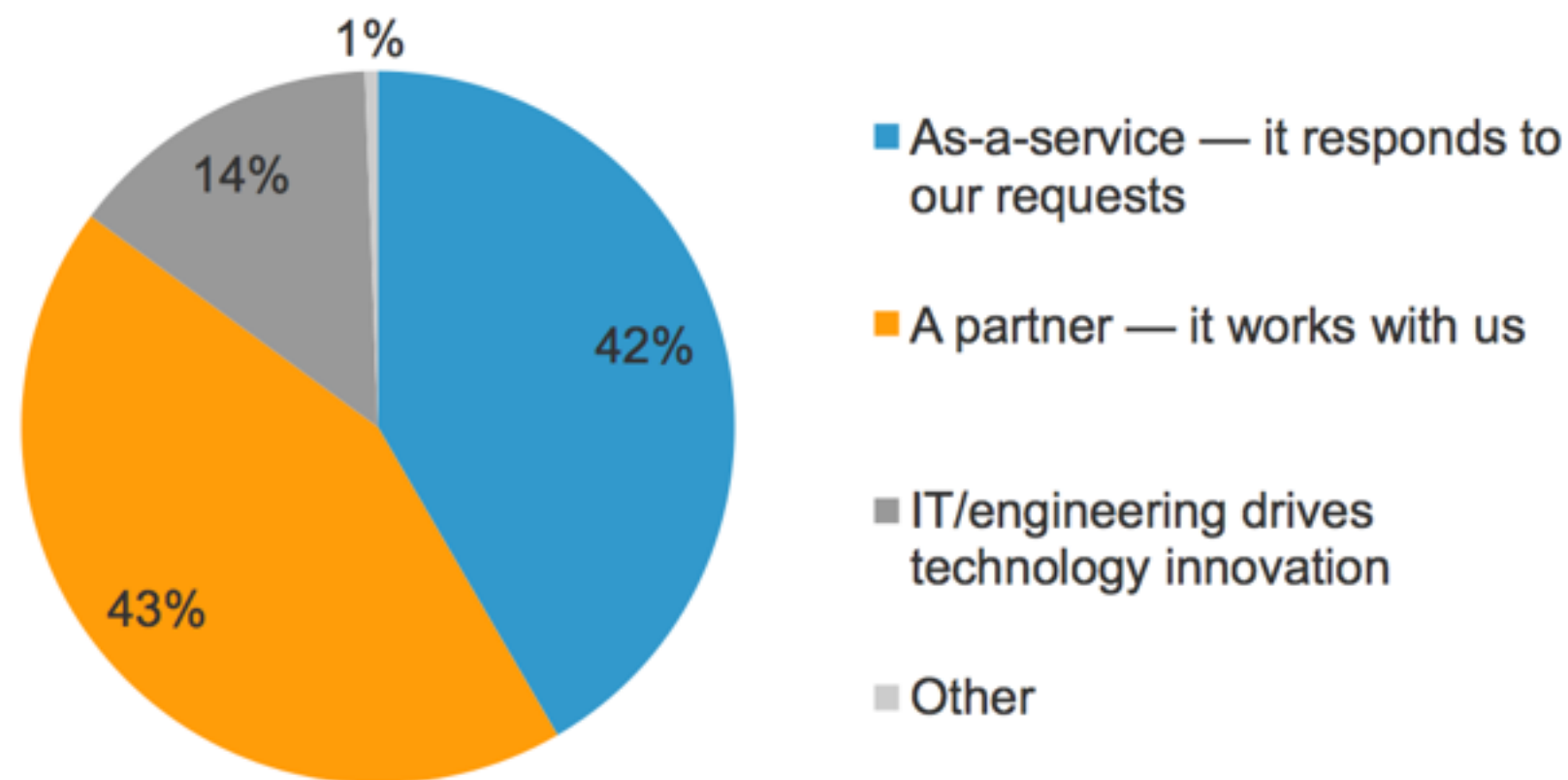the lean enterprise

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What Business Leaders Think About The Business-IT Relationship

"What level of influence does your software development provider have when it comes to deciding which business services or products you deliver?"

- 1%
- 14%
- 42%
- 43%

Legend:
- As-a-service — it responds to our requests
- A partner — it works with us
- IT/engineering drives technology innovation
- Other

Base: 161 business decision-makers

IT as a competitive advantage

2014
STATE OF
DEVOPS
REPORT

SUCCESS

$

Presented by   puppet   IT REVOLUTION PRESS   ThoughtWorks

"Firms with high-performing IT organizations were twice as likely to exceed their profitability, market share and productivity goals."

http://bit.ly/2014-devops-report

"it performance"?

lead time for changes

release frequency

time to restore service

change fail rate

highest correlation with it performance

- "Our code, app configurations and system configurations are in a version control system"
- "We get failure alerts from logging and monitoring systems"
- "Developers merge their code into trunk daily"
- "When development and operations teams interact, the outcome is generally win/win."
- "Developers break up large features into small, incremental changes."

top predictors of it performance

peer-reviewed change approval process

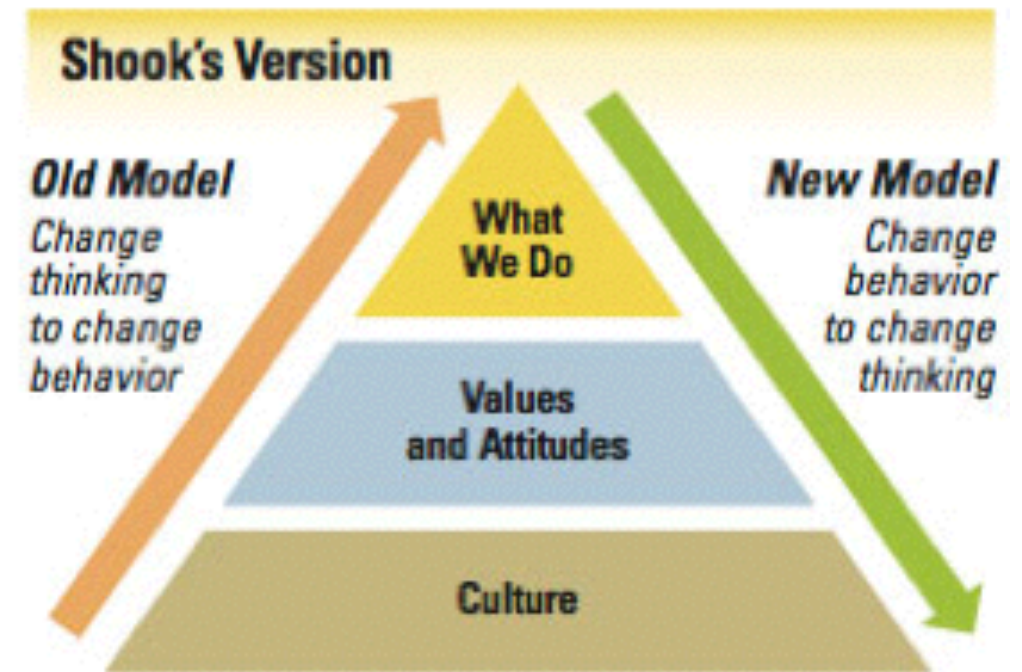version control everything

proactive monitoring

high trust organizational culture

win-win relationship between dev and ops

high trust culture

Pathological (*power oriented*)	Bureaucratic (*rule oriented*)	Generative (*performance oriented*)
Low cooperation	Modest cooperation	High cooperation
Messengers shot	Messengers neglected	Messengers trained
Responsibilities shirked	Narrow responsibilities	Risks are shared
Bridging discouraged	Bridging tolerated	Bridging encouraged
Failure leads to scapegoating	Failure leads to justice	Failure leads to enquiry
Novelty crushed	Novelty leads to problems	Novelty implemented

Westrum, "A Typology of Organizational Cultures",
Qual Saf Health Care 2004; 13 (Suppl II):ii22-ii27

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changing culture

Shook's Version

Old Model
Change thinking to change behavior

New Model
Change behavior to change thinking

What We Do

Values and Attitudes

Culture

http://www.thisamericanlife.org/radio-archives/episode/403/nummi

http://sloanreview.mit.edu/article/how-to-change-a-culture-lessons-from-nummi/

Schein, *The Corporate Culture Survival Guide*

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Toyoda Automatic Loom, Type G

"Since the loom stopped when a problem arose, no defective products were produced. This meant that a single operator could be put in charge of numerous looms, resulting in a tremendous improvement in productivity."

hp laserjet firmware team

2008

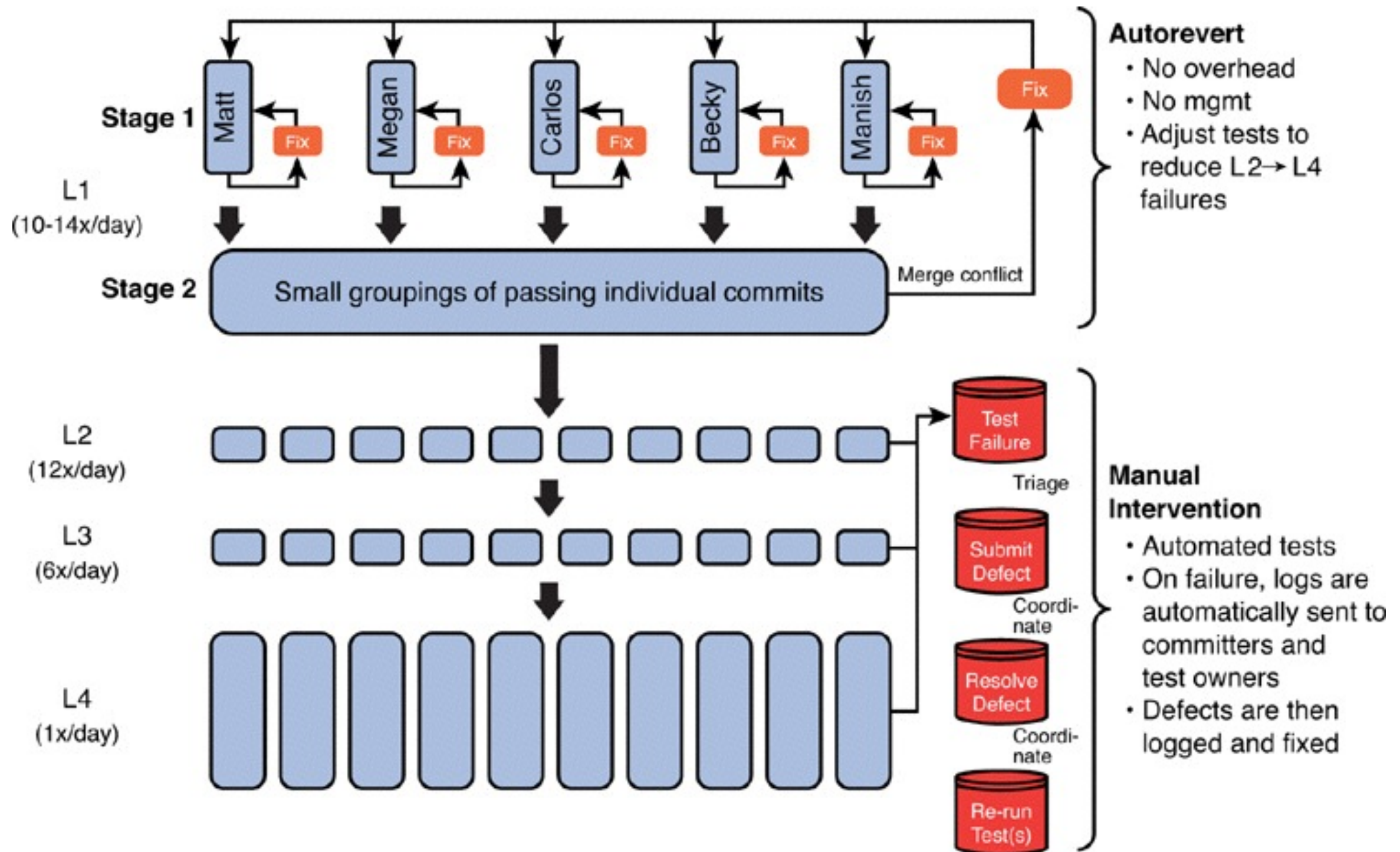- 10% - code integration
- 20% - detailed planning
- 25% - porting code
- 25% - current product support
- 15% - manual testing
- ~5% - innovation

deployment pipeline

hp laserjet firmware team
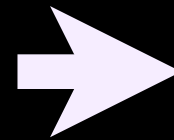
2008

- 10% - code integration
- 20% - detailed planning
- 25% - porting code
- 25% - current product support
- 15% - manual testing
- ~5% - innovation

2011

- 2% - continuous integration
- 5% - agile planning
- 15% - one main branch
- 10% - one branch cpe
- 5% - most testing automated
- ~40% - innovation

The remaining 23% on RHS is spent on managing automated tests.
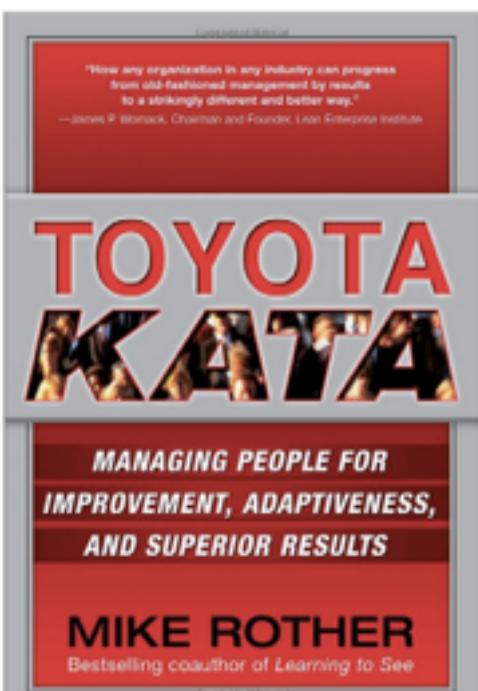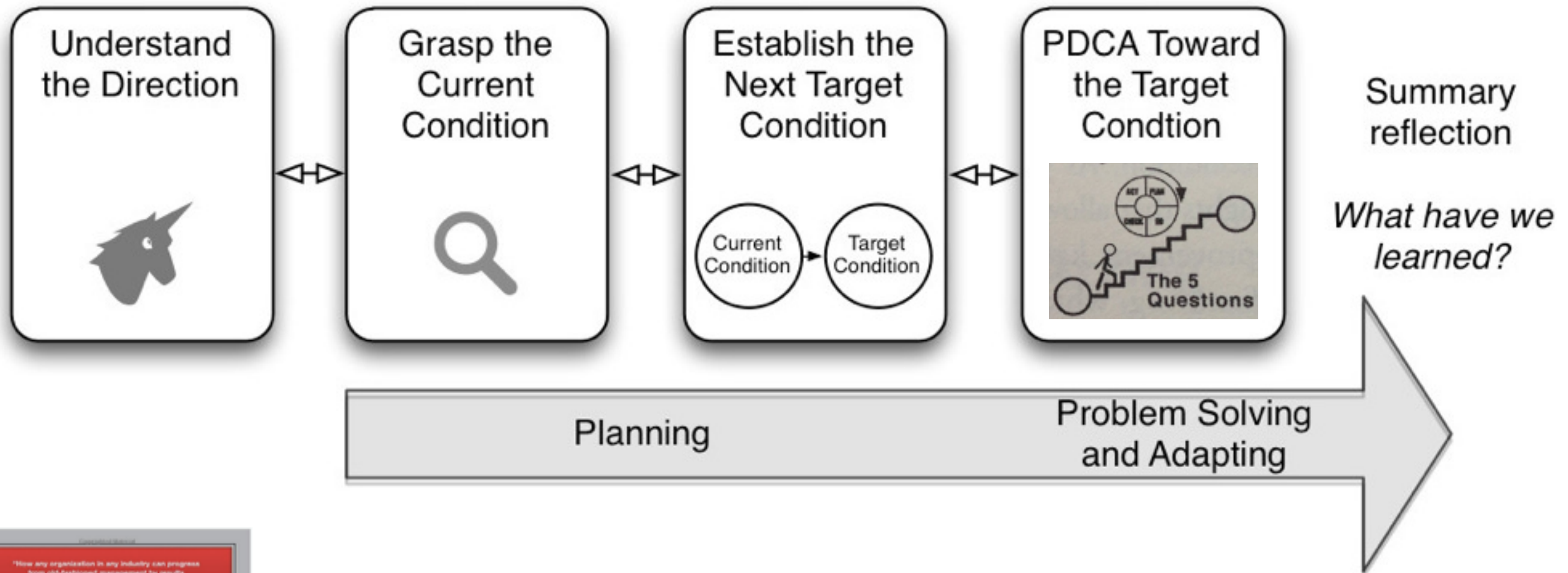
the economics

2008 to 2011

- overall development costs reduced by ~40%
- programs under development increased by ~140%
- development costs per program down 78%
- resources now driving innovation increased by 5X

A Practical Approach to Large-Scale Agile Development - Gruver, Young, Fulghum

improvement kata

Understand the Direction	Grasp the Current Condition	Establish the Next Target Condition	PDCA Toward the Target Condtion	Summary reflection

Current Condition → Target Condition

The 5 Questions

What have we learned?

Planning

Problem Solving and Adapting

TOYOTA KATA

MANAGING PEOPLE FOR IMPROVEMENT, ADAPTIVENESS, AND SUPERIOR RESULTS

MIKE ROTHER
Bestselling coauthor of *Learning to See*

improvement kata

What is the target condition? (The challenge)

What is the actual condition now?

What obstacles are preventing you from reaching it?
which one are you addressing now?

What is your next step? (Start of PDCA cycle)

When can we go and see what we learned from taking that step?

improvement kata

Table 5.1. Sample Mini-Milestone Objectives (MM30 Objectives)

Rank	Theme	Exit Criteria: Objective Met/*Objective not met*
0	Quality threshold	P1 issues open < 1week *L2 test failure 24-hour response*
1	Quarterly bit release	*A) Final P1 change requests fixed* B) Reliability error rate at release criteria
2	New platform stability and test coverage	A) Customer Acceptance Test 100% passing B) All L2 test pillars 98% passing C) L4 test pillars in place D) L4 test coverage for all Product Turn On requirements E) 100% execution of L4 tests on new products
3	Product Turn On dependencies and key features	A) Print for an hour at speed to finisher with stapling B) Copy for an hour *at speed* C) *Enable powersave mode* D) Manufacturing nightly test suite execution E) Common Test Library support for four-line control panel display
4	Build for next-gen products	*A) End-to-end system build on new processor* *B) High-level performance analysis on new processor*
5	Fleet integration plan	Align on content and schedule for "slivers" of end-to-end agile test with system test lab

impact mapping

Gojko Adzic, *Impact Mapping*
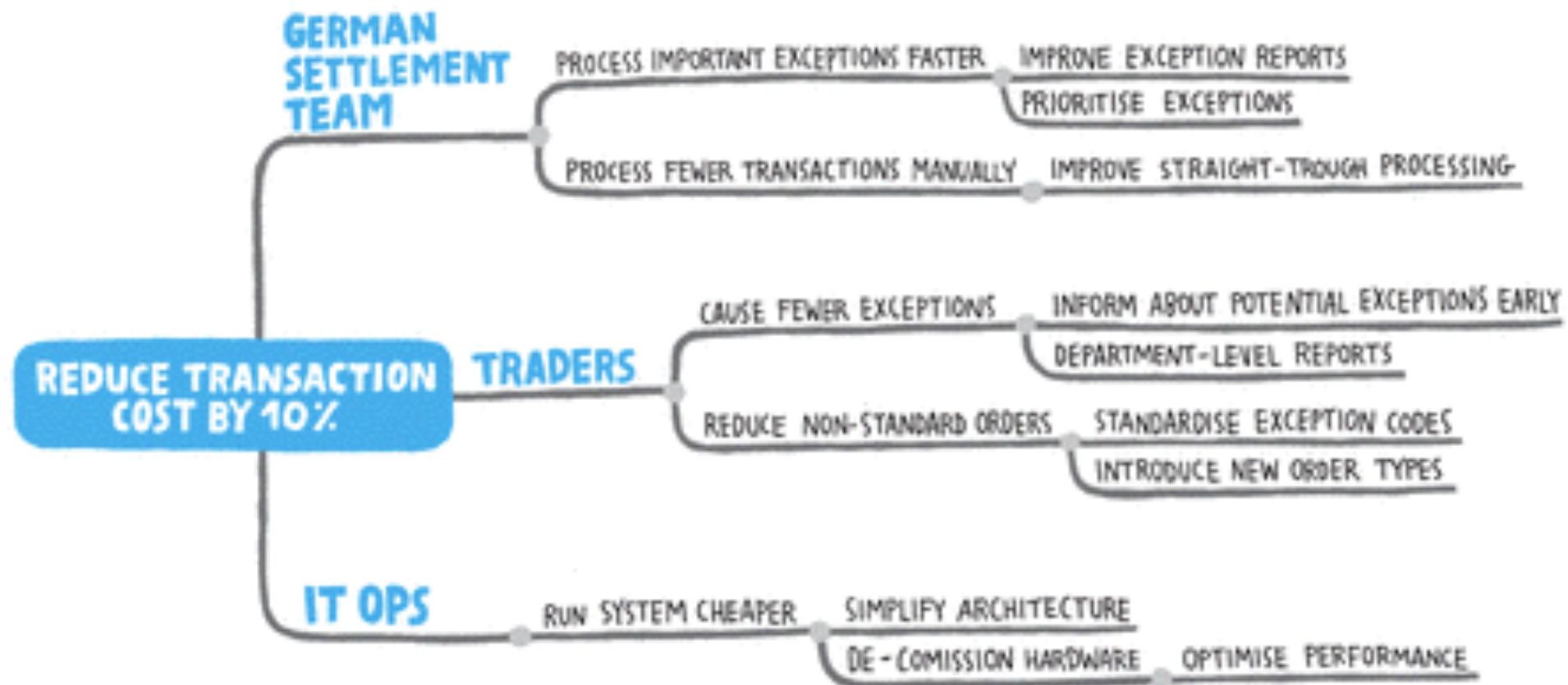
hypothesis-driven delivery

We believe that

[building this feature]

[for these people]

will achieve [this outcome].

We will know we are successful when we see [this signal from the market].

Jeff Gothelf "Better product definition with Lean UX and Design" http://bit.ly/TyIT6A

do less

"Evaluating well–designed and executed experiments that were designed to improve a key metric, **only about 1/3** were successful at improving the key metric!"

"Online Experimentation at Microsoft", Kohavi *et al* http://stanford.io/130uW6X

Amazon May Deployment Stats
(production hosts & environments only)

11.6 seconds

Mean time between deployments (weekday)

1,079

Max # of deployments in a single hour

10,000

Mean # of hosts simultaneously receiving a deployment

30,000

Max # of hosts simultaneously receiving a deployment

"I think building this culture is the key to innovation. Creativity must flow from everywhere. Whether you are a summer intern or the CTO, any good idea must be able to seek an objective test, preferably a test that exposes the idea to real customers. Everyone must be able to experiment, learn, and iterate."
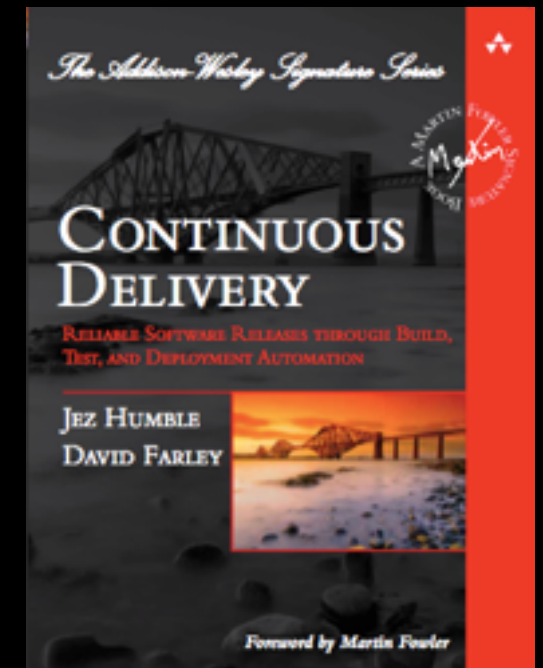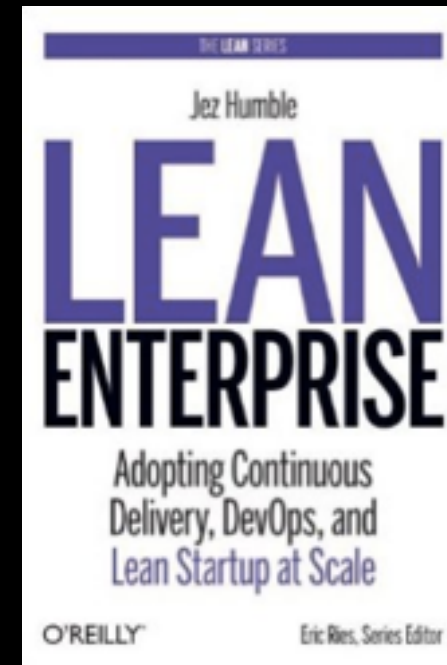
questions

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