建设持续交付组织

关于我

金明 （@金明i）

- ThoughtWorks 持续交付与DevOps Lead
- 多年企业应用和互联网应用开发经验，专注于敏捷和精益。目前主要关注敏捷实施、组织转型、持续交付、云计算、DevOps以及架构设计

持续交付

Buzz Word?

支付宝

余额宝

微博

淘宝同学

地图

淘宝点点

O2O

一淘

大数据

微淘

互联网日新月异

微创新

淘宝

移动互联网

打车助手

盒子

云

微信

虚拟信用

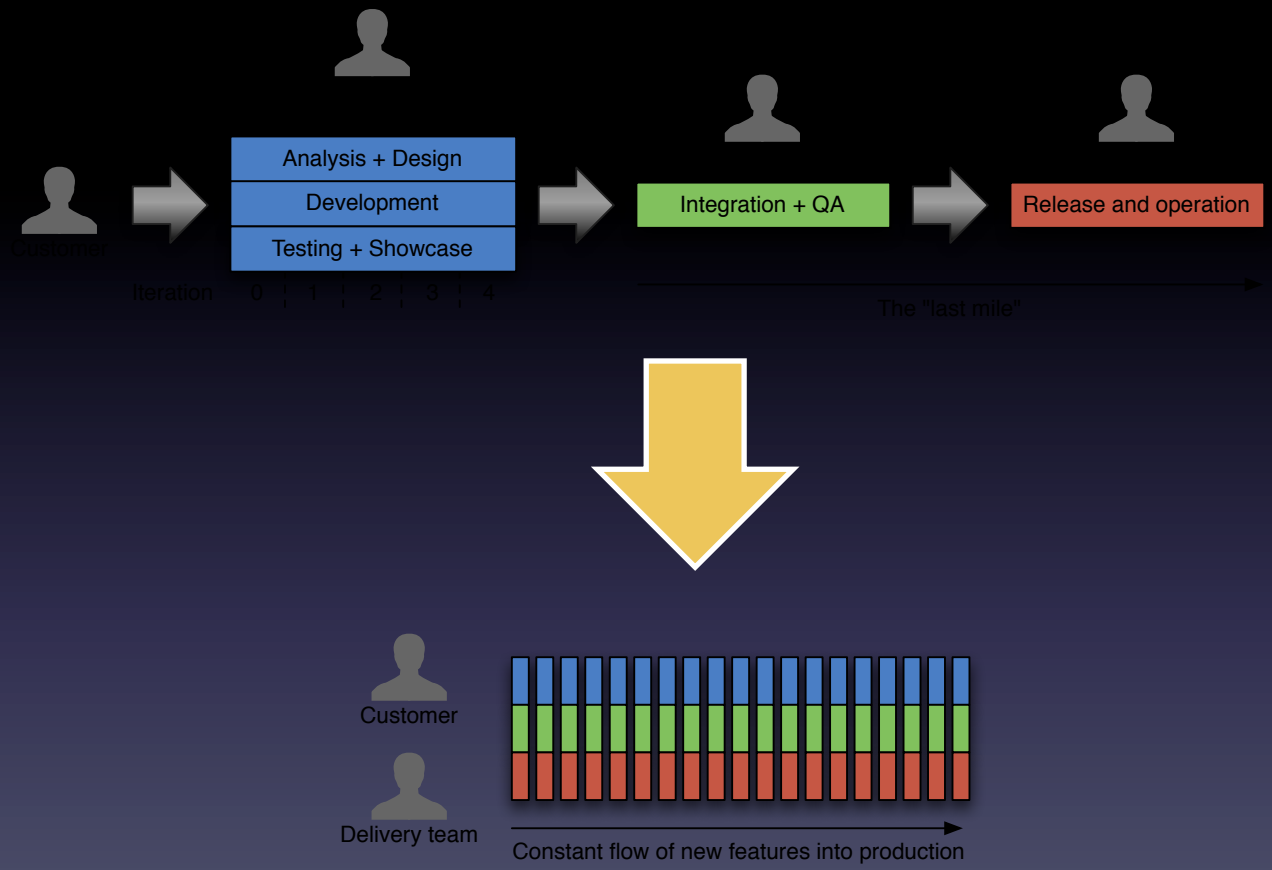
云存储

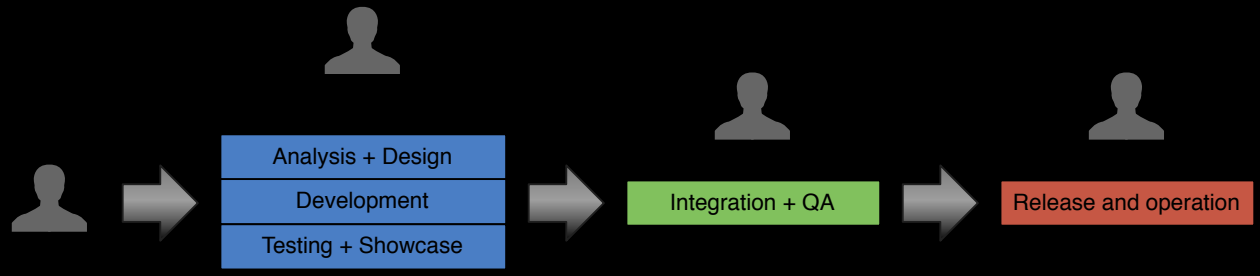
云主机

P2P小额

IT如何支撑、引领业务创新?

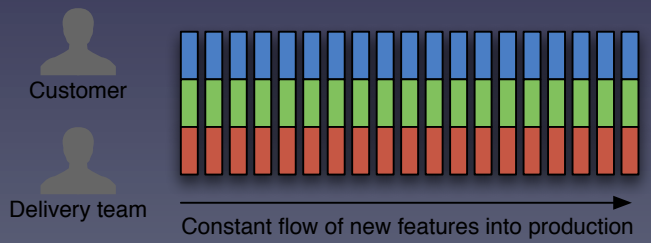
天下武功，唯快不破！


Customer
Analysis + Design
Development
Testing + Showcase
Integration + QA
Release and operation
Iteration
0
1
2
3
4
The "last mile"
Customer
Delivery team
Constant flow of new features into production



提高交付质量

缩短交付周期



不想做全面质量管理的QA不是好QA

什么是持续交付?

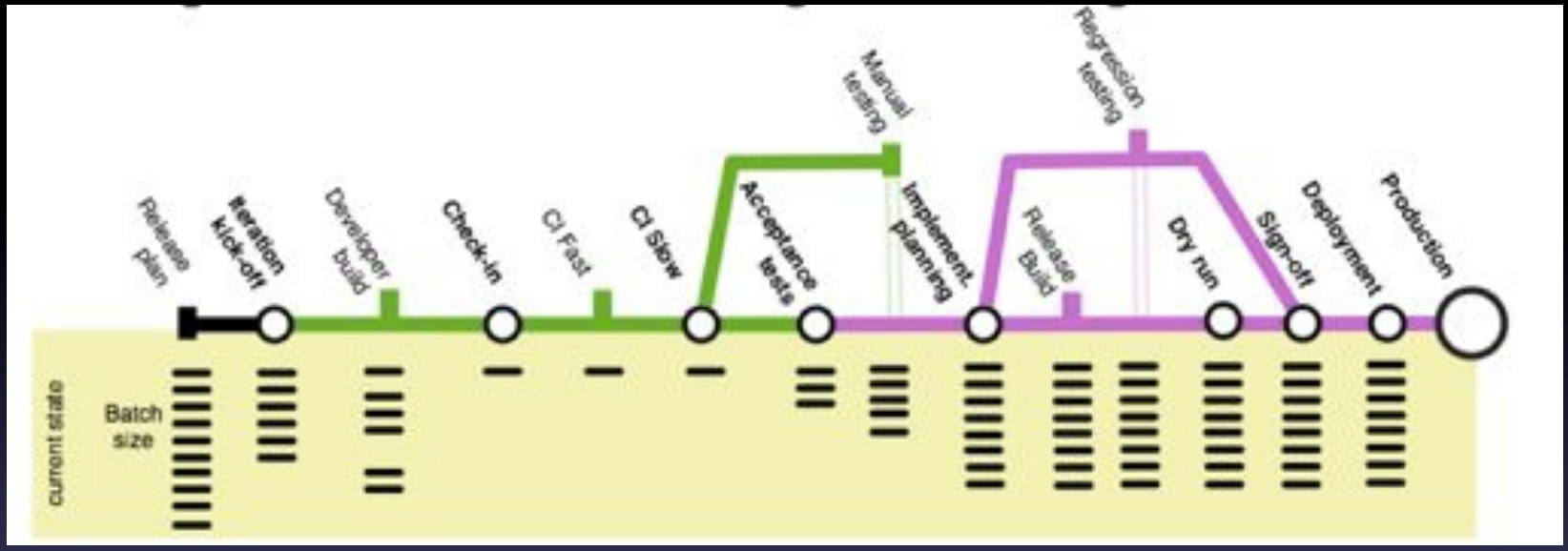

自动化
部署
持续集
成
自动化
测试
NO
交付

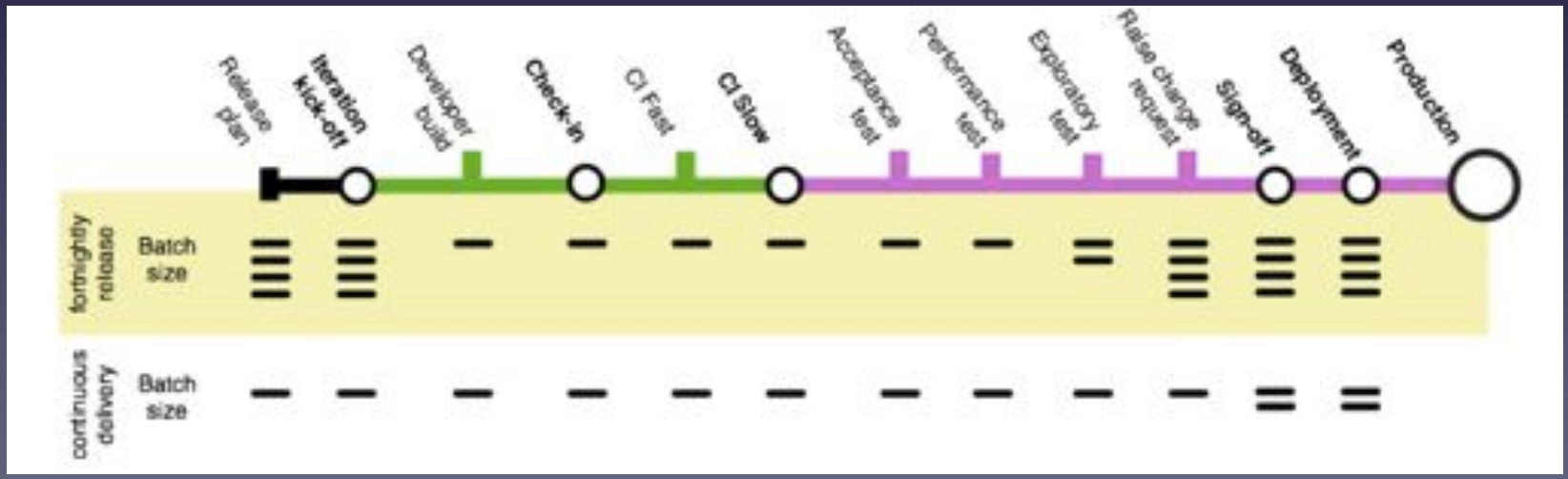
持续交付源自精益思想

精益原则

- 拉式生产
- 特性团队
- 小批量
- 自働化

小批量

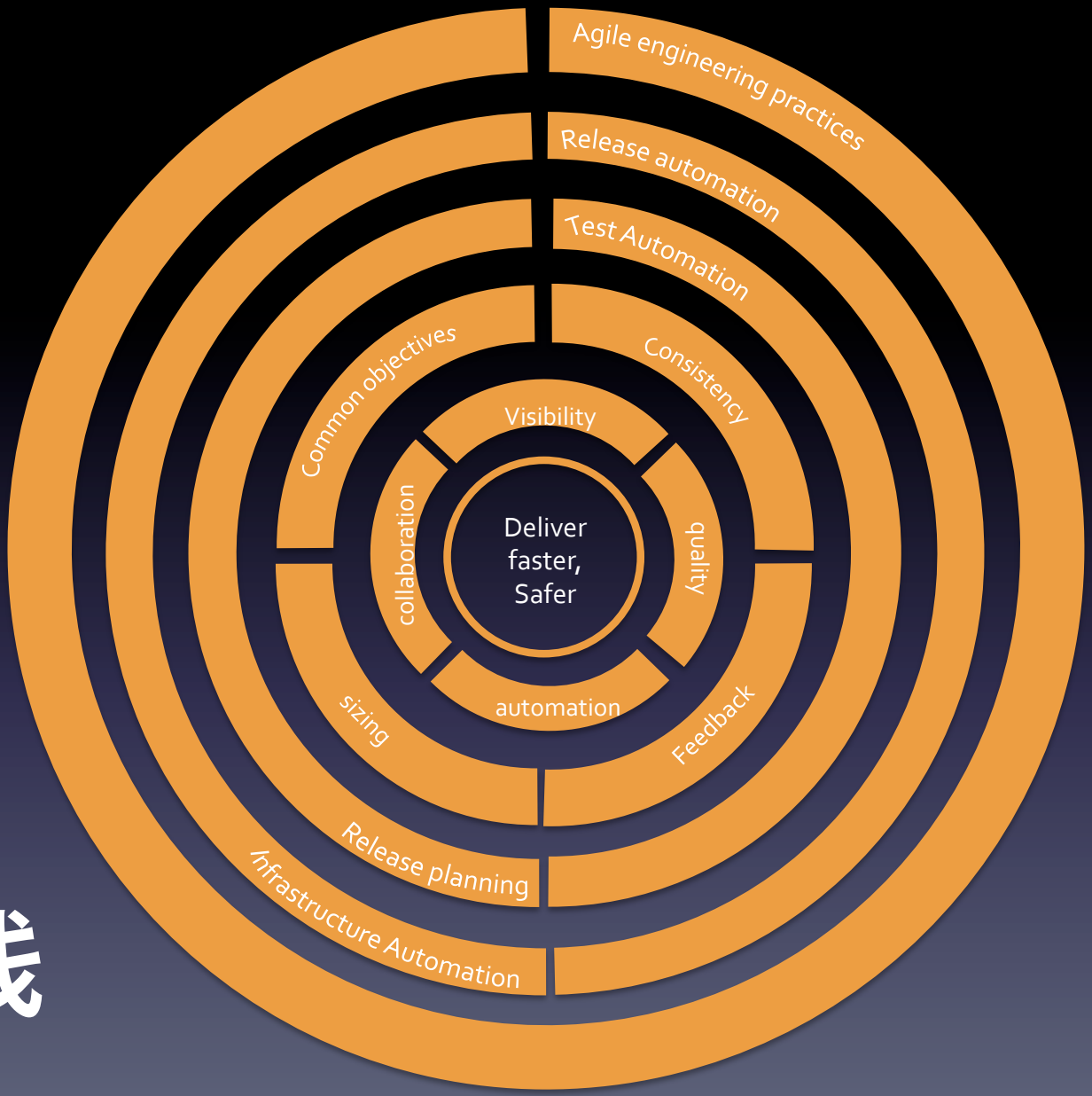

current state
Batch size
Release plan
Iteration kick-off
Developer build
Check-in
CI Fast
CI Slow
Acceptance tests
Manual testing
Implement planning
Release Build
Regression testing
Dry run
Sign-off
Deployment
Production

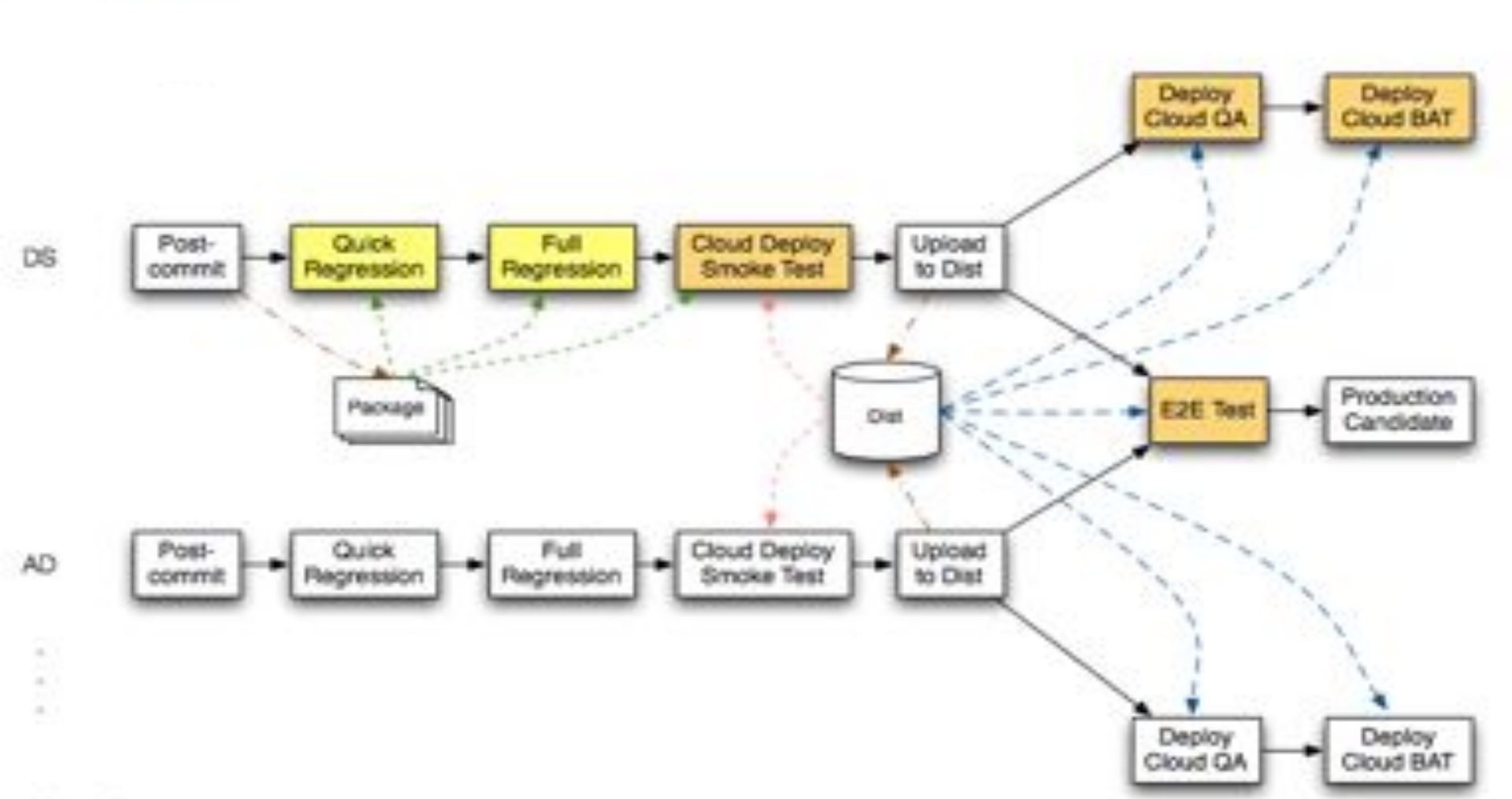

fortnightly release
Batch size
continuous delivery
Batch size
Release plan
Iteration kick-off
Developer build
Check-in
CI Fast
CI Slow
Acceptance test
Performance test
Exploratory test
Raise change request
Sign-off
Deployment
Production

自働化

- 自动停止的自动化
  - 一旦出现质量问题，流水线自动停止
  - 流水线自动定位质量缺陷
- 人化的自动化
  - 人员纪律是基础
  - 持续优化是目标

实践


Agile engineering practices
Release automation
Test Automation
Consistency
Feedback
Infrastructure Automation
Release planning
sizing
Common objectives
collaboration
Visibility
quality
automation
Deliver faster, Safer

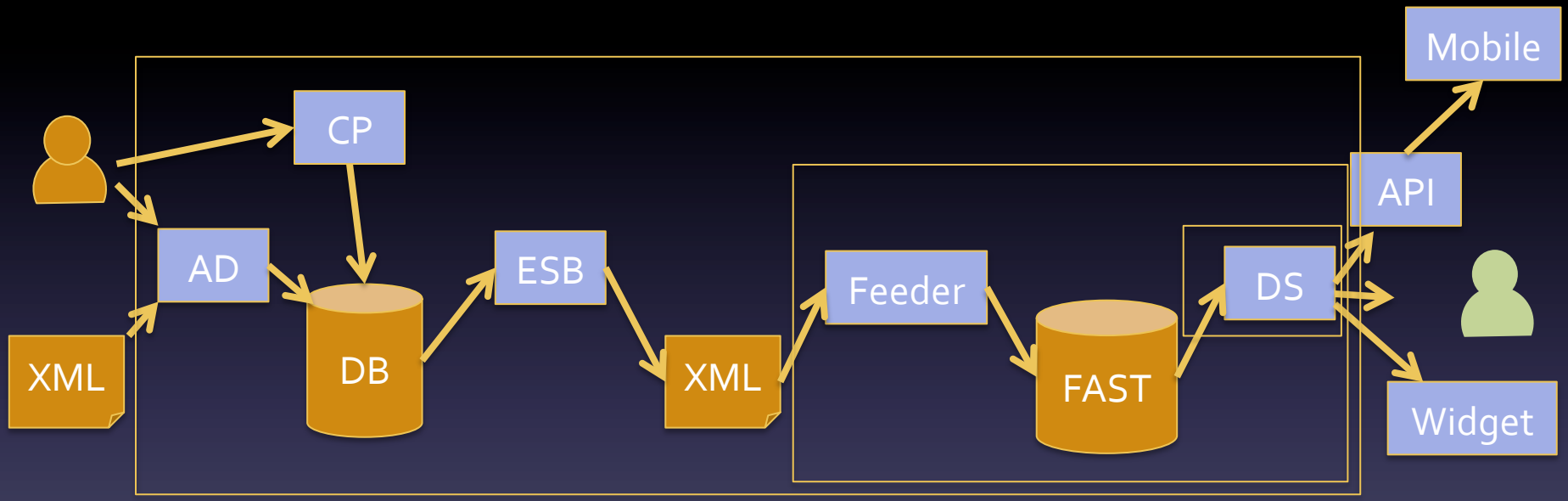

DS
Post-commit
Quick Regression
Full Regression
Cloud Deploy Smoke Test
Upload to Dist
Deploy Cloud QA
Deploy Cloud BAT
Package
Dist
E2E Test
Production Candidate
AD
Post-commit
Quick Regression
Full Regression
Cloud Deploy Smoke Test
Upload to Dist
Deploy Cloud QA
Deploy Cloud BAT
Legends:
Flow actions
Upload latest built version of the app
Fetch latest built version of the app
Fetch latest version in Dist of apps that the ap
Fetch all latest versions of apps in Dist
Run tests against local app and other stubbed apps that the app depends on
Run tests against apps in cloud

发布流水线

自动化测试

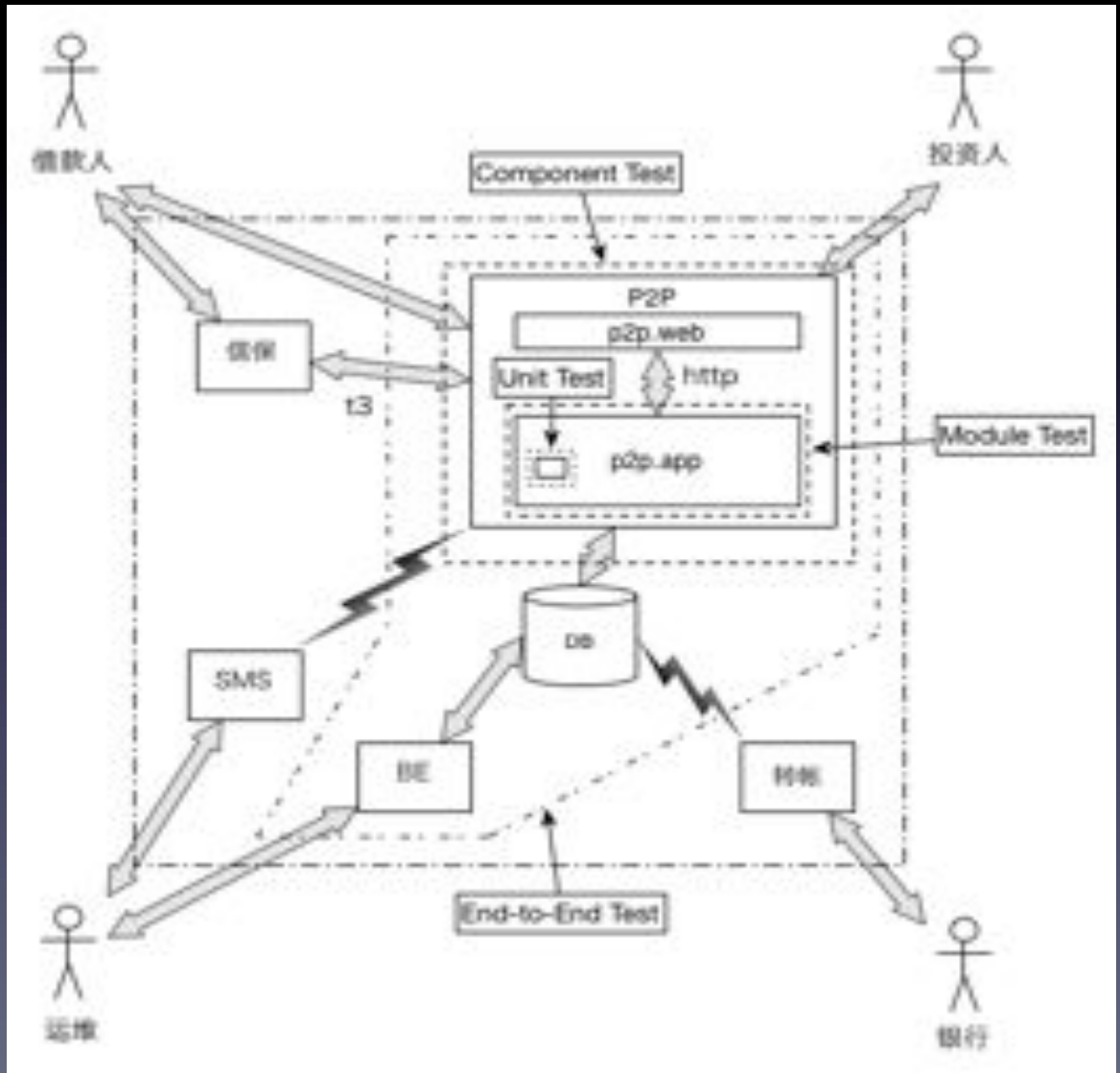
- 结合系统架构进行分层
- 通过BDD/TDD演化自动化测试套件
- 尽量选择简单开源的工具
- 开发人员应该负责绝大部分的自动化测试
- 拒绝“象牙塔”设计

测试分层

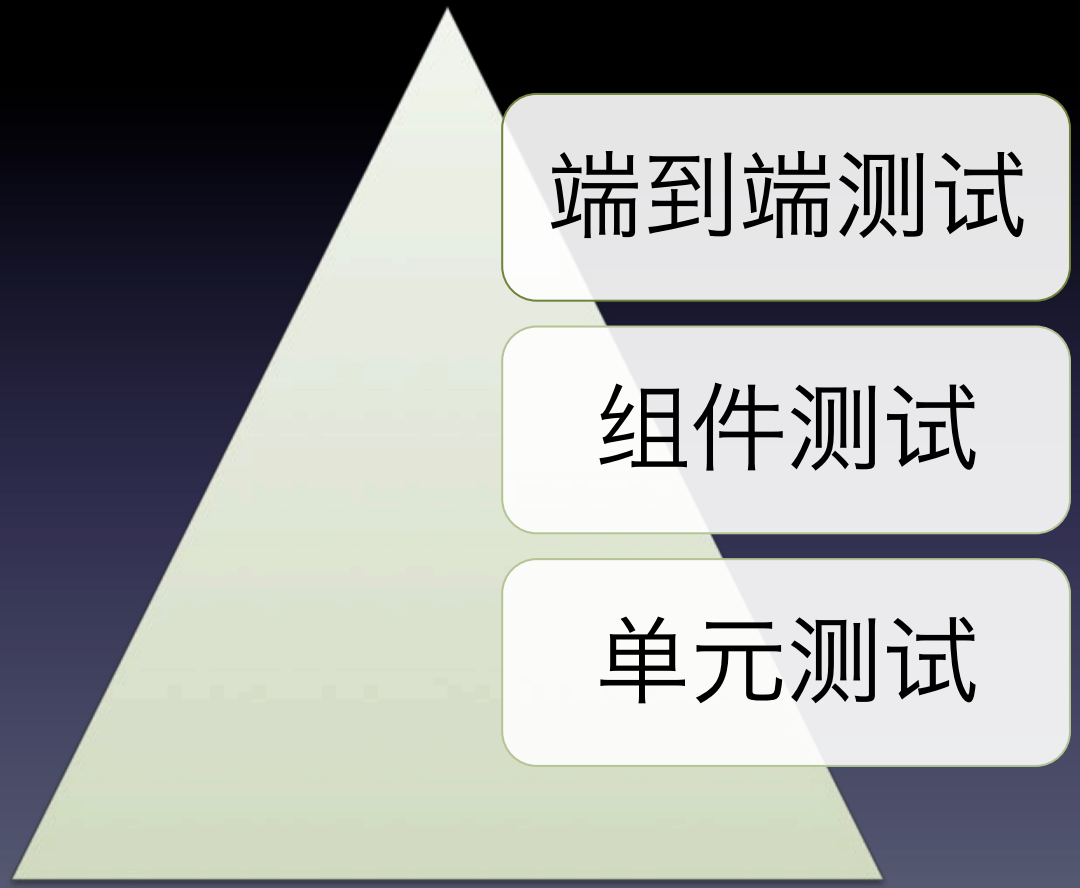


1. 跟随数据流
2. 寻找数据状态明确的输入输出
3. 技术上易于自动化测试

另一个例子


借款人
投资人
Component Test
P2P
p2p.web
Unit Test
http
p2p.app
Module Test
信保
t3
SMS
db
运维
银行
End-to-End Test

测试金字塔



开发人员自动化测试

业务、QA设计测试用例

Eat Your Own Dog Food!!

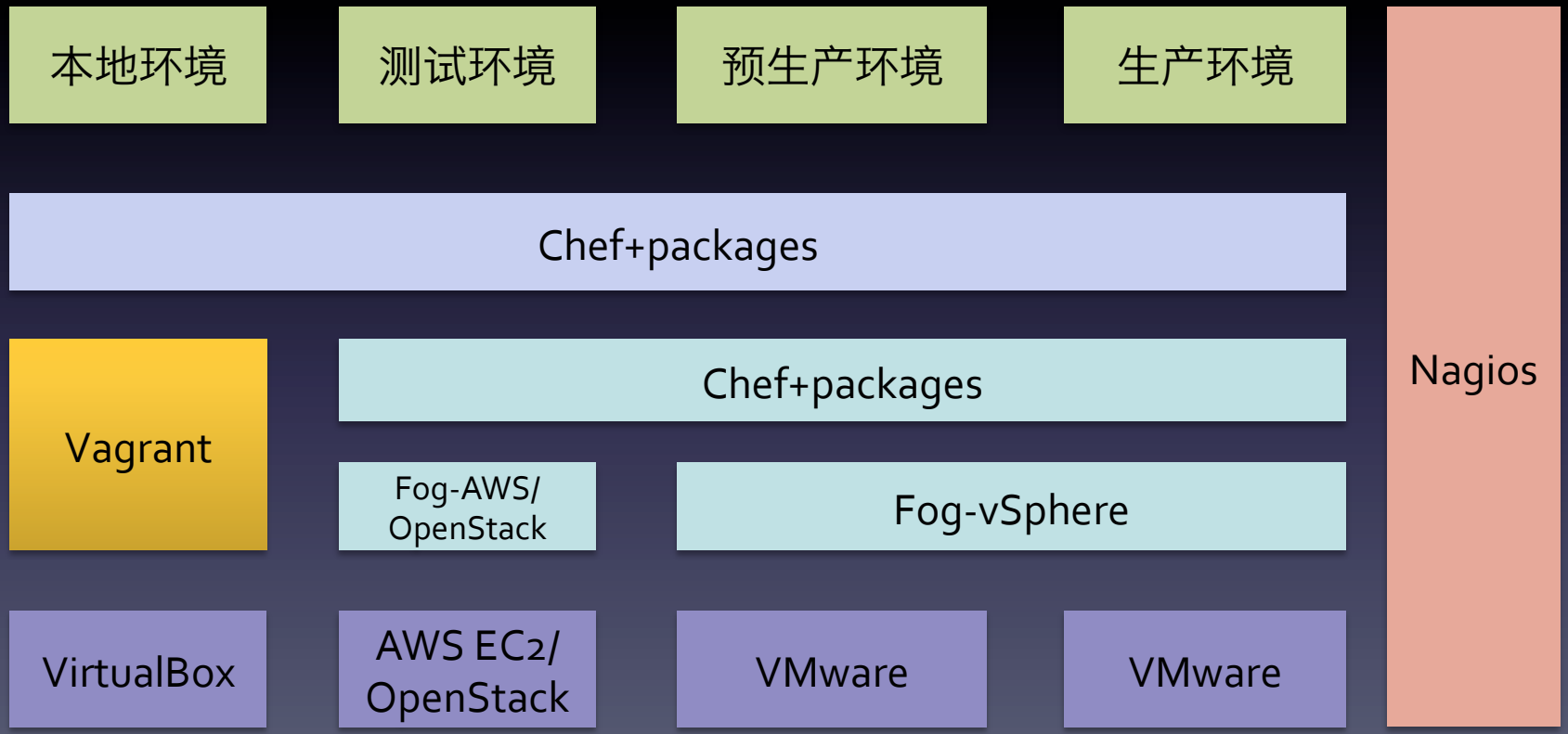
全面质量管理

我们还缺少——

环境配置

用户交互、体验

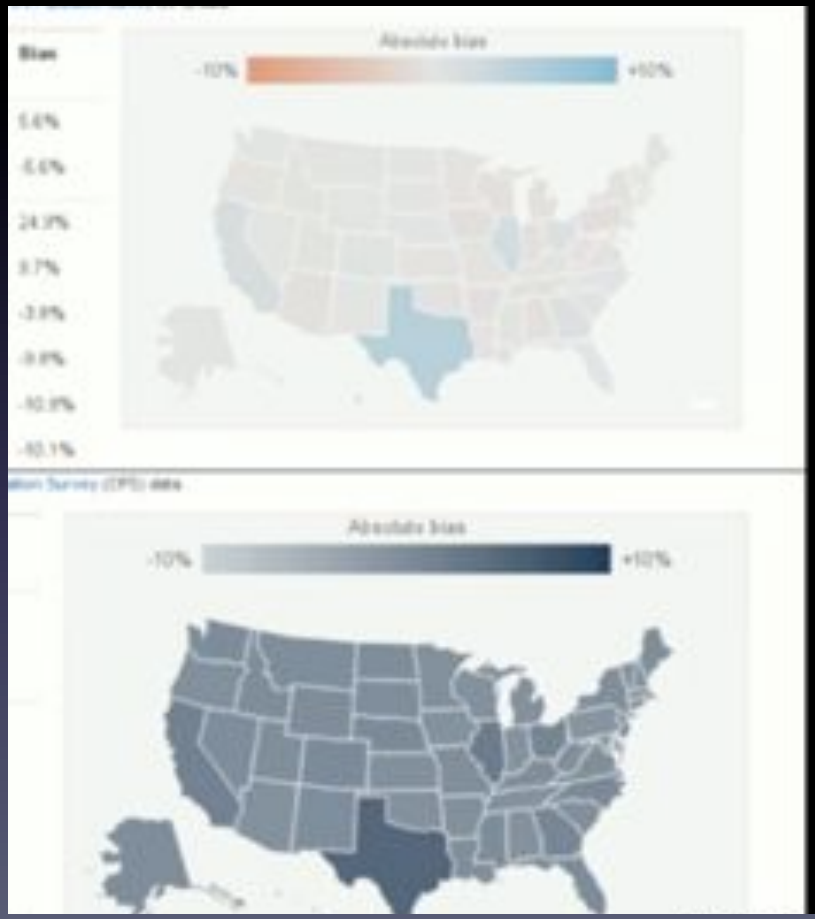
环境配置即代码


本地环境
测试环境
预生产环境
生产环境
Nagios
Chef+packages
Vagrant
Chef+packages
Fog-AWS/
OpenStack
Fog-vSphere
VirtualBox
AWS EC2/
OpenStack
VMware
VMware

```
AirMjj:chef-repo mingj$ knife bootstrap windows winrm 10.29.2.122 -r 'recipe[demo_windows]' -x Administrator -P 'R0ys1ngh4m'
WARNING: Could not load IOV methods. Check your GSSAPI C library for an update
WARNING: Could not load AEAD methods. Check your GSSAPI C library for an update
WARNING: Nokogiri was built against LibXML version 2.7.8, but has dynamically loaded 2.7.3
Bootstrapping Chef on 10.29.2.122
10.29.2.122 "Rendering 'C:\Users\ADMINI~1\AppData\Local\Temp\bootstrap-27399-1329307634.bat' chunk 1"
10.29.2.122 "Rendering 'C:\Users\ADMINI~1\AppData\Local\Temp\bootstrap-27399-1329307634.bat' chunk 2"
10.29.2.122 "Rendering 'C:\Users\ADMINI~1\AppData\Local\Temp\bootstrap-27399-1329307634.bat' chunk 3"
10.29.2.122 "Rendering 'C:\Users\ADMINI~1\AppData\Local\Temp\bootstrap-27399-1329307634.bat' chunk 4"
10.29.2.122 "Rendering 'C:\Users\ADMINI~1\AppData\Local\Temp\bootstrap-27399-1329307634.bat' chunk 5"
10.29.2.122 "Rendering 'C:\Users\ADMINI~1\AppData\Local\Temp\bootstrap-27399-1329307634.bat' chunk 6"
10.29.2.122
10.29.2.122 A subdirectory or file C:\chef already exists.
10.29.2.122 C:\Users\Administrator>mkdir C:\chef
10.29.2.122
10.29.2.122
10.29.2.122 C:\Users\Administrator>(
10.29.2.122 echo.log_level        :info
10.29.2.122  echo.log_location     STDOUT
10.29.2.122  echo.
10.29.2.122  echo.chef_server_url  "http://10.29.1.7:4000"
10.29.2.122  echo.validation_client_name "chef-validator"
10.29.2.122  echo.client_key       "c:/chef/client.pem"
10.29.2.122  echo.validation_key   "c:/chef/validation.pem"
10.29.2.122  echo.
10.29.2.122  echo.file_cache_path  "c:/chef/cache"
10.29.2.122  echo.file_backup_path "c:/chef/backup"
10.29.2.122  echo.cache_options    ({:path => "c:/chef/cache/checksums", :skip_expires => true})
10.29.2.122  echo.
10.29.2.122  echo.# Using default node name (fqdn)
10.29.2.122 ) 1>C:\chef\client.rb
10.29.2.122
10.29.2.122 C:\Users\Administrator>(echo.{"run_list":["recipe[demo_windows]"]}) 1>C:\chef\first-boot.json
10.29.2.122
10.29.2.122 C:\Users\Administrator>SET PATH=C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\opscode\chef\bin;C:\opscod
e\chef\\embedded\bin;C:\ruby\bin;C:\opscode\chef\bin;C:\opscode\chef\embedded\bin
10.29.2.122
10.29.2.122 C:\Users\Administrator>chef-client -c c:/chef/client.rb -j c:/chef/first-boot.json -
10.29.2.122 [Wed, 15 Feb 2012 04:08:29 -0800] INFO: *** Chef 0.10.8 ***
10.29.2.122 [Wed, 15 Feb 2012 04:09:21 -0800] INFO: Setting the run_list to ["recipe[demo_windo
10.29.2.122 [Wed, 15 Feb 2012 04:09:21 -0800] INFO: Run List is [recipe[demo_windows]]
10.29.2.122 [Wed, 15 Feb 2012 04:09:21 -0800] INFO: Run List expands to [demo_windows]
10.29.2.122 [Wed, 15 Feb 2012 04:09:21 -0800] INFO: Starting Chef Run for WIN-J2KDQHFJ5C9.corpor
10.29.2.122 [Wed, 15 Feb 2012 04:09:21 -0800] INFO: Running start handlers
10.29.2.122 [Wed, 15 Feb 2012 04:09:21 -0800] INFO: Start handlers complete.
10.29.2.122 [Wed, 15 Feb 2012 04:09:21 -0800] INFO: Loading cookbooks [chef_handler, demo_windo
10.29.2.122 [Wed, 15 Feb 2012 04:09:31 -0800] INFO: PowerShell 2.0 is already installed/enabled.
10.29.2.122 [Wed, 15 Feb 2012 04:09:31 -0800] INFO: This is invoked against windows server
10.29.2.122 [Wed, 15 Feb 2012 04:09:31 -0800] INFO: Processing powershell[cwd-to-win-env-var] action run (demo_windows::default line /chef/cache/cookbooks/demo_windows/recip
es/default.rb)
10.29.2.122 [Wed, 15 Feb 2012 04:09:31 -0800] INFO: powershell[cwd-to-win-env-var] sh(cd c:\ & C:\Windows\sysnative\WindowsPowershell\v1.0\powershell.exe -ExecutionPolicy Re
moteSigned -inputformat none -Command "& { C:\Users\ADMINI~1\AppData\Local\Temp\chef-script20120215-784-1ltlvc9.ps1 }")
10.29.2.122 [Wed, 15 Feb 2012 04:09:34 -0800] INFO: powershell[cwd-to-win-env-var] ran successfully
10.29.2.122 [Wed, 15 Feb 2012 04:09:36 -0800] INFO: Chef Run complete in 14.921728 seconds
10.29.2.122 [Wed, 15 Feb 2012 04:09:36 -0800] INFO: Running report handlers
10.29.2.122 [Wed, 15 Feb 2012 04:09:36 -0800] INFO: Report handlers complete
```

例子

用户体验自动化测试

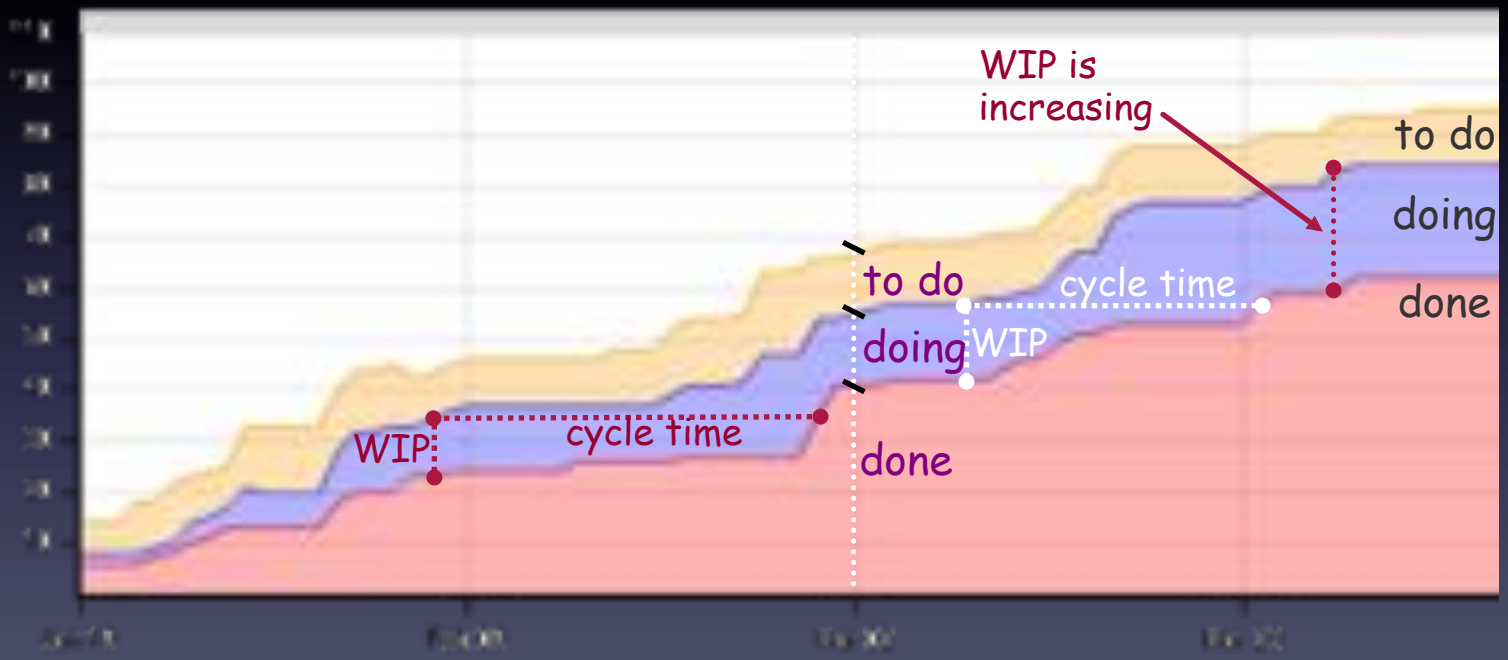


没有衡量
就无所谓改进

衡量指标

- 周期时间
- WIP（Work in Progress）数目
  - 集成构建成功率
  - 环境创建周期
  - 发布候选包手工修改次数

可视化



Cumulative Flow Diagram

可视化


Upcoming Deployments
ad-2-0-acceptance
ad-acceptance-other
customer-e2e
agentdesktop-debify
cp-01-quality
cp-02-js
cp-03-spec
cp-04-agency-listing-url
cp-05-listings
cp-07-price-config
cp-08-wip
cp-11-new-listing
cp-debify
cp-e2e-prepare
dbm-01
libres-debify
Rob
Rob
EXIT
Datacenter DNS Balance
Hostname
Datacenter
Kidman Park
Equinix
Amsterdam
TTL
100%
50%
1s
56s
54s
0s
55s
7s
20s
28s

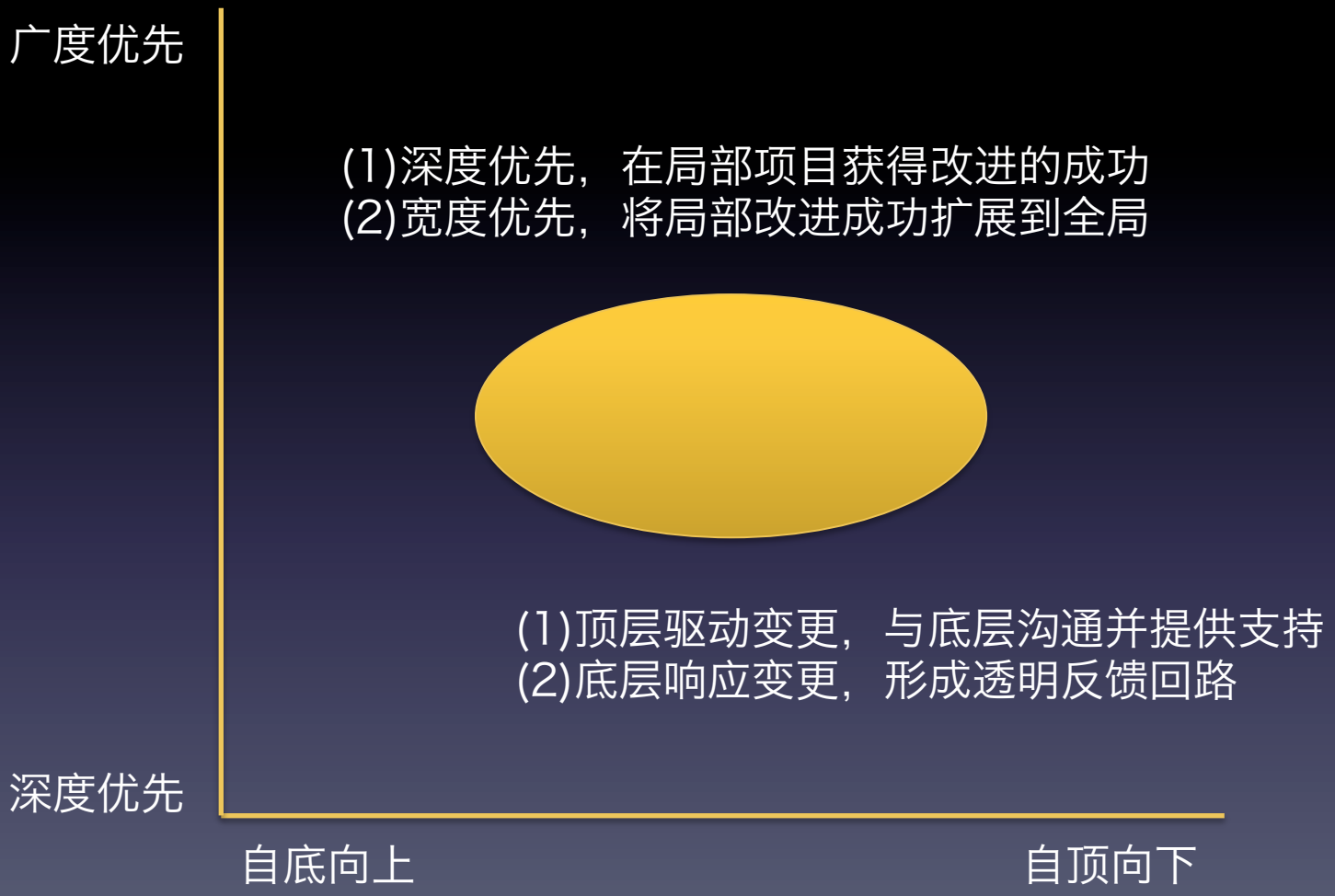
Continuous delivery is about putting the release schedule in the hands of the business, not in the hands of IT.

Implementing continuous delivery means making sure your software is always production ready throughout its entire lifecycle – that any build could potentially be released to users at the touch of a button using a fully automated process in a matter of seconds or minutes.

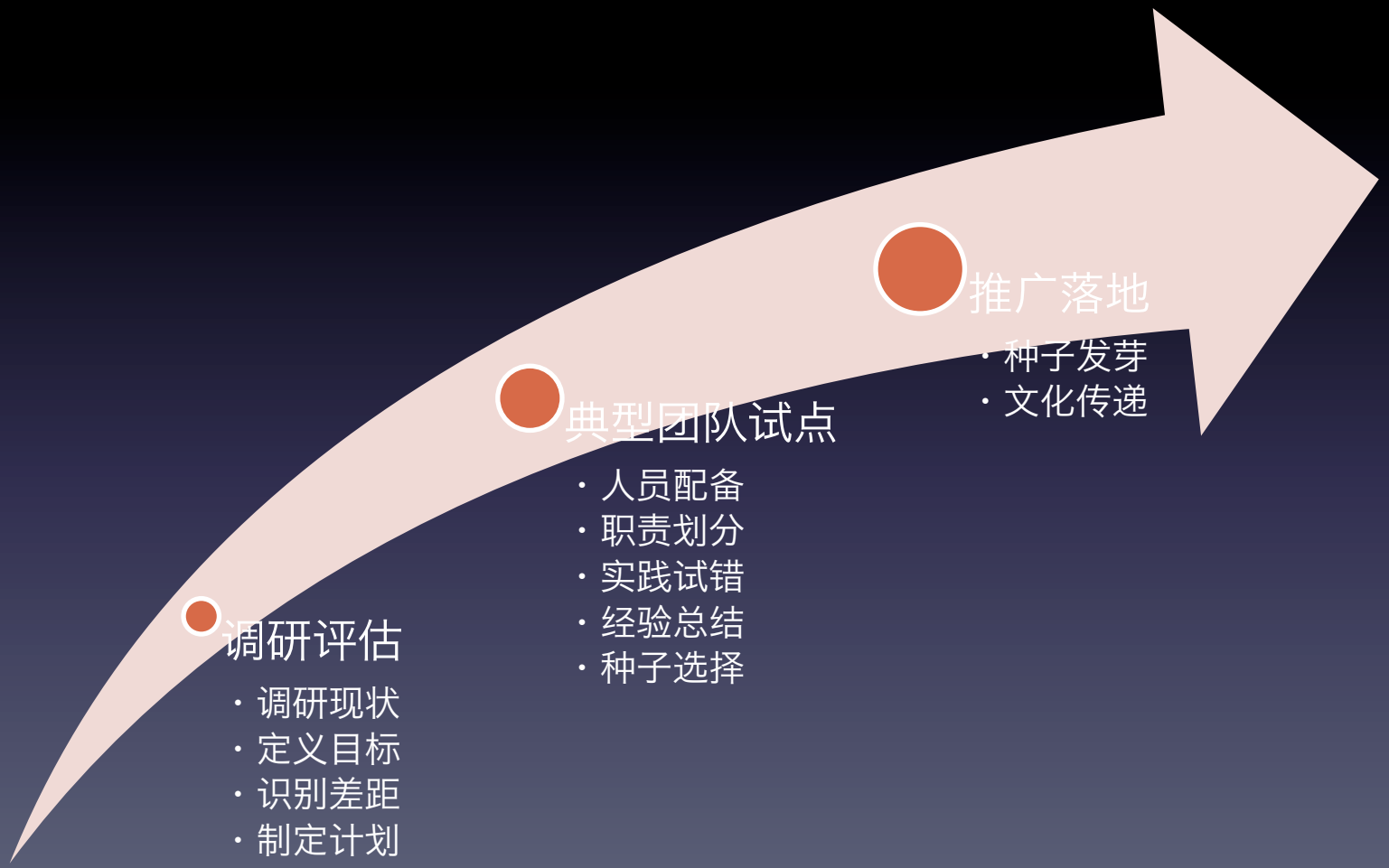
- Jez Humble (http://continuousdelivery.com/)

如何组织内建设持续交付?

- 实践能否证明有效?
- 哪些实践应该做哪些裁减?
- 如何让人员接受新的实践和流程?
- 改革的风险和难点在哪里？有何解决方法?
- ……


广度优先
(1)深度优先，在局部项目获得改进的成功
(2)宽度优先，将局部改进成功扩展到全局
(1)顶层驱动变更，与底层沟通并提供支持
(2)底层响应变更，形成透明反馈回路
深度优先
自底向上
自顶向下

路线图


调研评估
・调研现状
・定义目标
・识别差距
・制定计划
典型团队试点
・人员配备
・职责划分
・实践试错
・经验总结
・种子选择
推广落地
・种子发芽
・文化传递

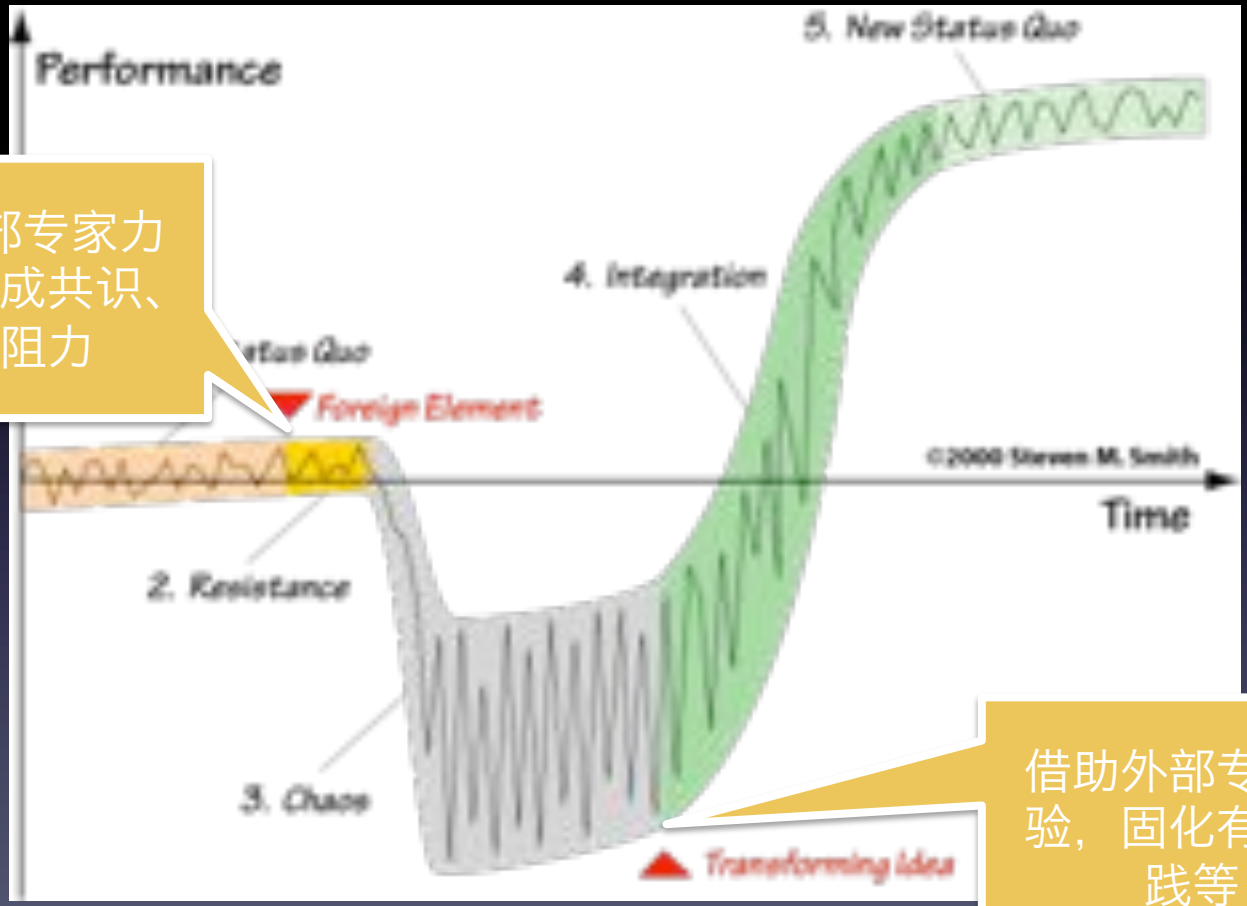
关键因素

- 人
- “端到端”的全面系统性分析
- 可行性强的改进计划
- 阻力消除与资源支持
- 沟通
- 屏蔽外部干扰

风险

- 顶层的决心和投入
- 底层对资源的获取情况和执行力
- 上下级对目标的认同程度
- 当前交付目标与改进目标之间的冲突

Satir变革模型



引入外部专家力量，达成共识、克服阻力

借助外部专家经验，固化有效实践等

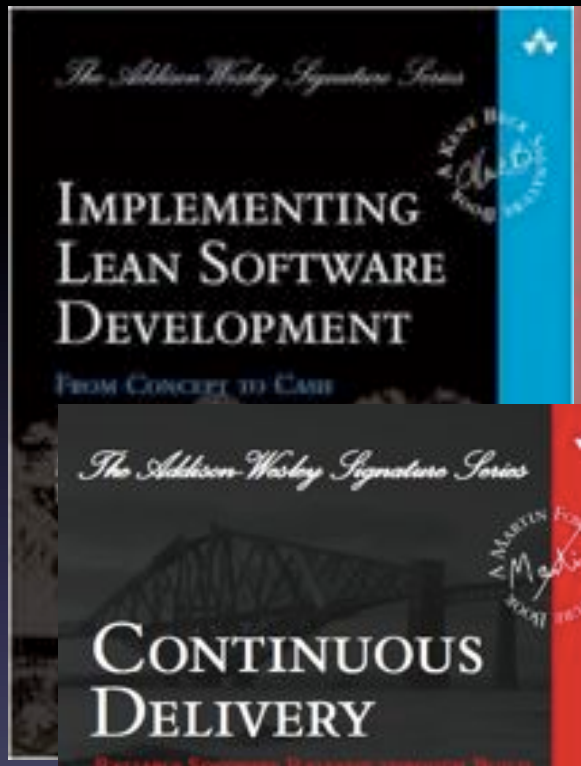
组织里面已经持续交付了几个项目

下一步该做什么？

持续交付之持续

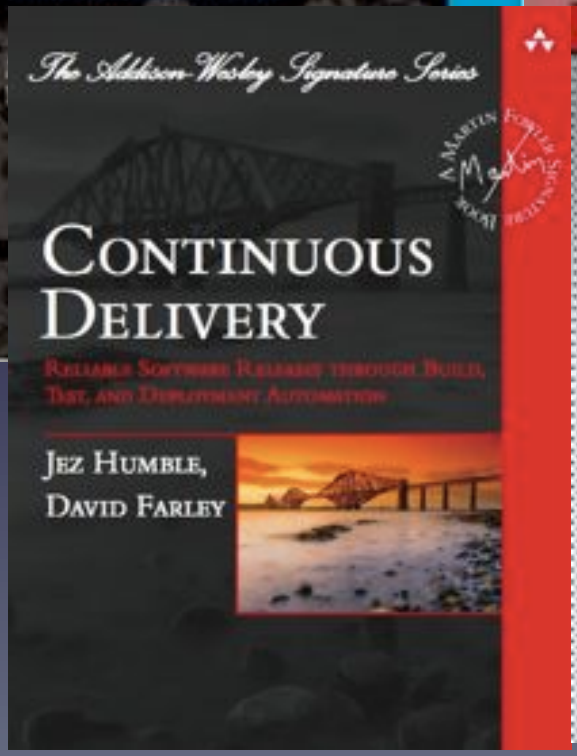
- 保持初心
- 系统思考
- 坚持技术卓越
- 学习型组织

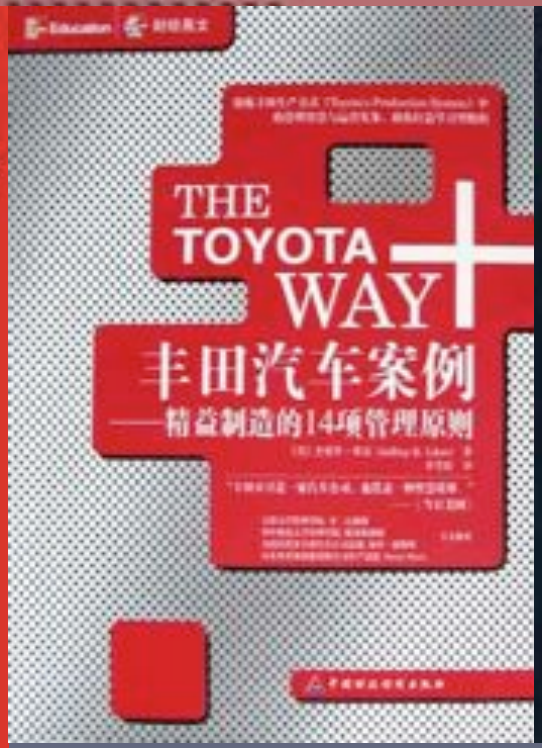
推荐书籍


The Addison Wesley Signature Series
IMPLEMENTING
LEAN SOFTWARE
DEVELOPMENT
FROM CONCEPT TO CASH


Toyota
Production System
丰田
生产方式


精益软件度量
——实践者的观察与思考


The Addison Wesley Signature Series
CONTINUOUS
DELIVERY
JEZ HUMBLE,
DAVID FARLEY


THE
TOYOTA
WAY
丰田汽车案例
——精益制造的14项管理原则


持续集成
软件质量改进和风险降低之道
Continuous Integration
Improving Software Quality
and Reducing Risk


T
HANKYOU