



Lean in the *Digital Transformation*

Steve Bell, LEI Senior Advisor for Digital Lean Transformation
Jean-Francois Cote, Director for Operational Excellence at Bell
John Drogosz, LEI Coach for LPPD
Kevin Fisher, Associate Vice President at Nationwide
Bruno Guicardi, Founder and President at CI&T

Want Better Employees?
Be a Better Employer.

Lean Transformation Summit 2018
Nashville | March 25-28, 2018



Lean in the *Digital Transformation* Forum

Moderator: **Steve Bell**
LEI Senior Advisor, Digital Lean Enterprise

Want Better Employees?
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Lean Transformation Summit 2018
Nashville | March 25-28, 2018

Learning Session 1

10:45am – 12:00 noon

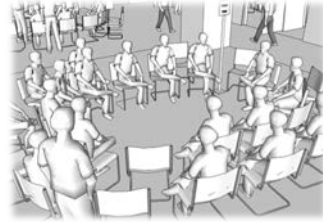
Each speaker shares their story and lessons learned



Learning Session 2

1:30pm - 2:45pm

Small-group conversation sessions with each speaker



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Lean


... in the Digital Age

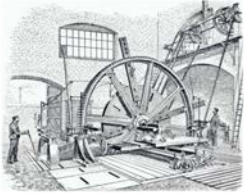
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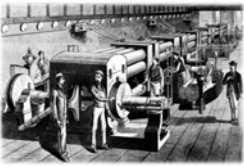


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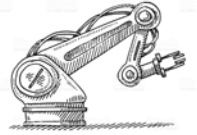




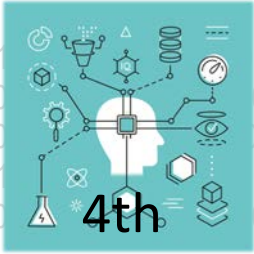
1st
~1780 Water & Steam Power



2nd
~1890 Electricity



3rd
~1970 Computers & Software





4th
Data and Intelligence


Internet, Mobility, Cloud, IoT, Advanced Analytics, Simulations, Augmented Reality, Sensing and Actuation, Cobotics, Additive/3D Manufacturing, Robotic Process Automation, AI & Machine Learning, and more . . .

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Digital Lean Enterprise: Gemba Interviews





What we're learning:

- 1) Different views, and much confusion, about what digitization is
- 2) Desire to learn how digital capabilities can support Lean enterprise performance
- 3) Desire to learn how Lean principles and practices can support digital capability development

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What is “Digitization”?

An Adaptive Learning Human/Digital Ecosystem

Steve Bell, Lean IT Summit, Paris France, March 2017

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Summit 2018



THE HYPE CYCLE

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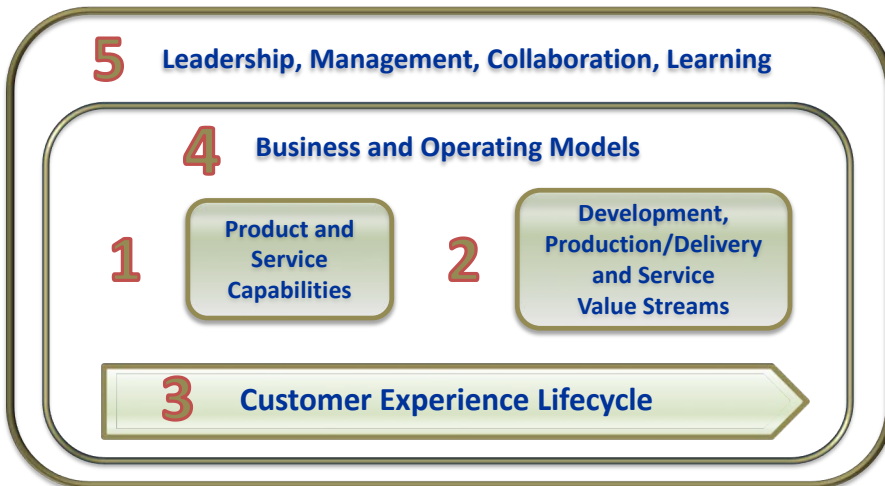
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Why is Digitization Important?

VALUE



Five Dimensions of Digital Value



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1. Product and Service Capabilities

The boundaries of products and services are becoming fuzzy, physical and digital products are blending:

- ✓ Appliance with Smartphone interface, use of analytics to anticipate problems, and help service and designers
- ✓ Automobile with internet connection and systems monitoring - update in the garage overnight
- ✓ Professional services customer interfaces that learn your preferences and anticipates how they can help you



Forbes
EY, Deloitte and PwC Embrace Artificial Intelligence for Tax and Accounting

Value: New capabilities that often redefine what the product or service is/does

Value Stream: Entire organization focused on all aspects of the product and service (cyber-physical) in a holistic way

Flow/Pull: Enterprise can observe changing customer preferences and uses in real time and respond to them

CI & Learning: Products, services, value streams and customers learn together, based on realtime data, observations and interactions; continuously adapt, innovate and improve



2. Development, Production/Delivery and Service Value Streams

View of three core value streams - Development, Delivery & Service in a new way:

- ✓ 3D/Additive prototyping and service parts at point of use
- ✓ Data driven instrumentation (IoT) enable real-time alerts (Andon), analysis, innovation and improvement
- ✓ Automation – Bots, robots, cobots, robotic process automation; machine learning to aid people
- ✓ Aircraft messages inflight maintenance issue, parts waiting at airside



Value: Speed, quality, cost, agility, mass customization

Value Stream: End-to-end value stream visibility, metrics, and collaboration. Physical and Virtual product development integrate and synchronize. Omnichannel integration.

Flow/Pull: Update virtual product continuously, modify product capabilities to meet changing customer preferences.

CI & Learning: Continuous stream of data and analytics available to value stream/product team, real-time learning, rapid capability to improve product design, production and service delivery



3. Customer Experience Lifecycle

Every step in the customer journey: identify need, select solution, acquire, use, upgrade, replace, retire:

- ✓ Mobile Self Service autonomy
- ✓ Always available to help and gather learning/feedback
- ✓ Augmented reality engineer assist
- ✓ More knowledge in customers' hands
- ✓ Predictive means less downtime, more safety



Value: New capabilities that often redefine what the product or service is/does

Value Stream: Entire organization focused on all aspects of the product and service (cyber-physical) in a holistic way

Flow/Pull: Enterprise can observe changing customer preferences and uses in real time and respond to them

CI & Learning: Products, services, value streams and customers learn together, AB Testing based on real-time data, observations and interactions; continuously adapt, innovate and improve.



4. Business and Operating Models

New ways of thinking about value:

- ✓ Blurring industry boundaries
- ✓ Platform enterprises:
 - Products as platforms
 - Customer networks as platforms
- ✓ Derivative data as value (we must protect privacy to maintain trust!!)



SIEMENS



Value: Extend customer view from the product to the entire usable lifecycle of the generation, and the knowledge value of the enterprise and its network

Value Stream: Need for skilled data and automation so these complex, emergent networks can function without management overhead.

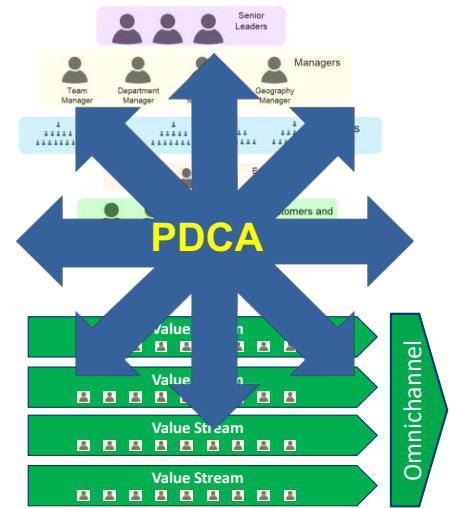
Flow/Pull: Flow can look very different in complex networked value streams. Traditional Value Stream mapping, measurement and analysis evolving accordingly.

CI & Learning: Need to adopt lightweight, flexible Lean management systems and practices to create agile, extended enterprise



5. Leadership, Management, Collaboration, Learning

- ✓ Virtual visual management to augment traditional physical methods (e.g. Obeya, Hoshin)
- ✓ Remote collaborative workspaces and ecosystems help geographically distributed teams perform effectively
- ✓ Sense and respond with instrumentation (IoT), pattern analysis, machine learning, automated visualizations and notifications
- ✓ Provide teams with advanced experimentation, problem solving and decision making capabilities using data and advanced analytics, and machine intelligence



Communities of Practice and Shared Principles



Uncertainty



Lean Startup

Small, rapid experiments for completely new ideas, with data collection and analysis to validate the value hypothesis prior to making a larger investment; be prepared to quickly pivot as you learn.



Lean Development

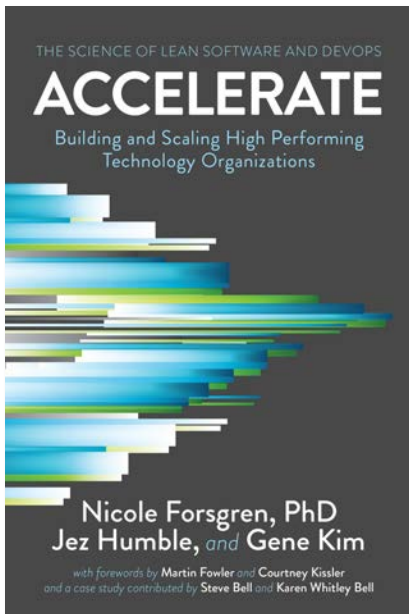
Development for products, services, software, and processes once value hypothesis is validated; Small, cross-functional teams with clarity of purpose and priorities conducting rapid, small batch experiments with continuous testing and delivery.



Lean Operational Excellence

Disciplined problem solving for incremental improvement of existing products, services, software, and processes.

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HIGH-PERFORMANCE LEADERSHIP AND MANAGEMENT

By Steve Bell and Karen Whitley Bell



To download a free excerpt visit:

www.DigitalLeanStrategies.com





Network 3.0

Transformation @ Bell Canada Networks

Jean-François Côté

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52000
9,100,000
3,700,000
2,800,000
20%
23
8500

Bell



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Our Goal
To be recognized by customers as
Canada's leading communications
company



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Bell Wireless	Bell Wireline	BellMedia				Sports
 	 	Conventional TV 	Specialty and Pay TV 	Radio 	Digital 	

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In Network we ...

Build the Network

Cell Tower Bell Central Office Poles with Fiber Satellite









Enhance and introduce services

Operate the Network


Deliver content on the Network

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Retail	Banking	Transportation	Tech
			
			

facebook. amazon NETFLIX Google

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In front of us ...

- The customers expect to be served @ internet speed.
- Customer want to maximize use of technology and be autonomous
- Patience for new products and features is low.
- The model mix is increasing
- Relevant start-ups are now competitors
- Hardware is “out,” software is “in”
- Technology is getting more complex, available to all...and **powerful !**
- Our processes need to adapt.
- Our knowledge and leadership behaviours need to adapt.
- Our culture needs to adapt....




How
build


What
Products & services

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In 2014 we named our network ambition for 2020 : Network 3.0



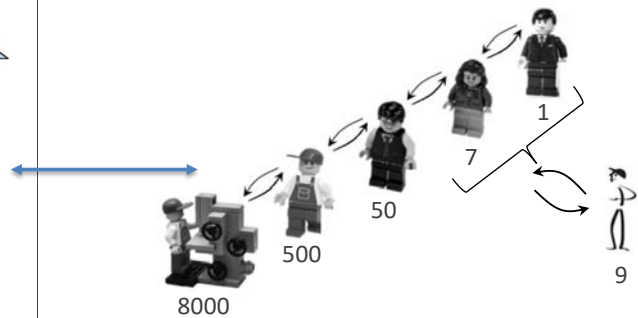
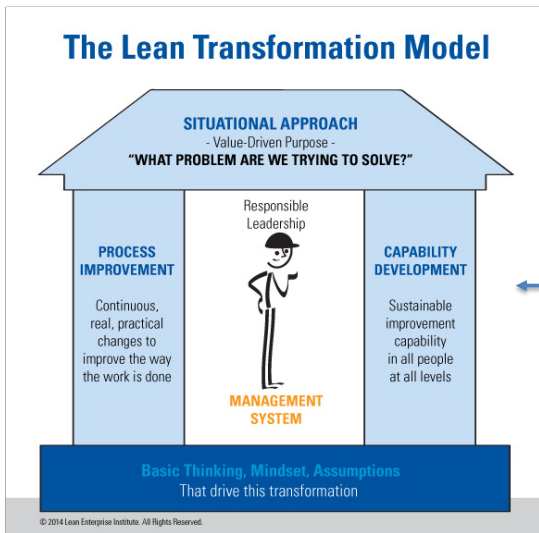
people
Culture
Technology
Process



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Since 2007 we build on this...



In 2012 we had to adapt...



In 2015...

**OMG!
DevOps**

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People

Learning Pyramid Coaching Dreyfus Model ADKAR mindfulness

Process


Six Sigma Lean / TPS / Kata OE Agile Dev Ops

Technology

Internet of Things Big Data Open Source SDN & NFV Ready 5G

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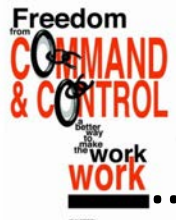


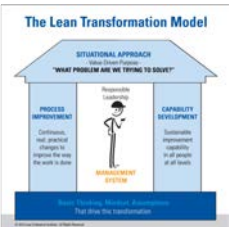
Nine 3.0 transformational values;


Put Customer first	Think end-to-end in the eyes of our customers	Allow for experimentation and tolerate risks
Innovate at Internet speed	Trust and empower team members	Eliminate waste
Work with facts - go and see	Foster team proximity	Be leaders who support and serve


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Lean & Digital transformation

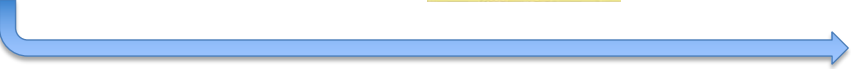








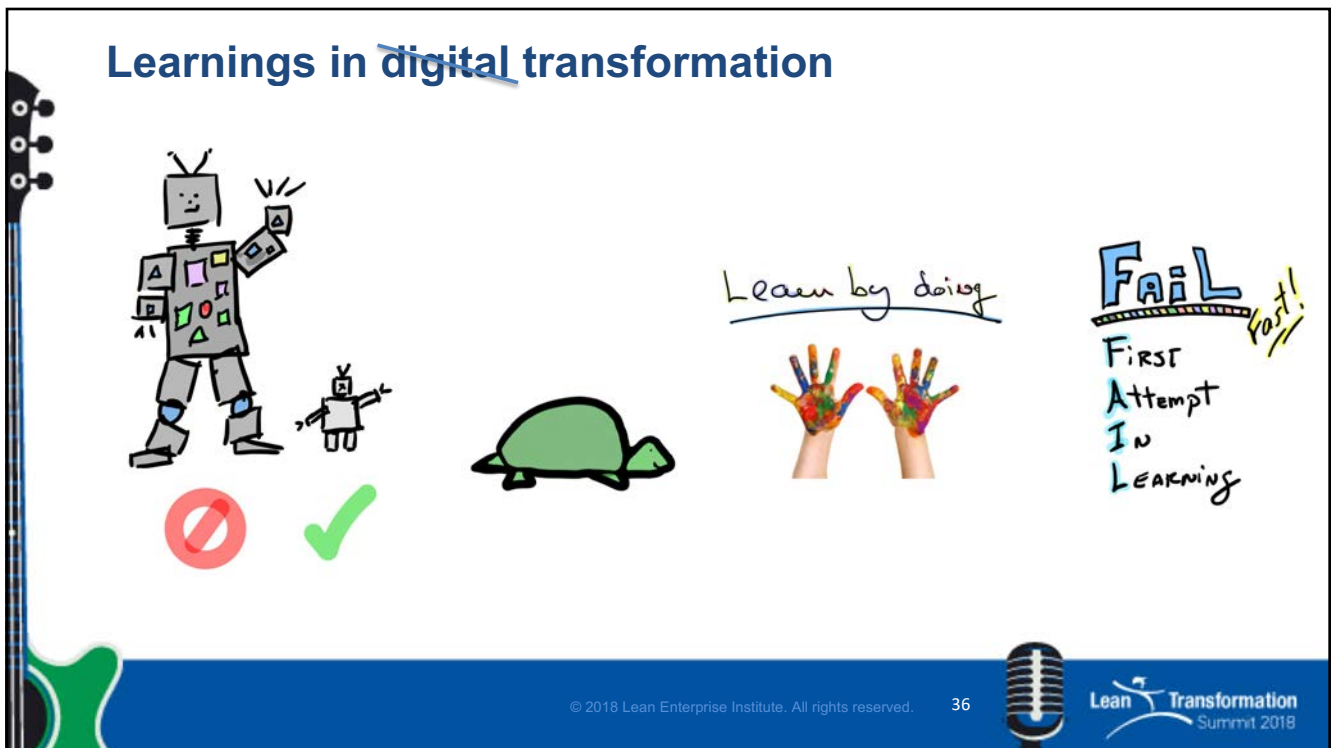
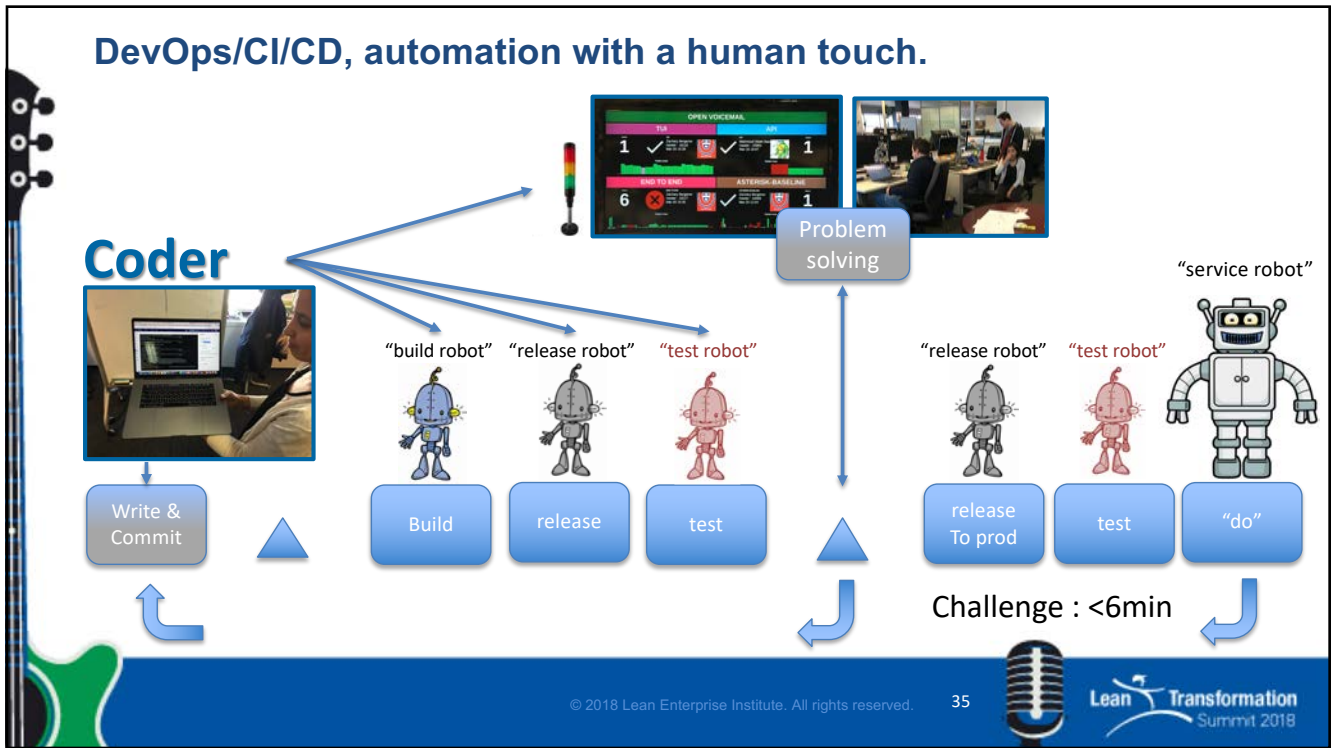






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Thank you

JF Côté

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Lean in Digital Session

John Drogosz, PhD
Lean Product & Process Dev. Coach

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History and LPPD Learning Group



LPPD Learning Group: High-performing, non competing organizations which are able to share



Lean Product & Process Development

Move from Product Development to Solutions Development

Modularization of Product Architectures

Hardware and Software Integration



Lean Product & Process Development

Move from Product Development to Solutions Development

Modularization of Product Architectures

Hardware and Software Integration



Features of Integral Architecture:

- Elements that perform many functions
- Elements that are in close proximity or close spatial relationship
- Elements that are tightly synchronized



Features of Modular Architecture:

- Elements are interchangeable
- Elements are individually upgradeable
- Element interfaces are standardized
- System failure can be localized

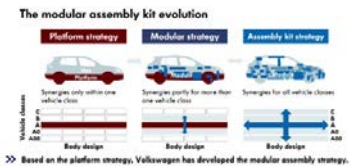
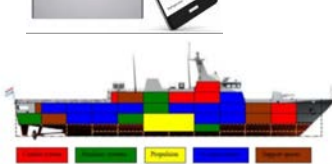


Questions for consideration:

Is modular *product* architecture always the best solution?



Modularity and integrated solutions moving to all types of products...



Lean Product & Process Development

Move from Product Development to Solutions Development

Modularization of Product Architectures

Hardware and Software Integration

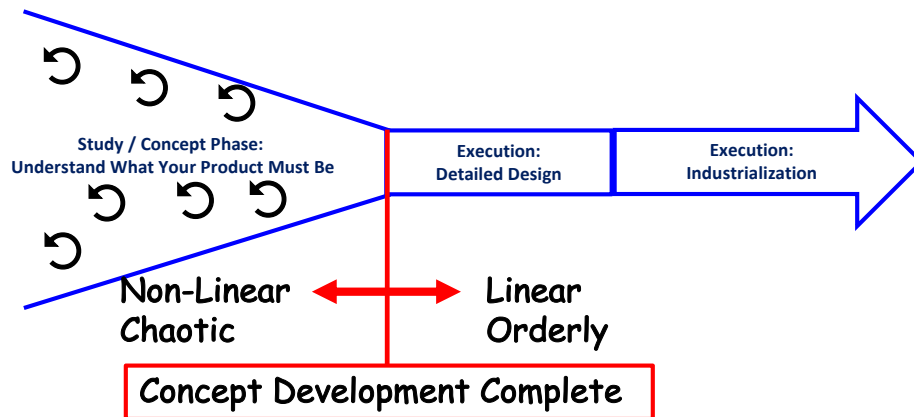


Hardware and Software Integration

- Rapid Learning Cycles & Cross-functional problem solving
- Synchronization of activities with Agile/Scrum
- Systems integration – adjudicating tradeoffs
- Set-Based Design



Product Development Value Stream



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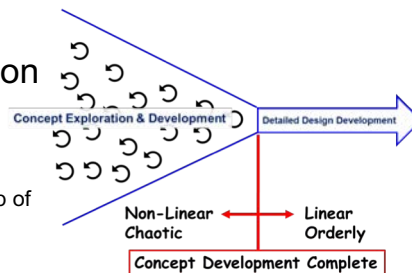
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Bringing Structure to Chaos

Three techniques for developing structure to the concept exploration phase:

1. Decision Flow
 - Identify and understand the interrelationship of key decisions or critical questions
2. Rapid Learning Cycles to close knowledge gaps leading to better decisions and design solutions.
3. Set Based Concurrent Engineering
 - Structured exploration
 - Generation of knowledge to identify the best option or combination of options to meet the needs of the customer



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Rapid Learning Cycles (RLC)

Rapid Learning Cycles are synchronized sets of experiments to remove uncertainty, manage risk and build knowledge before key decisions need to be made during a product development project.

Pull learning forward and push decisions later.

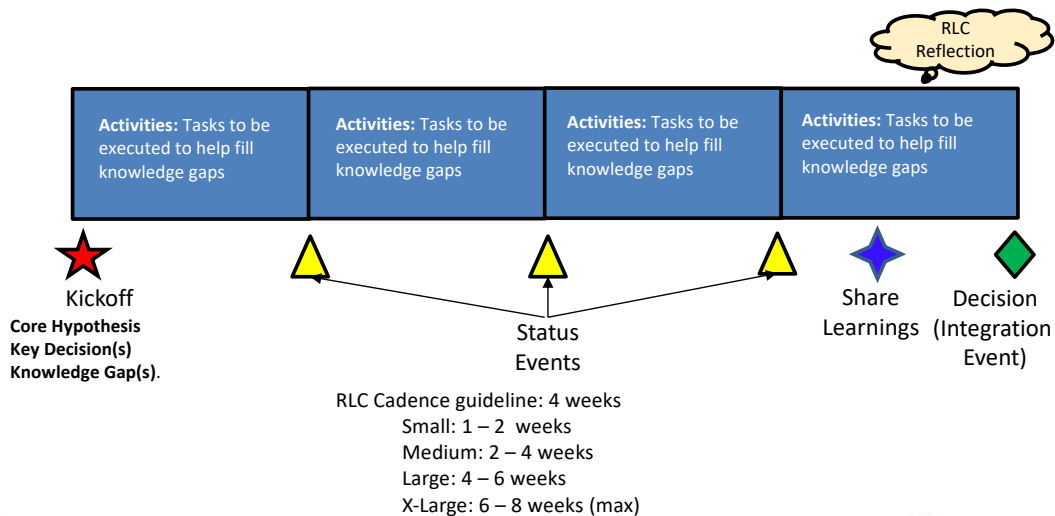
Teams delay making major commitments until they have the knowledge to make those commitments with confidence. (Last Responsible Moment)

Eliminate the biggest risk of all – inadequate knowledge!

Shift from “Doing” to “Learning”



Key Events in a Rapid Learning Cycle



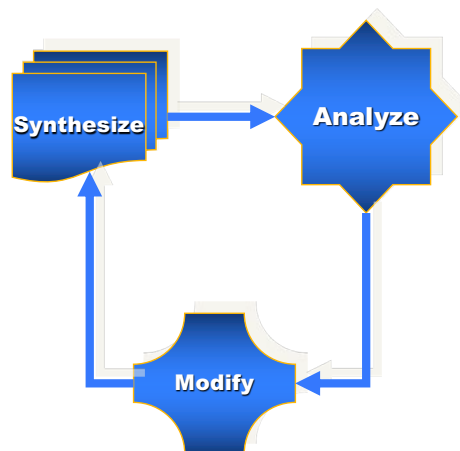
Set-Based Concurrent Engineering

Generating multiple potential solutions to a design or engineering challenge and working through a convergence process to arrive at the best possible solution.

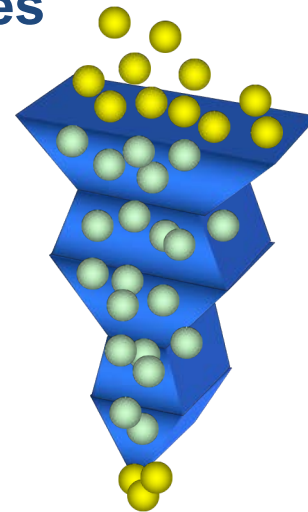
- Al Ward



Exploration Approaches



Iterative



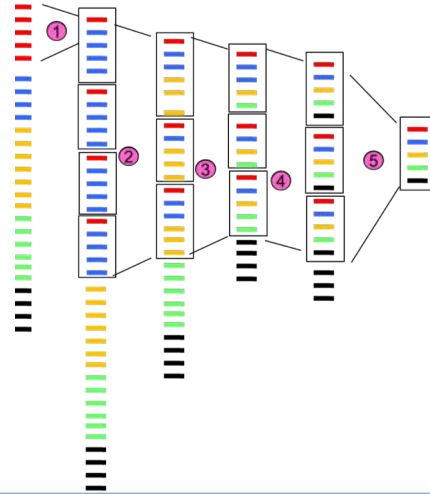
Convergent



Set Based Concurrent Engineering

Components

- Component A
- Component B
- Component C
- Component D
- Component E



- Sub-groups are used to limit the number of combinations
- Develop enough knowledge to understand which alternatives to discard
- Knowledge builds around the remaining alternatives
- Final selection is made with significant amount of accumulated knowledge
- High confidence in selected solution



Lean Product & Process Development

Move from Product Development to Solutions Development

Modularization of Product Architectures

Hardware and Software Integration







Lean & Digital at Nationwide Insurance

By Kevin Fisher
Associate Vice President
Nationwide Insurance



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2016 Company Overview

FORTUNE World's Most Admired Companies*	\$43 billion in total sales/direct written premium	 \$17.2 billion paid in claims and other benefits to members in 2016
FORTUNE 100 Best Companies to Work For*	\$26.9 billion in operating revenue	 We do business in all 50 U.S. STATES
FORTUNE 50 Best Workplaces for Diversity*	\$910 million in net operating income	
	\$209.8 billion in total assets	

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Nationwide IT supports 21 business units

\$1+

BILLION
ANNUAL IT
SPEND



35,000+
PERSONAL
COMPUTERS



9,000+
IT WORKFORCE
(PREDOMINANTLY
IN-HOUSE)

5 LOCATIONS

- Columbus, OH
- Des Moines, IA
- Scottsdale, AZ
- Harleysville, PA
- Brea, CA

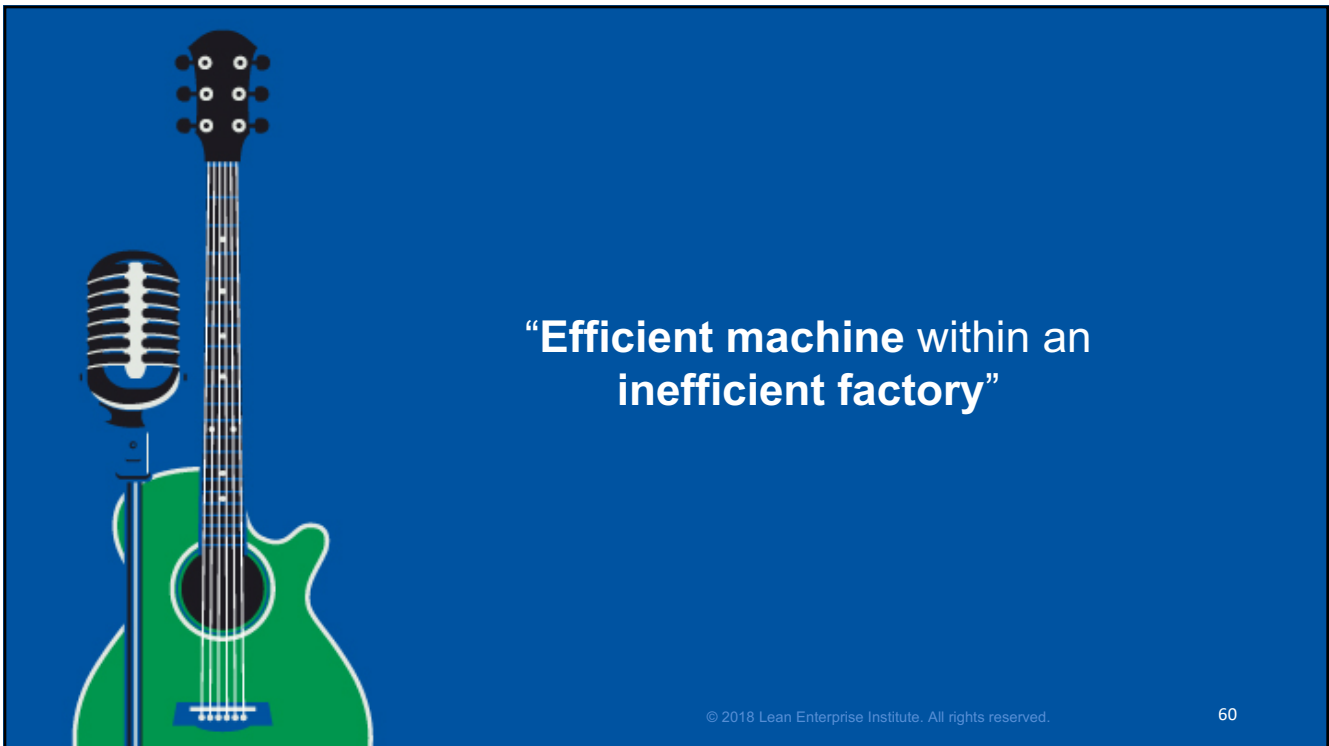
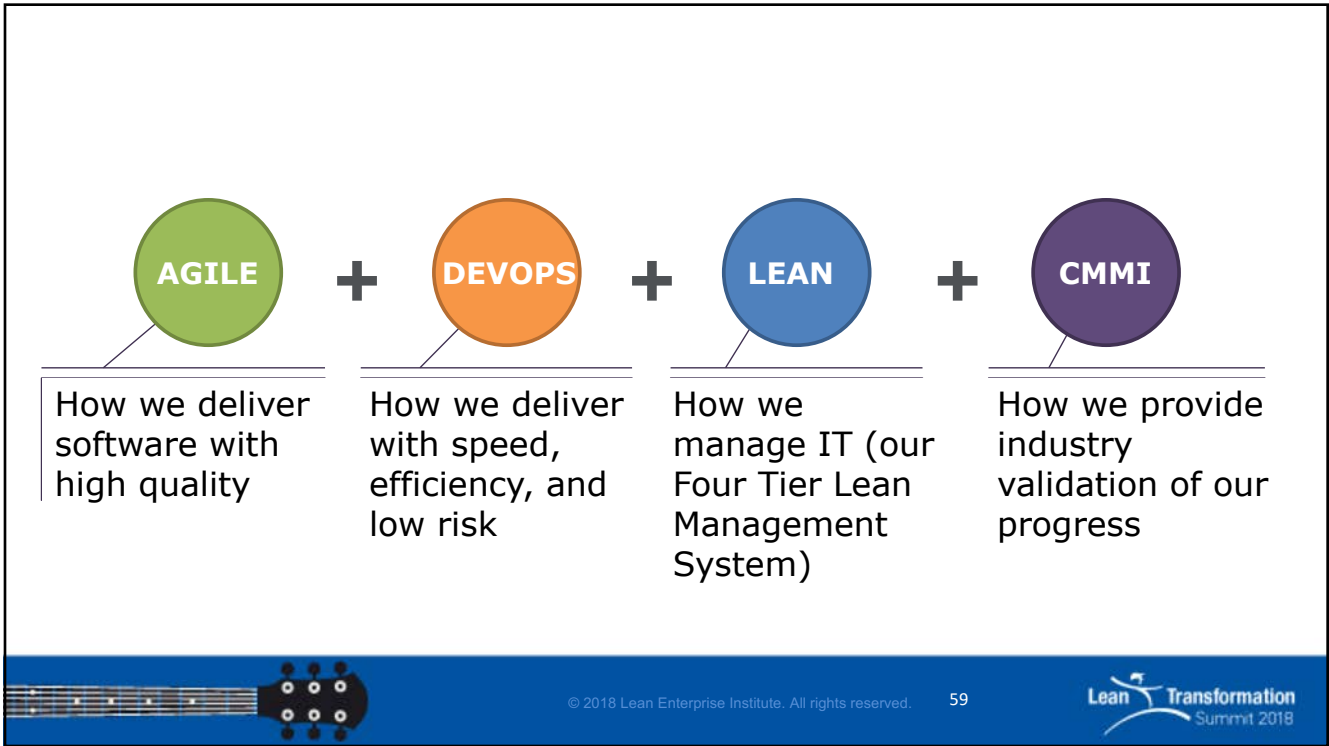
2016 Watts Humphrey
Software Process
Achievement Award
(Only 11 companies awarded since 1994)



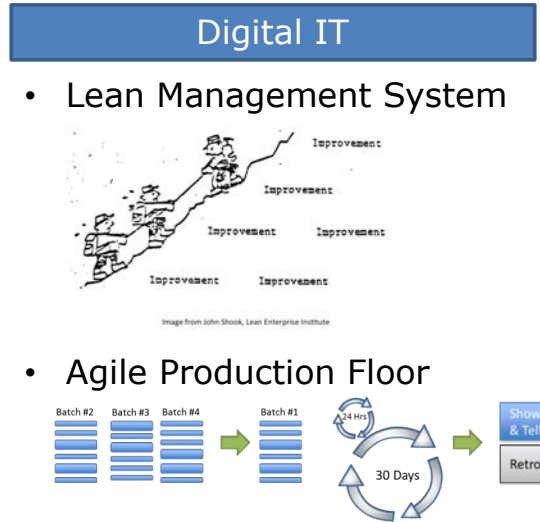
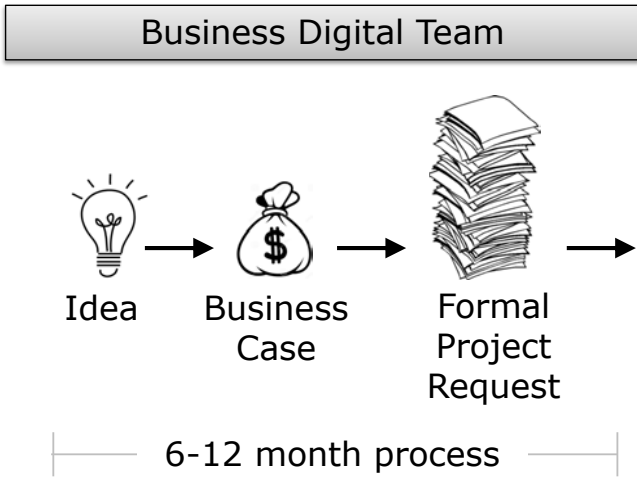
Carnegie Mellon
Software Engineering Institute



“10 years ago, we set out to build a globally competitive in-house software development capability”

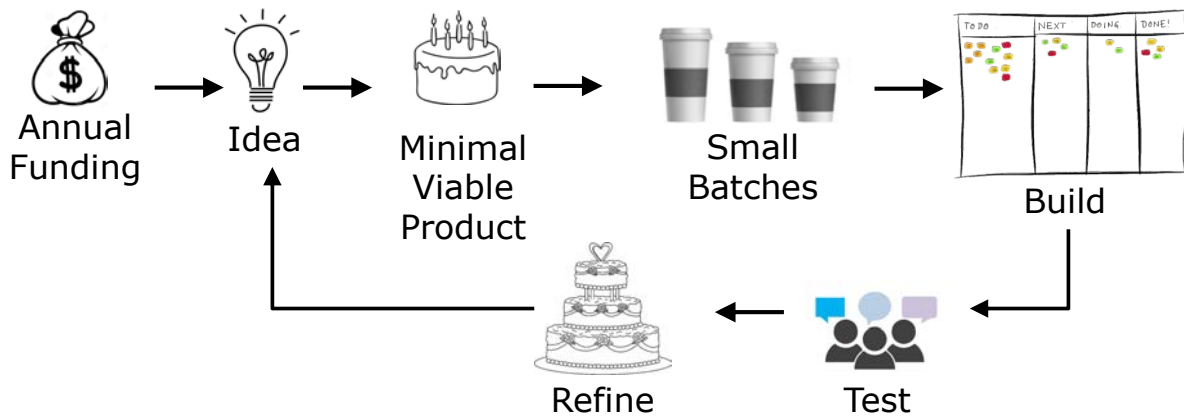


Circa 2015: Clear lines of demarcation between business and IT



2017: Operating model and behavior changes to apply Lean and Agile methods to increase speed to market

One Digital Team (Business & IT)



Breaking the Cycle

FROM



TO



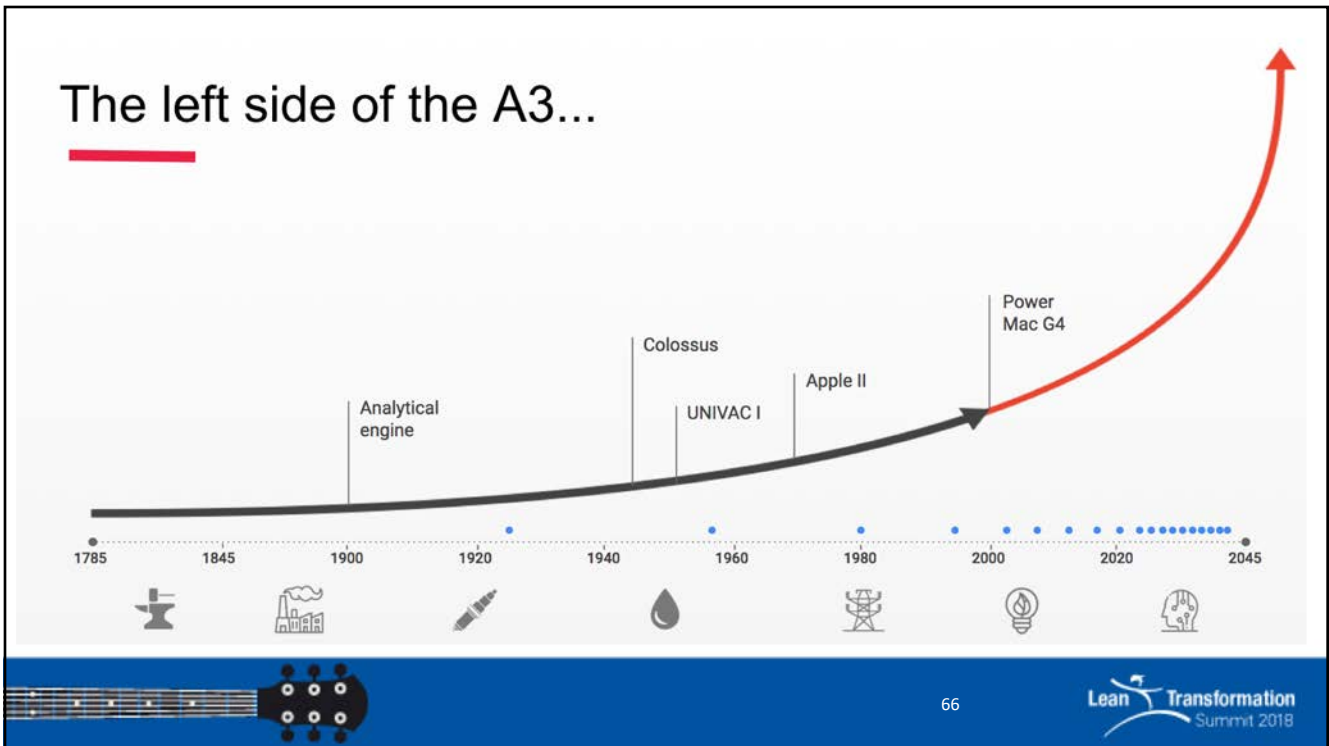
Lean IT at Nationwide: *Establish a culture of continuous improvement to deliver IT operational excellence and business value*

Lean Management Systems	Lean Production Systems	
Lean Leadership <ul style="list-style-type: none"> ▪ Visual Controls ▪ Daily Accountability ▪ Leader Standard Work ▪ Gemba Walks <p><i>Connecting the vision of leadership with the know how of our associates</i></p>	Lean Delivery <ul style="list-style-type: none"> ▪ Continuous Improvement ▪ Problem Solving ▪ Value Creation 	<i>Empowering our associates to reach their potential</i>
	Agile	
	Lean Software Development <ul style="list-style-type: none"> ▪ Kanban ▪ Scrum 	<ul style="list-style-type: none"> ▪ XP ▪ Faster Build Cycles ▪ Embrace Change
	DevOps	
	Lean Engineering <ul style="list-style-type: none"> ▪ Automation ▪ Continuous Delivery 	<ul style="list-style-type: none"> ▪ Continuous Deployment ▪ Feedback Loops
Common Elements	<ul style="list-style-type: none"> <li style="width: 33%;">▪ Continuous Improvement <li style="width: 33%;">▪ Reflection <li style="width: 33%;">▪ Data-Driven <li style="width: 33%;">▪ Empowerment <li style="width: 33%;">▪ Respect for People <li style="width: 33%;">▪ Value Stream Focus <li style="width: 33%;">▪ Customer Focus 	

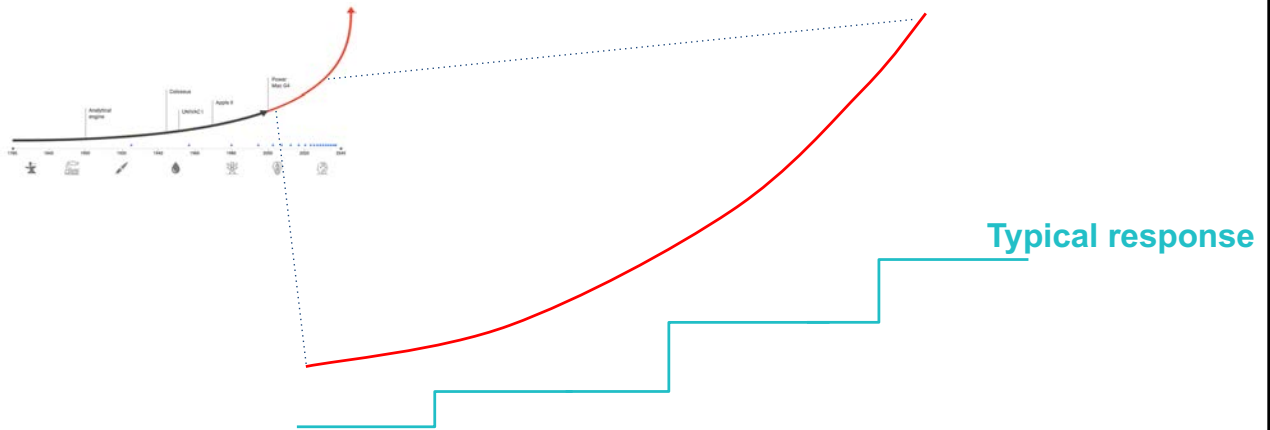


Lean Digital Transformation

Bruno Guicardi
Co-founder, President



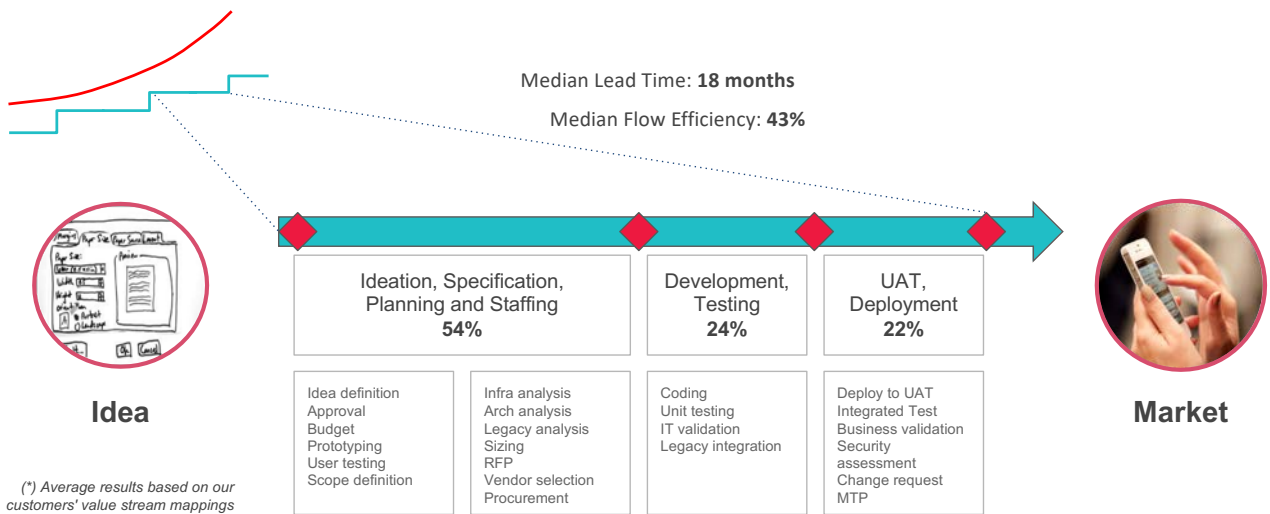
The left side of the A3...



Typical response



The left side of the A3...



Learning by *doing*



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Lean Digital Transformation at Itau Bank



About Itau

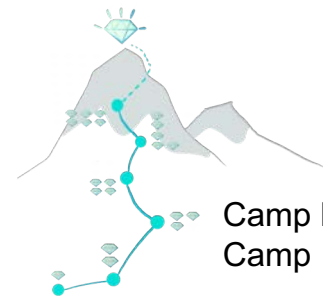
Top Private Company in Latin America

60 Million + customers

1 Top in return of assets

90,000 + employees

How the 13th largest bank in the world is *transforming* with *Lean Digital*



Camp by Camp

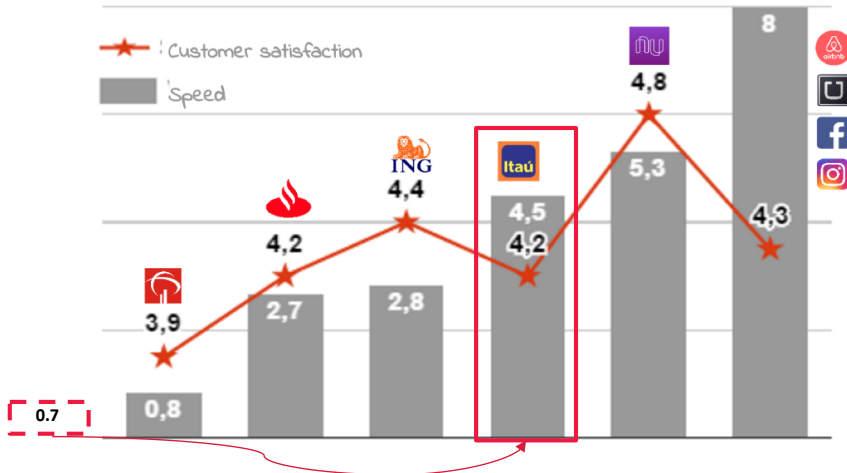


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Reduced lead times \Rightarrow Customer love

Itaú



In one year...
0.7 to 4.5
releases/month

2.9 to 4.2
Star Rating

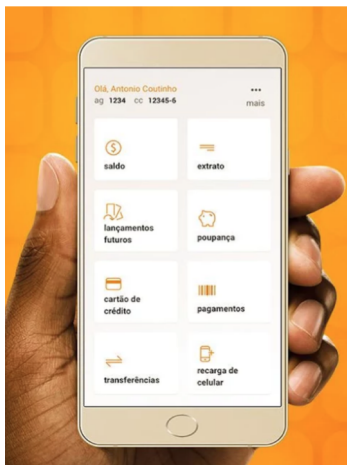
**Awarded Best
Banking App '17**

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Purposeful VS \Rightarrow The "Light App" case

Itaú
light



Insight: analytics shows very low adoption among a certain demographic

Research: demographic is found to be non tech-savvy and "scared" of the app complexity/comprehensiveness

Prototype: a "light app" (simpler and clearer) is tested

Build: MVP is built and pushed live on Google Play

Results: 5+ million downloads. 4.5 star rating.

From Idea to Live Product in 4 months!

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What did we learn?

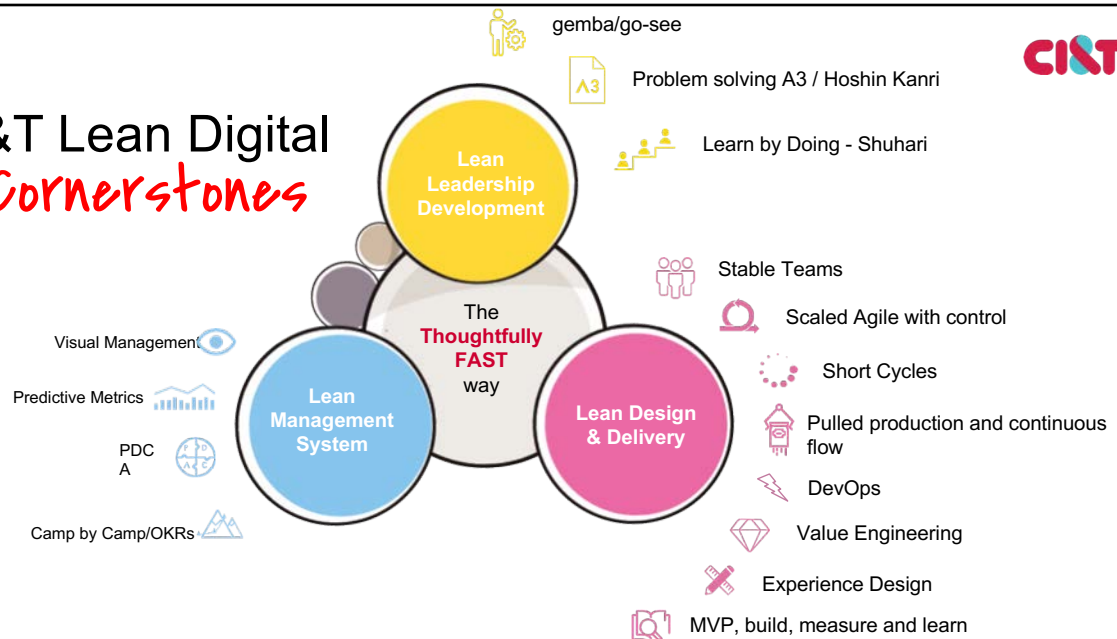


- ❖ **Stable cross-functional teams** organized in Value Streams create a great environment for **autonomy** and **speed**
- ❖ **Experiments** (MVPs) are a great tool to increase **resilience to failure**
- ❖ Change needs to be introduced **gradually** with **rapid business results**
- ❖ The **predictability** mindset is **Agility's #1 enemy**
- ❖ Lasting cultural changes only happen when **leaders change how they work**

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CI&T Lean Digital Cornerstones



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Thank you!

@brunogn

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What next?

- Participate in Gemba interview for LEI's Digital Lean Enterprise (DLE)
- Reach out to us for a conversation
- Read handout/download and share what you learn with others (slides and videos from this session coming shortly)
- We'll be sharing our DLE Gemba findings soon

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