Escaping the Legacy Trap

A proven method for application modernization

Coté - March 11th, 2023

“It’ll just take 15 minutes.”

76% of executives say legacy software is holding them back.

Sources: "Improving Customer Experience And Revenue Starts With The App Portfolio," Forrester Consulting, commissioned by VMware, March, 2020. Survey conducted July to Oct. 2019 with 614 respondents and six CIO/SVP interviews.

Coté

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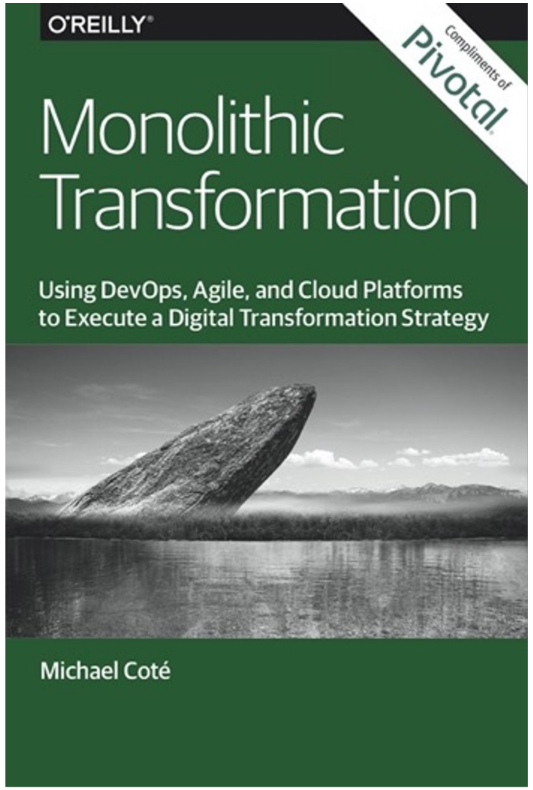

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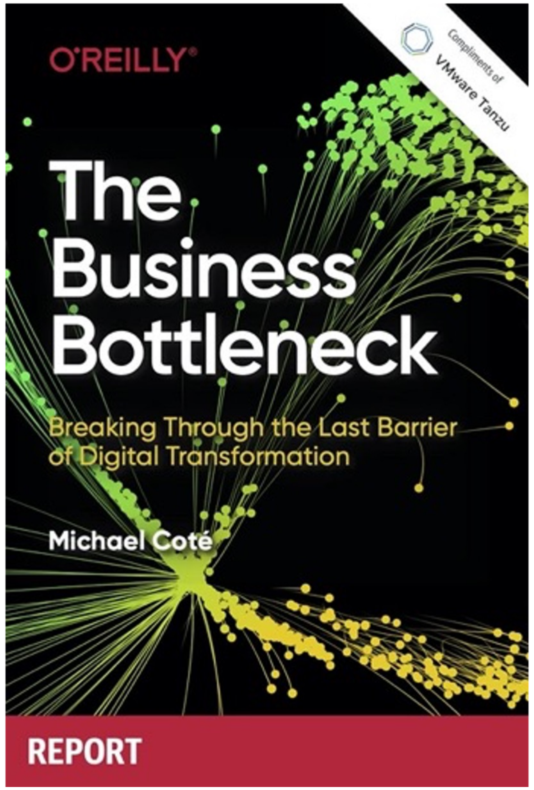
Compliments of Pivotal

Monolithic Transformation

Using DevOps, Agile, and Cloud Platforms to Execute a Digital Transformation Strategy

Michael Coté



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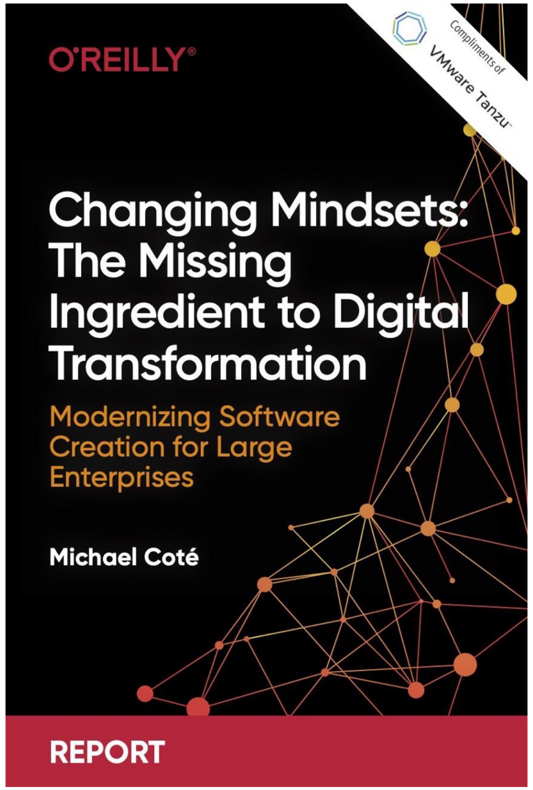
The Business Bottleneck

Breaking Through the Last Barrier of Digital Transformation

Michael Coté

REPORT



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Changing Mindsets: The Missing Ingredient to Digital Transformation

Modernizing Software Creation for Large Enterprises

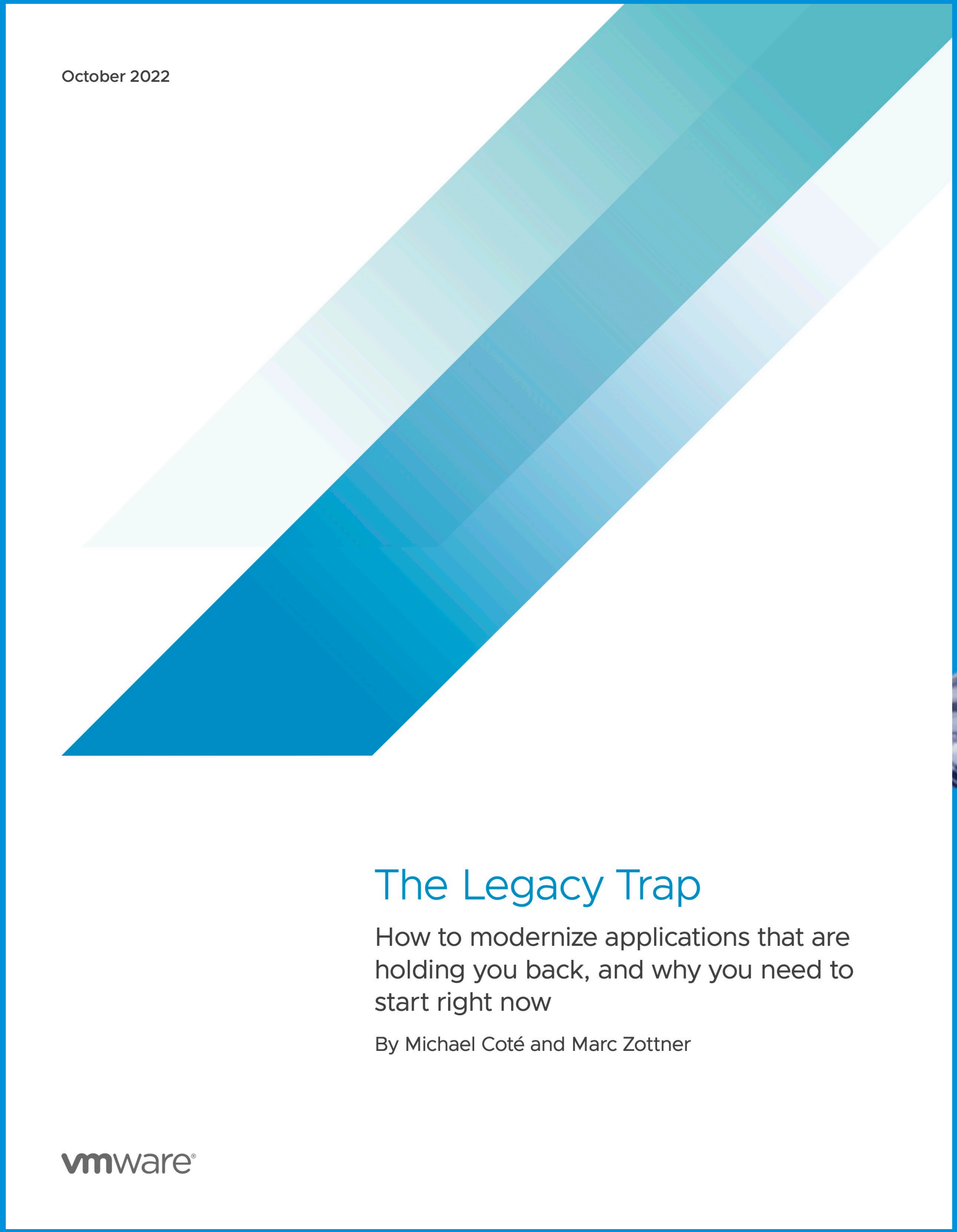
Michael Coté

REPORT

Tanzu Talk

SOFTWARE DEFINED TALK

RedMonk DELL 451 Research Pivotal vmware



October 2022

The Legacy Trap

How to modernize applications that are holding you back, and why you need to start right now

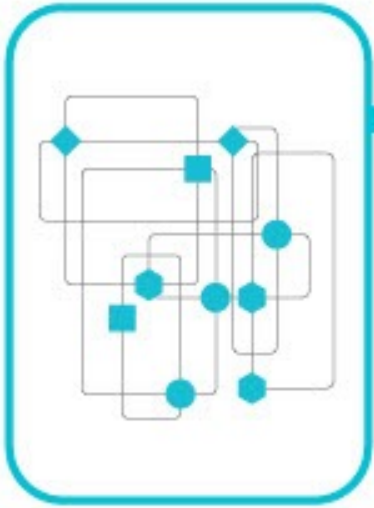
By Michael Coté and Marc Zottner

Free Download:
https://cote.io/legacytrap/

The Swift Methodology

A series of proven practices that jump-start application modernization in days, not months

vmware



1 Define objectives and key results

1–2 hours

Agree on objectives and determine the key results to measure using an objectives and key results (OKR) framework.

Benefit

Ensure desired business outcomes always guide modernization practices.

2 Event storm the system

1–2 days

Make sense of the complexity by discovering and visualizing business events that cover key features of the system.

Benefit

Quickly create a common understanding between business experts and IT on the provided functionalities of the modernized system.

3 Select one thin slice of functionalities

2 hours

Identify meaningful modernization starting points by selecting one thin slice of functionalities from the system.

Benefit

Avoid analysis paralysis by having one meaningful, well-defined business narrative jump-start modernization.

4 Conduct a Boris exercise

2–4 days

Model relationships between business capabilities the system will support to draft the desired notional architecture.

Benefit

Determine how the system wants to be designed and avoid pitfalls such as premature solutioning.

5 Fill the backlog

1–2 days

Capture user stories, required APIs, data, and connections for each business capability of the system.

Benefit

Identify and prioritize a backlog of work to balance business value, technical risk, and effort.

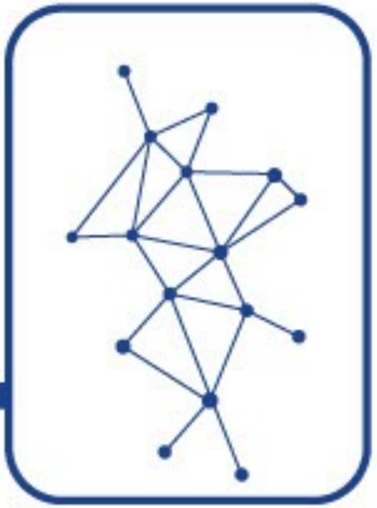
6 Produce tested and working code

Approx. 3 weeks

Make low-level design decisions, apply technical patterns, and implement capabilities within a time-bounded set of 1-week iterations.

Benefit

Enable your team by pairing with Tanzu Labs engineers on a backlog. Then progressively transfer traffic from the existing system without disrupting business.



Sources: Swift method overview at Tanzu Developer center.

Software that you need to change, but are afraid to change

“Legacy technology is any technology that makes it difficult for organizations to change their application systems to support changing business requirements. And, therefore, it impedes business agility.”

Anne Thomas,

distinguished research VP at Gartner, in an email to CIO Dive

“Legacy code is code without unit tests.”

Michael Feathers,

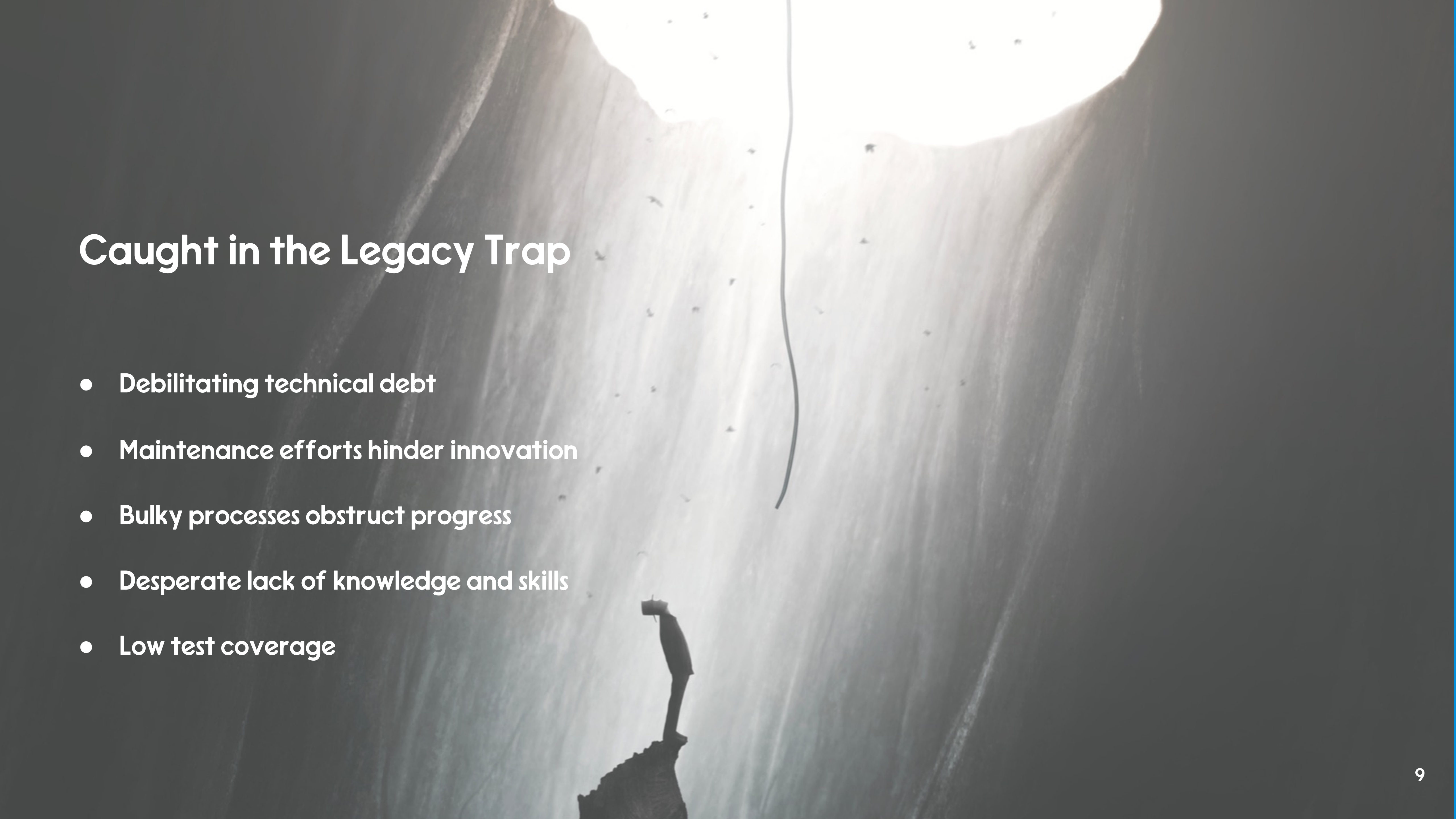
Working Effectively with Legacy Code

“IDC estimates there are

500 million

legacy applications in use around the world. The vast majority are found on x86 servers, with most running on virtual machines (VMs).”

Sources “Transforming Workloads Through Application Modernization,” Lara Greden and Al Gillen, IDC, April 2022.



Caught in the Legacy Trap

- Debilitating technical debt
- Maintenance efforts hinder innovation
- Bulky processes obstruct progress
- Desperate lack of knowledge and skills
- Low test coverage

How Software Goes Bad

Fitness

Forgotten

Capability

Common Fixes

Modernization Strategies - The 7 Rs

Retain	Keep and don't touch for now.
Retire	Decommission end-of-life application.
Rehost (lift and shift)	Repackage and move existing applications with as few changes as possible.
Replatform	Change the underlying platform (runtime, framework, middleware, OS).
Refactor/Rewrite	Redesign code to take advantage of the new platform (extend, strangle, rewrite).
Repurchase / Replace	Replace by commercial off-the-shelf (COTS) or Software-as-as-Service (SaaS).

Low efforts
Low value

↓

High efforts
High value

Holistic Way Out Of The Trap

Culture

Continually improve
and deliver customer success.

Startup
Generative
Empowered
Psychological Safety

Methodology

Learn the necessary practices
to build modern software.

User-Centered Design
Lean Product Management
Extreme Programming
Cloud-Native Practices

Tools

Build with products focused
On developer productivity.

Best in class tools

Platform

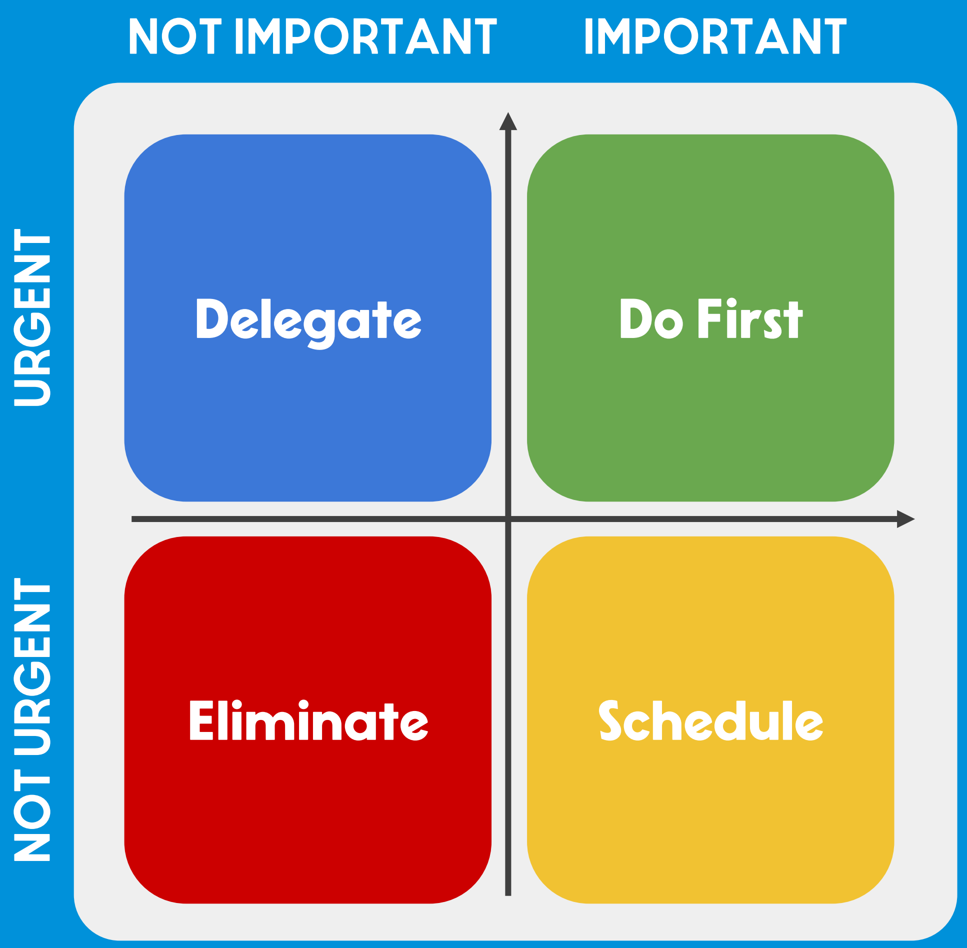
Run any app, on any cloud,
on a unified platform.

Portable
Low coupled
Standardized
Matching abstraction

Spoiler
"This is hard!"

Stick to business outcomes for answering “why?”

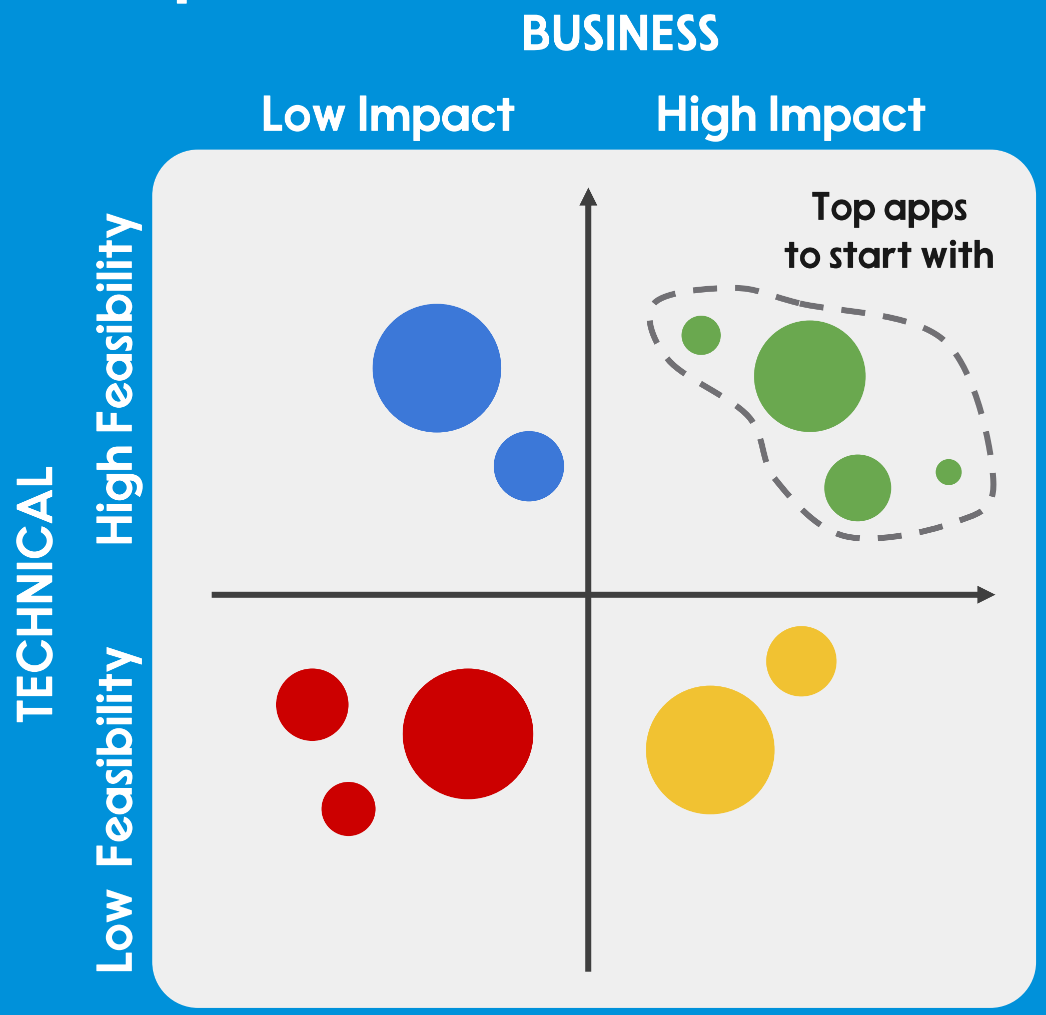
Use Portfolio Rationalization to find what's important



	NOT IMPORTANT	IMPORTANT
URGENT	Delegate	Do First
NOT URGENT	Eliminate	Schedule

Eisenhower Matrix

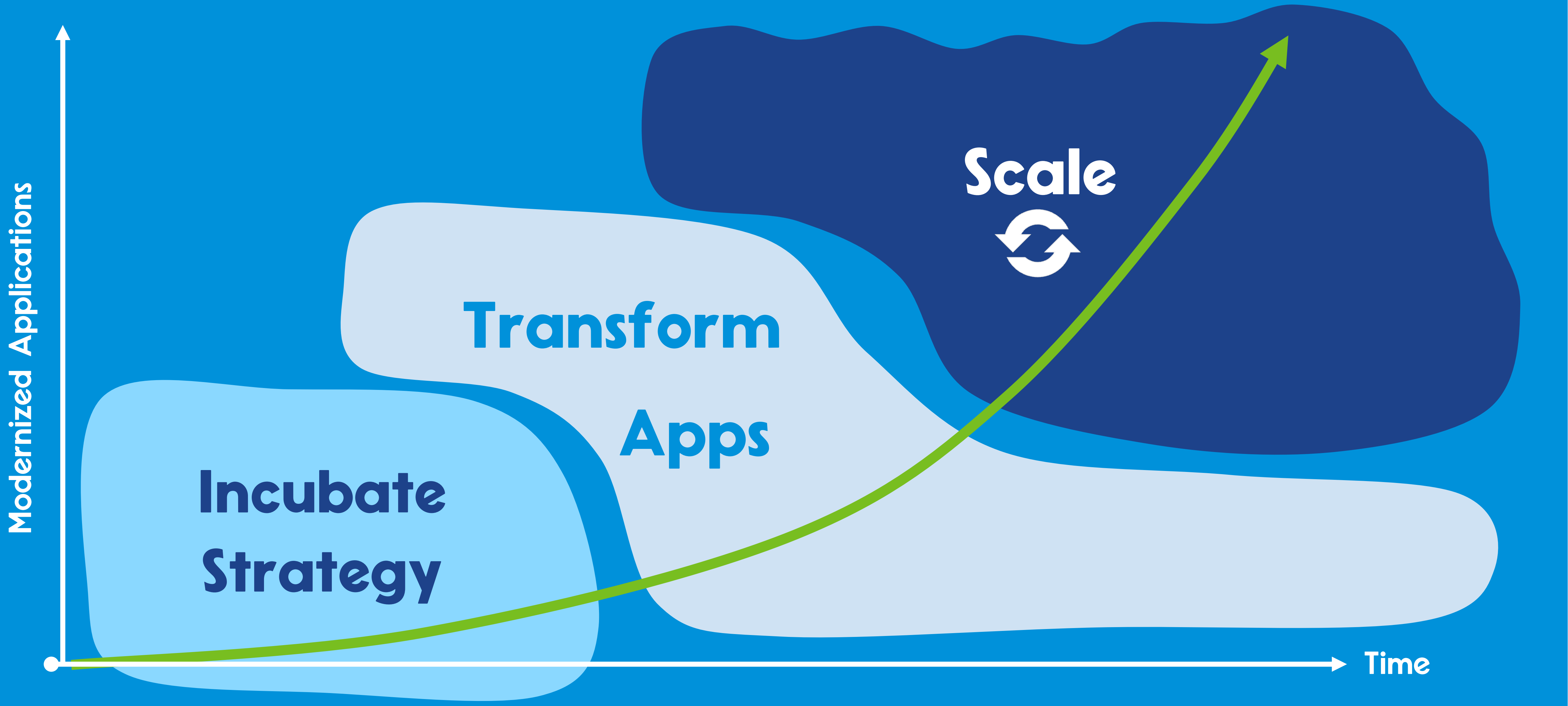
Escape the "Urgency" Trap

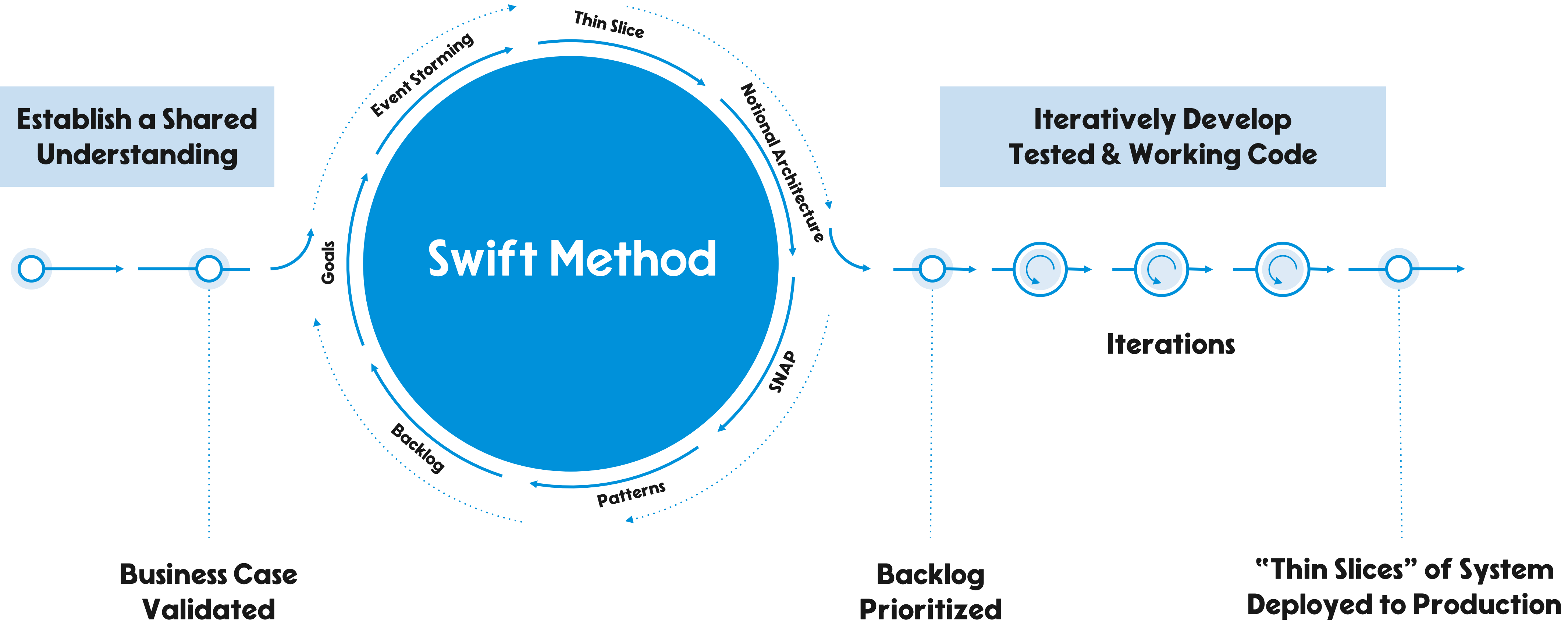


Impact Effort Matrix (2x2)

Align modernization efforts & impact

Plan for a long journey – start small and agile, learning as you scale





Establish a Shared Understanding

Swift Method

Iteratively Develop Tested & Working Code

Business Case Validated

Backlog Prioritized

Iterations

“Thin Slices” of System Deployed to Production

Find the business processes and element with event storming

prescription ingestion

- pharmacy received prescription
- prescription validity and legality check completed
- prescription saved
- Prescription sent for pharmacy review

prescription safety review

- pharmacy received prescription for review
- pharmacist assigned for prescription review
- prescription accuracy check completed
- therapeutic check completed
- overfill prescription check completed
- prescription review completed

prescription authenticity check

- pharmacy received prescription for authenticity check
- pharmacist assigned for prescription authenticity check
- prescriber validated
- patient validated
- insurance validated
- prescription authenticity check completed

prescription price calculation

- standard price obtained
- insurance negotiated price obtained
- insurance discount calculated
- insurance copay calculated
- insurance pricing details saved
- pharmacy discount calculated
- final prescription price calculated

prescription technical review

- pharmacist assigned for prescription technical review
- prescription filling check completed
- medication interaction check completed
- medication labeling check completed
- medication brand,quantity and doses check completed
- printed counseling documents

prescription preparation

- pharmacist assigned for prescription preparation
- medication filled as per insurer guidance
- medication dosage and expiry checked
- medication labels printed
- medication packed per guidelines
- prescription marked as ready for pickup

prescription dispensing

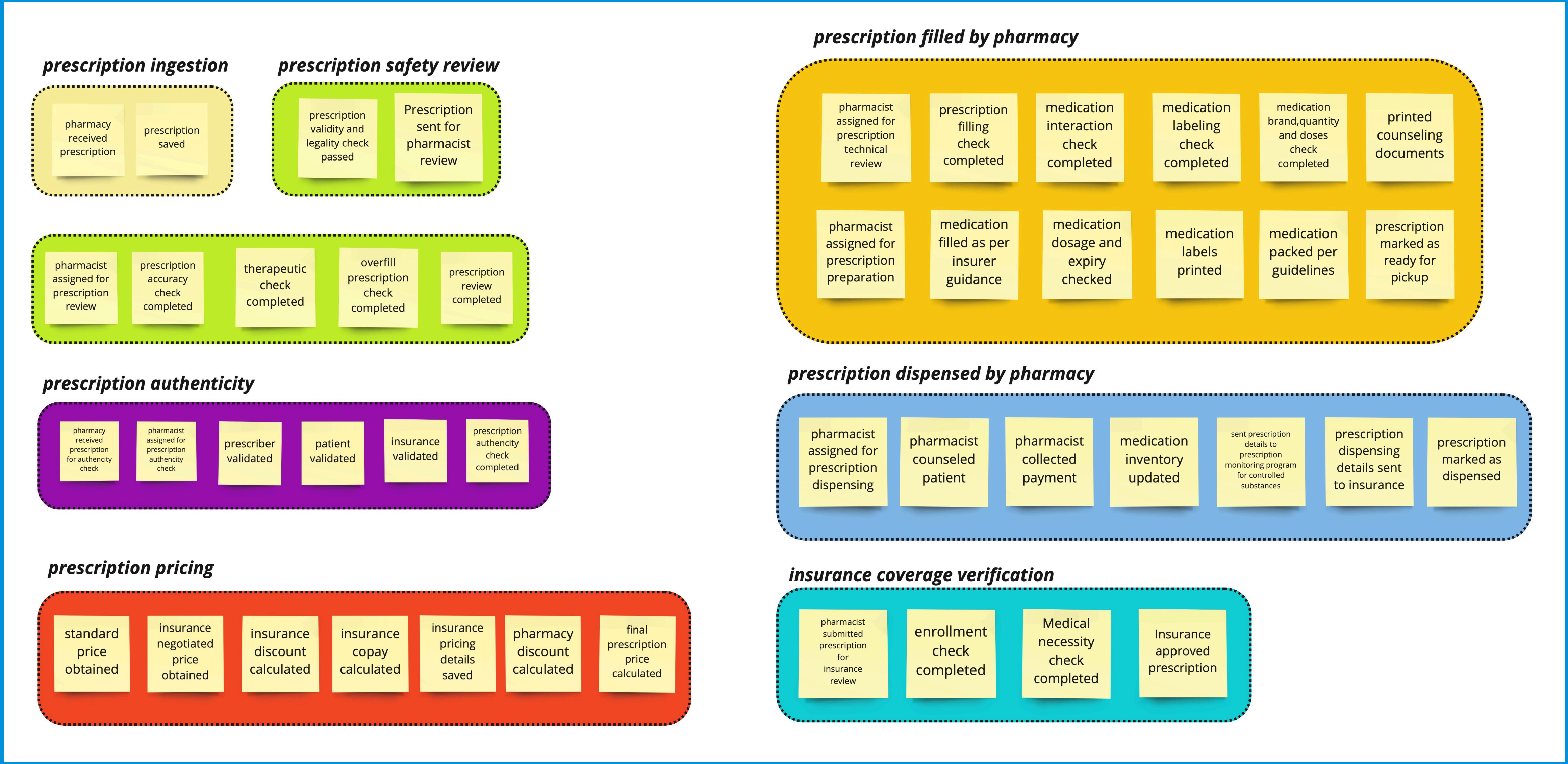
- pharmacist assigned for prescription dispensing
- pharmacist counseled patient
- pharmacist collected payment
- medication inventory updated
- sent prescription details to prescription monitoring program for controlled substances
- prescription dispensing details sent to insurance
- prescription marked as dispensed

insurance coverage verification

- pharmacist submitted prescription for insurance review
- enrollment check completed
- Medical necessity check completed
- Insurance approved prescription

Source: "Decompose monoliths using business workflows," Prashanth 'PB' Belathur, Oct 2022.

Discover the bounded contexts, find shared services, design hygiene



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prescription authenticity

- pharmacy received prescription for authenticity check
- pharmacist assigned for prescription authenticity check
- prescriber validated
- patient validated
- insurance validated
- prescription authenticity check completed

prescription pricing

- standard price obtained
- insurance negotiated price obtained
- insurance discount calculated
- insurance copay calculated
- insurance pricing details saved
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prescription filled by pharmacy

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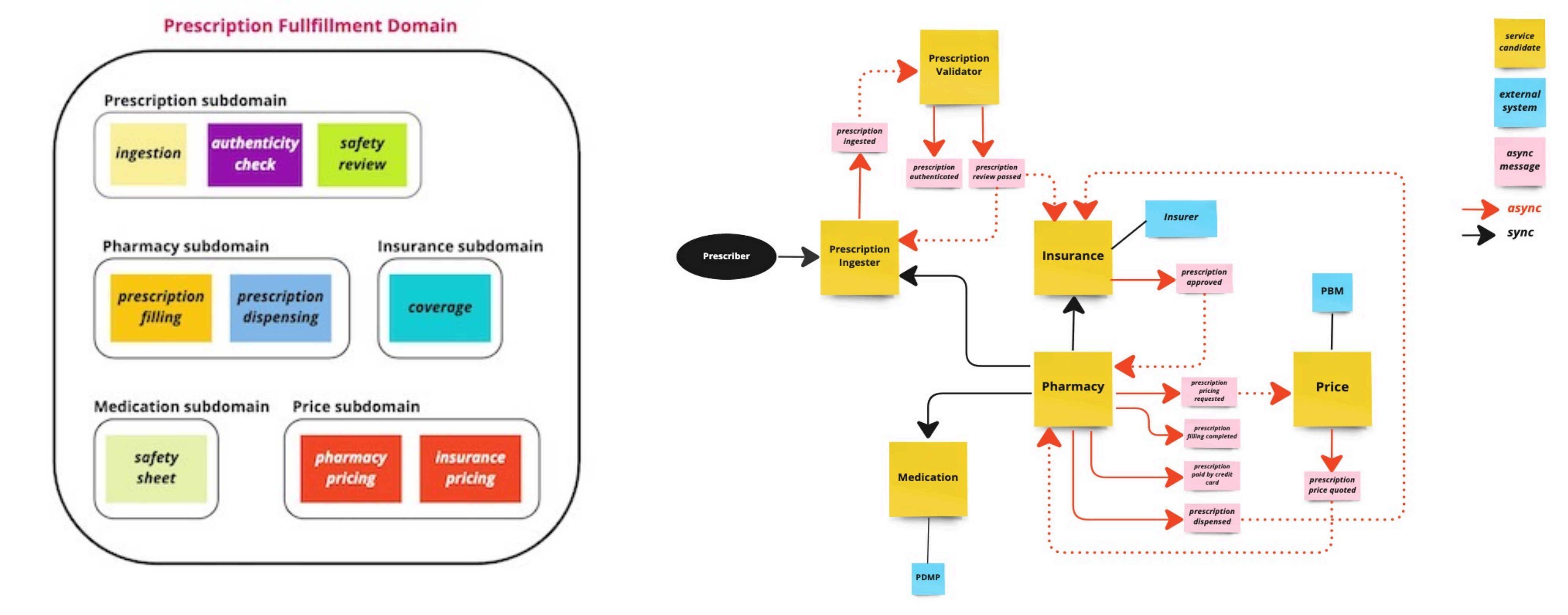
Pick an important, but small slice then re-architect based on business capability/process



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Thanks!

📥 https://newsletter.cote.io

📚 https://cote.io/legacytrap/

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Slides & stuff