

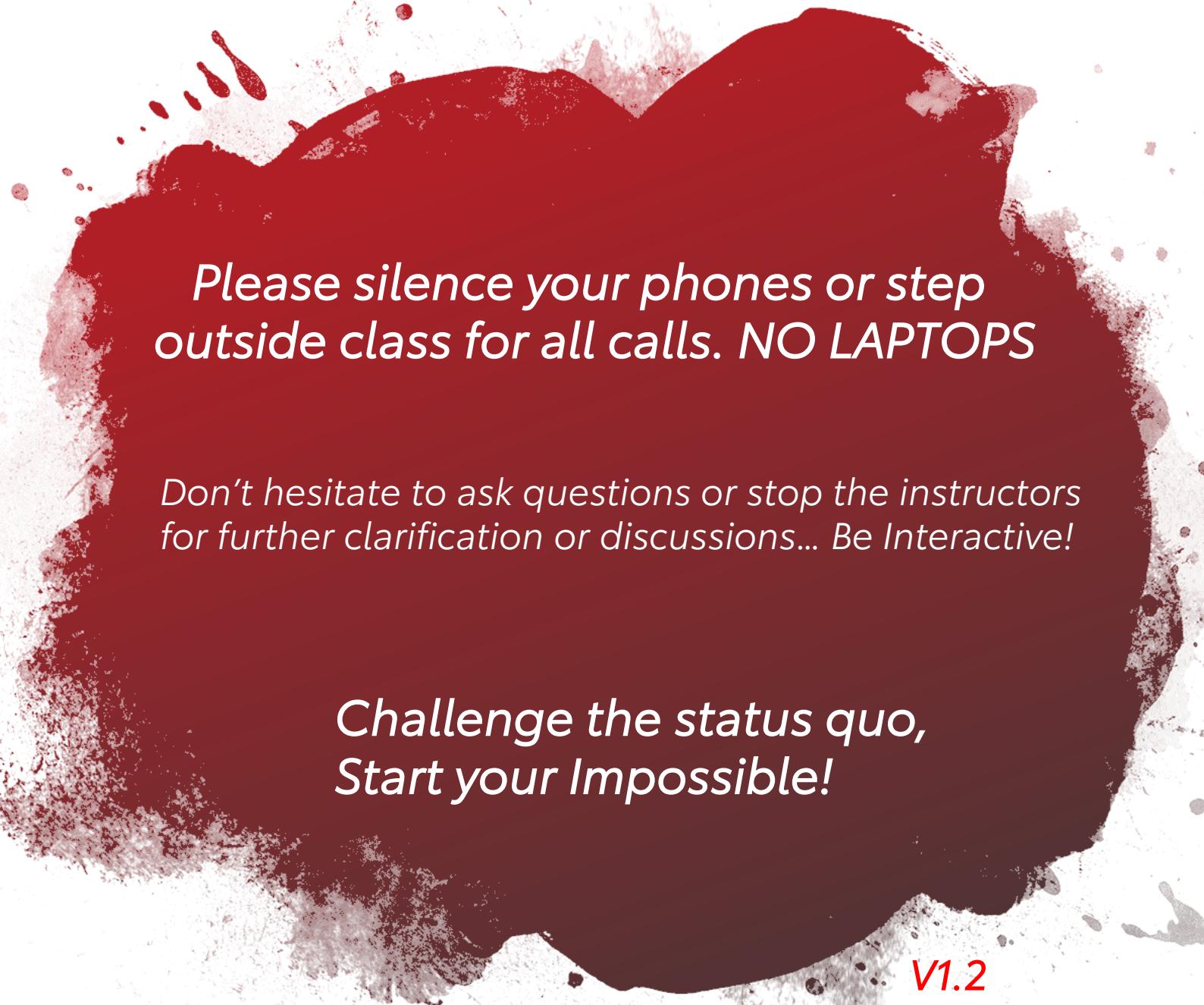
# DEVOPS Engineering

**TFS** DIGITAL



CREATING VALUE BY ENABLING FREEDOM OF MOVEMENT

## DevOps Day



*Please silence your phones or step outside class for all calls. NO LAPTOPS*

*Don't hesitate to ask questions or stop the instructors for further clarification or discussions... Be Interactive!*

*Challenge the status quo,  
Start your Impossible!*

V1.2

# DEVOPS Engineering

**TFS** DIGITAL



CREATING VALUE BY ENABLING FREEDOM OF MOVEMENT

## DevOps Workshop

## Your Instructor today

**Ed Gillis, TFS**  
IDS Manager- DevOps Engineering  
*Certified DevOps Practitioner (SDP)*

Former **HP** Software Engineer & Trainer  
(23 years)

**PepsiCo** CMDB Lead (5 years)

**Citi** VP of Global Command Center

*Lean Six Sigma, ITILv3, IEEE, Scaled Agile, Toyota Way, A3, JKK, TPS & TBP*

*Texan since 1999, Toyota since 11/2017*

*When not working-*

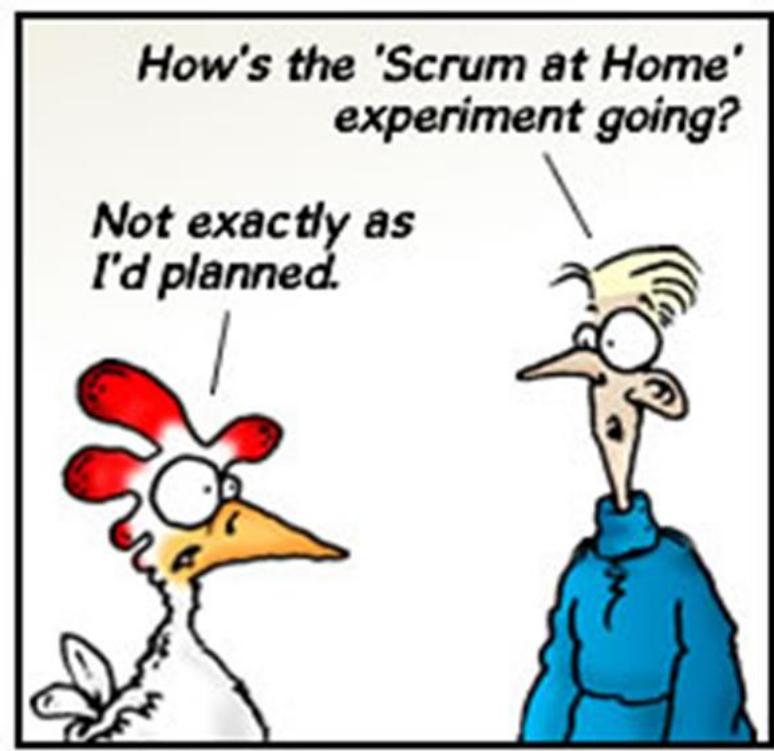
*Local CERT member in McKinney*

*Amateur radio general operator K5EDG*

*Private Pilot at KTKI (ASEL)*

*Married 34 years (ask how)*

## Your Instructor today

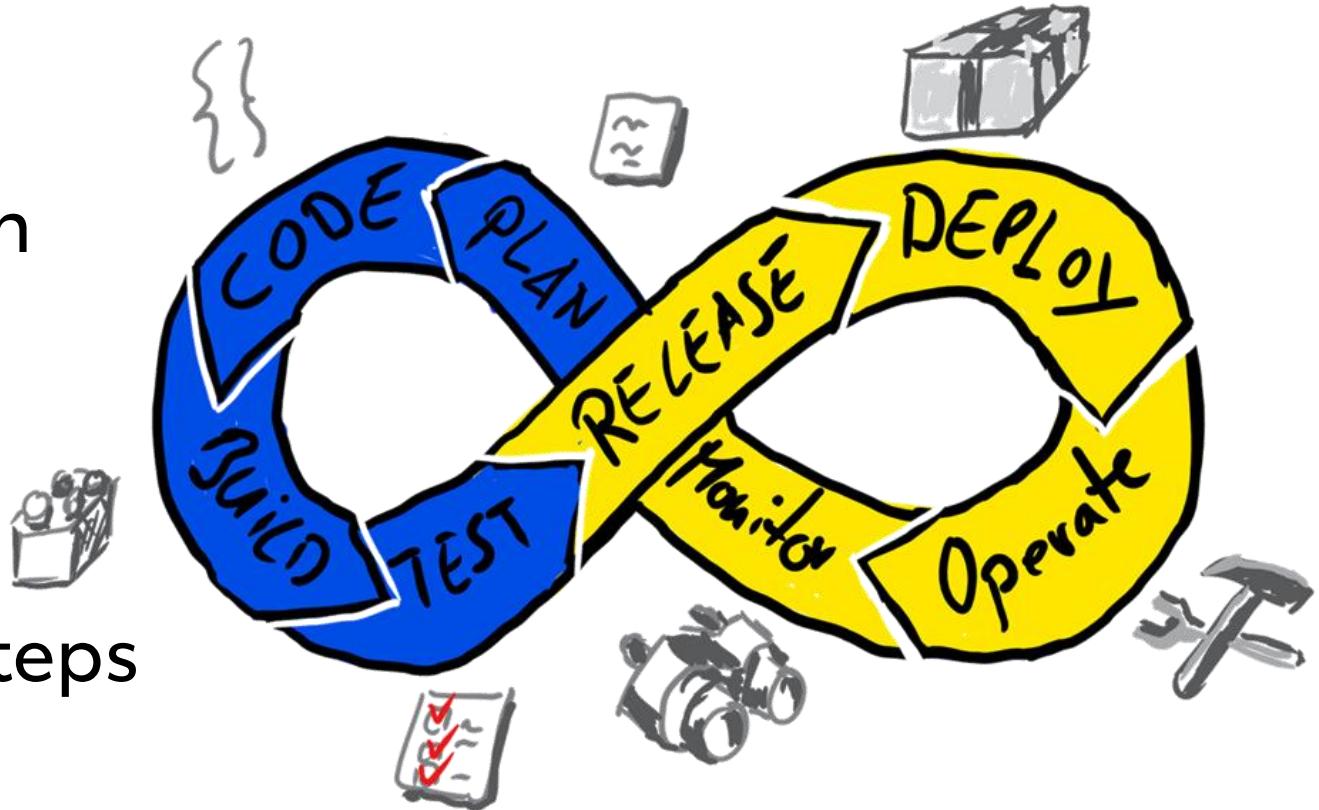


By Clark & Vizzios

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# Course Overview

- Background & Intro
- ABC Factory Ops Automation
- From Lean/Agile to DevOps
- New ways of Thinking
- DevOps Process Details
- DevOps Onboarding Next Steps



# Intended Audience

- ✓ **Factory Developers & technical staff**
- ✓ *Have completed "Scrum the Toyota Way"*
- ✓ **Already mature in Lean/Agile thinking!**

*Ready to begin the NEXT STEP as a  
New DevOps Team!*

**THIS IS the  
Next Step from  
Lean/Agile  
Boot Up!**

DevOps Workshop

# DevOps Workshop

**THIS IS the  
Next Step from  
Lean/Agile  
Boot Up!**

## HANDS SURVEY!



I understand how Lean applies to my daily work!

I understand how Agile applies to my daily work!

I understand how Scrum applies to my work on my team!

I understand how DevOps can automate my daily work!

# Facility Details

- **Schedules**
  - We expect to be done in 3hrs!
  - We *will have breaks as needed or on demand... just ask*
- **Facilities**
  - Restroom location(s)
  - Phones/Desks/Offices
  - Conference rooms / Private Calls
- *Emergencies – Observe Directions & Instructions promptly!*



# Our Class Manifesto!

- ✓ **Group Discussion** over Oration
- ✓ We Value **Talking** over Silence
- ✓ **Interaction** is most important
- ✓ Post It Assignments

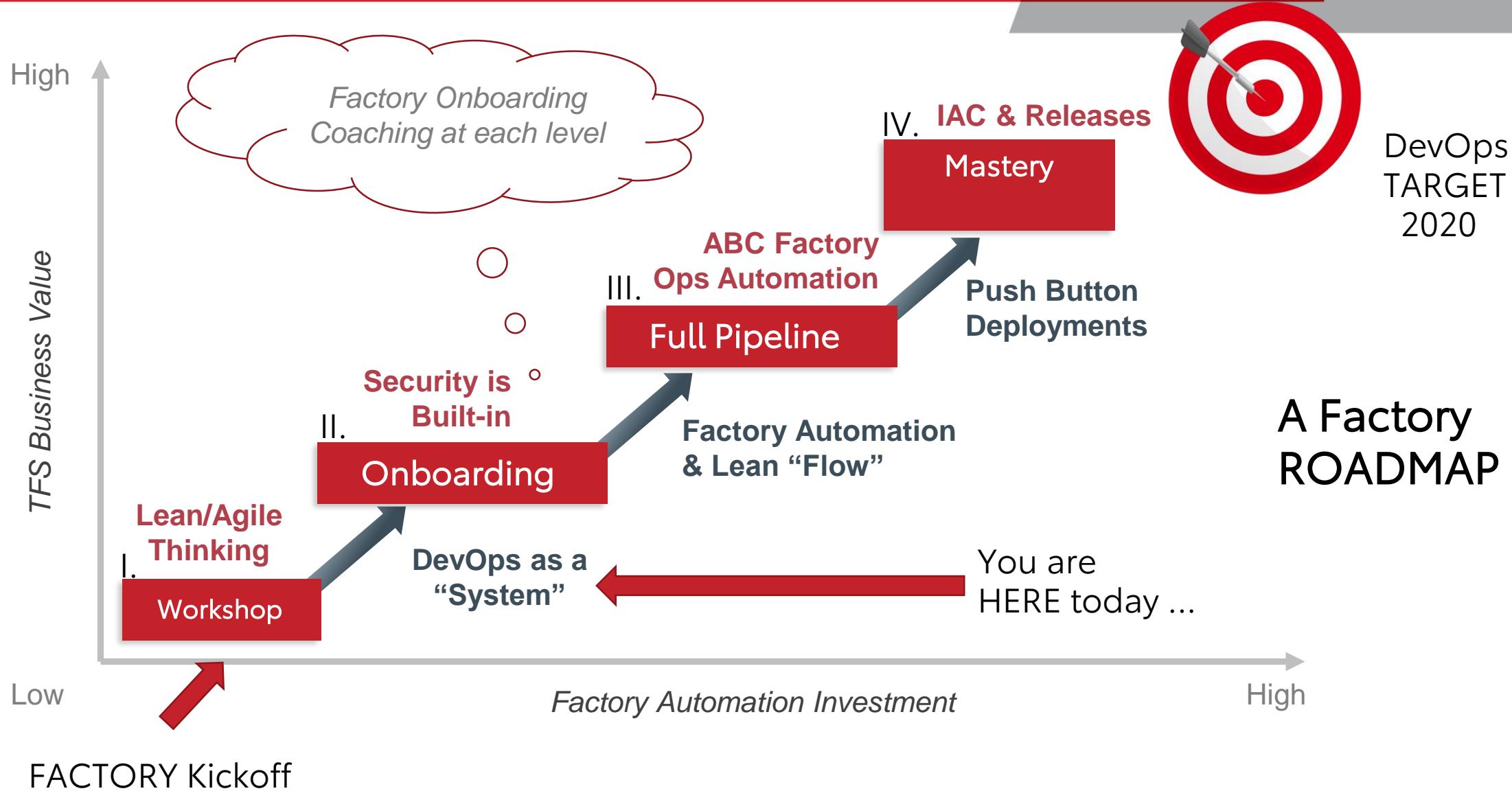


# The Primer-

- DevOps bridges “**Agile Bootup**” (Scrum the Toyota Way) & builds on those lessons for operational SPEED.
- Factory Teams will be exposed to a new **DevOps Mindset** and terms used, so they may **leverage automation** that will improve their **velocity** and **value streams...**
- *After this class Factories will start **DevOps Onboarding**...and the implementation of **speed & quality** with Lean & Agile knowledge!*

## DevOps Workshop

# DevOps Learning Program Plan

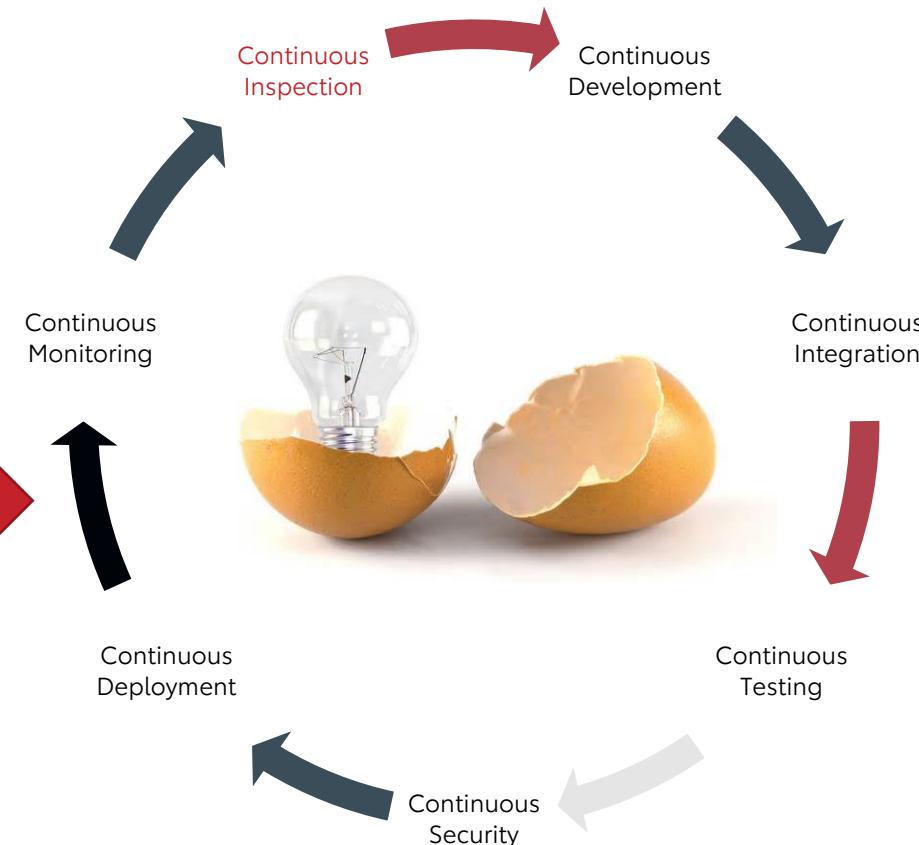


# Factory Onboarding Simplified

I. Participate in  
Questionnaires  
From DevOps



II. Commit to Story Points per Sprint



Onboarding  
DevOps PROD



# Key Training Takeaways!

*From this class you will gain understanding of the following-*

1. **Systems Thinking.** Understand what DevOps means and how to apply tool chain automation to your daily work.
2. **SPEED.** Leverage Boot-up learnings and apply a **DevOps mindset** for opportunities to automation factory work products.
3. **FEEDBACK Loops.** How Feedback loops provide **continual** experimentation & learning opportunities.

Keep in mind and think on these three GOALS for this day...

## Toyota Global Agile Book トヨタグローバル アジャイルブック

Release 2 – April 2019 / リリース2 – 2019年4月



●●PROTECTED 関係者外秘

### Toyota Agile Mindset



トヨタのアジャイルマインドセットはトヨタの基本方針に沿って、下記の通り。

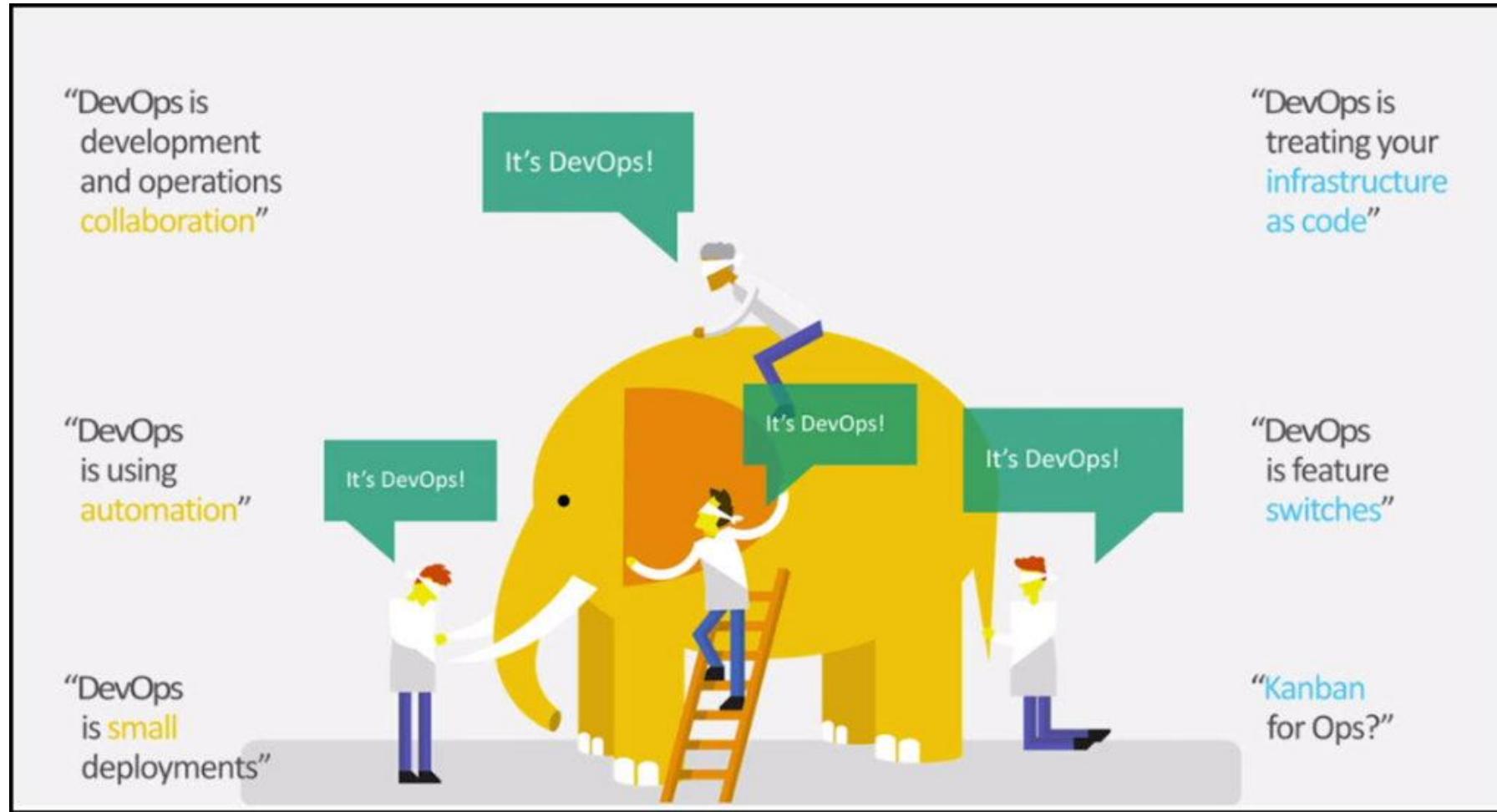
- カスタマーファースト（お客様第一）
- 平準化
- 1個流し
- 視える化
- 自働化
- チームワーク & 人材育成
- ジャストインタイム
- 繙続的なプロセス & プロダクトの改善  
(改善/PDCA)

Toyota's agile mindset is described through existing Toyota fundamentals:

- Customer First (Okyakusama daiichi)
- Leveling (Heijunka)
- One Piece Flow
- Visualization (Mieruka)
- Automation with human judgement (Jidoka)
- Teamwork and people development (Hitozukuri)
- Just in time (JIT)
- Continuous improvement of process and product (kaizen / PDCA )

# Everything is a DevOps SYSTEM!

Blind Men  
See Systems  
Everywhere!



# DEVOPS Engineering

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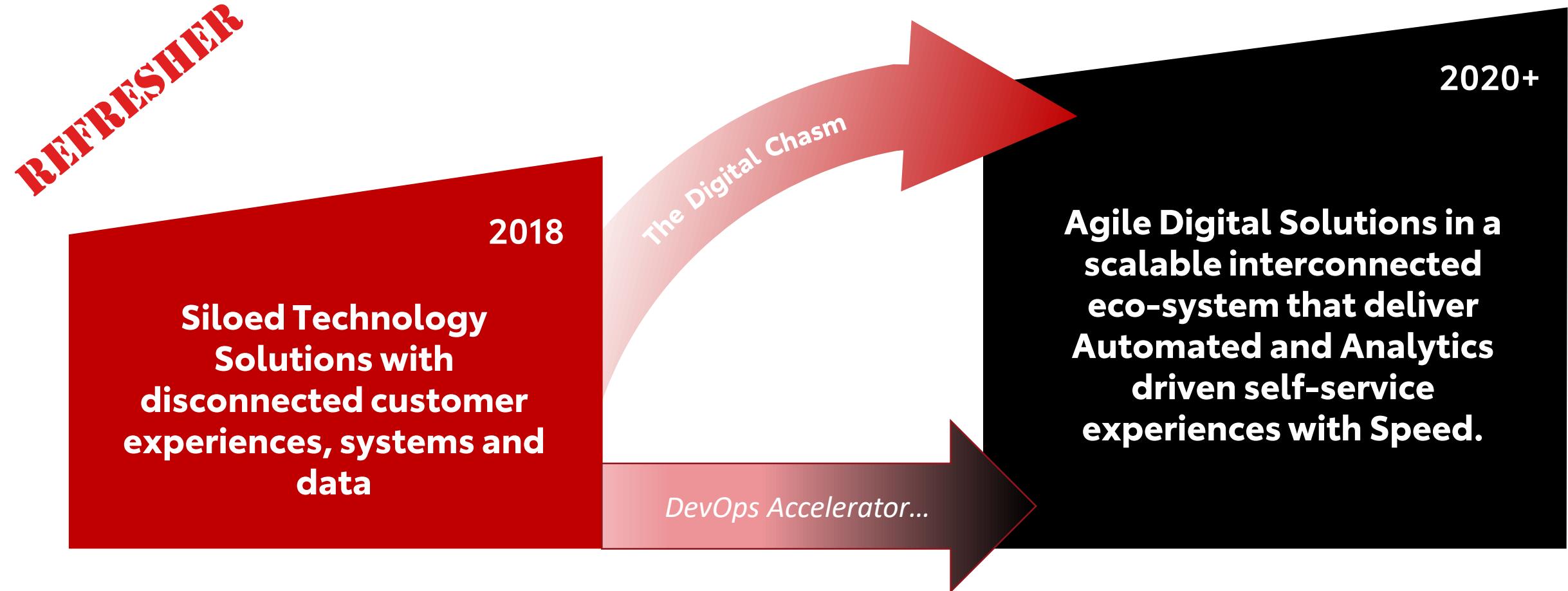


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**Strategy & Direction  
-Refresher-**

# Our Challenge... The Digital Chasm

To Revolutionize our Traditional Business, we need to cross this Digital Chasm now ... with Urgency and Speed.



Crossing the Digital Chasm is not just about implementing new technologies... it is about  
**CHANGING THE WAY WE THINK & WORK**

# TFS Direction... Crossing the Digital Chasm

**... Changing the way we work**



## BE AN AGILE FINTECH

- Engineering agility
- Platform agility
- Organizational agility

**Actions**

***'TFS Digital Factories'***

***'TFS Digital Architecture'***

***'TFS Digital Operating Model'***



## DevOps Engineering

- Automation
- Be digital and technical experts
- Enable Factory Value

***'TFS Digital Academy'***

***'TFS DevOps Engineering'***

***'TFS Digital Factories'***



## BE CUSTOMER FOCUSED

- Deliver on-mi 'on my' channel
- Make it easy to do business
- Delight customers and dealers

***'TFS Digital Business Transformation'***

***'TFS Digital Tech Modernization'***  
***'TFS Digital Security'***

# **IDS & ETO Direction**

## **Enabling ECARS**



**E**xperience Driven... **Solutions and Services**



**C**loud Driven... **Integrated Digital Ecosystem &  
Architecture (IDEA)**



**A**utomation Driven... **Operations across End to  
End System Lifecycle**



**R**eliability Driven... **Platforms and Products eco-  
system**



**S**oftware Driven... **Infrastructure and Security**

# Our DevOps Direction for IDS

... Engineering the Future



## RELENTLESS AUTOMATION

- Institutionalize Automated Testing
- Hands-off Service Delivery
- Fully Integrated Tooling

*Automate IT*



## BUILT IN RELIABILITY

- Unified Run Model
- Automated Incident Response
- Operational Transparency

*Run IT*



## CLOUD DRIVEN PLATFORM

- Dynamic Infrastructure
- Code Driven Environment Delivery
- Business Focused Solutions

*Enable IT*



## WORLD CLASS EXPERIENCE

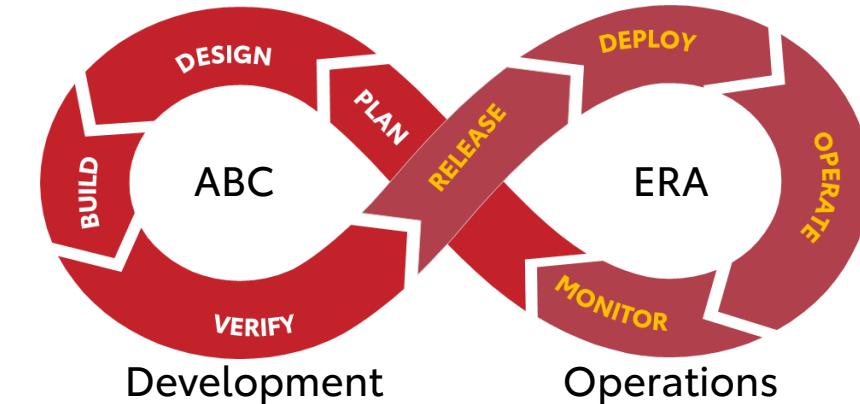
- Deliver on-mi 'on my' channel
- Frictionless Delivery
- Delight Customers

*Experience IT*

# Growing IDS as a Automation Culture

**DevOps = Development + Operations**

*DevOps is a “**Cultural Change**” and a way of “lean” thinking. DevOps brings agility to all Factory & ERA Teams by delivering a consistent set of tools & automation.*



*DevOps Engineering team supports the factories to add value here-*

1. *Enabling Factory **Speed** of delivery*
2. *Supporting a pipeline of successful **Products** from Factories*
3. *Creating a **Culture of Collaboration** with Squads & Domains*
4. ***Teaming** with ERA, Developers & Infrastructure – Agile everywhere!*

**REFRESHER**

# *Ops Automation Guiding Disciplines*

**ZERO** Software fixes outside of Factory – No Exceptions.

**ONE** common and shared **DevOps Toolchain** for all TFS digital factories.

**TWO** pre-defined monthly software release windows per factory.

**THREE** ways of systems thinking about Lean & Agile work.

# Focused Forward, Fast...

Post IT!

What do you expect to get from this workshop?

How does automation Improve TFS? Is it Only in terms of Productivity or is there Something else?

Who do I See for Q&A on DevOps

How is DevOps Lean/Agile?

How do I do DevOps when Things are so Agile & Dynamic?

How DevOps would be effective when Dev and Ops are on different teams?

In a DevOPS model Who owns Implementing DevOps tools? ERA or Factory?

why did TFS Switch to DevOPS? I want to Understand the OPS Side as well?

CI/CD tools that are Already used in TFS How do we leverage?

Why do Dev's have To be on-call?

Will Automation eliminate jobs?

# DEVOPS Engineering

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<https://youtu.be/V6DrGBg-w40>

## DevOps Video

### DEVOPS TEAMS

AGILE 30x Deploy & 8000X faster!  
STABLE 2x RFC success & 12x Faster MTTR

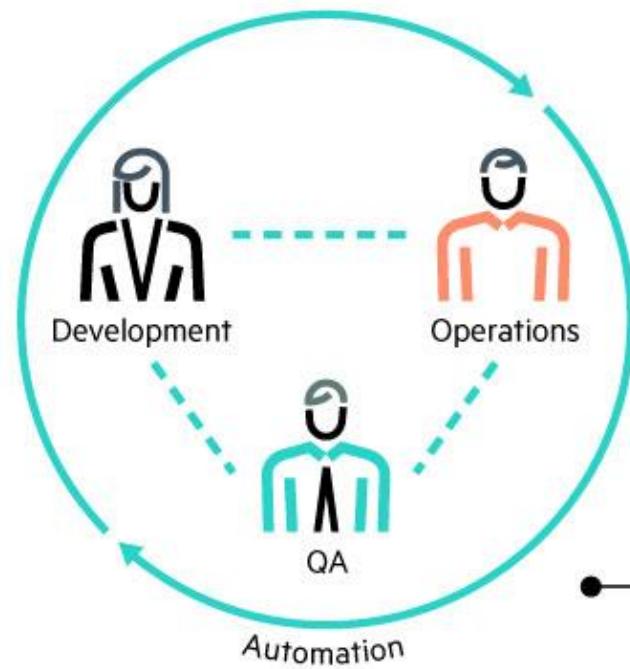
### DEVOPS ORGS

2x Profit, share & savings  
50% Higher Cap Growth

# Why DO DevOps

DevOps is huge effort across many One Toyota Teams

DevOps gains momentum



 90%  
of surveyed organizations  
are implementing or  
piloting DevOps

and  
 99%  
agree DevOps is an  
opportunity to improve  
application security

but only  
 20%  
are doing application  
security testing during  
development

# DEVOPS Engineering

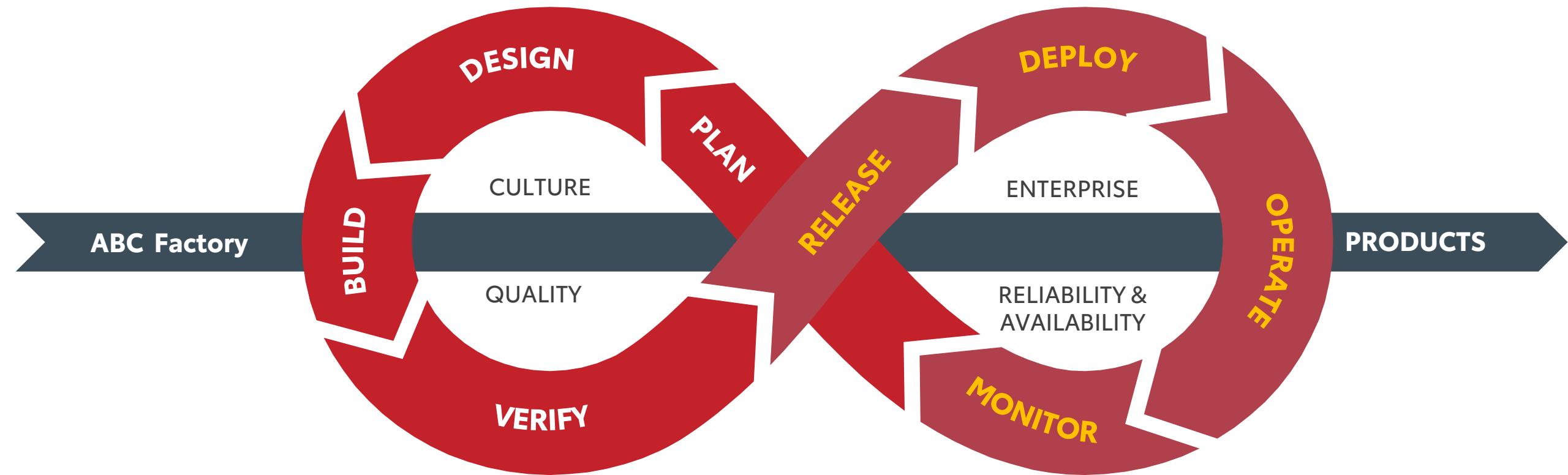
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**Why NOW do  
DevOps at TFS?**

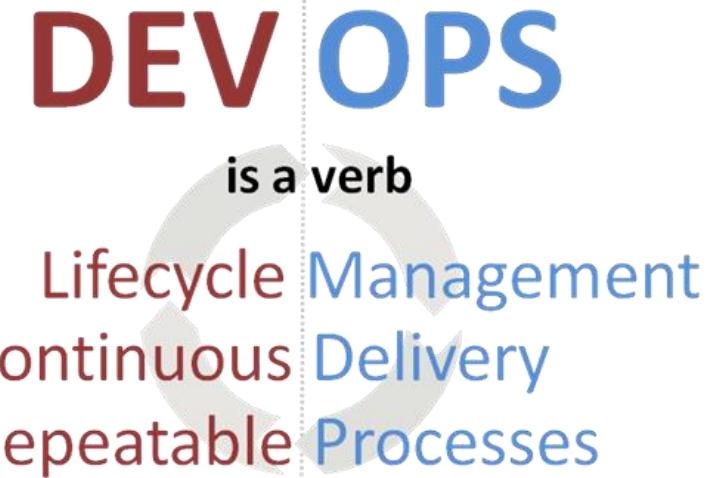
# The Infinity Loop



# The Goal of DevOps in IDS

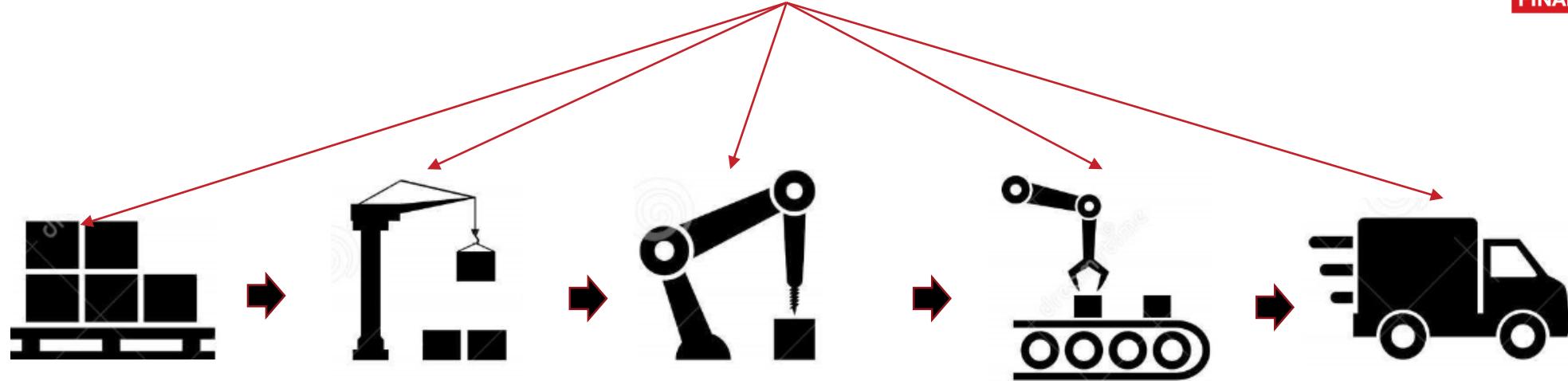
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Factory OPS Automation



Devops is application lifecycle management with the goal of continuous delivery achieved through the discovery, refinement and optimization of repeatable processes.

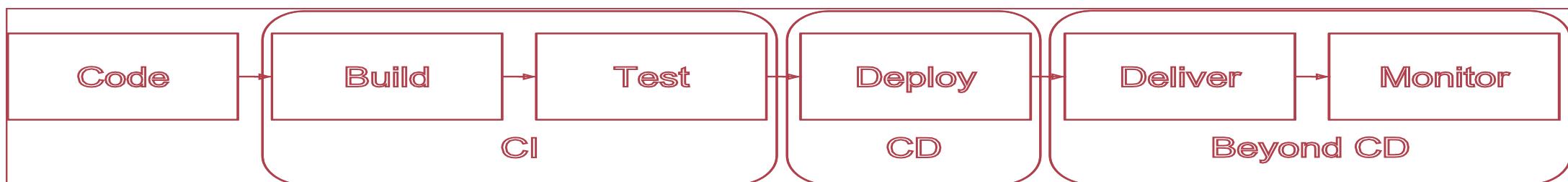
## Factory Jobs



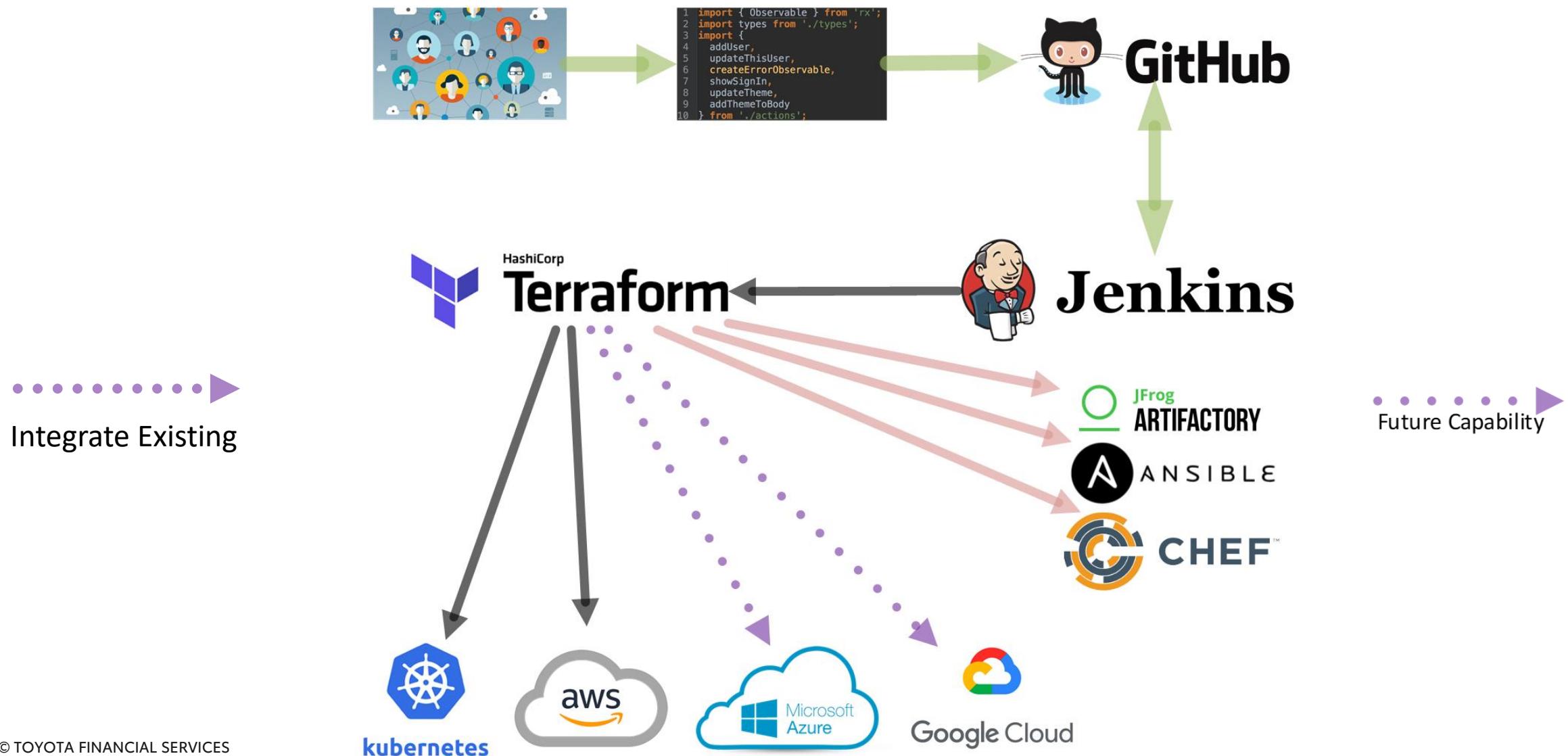
***Simplified***...DevOps is a 'Chain' of Factory Tools

# DEV OPS

***Simplified***...DevOps is an 'automated' Pipeline for Lean Flow



# DevOps Factory Ops Automation Goal



# DevOps...Factory Ops Automation

Product / Portfolio Planning



SCM / VCS



Build / Continuous Integration



Testing



Security Analysis



Collaboration



Deployment



kubernetes

Configuration Mgmt / Provisioning



**ARTIFACTORY**

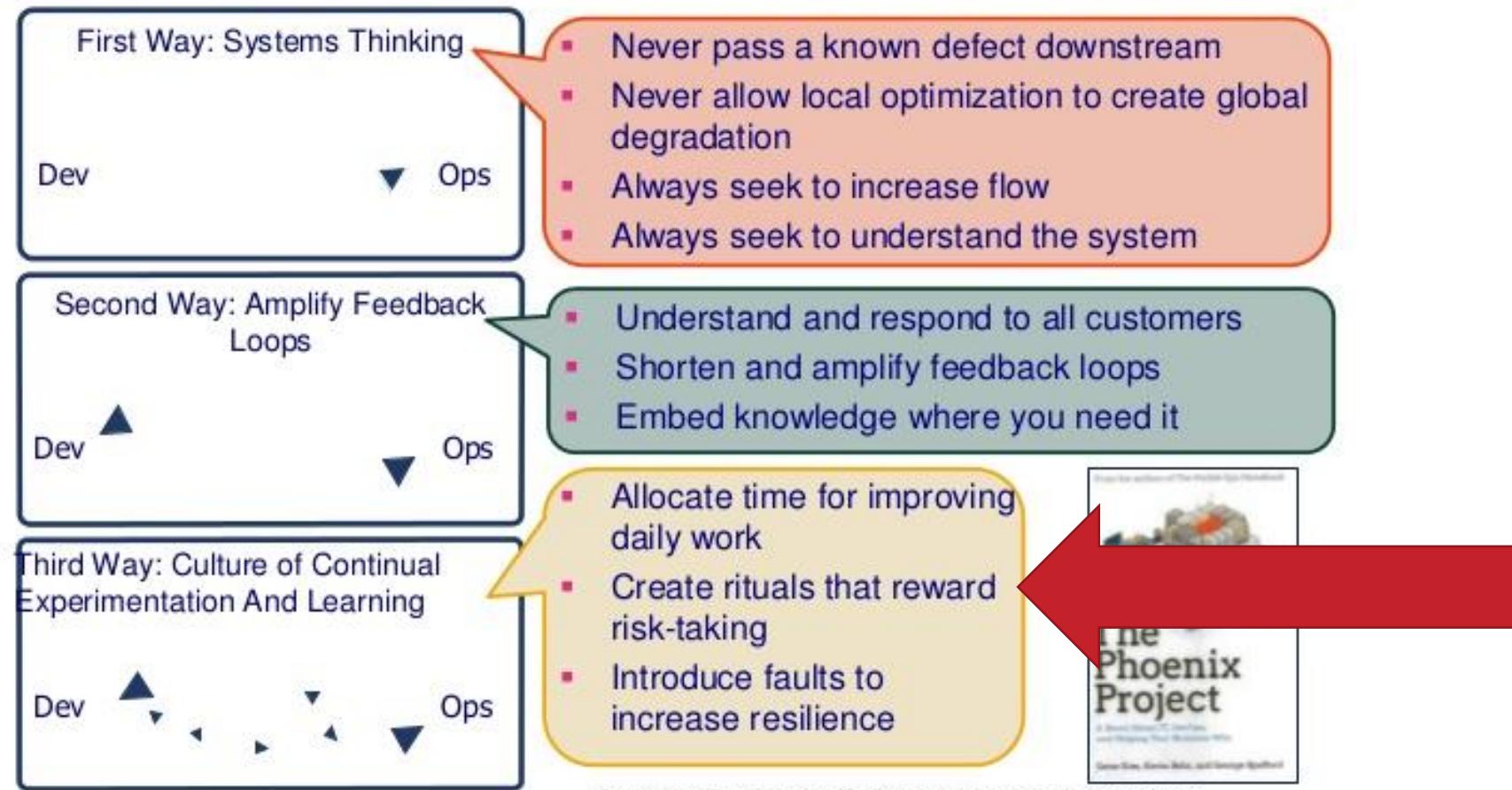
Artifact Management



Monitoring / Logging / Analytics  
ONLY for Tool Chain! Not APPS

# Book introduces “The Three Ways”

## The Three Ways: Lean Principles Underpinning DevOps



# DEVOPS Engineering

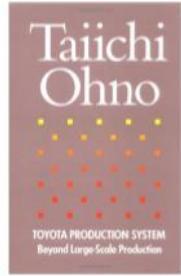
**TFS** DIGITAL



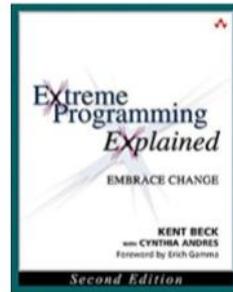
CREATING VALUE BY ENABLING FREEDOM OF MOVEMENT

**DevOps is YOUR  
Lean & Agile next step**

# Lean Scrum Agile - The Connection



Inspired



TPS/Lean 1950s

Scrum 1995  
eXtreme Programming 1996

Created

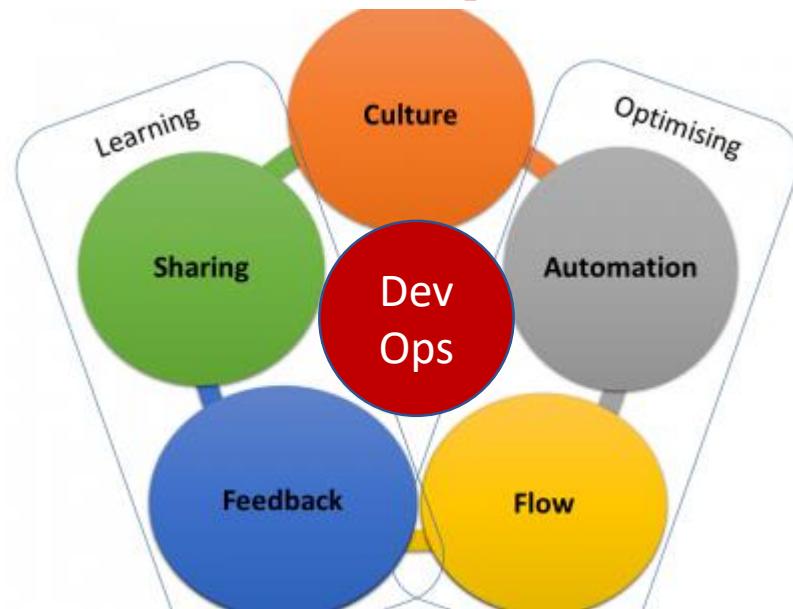


- WE ARE UNDERRATING BETTER SPOTS IN FAVOR OF MORE CERTAIN SPOTS. WE ARE PREDICTING THE FUTURE INSTEAD OF LEARNING FROM IT.
- 1 INDIVIDUALS & INTERACTIONS over processes and tools  
2 WORKING SOFTWARE over comprehensive documentation  
3 CUSTOMER COLLABORATION over contract negotiation  
4 RESPONDING TO CHANGE over following a plan

Agile 2001

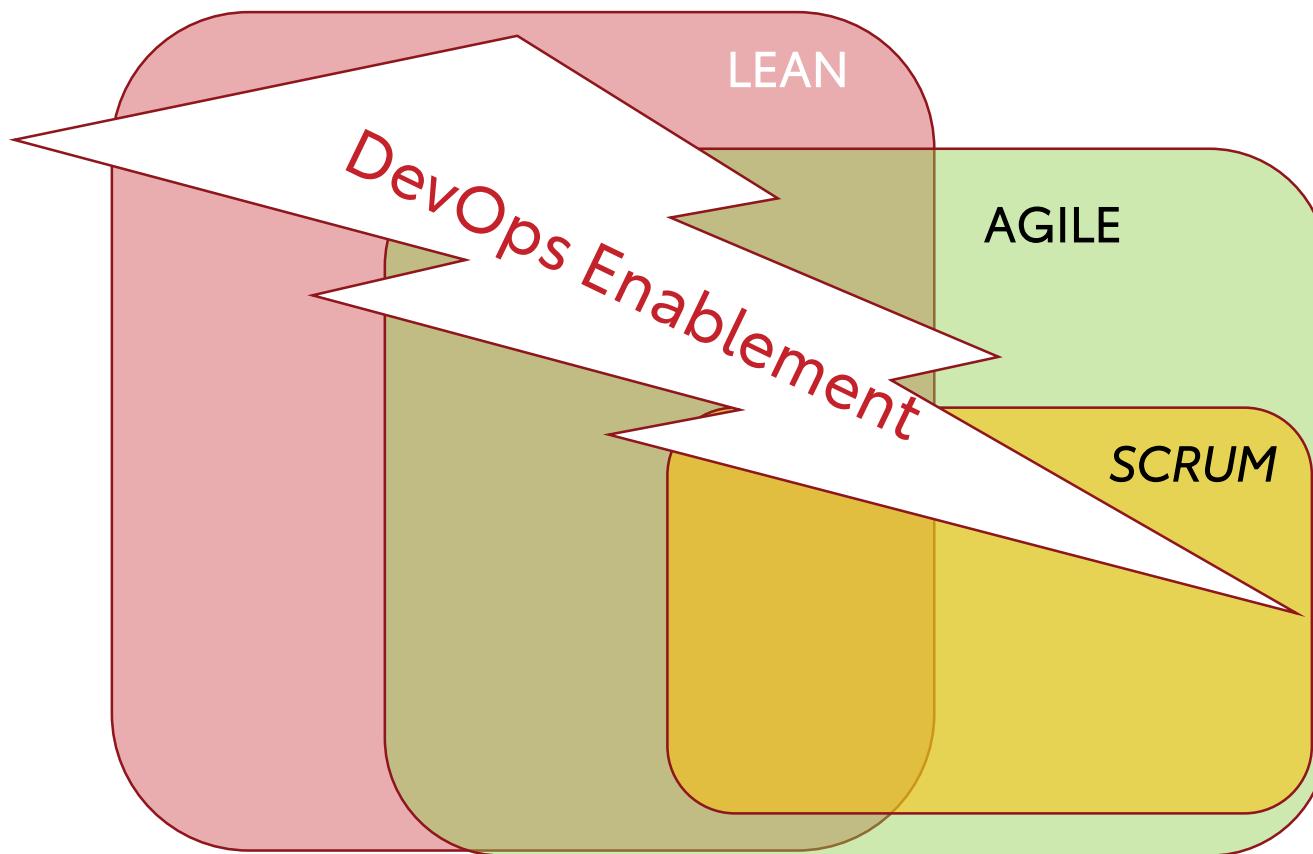
+

## DevOps

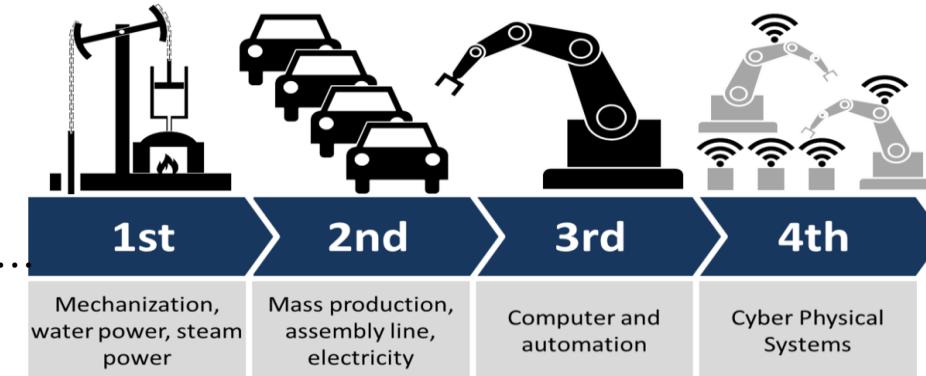


# Lean / Agile Q&A

## DevOps... is it Lean or Agile?



Scaling...



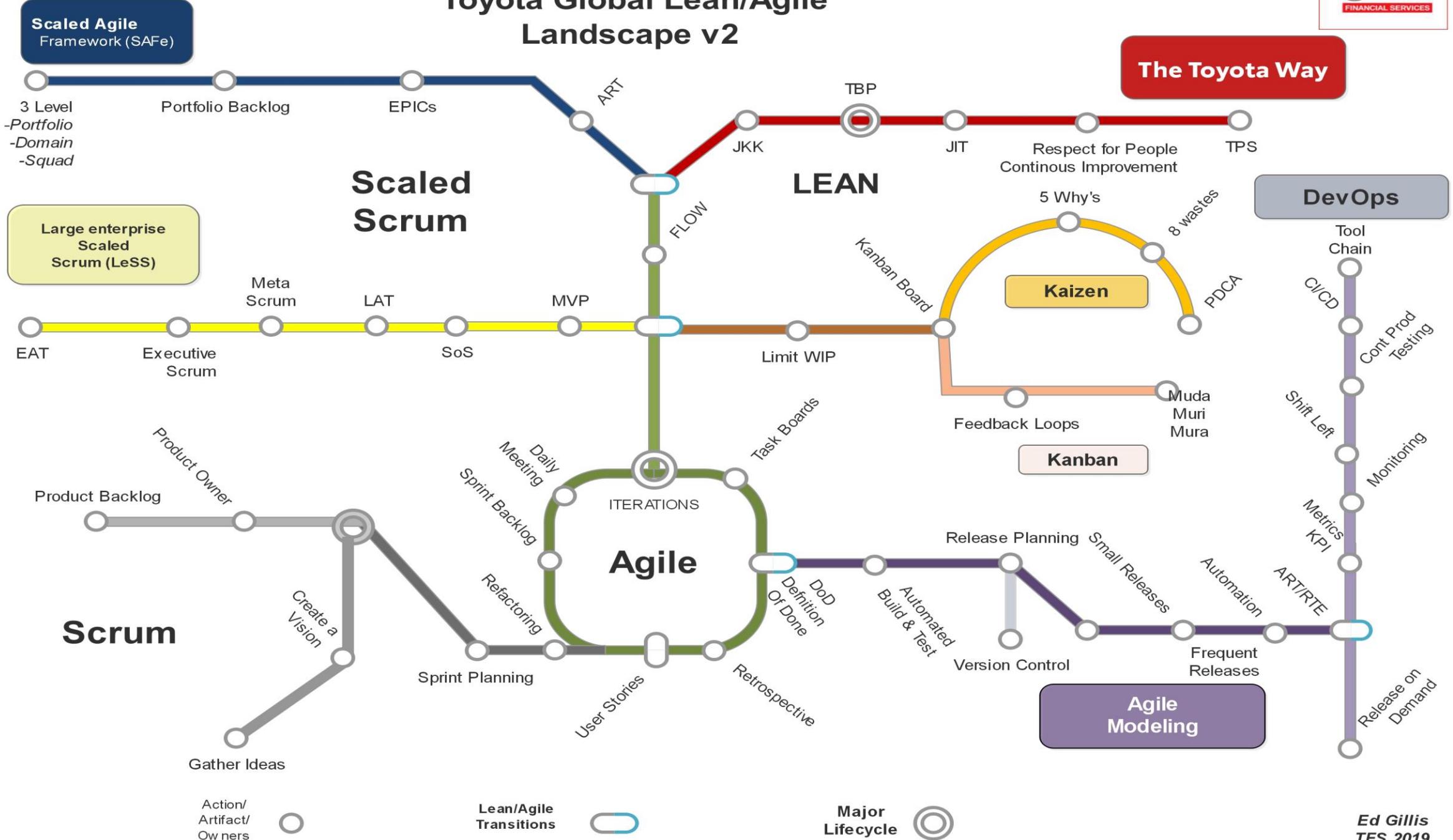
DOMAINS



TFS Scrum  
Software  
Scaling  
Methods

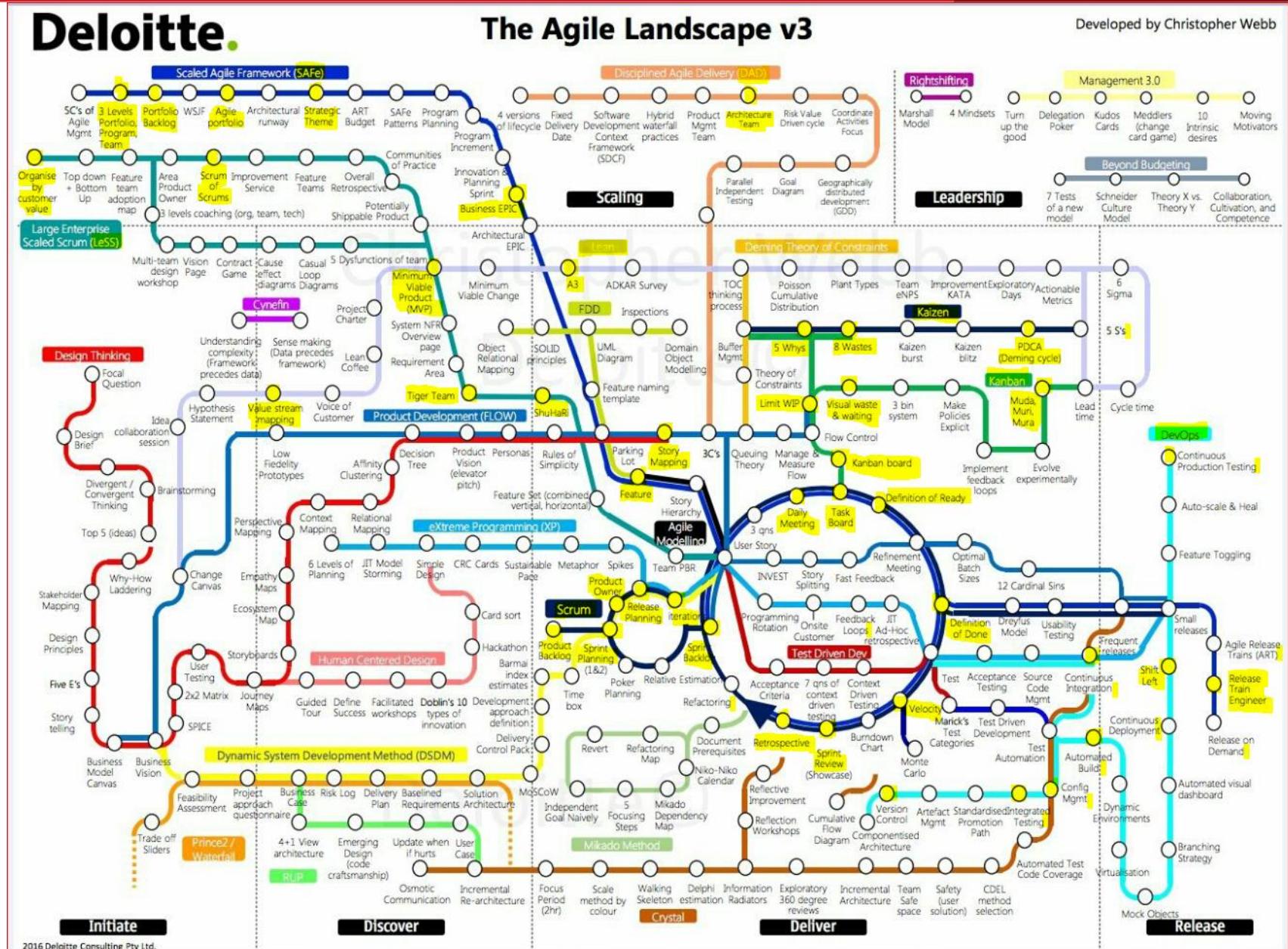
Meta  
SOS  
Exec  
LAT/EAT

# Toyota Global Lean/Agile Landscape v2



# Lean / Agile Landscape

# IDS-Agile mapping



## Toyota Lean/Agile Playbook v2



PDF File

# DEVOPS Engineering

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**DevOps Thinking  
-New Concepts-**

# DevOps Workshop

DevOps as  
a mindset for  
automation

## HANDS SURVEY!



I understand how Lean FLOW affects my daily work!

I understand how a Agile MINDSET affects my daily work!

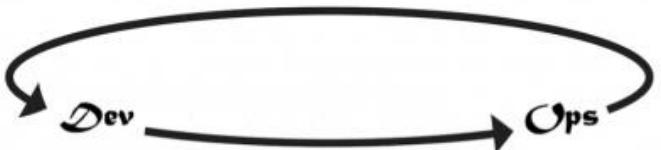
I understand how the 3 Ways affects my daily work!

I understand how my daily work can be automated!



# DevOps is a NEW way of *thinking* for TFS & ABC Factories

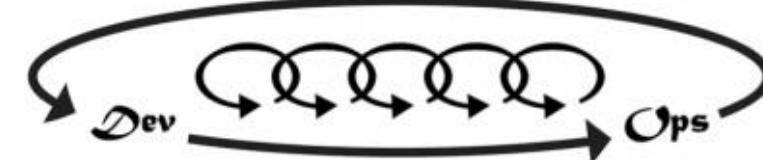
The Second Way:  
Amplify Feedback Loops



The First Way:  
Systems Thinking



The Third Way:  
Culture Of Continual Experimentation And Learning



# The 3 Ways Discussion Prompts!

# Lean/Agile Playbook-

**Vision Provide high value just in time to our customers with quality.**

Our strategy focuses on **people, process, and technology:**

## People

- Shift mindset to deliver high value Product Increments rather than large indivisible projects
- Build stable Teams to support value streams
- Increase multi skill capability of cross functional Teams
- Uplift deep business understanding and technical skills

## Process

- Kaizen: prioritization, delivery, resolution and escalation of impediments Technology
- Uplift existing and implement new products and services that are modern with scalability, automation, and incremental delivery

## Technology

- Uplift existing and implement new products and services that are modern with scalability, automation, and incremental delivery

# A new competitive way of thinking

Toyota's **agile mindset** is described through existing Toyota fundamentals of:

- Customer First (Okyakusama daiichi)
- Leveling (Heijunka)
- One Piece Flow (Lean)
- Visualization (Mieruka)
- Automation with human judgement (Jidoka)
- Teamwork and people development (Hitozukuri)
- Just in time (JIT)
- Continuous improvement of process and product (kaizen / PDCA )

DevOps is Lean/Agile with speed and quality thru relentless automation...

# Trouble with Analytical Thinking

Analysis is studying of parts looking for a solution

- Challenge is with synthesis back into a whole at the end
- Process of analysis is HOW things work, not why

Systems with both how & 'why' questions cannot be answered with just analysis

- Understanding a whole is more than the sum of its parts
- Problems with analysis cannot address critical questions about "systems"

# DEVOPS Engineering



Change of Age - <https://www.youtube.com/watch?v=IJxWoZJAD8k>

<https://www.youtube.com/watch?v=UdBiXbuD1h4>

<https://www.youtube.com/watch?v=MBrEJjT-dWU&t=1s>

# How do I "think" differently...?

As a Toyota Family Member I would like to advance my DevOps understanding of 'systems thinking' so that I can support my growth of Lean & Agile at Toyota.

## Acceptance Criteria -

- **Know:** observe, read, or train to obtain basic skills of Lean/Agile plus DevOps!
- **Understand:** put the learning into practice (relentless automation)
- **Do:** build expertise through repetition
- **Coach:** Develop experts that want to become a coach (ABC Coaches Corner)

## How to deliver-

- **Know:** Genchi Genbutsu, read the Toyota Global Agile Book, attend Lean/Agile training
- **Understand:** with the help of a ABC coach put learning into practice
- **Do:** continuous repetition of learnings through practice, feedback, and coaching
- **Coach:** go back to beginner's mind, make complex things simple for trainee to understand and assimilate

# No such things as problems



Never had a headache?

Corporations always do brain surgery

90% of problems are solved thru interaction

# DEVOPS Engineering

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## Factory Work Flow -New Content-

# DevOps Workshop

Automation  
Everywhere

## HANDS SURVEY!



I understand how Lean FLOW can be automated!

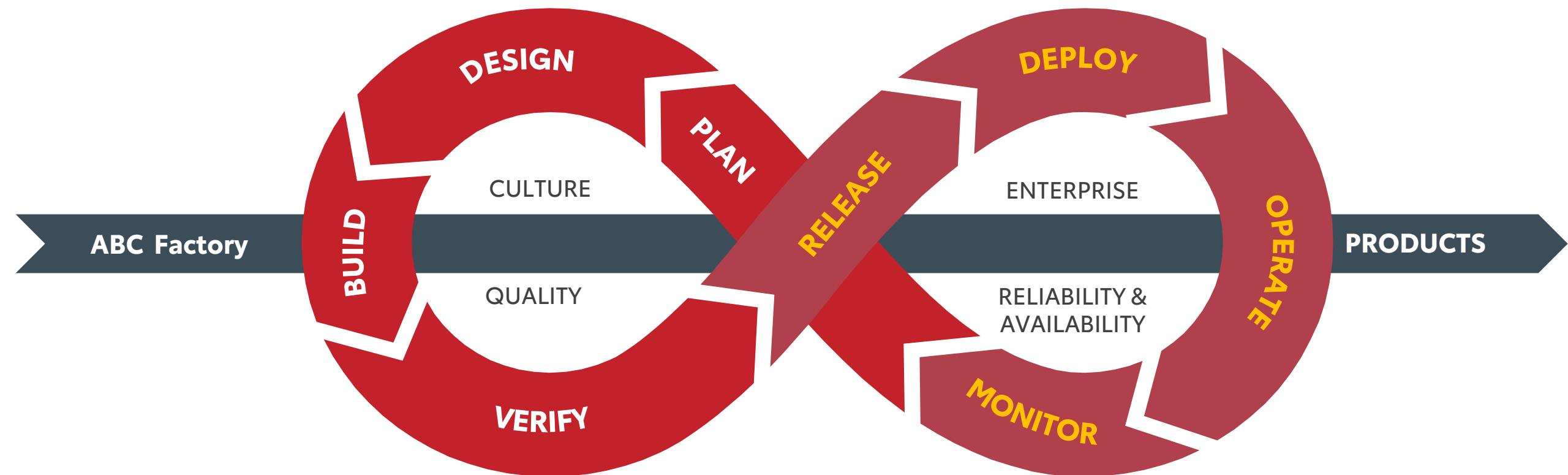
I understand how SYSTEMS THINKING aids automation!

I KNOW one thing I can automate today in my work!

I know several things that I WISH I could automate!

# The Infinity Loop Workflow

(THE DevOps Factory Feedback Process)

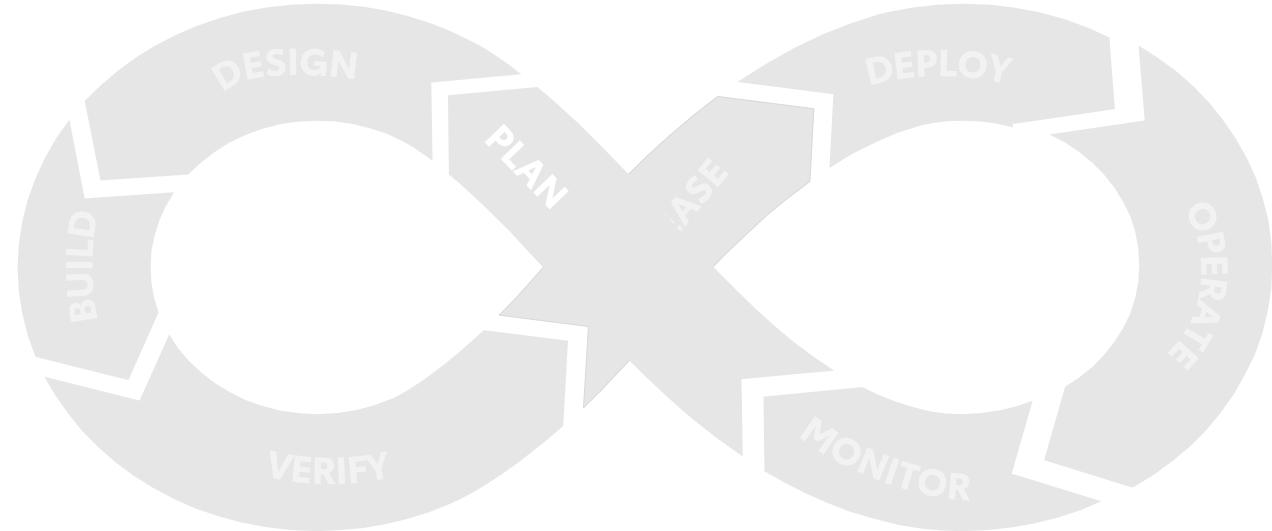


# The DevOps as a Process – Factory Working loops

## The 'Infinity Loop' Process

The work a factory does daily. How and why.

**Phases:** Factory ownership of the work and processes



## How this effects ABC Factory Work?

- **Analysis** of production feedback and metrics
- Refinement of user stories
- Prioritization of **work**
- Grouping of work into sprints aligning to release schedule and projected velocity
- Planning with a "Systems Mindset"
- Tracking of work visually
- **Automation** with Tools, Scripting & Jobs
- Security
- **Testing**
- Deploy/Release!
- ERA feedback (NFR & Technical Debt)

# DevOps <Plan/>

Definition and Tools



# Factory Planning

**Phase Definition:** Determine what needs to be done, in what order, aligning to business and operational priorities.

**Phase Prerequisites:** Backlog of stories, Production metrics and feedback, business metrics, infrastructure changes / updates

## What Happens in Phase:

- Analysis of production feedback and metrics
- Grooming of user stories
- Prioritization of work
- Grouping of work into sprints aligning to release schedule and projected velocity
- Tracking of work visually

## Phase Output:

- Story grooming complete
- Prioritized backlog
- Stories grouped into sprints

CANDIDATE TOOLS	
Issue Management	JIRA
Collaboration	  

No beginning...?

**Phase Actors:** Release Master, Enablers, Domain Owner, Factory Owner

# Plan Details

What	Why
Collaboration across teams.	Ensures everyone is on same page and working to achieve aligned goals.
Understanding business needs that aligns with the business	Reduce re-work or missed opportunities due to missed or misunderstood requirements.  Ensure delivery of a product that meets the business needs.
Estimation for everyone involved (DEV, QA, InfoSec, etc...).	Ensures all team resources have a say during estimation and forecasting.  Improves success rate of meeting sprint goals
Splitting backlog into individual units of work.	Work is broken down into manageable chunks that can be distributed and estimated accurately.  Ability to track backlog items more granularly to resources and identify roadblocks for each unit of work.

# DevOps <Design/>

Definition and Tools



# Design Details

**Phase Definition:** Drawings and other presentation documents are created to crystallize the design concept and describe it in terms of hardware, software, user experience and integration requirements.

**Phase Prerequisites:** Groomed user stories, clear & complete user stories, prioritized user stories

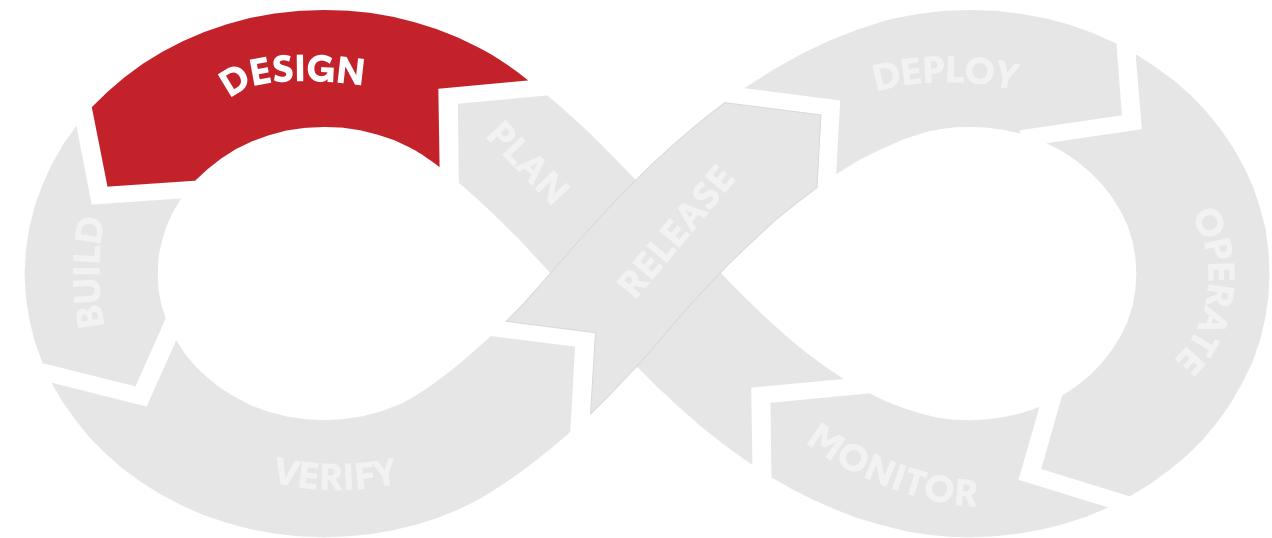
## What Happens in Phase:

- Develop architecture diagrams
- Applying design best practices
- Creating data dictionaries
- Creating application roadmap

## Phase Output:

- Roadmap, Non-Functional Requirement (NFR), Design Review, Interface Design Document (IDD)

CANDIDATE TOOLS	
Architecture Design	
Artifact Design	



**Phase Actors:** Enablers, The Squad

# Design Details

What	Why
Factor in RAS (Reliability, Availability, Scalability)	Ensures systems are designed with maximum uptime, availability and redundancy
Modular code with low coupling/high cohesion	Reduces overall time to market; “Legos vs. SuperGlue”
A holistic Roadmap for all apps – include upstream/downstream	Provides for big-picture business capabilities
Include “rainy-day” processing (the “Else” branch)	Reduced errors/defects and improved data quality
Documented Non-functional Requirements	Ensures reliability, availability and scalability
Include and code for performance metrics	Ensures monitorability
Avoid adding tech debt	Reduces muda (rework)
Consider QA	Reduced errors/defects and improved data quality
Required Design Review Milestone	Ensures reliability, availability , scalability and ownership
WORM (Write Once, Reuse Many)	Reduces overall time to market; “Legos vs. SuperGlue”
Required Holistic Solution Design Diagram	Clear, single-lens picture of what runs where

# DevOps <Build/>

Definition and Tools



# Build Details

**Phase Definition:** When source code files are converted into executable code.

**Phase Prerequisites:** Prioritized backlog, assigned tasks and iteration of daily work, clear acceptance criteria

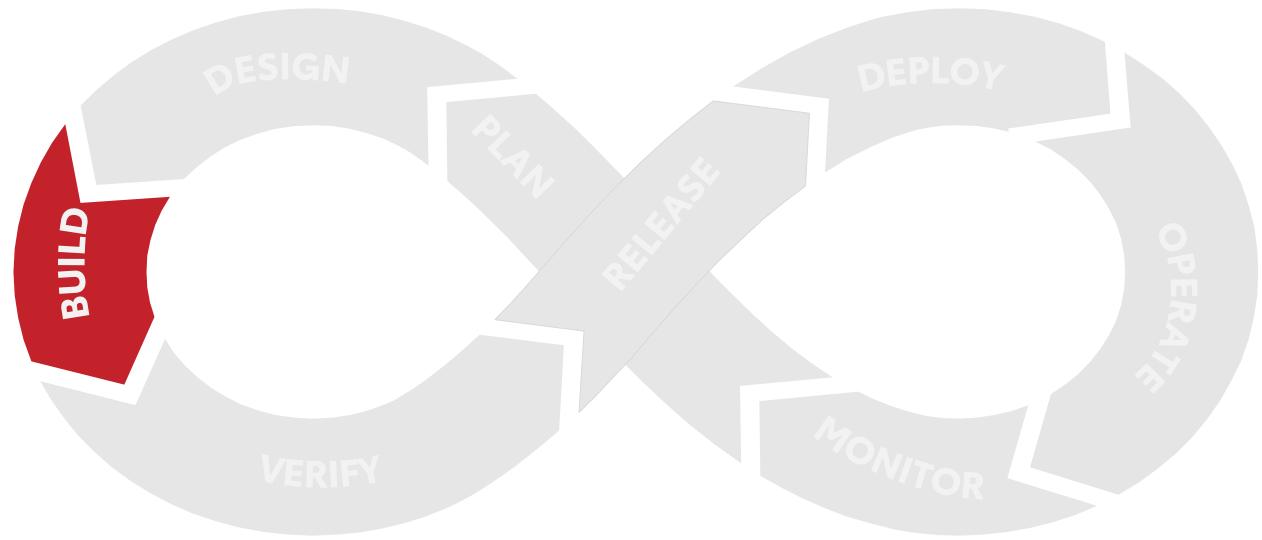
BUILD
Integrated Development IDE
Software Code Versioning & Management
Build Automation & Management
Code Analysis & Quality Management
Continuous Integration
DevOps Collaboration

## What Happens in Phase:

- Coding
- Configuration
- Unit Testing
- Source code management
- Build Verification

## Phase Output:

- Ready to test functionality
- Check-in source code
- Technical documentation



**Phase Actors:** SCRUM Master, Release Master, The Squad

# Build Details

What	Why
Fully Automate the Build process;	Ensures repeatability and the reproducibility of the build process.  Eliminates risk of human error in the build process.
Use secure and dedicated build servers;	Eliminates unauthorized access to make changes in the server configuration.  Reduces build time because the build is not fighting other processes and application for server resources
Test early and often	Finds issues early and provides more time to properly fix the issue.  Increases confidence in product and process consistency.

# DevOps as a Process – Ops & ERA feedback

## The Infinity Loop Ops & ERA feedback!

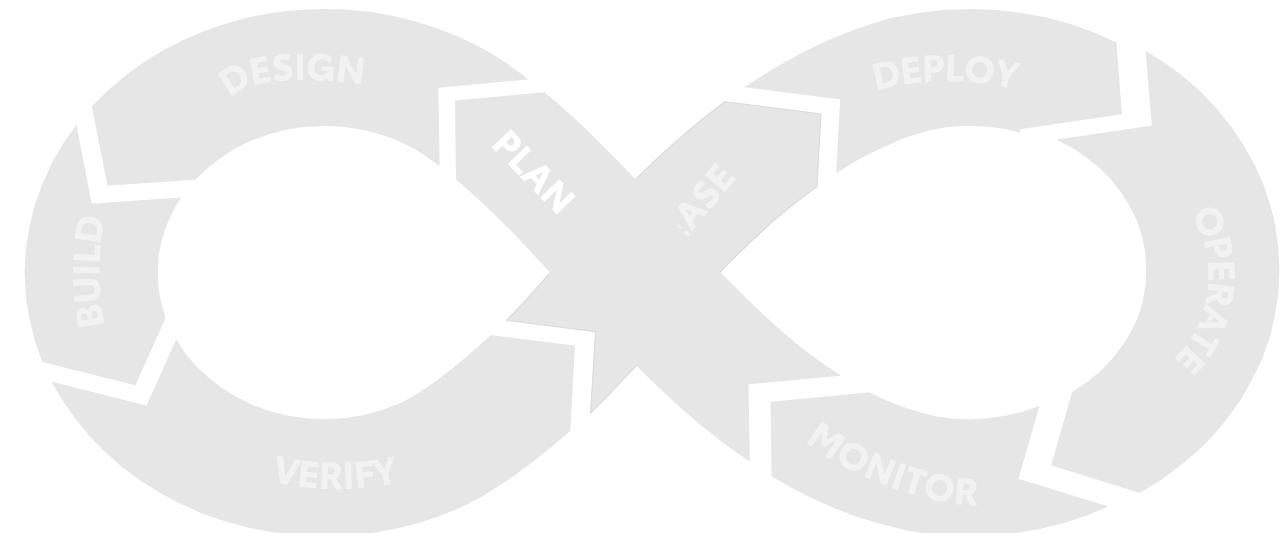
**Ops & ERA Details shared during DevOps Onboarding!**

**Leverages existing ITSM Management & Ops Processes**

**Collaborate with FRE's & DOC's**

**Add NFR and Tech Debt to all Sprints!**

**Speed, Quality and Security is baked in at all levels...**





CREATING VALUE BY ENABLING FREEDOM OF MOVEMENT

**BREAK**  
07:00

# DEVOPS Engineering

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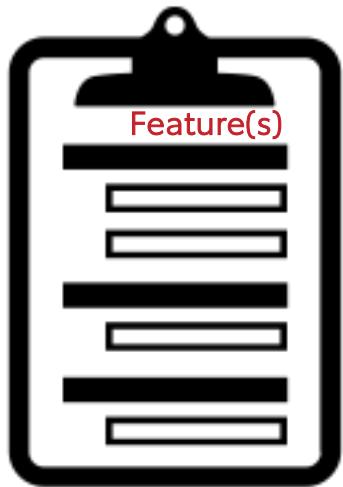


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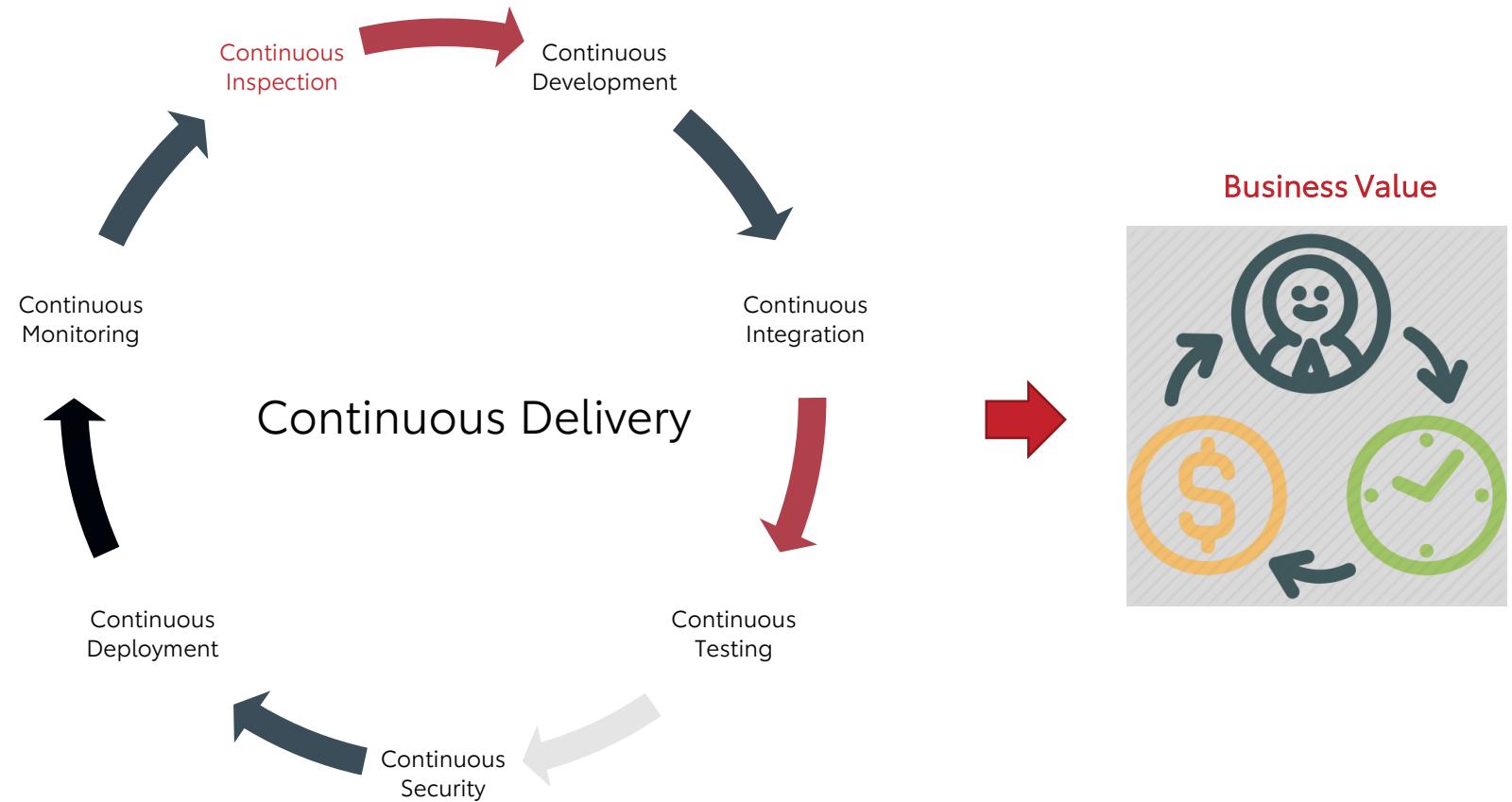
**Tool Chain & Pipe Line  
-Technical Details-**

# DevOps is Continuous Continuum

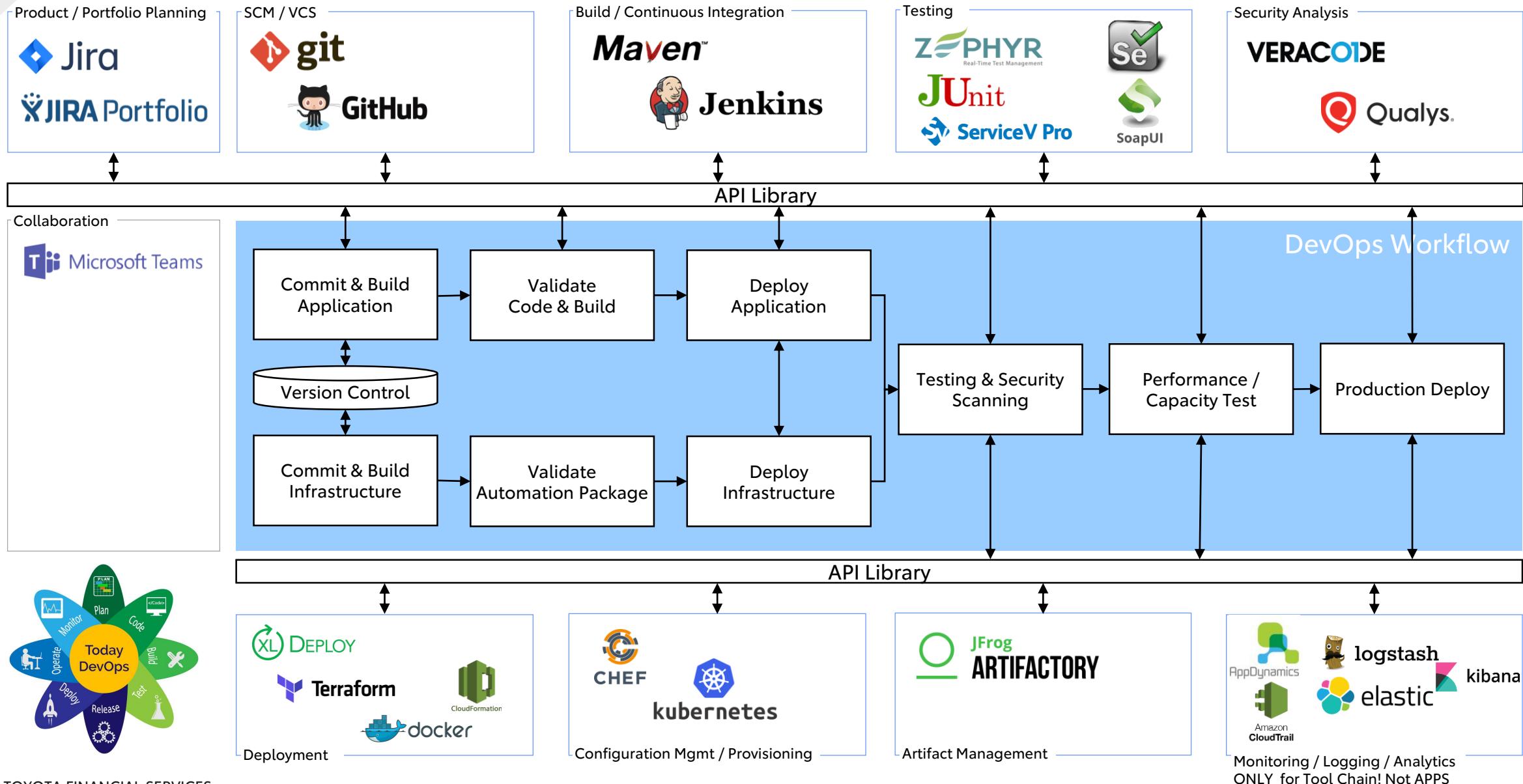
Factory Backlog  
NFR's  
Tech Debt



Discuss



# DevOps...CI/CD Pipeline



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## Factory Next Steps -Onboarding-

# Factory NEXT STEPS



**Participate as a Trailblazer Factory!**

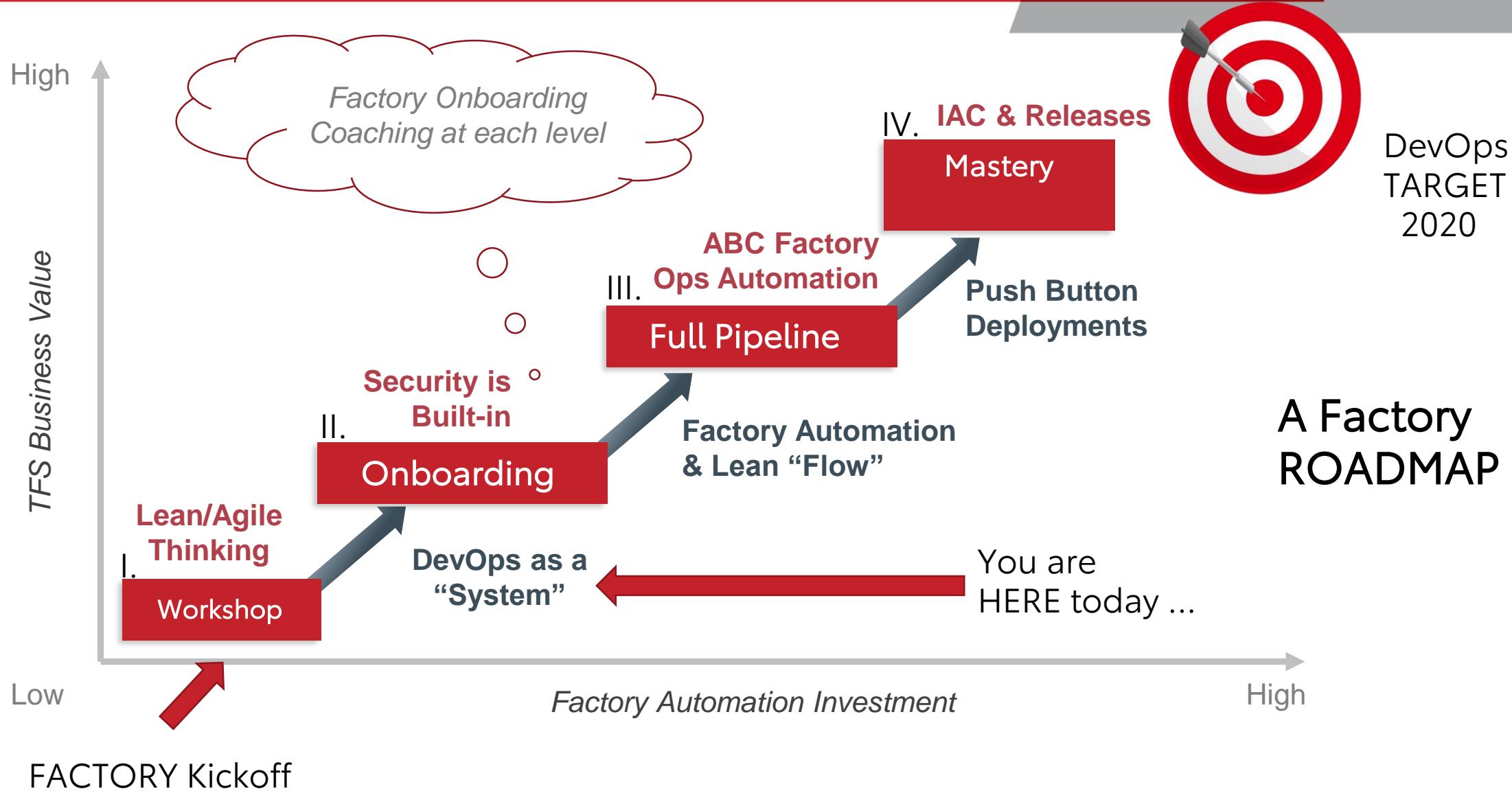
Lots of opportunities for new automation & “Systems Thinking”

Factories see net GAINS in velocity from Automation efforts!

“We” DevOps will help teams **apply** tool chain & pipeline work

Factories own the effort and “mindset” as well as delivery timelines!

# DevOps Learning Program Plan



# Key Training Takeaway (Again...)

## ***The Three Ways...***

- ✓ The first way- Think of everything as a **System**.  
*As such, **any system** can be **automated***
- ✓ The second way- **Amplify** feedback loops..  
*Create right to left **feedback loops***
- ✓ The Third Way- Our **Toyota Culture** fosters two things.  
*Continual **experimentation** with risks. Second, learning from **failures***

**...Keep these Three Ways of working in mind after today**

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## How we do Onboarding



## Kickoff Workshop

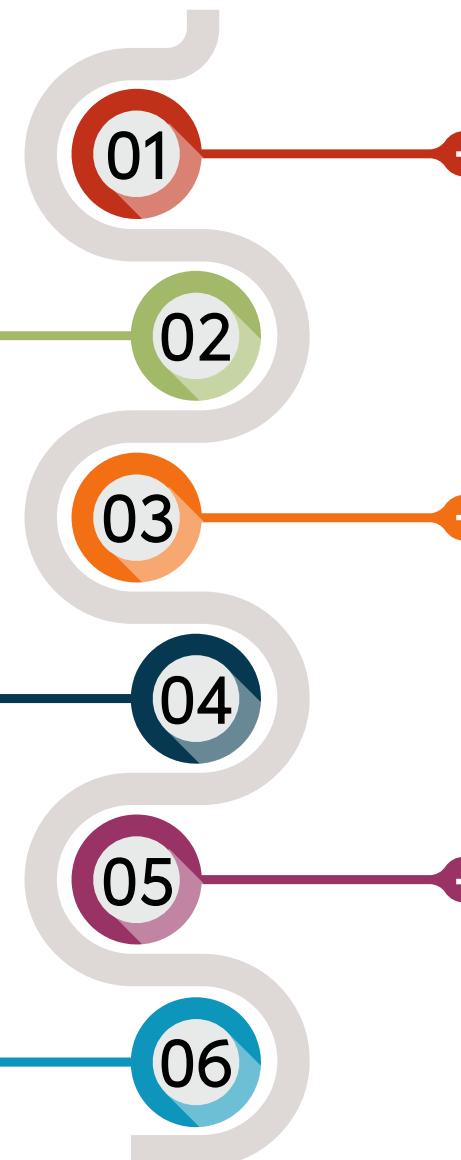
This meeting will gather additional details needed after pre-kickoff review as well as identify Roles/Responsibilities and finalize timeline.

## Build & Deploy

Complete configuration of auto test and auto build. Including Security scanning.

## Follow Up

2 and 4 week follow-ups will be scheduled to ensure the teams are operating optimally.



### Pre-Kickoff

Data will be gathered about the application(s) in full detail. Early decisions on tooling and approach should be made.

### Configure & Integrate

Sessions will be held between DevOps engineering and the application teams to configure and setup environments while also, starting to build out integration pipeline.

### Go Live

Once automation has been completed we will identify a go live date and support the team through the launch.

# Overall Approach

- Each engagement will follow a consistent and repeatable process with an assigned Single point of contact. (SPOC)
- The team will have a standard checklist for each task needed throughout the process.
- Onboarding 'Stages' will be tracked as "% of completion" as follows..
  - Source Code Repository
  - Scripted Build
  - Test Automation
  - Security Scanning
  - Auto Code Deploy
  - Infra As Code (IAC)



## Early Adopters

### Prescriptive Build

A prescriptive yet Complete configuration of auto test and auto build. Including Security scanning.

### Close Monitoring

9's follow-ups will be scheduled to ensure the teams are operating optimally.

### Incubator

Early Access / Self Services

### Self Service!

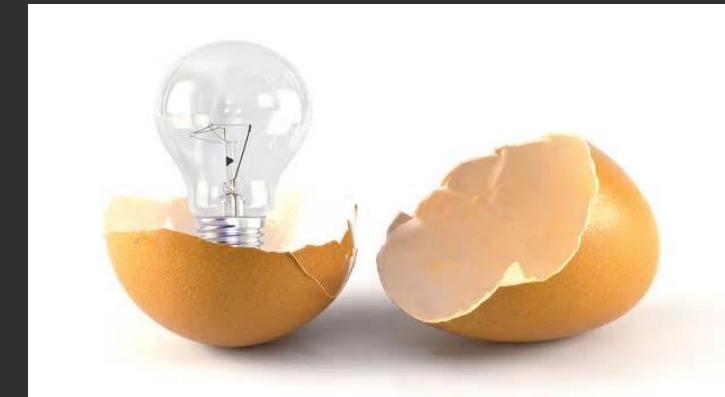
Teams are given access, tools and KB or materials for self training. Resource repositories as well as access to same data as DevOps. Teams then consume or customize with support but at their own pace... with no delays

### Rapid Enablement

Once automation has been consumed the teams set their OWN timelines for Sprints and pipeline/toolchain automation opportunities

# Trailblazer Program

- Early adopter teams can choose the Incubator program for RAPID onboarding
- FACTORY **teams own** self-service process with close supervision & monitoring by DevOps!
- Teams may accelerate pace of adopting toolchain & pipeline or fall back to Onboarding program dates as default



# Pre-Kickoff Activities

- The onboarding questionnaire will be provided to The Factory 2-4 weeks prior to onboarding kickoff.
- This questionnaire will gather needed details about the application and its architecture as well as details around any components of the pipeline already in use.
- Data for the application will be pre-populated wherever possible using data from APM and CMDB.

**TFS DIGITAL** factory

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Pipeline Onboarding Questionnaire

1	Please provide an overview of your application.	
2	Is your application stack on-prem, private cloud, public cloud?	
3	Please list out the technologies used for your application stack(s)	
4	Please provide any documentation or diagrams that may assist in this onboarding process	
1	Do you currently use any source code repository or version control?  if yes	
2	What tool do you use for source code repository and version control?	
3	Where is that tool located? (OnPrem, Private Cloud, AWS, etc.)	
4	Number of code repositories	
5	Where do you track Features and Bugs?	
6	Describe your branching strategy.	
1	Do you currently have a scripted build process? (Continuous Integration Process)  if yes	
2	What tool do you use for scripted build?	
3	Where is that tool located? (OnPrem, Private Cloud, AWS, etc.)	
1	Do you currently use a tool to conduct unit testing?  if yes	
2	What tool do you use for unit testing?	
3	Where is that tool located? (OnPrem, Private Cloud, AWS, etc.)	
1	Do you currently use a tool to conduct QA testing?	



Microsoft Excel  
Worksheet

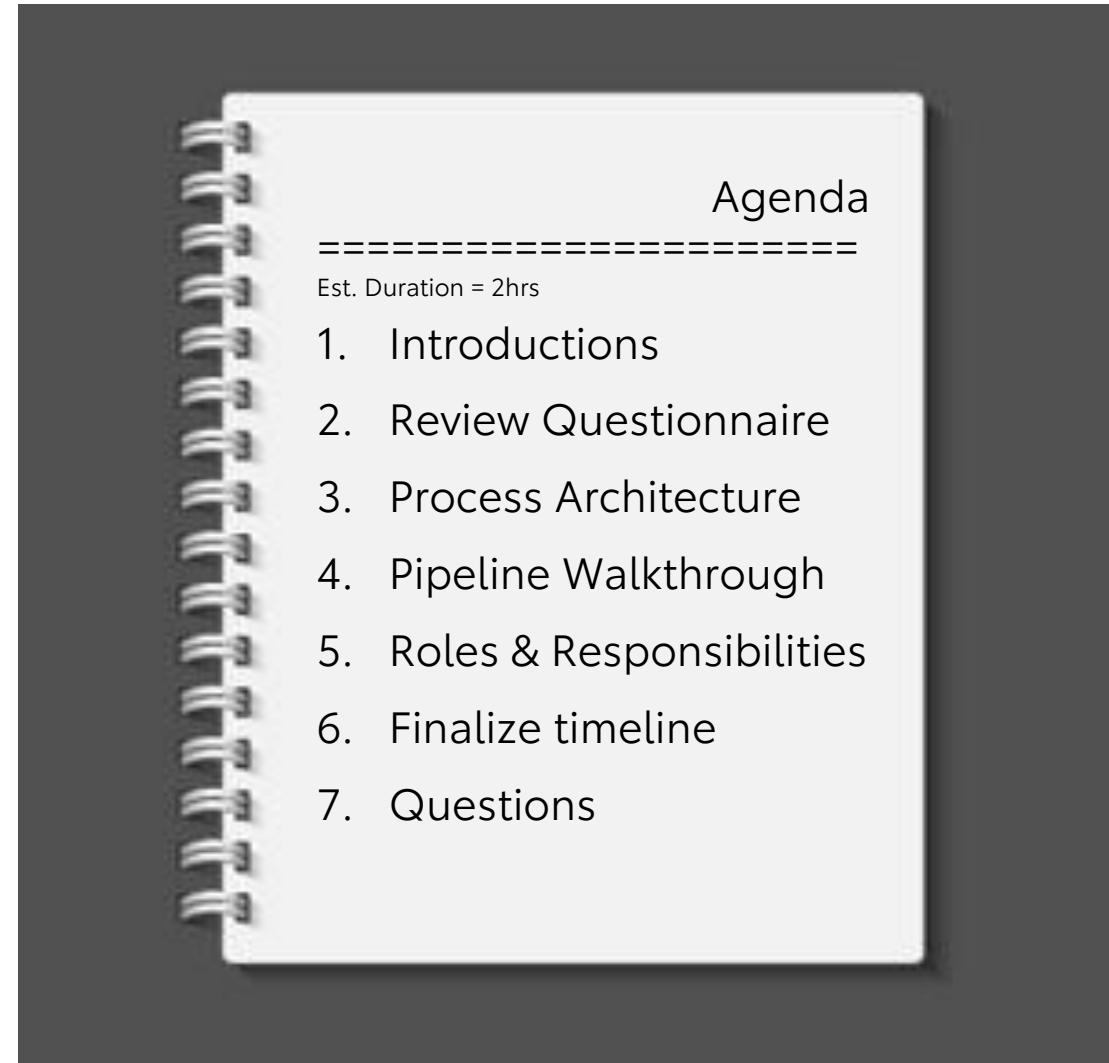
# Pipeline Onboarding Kickoff

During the workshop, we will clarify any questions regarding the pre-kickoff discovery.

We will communicate the recommended tool set and suggested use and answer any questions the team may have.

We will identify roles and responsibilities for both the DevOps Engineering team as well as The Factory.

The factory should have a good idea of time and effort involved on their end as we will finalize the timeline.



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## Factory Commitment

# Next Steps Onboarding

DevOps Onboarding Process

Questionnaire Review

Contacts

Prep activity



# DevOps Workshop

*Understanding*

## Another HANDS SURVEY!



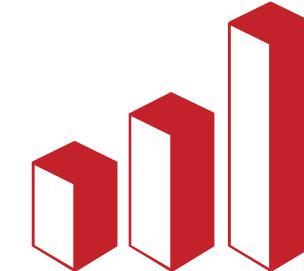
I now understand how a DevOps tool chain AIDS my job!

I understand how pipeline **automation** will aid my work!

I understand speed/velocity is essential for factory success!

I am ready for DevOps **onboarding** to begin!

# Onboarding Questionnaire discussions



# Your Key Factory Takeaways

From this class you should-

1. **Systems Thinking.** Understand what **DevOps** means and how to apply tool chain automation to your daily work.
2. **SPEED.** Leverage Boot-up learnings and apply **DevOps Lean/Agile mindsets** for opportunities for factory automation.
3. **FEEDBACK.** Feedback loops provide **continual** experimentation & learning.

Keep in mind and think on these three key takeaways...

# The 9's

Factory support 9 weeks, 9 months & 9 months later

# DevOps Workshop

FACTORY  
COMMITMENT!

## Final HANDS SURVEY!



I commit my time in sprints to work more on DevOps!

I commit I will apply automation wherever possible!

I commit my time & my factories time to further automation efforts!

# The DevOps Team – Who to call

**DevOps** is a mindset, not just tools and automation-

## **Our Leaders-**

- Aparna K.– DevOps Scrum Master
- Cedric Lee- DevOps Automation
- Coty Kennedy- DevOps Onboarding
- David Paine – Strategy & Vision
- Ed Gillis- DevOps Factory Enablement
- Jeff Nadeau- DevOps Testing



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# **Closing**

**Leave Survey Forms!**

- Gather your materials & belongings**
- Look for Email with course contents & survey**
- Next Step will be DevOps ONBOARDING!**



# **End of Workshop**

**Start your  
Impossible!**



# DEVOPS Engineering

