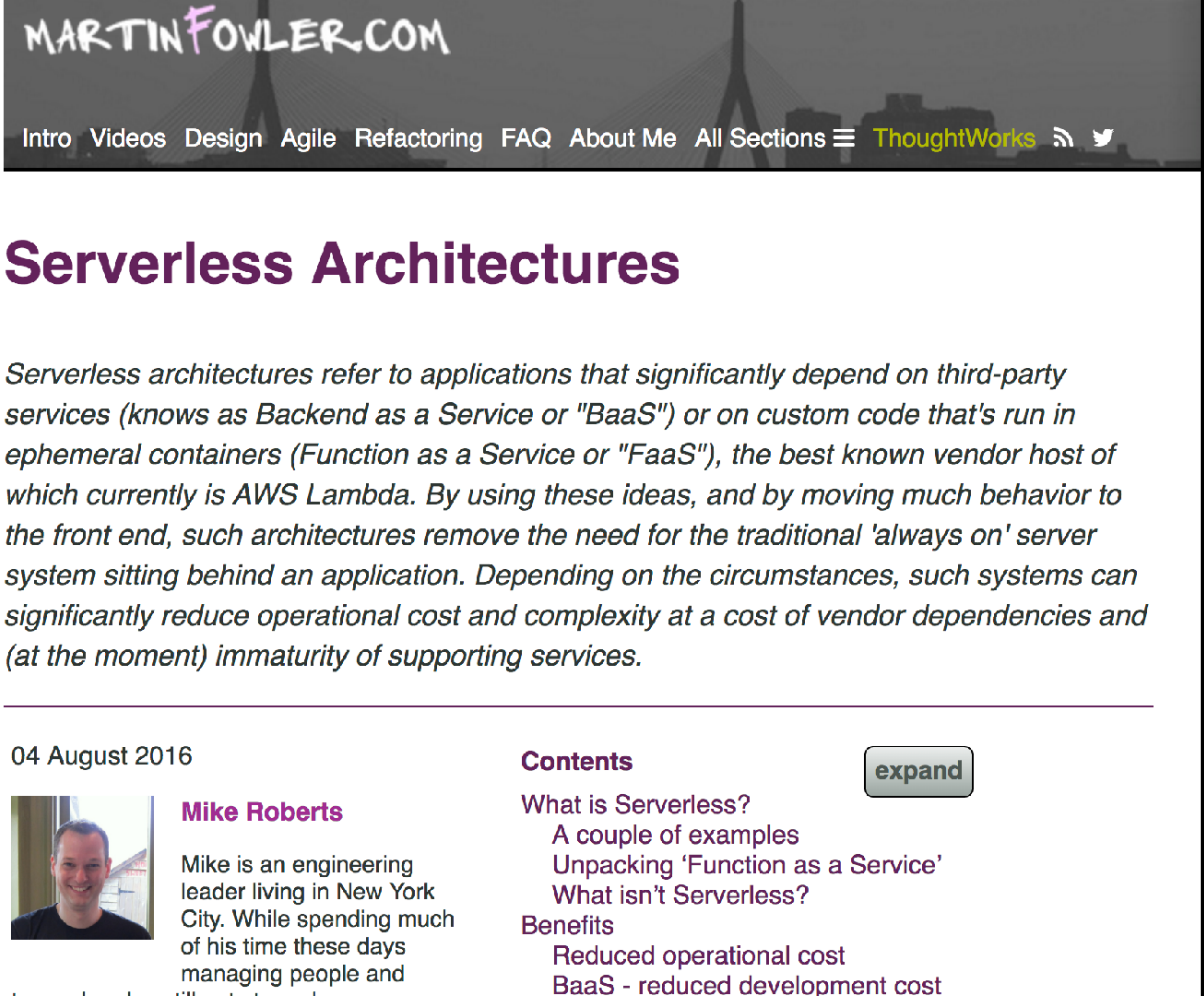
Serverless + Modern Agile

@mikebroberts
https://symphonia.io/



Serverless Architectures

Serverless architectures refer to applications that significantly depend on third-party services (knows as Backend as a Service or "BaaS") or on custom code that's run in ephemeral containers (Function as a Service or "FaaS"), the best known vendor host of which currently is AWS Lambda. By using these ideas, and by moving much behavior to the front end, such architectures remove the need for the traditional 'always on' server system sitting behind an application. Depending on the circumstances, such systems can significantly reduce operational cost and complexity at a cost of vendor dependencies and (at the moment) immaturity of supporting services.

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04 August 2016

Mike Roberts

Mike is an engineering leader living in New York City. While spending much of his time these days managing people and

Contents

Symphonia

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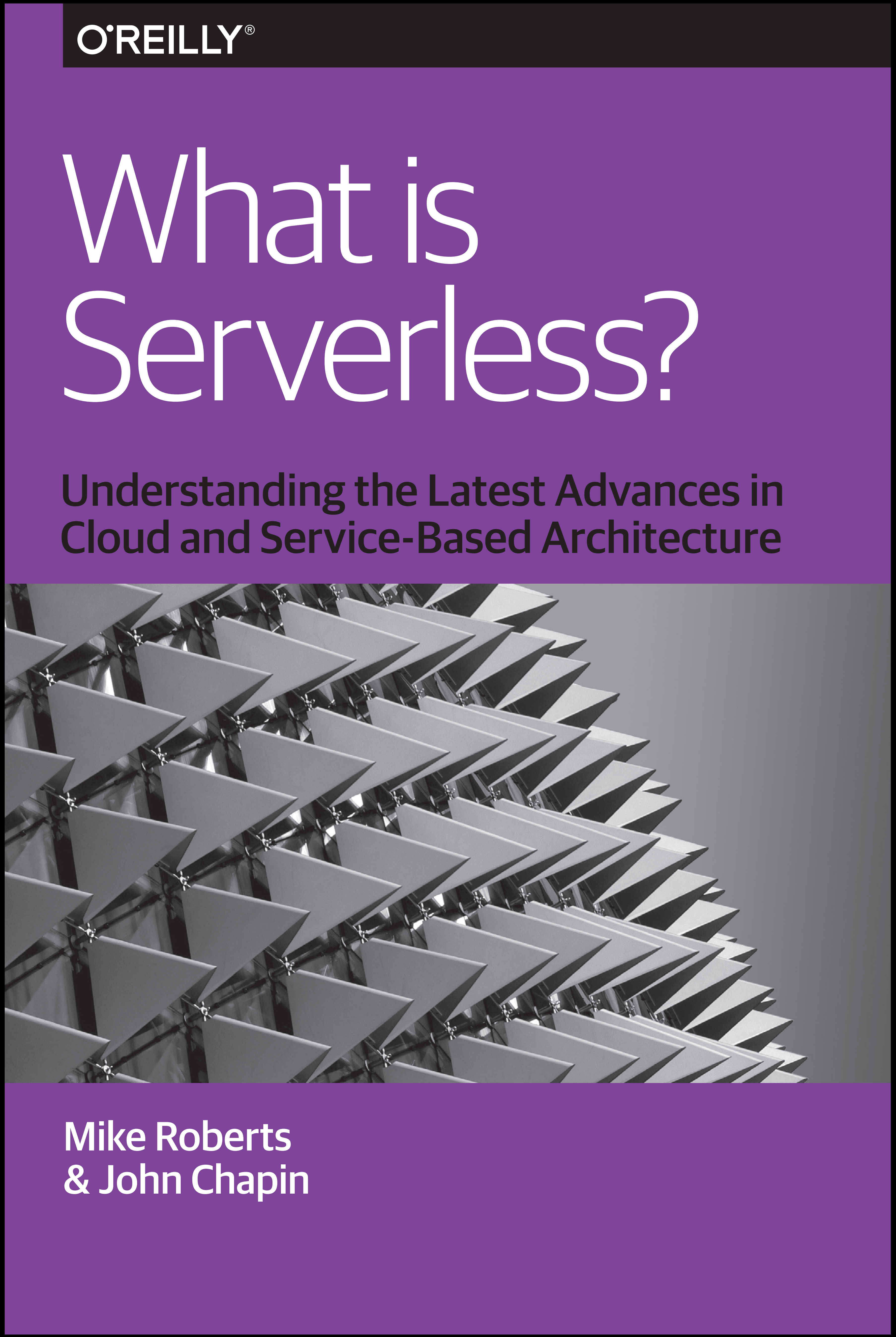
Coming in June!



O'REILLY®

What is Serverless?

Understanding the Latest Advances in Cloud and Service-Based Architecture

Mike Roberts
& John Chapin

Resources for this talk:

http://bit.ly/symphonia-goto-chicago

@mikebroberts

Continuous Experimentation

I - From Feature Factories to Product Labs

@mikebroberts

What is the point of software engineering?

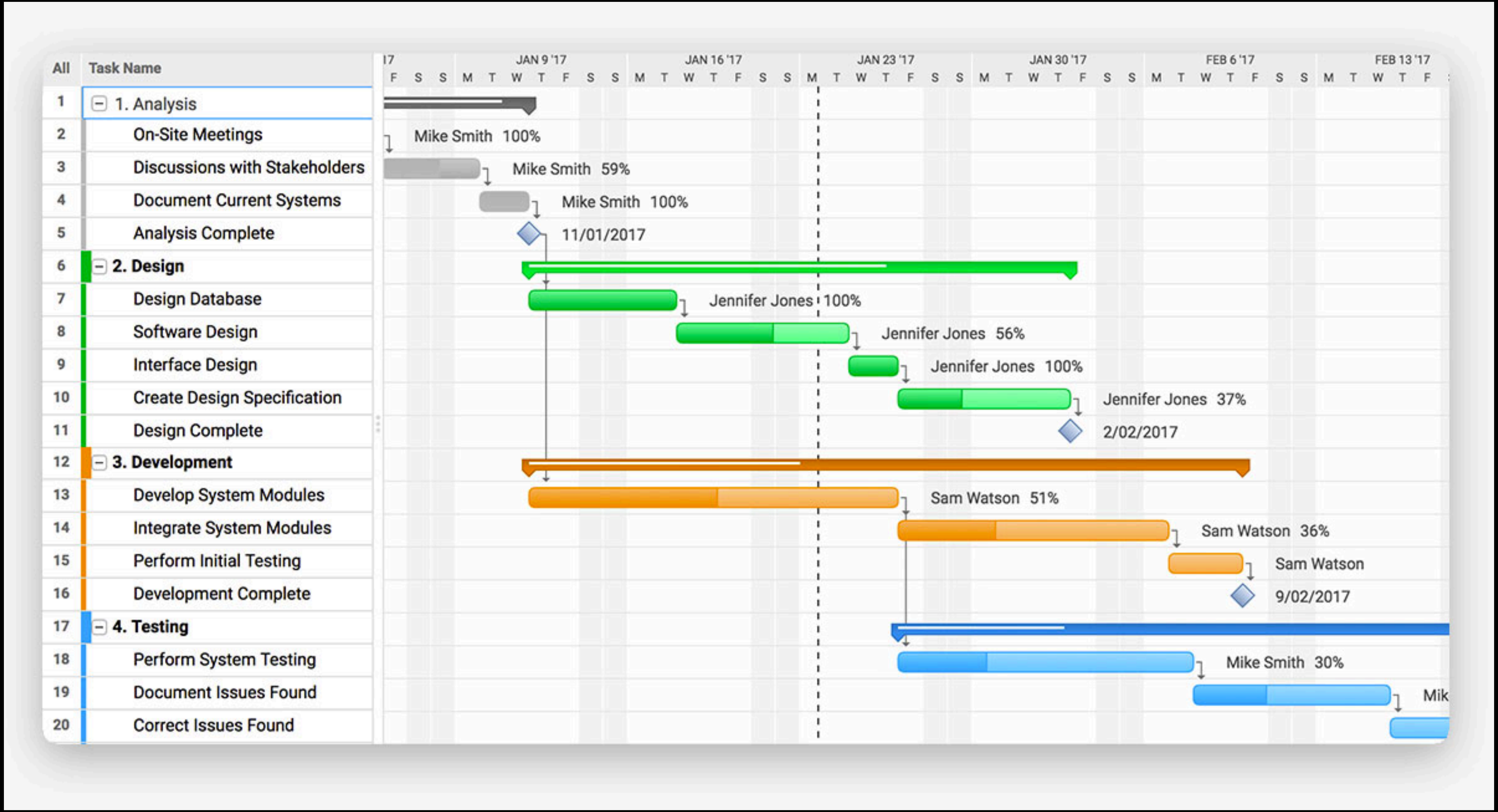
“The goal of software is to sustainably minimize lead time to business impact”

— Dan North ‘Beyond Features’

How has software lead time changed over the years?

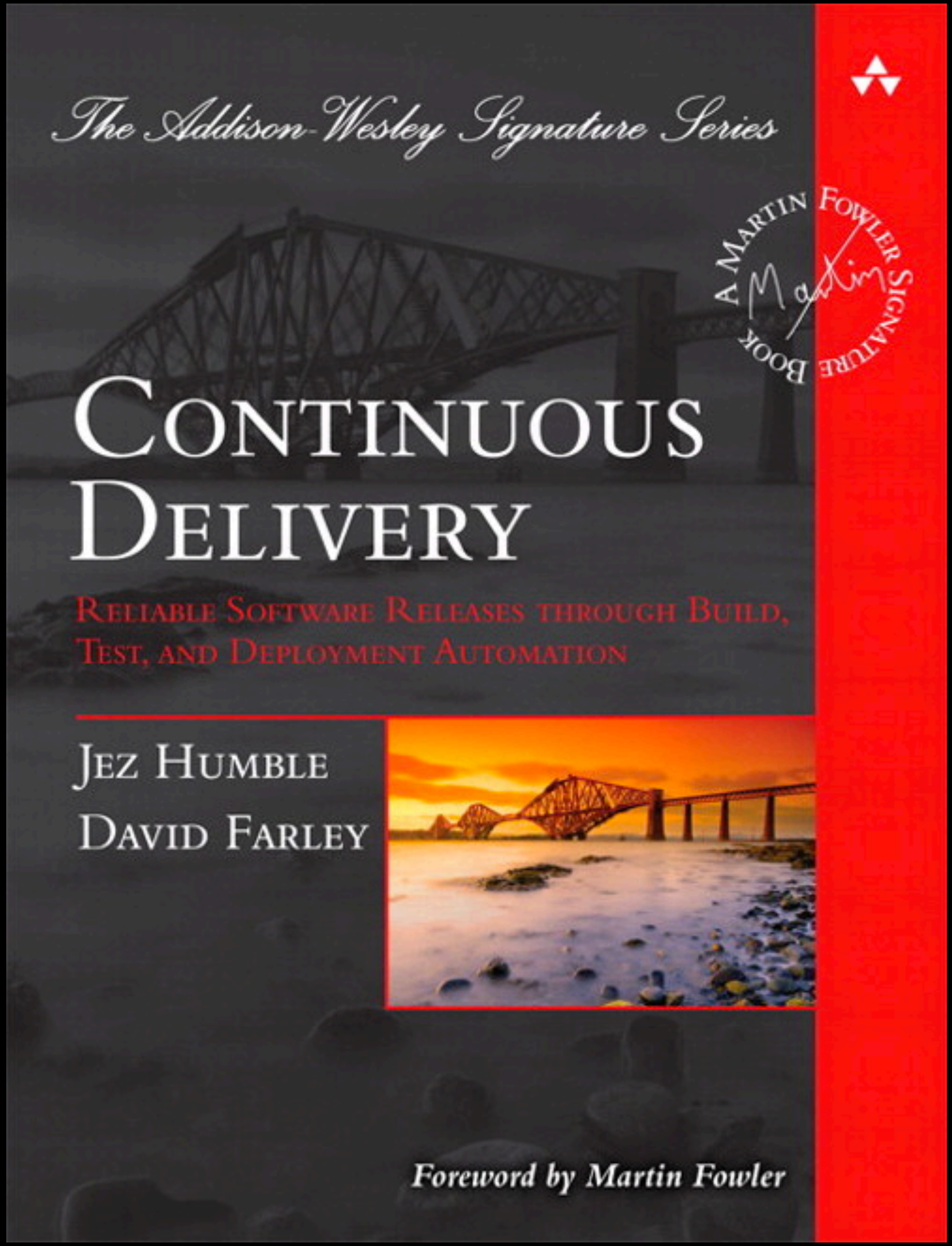
Back in the old days…

- Releasing software was expensive
- Infrastructure was expensive
- *Changing* infrastructure was expensive



All	Task Name
1	1. Analysis
2	On-Site Meetings
3	Discussions with Stakeholders
4	Document Current Systems
5	Analysis Complete
6	**2. Design**
7	Design Database
8	Software Design
9	Interface Design
10	Create Design Specification
11	Design Complete
12	**3. Development**
13	Develop System Modules
14	Integrate System Modules
15	Perform Initial Testing
16	Development Complete
17	**4. Testing**
18	Perform System Testing
19	Document Issues Found
20	Correct Issues Found

https://www.projectmanager.com/



The Addison-Wesley Signature Series

A Martin Fowler Signature Book

CONTINUOUS DELIVERY

RELIABLE SOFTWARE RELEASES THROUGH BUILD, TEST, AND DEPLOYMENT AUTOMATION

JEZ HUMBLE
DAVID FARLEY

Foreword by Martin Fowler

https://www.martinfowler.com/

amazon
web services™

Microsoft
Azure

Google Cloud Platform

> *“We used to ship our product every 12–18 months, in a 3–5 year period we shipped 3 or 4 releases. Now we ship 3 releases every week.”*
>
> — Sree Kotay, CTO, Comcast Cable

Project → Product

Output → Outcome

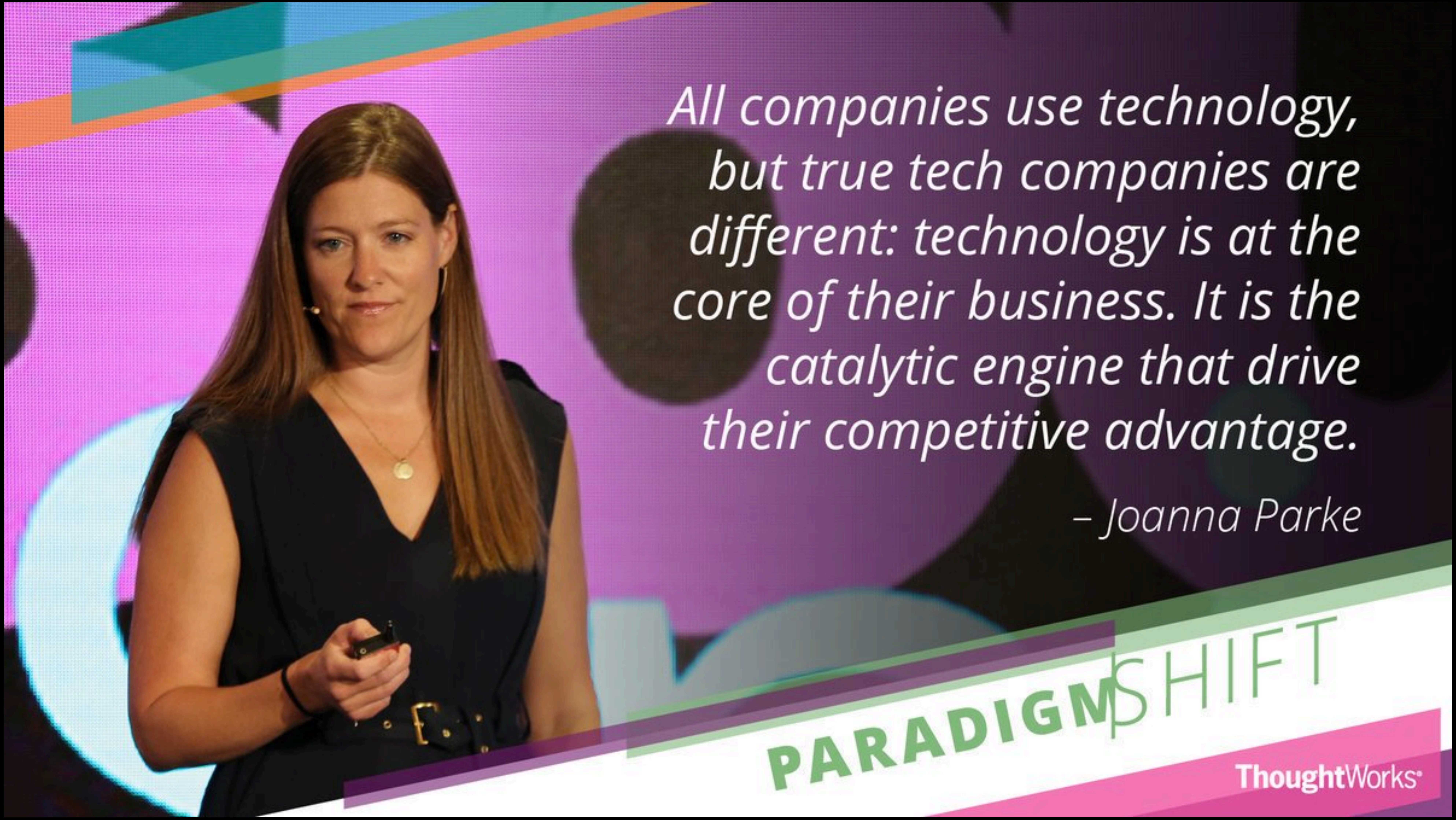
“We’re starting to see applications be built in ridiculously short time periods.”

— Adrian Cockroft, AWS

We don’t know upfront what the best solution is

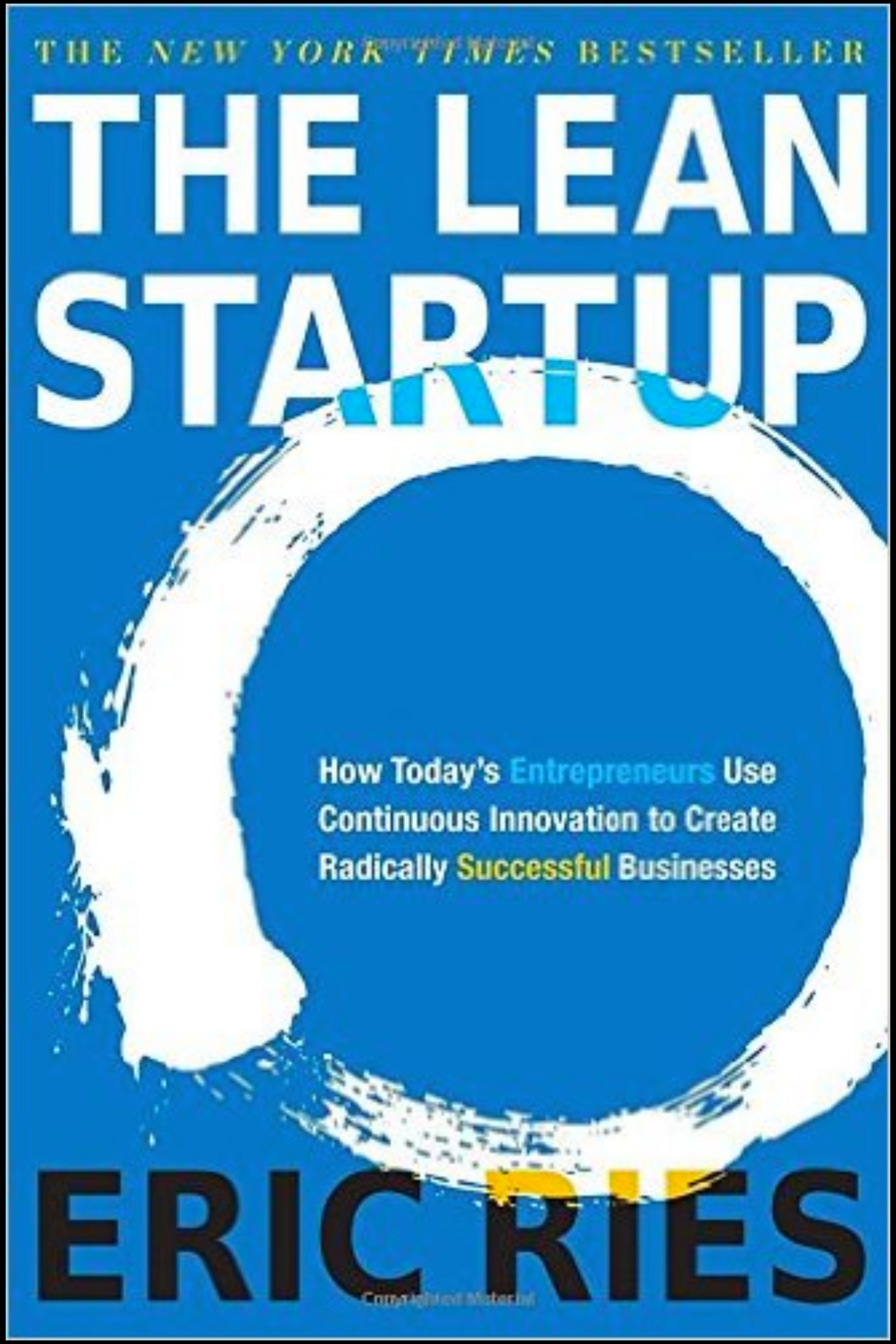
“Most of our ideas suck!”

— Jeff Patton ‘Output vs. Outcome & Impact’



All companies use technology, but true tech companies are different: technology is at the core of their business. It is the catalytic engine that drive their competitive advantage.

– Joanna Parke


THE NEW YORK TIMES BESTSELLER
THE LEAN STARTUP
How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses
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Feature
Factory
→
Product
Lab

II - Challenges of this approach

Technical Challenges

1. **Minimize incidental complexity**
2. **Reduce infrastructure cost and commitment of new systems**
3. **Minimize the tech debt impact of highly fragmented ecosystem**

Process and Culture Challenges

4. **Minimize initial deployment time**
5. **Culture of learning**
6. **Spread ownership of product innovation**

Safety Challenges

7. **Safe to fail**
8. **Budgetary safety**
9. **Data and Security Safety**

III - Serverless as an experimentation platform

A Quick Serverless Reminder

amazon web services

Firebase

Auth0

amazon web services S3

DynamoDB

amazon

Attributes of a Serverless Product

- **No management of Server Hosts or Processes**
- **Self auto provision & auto-scale based on load**
- **Costs based on actual, precise, usage**

1 - Minimize incidental complexity

- **Pre-built generic logic**
- **Lightweight model for custom code (FaaS)**
- **Handles system administration**
- **Automatic horizontal scalability**

2 -Reduce infrastructure cost

- **Costs based on actual usage, not any commitment**
- **Costs scale up from, and down to, zero, automatically**
- **Removes cost-saving incentive to co-locate features**

3 -Minimize Tech Debt

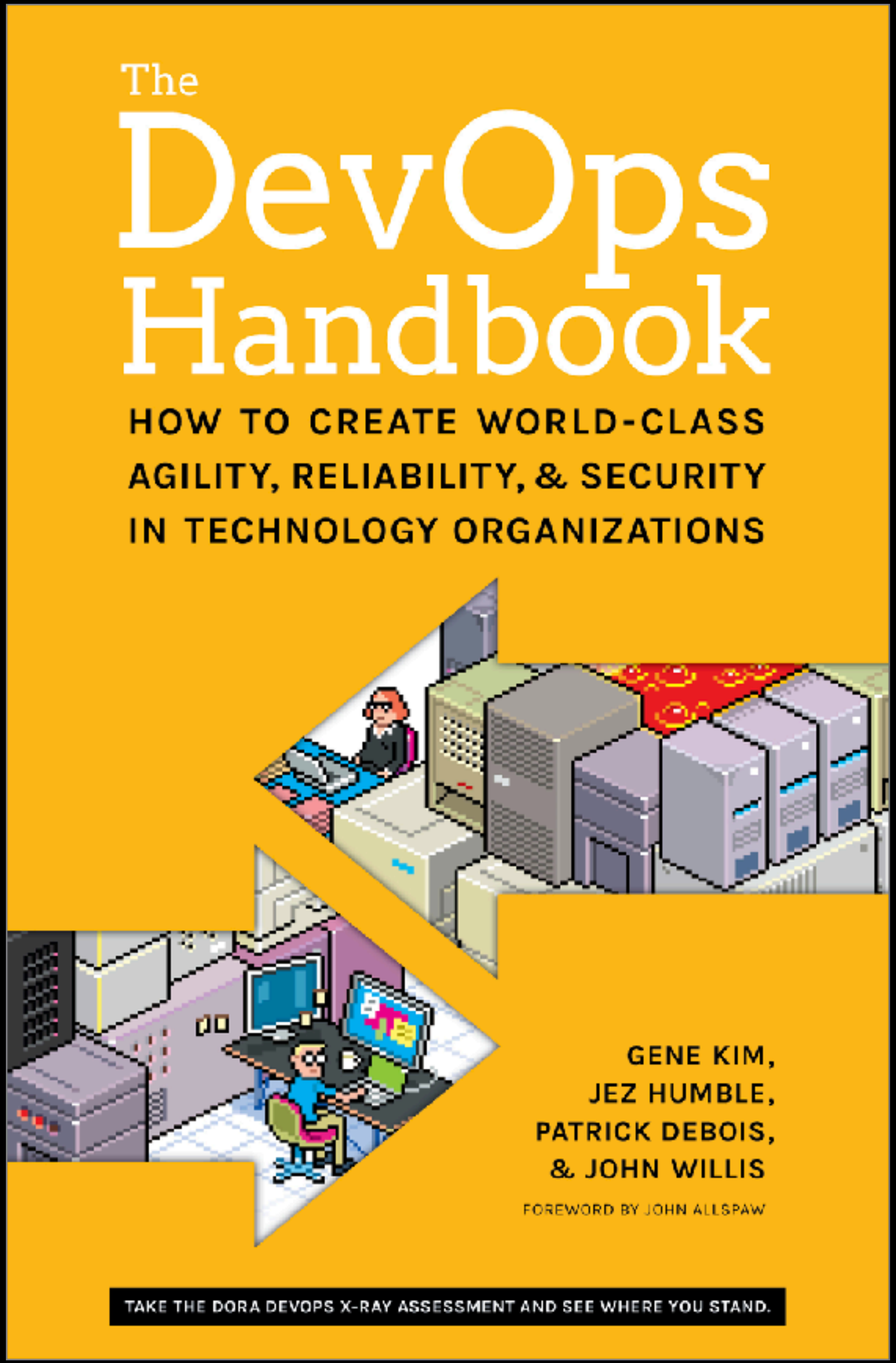
Encourages a modular, well-encapsulated, loosely coupled architecture

If you’re only using
Serverless for cost savings
you’re missing a big trick

A technical platform is not sufficient - our organizations need to change too

IV - Continuous delivery, continuous value

DevOps Culture



The
DevOps
Handbook

HOW TO CREATE WORLD-CLASS
AGILITY, RELIABILITY, & SECURITY
IN TECHNOLOGY ORGANIZATIONS

GENE KIM,
JEZ HUMBLE,
PATRICK DEBOIS,
& JOHN WILLIS

FOREWORD BY JOHN ALLSPAW

TAKE THE DORA DEVOPS X-RAY ASSESSMENT AND SEE WHERE YOU STAND.

http://www.itrevolution.com/

4 - Minimize initial deployment time

- **More than Continuous Deployment…**
- **… need to be able to bring up *entirely new* stacks of components in minutes or seconds**

5 - Culture of Learning

- **Our customer**
- **Our tools**
- **Each other**

Tear up the Backlog!

“Software,
Faster”

6 - Spread ownership of innovation

Product ownership is a team’s responsibility, not an individual’s

V - A new approach to safety

@mikebroberts

7 - Safe to Fail

> *“Google’s data indicated that psychological safety, more than anything else, was critical to making a team work”*
>
> — New York Times

“If you think that’s a big failure, we’re working on much bigger failures right now — and I am not kidding. Some of them are going to make the Fire Phone look like a tiny little blip.”

— Jeff Bezos, on the Fire Phone

> *“By removing blame, you remove fear;*
> *by removing fear, you enable honesty;*
> *and honesty enables prevention.”*

— Bethany Macri, Etsy
c/o DevOps Handbook

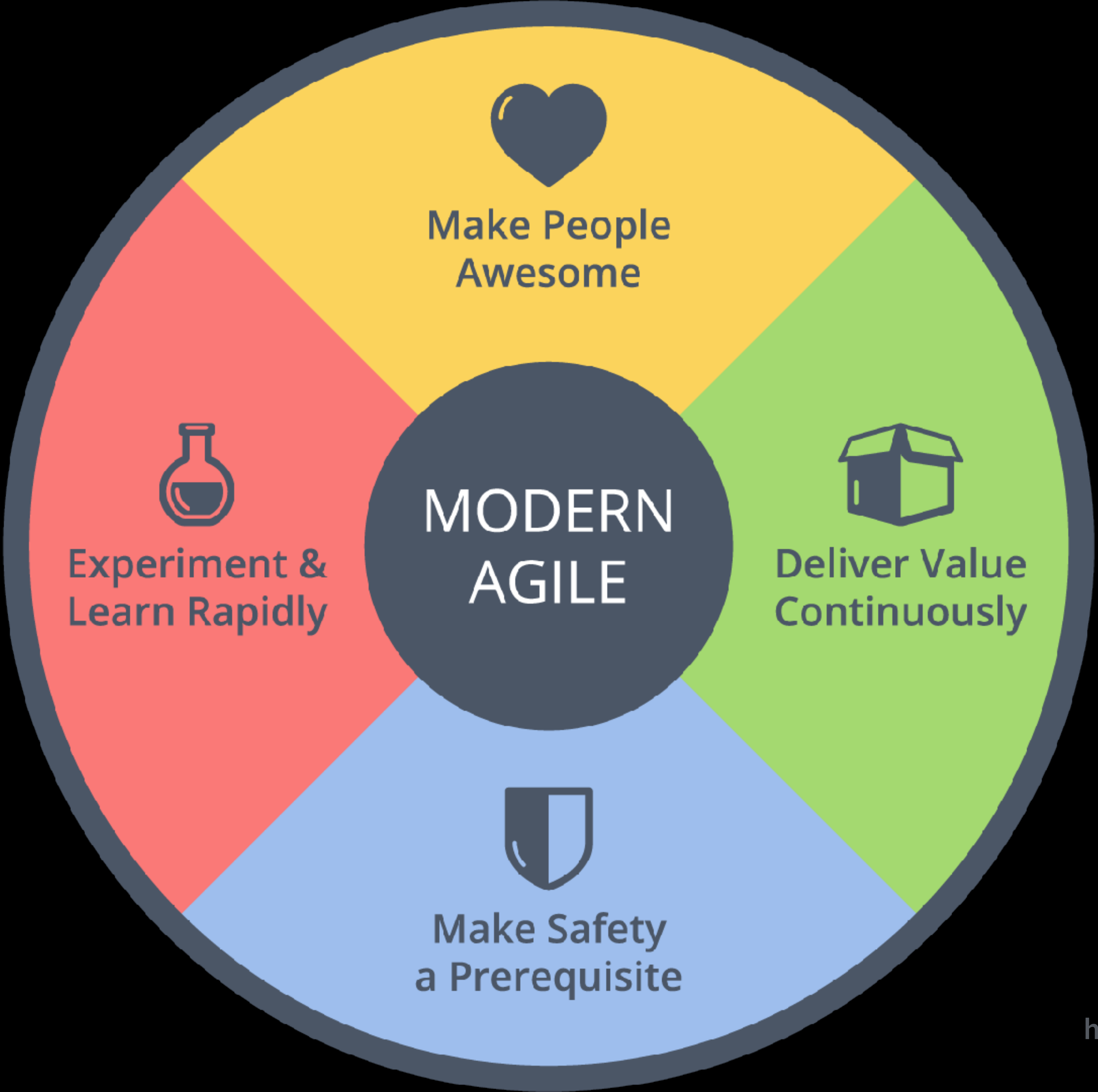
8 - Budgetary safety

- **Team visibility and ownership**
- **Automation and tooling**

9 - Data and Security Safety

- **Make it part of a team’s regular work**
- **Build cross-organizational tooling**
- **Team autonomy for many access controls…**
- **But embrace change request process too**

VI - Modern Agile



MODERN AGILE

Make People Awesome

Deliver Value Continuously

Make Safety a Prerequisite

Experiment & Learn Rapidly

http://modernagile.org/

Make People Awesome

Experiment & Learn Rapidly

Deliver Value Continuously

Make Safety A Prerequisite

Serverless +
Modern Agile +
DevOps +
Software, Faster

=

Continuous
Experimentation

How will you transform your organization from a feature factory to a product laboratory?

Resources for this talk:

http://bit.ly/symphonia-goto-chicago

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