Pivotal

Rethinking enterprise architecture for DevOps, agile, & cloud native organizations

Nov, 2018

@cote

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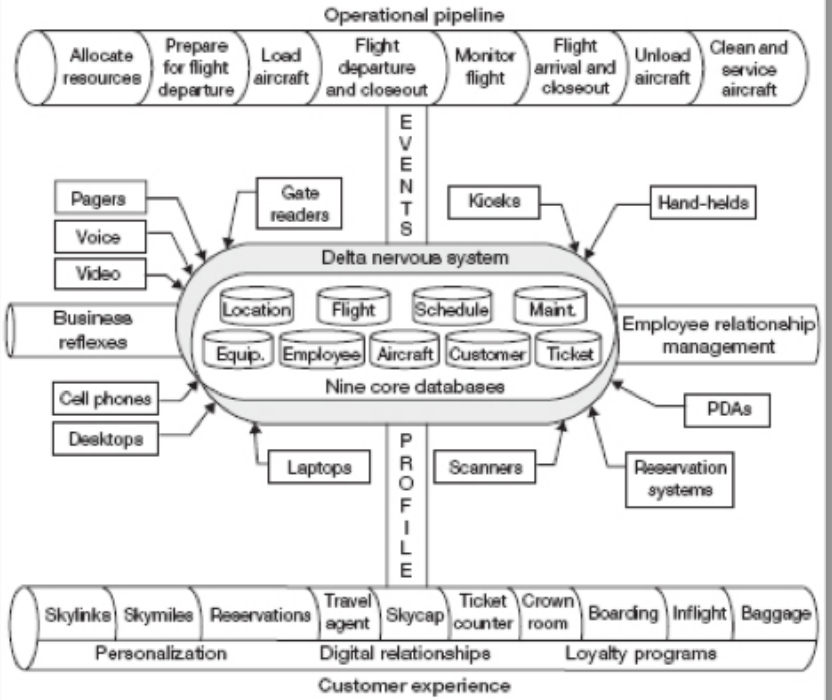
First, what is “enterprise architecture?

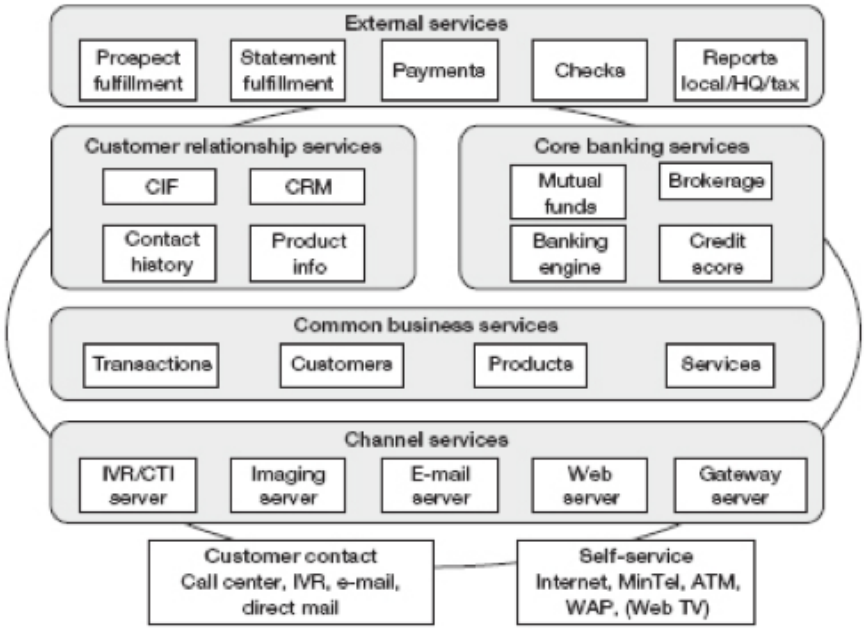
DEFINING "ARCHITECTURE"?
ITS A TRAP!
imgflip.com

Delta Air Lines core diagram



Source: Adapted from Delta Air Lines documents. Used with permission.

ING DIRECT's core diagram



e.g. CIF (customer information file), CRM (customer relationship management), IVR (interactive voice response), CTI (computer-telephony integration), WAP (wireless access point).

Source: Adapted from ING Direct documents. Used with permission.

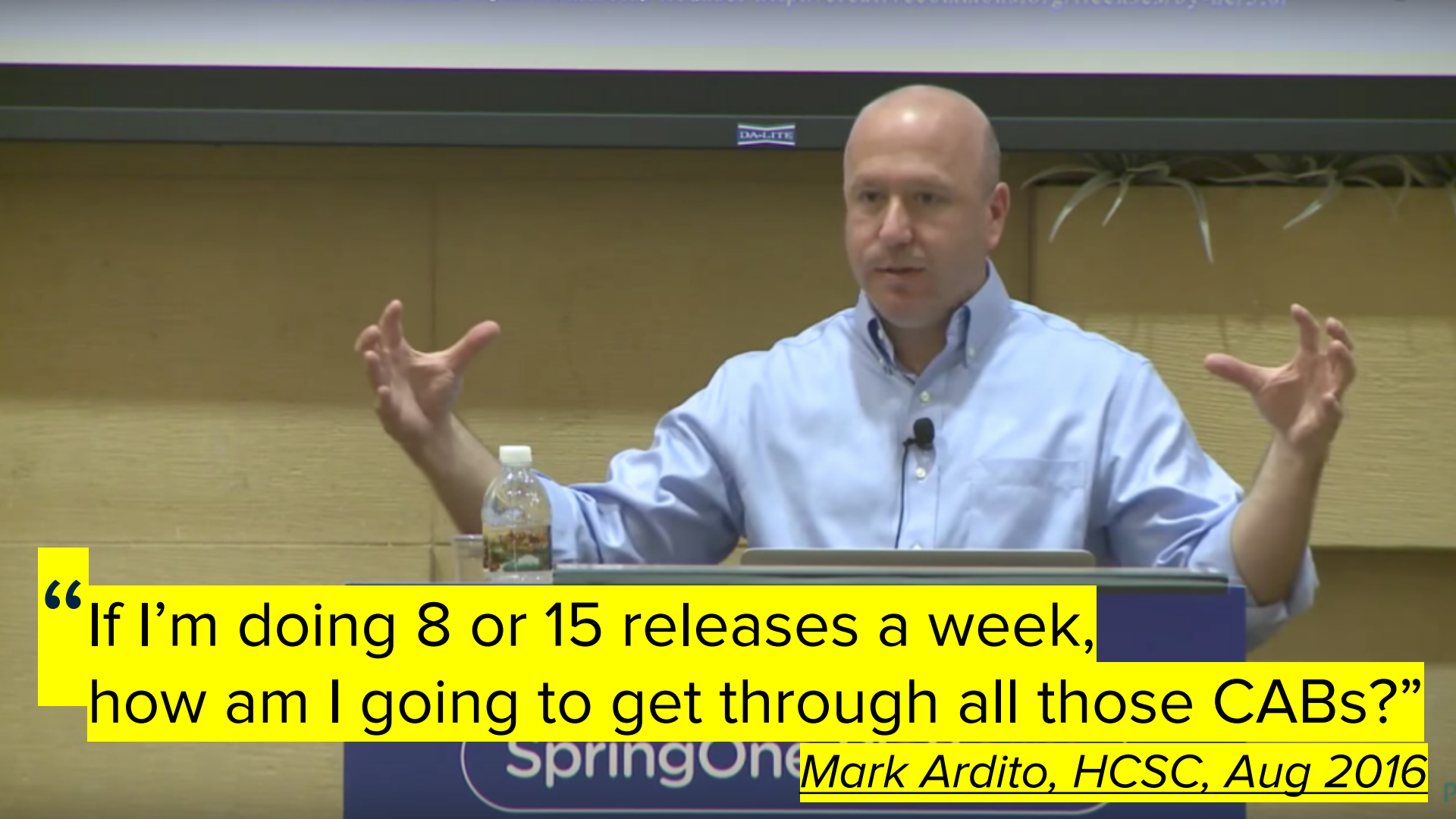
Source: *Enterprise Architecture as Strategy*, Jeanne W. Ross, Peter Weill, David Robertson, 2006.

For something more useful & thoughtful, please see:

“Agile Architecture,” Matthew Parker, 2018.

“Architectures That Bend But Don't Break,” Matt Stine, 2018.

The problem

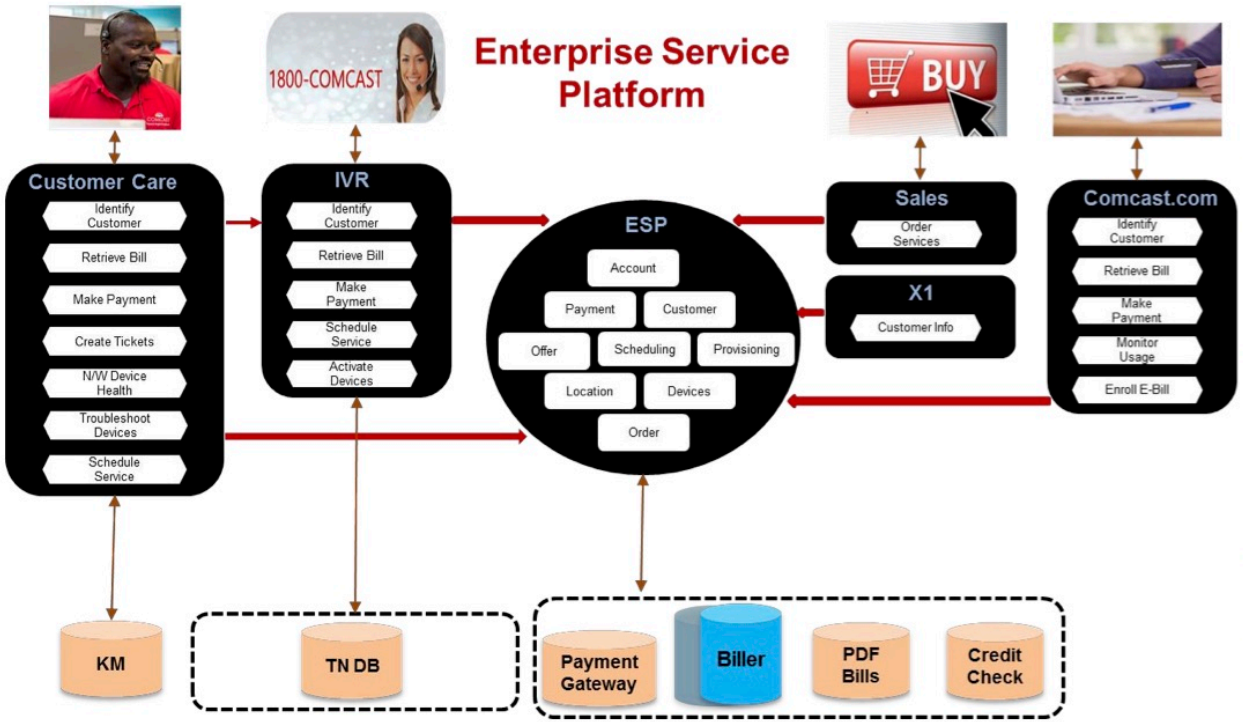


"If I'm doing 8 or 15 releases a week,
how am I going to get through all those CABs?"

Mark Ardito, HCSC, Aug 2016

> “Using external change approval processes such as a change advisory board, as opposed to peer-based code review techniques, significantly impacts throughput while doing almost nothing to improve stability.”
>
> *Jez Humble, 2014*

What is ESP?



- Monolithic SOA powering the Comcast Back Office
- 65+ services
- 250M+ transactions/day
- 200+ internal and external consumers
- 150+ back ends
- 256+ servers
- 50+ Domains
- 1,000+ JVMs

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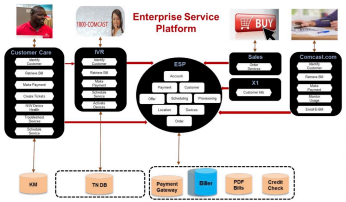

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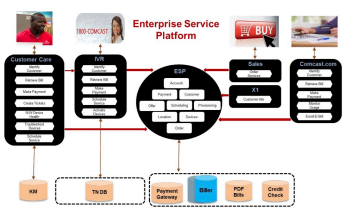

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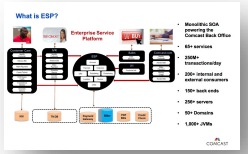
What is ESP?
Enterprise Service Platform
Monolithic SOA powering the Comcast Back Office
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COMCAST

Over time, tools that helped us scale are now obstacles

CompoZed
Accelerated Delivery

Sources: "Building a Brand Around a Technology and Cultural Transformation," Matt Curry, Sep. 2016.

Leading change

“The Business”

Corporate strategy, revenue goals, mission, etc.

IT Leadership, EAs, etc.

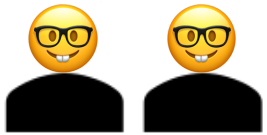
Culture, process, methodology, governance, compensation, etc.

Product teams

Mobile payments | Mortgage application | Mortgage approval | Bill pay | Transfers

Pivotal Cloud Foundry

Platform Engineers



Private or public IaaS

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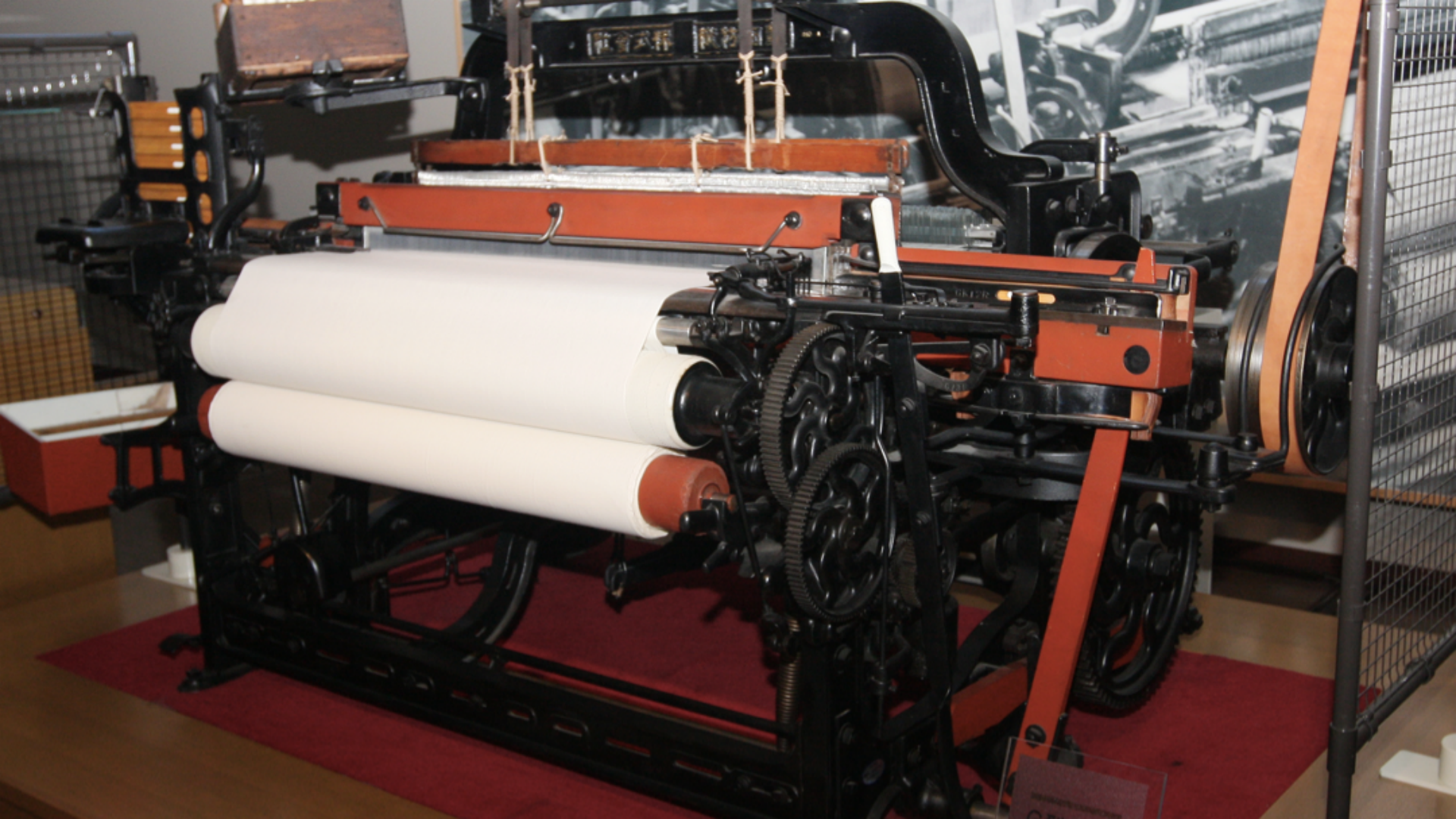


Beyond 10 ways to make coffee: leadership's role

- Create a culture of innovation, risk taking, and focusing on people ("users")
- Give product teams autonomy, trust, and voice
- Establish trust by doing what you say, delegating, and celebrating ~~failure~~learning.
- Feedback loop: surveys (ENPS), silence, churn, results.
- Giving feedback: OKRs, praising process & stories, not just schedule

More: creating a DevOps culture, whatever that means; in work-in-progress book, *Monolithic Transformation*, the culture section.

Gardening teams

Closer to a product organization...

Mobile payments

Mortgage application

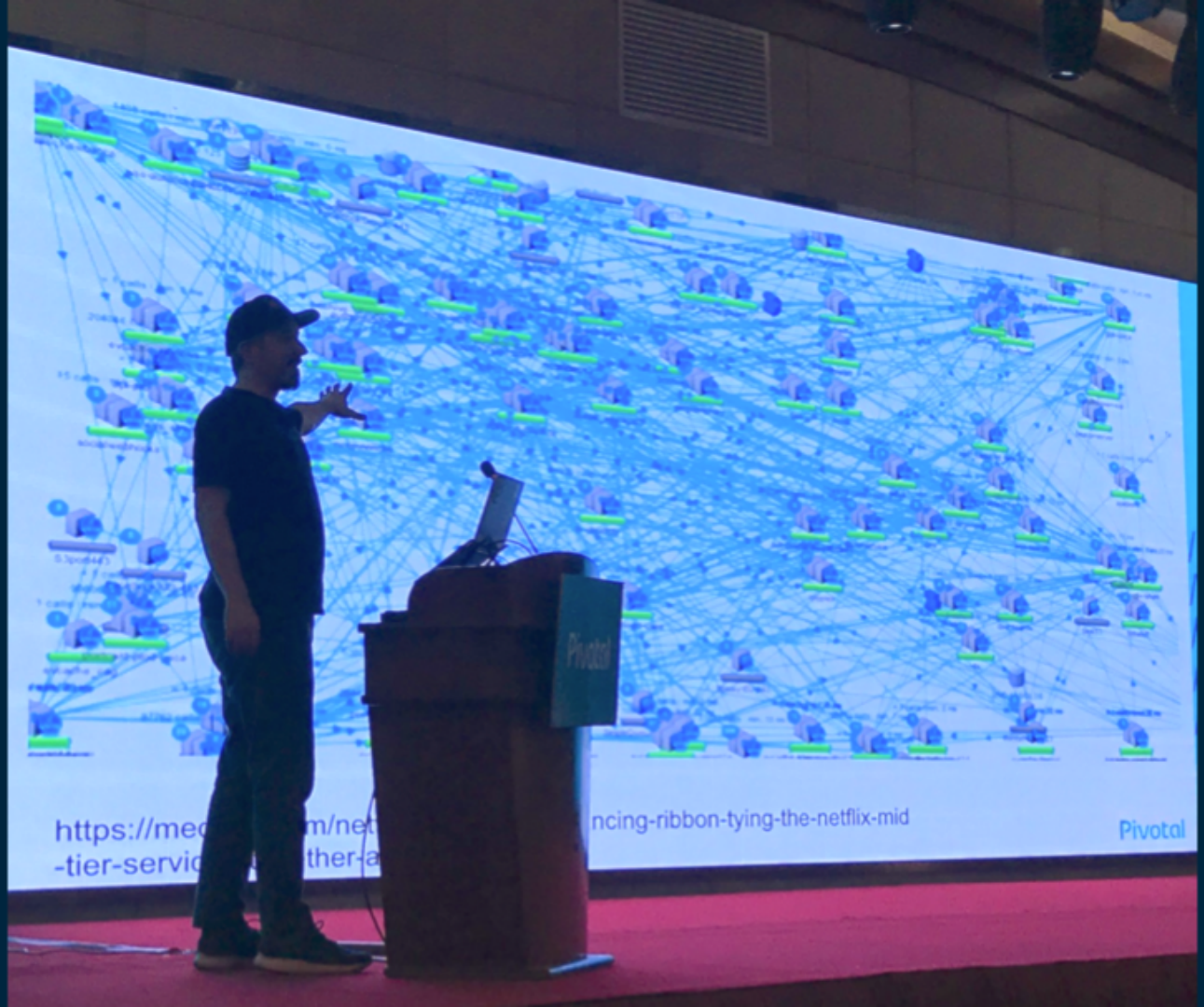
Mortgage approval

Bill pay

Transfers

Gardening microservices

(and the before times)



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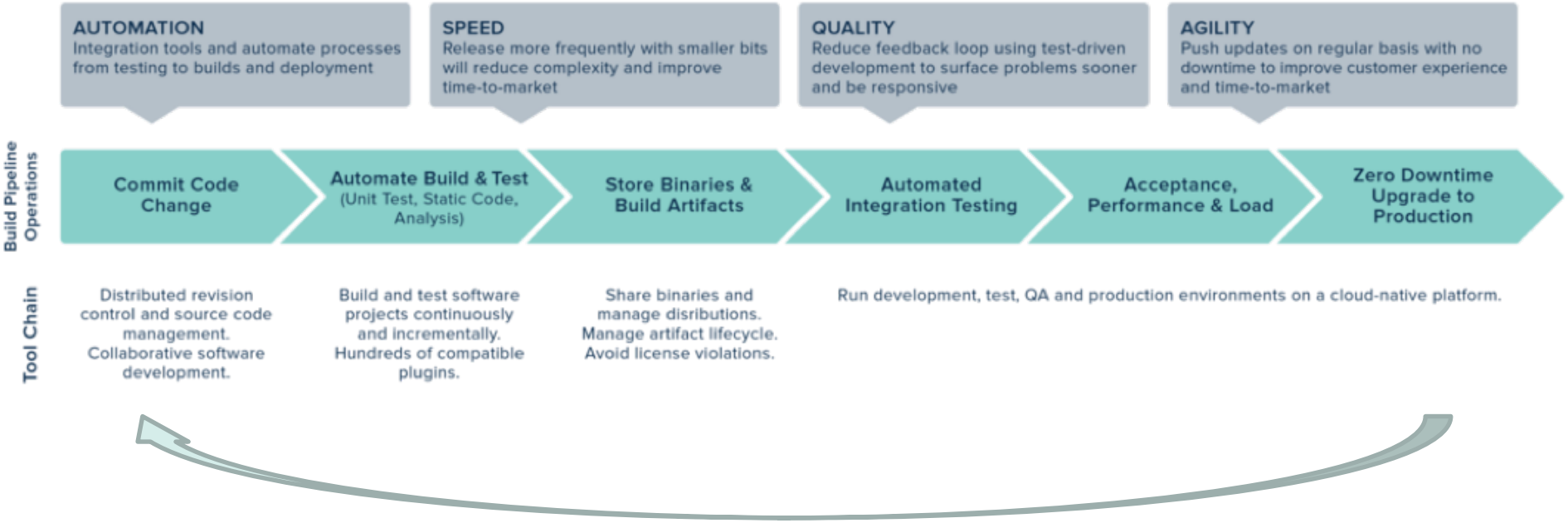
Source: @AreasAbandoned.

Gardening platform & Tools

Source: Presentation at SpringOne Platform, Sep 2018.

Rabobank

Standardize & automate with a build pipeline



(<= 5 days)

Sources: "Speed Thrills: How to Harness the Power of CI/CD for Your Development Team," Ben Kamysz & Jared Ruckle, Pivotal, Aug 2017. CI/CD estimate based on the "The 12th Annual State of Agile Report" (2018) and "Survey Analysis: Agile Now at the Tipping Point - Here's How to Succeed," Mike West, Gartner, June 2017, see also estimates from 2015.

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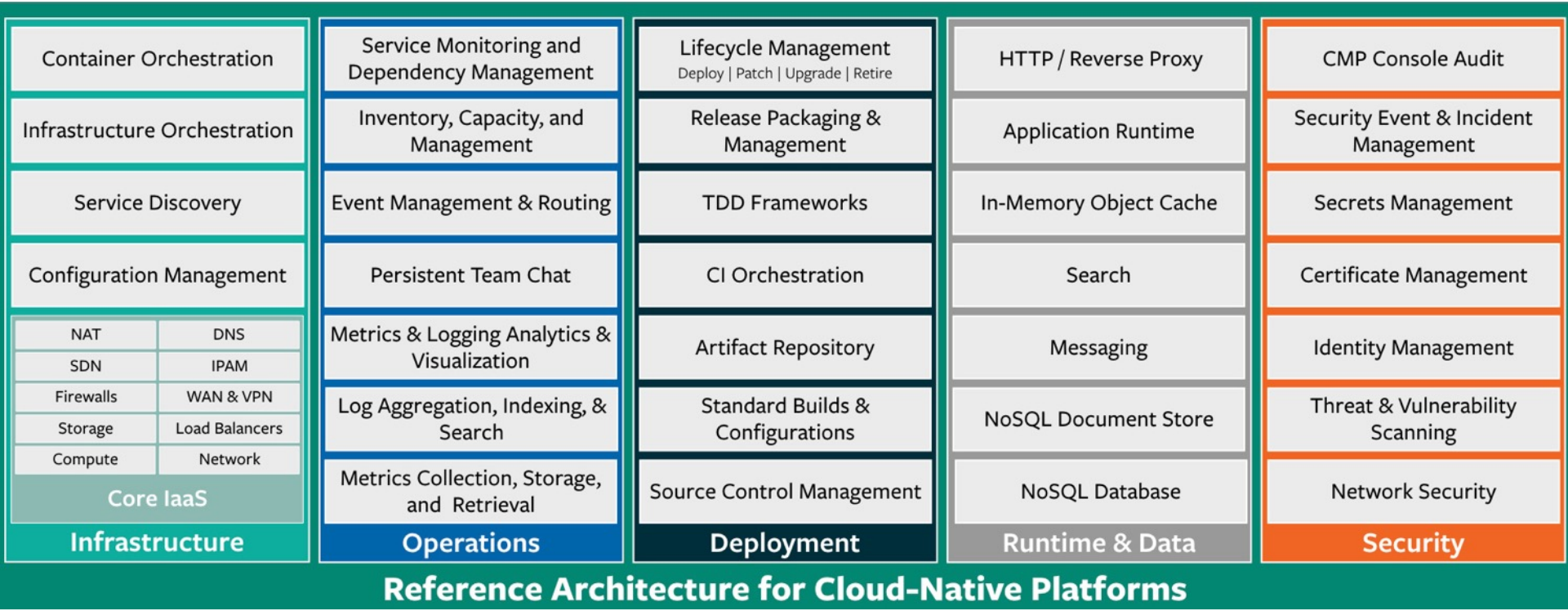
Govern with a platform and build pipeline



Source: "The Upside-Down Economics of Building Your Own Platform," Jared Ruckle and Matt Walburn, 2017.

Pivotal Cloud Foundry®

Application Code & Frameworks
Buildpacks | Spring Boot | Spring Cloud | Steeltoe

Pivotal Application Service (PAS)
>cf push
Java | .NET | NodeJS

Pivotal Container Service (PKS)
>kubectl run
Elastic | COTS | Spark

Pivotal Function Service
Coming Soon!

Pivotal Services Marketplace
Pivotal and Partner Products

Open Service Broker API

CLOUDFOUNDRY BOSH

Embedded OS
(Windows & Linux)

NSX-T

CPI (15 methods)

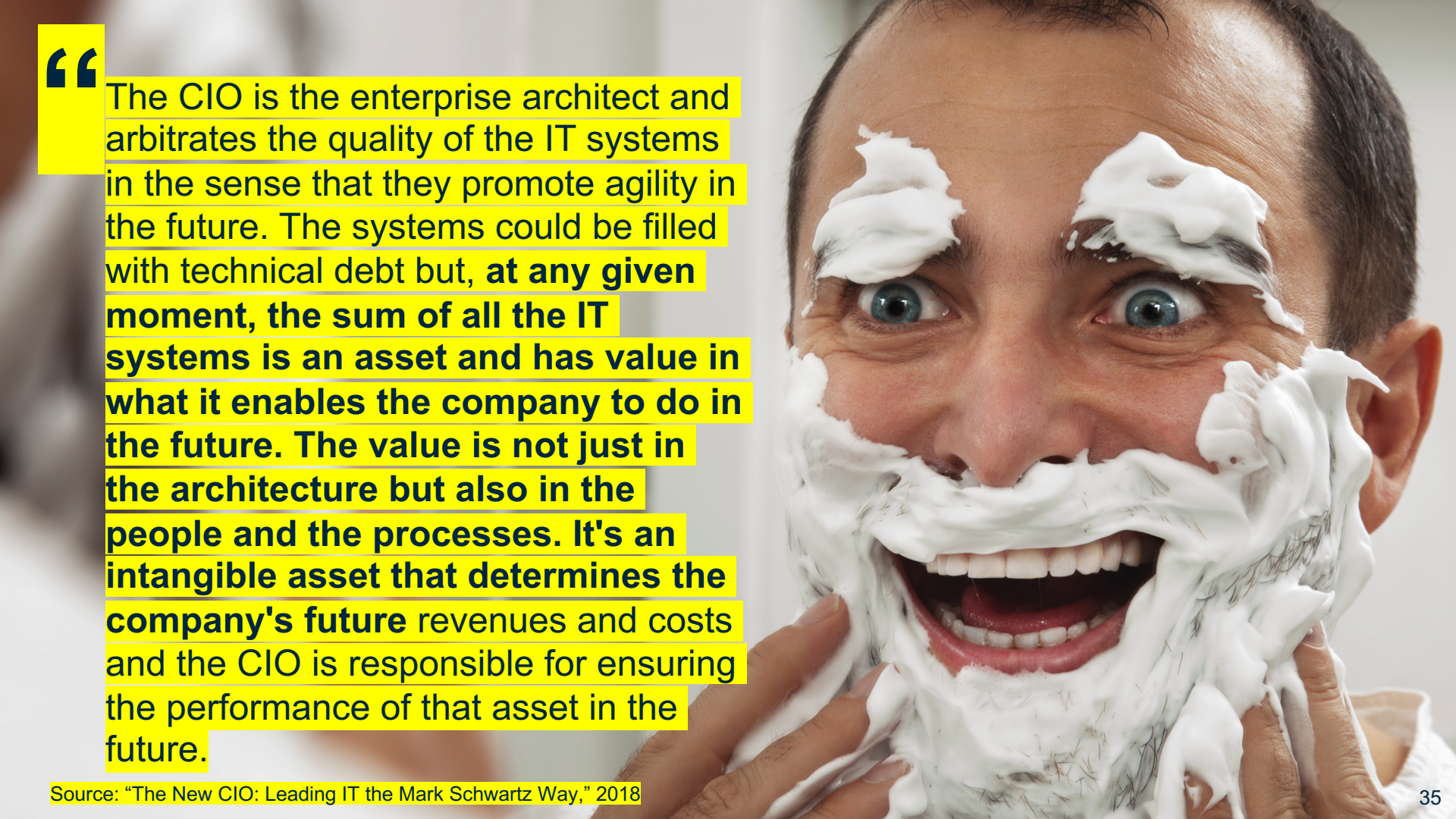
vSphere | OpenStack | AWS | Google Cloud | Azure & Azure Stack

MOTOROLA
TOROLA
ADVISOR
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
SICHERN
LÖSCHEN
DRUCKEN
EIN
LESEN
STOP
LAUTSTÄRKE
Cityruf

The same as always

The left overs:

- Exploring and guiding org. wide technical decisions & services
- Programming the organization
- Talk with “The Business”



> The CIO is the enterprise architect and arbitrates the quality of the IT systems in the sense that they promote agility in the future. The systems could be filled with technical debt but, **at any given moment, the sum of all the IT systems is an asset and has value in what it enables the company to do in the future. The value is not just in the architecture but also in the people and the processes. It's an intangible asset that determines the company's future** revenues and costs and the CIO is responsible for ensuring the performance of that asset in the future.

Source: “The New CIO: Leading IT the Mark Schwartz Way,” 2018

“We are uncovering better ways of developing software by doing it and helping others do it.”

- *The Agile Manifesto*, 2001

http://cote.coffee/bettersoftware/