iNNolutioN
agile innovative solutions

Getting the Biggest Bang
for the Buck Out of Scrum
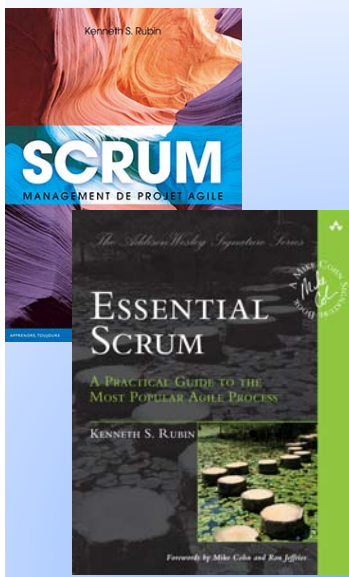# Agile Austin
November 5, 2013
by Kenny Rubin

www.innolution.com

Background of Kenny Rubin

Author

SCRUM
MANAGEMENT DE PROJET AGILE
Kenneth S. Rubin

ESSENTIAL SCRUM
A PRACTICAL GUIDE TO THE MOST POPULAR AGILE PROCESS
KENNETH S. RUBIN
Foreword by Mike Cohn and Ron Jeffries

Trainer/Coach

Trained more than 20,000 people in Agile/Scrum, SW dev and PM

Provide Agile/ Scrum coaching to developers and executives

ScrumAlliance
CST
CERTIFIED
ScrumTrainer

Experience

Former Managing Director

ScrumAlliance
transforming the world of work

My first Scrum project was in 2000 for bioinformatics

GENOMICA

IBM **Executive**
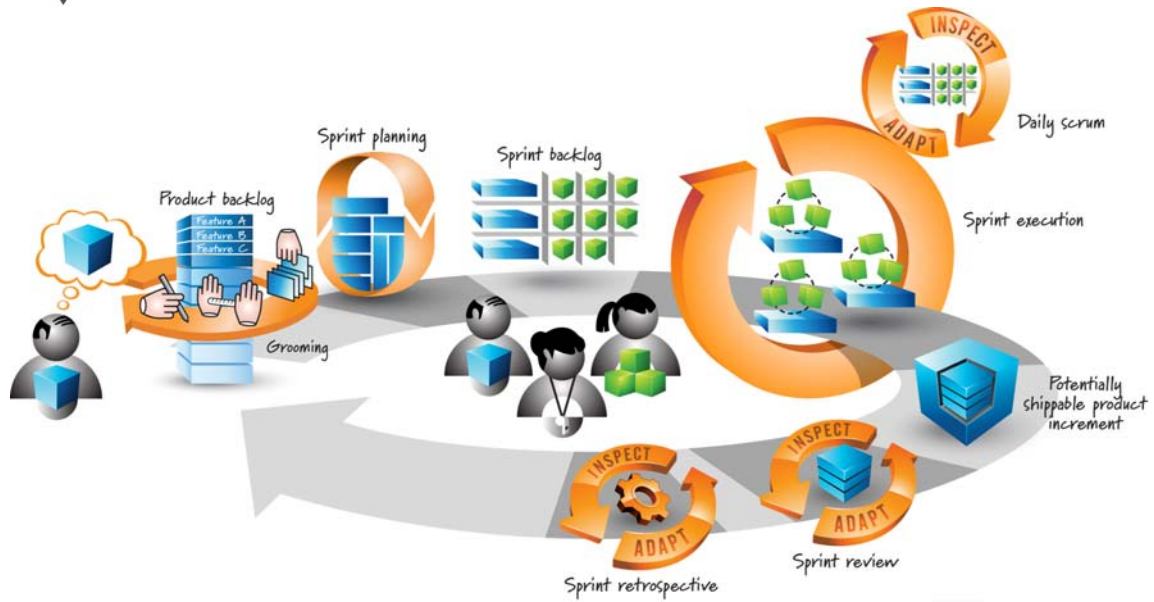
SMALLTALK

ParcPlace

If you here something interesting...

> Please Tweet About It!

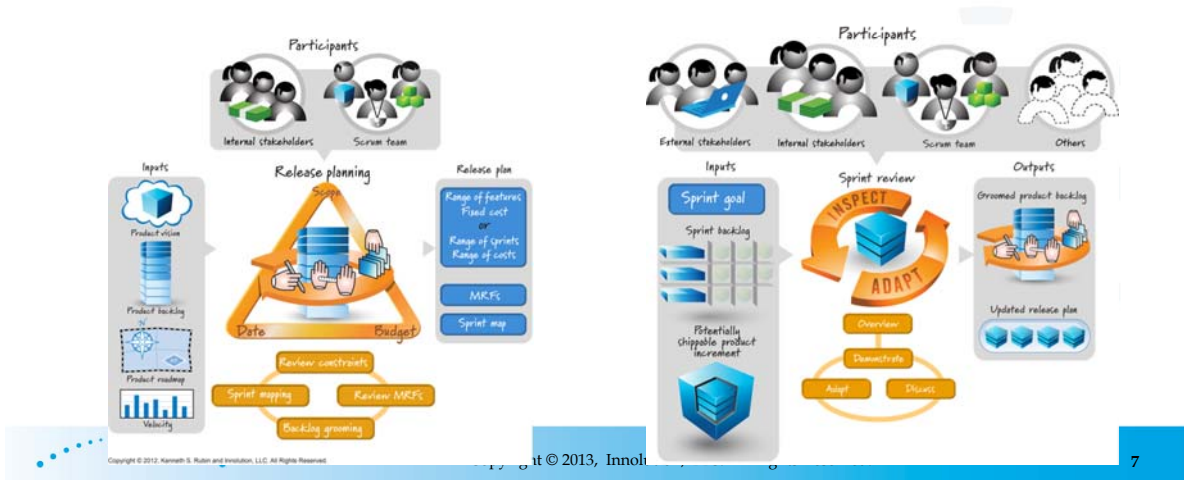> Include **@krubinagile** and **#agileaustin** in each tweet

☀ Scrum Framework

Art available at: http://www.innolution.com/resources

Approaches

ScrumBut(t) – Violations of the Scrum Framework

We do Scrum, but...

Sprints are 8 weeks
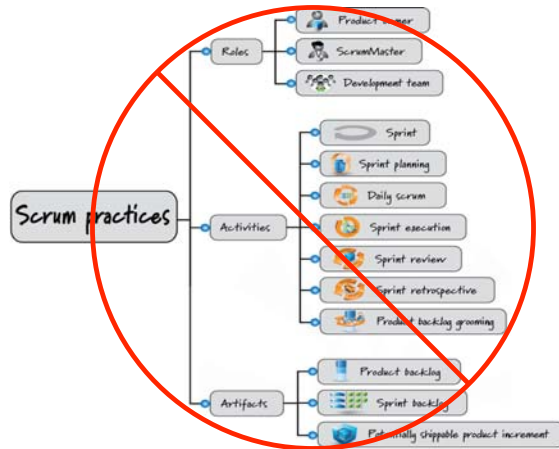
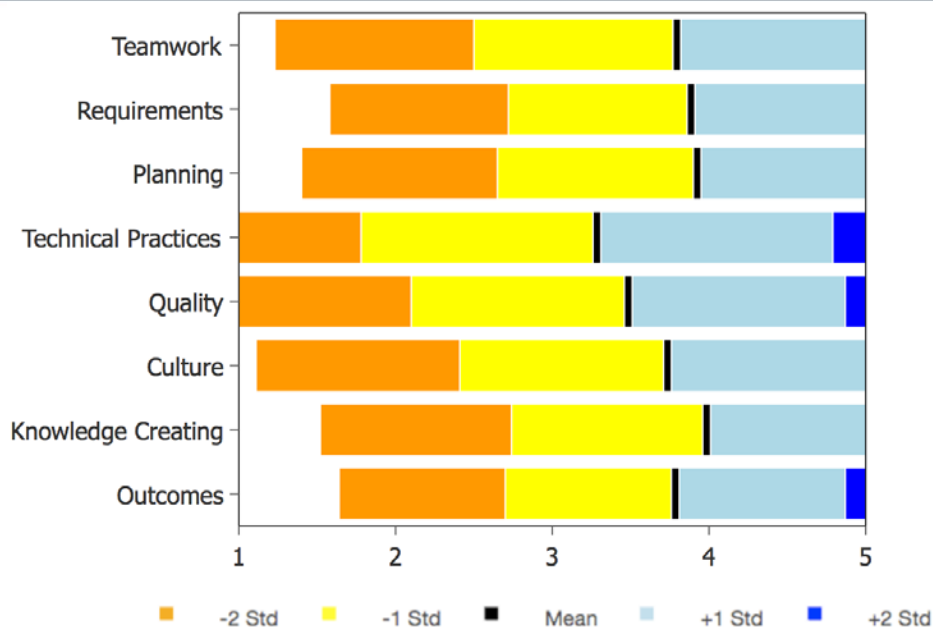No product owner

Daily scrums on M-W-F

Sprint planning is 2 days

Etc...

What If We Had No Scrum "Violations?"

VIOLATION

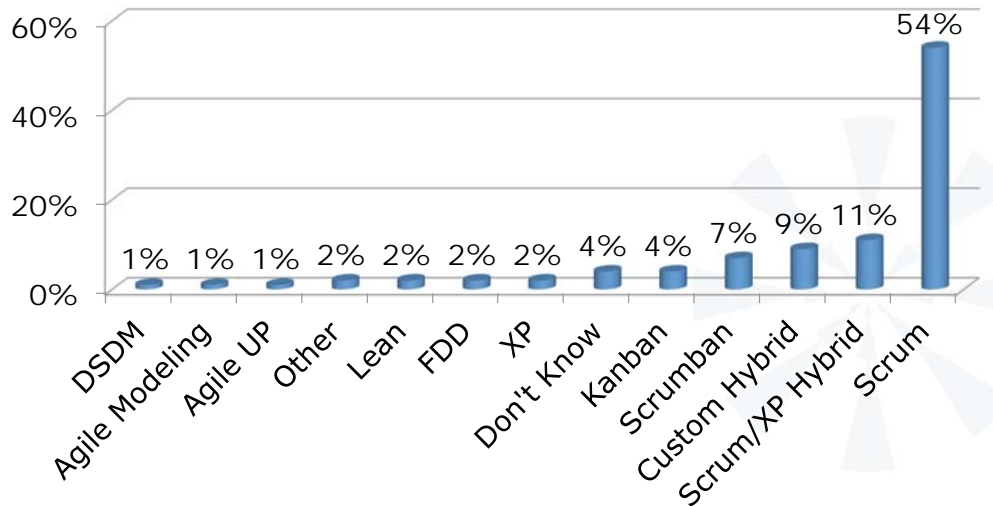YOUR USE OF SCRUM VIOLATES A CORE PRACTICE AND IS HEREBY DEEMED TO BE A SCRUMBUT

YOUR TEAM PHOTO HAS BEEN RECORDED

Scrum practices
- Roles
  - Product owner
  - ScrumMaster
  - Development team
- Activities
  - Sprint
  - Sprint planning
  - Daily scrum
  - Sprint execution
  - Sprint review
  - Sprint retrospective
  - Product backlog grooming
- Artifacts
  - Product backlog
  - Sprint backlog
  - Potentially shippable product increment

Do no violations = success with Scrum?

Current Industry Results — From Comparative Agility®

- Teamwork
- Requirements
- Planning
- Technical Practices
- Quality
- Culture
- Knowledge Creating
- Outcomes

Legend: -2 Std | -1 Std | Mean | +1 Std | +2 Std

8,558 Surveys at www.comparativeagility.com

VersionOne 7th Annual Survey

Of 4,048 respondents, most are using Scrum or Scrum variants (72%)

Chart values: DSDM 1%, Agile Modeling 1%, Agile UP 1%, Other 2%, Lean 2%, FDD 2%, XP 2%, Don't Know 4%, Kanban 4%, Scrumban 7%, Custom Hybrid 9%, Scrum/XP Hybrid 11%, Scrum 54%

11

Inhibitors to Success Using Scrum

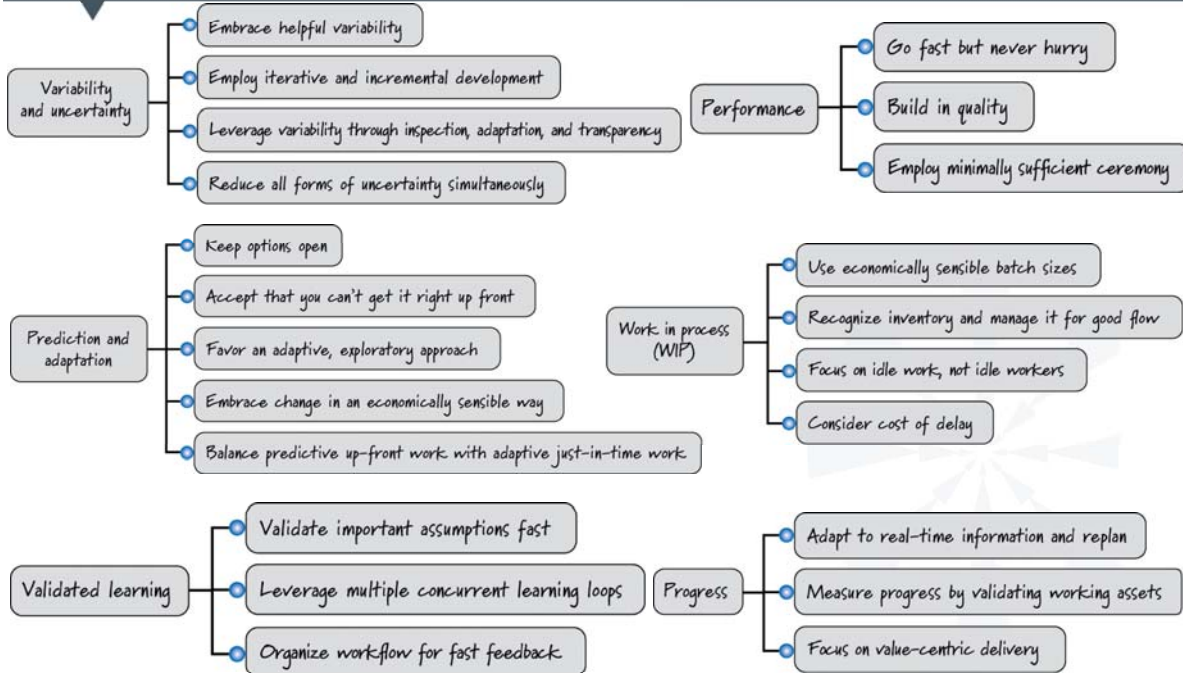Ignorance or misapplication of core agile principles during development

Failure to apply agile principles throughout the value chain

Failure to structure teams in an economically sensible way

Overall, they don't apply core agile principles in an economically sensible way
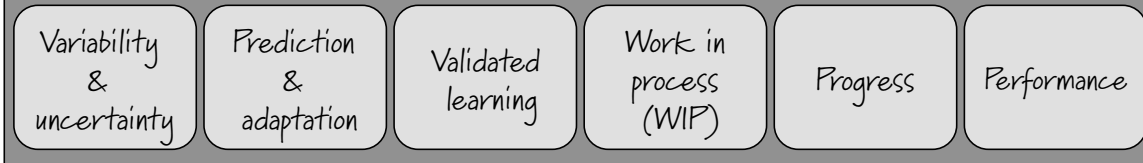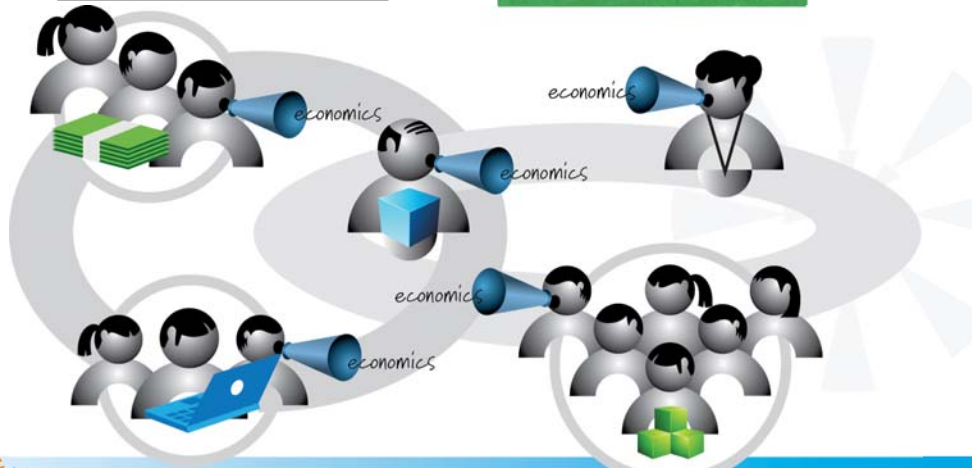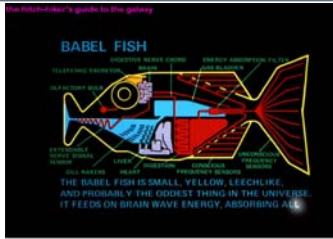
12

Principles

- **Variability and uncertainty**
  - Embrace helpful variability
  - Employ iterative and incremental development
  - Leverage variability through inspection, adaptation, and transparency
  - Reduce all forms of uncertainty simultaneously

- **Performance**
  - Go fast but never hurry
  - Build in quality
  - Employ minimally sufficient ceremony

- **Prediction and adaptation**
  - Keep options open
  - Accept that you can't get it right up front
  - Favor an adaptive, exploratory approach
  - Embrace change in an economically sensible way
  - Balance predictive up-front work with adaptive just-in-time work

- **Work in process (WIP)**
  - Use economically sensible batch sizes
  - Recognize inventory and manage it for good flow
  - Focus on idle work, not idle workers
  - Consider cost of delay

- **Validated learning**
  - Validate important assumptions fast
  - Leverage multiple concurrent learning loops
  - Organize workflow for fast feedback

- **Progress**
  - Adapt to real-time information and replan
  - Measure progress by validating working assets
  - Focus on value-centric delivery

So What is Economically Sensible Scrum?

Economic Framework

Variability & uncertainty	Prediction & adaptation	Validated learning	Work in process (WIP)	Progress	Performance

Economics – The Universal Language of Product Development

We Need a Economic Framework

Compare effects of different product / process / organizational attributes by converting them all into the same unit of measure

```
Waste ──────┐
Lead time ──┤
Variability ┤──────→ Lifecycle profits
Batch size ─┤
Customer sat┤
... ────────┘
```
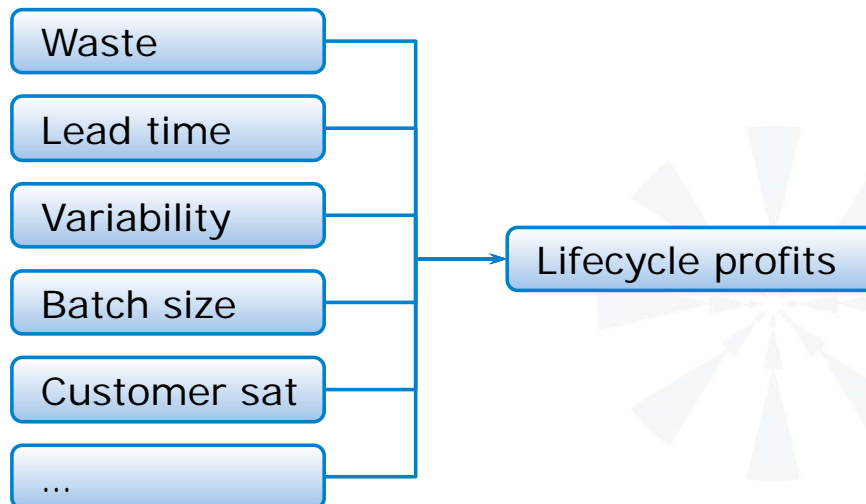
Based on Reinertsen "The Principles of Product Development Flow: Second Generation Lean Product Development"

Example: Waste

	Waste 1	Waste 2	Waste 3	Waste 4
Multiple forms of waste	🗑	🗑	🗑	🗑
Can't eliminate them all	🗑 (crossed out)	🗑	🗑 (crossed out)	🗑
Determine which cause most economic damage	🗑 $	🗑 $$$$	🗑 $$	🗑 $$$
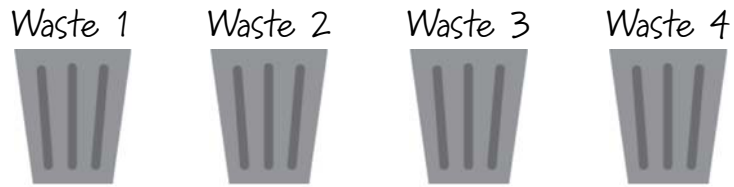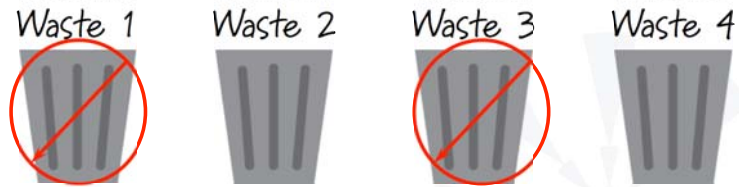
Example: Cost of Delay

If you have to wait 3 weeks for the UX team to design your UIs, and that delay could be eliminated by having a UX designer on your team, what would be the cost of the UX-team delay (in lifecycle profits)?
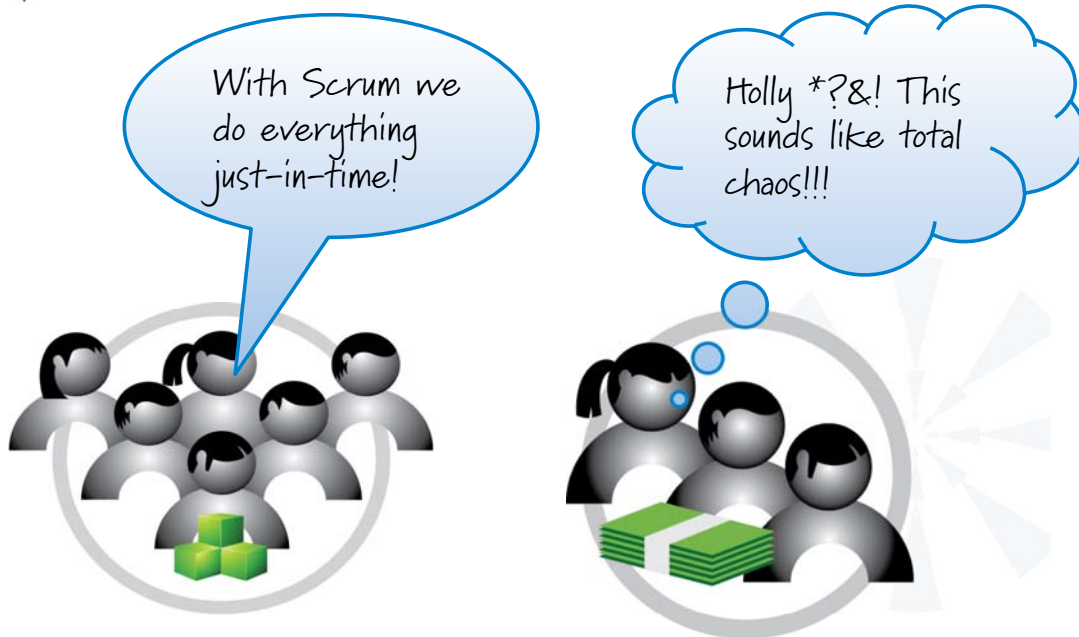
Money — Lead time

Lead time — Variability
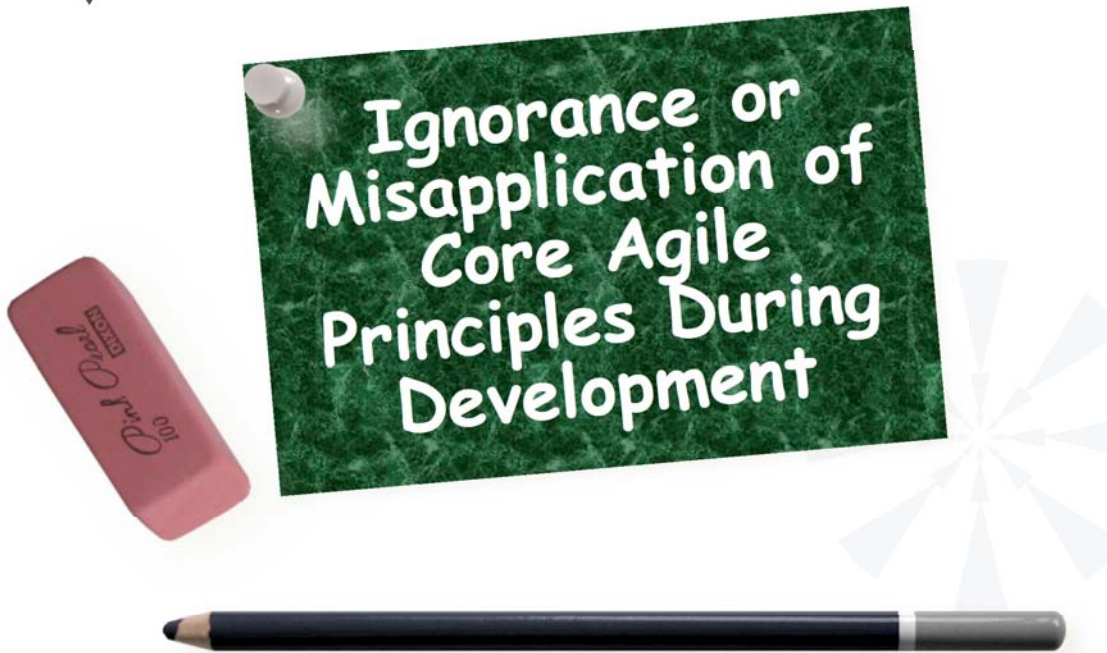
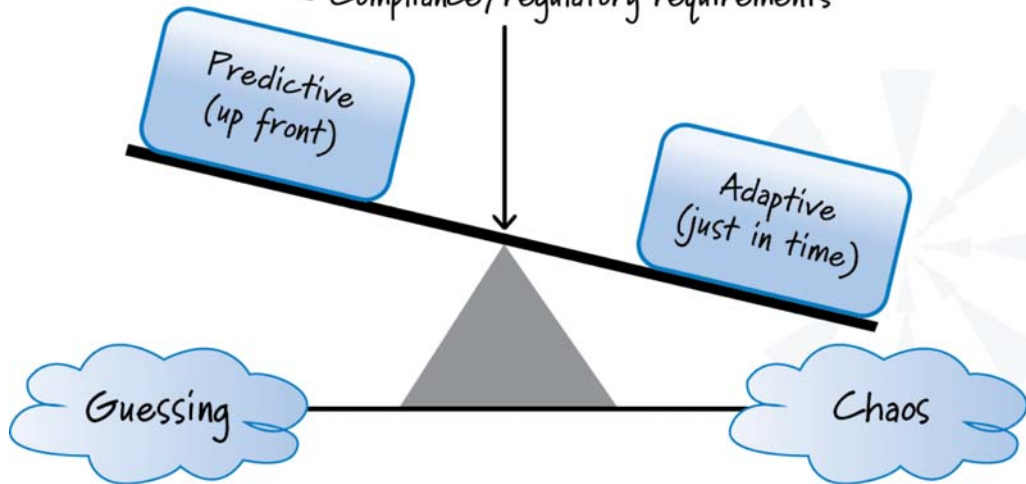## Misunderstanding of When Change Occurs

Economically Sensible Change
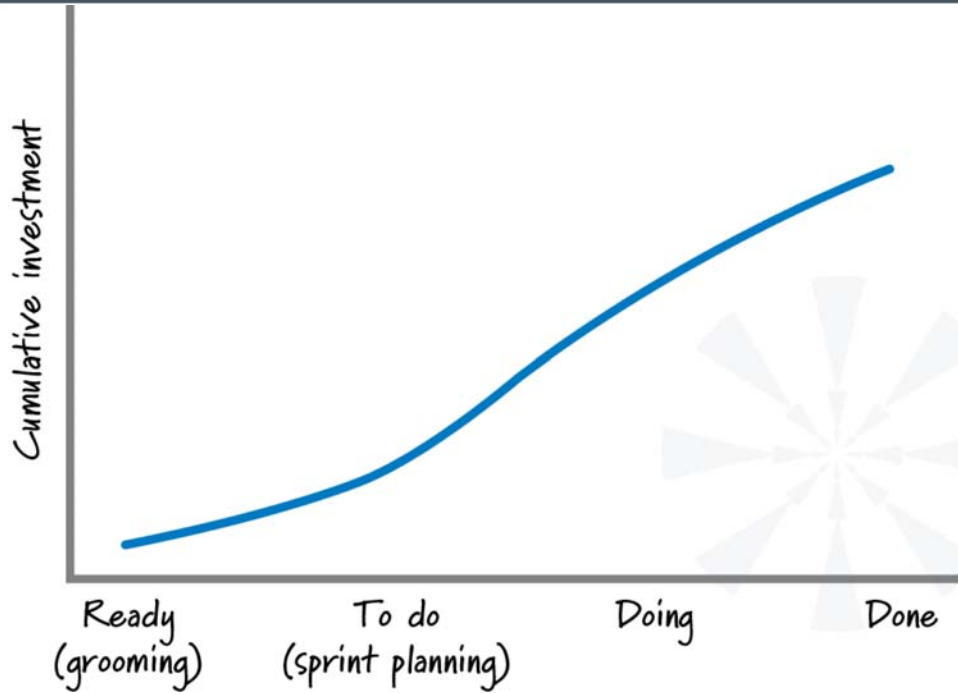
Misunderstanding of Just-in-Time

Balance Up Front Predictive with Adaptive Just in Time

- Type of product
- Degree of end uncertainty
- Degree of means uncertainty
- Constraints on development
- Compliance/regulatory requirements

Predictive (up front)
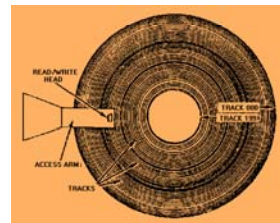
Adaptive (just in time)

Guessing

Chaos

Recognize Inventory (WIP) Waste

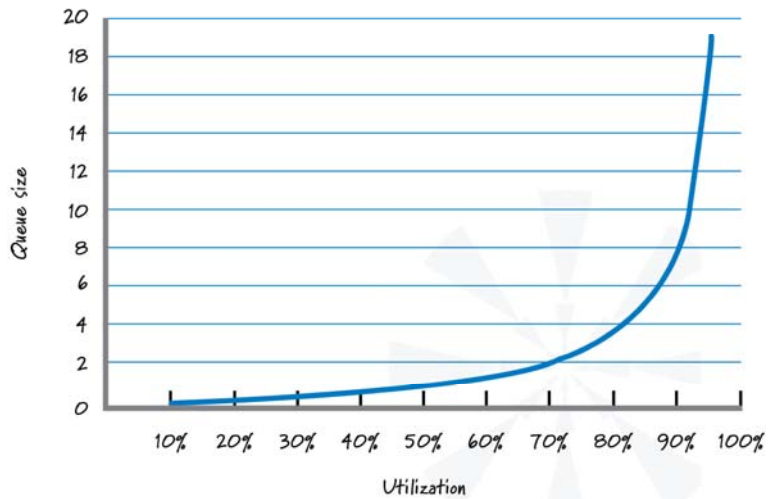Manufacturing inventory is both physically and financially visible

Product-development inventory are knowledge assets that aren't visible in the same way as physical parts
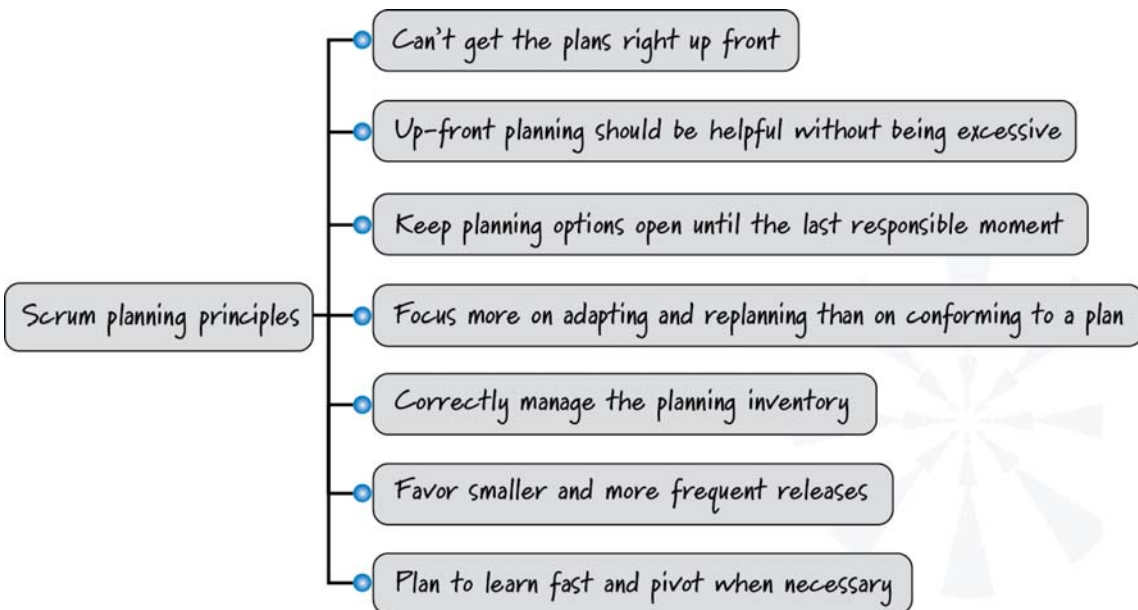
Focus on Idle Work Not Idle Workers
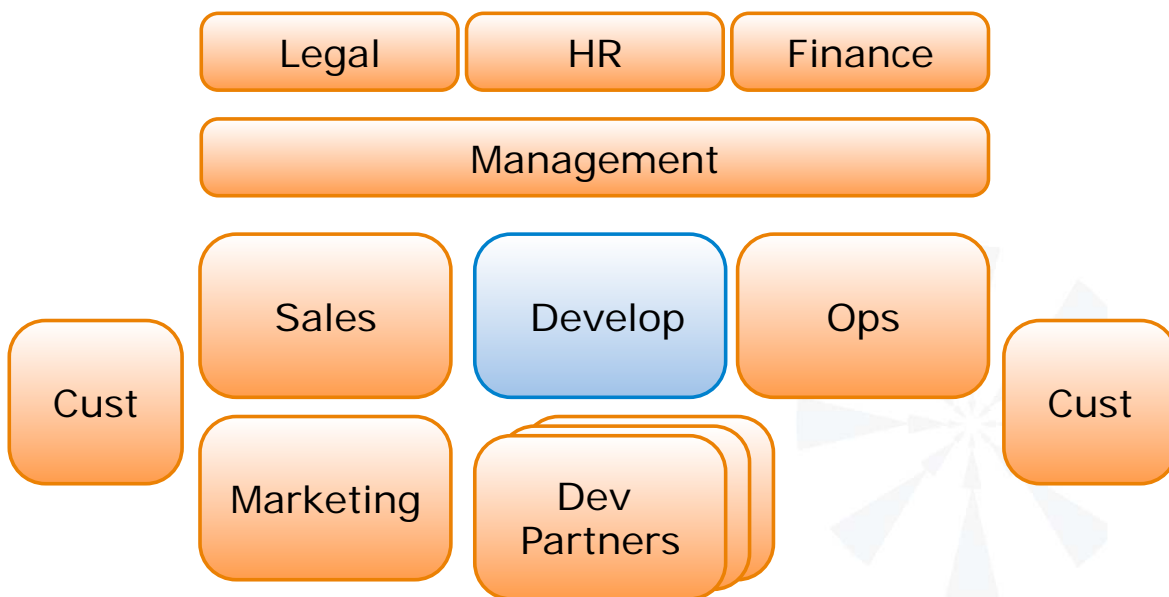
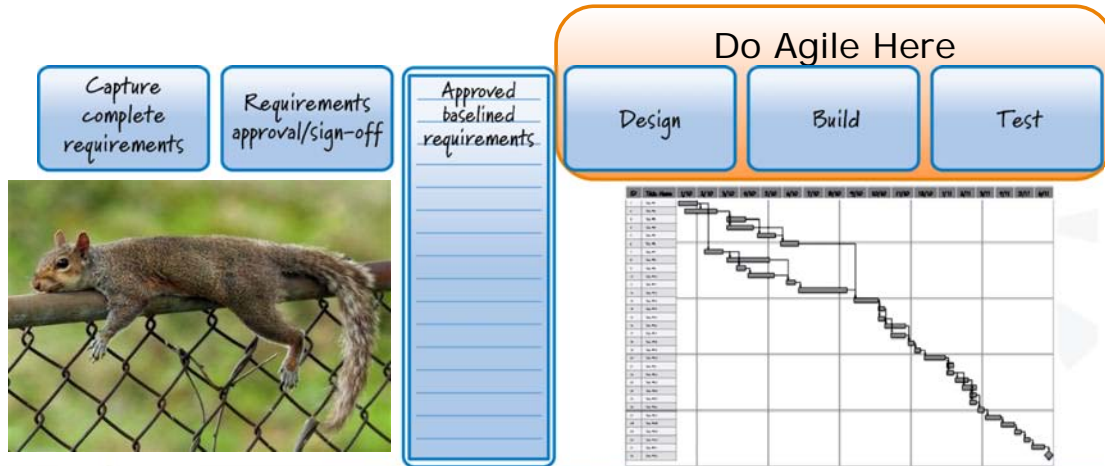## Watch the Baton Not the Runners

Economically Sensible Planning

Scrum planning principles:
- Can't get the plans right up front
- Up-front planning should be helpful without being excessive
- Keep planning options open until the last responsible moment
- Focus more on adapting and replanning than on conforming to a plan
- Correctly manage the planning inventory
- Favor smaller and more frequent releases
- Plan to learn fast and pivot when necessary

Failure to Apply Scrum Principles Throughout the Value Chain

Example Value Chain

| Legal | HR | Finance |

| Management |

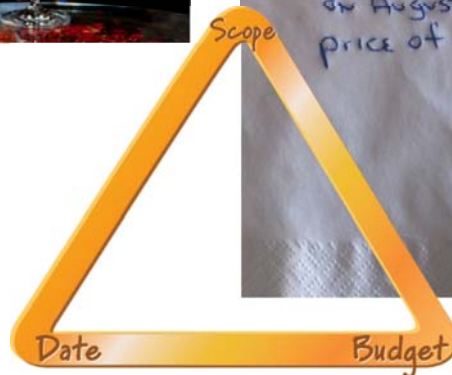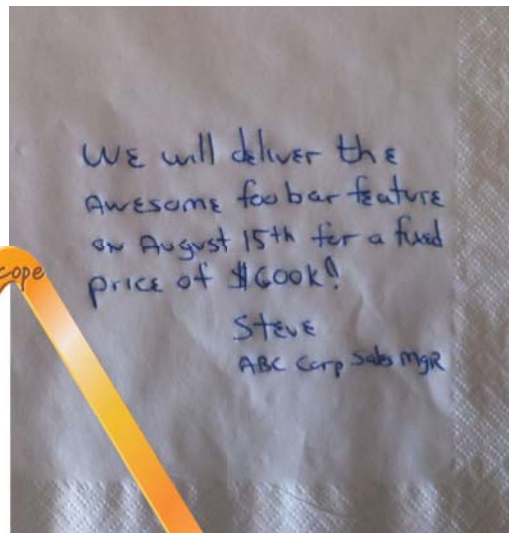| Cust | Sales | Develop | Ops | Cust |

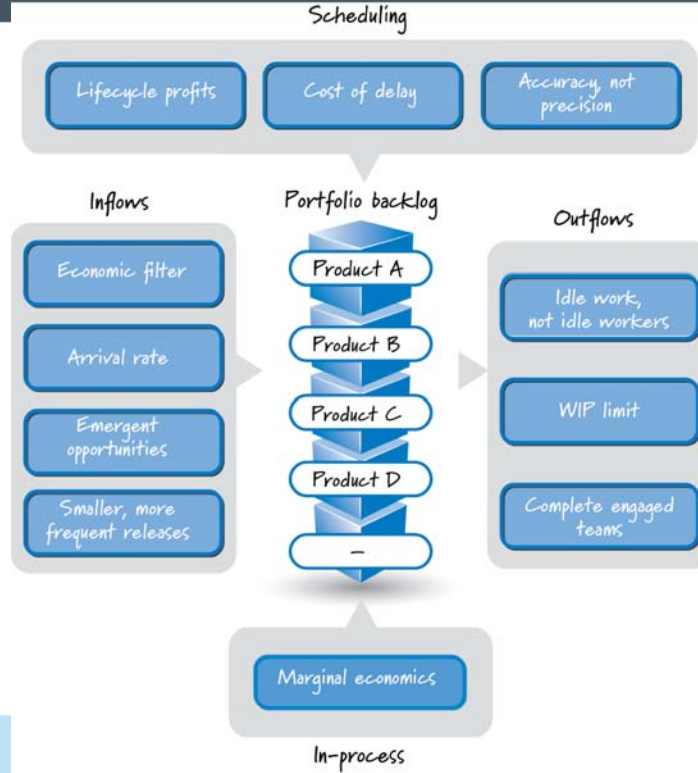| Marketing | Dev Partners |

Internal Management Misaligned

Develop in an Agile way, but still provide all of the same plan-driven artifacts (e.g., extensive up-front requirements, full budget, and precise schedule) like before to get the project approved
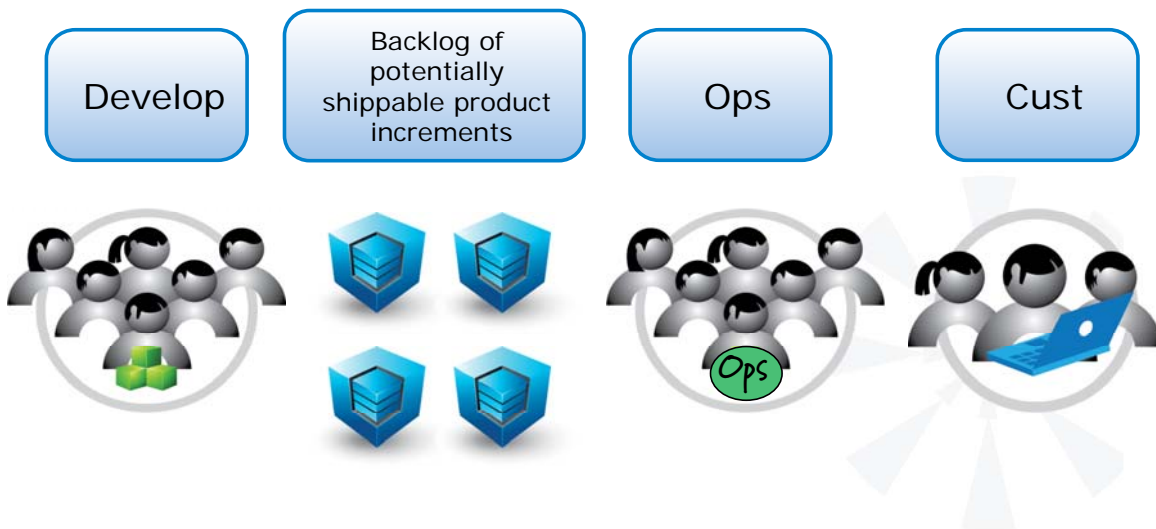
Do Agile Here

Capture complete requirements

Requirements approval/sign-off

Approved baselined requirements

Design

Build

Test

Sales Misaligned

We will deliver the Awesome foobar feature on August 15th for a fixed price of $600k!

Steve
ABC Corp Sales Mgr

Scope

Date

Budget

Portfolio Planning Misaligned

Scheduling

| Lifecycle profits | Cost of delay | Accuracy, not precision |

Inflows

| Economic filter |
| Arrival rate |
| Emergent opportunities |
| Smaller, more frequent releases |

Portfolio backlog

- Product A
- Product B
- Product C
- Product D
- _

Outflows

| Idle work, not idle workers |
| WIP limit |
| Complete engaged teams |

Marginal economics

In-process

Downstream Misaligned

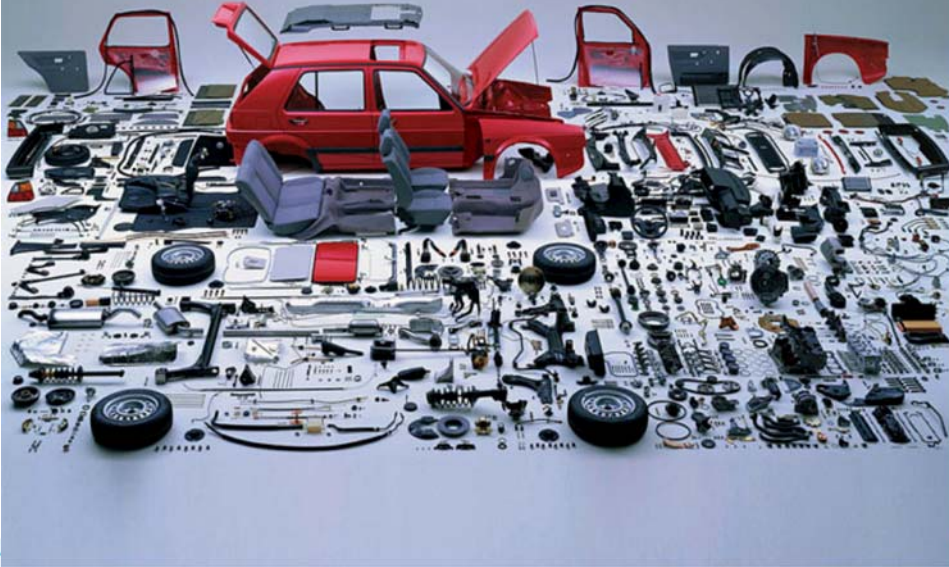| Develop | Backlog of potentially shippable product increments | Ops | Cust |

Ops

Partners Misaligned
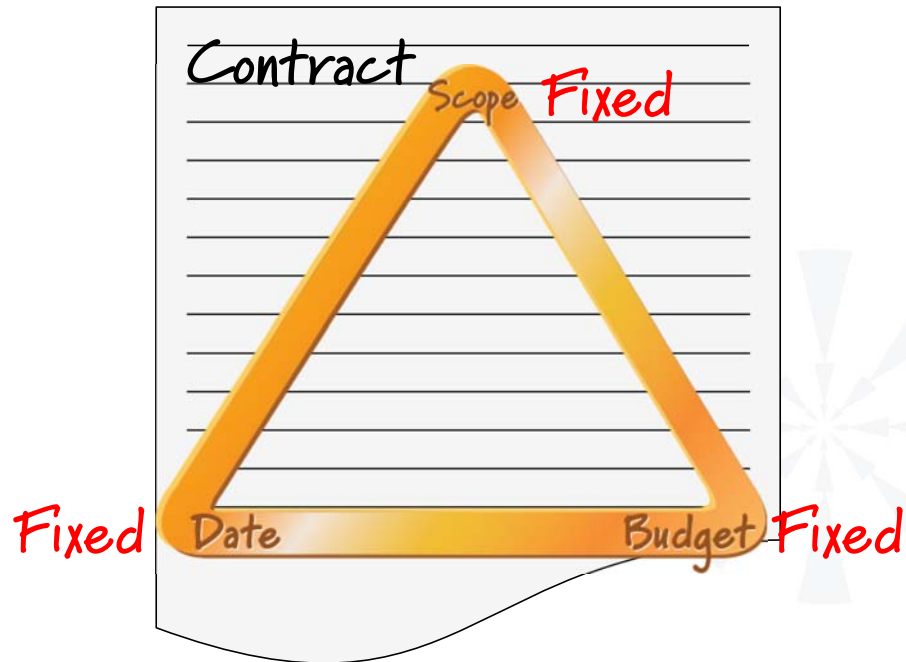
Protection of the Fiefdoms

✳ Failure to See the Whole

Optimizing locally frequently sub-optimizes the system

✳

Failure to Structure Teams in an Economically Sensible Way

Economically Sensible Teaming

Reduce multitasking

Embrace T-shaped Skills

Create and maintain long-lived teams
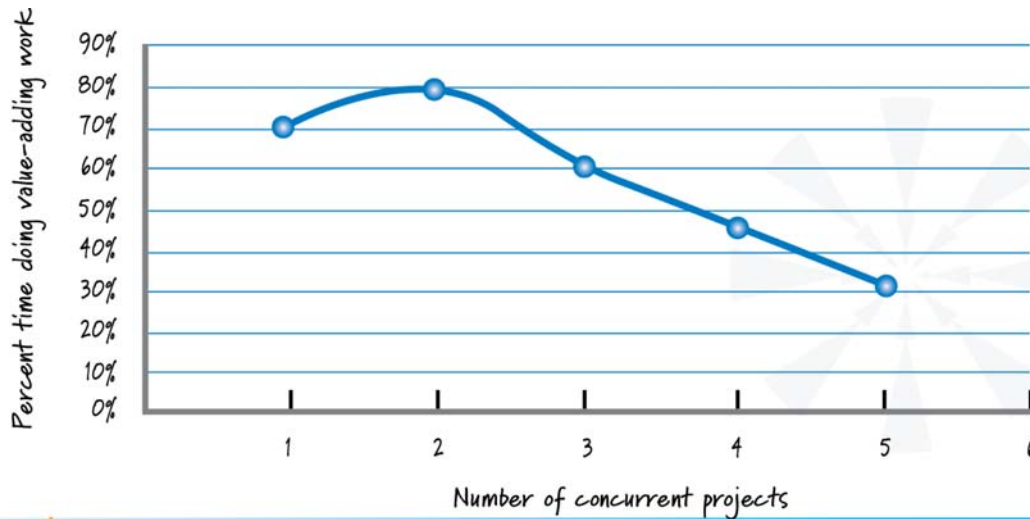
Scaling teams based on economics, not dogma

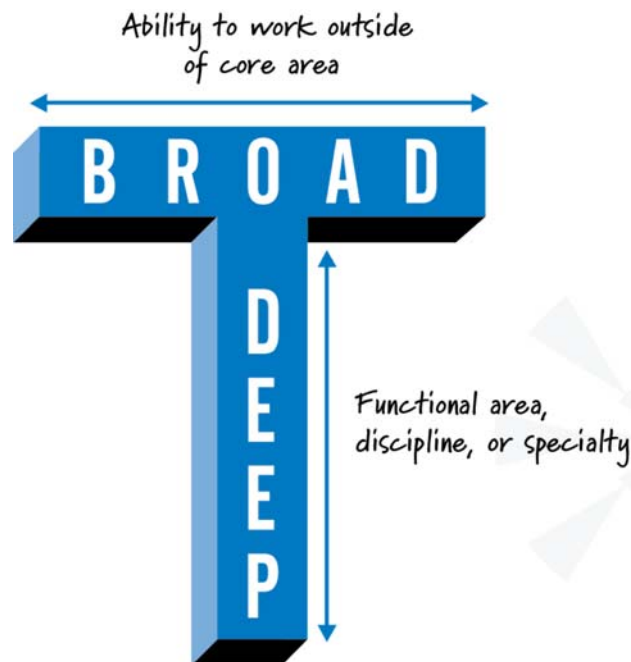# Reduce the Amount of Multi-tasking
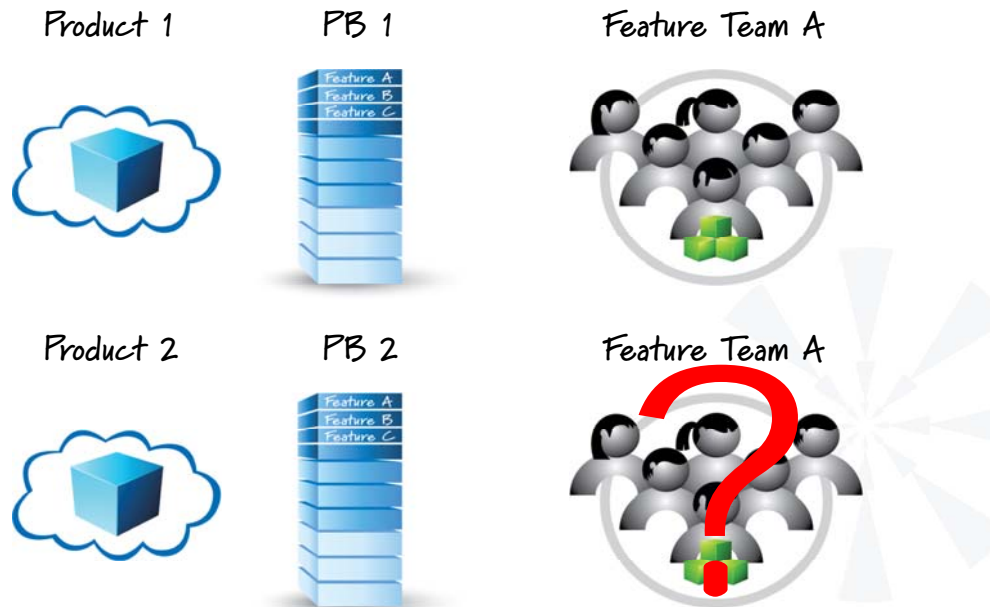
Not about keeping people busy

☀ Multitasking

Clark and Wheelwright (1992) studied multi-tasking and determined that when working on more than **two projects**, a person's time spent on value-adding work drops rapidly

☀ Teams with T-Shaped Skills

Team Longevity

Product 1	PB 1	Feature Team A

Product 2	PB 2	Feature Team A

Economics Favor Long-lived Teams

- Have established trust and team identity and integrity
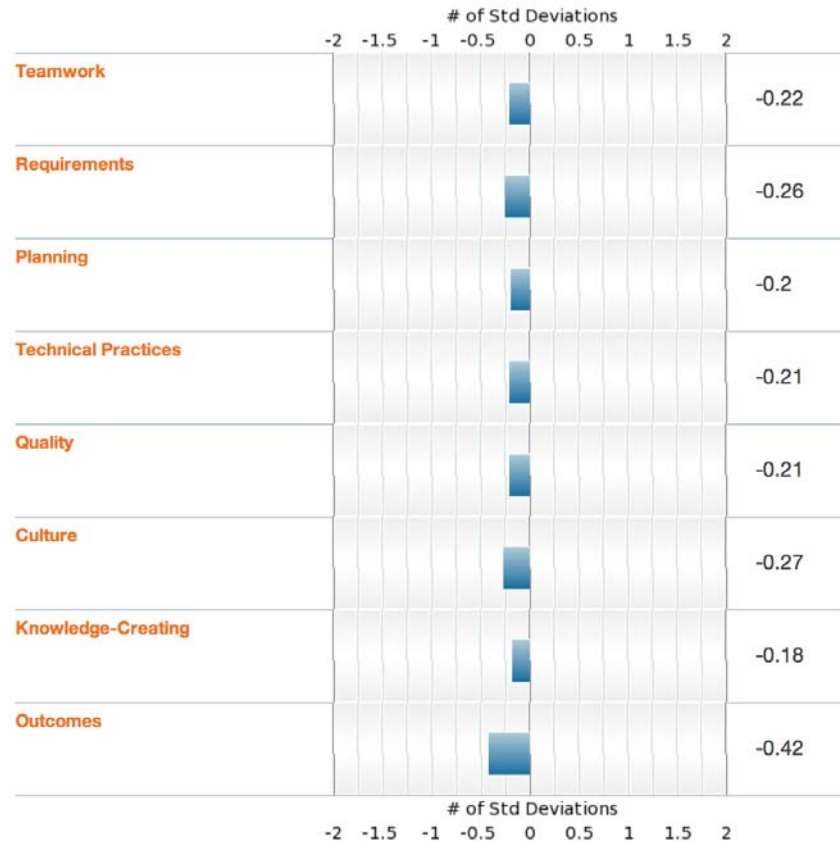
- More productive than newly formed groups

- Team familiarity can positively impact efficiency and quality of team output

- Has a shared velocity and estimating history that can be used during planning

# of Std Deviations
-2   -1.5   -1   -0.5   0   0.5   1   1.5   2

Teamwork	-0.22
Requirements	-0.26
Planning	-0.2
Technical Practices	-0.21
Quality	-0.21
Culture	-0.27
Knowledge-Creating	-0.18
Outcomes	-0.42

# of Std Deviations
-2   -1.5   -1   -0.5   0   0.5   1   1.5   2
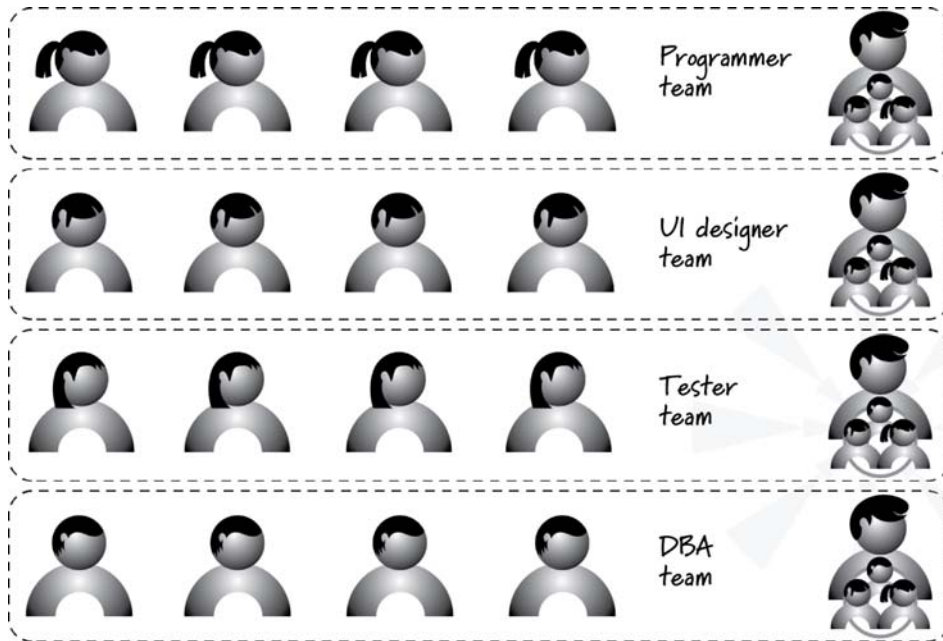
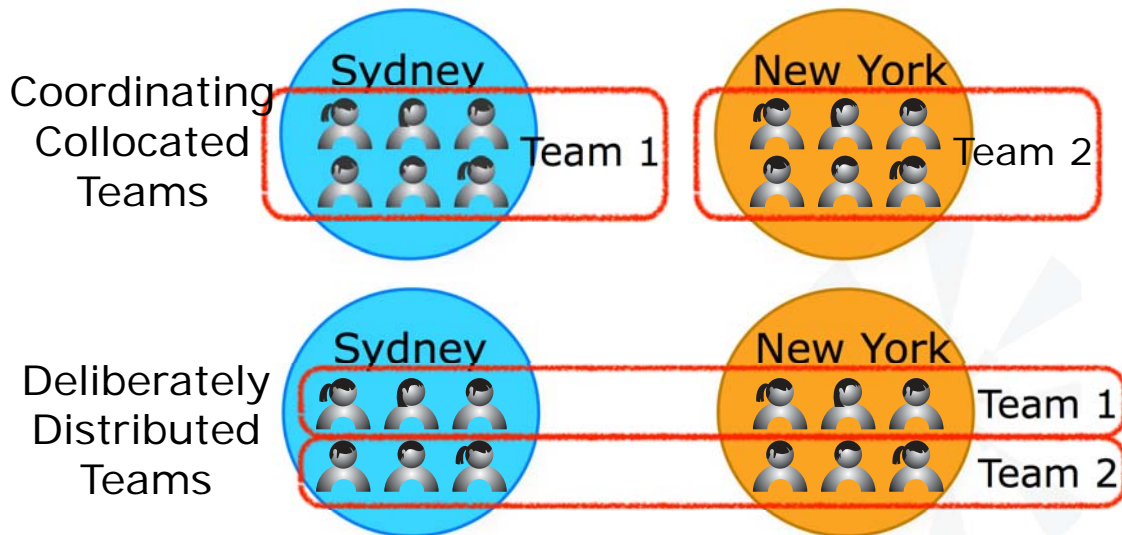Projects with at least 100 people (320 surveys)

✺ Scaling With Multiple Teams

As the scope of work gets larger and one team is no longer sufficient, what is your scaling strategy?

Discipline Teams

Programmer team

UI designer team

Tester team

DBA team

Location Teams

Coordinating Collocated Teams

Sydney — Team 1

New York — Team 2

Deliberately Distributed Teams

Sydney

New York — Team 1

Team 2

Architectural Layer Teams

(team icon)	**GUI**
(team icon)	**Middle Tier**
(team icon)	**DB**

Component Teams

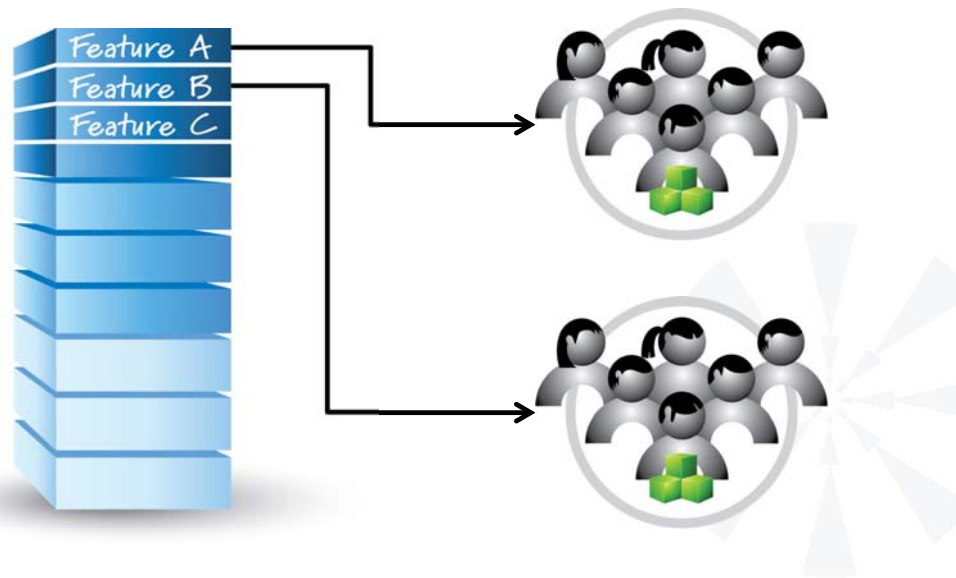Component team 1   Component team 2   Component team 3

Component 1   Component 2   Component 3

Feature Teams

Don't Scale Based on Dogma!

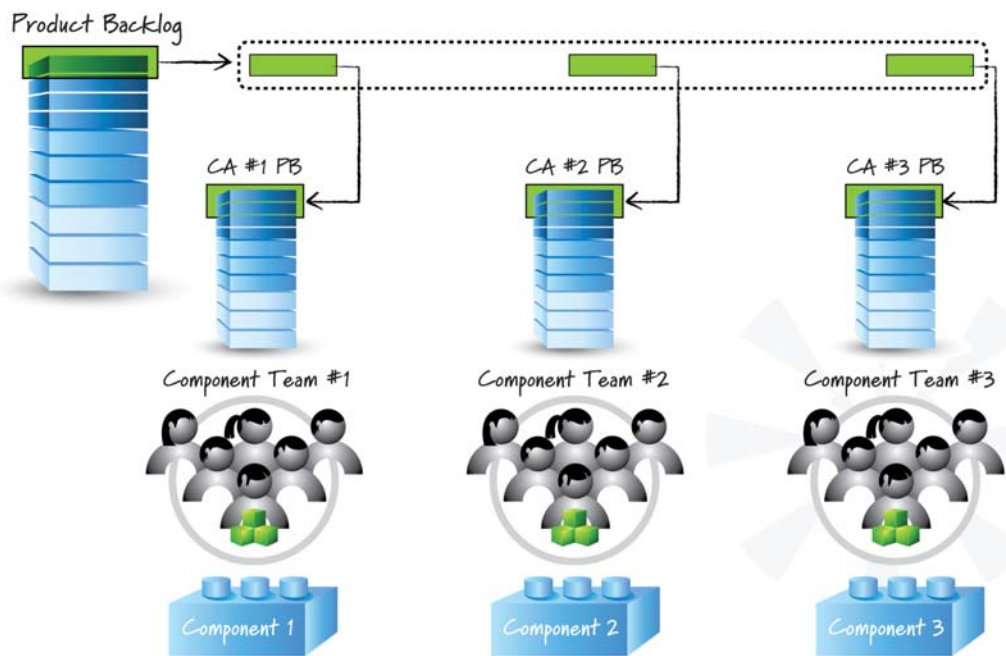Everyone knows **feature teams** are better!

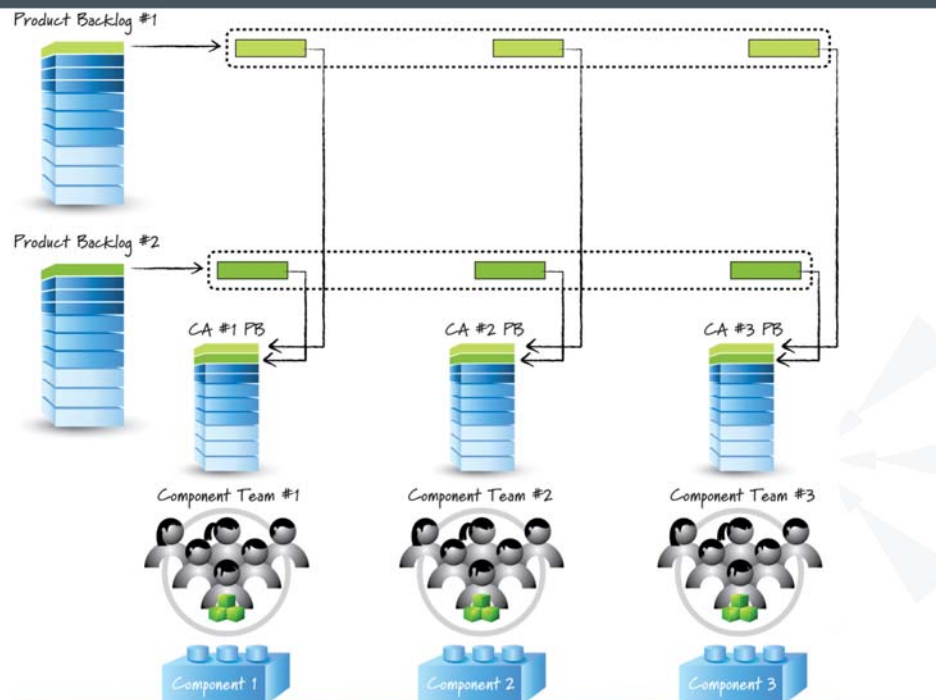Nuts! **Component teams** promote conceptual integrity & reuse!
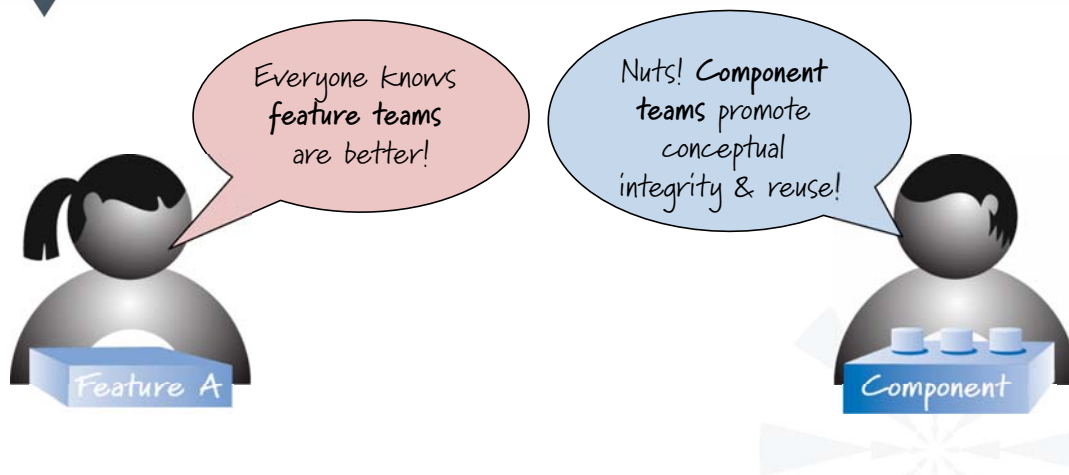
Do you honestly think there is a single answer to scaling that universally applies to all situations (sizes and types of organizations)?
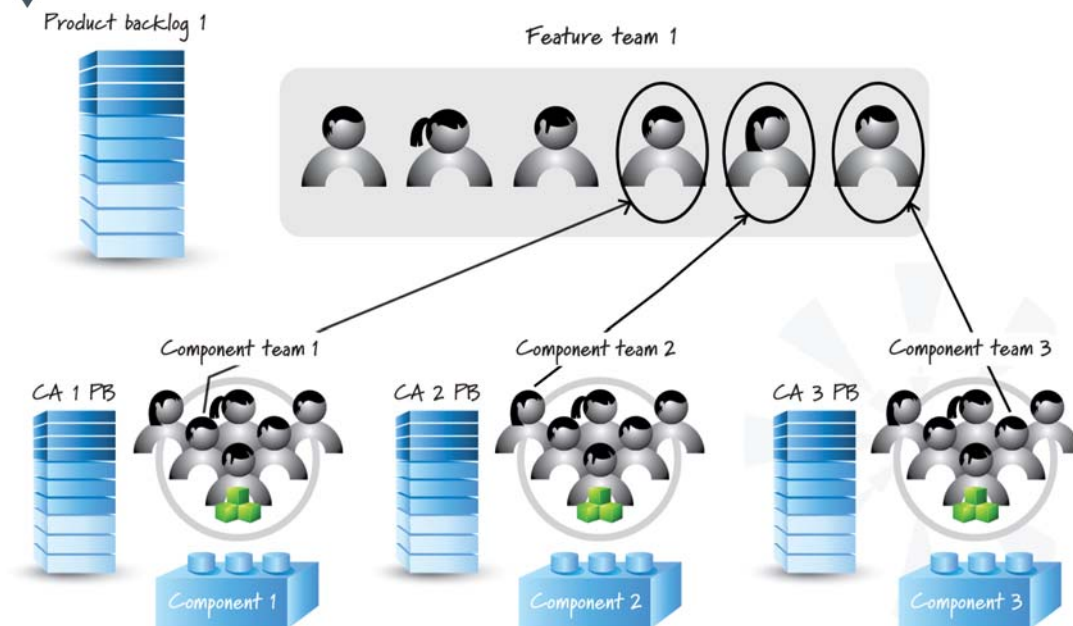
Component Teams (Single Source)

Component Teams (Multiple Sources)

Combined Feature & Component Teams

Product backlog 1

Feature team 1

Component team 1

Component team 2

Component team 3

CA 1 PB

CA 2 PB

CA 3 PB

Component 1

Component 2

Component 3

Summary

> Performing all Scrum practices and using generally accepted Scrum approaches is necessary, but not sufficient

> If you want to see the real benefits of applying Scrum you need to apply Scrum within an economic framework that allows you to make sensible tradeoffs

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Facebook:	www.facebook.com/InnolutionLLC
Essential Scrum: A Practical Guide to the Most Popular Agile Process	www.essentialscrum.com
Comparative Agility Website	www.comparativeagility.com