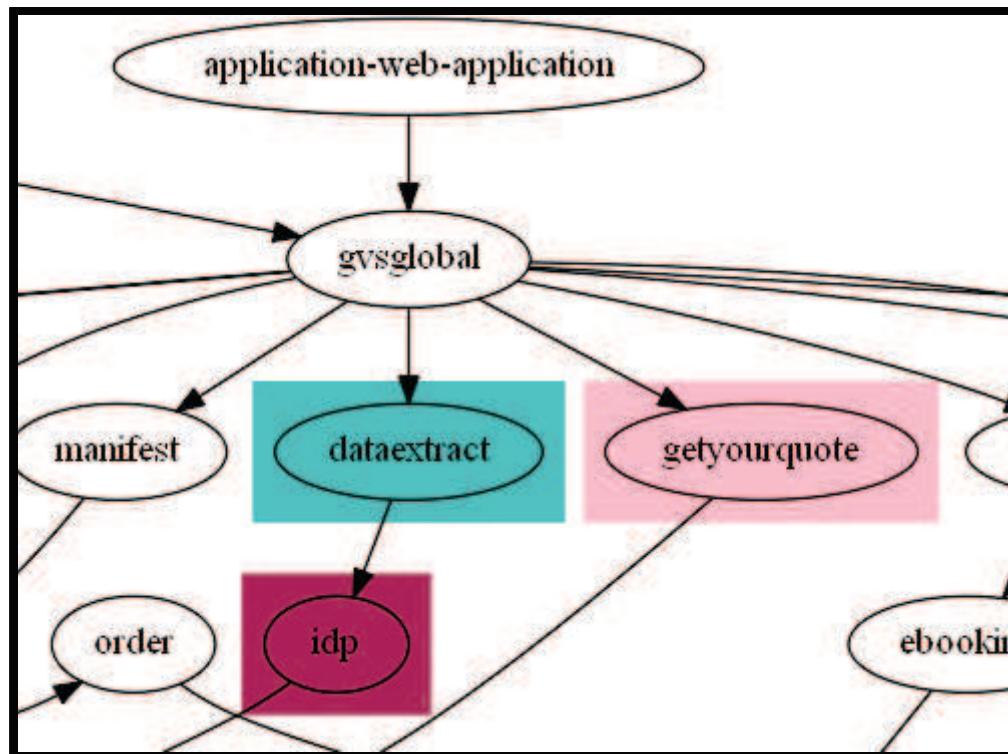
CYCLE PREVENTION COMPONENTS™



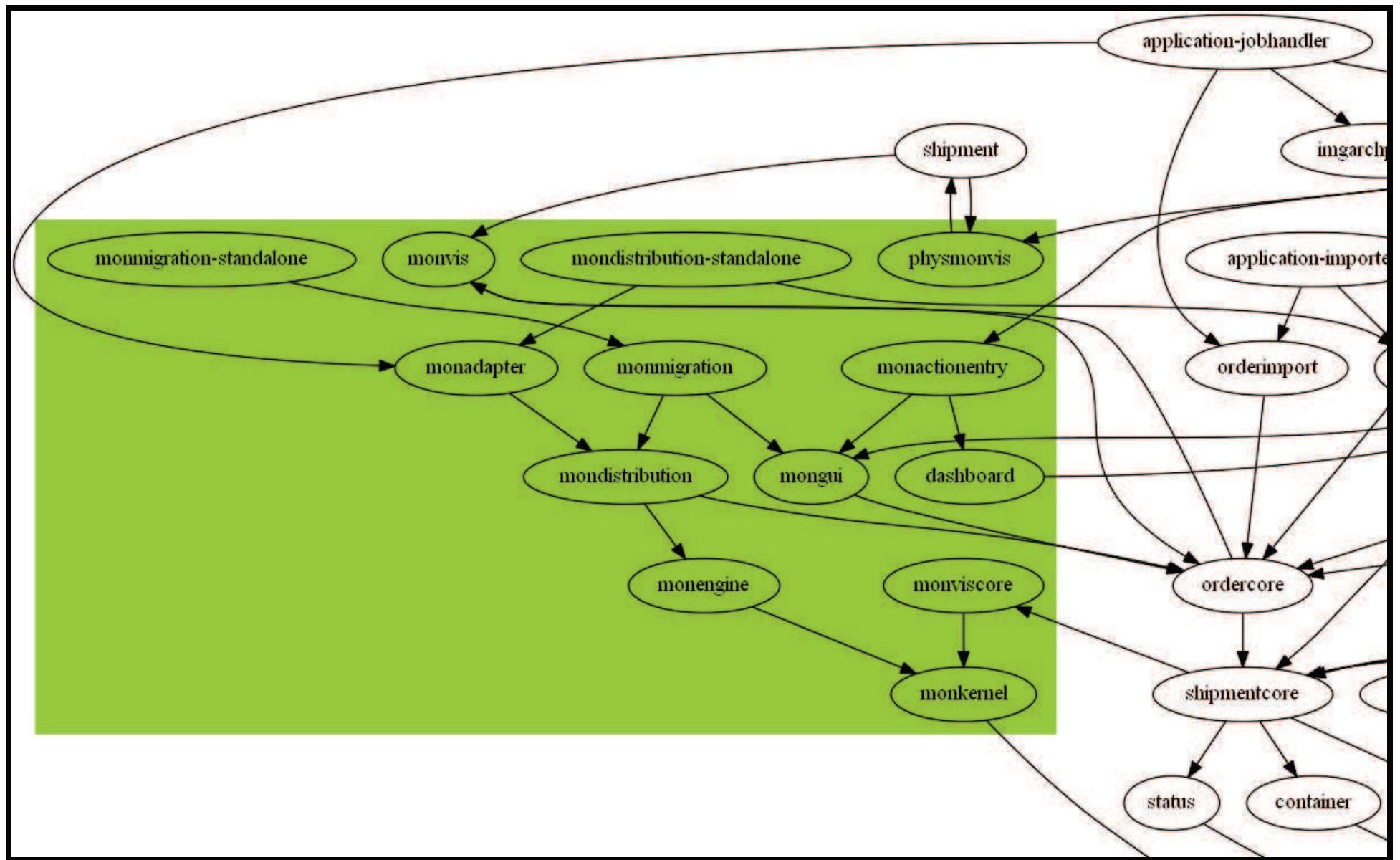
#4: REHABILITATION

Continually desiccate the monolith in spite of #3!

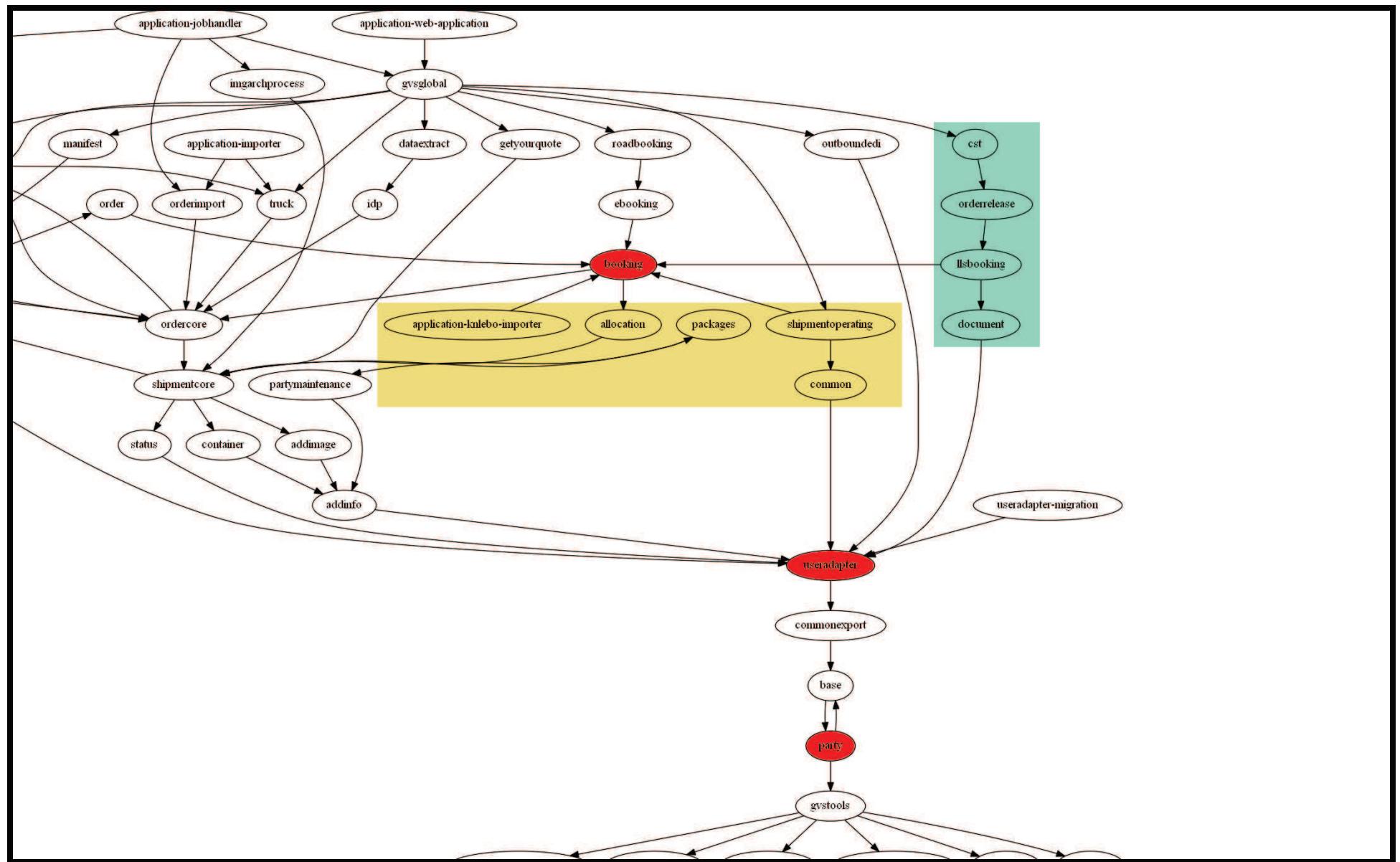
SEEMINGLY LOW-HANGING FRUITS



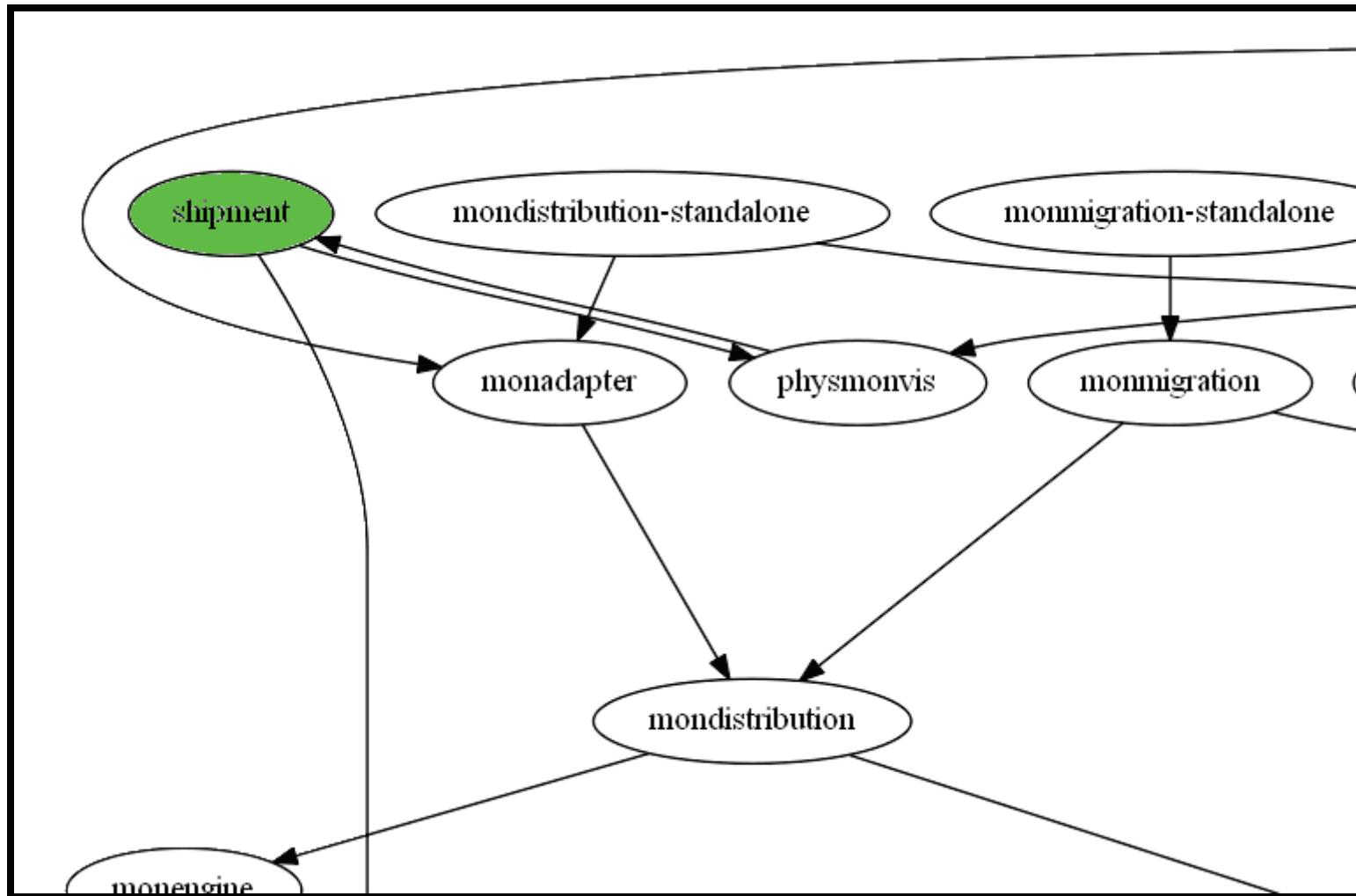
WELL DEFINED BOUNDED CONTEXT



REAL PAIN SPOTS



BACK TO THE ROOTS

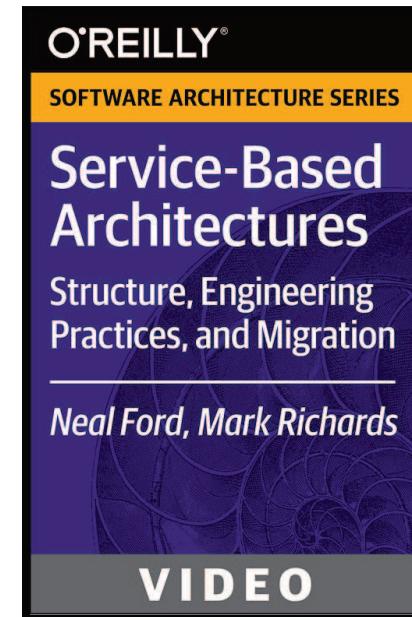
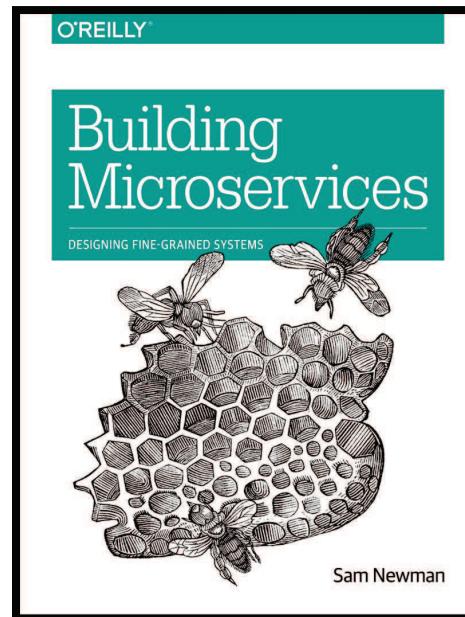
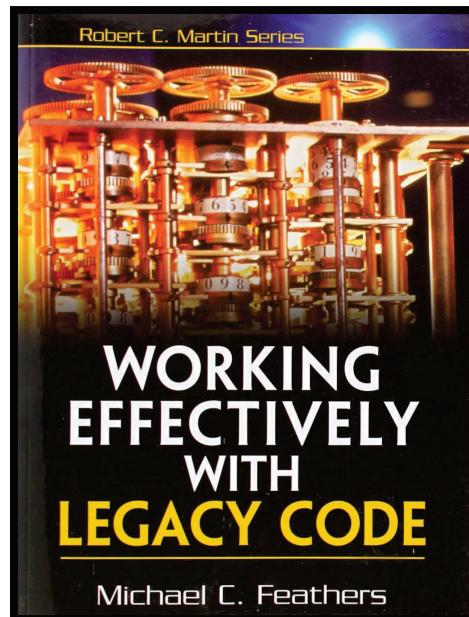


FINAL TAKEAWAY

The transition from a monolithic application to a microservice architecture is **neither easy nor cheap**.

Even if you do not end up with "real" microservices, multiple smaller applications come with better **Maintainability and extensibility** for the future!

RECOMMENDED RESOURCES



THE END...?

MONOLITHFIRST



Björn Kimminich

@bkimminich

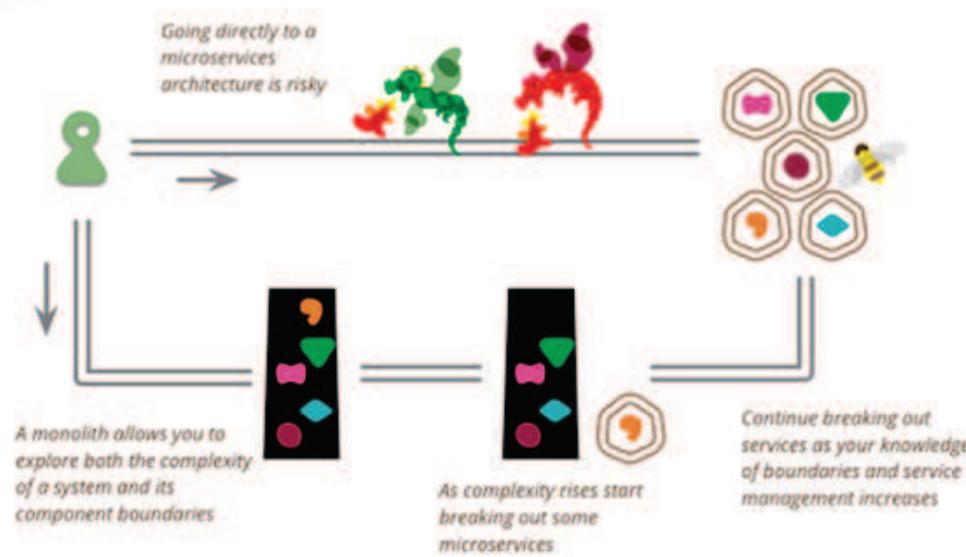
+ Folgen

With regards to @martinfowler's latest coup
I hereby coin the term #Wegwerfprotolith
(English: #throwawayprotolith)
martinfowler.com/bliki/Monolith...

Übersetzung anzeigen



Martin Fowler



THE END.....?

DON'T START WITH A MONOLITH



Stefan Tilkov
@stilkov



Folge ich

I'm happy @martinfowler let me publish my opinion on his site: "Don't start with a monolith" martinfowler.com/articles/dont-monolith.html

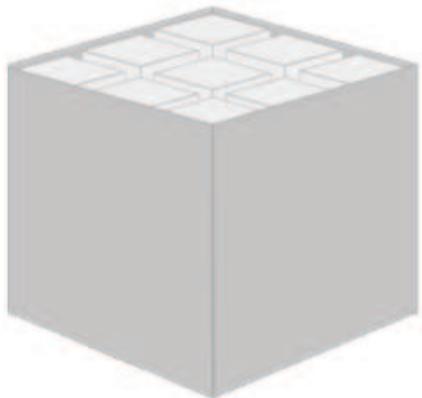
Übersetzung anzeigen



...



Martin Fowler



Hope



Reality

Don't start with a monolith

By [Stefan Tilkov](#) @stilkov

Don't start with a monolith if you want to end up with microservices. It's usually a good idea to follow the YAGNI principle, but a monolith won't magically contain services waiting to be liberated.

THE END!



Björn Kimminich
@bkimminich

So, no #Wegwerfprotolith's after all? ... I
was really happy to read this! @stilkov
@martinfowler

QUESTIONS?

CREDITS

- Presentation created with [reveal.js](#) - The HTML Presentation Framework
- KN Login photos and diagrams by [Kuehne + Nagel](#) / All rights reserved
- [USS Yorktown Red Light](#) by [Mr.TinDC](#) / CC BY-SA 3.0
- Three road flares burning by [Dvortygirl](#) / CC BY-ND 2.0
- MonolithFirst by [Martin Fowler](#) / All rights reserved
- Don't start with a monolith by [Stefan Tilkov](#) / All rights reserved
- Other photos from [StockSnap.io](#) and [Unsplash](#) / CC0 1.0