

企业DevOps之旅

理念-实践-展望

刘征

- ▶ 博客：<http://martinliu.cn/>
- ▶ 热爱：开源、跑步、分享
- ▶ 曾经：CA、BMC、Citrix、Red Hat
- ▶ 从事：架构师、DevOps



议程

- ▶ DevOps 简史 - 理清思路
- ▶ DevOps 实践 - 抓住重点
- ▶ DevOps 落地 - 展望未来
- ▶ 问答





DEVOPS概念篇

理清思路



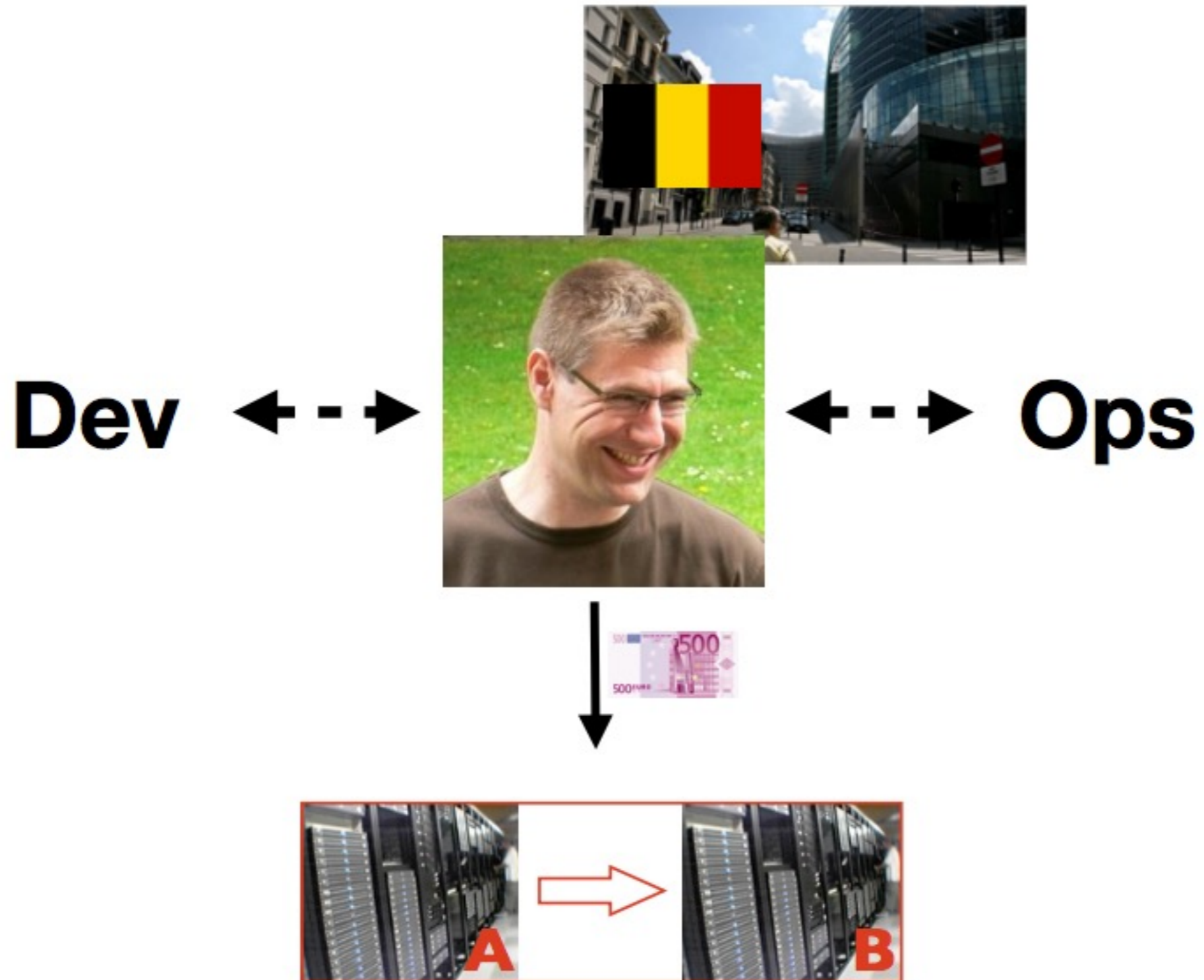
The History of DevOps

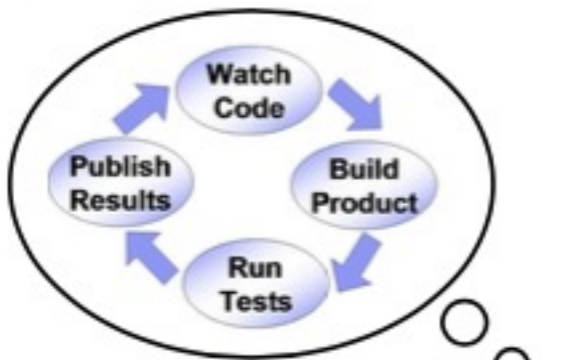
And what you need to do about it

Damon Edwards
Managing Partner
DTO Solutions, Inc.



2007





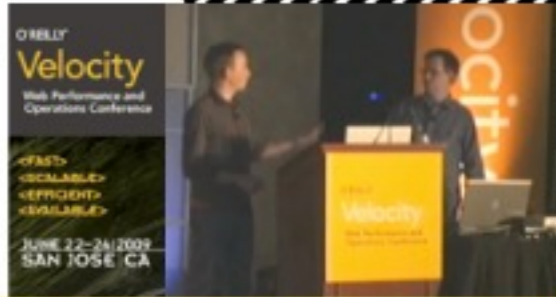
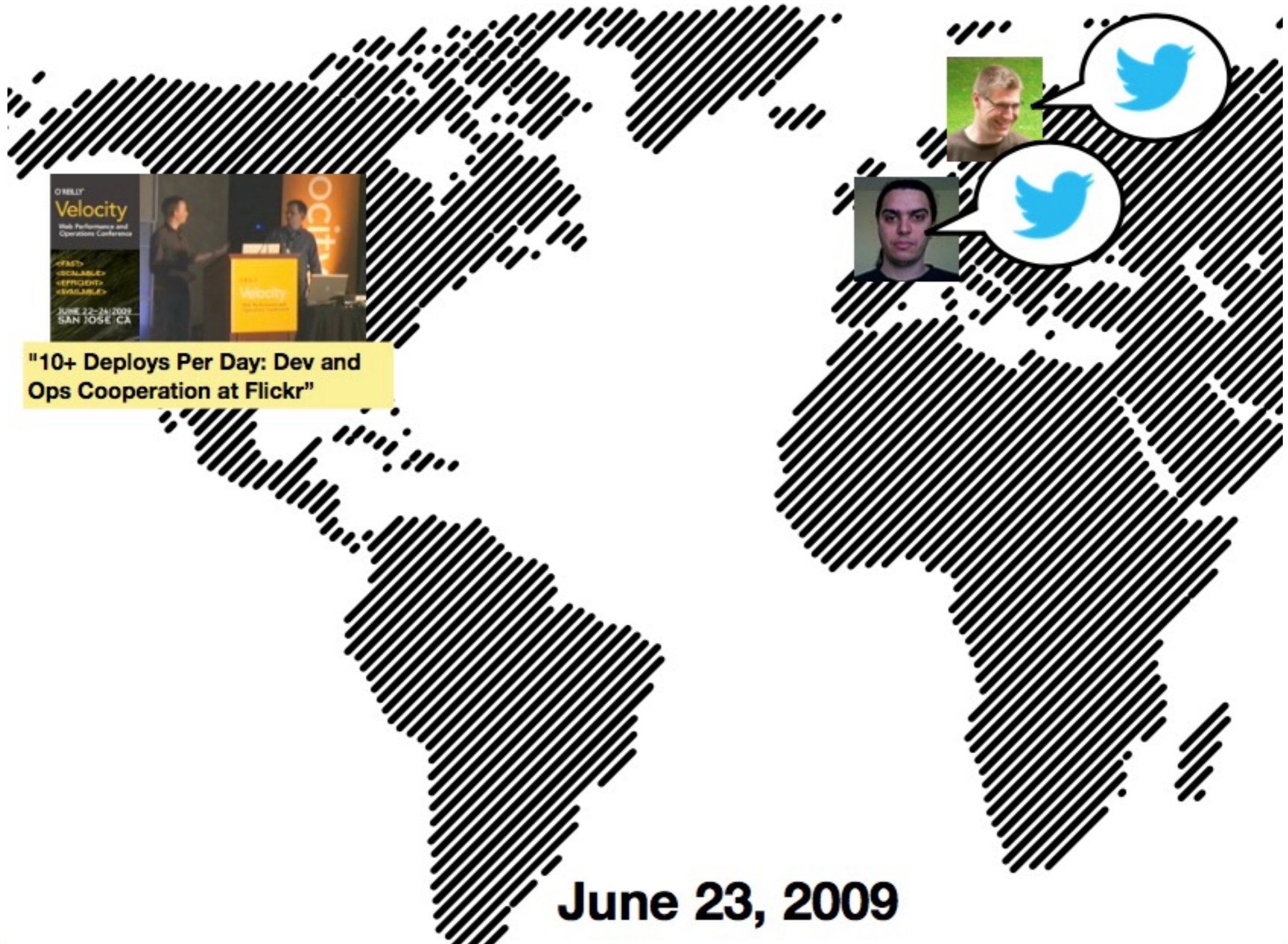
Agile2008
Conference



"Agile
Infrastructure"



Google groups
Groups Home
Agile System Administration



"10+ Deploys Per Day: Dev and Ops Cooperation at Flickr"

June 23, 2009

为何没有一个DEV和OPS
在一起讨论他们共同问题
的大会？



Patrick Debois

October 30 - 31, 2009: Ghent, Belgium

 **#DevOpsDays**



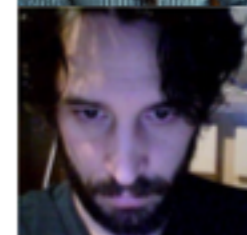
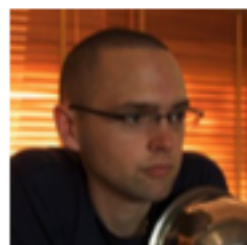
***and many more!**

DevOps Days

Ghent 2009

Sydney 2010

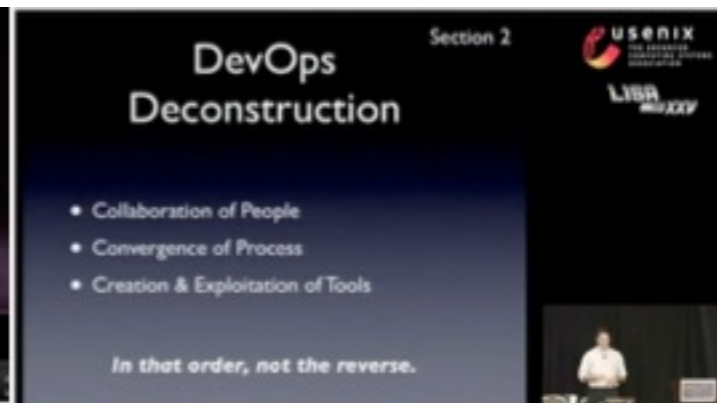
Mountain View 2010





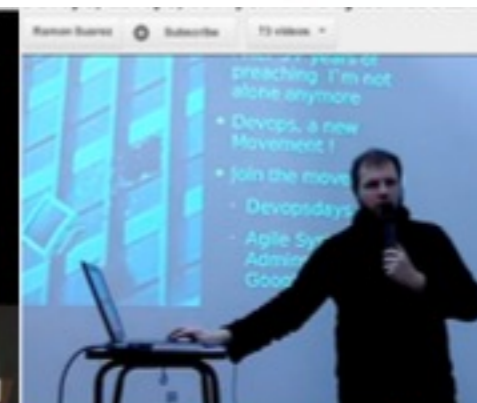
Velocity 2010 - Adam Jacob on DevOps

Dyntrc 281 videos



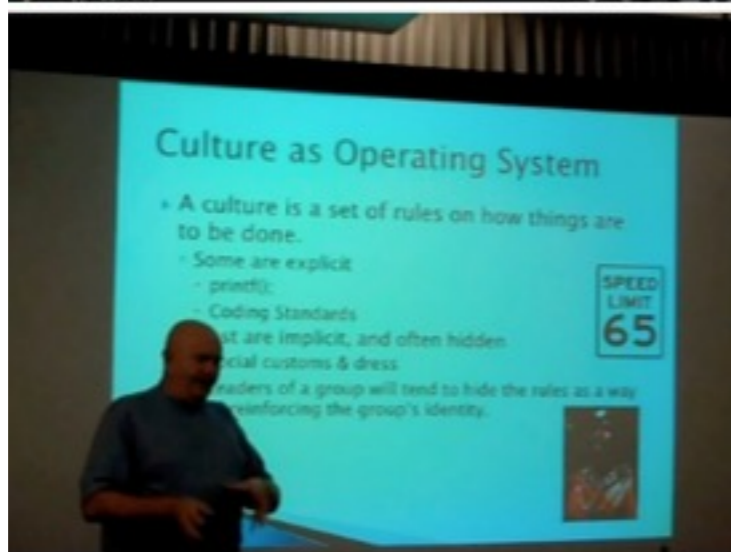
Paris JUG 28/02/2011 Devops par Patrick Debois

@pays 108 videos



Surviving Incidents for Ops

Opscode 43 videos



Velocity Europe, John Allspaw, "Anticipation: What Could"

O'REILLY* 3,118 videos



dev2ops: delivering change

Graphite - Enterprise scalable realtime graphing

The Rise of a New IT Operations Support Model

By 2015, DevOps will evolve from a niche strategy employed by large cloud providers into a mainstream strategy employed by 20% of Global 2000 organizations.

Why DevOps will not emerge:

- ▶ Cultural changes are the hardest to implement, and DevOps requires a significant rethinking of IT operations conventional wisdom.
- ▶ There is a large body of work with respect to ITIL and other best practices frameworks that is already accepted within the industry.
- ▶ Open source (OSS) management tools, which are more aligned with this approach, have not seen significant enterprise market share traction.

Why DevOps will emerge:

- ▶ DevOps is not usually driven from the top down and, thus, may be more easily accepted by IT operations teams.
- ▶ ITIL and other best practices frameworks are acknowledged to have not delivered on their goals, enabling IT organizations to look for new models.
- ▶ The growing interest in tools such as Chef, Puppet, etc., will help stimulate demand for OSS-based management

Gartner.

March 18, 2011

80%

of Global 1000 firms are expected
to adopt DevOps practices by 2019



IDC 2016年

为什么历史很重要？

- ▶ 它时刻提醒着我们DevOps的宗旨是：
 - ▶ 从参与者中来，为参与者而生
 - ▶ 一场基于体验的变革运动
 - ▶ 去中心化的
 - ▶ 对所有人都开放的

DevOps Days

Ghent 2009

Sydney 2010

Mountain View 2010

Hamburg 2010

São Paulo 2010

Boston 2011

Mountain View 2011

Melbourne 2011

Bangalore 2011

Gothenburg 2011

Manilla 2011

Austin 2012

Tokyo 2012

Mountain View 2012

+62 more (and 19 in 2016)



**DEVOPS
DAYS**

<http://devopsdays.org>



*Patrick has handed off
organizing leadership to
group of community
members*

**WORKED FINE IN
DEV**

OPS PROBLEM NOW

IOKO 的一名技术架构师，也是 GEEKCAP INC 的创始人



OPS 的人们来自水星，DEV
的人们来自火星。

Steven Haines

开发的根本就是系统，而不是软件。

Ben Butler Cole

你构建的它，你就去运维它。

Werner Voegls

DEVOPS 不是目标，而是永不
停止的流程。

Jez Humble

A sunset over a vast, rocky landscape. The sky is filled with soft, golden light and scattered clouds. The sun is a bright, glowing orb on the horizon. The foreground is a rugged, rocky terrain with patches of green and yellow vegetation. A solid blue horizontal banner is overlaid across the middle of the image, containing the text "重新审视IT" in white, bold, sans-serif font.

重新审视IT



什么是推动变革的驱动力?

后工业时代

高度动态的市场
经济的下滑
小微创业公司和企业
持续设计

数字化

IT即是产品
数字化转型
社交媒体
上下文计算

行业颠覆

颠覆式创新
云计算、移动设备、IoT
大数据分析
数据驱动的企业



IT
受迫
改变



新的目标是什么？



IT

需要能

快速

缩短响应时间
全局考虑IT价值链

弹性

按需求弹性地供给

效益

聚焦在产出，而不是输出

效率

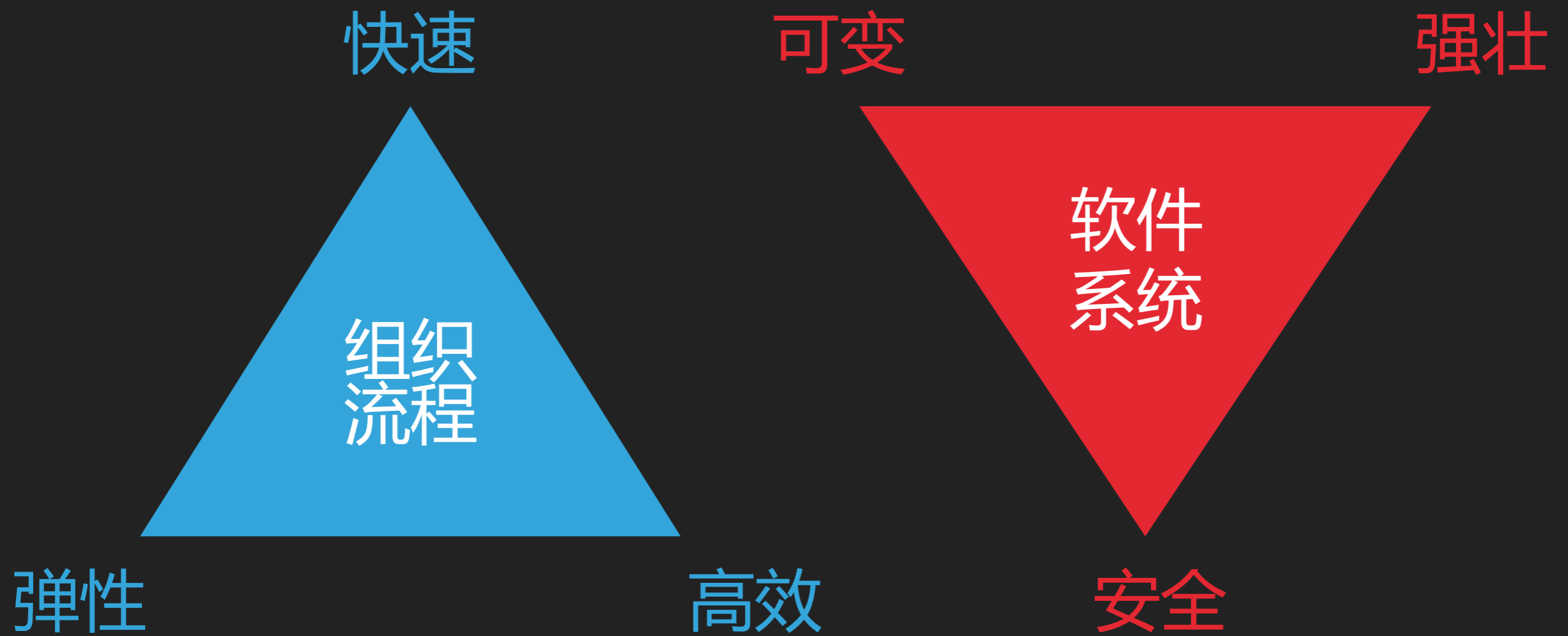
提供所需的生产力

强壮

高可用性和适应性

持续改进

改进是计划内活动

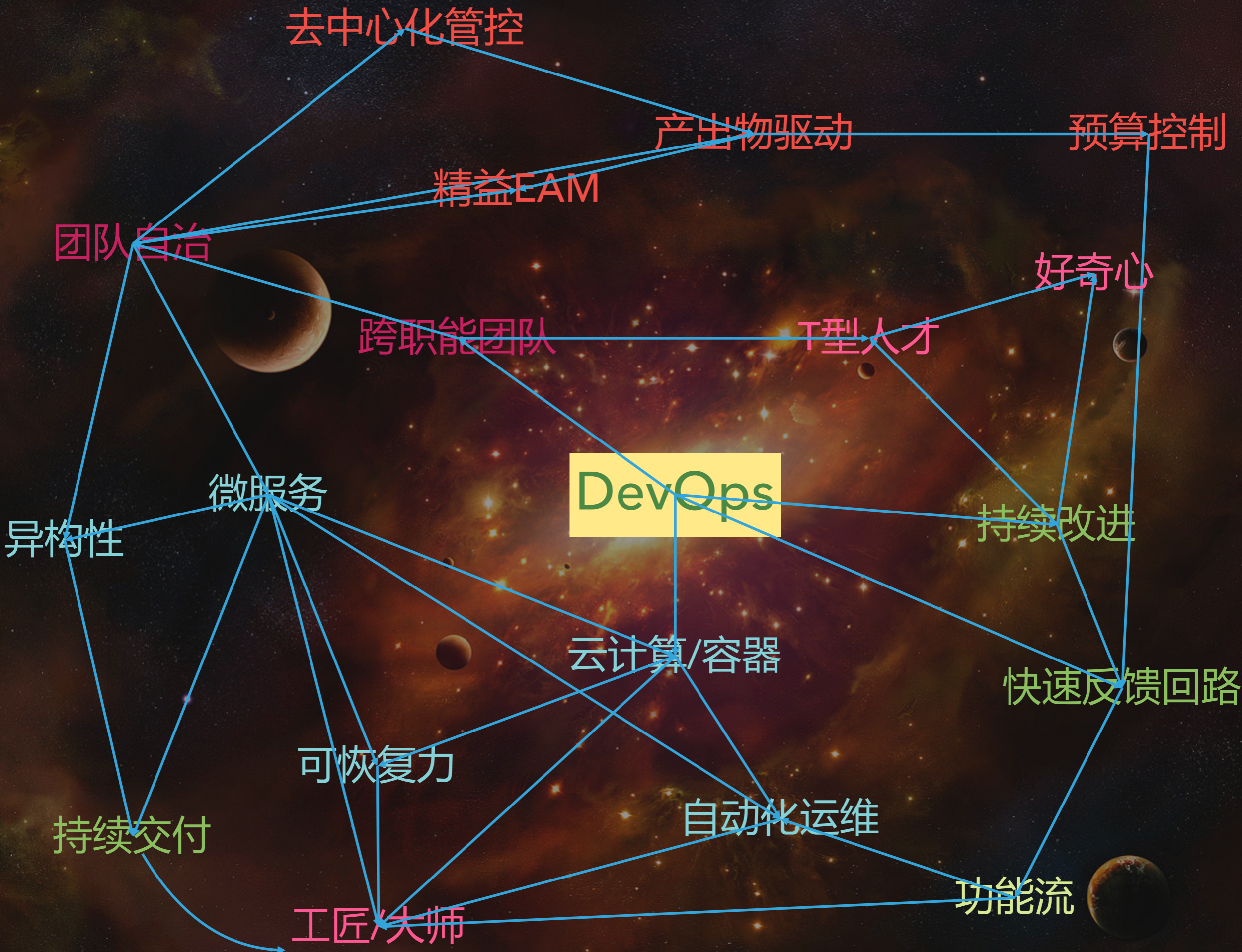


并且能够持续改进.....



DevOps的三个心法

1. 系统性思考
2. 放大反馈回路
3. 持续实验/学习的文化





DEVOPS实践篇

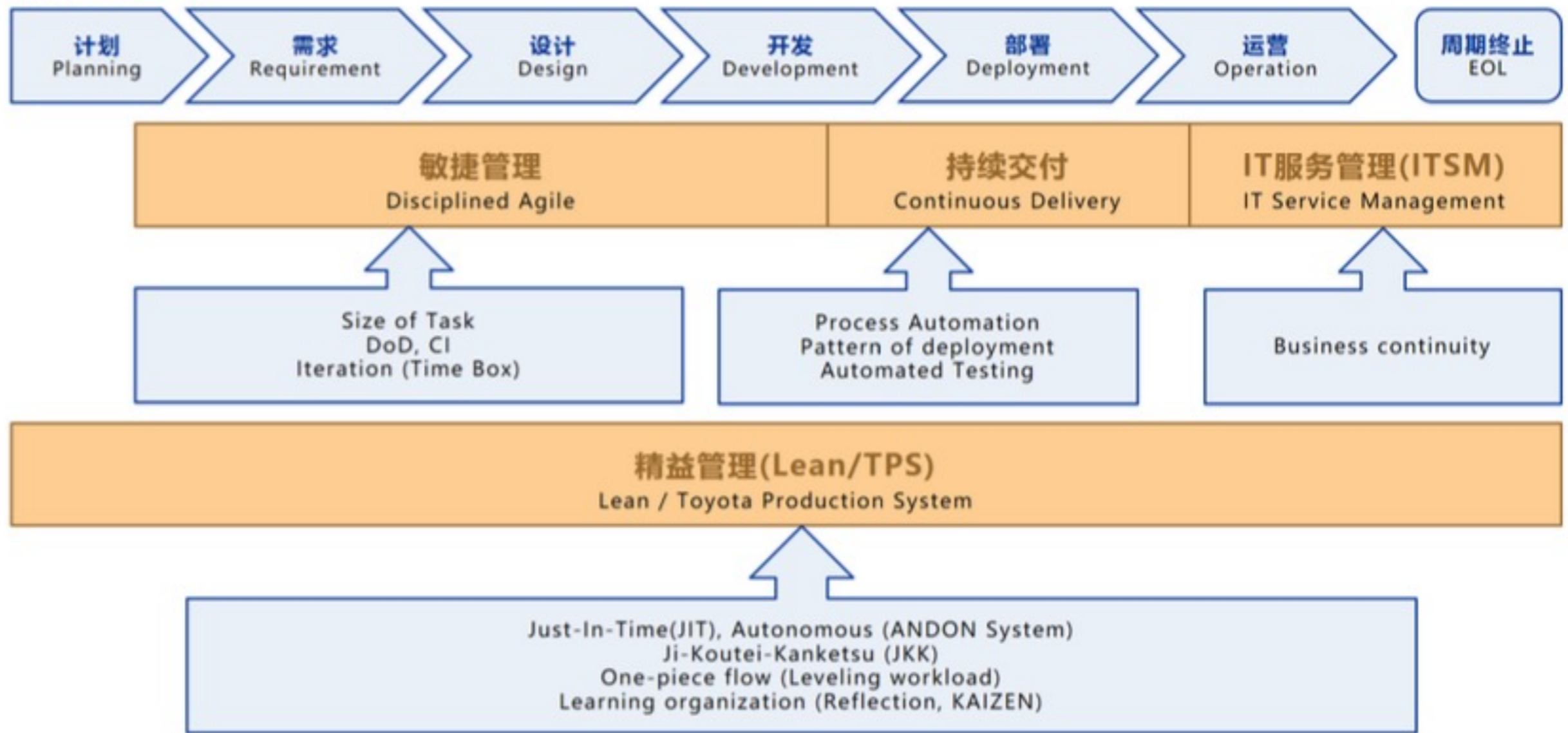
抓住重点

DEVOPS的目标是什么?

- ▶ 业务流程：建立合适的准时制（JIT）流水线式业务流程，最大化业务产出（提供销售和利润、提升业务更新速度、降低运营成本）
- ▶ IT流程：建立所有业务产品都能以相同方式嵌入的IT服务供应链，从提供软件交付转向供给IT服务
- ▶ 架构：建立自动化部署系统、搭建承载IT服务供应链的DevOps工具体系，保持它持续有效和持续改进

DEVOPS的三大支柱和一个基础

流程 (Process)

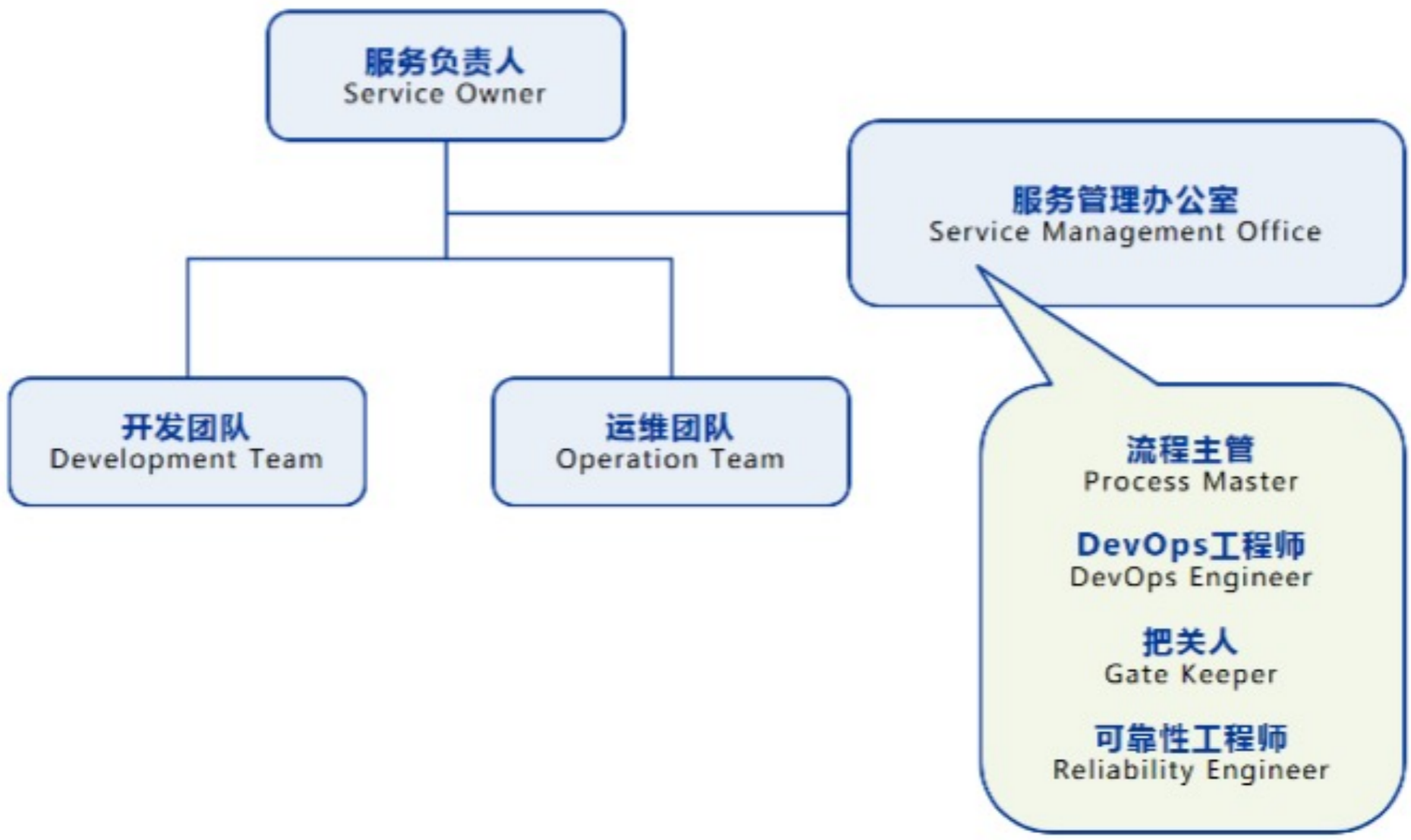


Source: 图表引自《EXIN 官方白皮书——企业DevOps的成功之路》

打造DEVOPS团队

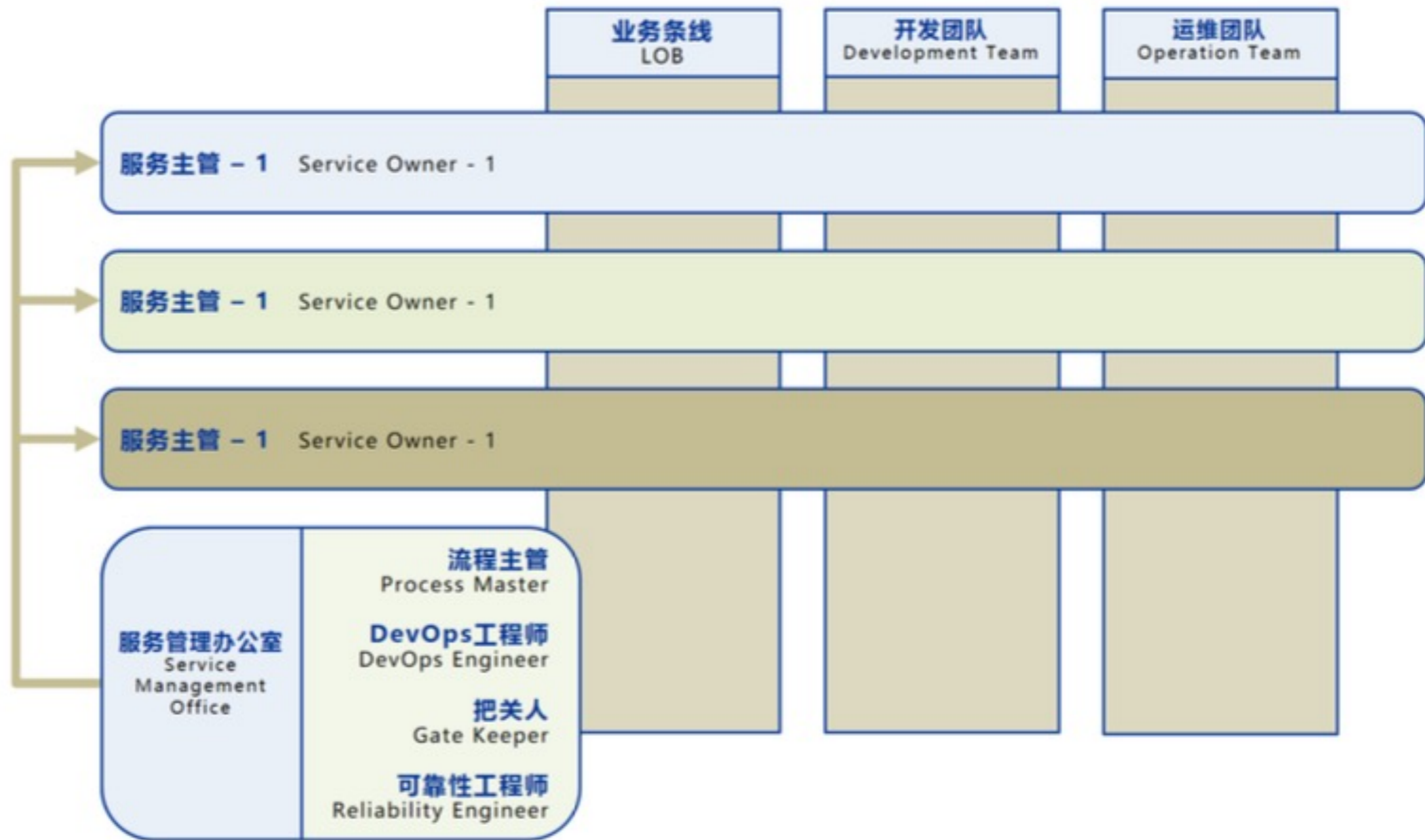
- ▶ 流程主管 - 类似于Scrum Master
- ▶ 服务主管 - 类似于Scrum Product Owner
- ▶ DevOps工程师 - 优化和维护自动化流程工具链
- ▶ 把关人 / 发布协调员 - Gatekeeper / Release coordinator
- ▶ 可靠性工程师 - Reliability Engineer(可选)
- ▶ 开发团队和运维团队 - 注重DevOps实践的导入和执行

适合小型组织的扁平化组织



Source: 图表引自《EXIN 官方白皮书——企业DevOps的成功之路》

适合大型复杂组织的矩阵架构

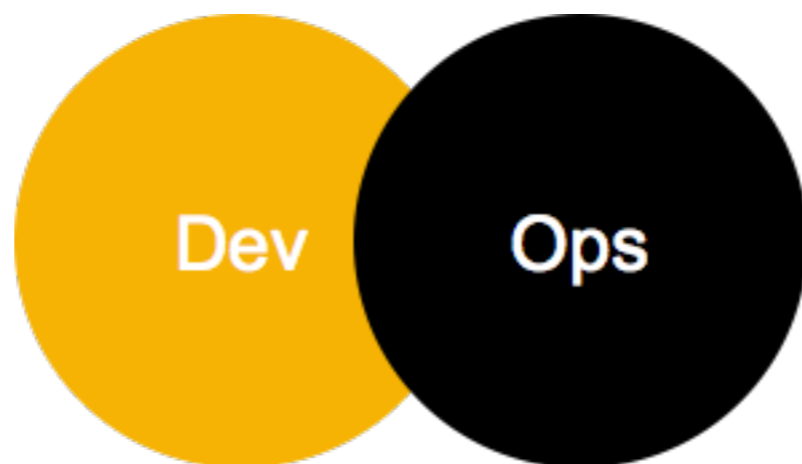


Source: 图表引自《EXIN 官方白皮书——企业DevOps的成功之路》

典型的企业组织结构



模式1：融合DEV和OPS团队



模式2：建立跨职能DEVOPS团队

- ▶ 特点：
 - ▶ 成员包括开发、测试、运维、产品经理等...
 - ▶ 聚焦在交付一款应用/服务
 - ▶ 自己自足
 - ▶ 优化的生产效率和生产量



模式3：建立临时的DEVOPS团队

- ▶ 特点：
 - ▶ 有跨界技术专家组成
 - ▶ 聚焦在自动化的痛点上
 - ▶ 负责构建一个都能使用的自助服务平台
 - ▶ 提供能让开发团队来构建、测试和部署业务系统的工具链
 - ▶ 训练其它团队



打造自动化IT服务供应流水线

以持续交付驱动的业务产出

自动化

持续集成

版本控制

这些实践的作用...

更少的部署痛点

更频繁地部署

更低的变更失败率

高阶的组织绩效 (生产效率, 市场份额, 利润率)



DEVOPS落地篇

展望未来



**“This is your last chance ... After this, there is no turning back.
You take the blue pill - the story ends, you wake up in your bed,
and believe whatever you want to believe.**



**You take the red pill, ...
you stay in Wonderland,
and I show you,**



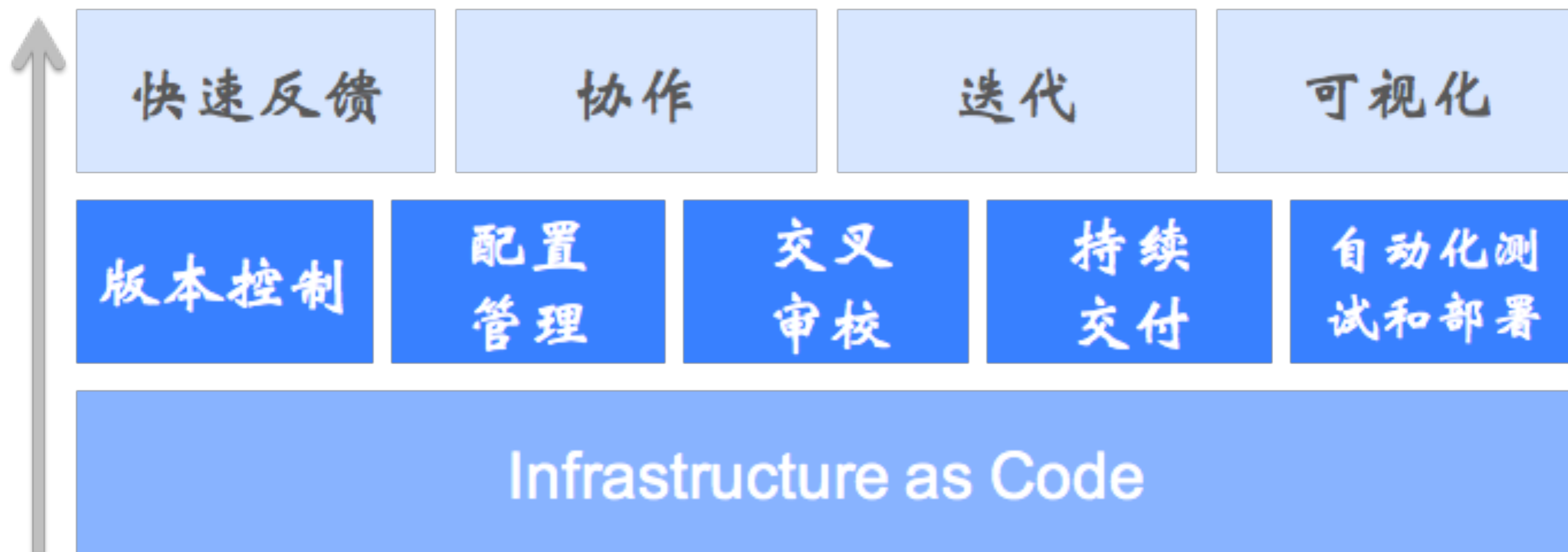
how deep the rabbit-hole goes.”

~ Morpheus' Warning To Neo (From The Film; "The Matrix") ~

DEVOPS实践导入的周期和阶段

- ▶ 第一阶段：建立唯一真相来源
- ▶ 第二阶段：标准化流程
- ▶ 第三阶段：对流程的不断迭代
- ▶ 第四阶段：优化的业务产出
- ▶ 不断地可视化、经验分享、持续评测

全局思考和系统性构建



对DEVOPS关键考察指标的持续关注

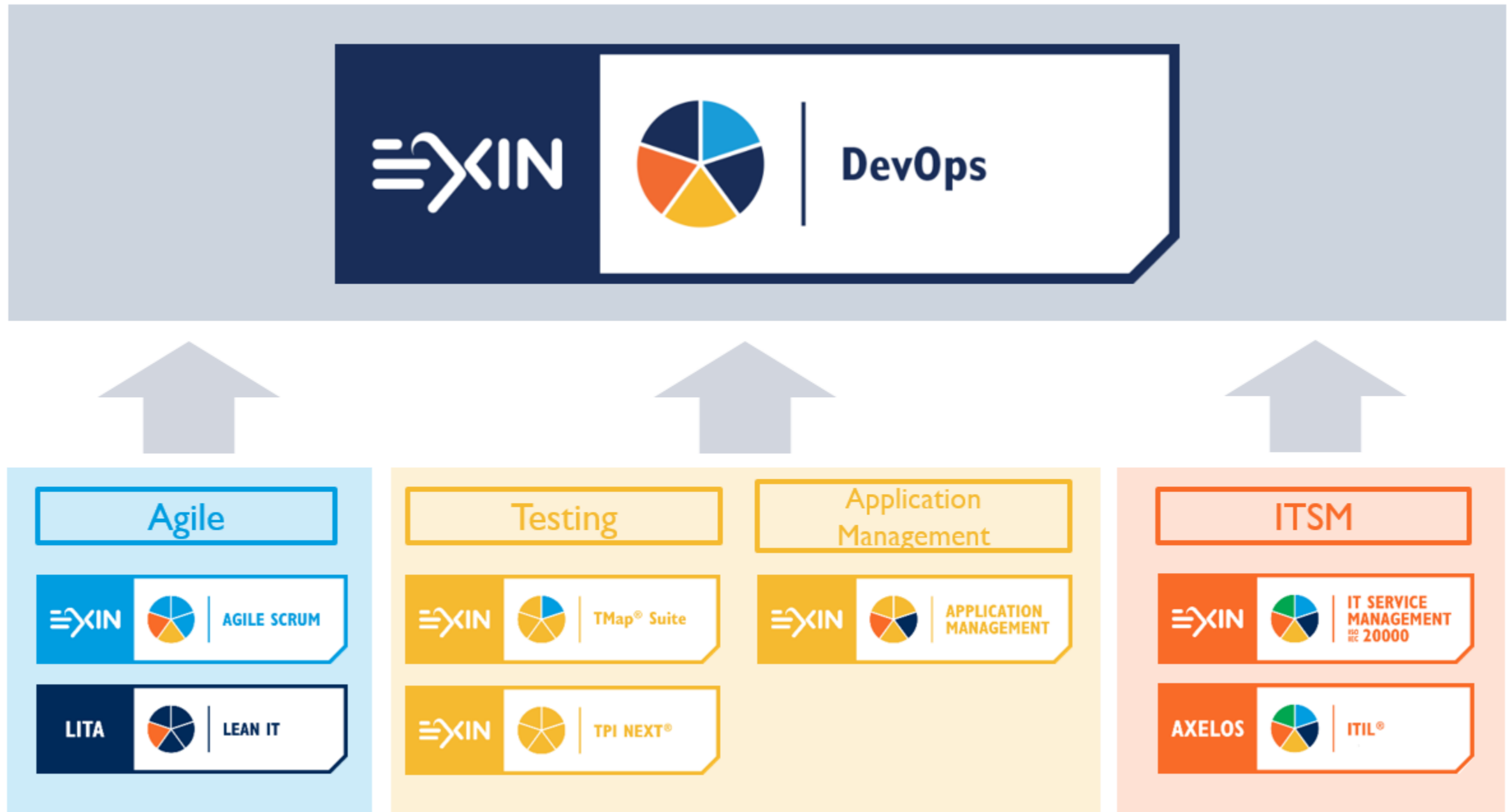
▶ 速度

- ▶ 部署频率
- ▶ 变更前置时间 (从开发人员的笔记本电脑到生产环境)
- ▶ 迭代时间

▶ 可靠性

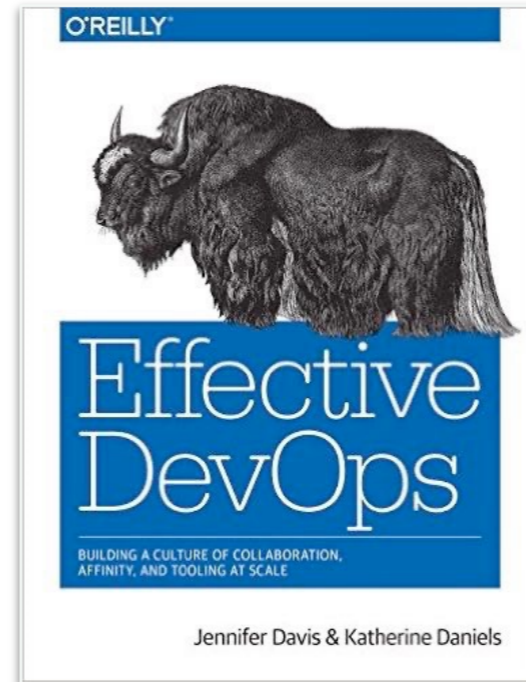
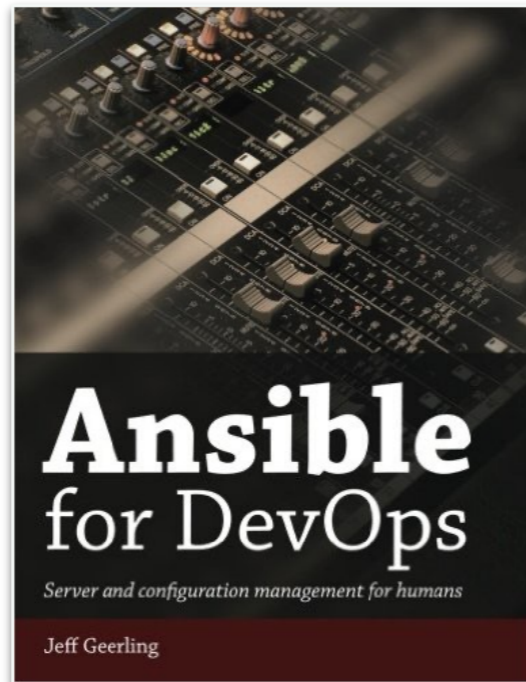
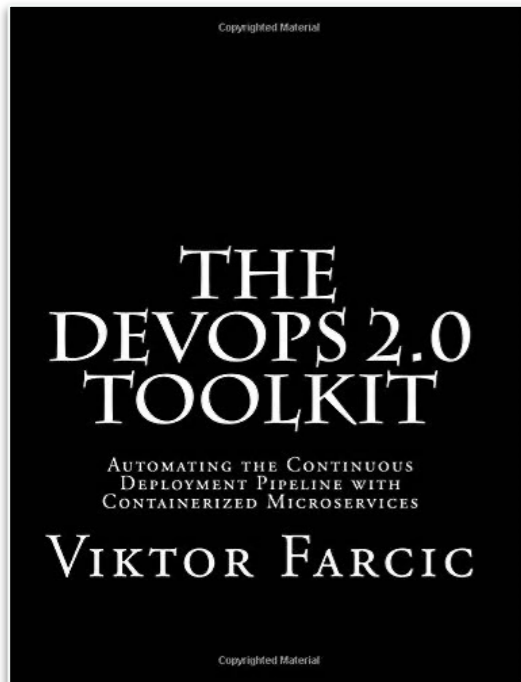
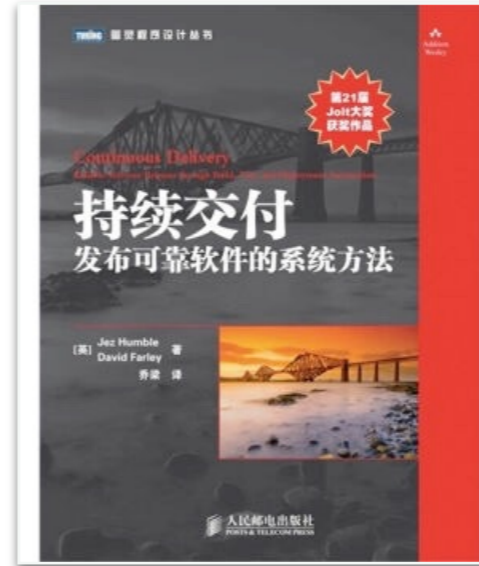
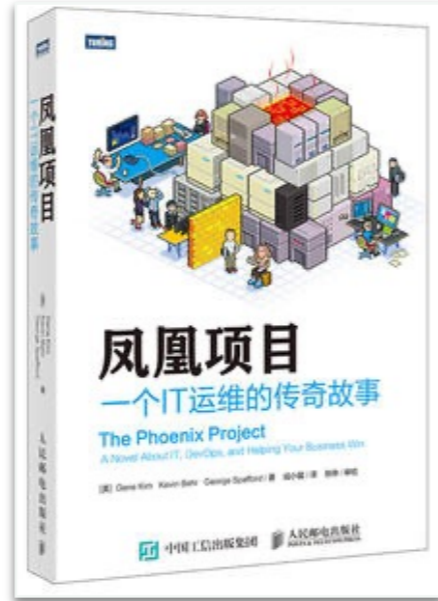
- ▶ 变更失败率
- ▶ 故障恢复时间
- ▶ 可用性时间/宕机时间

DEVOPS相关培训和认证

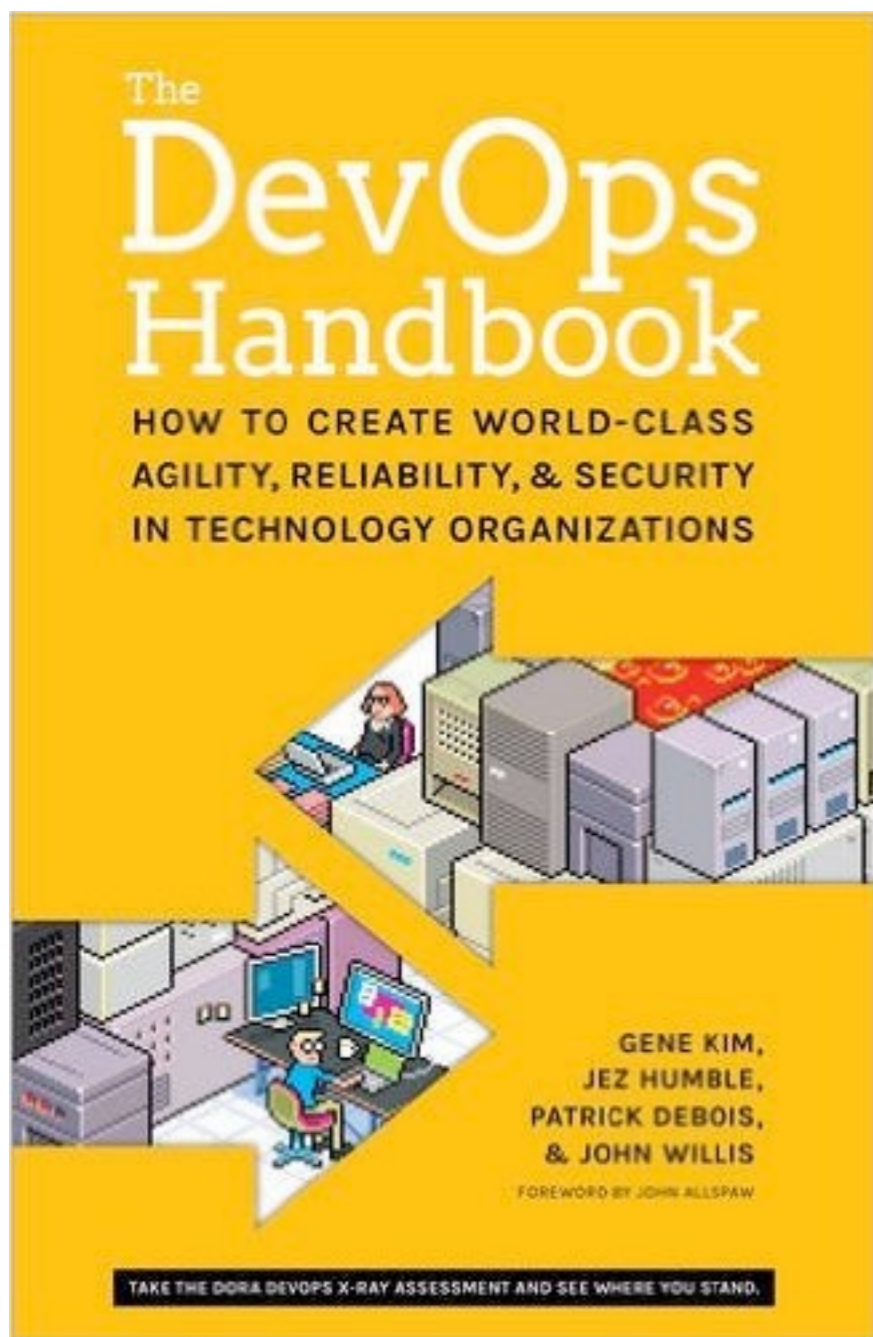


Source: 图表引自EXIN 官方网站: [点击查看](#)

推荐阅读和参考书籍



DEVOPS HANDBOOK — 敬请期待



Gene Kim



Jez Humble



Patrick Debois



John Willis

#1 Best Seller in Information Management

Customer Reviews

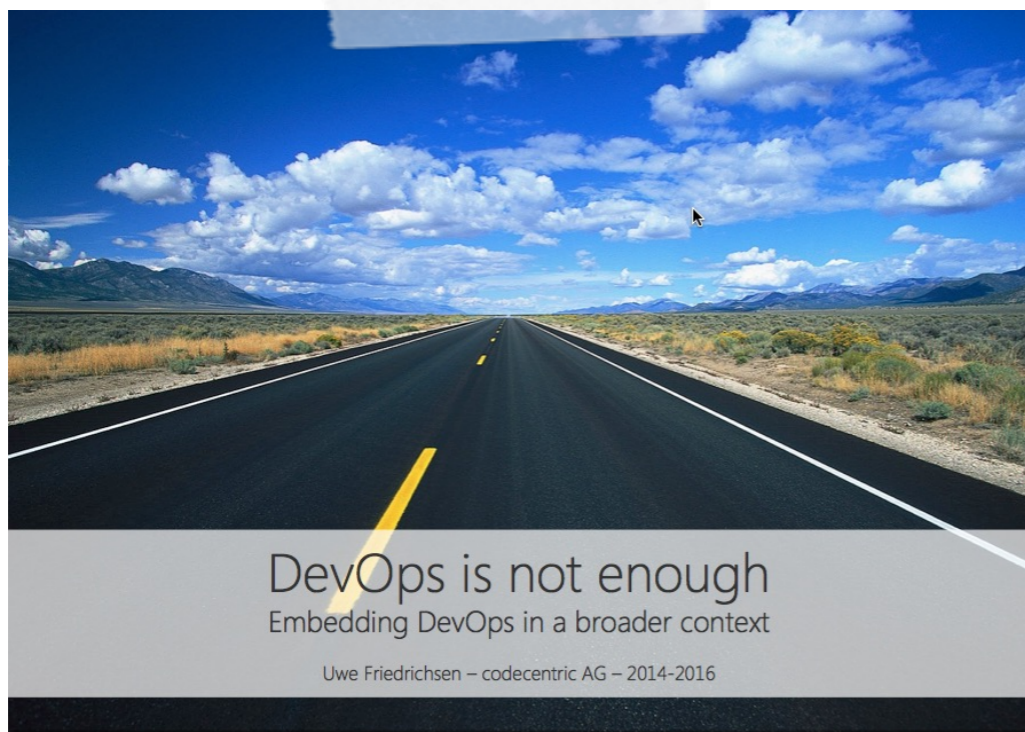
★★★★★ 16

4.8 out of 5 stars



参与组织DEVOPS MEETUP和大会学习

- ▶ 组织和参与各种范围的DevOps Meetup
- ▶ 参加 DevOps Days; 或将2017年三月进入中国
- ▶ 参加国内各种技术大会和论坛的DevOps会场
 - ▶ CSDN、Infoq
 - ▶ 国内的各种运维、敏捷和精益相关的社区活动



Q&A

