

DevOps Introduction

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DevOps Architect / App Dev TSP
Microsoft

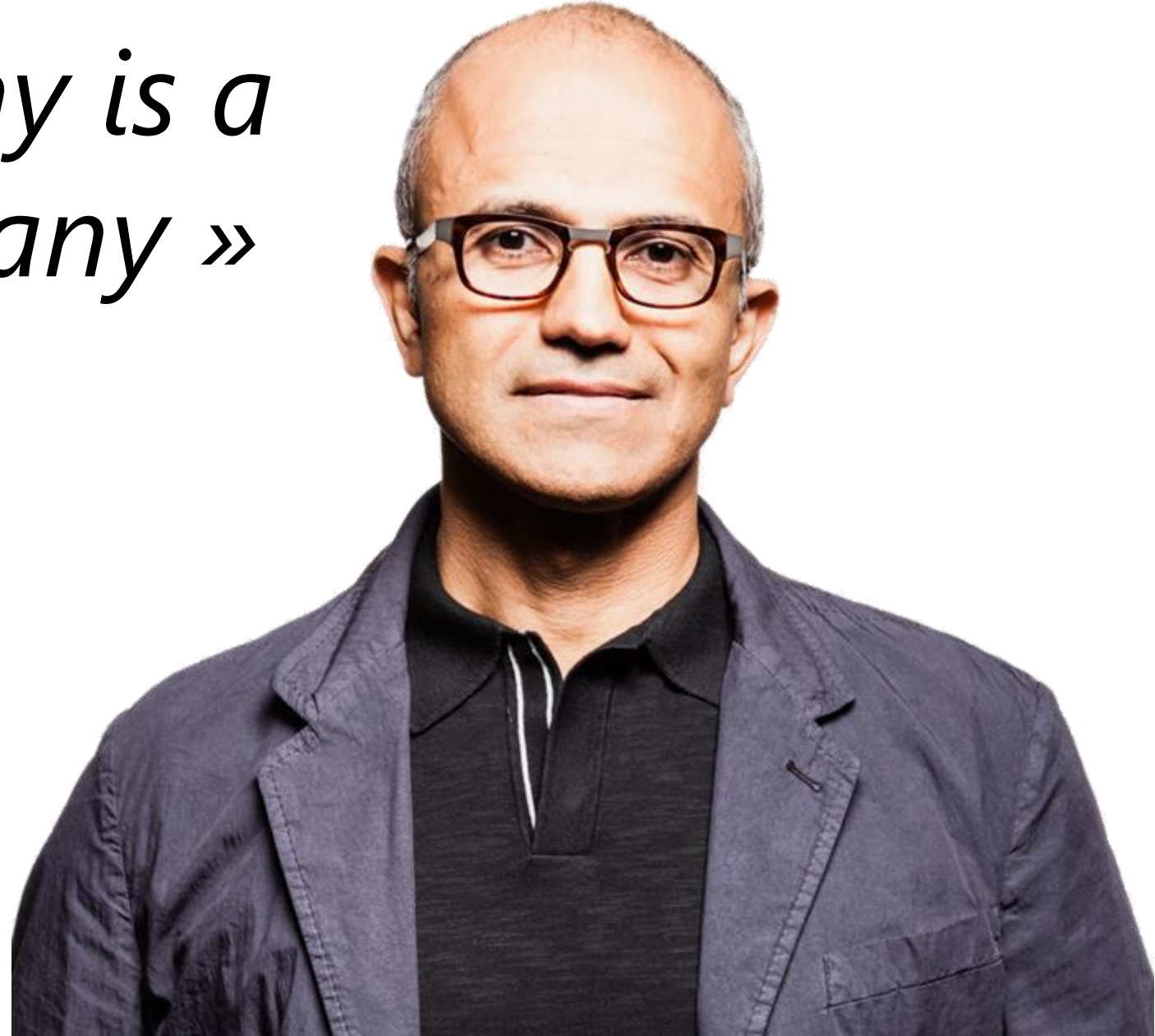
@DanielMeixner

DevelopersDevelopersDevelopersDevelopers.NET

Agenda

- Why DevOps?
- Goal of DevOps
- 3 Ways of DevOps (by Gene Kim)
- Microsoft DevDiv's 7 Habits
- VSTS Demo
- Q&A

*« Every company is a
software company »*



“

Nearly **50%** of the current **S&P 500** will be replaced by 2026.

Innosight

Corporate Longevity: Turbulence Ahead for Large Organizations, 2016



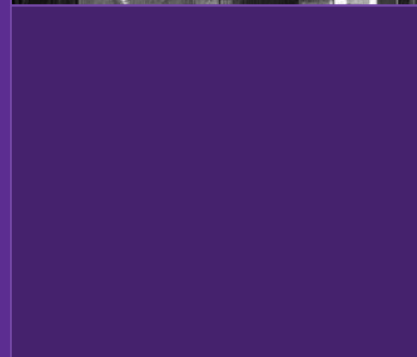
NETFLIX



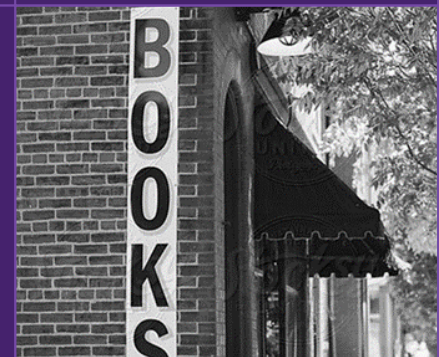
U B E R



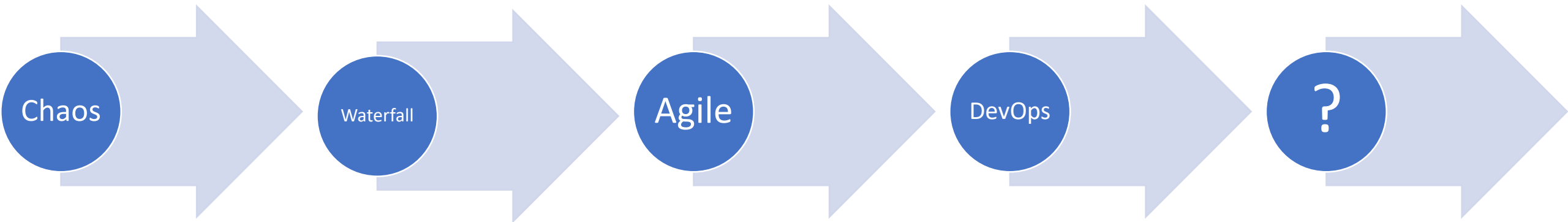
skype™



amazon.com



Dev/IT Evolution



The agile wave

The sprint

During the sprint, the team meets each day, in a Daily Scrum, to assess progress and make necessary adjustments.

Along the way, the ScrumMaster keeps the team focused on its goal. The ScrumMaster also removes impediments for the team, so everyone can focus and move forward with their work.

At the end of the sprint, the work should be potentially shippable: ready to hand to a customer, put on a store shelf, or show to a stakeholder.

The sprint ends with a review of the product and a retrospective of the team's work process, relationships, and tools.

Once a sprint is complete, the team chooses another chunk of the product backlog, and the next sprint begins.



potentially shippable increment*

*the goal of a sprint

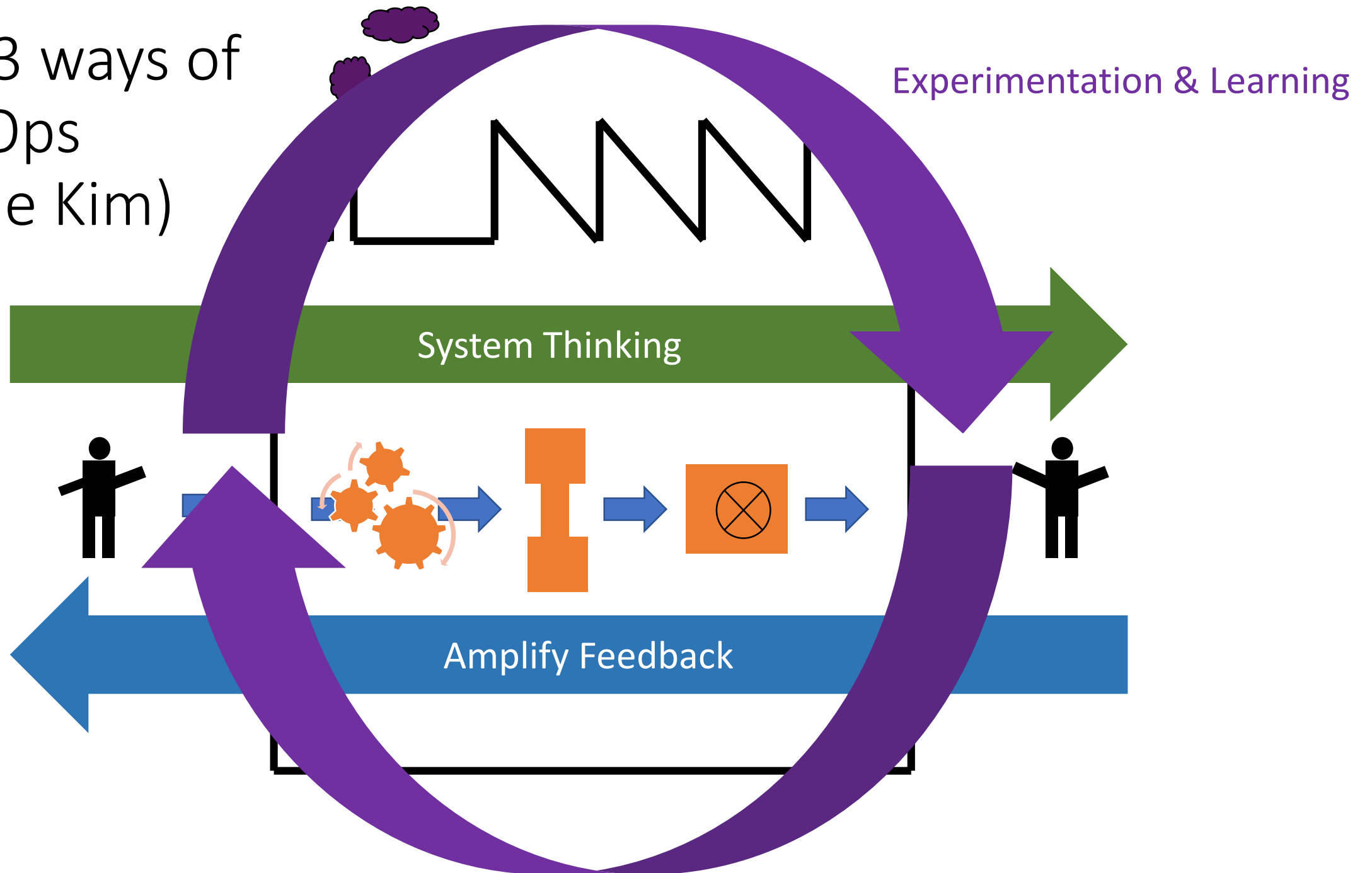
continuous value delivery*

*the goal of devops

DevOps Ingredients

People
Process
Tools

The 3 ways of DevOps (Gene Kim)



Our 7 DevOps habits



***FLOW OF
CUSTOMER
VALUE***

***AUTONOMY
and
ALIGNMENT***

***BACKLOG
improved by
LEARNING***

***EVIDENCE
gathered in
PRODUCTION***

***MANAGED
TECHNICAL
DEBT***

***PRODUCTION
FIRST
MINDSET***

***INFRA as a
FLEXIBLE
RESOURCE***

DevOps practices

Automated Testing
Continuous Integration
Continuous Deployment
Release Management

**FLOW OF
CUSTOMER
VALUE**

**AUTONOMY
and
ALIGNMENT**

Scaled Agile
Self-managing teams
Feature crews
Sprint Rituals
Planning Chats
Team Rooms

Usage Monitoring
Telemetry Collection
A/B Testing in Production
Stakeholder Feedback

**BACKLOG
improved by
LEARNING**

**EVIDENCE
gathered in
PRODUCTION**

Testing in Production
Usage Monitoring
User Telemetry
Stakeholder feedback
Feature flags
Experiments

Peer Code Reviews
Automated Testing
Continuous Measurement
Agile Documentation
Code Metrics
Shift-Left into the *Inner Loop*

**MANAGED
TECHNICAL
DEBT**

**PRODUCTION
FIRST
MINDSET**

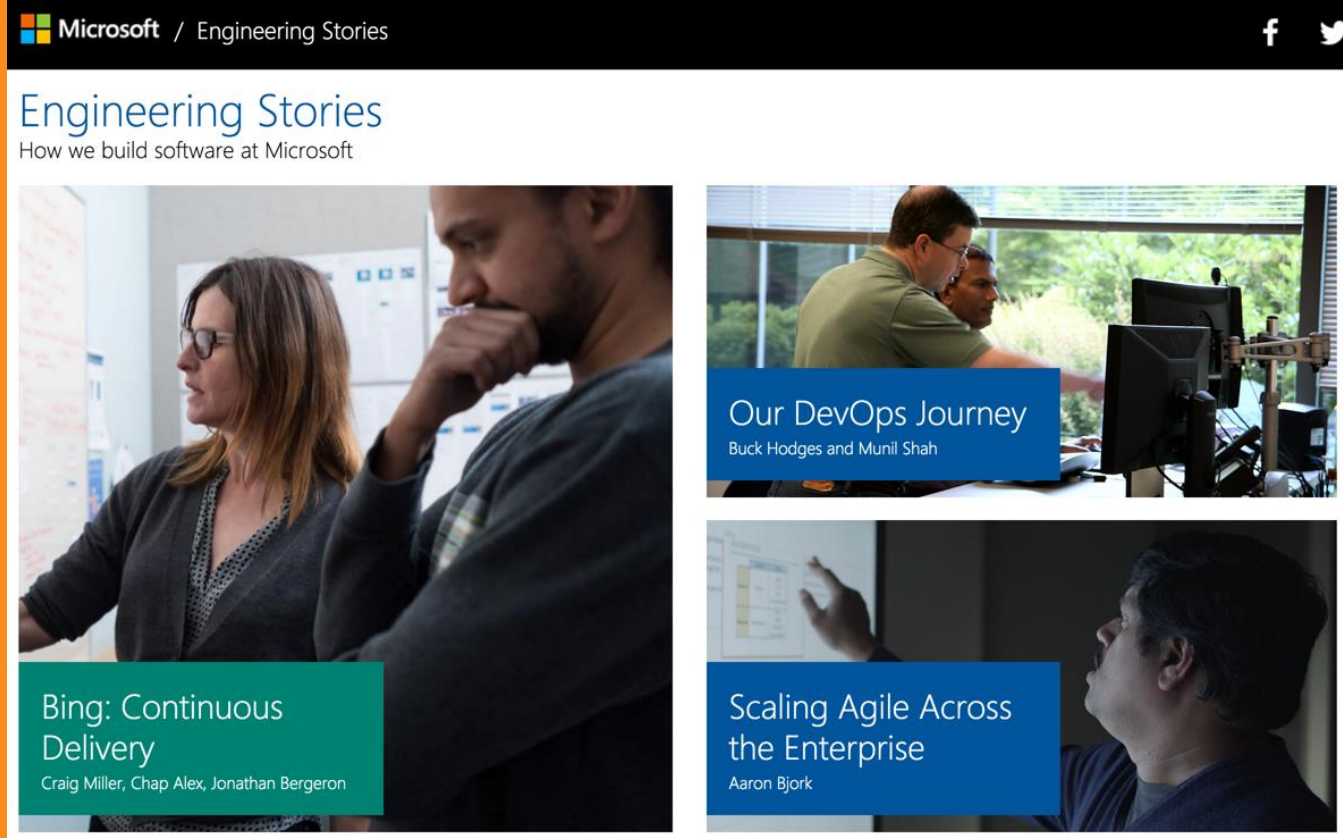
Application Performance Management
Infrastructure as Code
Continuous Delivery
Release Management
Configuration Management
Automated Recovery

Infrastructure as Code
Cloud Dev/Test
Automatic Scaling
Sandboxing/Dev and Test Labs
Containerization
Microservices Architecture

**INFRA as a
FLEXIBLE
RESOURCE**

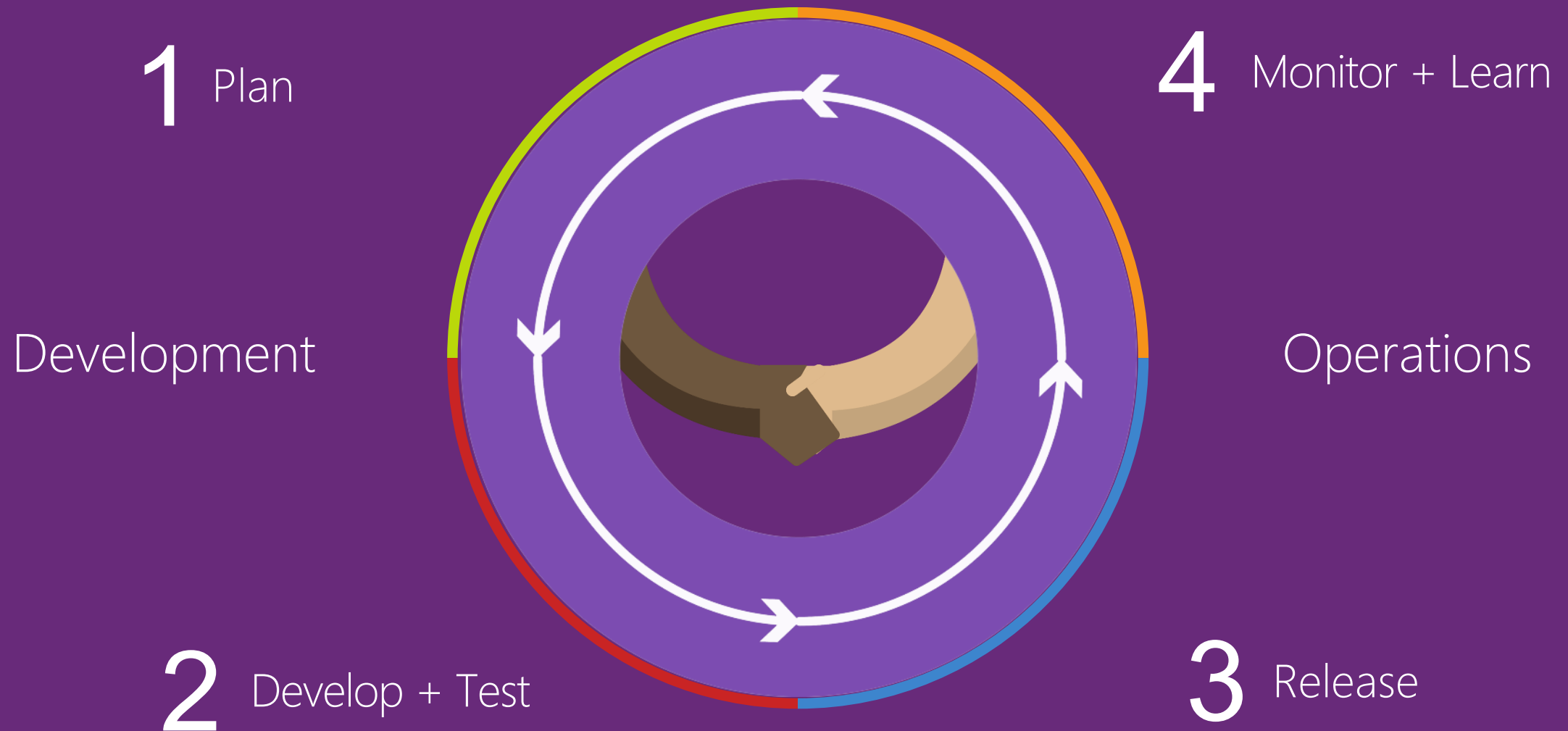
DevOps at Microsoft

Products and guidance based on our own learnings when moving to the cloud



stories.visualstudio.com | microsoft.com/devops

End-to-End DevOps



The background is a solid purple color with intricate white line art. The patterns include a grid of squares in the upper left, a series of concentric circles and radial lines in the upper right, and various wavy, organic lines and dots scattered throughout the lower half.

DevOps with Visual Studio Team Services

any app, any language, any platform

Microsoft Ecosystem

People | Process | Products



01

Develop

Developer Workstation



Team Collaboration

TFS / VSTS



02

Build & Test

Build/CI

TFS / VSTS

Release Management
for Visual Studio

Test

TFS / VSTS

Microsoft Test Manager



03

Deploy

Release

Microsoft
System Center

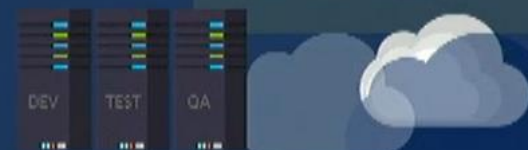
Release Management
for Visual Studio

Automation
Service

PowerShell | WAML

Azure
Resource
Management

xPlat Command Line



04

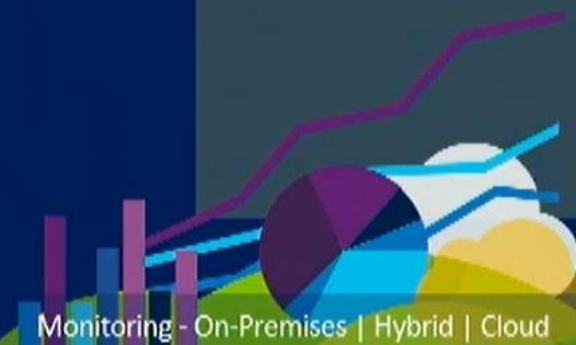
Monitor & Learn

Monitor

Microsoft
System Center

VSTS

Application Insights



Mixed Ecosystem

People | Process | Products



01

Develop

Developer Workstation



Team Collaboration

GitHub
CodePlex

02

Build & Test

Build/CI

gradle

GRUNT

Jenkins

Hudson

Test

gradle

GRUNT

03

Deploy

Configuration



Release

gradle

GRUNT

Jenkins

Hudson

VAGRANT

04

Monitor & Learn

Monitor

Nagios

ZABBIX

Thank you!

Daniel Meixner
DevOps Architect
Microsoft

@DanielMeixner
DevelopersDevelopersDevelopersDevelopers.NET

Questions?

And now for
something
completely
different ...

The background is a solid purple color with a complex, abstract pattern. It features a mix of geometric shapes like squares and rectangles, some of which are nested or overlapping. There are also organic, flowing lines and clusters of small dots, some of which are connected by thin lines, creating a sense of movement and depth. The overall effect is a rich, textured visual field.

Extended Responsibilities - Gain understanding of a DevOps culture

#People

Define your current role and responsibility. How would a DevOps approach change these? What does this mean more specifically for your roles? Which new tasks do you have to take care of? Which is being taken care of by someone else? How does your job change? Which interfaces to other teams and roles have to exist? How would this impact the all-over organization? Where do you see challenges? How could you approach these?

Expected Outcome: Mapping of existing roles to future roles, responsibility matrix, future team setup

Value Stream Mapping - Process Improvement

#Process

Visualize your current workflow from idea to production. Include tools, roles and artifacts and draw the flow of information in a diagram. Make sure you include different points of view from different roles. Discuss contradictions and points of contention. Find and mark strength which need no further optimization. Find and mark weaknesses which slow down the end to end process.

Building up on this knowledge: How could you standardize/industrialize your approach?

Expected Outcome: Visual representation of flow of value through the organization.

End to End Pipeline - Learn how to use VSTS as a DevOps platform

<http://aka.ms/devops-ess>

#Tools

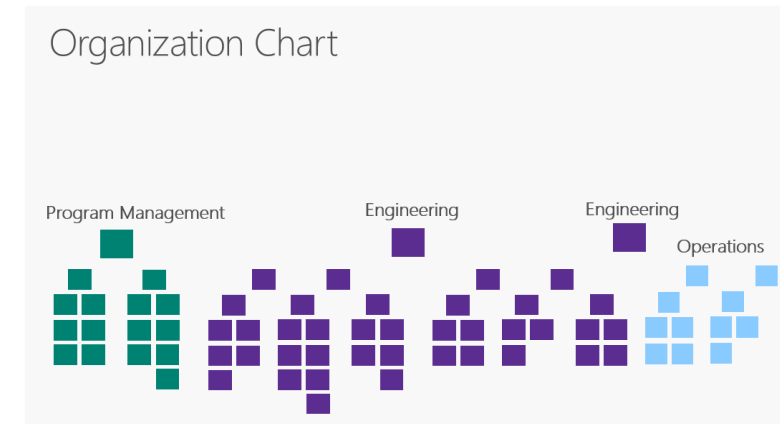
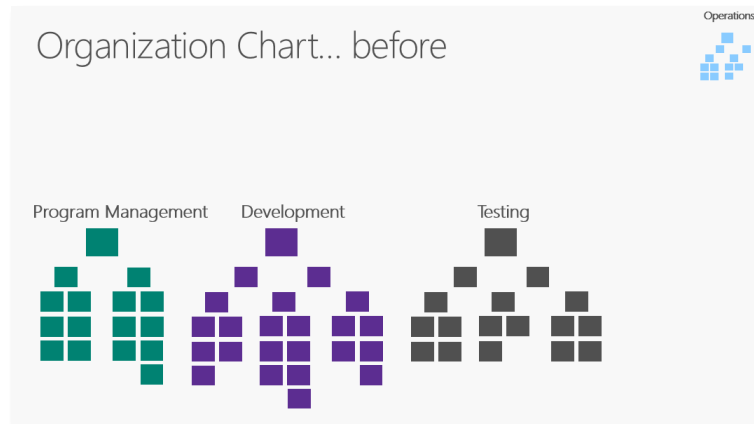
Build a devops pipeline with VSTS based on a sample application following a hands-on tutorial. At the end of the workshop you will have a fully automated pipeline where a code change automatically leads to a deployment into a defined target environment. You will learn about different ways to customize VSTS and configure it so it will fit your needs.

Expected Outcome: DevOps pipeline implemented in VSTS

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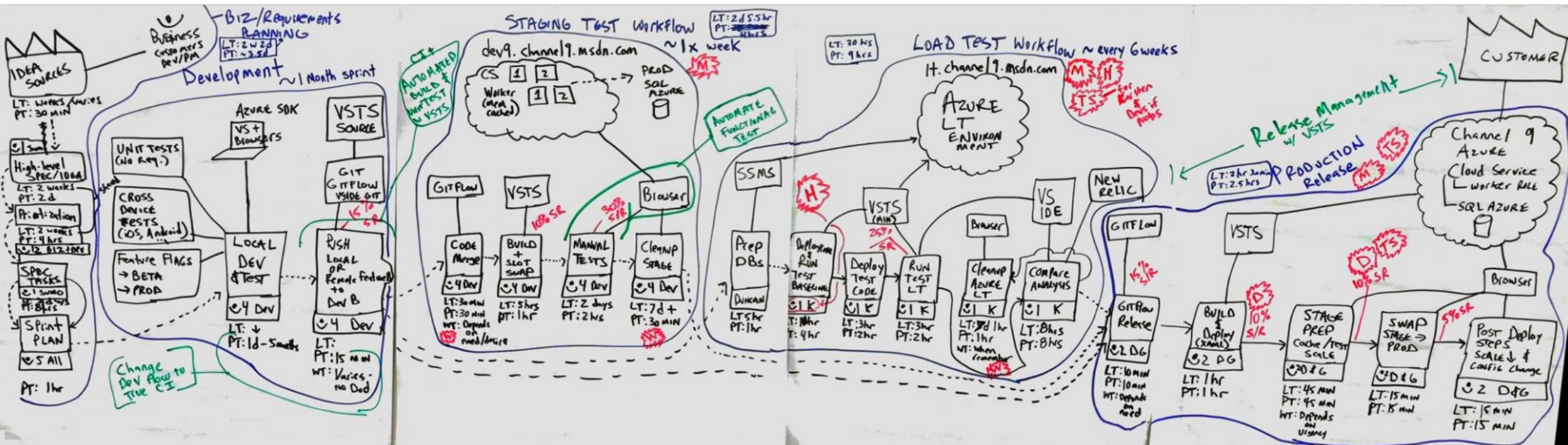


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