DevOps DeMystified

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Today's Agenda

Rise of DevOps

Introduce Demo

Impact of DevOps

Live Demo

DevOps is…

About **breaking down silos** and **promoting trust** between dev and ops
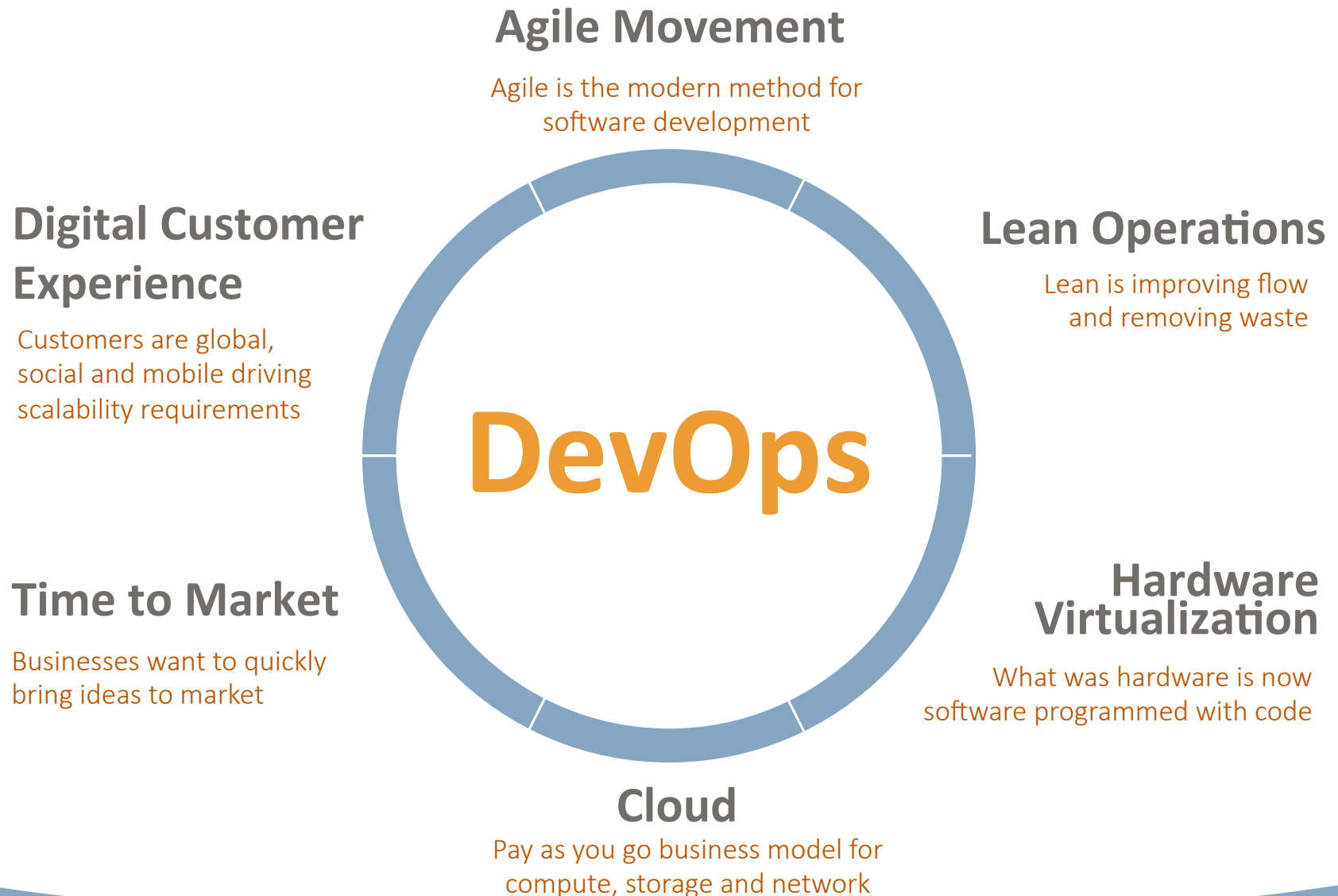
Encouraging tight **feedback, collaboration and communication** between dev and ops

A term for **skills and tools** related to automation and infrastructure code

A **convenient label** to market products, services, jobs and presentations

Why DevOps Now?

The convergence of key forces is helping drive the growth of DevOps

Agile Movement

Agile is the modern method for software development

Digital Customer Experience

Customers are global, social and mobile driving scalability requirements

Lean Operations

Lean is improving flow and removing waste

DevOps

Time to Market

Businesses want to quickly bring ideas to market

Hardware Virtualization

What was hardware is now software programmed with code

Cloud

Pay as you go business model for compute, storage and network

Introducing our Demo

This command just started a series of events that will provision and configure all the AWS infrastructure to run our interactive app

```
aws cloudformation create-stack --stack-name
InnovateVA --template-url https://s3.amazonaws.com/
singlestone/cfn/master.template --profile dtashner
--region us-east-1 --capabilities CAPABILITY_IAM
```
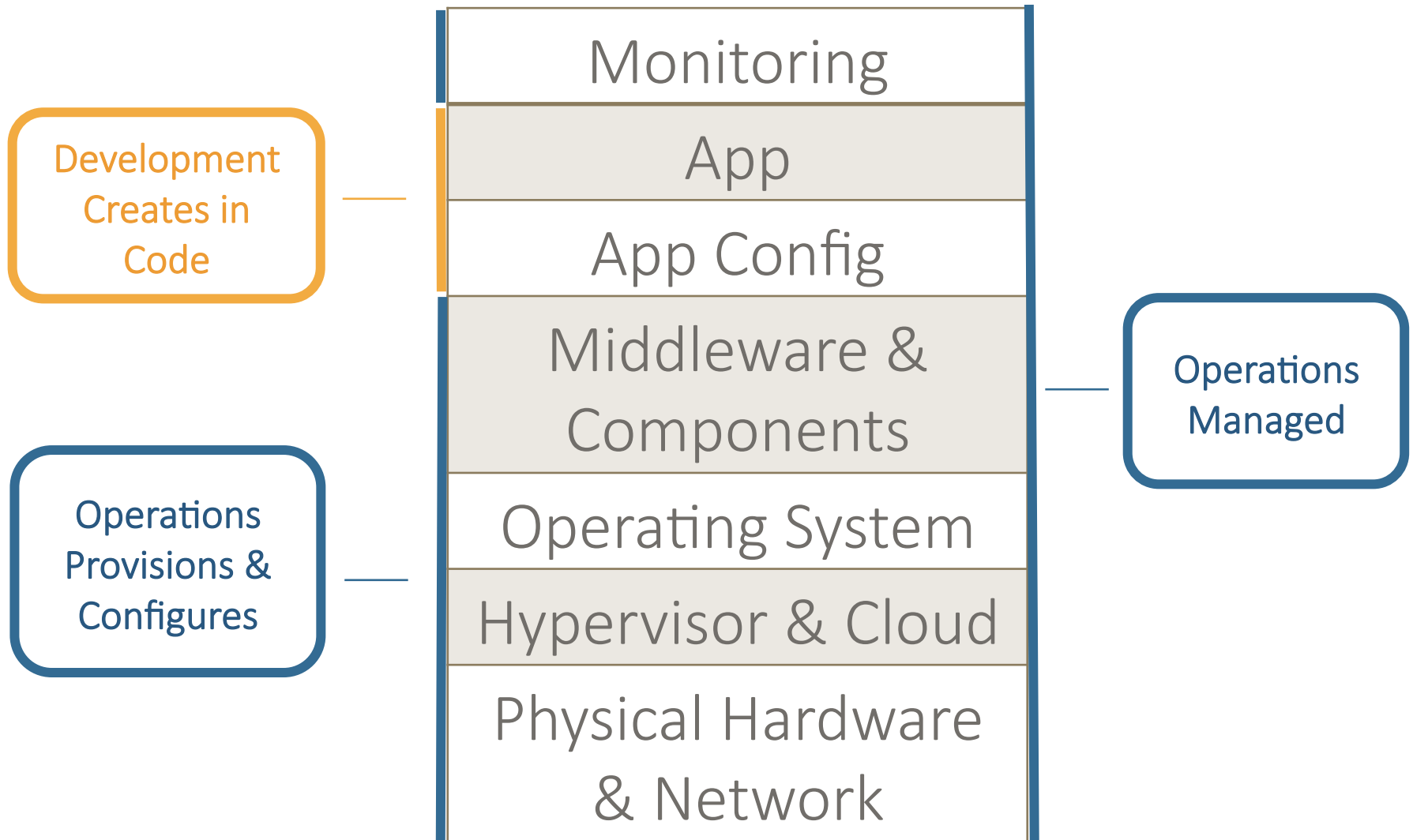
More on this later, but first nothing up our sleeves

DevOps Impact: Digital Products & Services

Typical stack for a digital product or service that delivers value

Monitoring
App
App Config
Middleware & Components
Operating System
Hypervisor & Cloud
Physical Hardware & Network

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Digital Products & Services in Typical Orgs

Development Creates in Code

Operations Provisions & Configures

Monitoring
App
App Config
Middleware & Components
Operating System
Hypervisor & Cloud
Physical Hardware & Network

Operations Managed

Digital Products & Services in DevOps Orgs

Development Creates in Code	Monitoring
	App
	App Config
Infrastructure Configured in Code	Middleware & Components
	Operating System
Operations Provisions & Configures	Hypervisor & Cloud
	Physical Hardware & Network

Product & Service Team Managed

Operations Managed

AWS

AWS
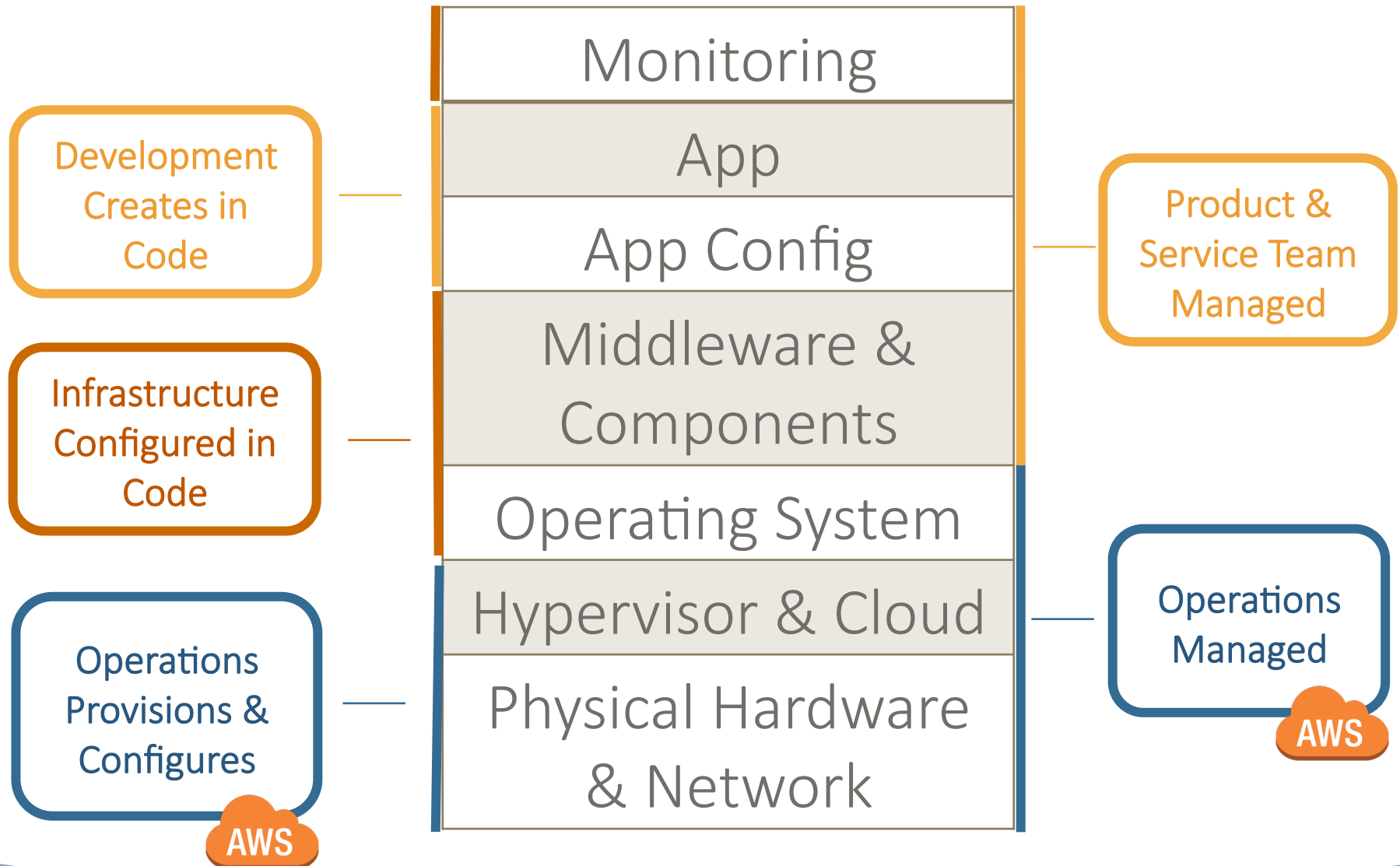
DevOps Impact: Continuous Delivery Pipeline

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Code Change

Run analysis on code

Deploy app on Dynamic Infrastructure

Approve Production Release

Version Control

Deploy to Production

Build & unit test latest change

Provision, Configure & Test Infrastructure

Run Regression & Performance Tests

Any failed step halts the process!
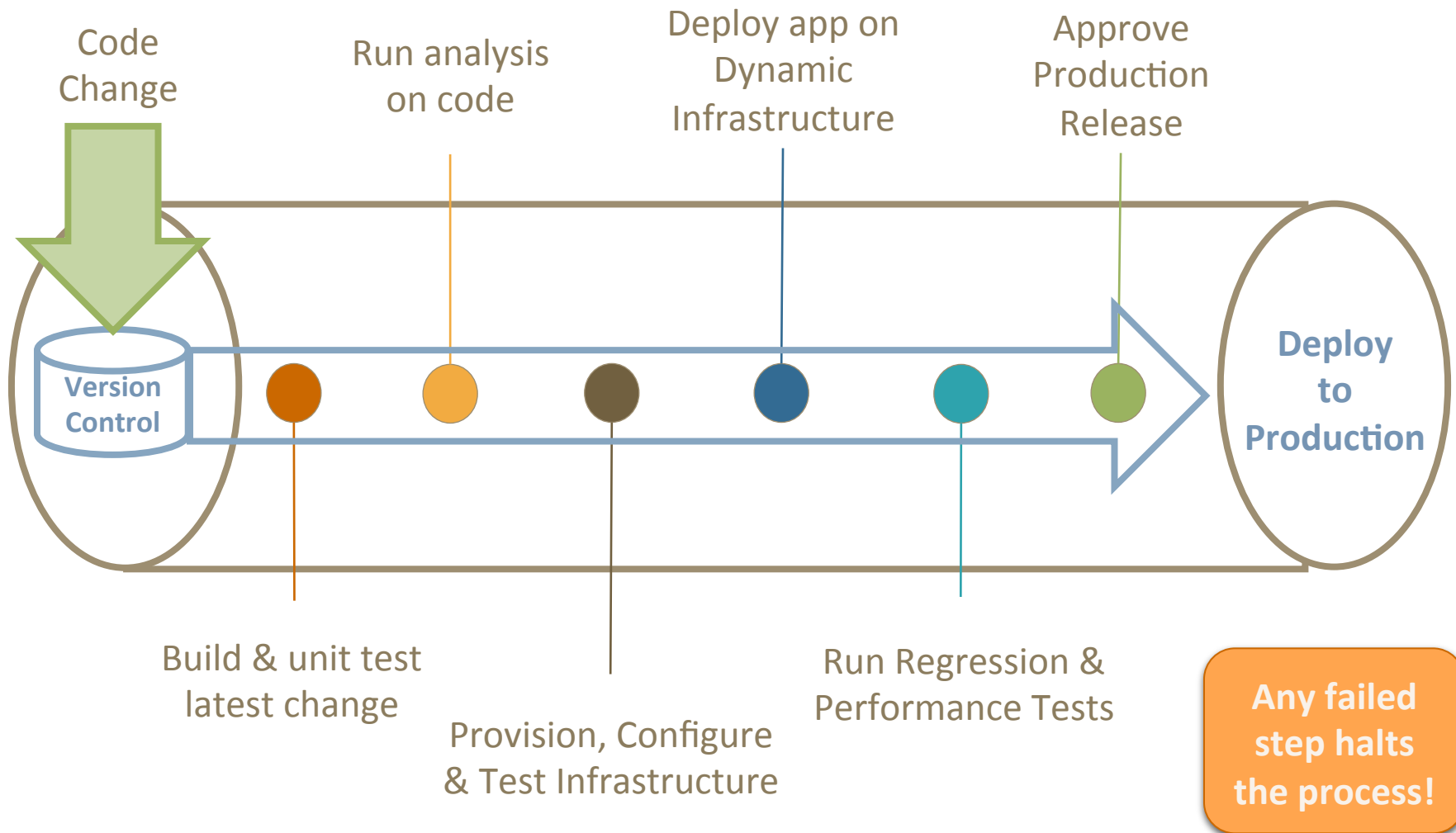
DevOps Impact: Tools & Skills

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Dev Tools ←

Ops Tools →

Version Control
GitHub, Subversion, TFS

Unit Testing
RSpec, JUnit, nUnit,

Acceptance Testing
Cucumber, FitNesse, Selenium,
Lots of commercial tools

Monitoring
AppDynamics, New Relic,
CompuwareAPM, Nagios

Build Automation
Maven, Ant, nAnt, ms-build

Release Automation
Passenger, uDeploy, Capistrano,
Lots of commercial tools

Performance Testing
LoadRunner, LoadImpact,
Apica, others

Continuous Integration
Jenkins/Hudson, TFS, Cloudbees

Scripting Languages
Bash, PowerShell,
Ruby, Python, Java, C#

Service Mgmt.
ServiceNow, JIRA, ITIL tools,

Code Editors
Eclipse, Visual Studio,
Textmate, tons of others

Web/App Servers
Apache, IIS, Tomcat, Jboss,
WebLogic, others

Configuration Mgmt.
Chef, Puppet, SALT Stack, Ansible

Cloud
AWS, Azure, OpenStack,
VMWare and others

**Communication &
Collaboration.**
Instance message,
video chat, Wiki's,
tons of others

Database Servers
Oracle, mySQL, SQL Server,
Postgres, MongoDB, Hadoop

Log Mgmt.
Splunk, Loggly, Log4J

Virtualization
Vagrant, VirtualBox,
VMWare

Operating Systems
Linux, Windows, OSX

Security
ActiveDirectory, LDAP,
RSA, tons of others

Networking
F5, Cisco, Dyn,
tons of others

So What Happened?

This command executed a CloudFormation template (master.template) that created a stack (InnovateVA) in Amazon's us-east-1 region under the profile dtashner

```
aws cloudformation create-stack --stack-name
InnovateVA --template-url https://s3.amazonaws.com/
singlestone/cfn/master.template --profile dtashner
--region us-east-1 --capabilities CAPABILITY_IAM
```

What Infrastructure was Created?

Enable Monitoring (AppD, CloudWatch)

Start App Server (Tomcat)

Deploy App (Jenkins)

Start Build Server (Jenkins)
Build App (GitHub, Jenkins)

Configure Build & App Servers (Chef)

Register Domain Names (Route53)

Provision Build & App Servers (EC2)
Provision Database (DynamoDB RDS)

Create Virtual Private Cloud (VPC)
Create Subnets for App

Questions?

This presentation and all code used in today's demo is available at github.com/singlestone