DevOps and TPS

For success your Business

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Agenda

- Introduction

- Enterprise DevOps, What is aiming for?

- Building IT service supply chain

- Success factors of Enterprise DevOps

- Useful methodologies and practices from TPS for building Enterprise DevOps and its success

Agile Principles behind the Agile Manifesto

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
  - ▪
  - ▪
  - ▪

Depends on Deployment and Operation

Enterprise DevOps, What is aiming for?
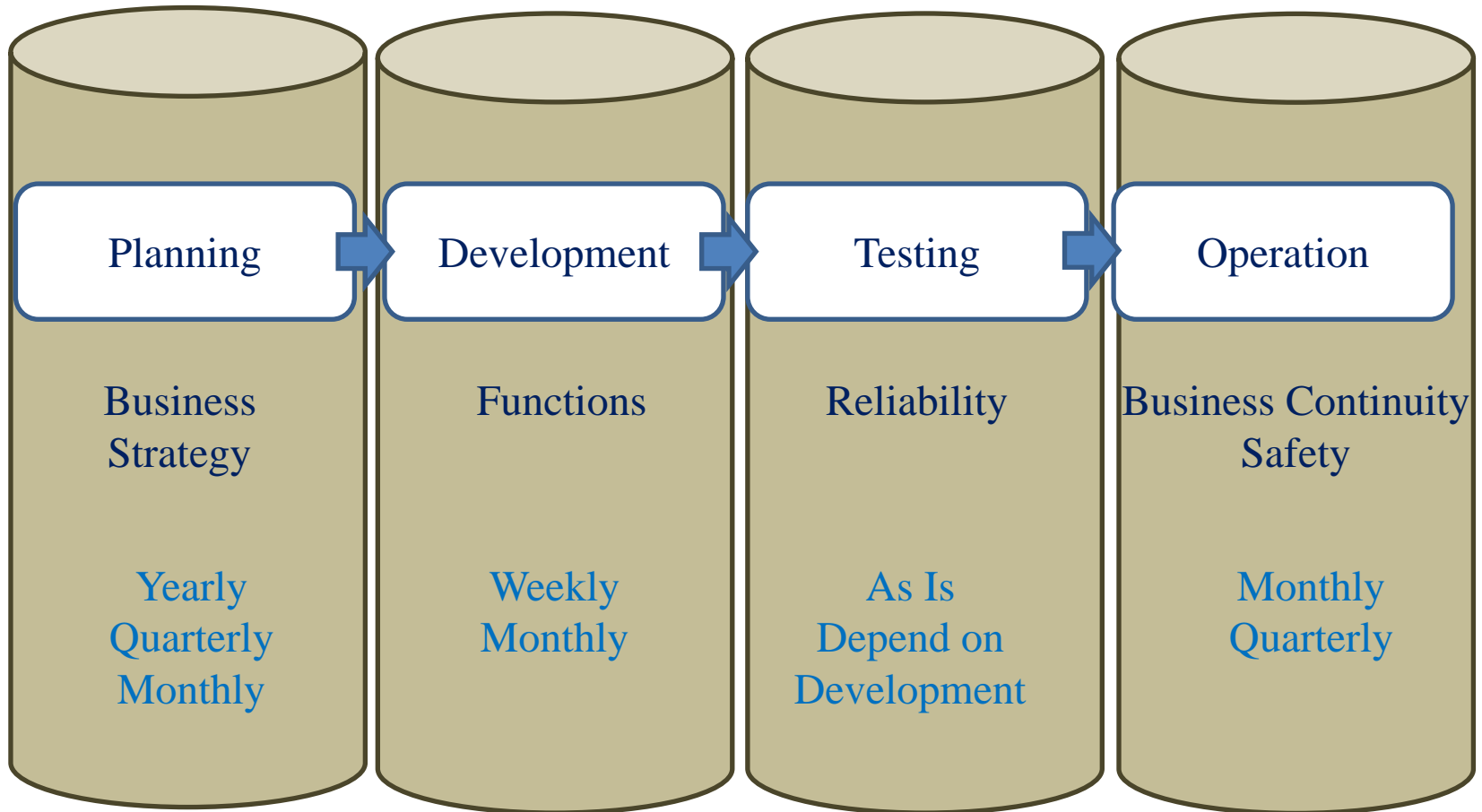
- Business support
  - Speed
  - Safety and Security
  - Business continuity
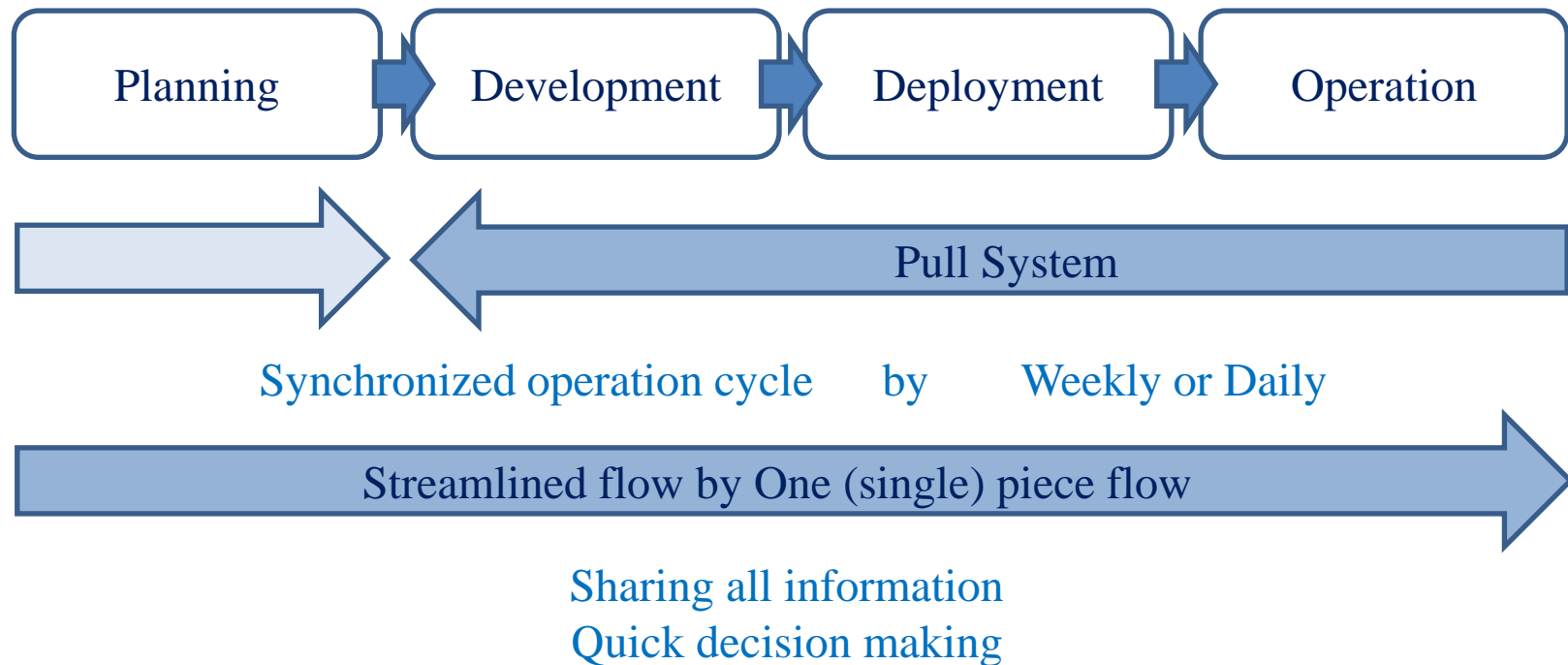 - Creates business advantages
  - Adaptive

- Final goal　　Increase business outcome
  - Gross sales
  - Profit
  - Turn-overs

Current Process - There are many Silos

Planning	Development	Testing	Operation
Business Strategy	Functions	Reliability	Business Continuity Safety
Yearly Quarterly Monthly	Weekly Monthly	As Is Depend on Development	Monthly Quarterly

How can we combine processes as single streamlined flow?

Planning	Development	Deployment	Operation

Pull System

Synchronized operation cycle   by   Weekly or Daily

Streamlined flow by One (single) piece flow

Sharing all information
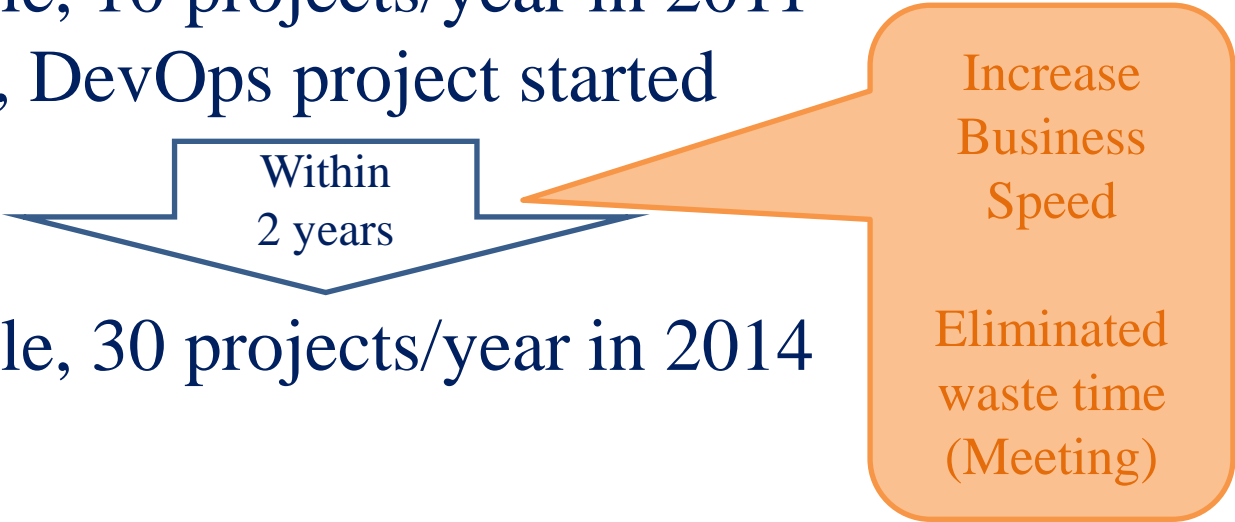Quick decision making

A DevOps Project

Providing conversion services for corporate Web-site form existing PC based to Smart Phone (iPhone and Android)

70 people, 10 projects/year in 2011
In 2012, DevOps project started

Within 2 years

70 people, 30 projects/year in 2014

Increase Business Speed

Eliminated waste time (Meeting)

Obeya (system) in DevOps Project

Value Stream Map

One piece flow streamlined process   Synchronized every processes by weekly

Planning	Sales & marketing	Admi.	Design	Development	Implementation	Operation	Call Center

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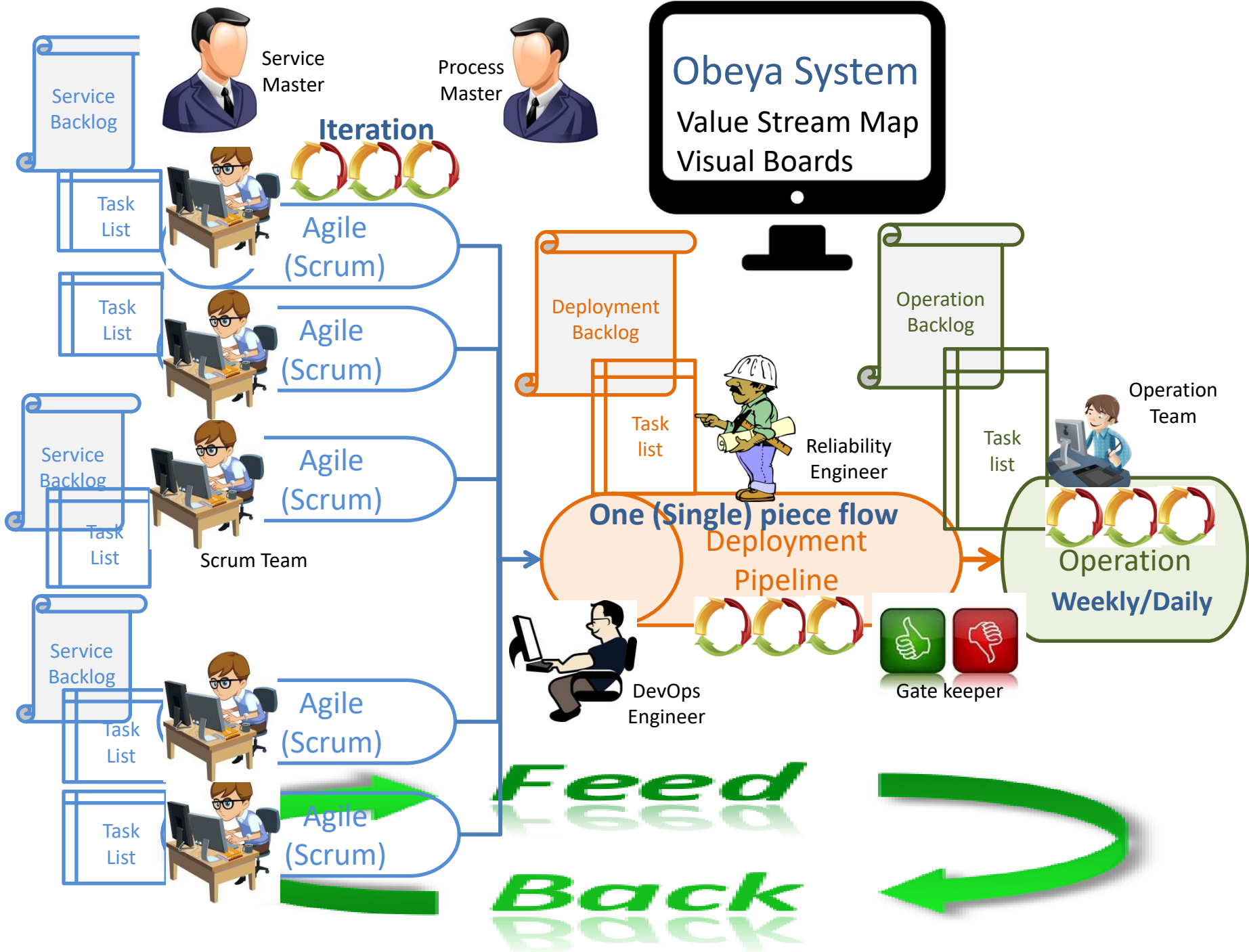
Characteristics of Enterprise DevOps

- Not required frequent release, but necessary quick deployment.

- Multiple project and Multiple development teams with parallel operation.

- Unified operation team and Single deployment pipeline.

- Reliable operation and keeping business continuity.

IT Services Supply Chain

Building IT services supply chain

- Deliver IT services with JIT (Just In Time) to Users.
  - Pull system.
  - Streamline flow.
  - Collaborate different processes and people.
- Manage entire process and quick decision making
  - Obeya system
- Always work correctly
  - One piece flow
  - JKK

Service Backlog

Task List

Service Master

Process Master

Iteration

Obeya System
Value Stream Map
Visual Boards

Agile (Scrum)

Task List

Agile (Scrum)

Deployment Backlog

Operation Backlog

Service Backlog

Task List

Agile (Scrum)

Scrum Team

Task list

Reliability Engineer

Task list

Operation Team

One (Single) piece flow
Deployment Pipeline

Operation
Weekly/Daily

Service Backlog

Task List

Agile (Scrum)

DevOps Engineer

Gate keeper

Agile (Scrum)

Task List

Feed

Back

Success factors of Enterprise DevOps

a. How DevOps team involve in business plan
b. Disciplined Agile team with sustainable velocity
c. Automated single deployment pipeline
d. Business continuity focused operation and synchronize with Agile team
e. Think Optimum in whole and streamlined flow process

And Fundamental factor
Change behavior of your people

CALMS Model

John Willis, Damon Edwards, and Jez Humble advocated at Devopsdays 2010, Mountain view, CA

C	Culture:	Change behavior
A	Automation:	Automatization with autonomy
L	Lean:	JIT and One piece flow
M	Measurement:	Business outcomes, JKK
S	Sharing:	All information and status, value and goal

TPS (TOYOTA Production System) and Agile.

Kent Beck explained in his book, "Extreme Programming Explained".
There is a strong similarity between many aspects of TPS and software development.

Jeff Sutherland mentioned in his book, "Scrum"
He would like to implement Chief Engineer system in TOYOTA into software development. So define the role of Product Owner and Scrum Master in Scrum.

TPS (TOYOTA Production System) and DevOps.

Jez Humble mentioned in his book, "Continuous Delivery"
Deployment pipeline must set single line to release and operate it with Single (One) piece flow.

Agile and DevOps affected from TPS.

Establishing new culture for success DevOps

DevOps factors (CALMS model)	TPS thoughts	TPS practices

Culture: Change behavior
- Customer first
- Kaizen mind (Continuous Improvement)
- Lean leadership

◆ 6 months Kaizen-Jyuku (Training program)
◆ Value stream for customer
◆ Asking Why 5 times, 5S
◆ Genchi Genbutsu (Go and See)
◆ Optimum in whole
◆ Watch process flow for keeping streamlined flow

Automation: Automatization with autonomic
Stop whole process when defect occurs ⟶

◆ Andon system
（This concept Imports to CI of Scrum)

Lean: JIT(Just In Time)

◆ One piece flow, (Pull system) JKK

Measurement: Business outcomes

Measurement standard for completion of work

◆ Increase Capital turn over
◆ KGI, KPI in Visual Board
◆ JKK

Sharing: Visualization
- Share value of work
- Share all of information
- Share reflection (Learn from failure) ⟶

◆ Visual Board, Task Board, Obeya system

（This concept imports to Retrospective of Scrum)

Useful TPS methodologies and practices

- Value stream Map

- One piece flow (Single piece flow)

- JKK

- Obeya

- TMS (Core behavior of TPS) as a template for changing behavior

Apply Lean concept for all of working areas
Framework for Changing Behavior of work
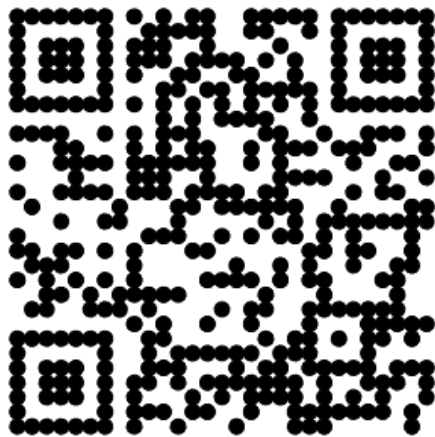TMS provides 6 months training program to change behavior as Kaizen-Jyuku

Thank You

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 DevOps 之父 Patrick Debois 与您相约

DevOpsDays 北京站 2017年3月18日

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http://2017-beijing.devopsdayschina.org/

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