Making Leaders Successful Every Day

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ALM
With power comes great responsibility

Dave West, VP and Research Director

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Hello and welcome to today's talk

To help people deliver software just a little bit better

Twitter :- davidjwest

Agenda

The Evolution of Development

Agile and Lean Thinking Spur Innovation

The Emergence of Continuous Delivery

What it means to you

Are things around you getting faster, or slower?

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Business Drives Technology Drives Business

Client-valued business innovation

IT inventions

Technology increases the speed of business change, creating more business opportunities

Business opportunities

Business opportunities shape technology development and custom applications

Time

1960 — 1980 — 1990 — 2007

User perspective: DP* era | MIS era | IT era | BT era

IT industry perspective: Installation | Deployment

*Data processing
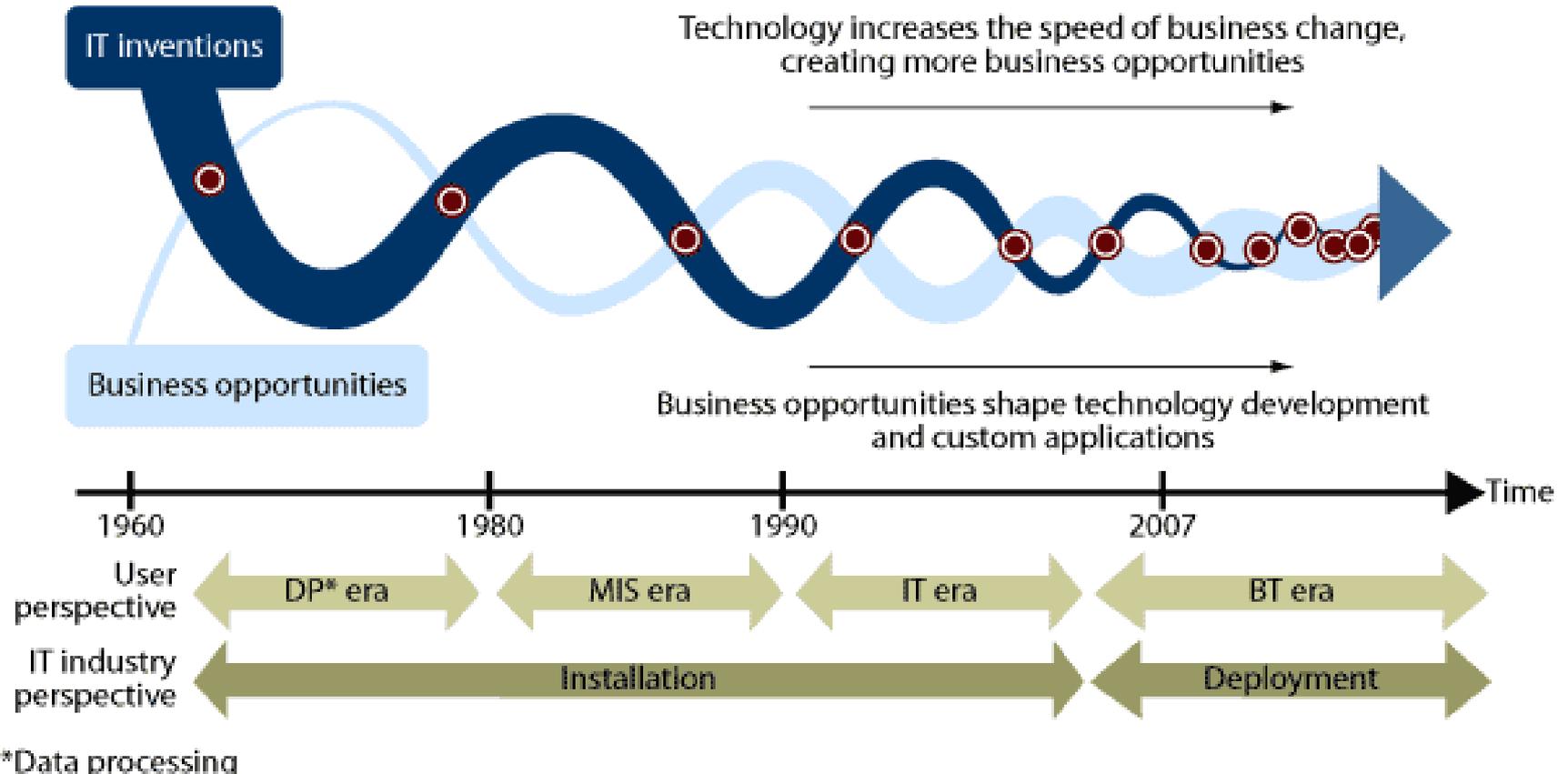
Business and IT relationship ready for this ?

Discontent with the status quo
The percentage of surveyed business and IT leaders who said they strongly or somewhat agreed with the following statements

Statement	Business leaders	IT leaders
The business doesn't give IT enough credit for working tirelessly behind the scenes	71%	67%
IT consists of technologists, not business leaders	60%	46%
IT is overly bureaucratic and control-oriented	51%	37%
The business always changes its mind about what it wants its system to do	50%	67%
The business makes half-baked requests and is clueless about enterprise impact	49%	63%
The business doesn't understand how to use its systems and technologies	48%	51%
IT leaders are business-smart	46%	60%
The business wants it all right now — regardless of return on investment	45%	56%
IT is expected to know the business better than the business does	35%	56%

Source: Valuedance and Harvard Business Review 2009 survey of 328 operational-level business and IT leaders

Software spend up in 2011 – High Tech is tops

How do you expect your firm's custom software development spending will change from 2010 to 2011?
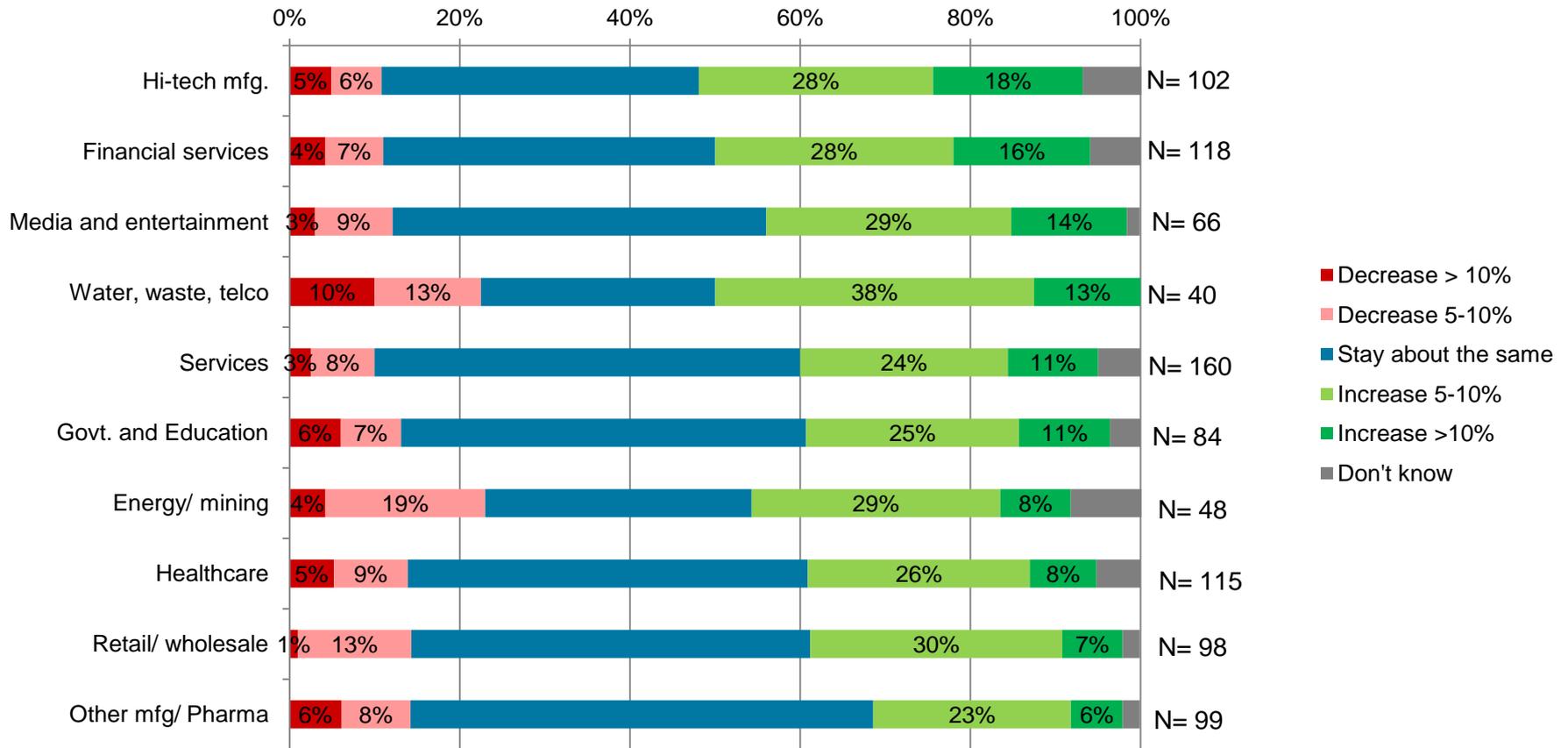
Base: 930 North American and European software decision-makers
Source: Enterprise And SMB Software Survey, North America And Europe, Q4 2010

Meet the new PC

By the end of 2011, more than 200 million people will use a Linux-based smart phone (Android)!

Another 140+ million will use iPhones, iPads

By 2013 Hardware Mfgs. Will ships more Mobile devices than PCs

9

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Customer facing apps are top of mind.

Which of the following mobile applications is your firm currently developing or planning to develop?

Application	Percentage
Customer-facing mobile applications (e.g. mobile commerce, marketing)	51%
Intranet site access (e.g. SharePoint, custom employee portal)	39%
Industry-specific applications	39%
Mobile collaboration applications	29%
Sales force applications	28%
Productivity applications (e.g. expense approval apps)	26%
Emergency/critical response applications	20%
Inventory management applications	18%
Logistics applications	15%
Transportation and shipping management applications	11%
Supply chain management applications	7%
Enterprise asset management	7%
Other applications	3%

Base: 444 North American and European software decision-makers
Source: Enterprise And SMB Software Survey, North America And Europe, Q4 2010

Multiplatform development is inescapable

"Which of the following mobile devices do you develop for?" (Select all that apply)

Device	Percentage
Apple iPhone	56%
Google Android	50%
Windows Mobile/Windows Phone	42%
Apple iPad	36%
RIM BlackBerry	19%
Symbian	8%
Feature phones/quick messaging devices	4%
Other	6%
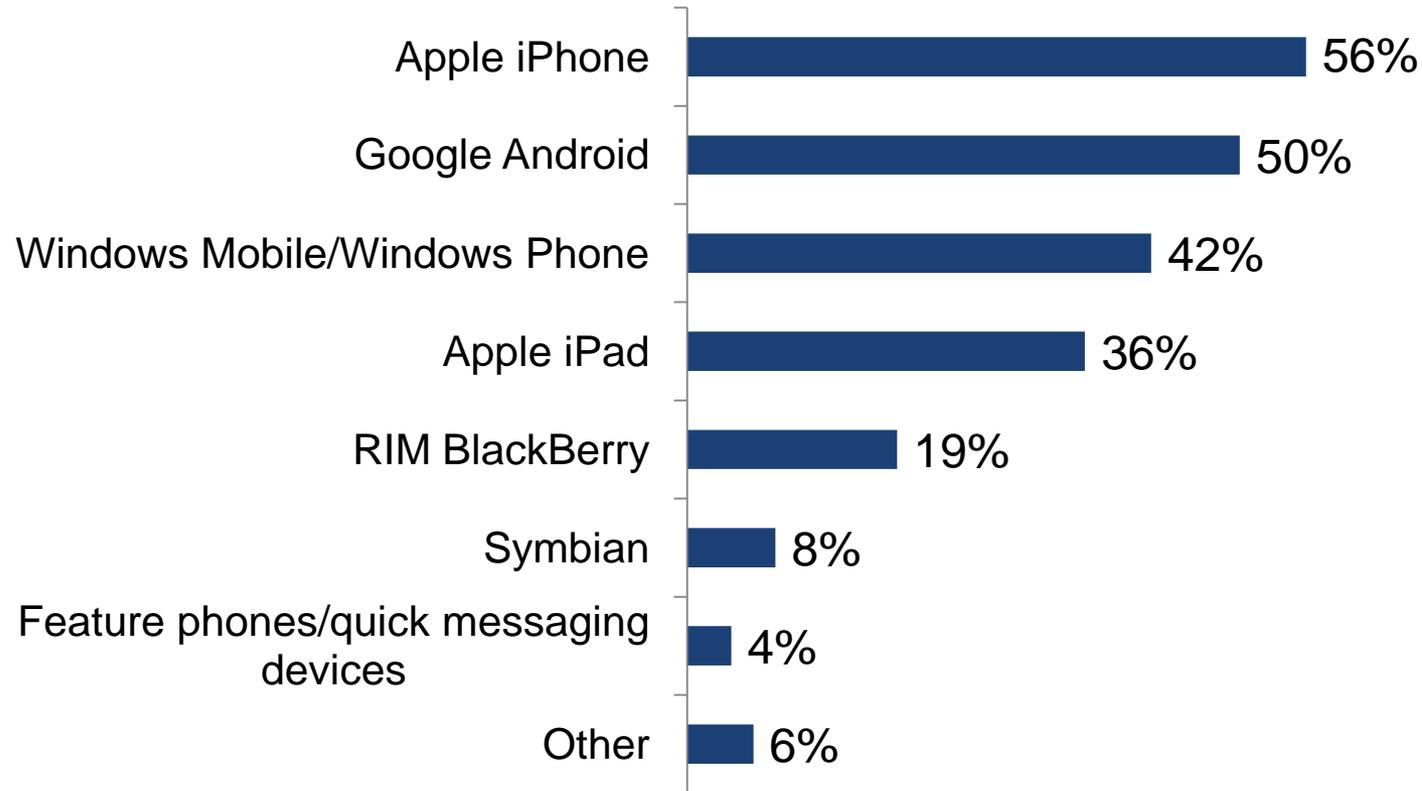
Base:137 development professionals

Source: Forrester/Dr. Dobb's Global Developer Technographics® Survey, Q3 2010

Is your future in the cloud?

We're headed toward a new type of systems thinking

Rethinking Architecture
Systems of Record + Systems of Engagement

- **Systems of Record create <u>efficiency</u>**
  - Impossible to do global commerce without them
  - Focus on cost, quality, and contractual commitments

- **Systems of Engagement create <u>effectiveness</u>**
  - Address the complexities of business relationships
  - Create compelling user interactions on line

- **Correct architecture**
  - SOEs operating <u>on top of</u> and <u>in touch with</u> SORs
  - This will require an evolution in infrastructure

Geoffrey Moore

We need to be good at three types of work

	Solid utility	Trusted supplier	Partner player
Metaphor	Manufacturing line	General contractor	Craft shop
Staffing	Resources are interchangeable.	Resources are specialized.	Individuals are stars.
Org. structure	Application silos	Functional silos	Cross-functional teams
Processes	IT infrastructure library (ITIL)	CMMi	Agile
Funding	Shrinking	Constant	Expanding
Technologies	Necessary technology	Standard technology	Leading-edge technology

Growth Tends to Push Us This Way

←

Are development shops ready?

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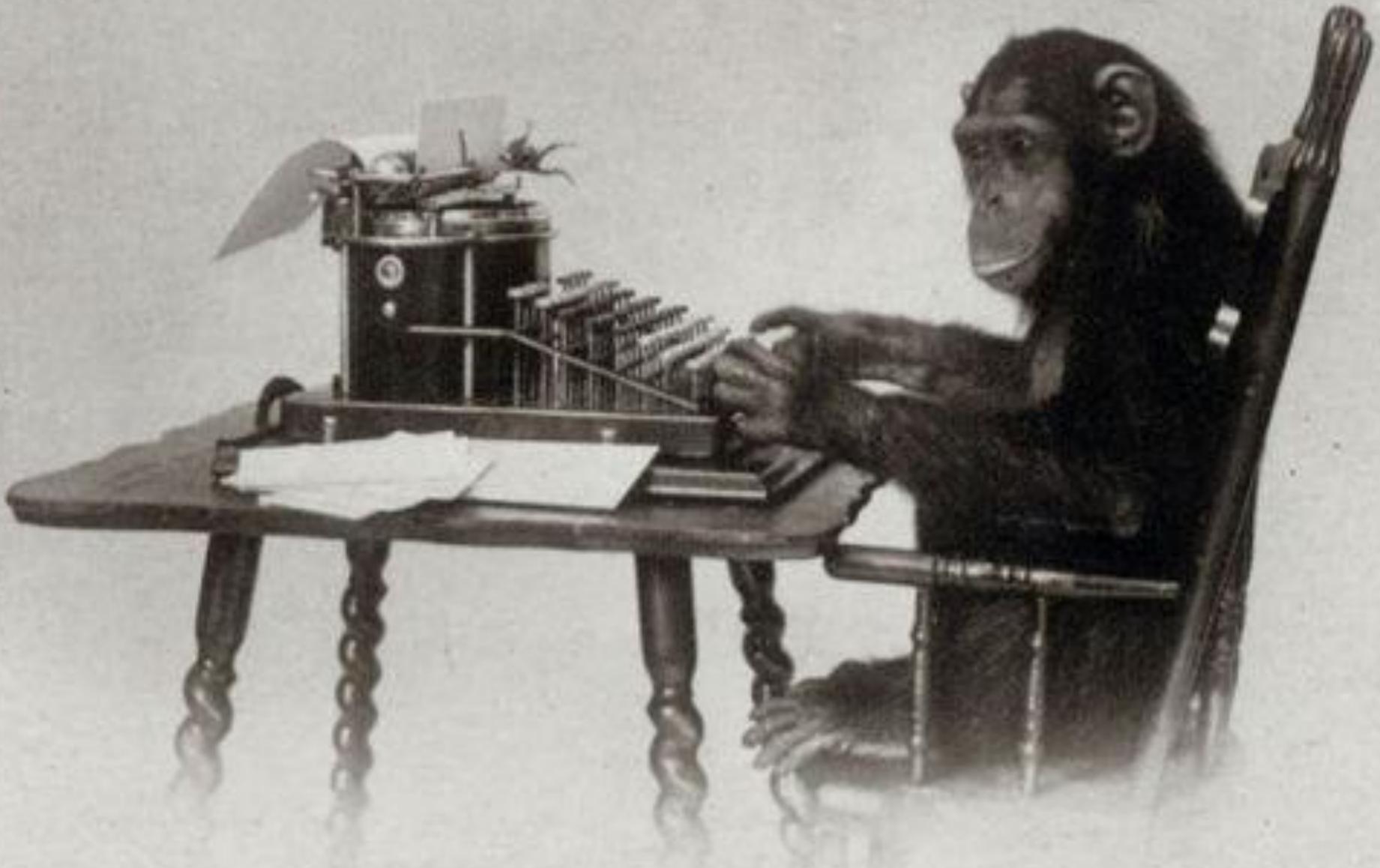
And our ALM practices look a bit like this..
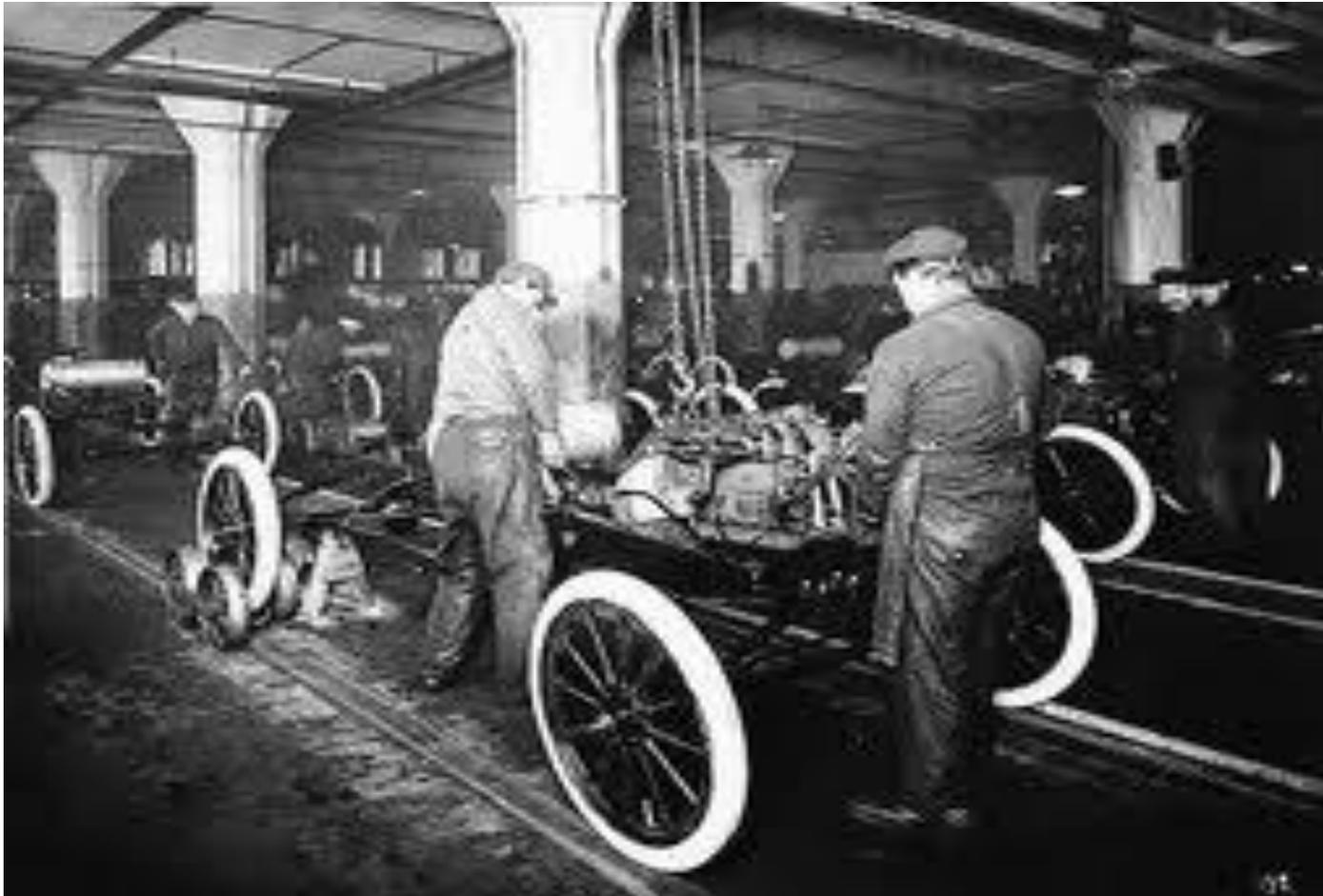
Agenda

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What it means to you

Software development is heuristic, not algorithmic

Numerous studies show a 10x difference in productivity and quality among software developers and teams

1968 – Sackman, Erickson and Grant

1981 – Curtis

1983 – Mills

1985 – Demarco and Lister

1986 – Curtis et al.

1987 – Card

1988 – Boehm and Papaccio

2000 – Boehm et al

This ratio is characteristic of _heuristic_ work

The differences in approach

The Software Factory
Algorithmic Emphasis

- Process manages complexity
- Automation wherever possible
- Artifact-based process
- Push to lowest cost labor
- Measurement throughout
- Centers of excellence
- Testing is discrete
- Exhaustive Analysis
- Prevent errors early

Not The Software Factory
Heuristic Emphasis

- People manage complexity
- Automation where it aids creativity
- Flow based process (Agile/Lean)
- Hire "Type I" individuals
- Measurement of end results
- Cross-skill mastery
- Quality is holistic
- Continuous Feedback
- Correct errors quickly

So why is this such a critical point?

The tactics you use to drive software innovation, productivity and quality depend on the path you take now

The Differences In ALM Thinking

The Software Factory
Algorithmic Emphasis

CMMI   ITIL

ALM 2.0

Not The Software Factory
**Heuristic Emphasis**

Scrum   Kanban

Flow-based ALM
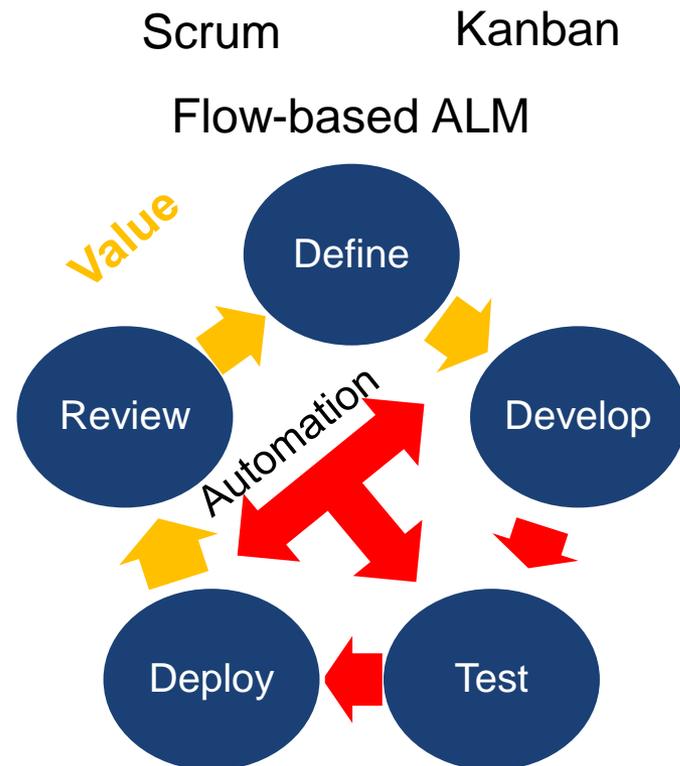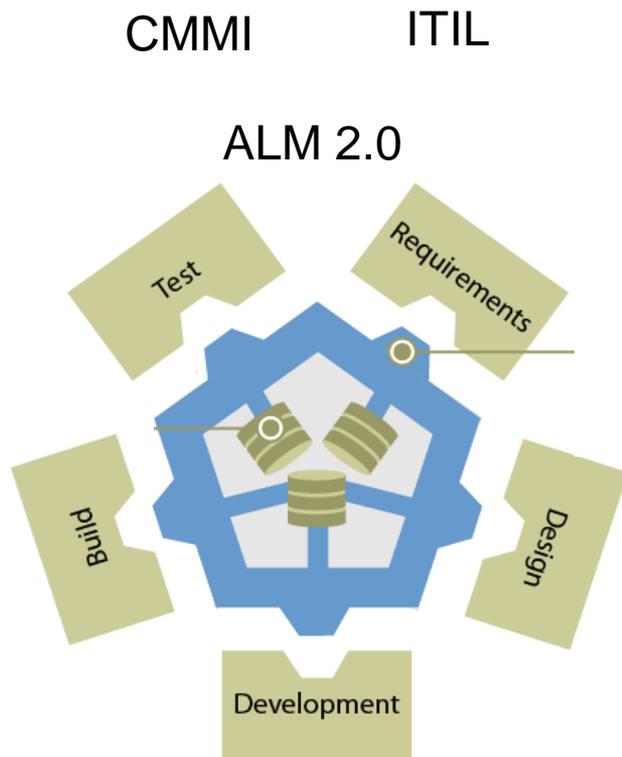
Agile continues to grow in importance and value

"Agile is a change framework for software delivery organizations because the business needs us to change."

– General manager of a large energy company

Executives are focusing on Agile

2010 (n=2,124) **2011* (n=2,198)**

Not on our agenda
39%
35%

Low priority
30%
31%

High priority
21%
23%

Critical priority
5%
8%
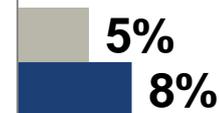
Base: IT executives and technology decision-makers

Don't know responses are excluded.
Source: Forrsights Software Survey, Q4 2010 and *Forrsights Software Survey, Q4 2011

But Agile is challenged by . . .

# "We can't fund projects without a plan!"

And . . .

"We only release software every six months!"

WARNING:

For the pure Agile people in the audience, the following may offend.

Source: The Haymakers Survey (http://www.thehaymakerssurvey.com/); CBS Interactive (http://www.bnet.com/)

Thus water-Scrum-fall is the reality . . .
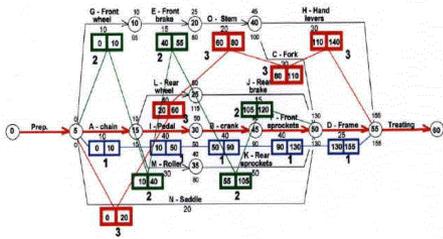
Requirements and planning
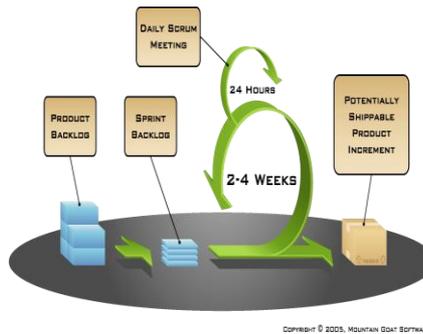
Release

This does not have to be as bad as it looks !

When the water-Scrum-fall is wrong . . .

WATER **SCRUM** **FALL**

Requirements

Development

System testing

Unit testing

Release

Planning

Deployment

Design

Integration testing
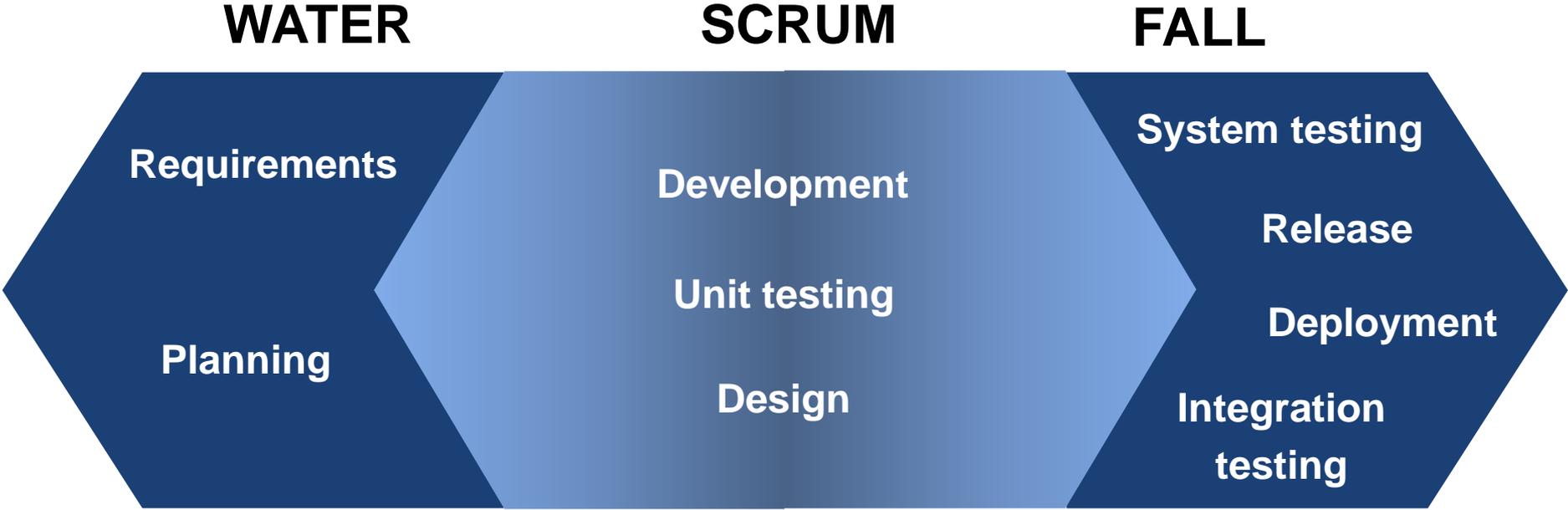
When the water-Scrum-fall is right . . .

When the water-Scrum-fall is right . . .

WATER   **SCRUM**   **FALL**

A3

Flow

Continuous integration

Model-driven deployment

Value

Manage by constraints

Kanban

Deployment

Lean Thinking

Continuous delivery
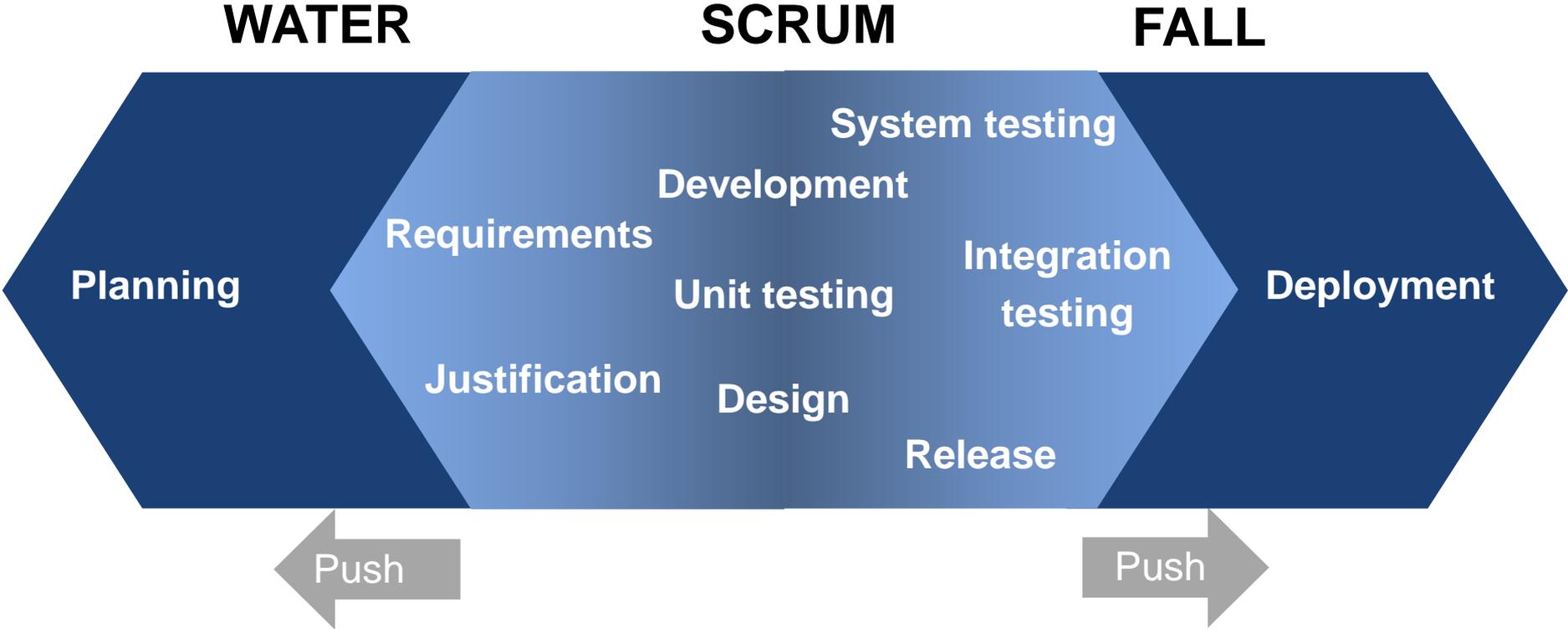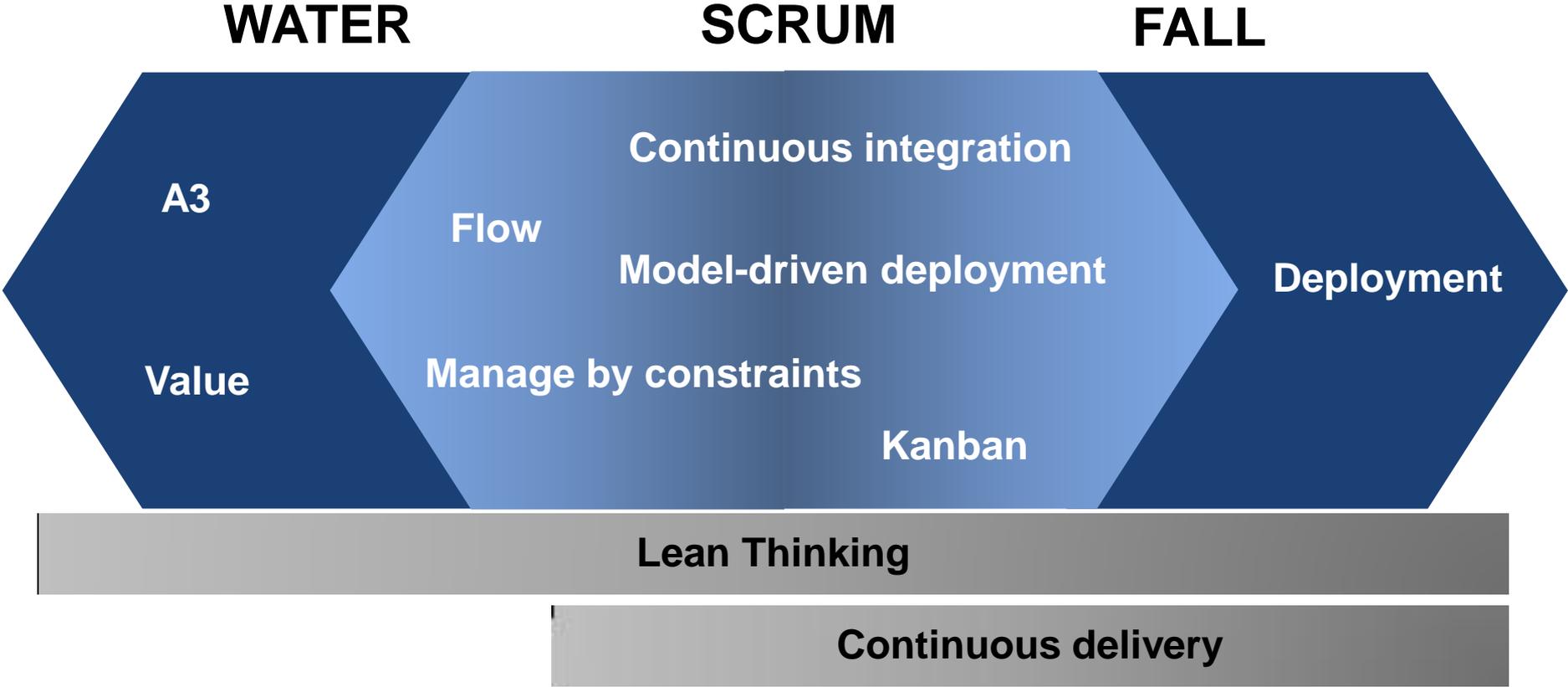
Visualizing the flow with Kanban

Planned	In progress	Tested	UAT	In release
178 Update customer name.	104 Build out GUI framework.	112 Access legacy SPOCC.	103 Add Bald indicator to customer .	112 Customer entry
108 Add address lookup from Zip.	11 Build environment.	178 Get quote.		
190 Create quote.				
10 Calculate rate value.				

Done closed

119 Get equipment.

Kanban board
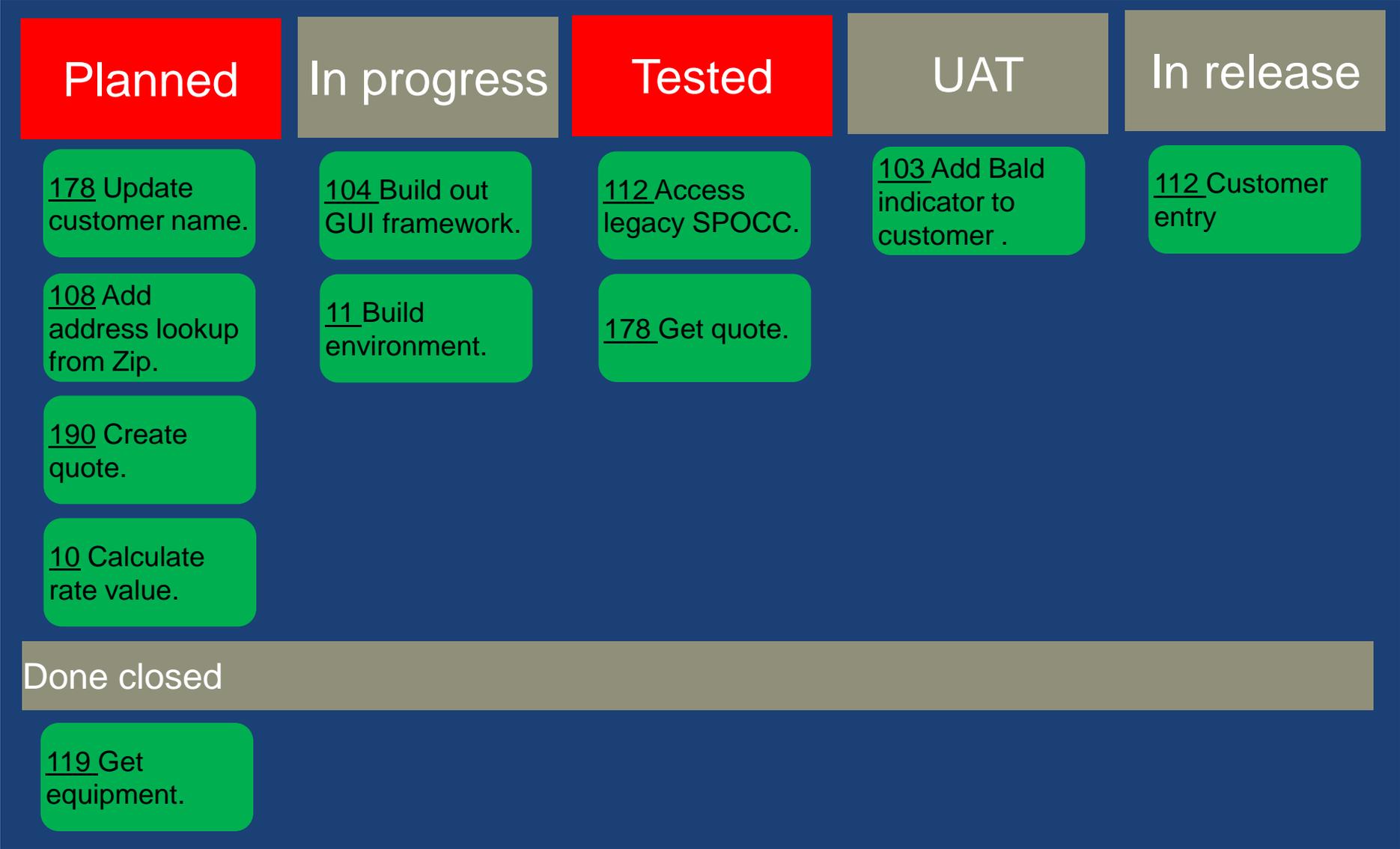
The Implications to ALM

Agile, Lean, anti-software factory means a different ALM

- Speeding up development cycles

- Changing the composition of teams

- Empowered individuals (who can select their own tools)

- Increasing the importance of transparency

- Dynamic planning cycles

- Active business involvement

- Focus on flow

- Change in nature of documentation

- Changeable process as we move from Water-Scrum-Fall

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What it means to you

Agile Fractures Traditional ALM Processes

Waterfall project milestones

Requirements complete

Design complete

Development complete

Testing complete

Deployment complete

J F M A M J J A S O N D

Agile project milestones

1 2 3 4 5 6 7 8 9 10

Iteration 0 complete

Parallel Design Development and Debug

Iteration 11 complete
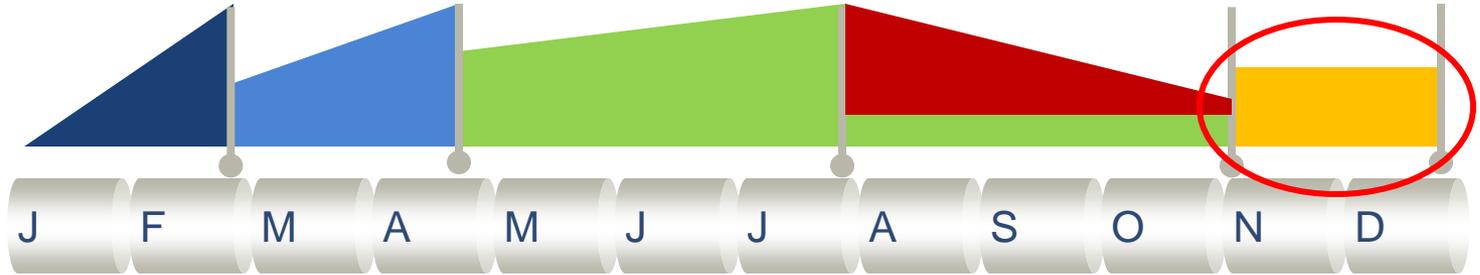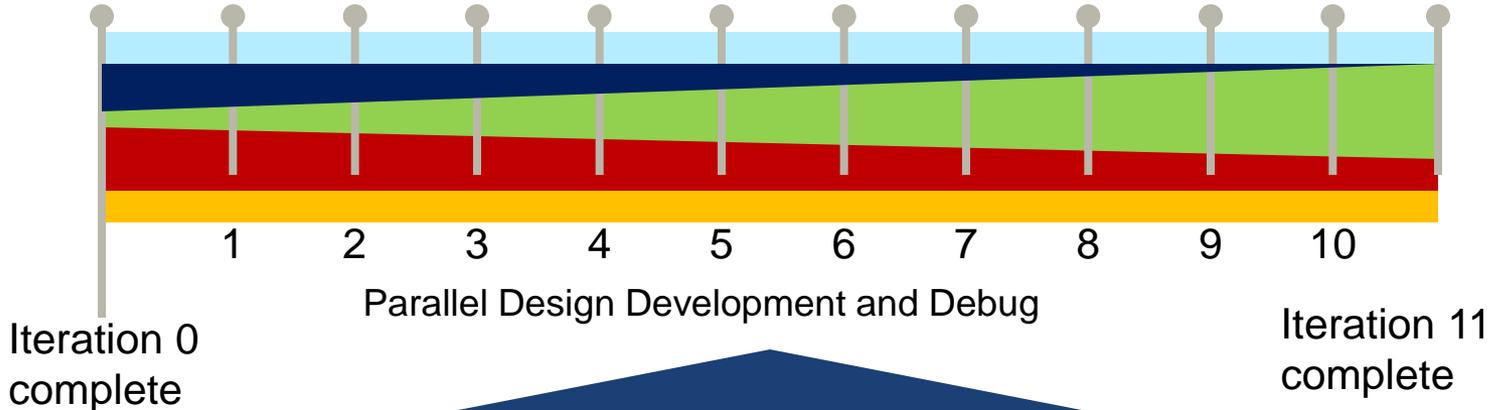
Manual process hand-offs are hard to scale!

Overhead of a release

34% overhead of a release is more than a week.

Source: Open Library (http://openlibrary.org/)

Speeding up releasing software

- Treat software release and deployment as a value chain.

- Be consistent through the promotion of software.

- Use automation as much as possible.

- Create a dashboard that provides clarity and highlights issues.

- Exploit tools that make it easier.

- Continually improve the process.

Source: Jez Humble and David Farley, *Continuous Delivery*, Addison-Wesley Professional (2010)

Dev Ops movement encourages a different approach

- **Shared goals**
  - Operations and development connected on business goals

- **One lifecycle, one process**
  - Everyone involved in releasing business value

- **Tooling that integrates**
  - Automation that streamlines the process

The Implications to ALM

DevOps changes lifecycle

- Heavy focus on automation

- Integration is the reality (operations and development, development and QA)

- Automated testing becomes more important

- Cloud deployment becomes of interest

- Traceability provides transparency

- Broader team involved

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What it means to you

Summary

- Business requires a different sort of delivery.

  – Do more with less at the speed of the business.

- Agile continues to grow in the enterprise but . . .

  – Increased importance of broader process models

  – Water-Scrum-fall is the reality.

- Lean provides support for enterprise Agile.

  – Kanban provides visualization.

  – Focus on value and waste.

- Continuous delivery provides quick wins.

  – Consistent promotion

  – Automation

What is means to you…

- Software business is a cool business
  - But with power comes responsibility
- Think about improving the value stream
  - Value, waste and flow
- Adopt a different way of thinking about ALM
  - Agile and Lean provide foundations

Thank you

To help people deliver software just a little bit better

Dave West

VP and Research Director

Phone :- +1 617.613.6376

Twitter :- davidjwest

Email :- dwest@forrester.com

www.forrester.com

Thank you

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