



Continuous Delivery

JUNE, 2017
DIDIER DE COCK
CONTINUOUS DELIVERY PRESALES
CA TECHNOLOGIES

TODAY, EVERY BUSINESS IS IN THE SOFTWARE BUSINESS



Every new hire at the 305,000 person company will learn to code.

Jeff Immelt, GE CEO
August 2016



“We see ourselves as a technology company with a banking license.”

Michael Corbat, Citi CEO
February 2014

And...

IN THE SOFTWARE BUSINESS, EXPERIENCE IS EVERYTHING

✓ Fact:

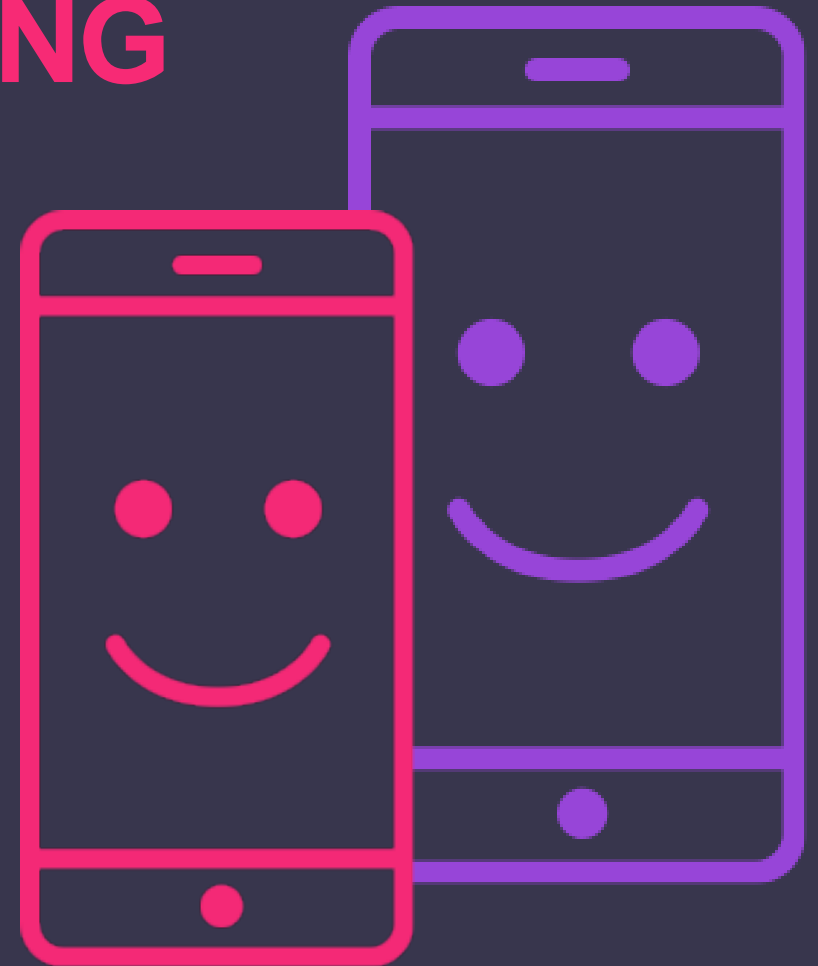
83% of U.S. consumers say having a positive customer experience with a brand is more important than the product itself¹

✓ Fact:

53% of large companies want to be customer experience leaders within three years²

✓ Fact:

53% of mobile site visits are abandoned if pages take longer than three seconds to load³





We know that

WINNING COMPANIES FOCUS ON FOUR **KEY PRINCIPLES**



Agility

to speed time
to market.



Automation

for greater
velocity
and quality.



Insights

to constantly
improve and spot
opportunity.

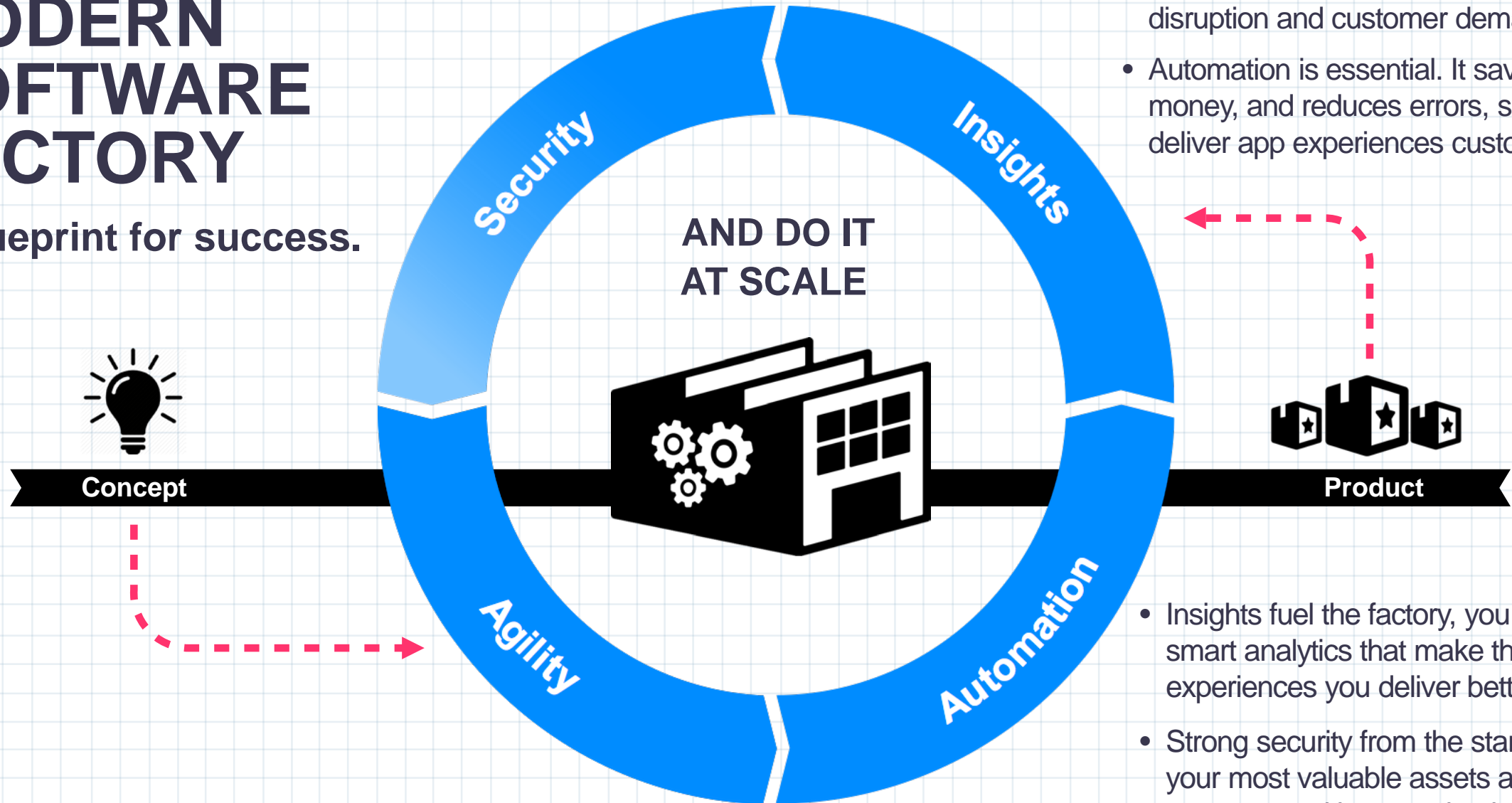


Security

to provide safe,
frictionless
access.

THE MODERN SOFTWARE FACTORY

A blueprint for success.



- A modern software factory is agile, built to change and able to adapt to market disruption and customer demand.
- Automation is essential. It saves time, money, and reduces errors, so you can deliver app experiences customers love.

- Insights fuel the factory, you need smart analytics that make the app experiences you deliver better.
- Strong security from the start protects your most valuable assets and builds users trust without getting in the way.

Agility

Wikipedia



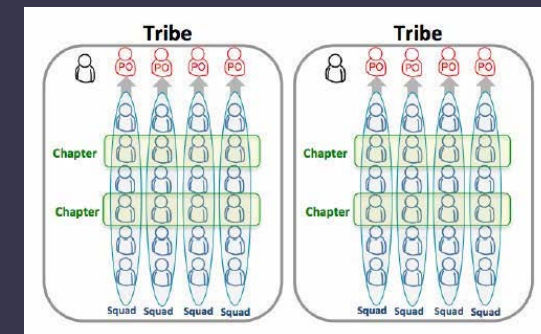
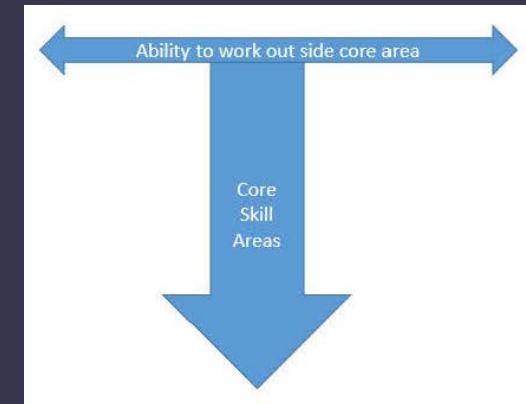
The free, online encyclopedia Wikipedia was a disruptive innovation that had a major impact on both the traditional, for-profit printed paper encyclopedia market (e.g., Encyclopedia Britannica) and the for-profit digital encyclopedia market (e.g., Encarta). The English Wikipedia provides over 5 million articles for free; in contrast, a \$1,000 set of Britannica volumes had 120,000 articles.

SAFe – Scaled Agile Framework for enterprises

- **Develop on Cadence, Release Any Time**
- Agile **Teams** (5-9), work typically in two week **scrums/sprints/iterations** (timeboxed)
 - **Systems Team**: specialized Agile team responsible for maintaining tooling factory and for testing solutions end-to-end
 - Pull items from the Program backlog
- 5-10 Agile Teams create an **Agile Release Train** (ART - 50-125) synchronize their iteration boundaries and deliver integrated, working systems every two weeks in a **System Demo**
- A **Program Increment** (PI) cadence is typically 4 iterations, followed by one Innovation and Planning Iteration (IP) which includes a **Solution Demo** and an Inspect and Adapt session – Big Room Planning
- **Release Train Engineer** and **Value Stream Engineer** facilitate ART and Value Stream processes and execution

Spotify model

- Scaling skill of existing resources in a T-shape model
- Autonomous **Squads** (8)
 - Product owner, scrummaster and T-shaped team
- A collection of Squads aligning to a line of business is a **Tribe** (<100)
- A **Chapter** is a horizontal slice across Squads within a Tribe. They have similar skills
- A **Guild** is an enterprise level Chapter



Automation

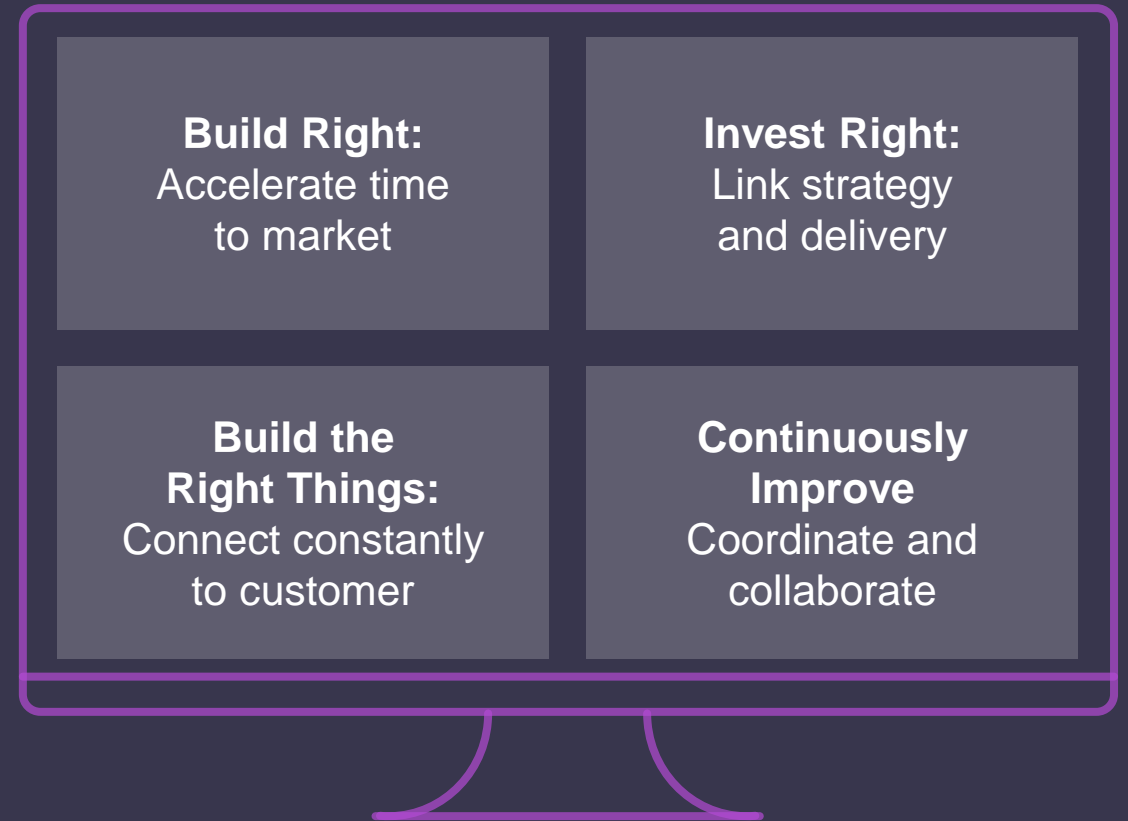
Summary of the Amazon S3 Service Disruption in the Northern Virginia (US-EAST-1) Region

We'd like to give you some additional information about the service disruption that occurred in the Northern Virginia (US-EAST-1) Region on the morning of February 28th. The Amazon Simple Storage Service (S3) team was debugging an issue causing the S3 billing system to progress more slowly than expected. At 9:37AM PST, [an authorized S3 team member using an established playbook executed a command](#) which was intended to remove a small number of servers for one of the S3 subsystems that is used by the S3 billing process. [Unfortunately, one of the inputs to the command was entered incorrectly and a larger set of servers was removed than intended.](#) The servers that were inadvertently removed supported two other S3 subsystems. One of these subsystems, the index subsystem, manages the metadata and location information of all S3 objects in the region. This subsystem is necessary to serve all GET, LIST, PUT, and DELETE requests. The second subsystem, the placement subsystem, manages allocation of new storage and requires the index subsystem to be functioning properly to correctly operate. The placement subsystem is used during PUT requests to allocate storage for new objects. Removing a significant portion of the capacity caused each of these systems to require a full restart. While these subsystems were being restarted, S3 was unable to service requests. Other AWS services in the US-EAST-1 Region that rely on S3 for storage, including the S3 console, Amazon Elastic Compute Cloud (EC2) new instance launches, Amazon Elastic Block Store (EBS) volumes (when data was needed from a S3 snapshot), and AWS Lambda were also impacted while the S3 APIs were unavailable.

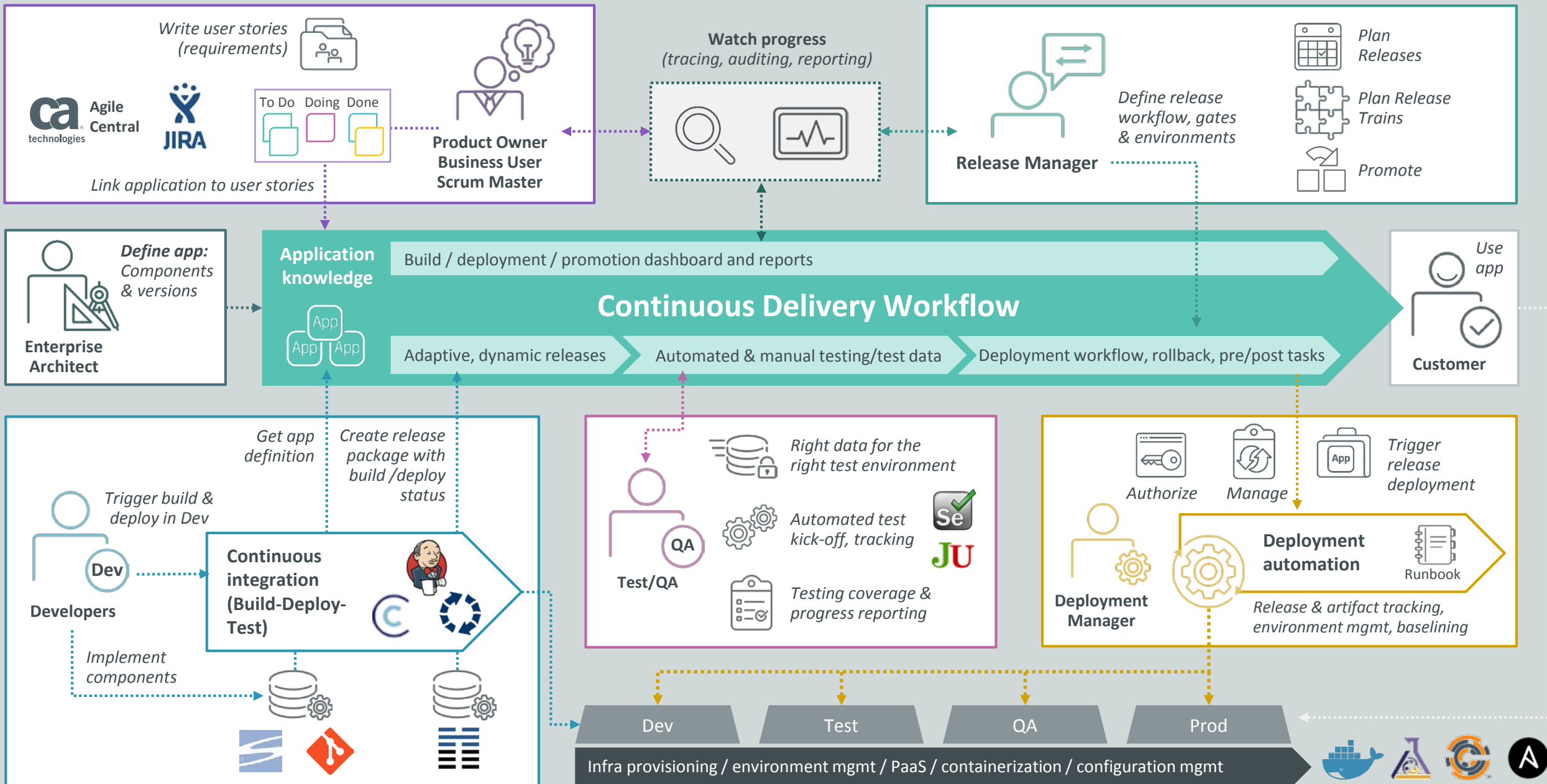
Continuous Delivery

KEY CHALLENGES:

- Need to deliver apps faster and more frequently
- Development delays are driving up costs
- Traditional testing requires too much time and effort
- Inefficient use of resources due to poor visibility and tracking



Continuous Delivery



Continuous Testing

KEY CHALLENGES:

- Test system setup and test data allocation delays
- Poor quality requirements
- Slow, inefficient test design and execution
- Unacceptable number of defects

End-to-End Continuous Delivery Ecosystem

Integrating continuous testing with a continuous delivery pipeline is key to taking an idea from design to production at speed, without compromising quality

Security

GDPR

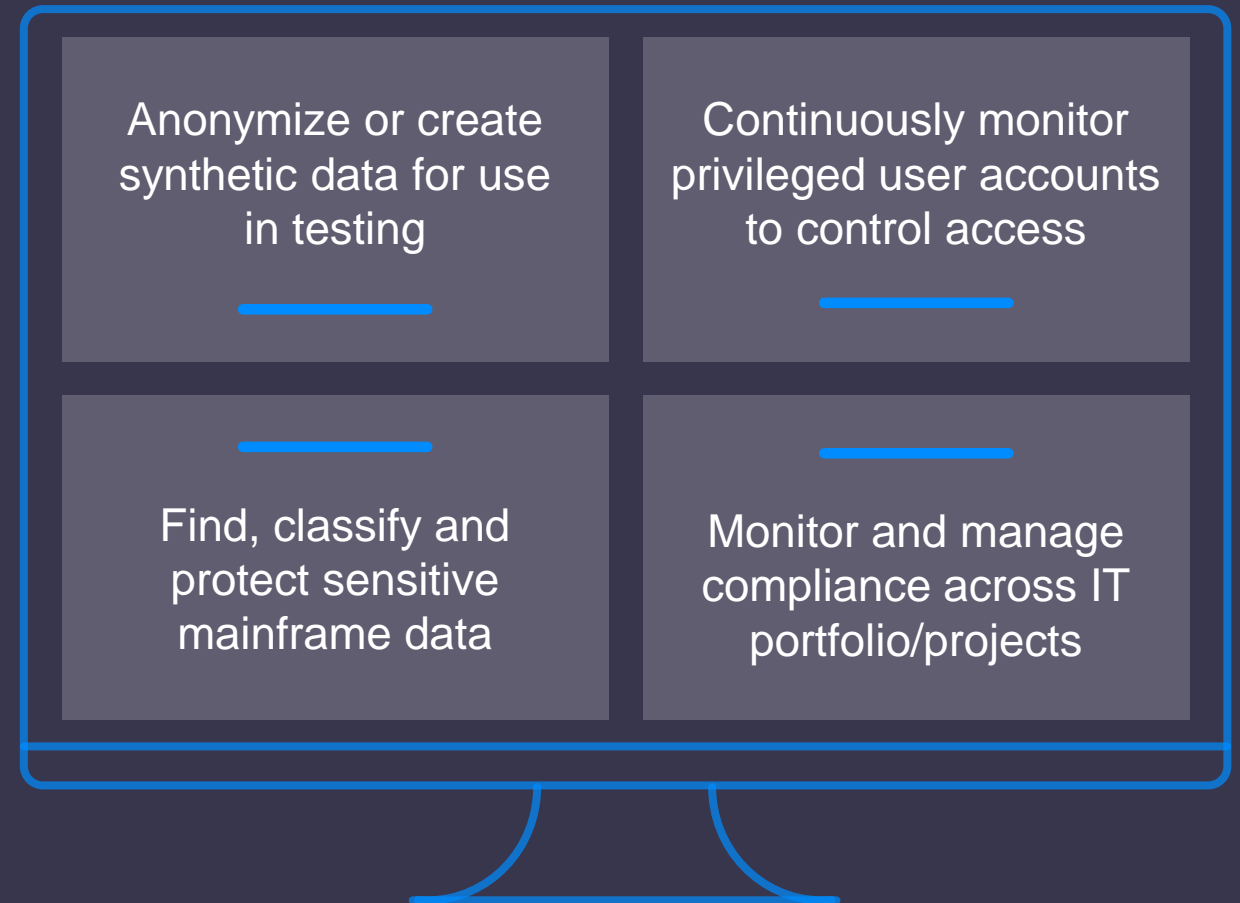
By 25 May 2018, any organization that processes personal data of EU citizens needs to be compliant with GDPR. This regulation introduces **new data protection requirements** that will impact the majority of businesses across all sectors. Organizations that fail to comply with GDPR may face administrative fines up to **€20,000,000** or up to **4 percent of global turnover**, whichever is higher.

- Rights of data subjects - Object to the use of their data
- Data protection by design and by default - Anonymisation and pseudonymisation

Protect data privacy

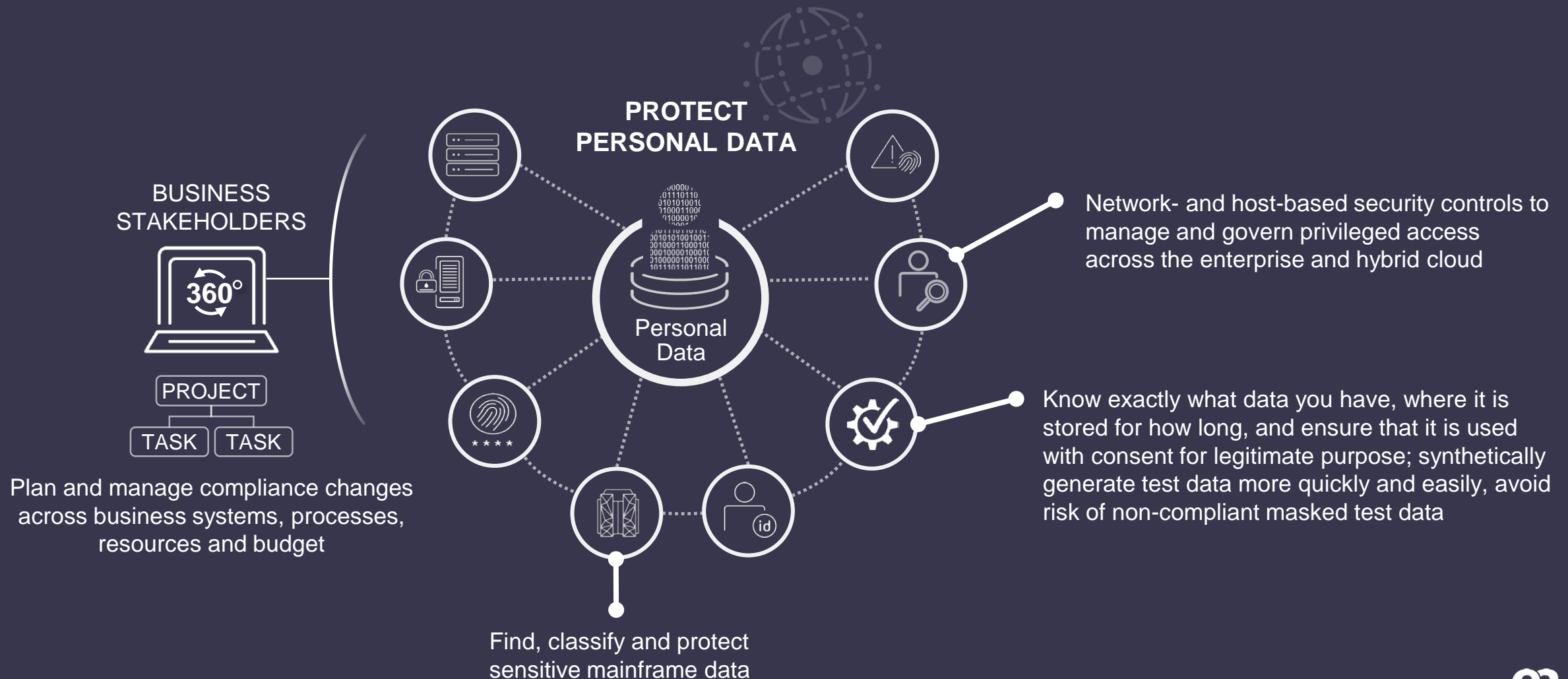
KEY CHALLENGES:

- Strict data protection requirements and heavy penalties
- Expanded definitions of personal data
- Data use restricted for testing and pre-production systems; strict breach reporting requirements



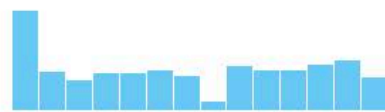
How do you make security a competitive advantage?

Protect data privacy



Insights

Apr 1, 2016-May 30, 2017



12,700
Impressions



527
Product Page Views



386
App Units



0
In-App Purchases



\$0
Sales



117
Sessions
Opt-in Only



3 (Monthly Average)
Active Devices
Opt-in Only



0
Crashes
Opt-in Only



App Units by Territory



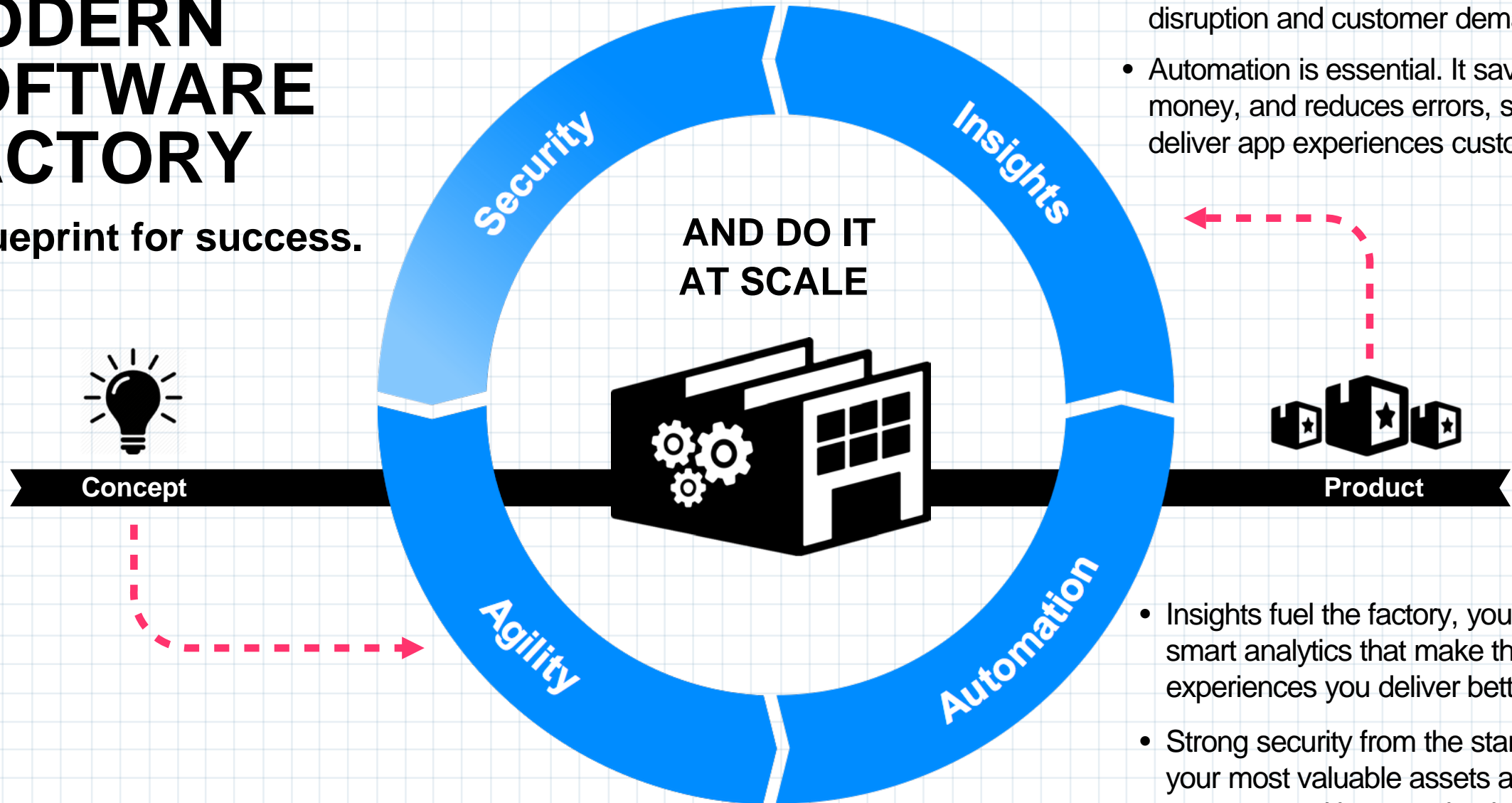
Insights

- Design for the experience: enhance application development based on real user insights.
- Optimize the customer journey: improve user experience across web, mobile and wearable apps to deliver a five-star customer experience.
- Improve digital performance: gain insights into performance to determine if the issue is with design, code or infrastructure.

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