DRAGON DANCE:
LARGE SCALE AGILE TRANSFORMATION IN TRADITIONAL TELECOMMUNICATIONS COMPANY

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Ni Sun

@NisunSun

- Sunny Sun is one of the most experienced coaches and consultants in the Agile enterprise transformation space in China.
- She successfully led Agile transformation and Scrum/Kanban adoptions for her clients' companies, including the industries of telecommunications, internet, finance, education, production, machinery, etc.
  - Coached 200+ Agile teams & 300+ Scrum Masters;
  - Helped 100+ organizational top leaders to build Agile leadership;
  - Impacted 2500+ people.

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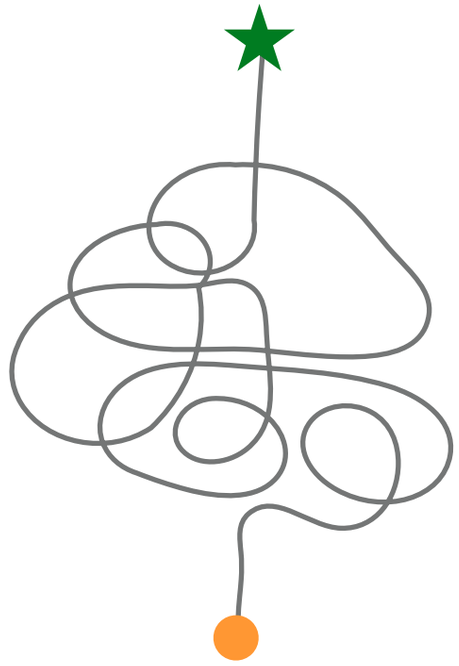
Game Time !

Chinese Culture

Rest of the World

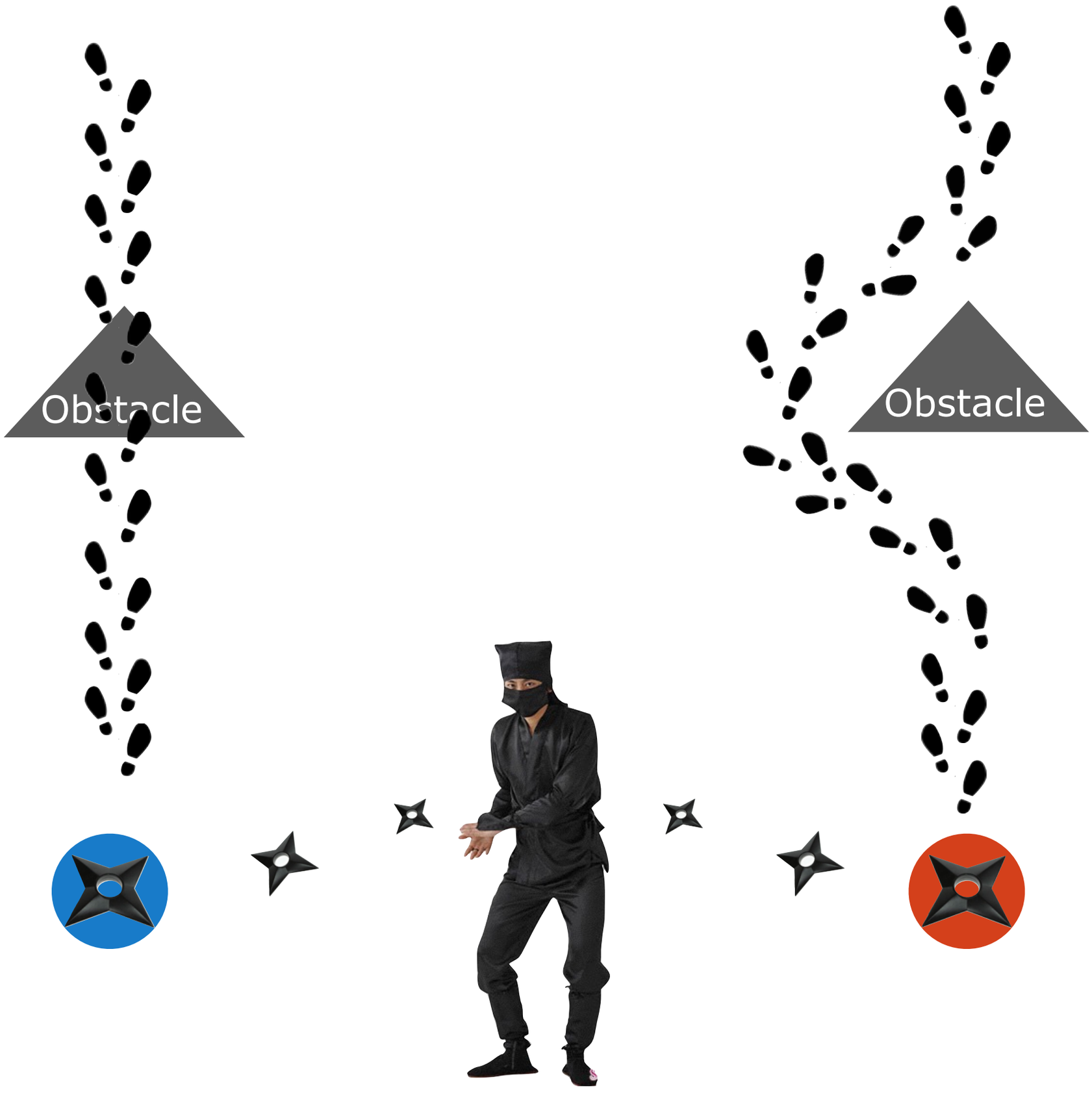
Be Punctual for Meeting

State Opinion



When People Talking

Problem Solving



CONTENT

BACKGROUND

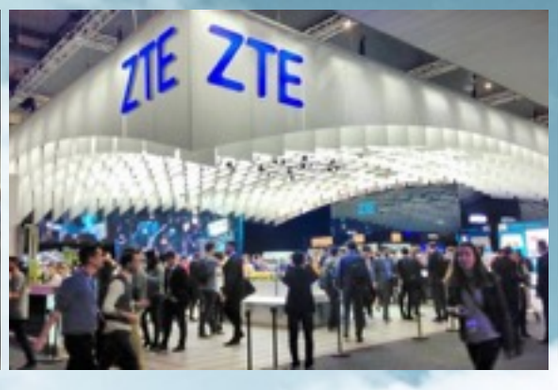
JOURNEY

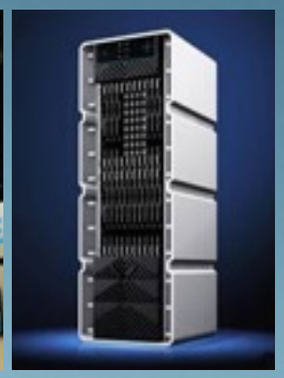
- STRATEGY AND TACTICS
- ALIGNMENT
- SETUP
- PILOT
- REORGANIZATION
- ROLLOUT

RESULT

SUMMARY

BACKGROUND

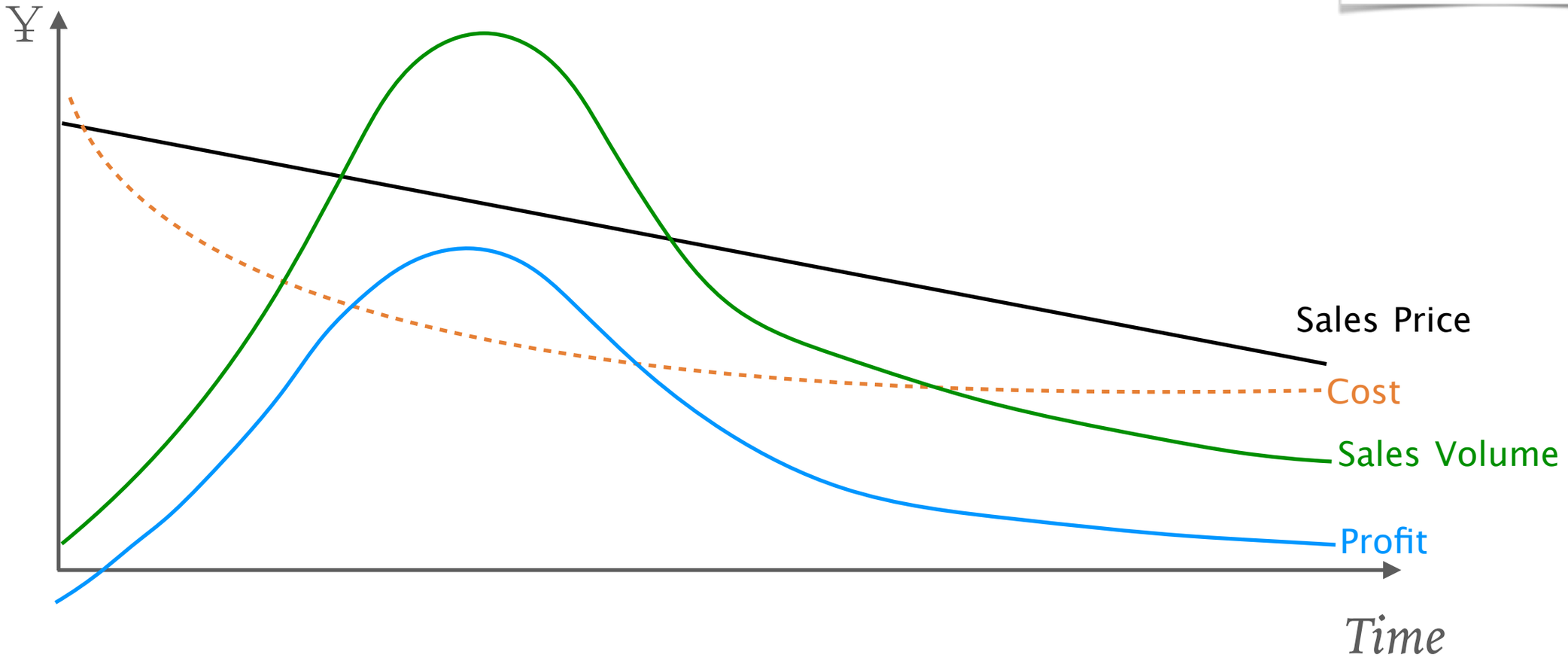




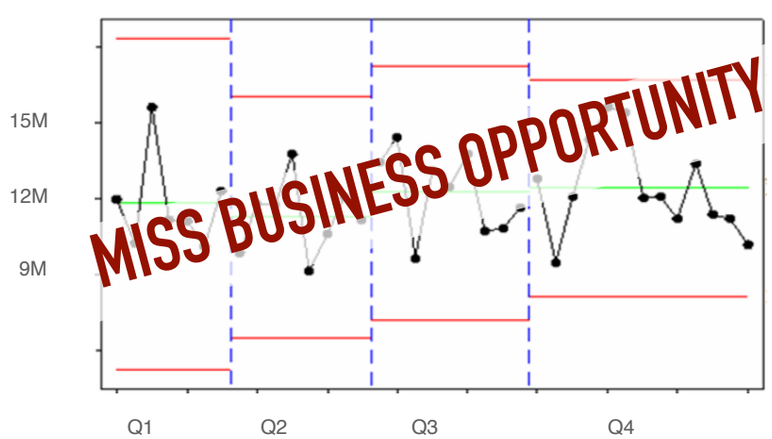
- A leading global telecommunications equipment and network solution provider.
- 50,000 employees worldwide.

Organization and Products

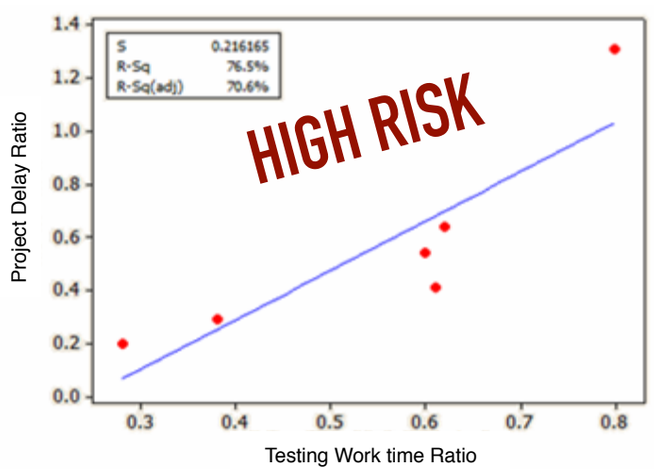
- 500+ people.
- 5 major products; each product has billions RMB sales volume.
- Complex product: 10-million Lines of Code, Application+Platform, Software+Hardware.
- Flagship product profit ramping down.



Pain Points of Giant Dragon

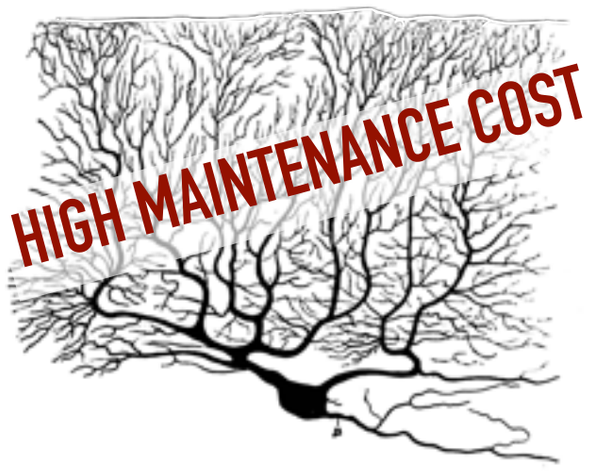


Very long Lead Time



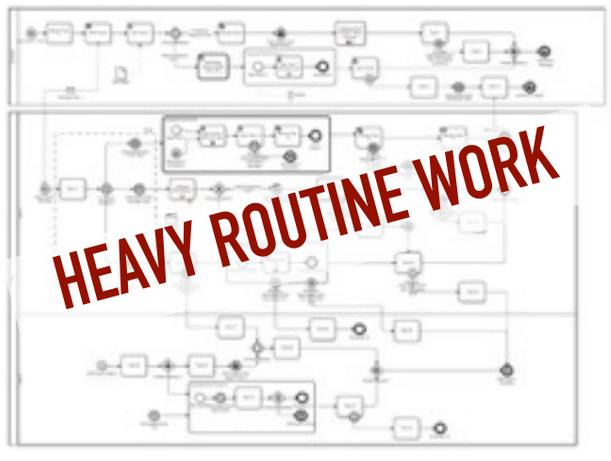
Projects delay

Long defects convergence time



Too many customization

Too many versions



Heavy Process

Bureaucracy

External Enterprise Agile Coach

Invited by the Head of EPG (Enterprise Process Group) in November 2014

Lead Agile Transformation for Fixed Network Business Unit

MISSION

SCOPE

500+PEOPLE

- Marketing
- Product Planning
- System Architecture
- Software Development
- Hardware Development
- Integration & System Testing
- Pre-production

BUSINESS

Reduce TTM (Time to Market)

GOAL

MANAGEMENT

- Improve efficiency
- Boost Morale

THE JOURNEY

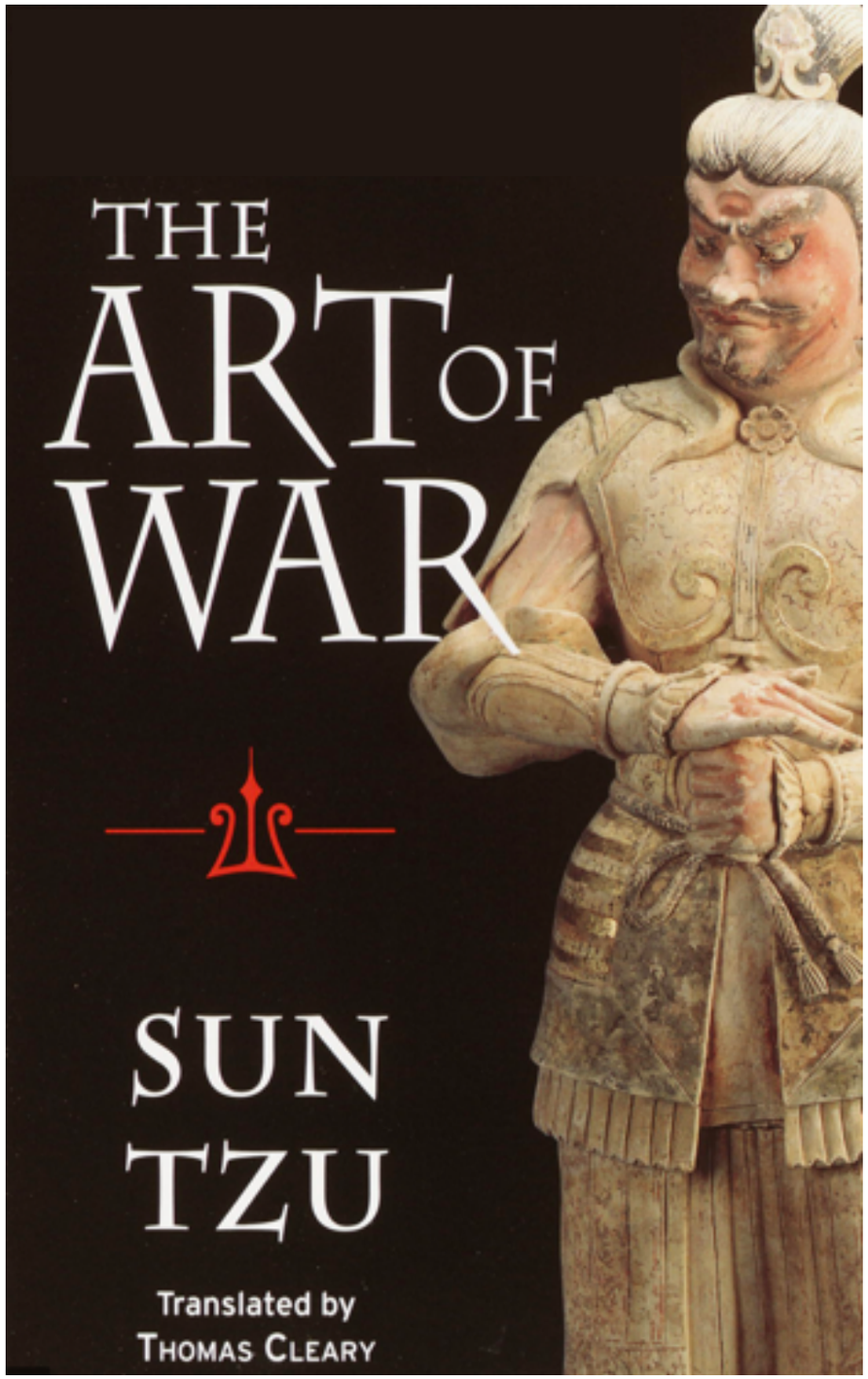
STRATEGY AND TACTICS

RIGHT
TIMING

RIGHT PLACE
RIGHT THING

RIGHT
PEOPLE

Enterprise Agile Coach’s Mindset



PRE-EMPTIVE

“The victorious strategist only seeks battle after the victory has been won,
whereas he who is destined to defeat first fights and afterwards looks for victory.”

— By Sun Tzu. “The Art of War”

Chinese Big Boss

They are …

Micro Monitoring

Demanding

FISI
(Face Is Super Important)

AATT
(Anxious All The Time)

Result Orientation

But, they also are …

Hardworking

Passionate

Love Work

Responsible and Accountable

Alignment

- Understand the current situation and history
- 1-on-1 in-depth walking discussions
- Identify key stakeholders
- Extract common interests and expectations

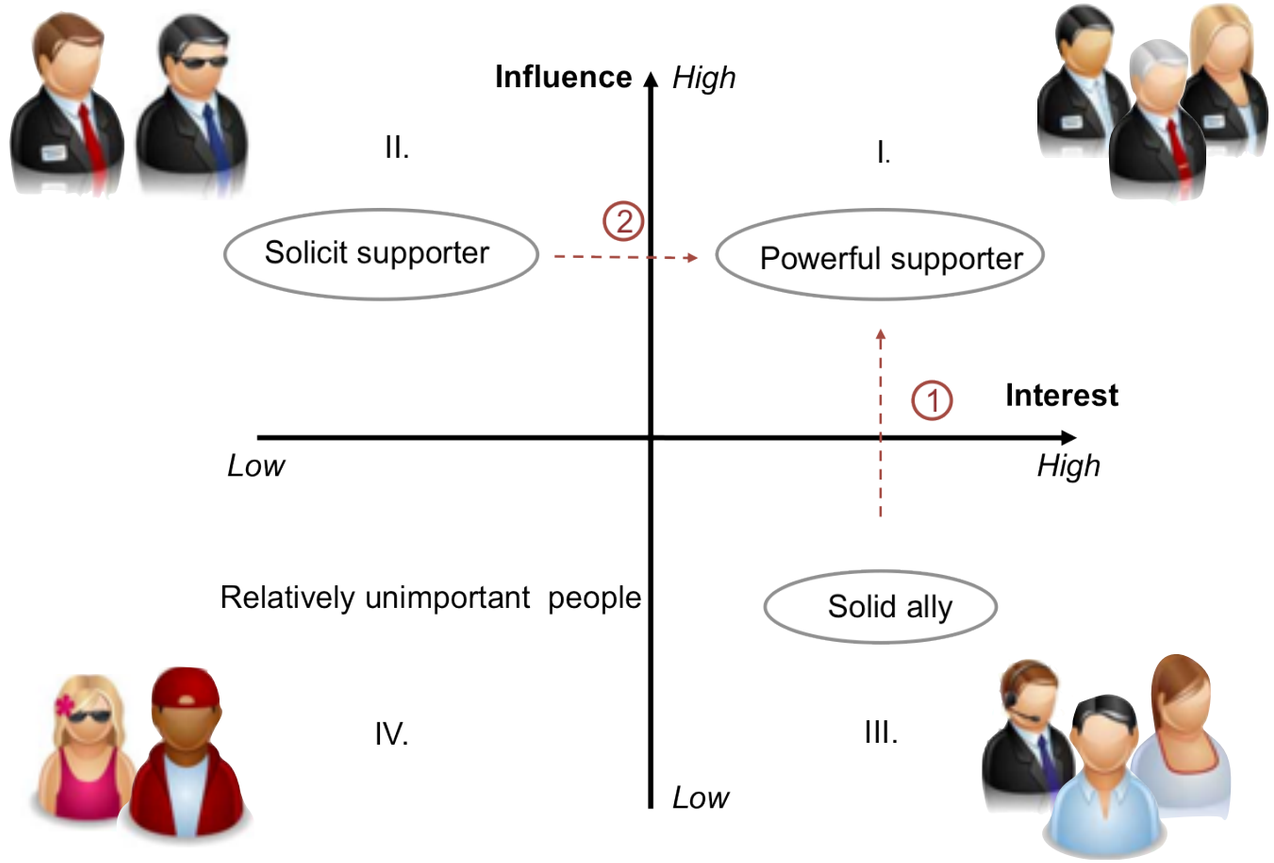


Fig 1. Influence-Interest diagram

Tactic - Systematical Transformation

- 11 Epics as the Agile Transformation Projects

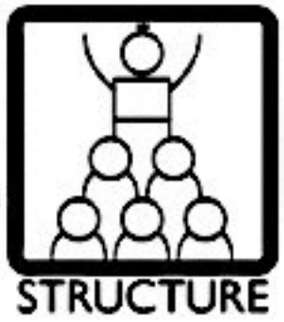
CEO (Chief Epic Owner)

Business Strategy

Agile Culture Fostering

Agile Teams Initiation & Development

Competence Mastery



Organization Restructure

Performance Appraisal

Career Path Redesign

Process Redesign

Continuous Integration

System Testing Preposition

Measurement

ETC(Enterprise Transformation Committee) Kickoff

Use Scrum to Organize ETC

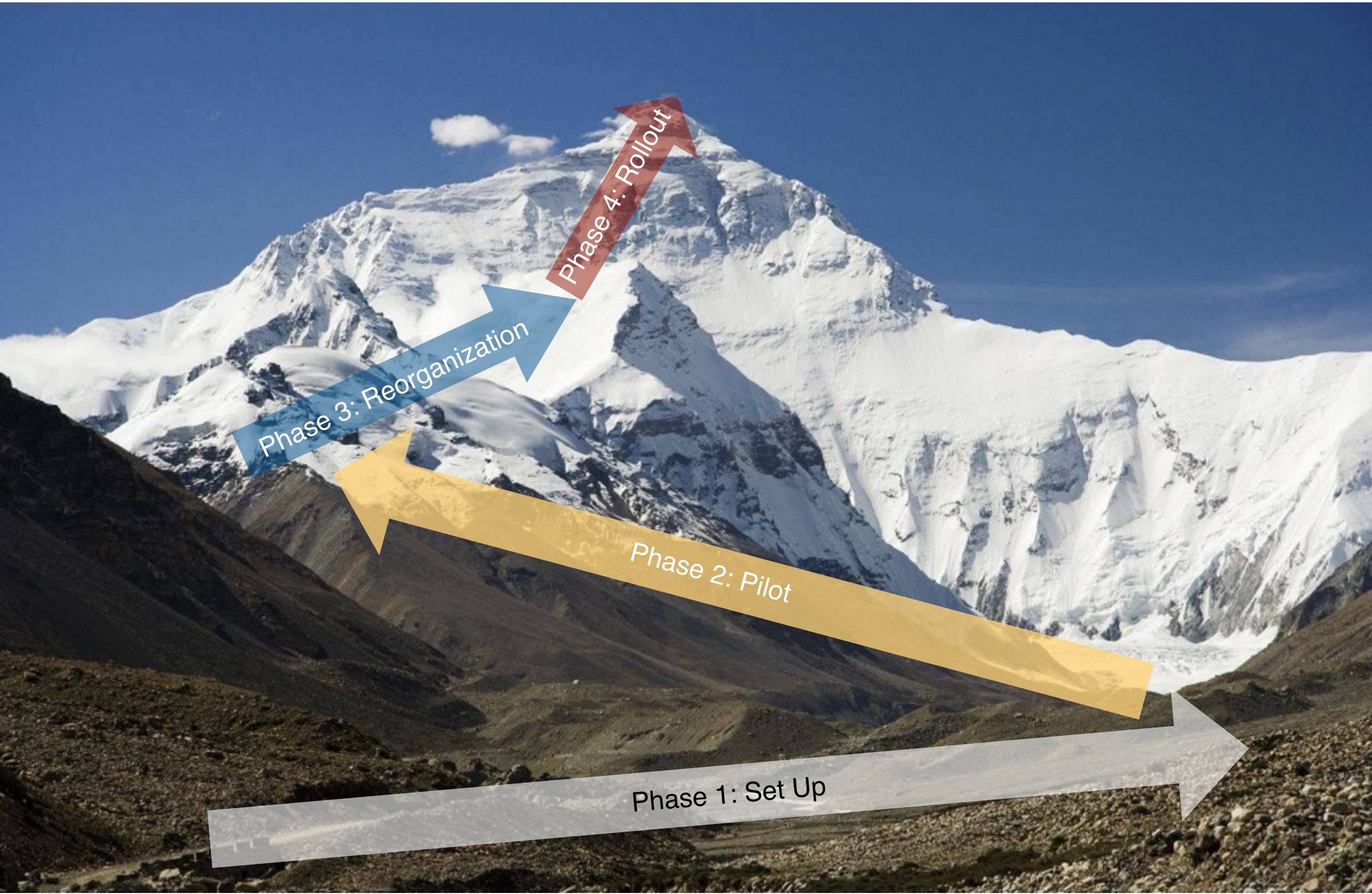
Scrum Board

Daily Standup

Review

Retrospective

Agile Transformation Phases



SETUP

Leadership Kickoff meeting

Agile Training

Scrum Master and Product Owner Training

PILOT

Self-designed Feature Teams

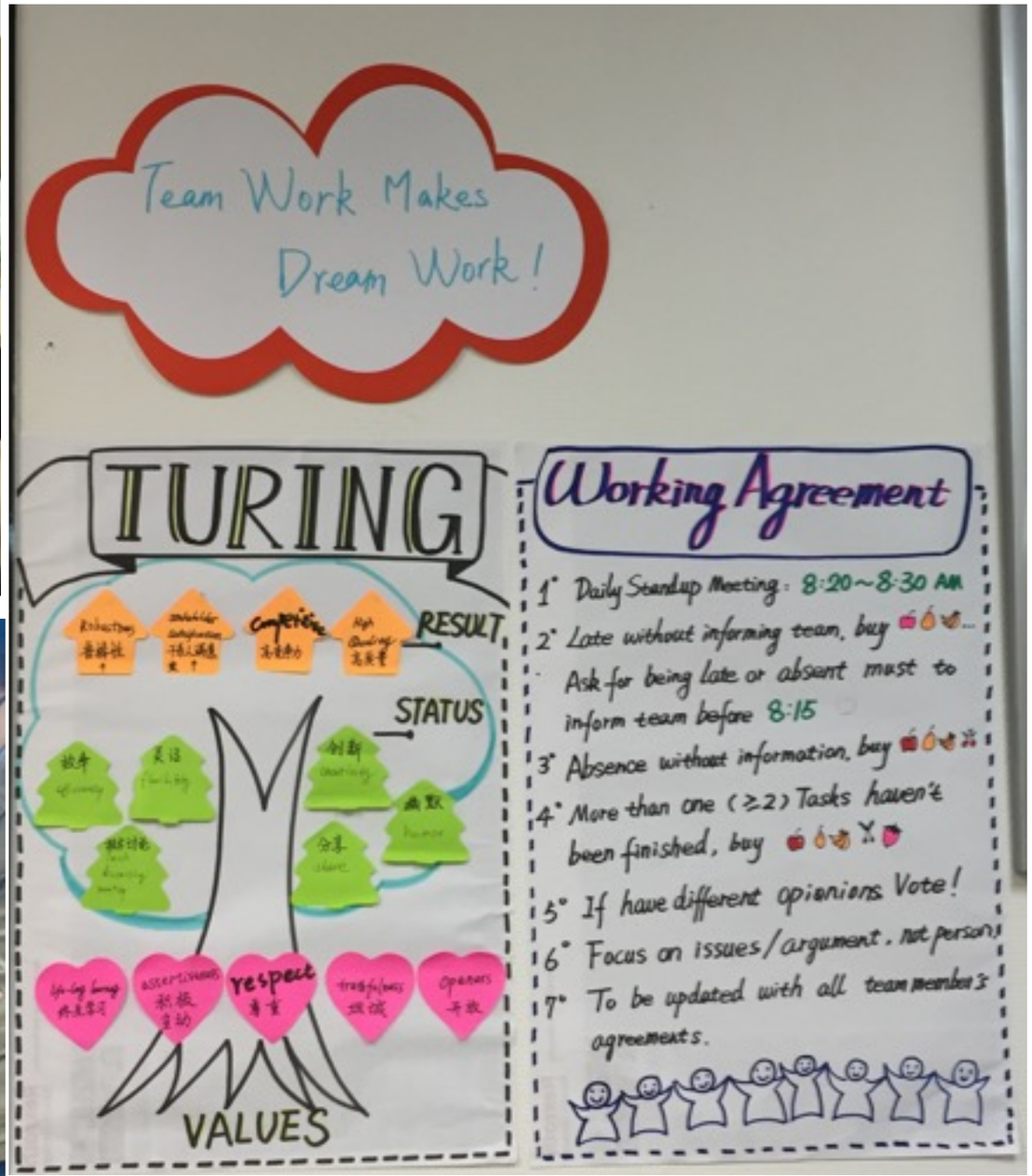
THREE ROUNDS

- 1st: Initial constrained rules
- 2nd: Refinements
- 3rd: Find bugs

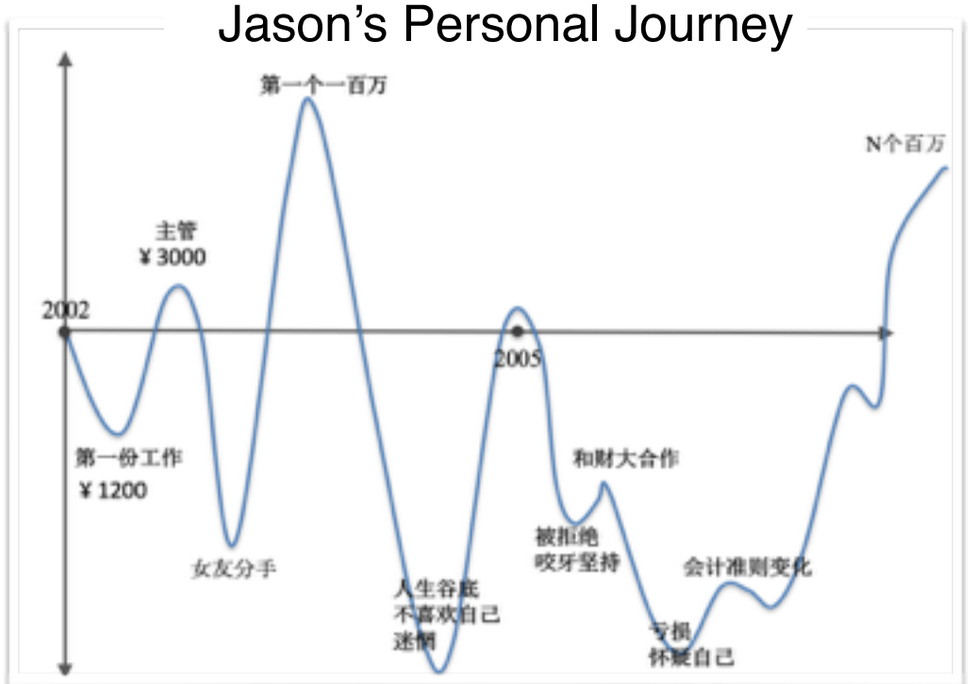
TEAM RESUME

- Team members
- Experiences
- Skills

Team Vision and Culture Building Workshop

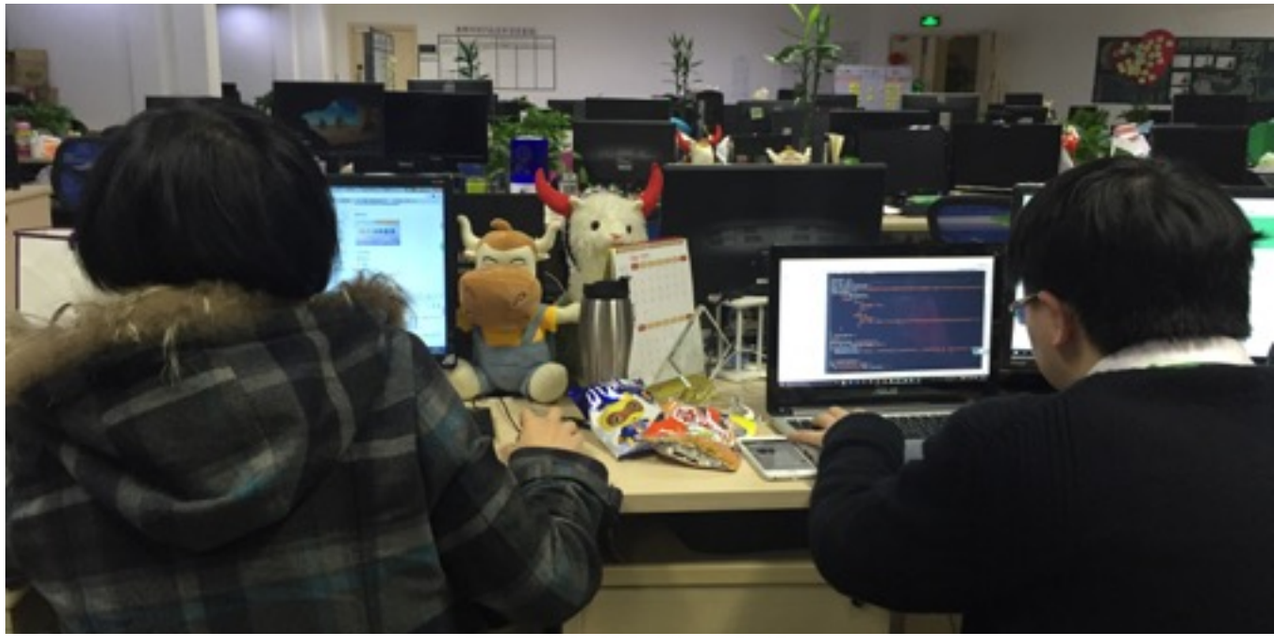


Team Development



Competence Development

Pair-programming



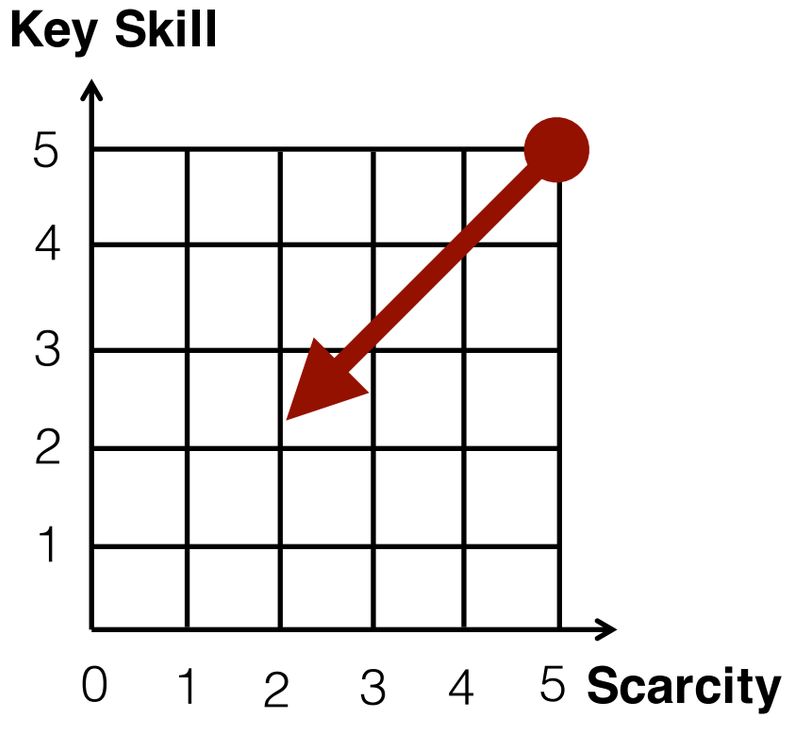
Team Technique Skill Map

Team Member

姓名 / 技术点	陆XX	陈XX	邱XX	狄XX	徐XX	谢XX	张XX	张XX	郭XX	曹XX	张XX	何XX
QOS	0	8	0	0	2	2	0	7	1	3	0	0
ACL	0	0	7	0	3	2	0	6	9	10	0	0
性能统计	9	6	7	0	1	0	0	0	0	3	0	0
环回检测	0	0	4	0	0	0	0	7	10	10	0	0
端口镜像	0	3	4	0	1	2	0	7	8	10	0	0
ATM PING	0	0	7	0	0	2	0	7	9	10	0	0
EFM	7	0	0	0	1	0	0	6	0	10	0	0
UAPS	9	0	0	0	1	2	0	0	7	2	0	0
MPLS	0	0	0	0	7	0	0	0	0	0	0	0
DHCP SNOOPING	0	0	2	5	9	9	8	0	0	1	0	0
DHCPv6 SNOOPING	0	0	2	5	9	9	8	0	0	1	0	0
IP SOURCE GUARD	0	0	2	0	9	9	8	0	0	1	0	0
ND SNOOPING	0	0	0	6	9	9	8	0	0	1	0	0
DHCP RELAY	5	0	0	0	9	2	7	0	0	1	0	0
DHCPv6 RELAY	5	0	0	0	9	2	7	0	0	1	0	0
DHCP SERVER	5	0	0	0	9	2	6	0	0	1	0	0
DHCP CLIENT	5	0	0	0	9	2	6	0	0	1	0	0
测试	8	5	5	0	3	5	0	0	6	6	8	0
SSP	0	0	0	0	0	0	0	0	0	1	0	7

Skills

Team Swarming



Pilot Success

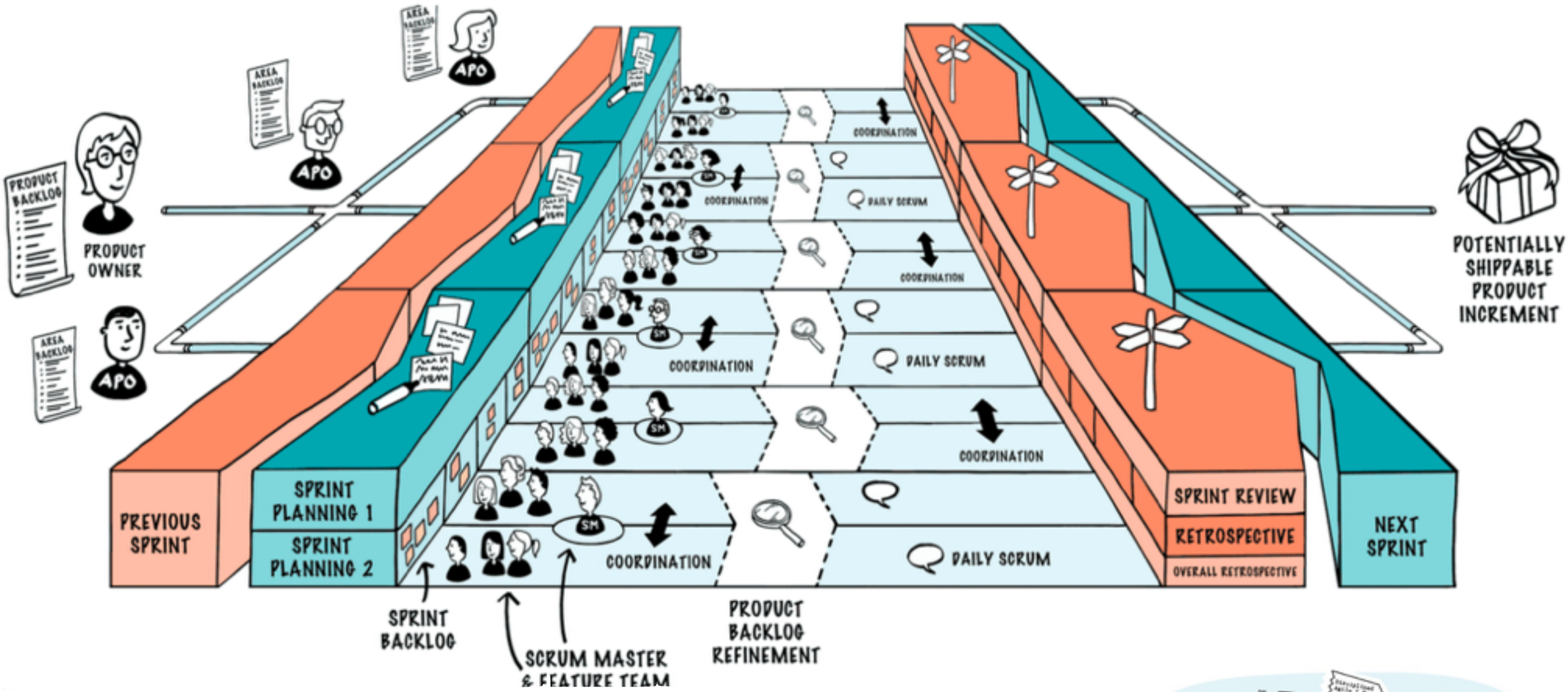
- Continuous Integration system was built and running
- Team members' competence increased rapidly
- Skills expanded to architecture design, requirement analysis and system testing
- Found 8 critical bugs during the system testing in the 3rd pilot sprint
- Feature development cycle time decreased from 32 days to 20 days

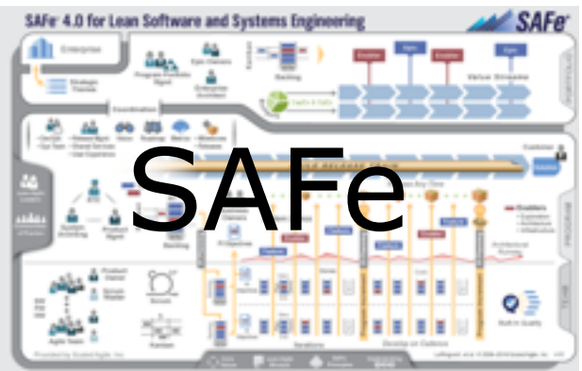
REORGANIZATION

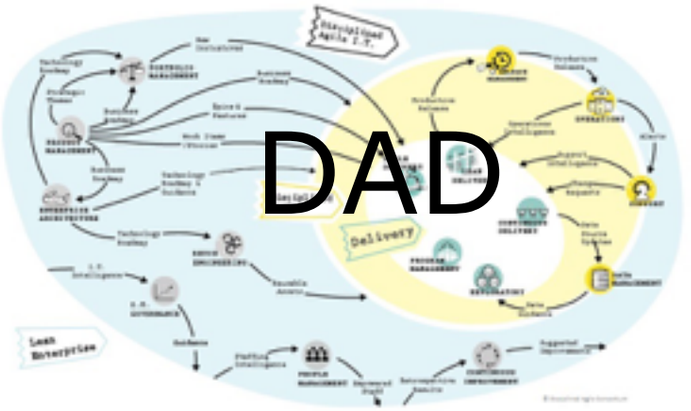
LeSS Huge

(LARGE SCALE SCRUM HUGE)

- https://less.works



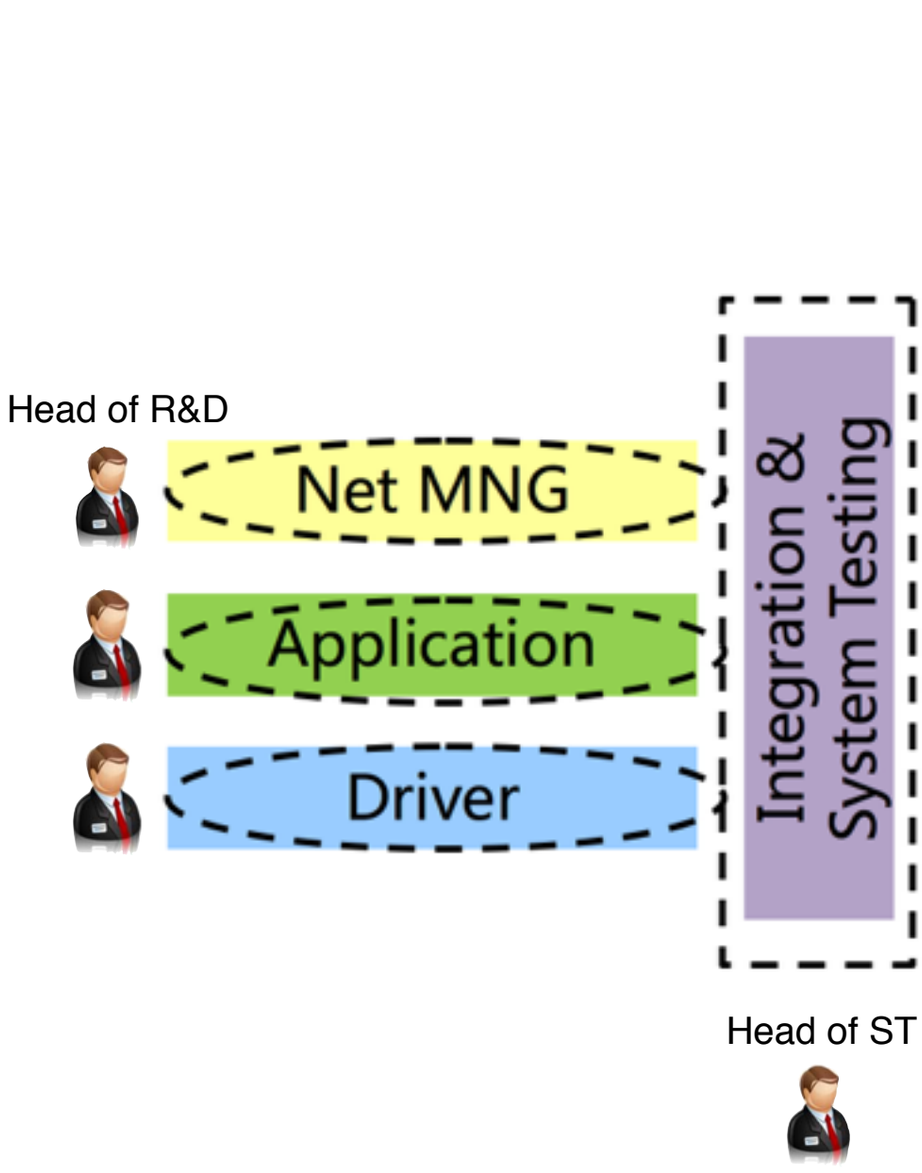




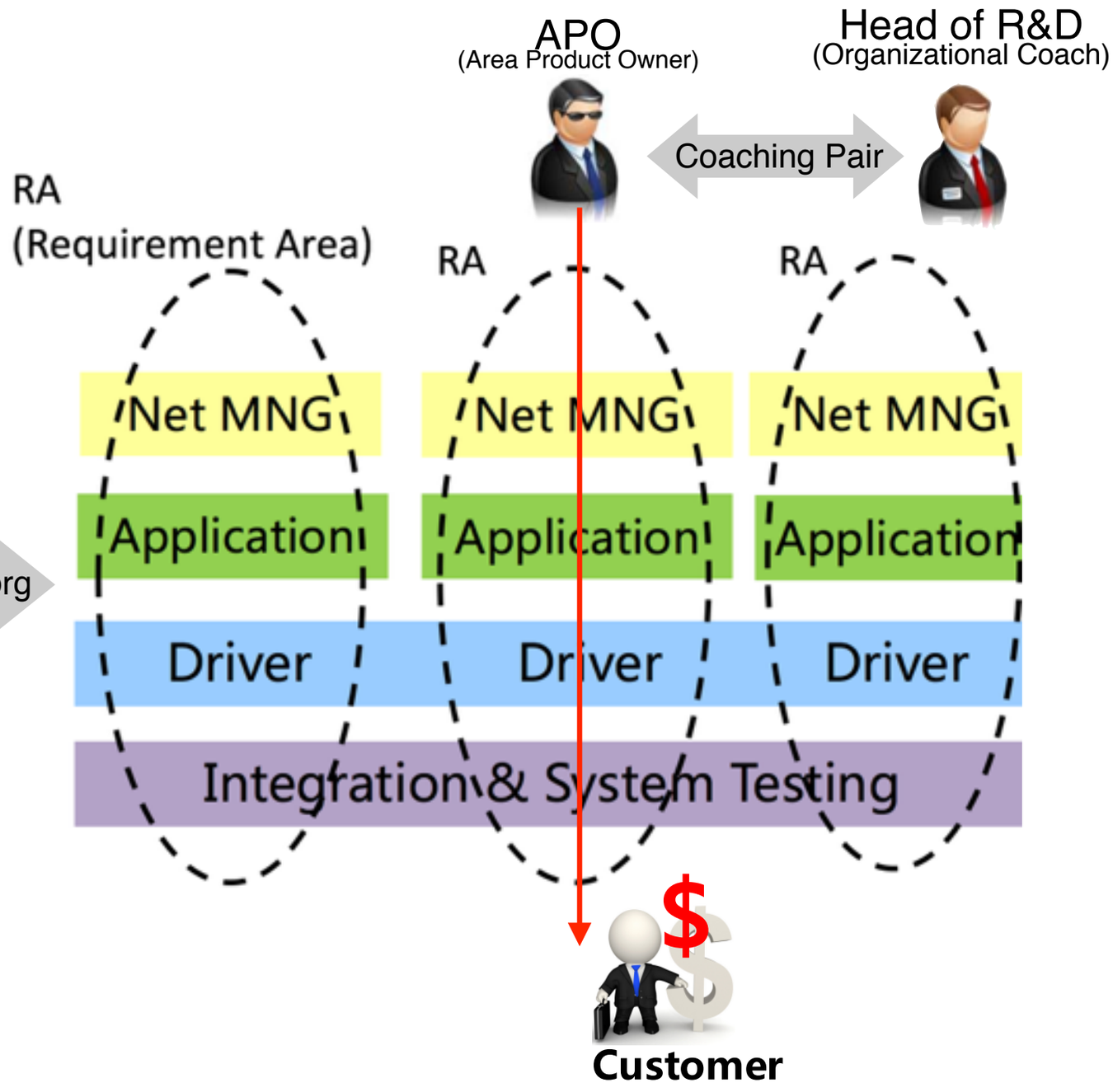
Flip over the Organization

Protocol-layered based delivery

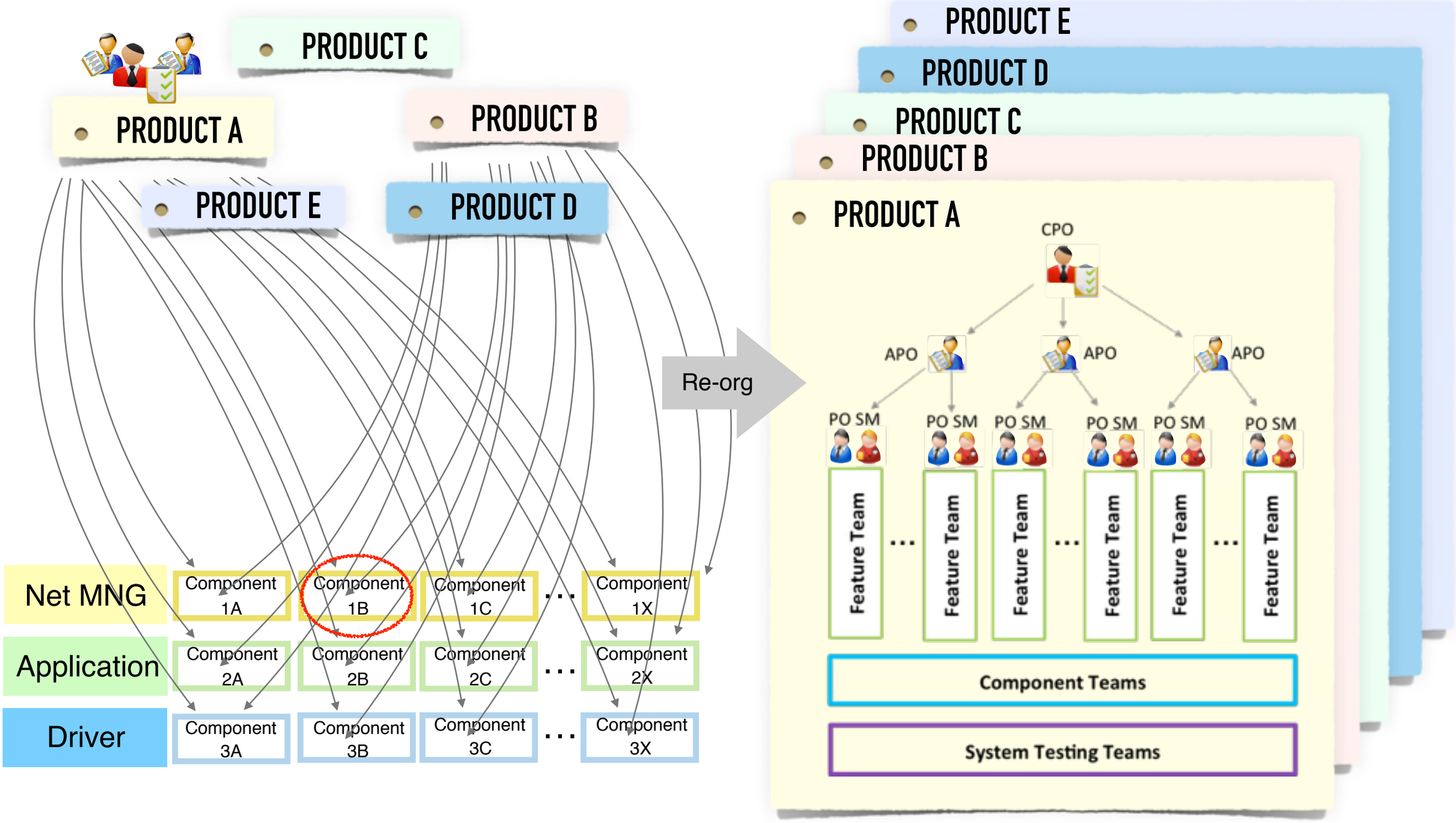
Customer-oriented Feature based delivery



Re-org



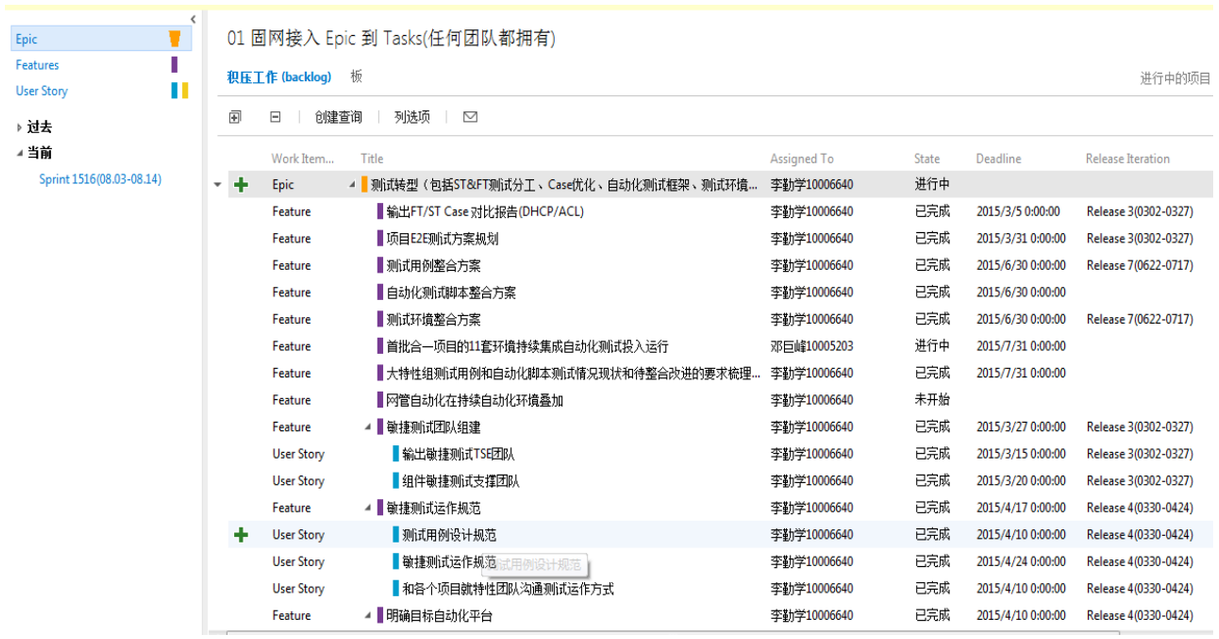
Component Based Team to Feature Based Team



Roles and Artifacts

Roles' Responsibility Definition

1 Product Backlog for 1 Product



	Work Item...	Title	Assigned To	State	Deadline	Release Iteration
✚	Epic	测试转型（包括ST&FT测试分工、Case优化、自动化测试框架、测试环境...	李勤学10006640	进行中		
	Feature	输出FT/ST Case对比报告(DHCP/ACL)	李勤学10006640	已完成	2015/3/5 0:00:00	Release 3(0302-0327)
	Feature	项目E2E测试方案规划	李勤学10006640	已完成	2015/3/31 0:00:00	Release 3(0302-0327)
	Feature	测试用例整合方案	李勤学10006640	已完成	2015/6/30 0:00:00	Release 7(0622-0717)
	Feature	自动化测试脚本整合方案	李勤学10006640	已完成	2015/6/30 0:00:00	
	Feature	测试环境整合方案	李勤学10006640	已完成	2015/6/30 0:00:00	Release 7(0622-0717)
	Feature	首批合一项目的11套环境持续集成自动化测试投入运行	邓巨峰10005203	进行中	2015/7/31 0:00:00	
	Feature	大特性组测试用例和自动化脚本测试情况现状和待整合改进的要求梳理...	李勤学10006640	已完成	2015/7/31 0:00:00	
	Feature	网管自动化在持续自动化环境叠加	李勤学10006640	未开始		
	Feature	敏捷测试团队组建	李勤学10006640	已完成	2015/3/27 0:00:00	Release 3(0302-0327)
	User Story	输出敏捷测试TSE团队	李勤学10006640	已完成	2015/3/15 0:00:00	Release 3(0302-0327)
	User Story	组件敏捷测试支撑团队	李勤学10006640	已完成	2015/3/20 0:00:00	Release 3(0302-0327)
	Feature	敏捷测试运作规范	李勤学10006640	已完成	2015/4/17 0:00:00	Release 4(0330-0424)
✚	User Story	测试用例设计规范	李勤学10006640	已完成	2015/4/10 0:00:00	Release 4(0330-0424)
	User Story	敏捷测试运作规范	李勤学10006640	已完成	2015/4/24 0:00:00	Release 4(0330-0424)
	User Story	和各个项目就特性团队沟通测试运作方式	李勤学10006640	已完成	2015/4/10 0:00:00	Release 4(0330-0424)
	Feature	明确目标自动化平台	李勤学10006640	已完成	2015/4/10 0:00:00	Release 4(0330-0424)

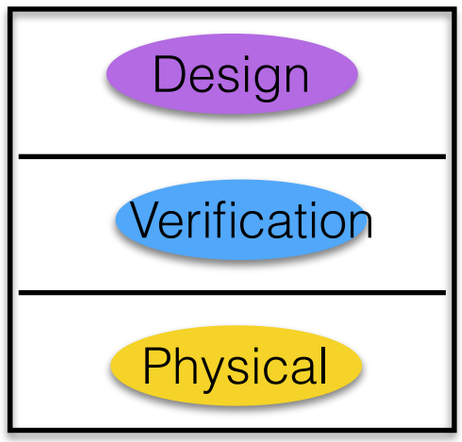
TFS (Team Foundation Server) Training

Hardware Agility Challenges

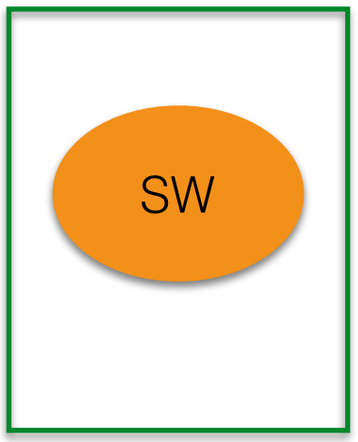
1. Background:

   Hardware department (50 people):

   - Functional teams act independently. Design and verification don't normally share goals.
   - Common software is out of the hardware scope (out of the loop).
   - SoC (System on Chip): ASIC/FPGA+Embedded processor + Software



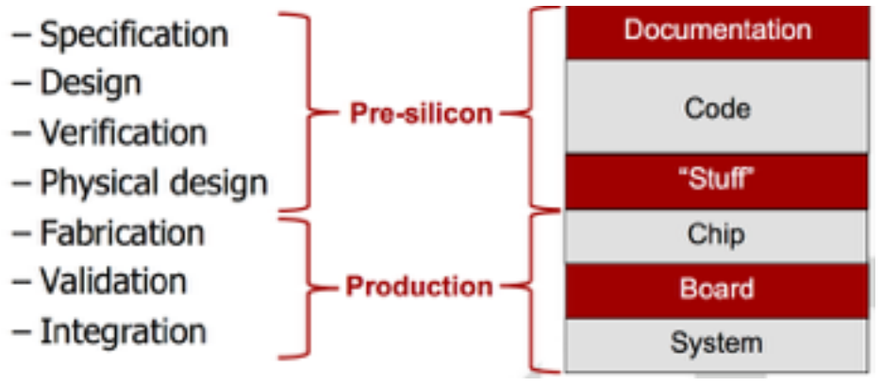
Building B
Hardware Department



Building A
3 R&D Departments

2. The big challenges we face:

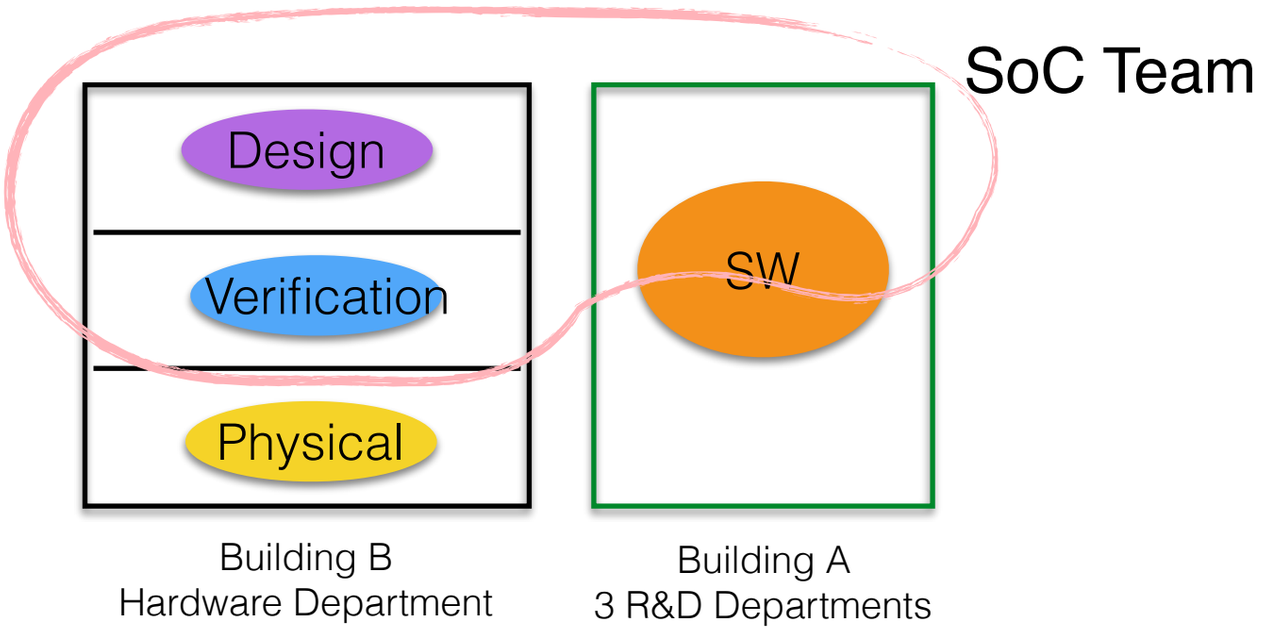
   - Hardware Long development cycle > 1.5 year.
   - Long correction time for hardware defect.
   - SW and HW more and more far away from each other.

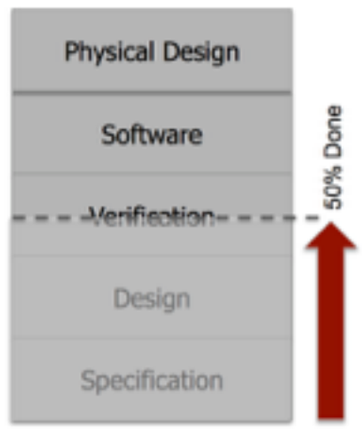


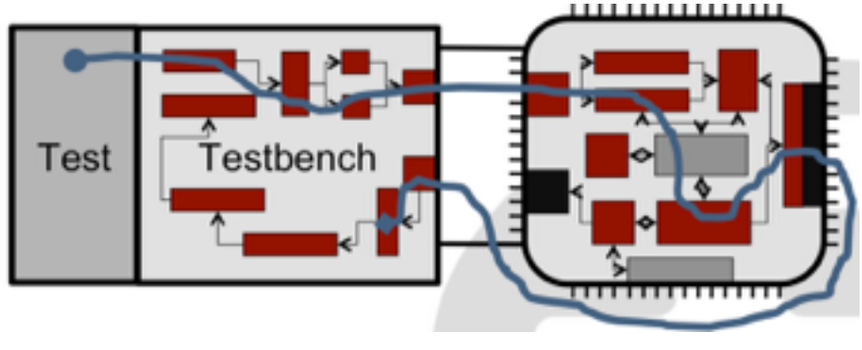
Hardware Agility Solution

Solution:

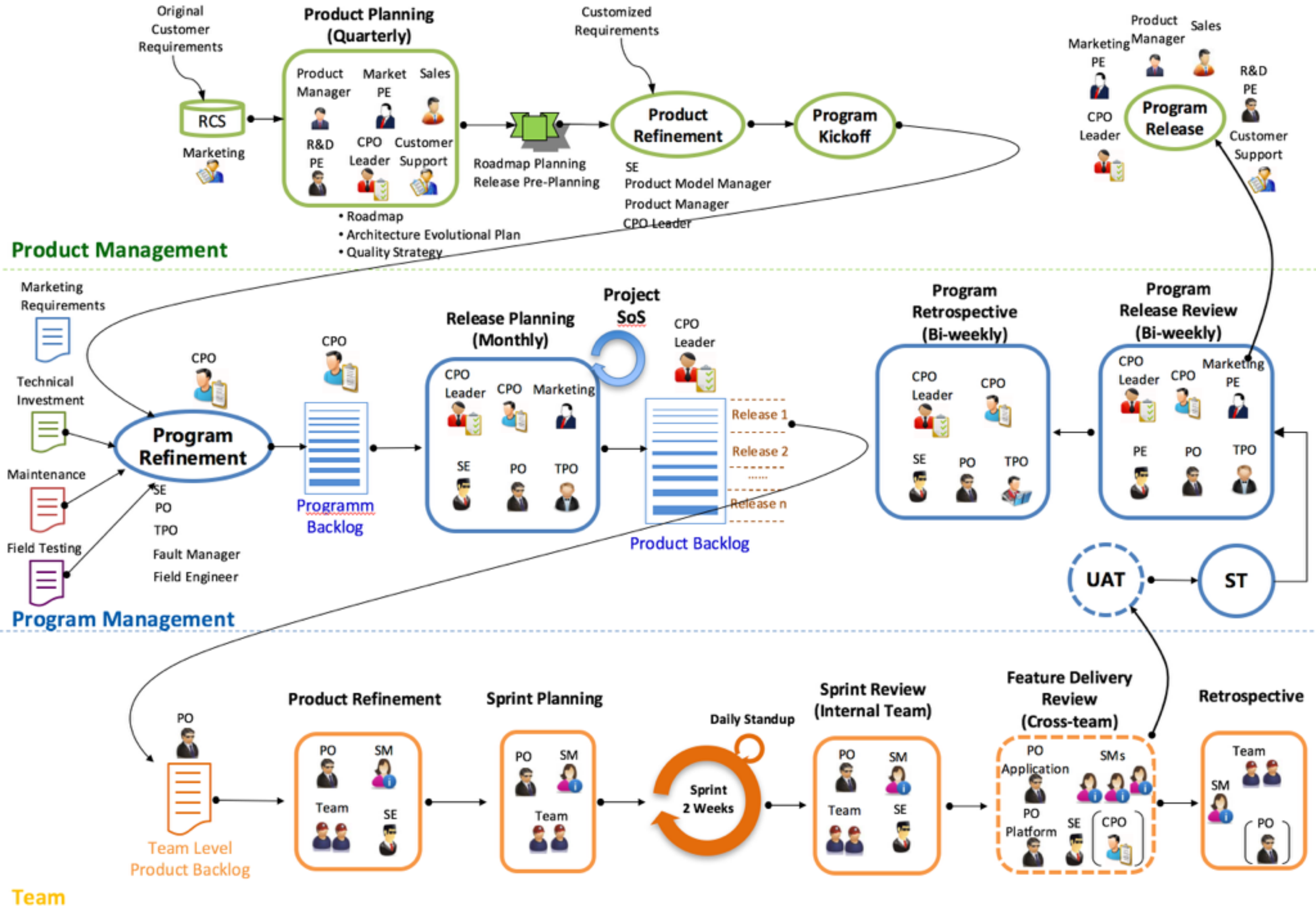
- Create shared Product vision and goal in HW and SW departments.
- ONE product backlog.
- Create SoC Team (Design+Verification+SW)
- Adopt Scrumban in SoC Team
- Change traditional waterfall to Agile Iteration
- Learn before Development: Operation Basic Sanity:







Customized Agile Process Overview



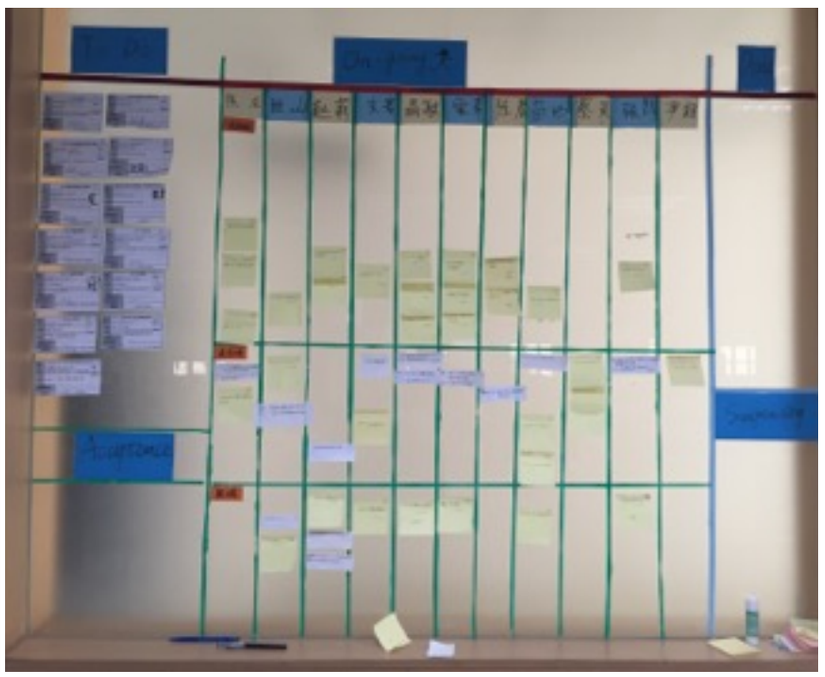
Set Backs

Command and Control Vs. Servant Leadership

ROLLOUT

All Hands Meeting
for Agile Transformation Rollout

Adopt Scrum/Kanban/Scrumban to 42 Agile Teams



Coach CoP (Community of Practice)

Coach CoP

Technical CoP

Web CoP

Driver CoP

Data Forwarding CoP

… …

Voice Control CoP

Agile CoP

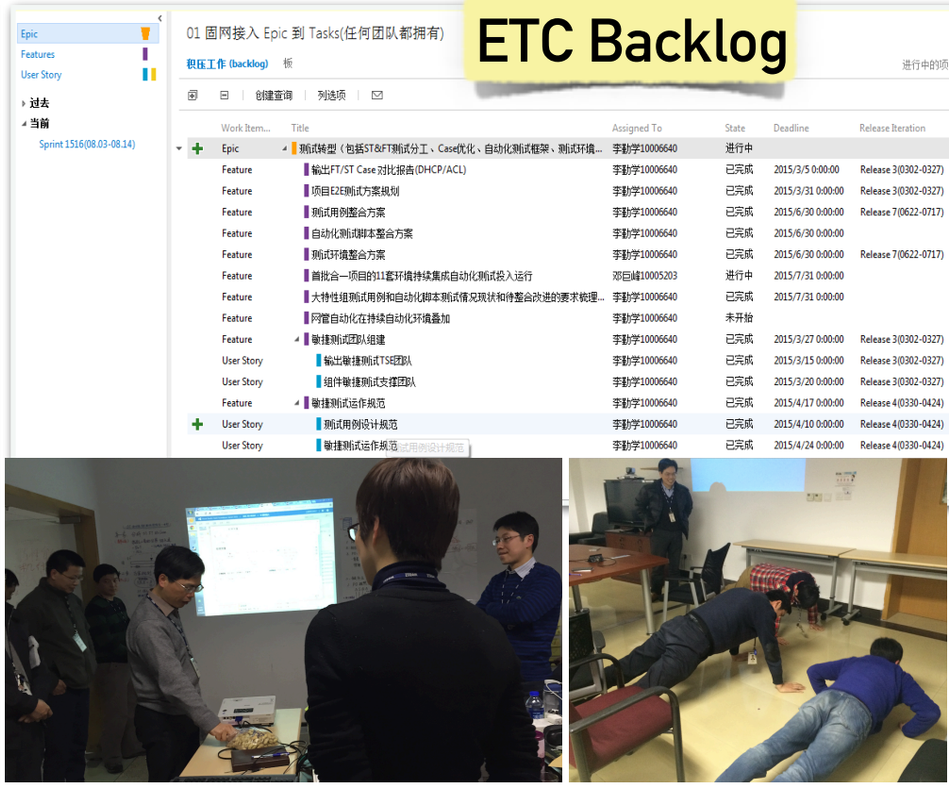
Scrum Master CoP

Product Owner CoP

ETC Release Review

Demo

ETC Backlog



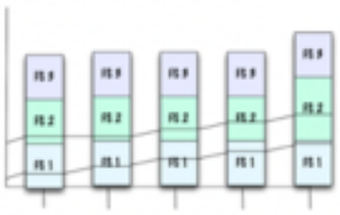
ETC Progress light board

Agile Transformation Roadmap

RESULT

Agile Metrics

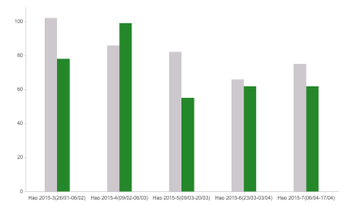
Productivity



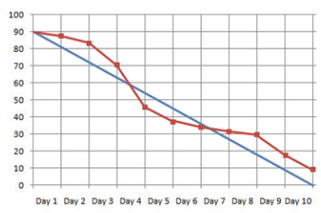
Feature burn up

Delivery Capability

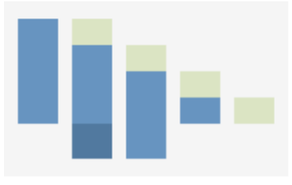
Velocity



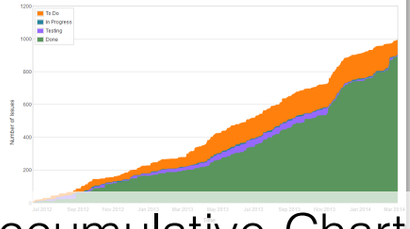
Velocity Chart



Sprint Burn down



Release Burn down



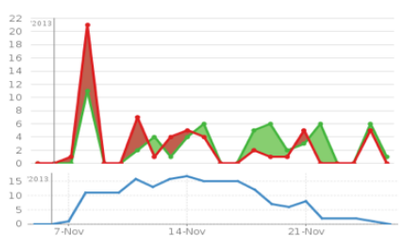
Accumulative Chart

Value

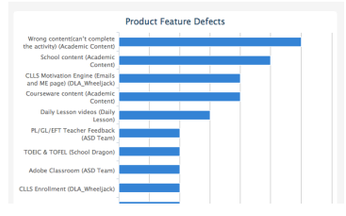
ROI

Customer Satisfaction

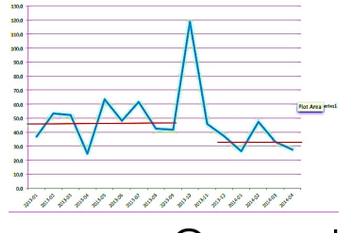
Quality



Bug Report



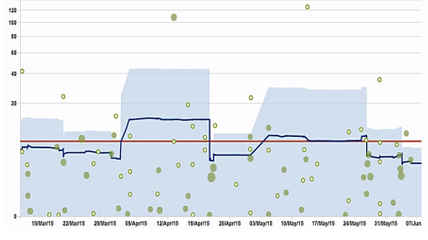
#Defect of Features



Average Open days

Predictability

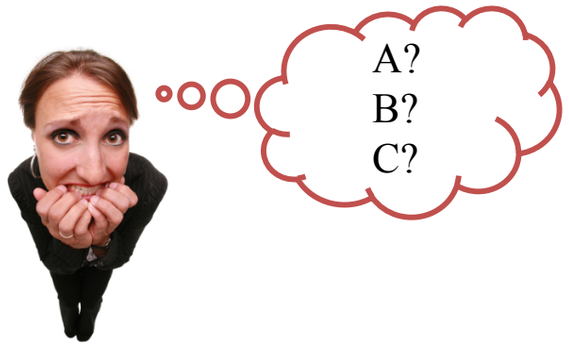
Standard Deviation



Control Chart

The Principle of Agile Metrics

Data



Informational

Motivational

Result

Time To Market

1 Year

102 Days

Customer Satisfaction

- Overall quality
- Perceived reliability
- Extent of customer's needs fulfilled

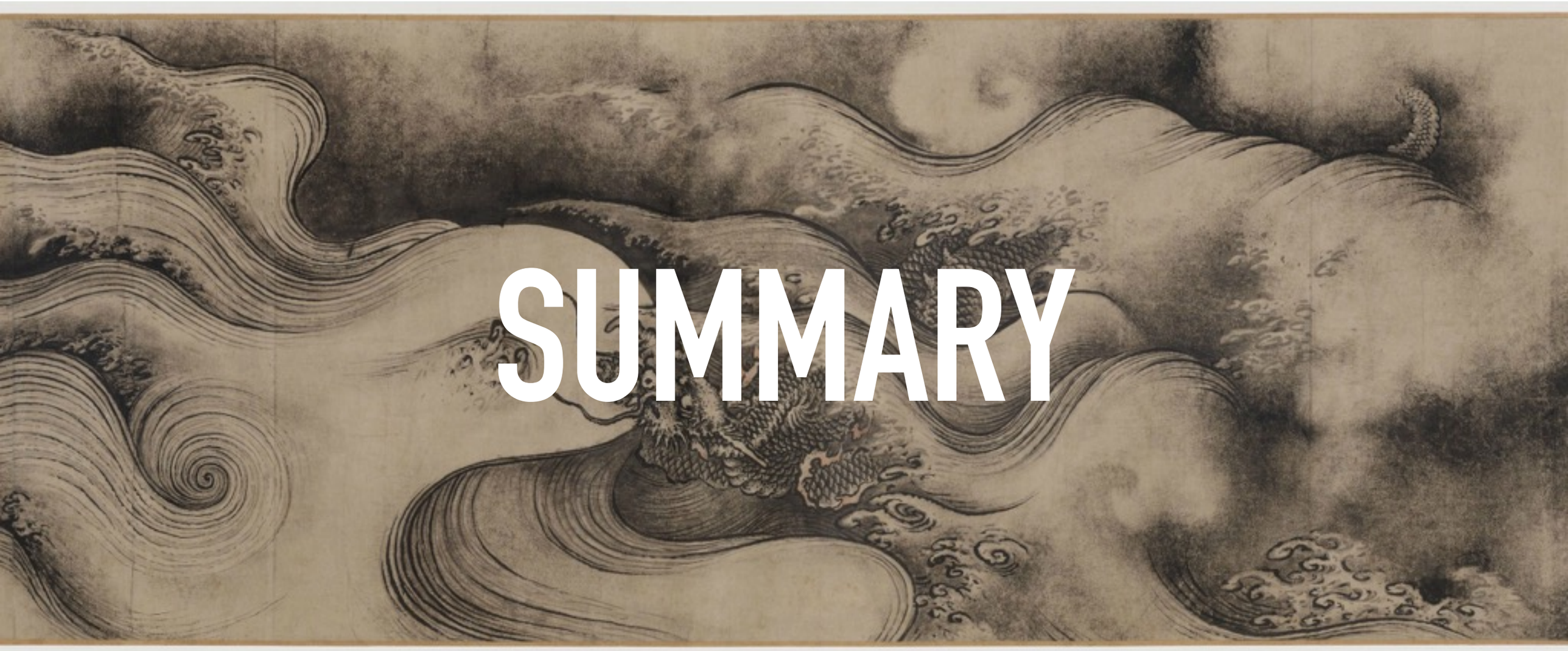
Feature Delivery Time

R&D development efficiency

50 Developers Started Next Generation Product

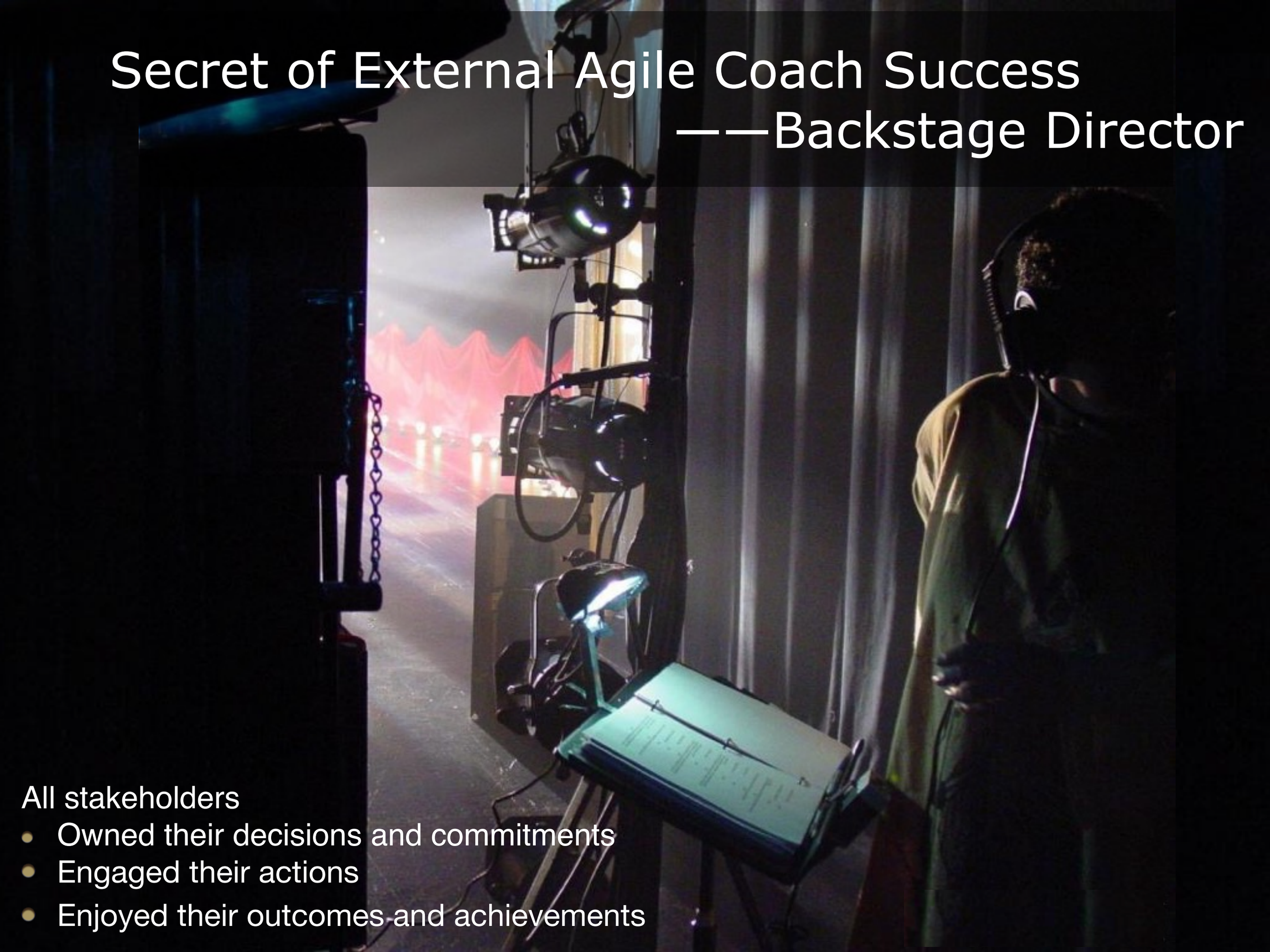
Agile Culture and Environment

HAPPY PEOPLE !



SUMMARY

Secret of External Agile Coach Success
——Backstage Director



All stakeholders

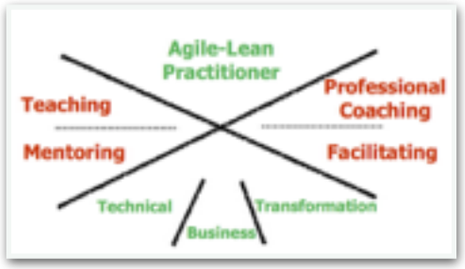
- Owned their decisions and commitments
- Engaged their actions
- Enjoyed their outcomes and achievements

Celebration for Every Short Win
—— Ritual Matters

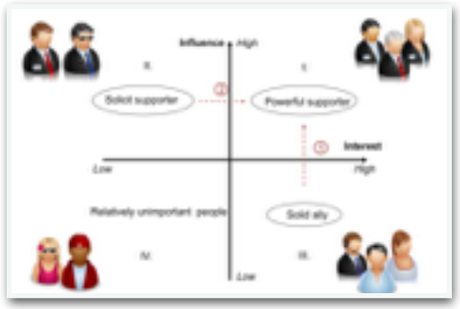
Biggest Pitfall of Management Team — Wrongly Use Metrics

CONTINUOUS IMPROVEMENT
OVER
PERFORMANCE EVALUATION

Agile Leadership Compass



Agile Coach Competency Framework



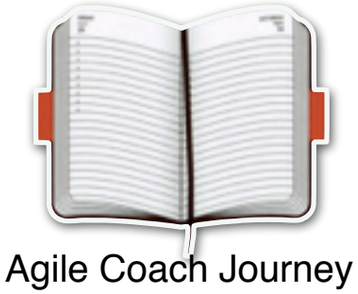
Influence - Interests Diagram

Video:Interlocking Roles in Agile

Coaching Strategy

Speed Leas - Conflict Model

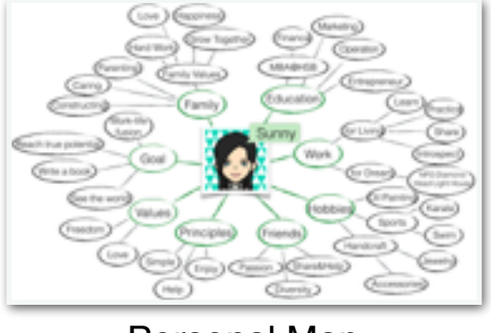
High Performance Tree



Agile Coach Journey

EQ Improvement

Conflict Solving (TKI)



Personal Map

Graphic Facilitation

THANK YOU

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Hardware Agility in Large Agile Transformation

1. Background:

   Hardware department (50 people):

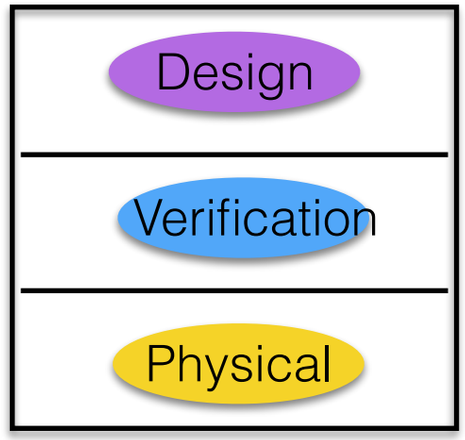
   - Functional teams act independently. Design and verification don't normally share goals.
   - Common software is out of the hardware scope (out of the loop).
   - SoC (System on Chip): ASIC/FPGA+Embedded processor + Software

2. The big challenges we face:

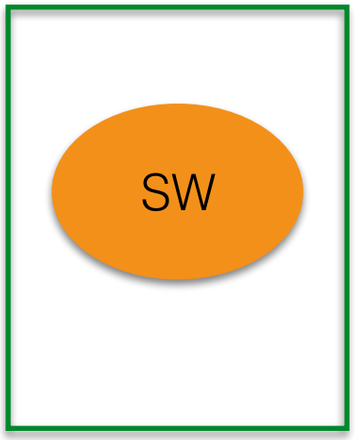
   - Hardware Long development cycle > 1.5 year.
   - Long correction time for hardware defect.
   - Because of the large cost of the SW&HW integration, SW R&D don't want to upgrade the new developed chip(new generation chip), even though by knowing how huge investment it was. That results SW and Hw more and more far away from each other.

3. The Solutions for Hardware agility:

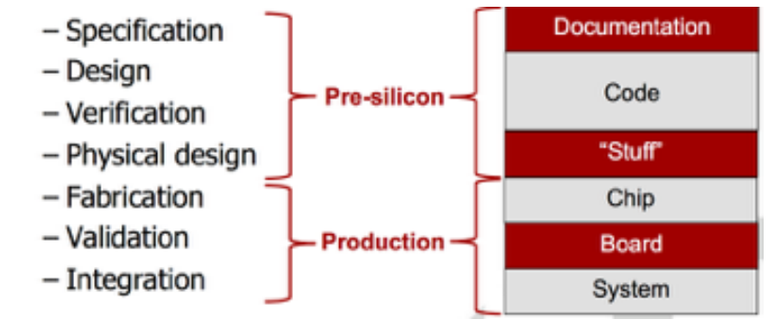
   - Create shared Product vision and goal in HW and SW departments. Abolish separated KPIs.
   - Include HW development contents into TFS (Team Foundation Server); HW shares ONE Product Backlog with SW R&D departments.
   - Create SoC Team (Design+Verification+SW): Move HW teams to seat with SW Drivers and OS team, in order to: a.Verify the new developed functionality together; b. Investigation defects together;
   - Adopt Scrumban in SoC Team: Use Kanban to visualize the work, manage the flow and limit WIP; Launch the Scrum ceremonies of Planning, Daily Standup and Review. 2 Weeks of Sprint, monthly Retrospective.
   - Change traditional waterfall: (Specification->Design->Verification->Software->Physical Design) to Agile Iteration: slice of (Specification+Design+Verification +SW+Physical Design) // See picture of right down corner.
   - Learn before Development: Operation Basic Sanity:
     - Start with a finished product
     - Identify the sanity path
     - Remove everything that don't need
     - Plan how to build what's the left

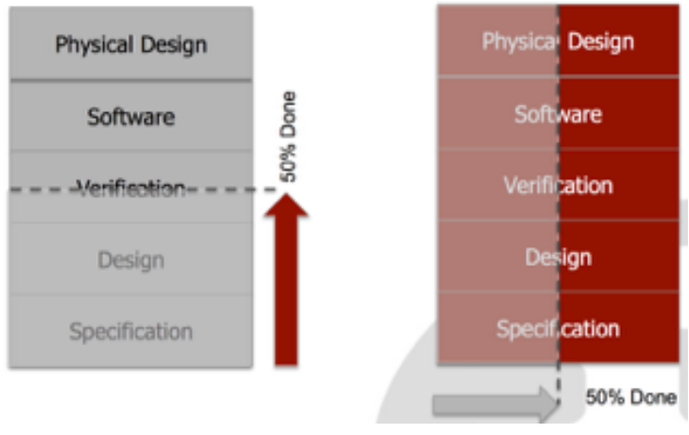


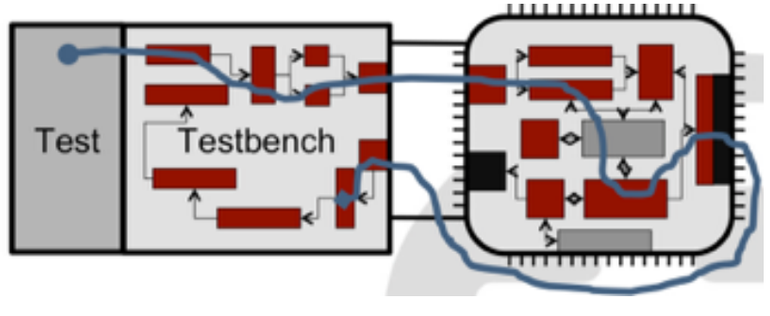
Building B
Hardware Department



Building A
3 R&D Departments

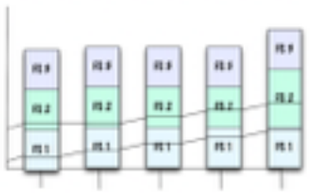






敏捷度量

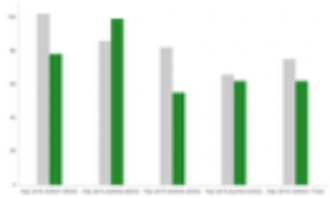
Productivity 生产力



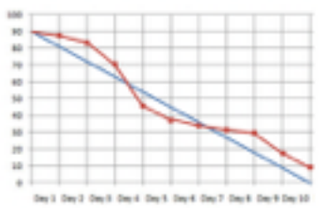
特性燃起图

交付能力

Velocity 速度

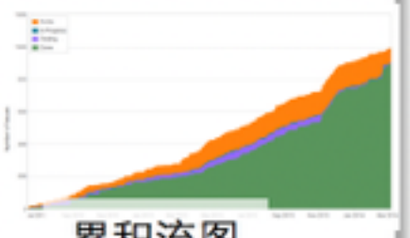


速率表



燃尽图

发布燃尽图



累积流图

Value 价值

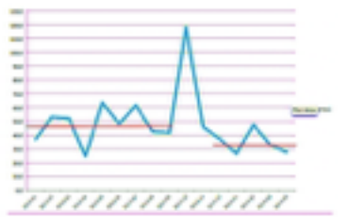
ROI投资回报比

用户满意度

Quality 质量

Bug量

#缺陷数/特性



缺陷平均开放周期

Predictability 可预测性

标准方差

前置时间/控制图

Enterprise Agile Coach’s True North
—— Open Your Truly Heart !

- TRUE HEART that makes the people better and the organization better