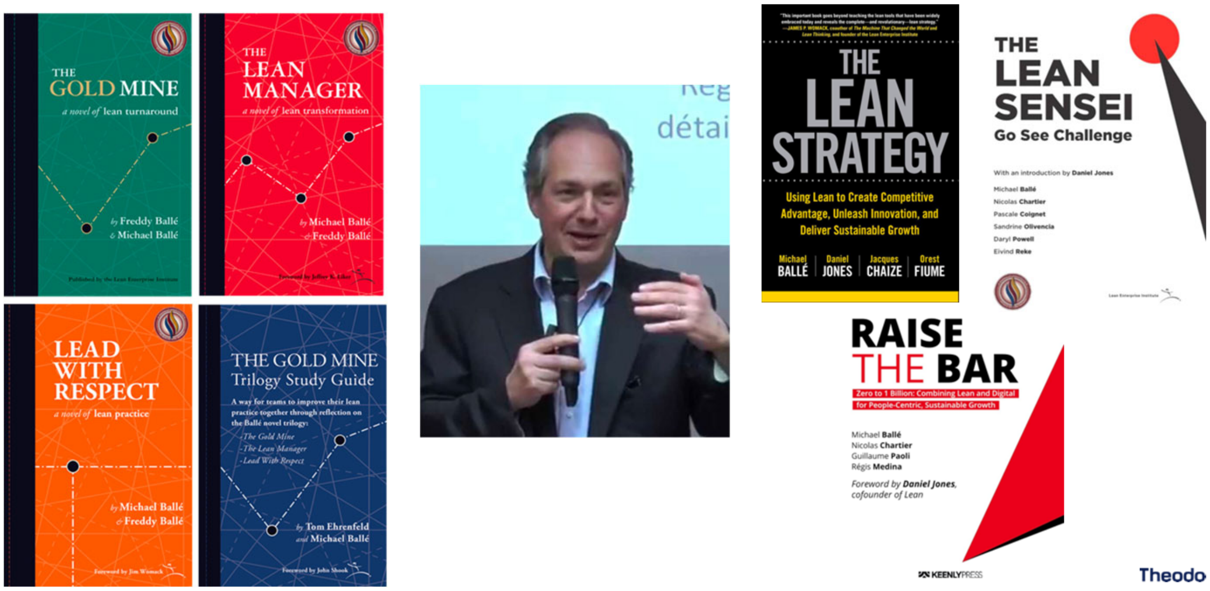
Lean Summit 2024

The Lean Tech Manifesto

Fabrice Bernhard

It all started during a Lean study tour in Japan organised by Michael Ballé

Michael Ballé is the four-times Shingo Award winning author of multiple reference books on Lean


THE GOLD MINE
a novel of lean turnaround
by Freddy Ballé & Michael Ballé
THE LEAN MANAGER
a novel of lean transformation
by Michael Ballé & Freddy Ballé
LEAD WITH RESPECT
a novel of lean practice
by Michael Ballé & Freddy Ballé
THE GOLD MINE Trilogy Study Guide
by Tom Ehrenfeld and Michael Ballé
THE LEAN STRATEGY
Using Lean to Create Competitive Advantage, Unleash Innovation, and Deliver Sustainable Growth
Michael BALLÉ | Daniel JONES | Jacques CHAIZE | Orest FIUME
THE LEAN SENSEI
Go See Challenge
RAISE THE BAR
Zero to 1 Billion: Combining Lean and Digital for People-Centric, Sustainable Growth
Michael Ballé
Nicolas Chartier
Guillaume Paoli
Régis Medina
Foreword by Daniel Jones, cofounder of Lean

On the bus, Michael and I were having a debate about the Agile Manifesto

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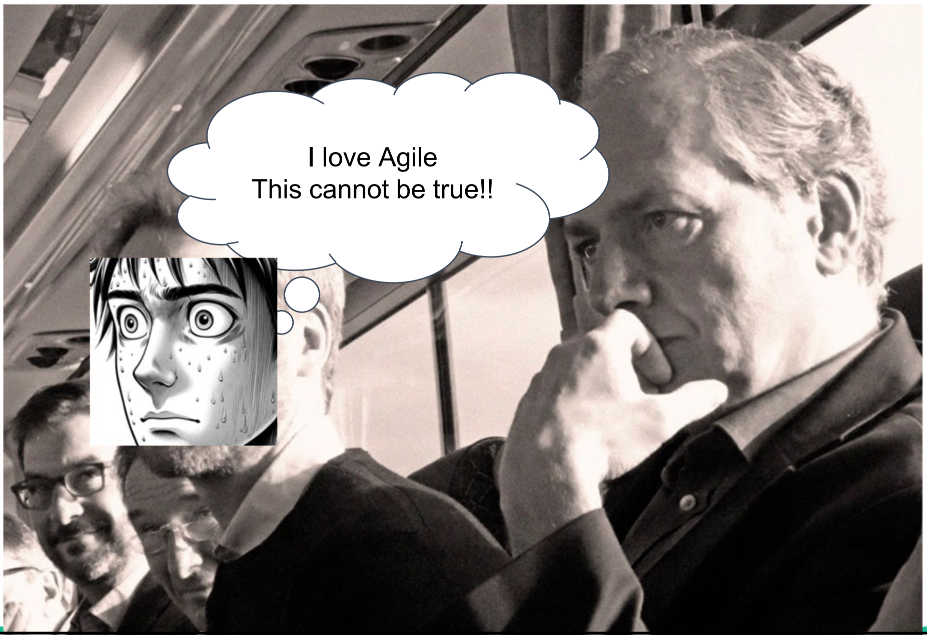
The Agile Manifesto is not scalable

On the bus, Michael and I were having a debate about the Agile Manifesto

How can you say that?
There are large organisations that are agile!


I love Agile
This cannot be true!!

Michael’s point was right: there are Agile cultures that have scaled…

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…but not thanks to the Agile Manifesto, because its principles do not scale.

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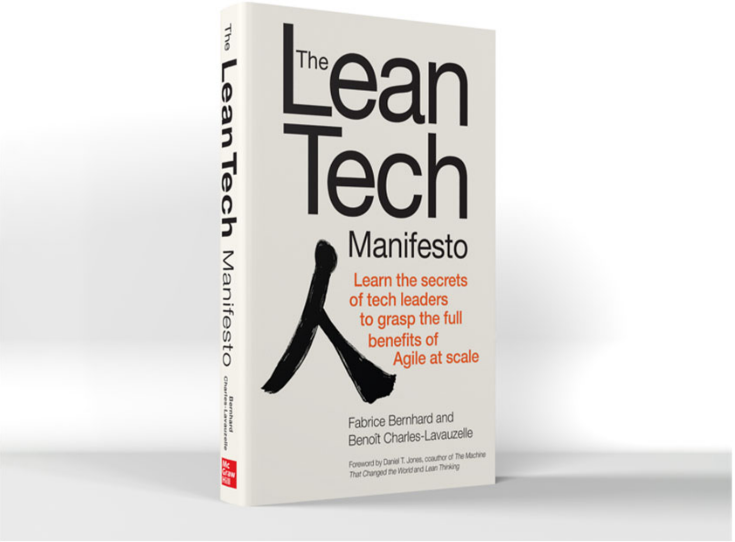
…but not thanks to the Agile Manifesto, because its principles do not scale.

I would not be on this Lean study tour if we had found the answers to scaling in the Agile Manifesto.

That’s how the journey to find principles that scale and are true to the spirit of the Agile Manifesto started…

That’s how the journey to find principles that scale and are true to the spirit of the Agile Manifesto started…
… and is ending now with the release of The Lean Tech Manifesto on March 19th


The Lean Tech Manifesto
Learn the secrets of tech leaders to grasp the full benefits of Agile at scale
Fabrice Bernhard and Benoît Charles-Lavauzelle
Foreword by Daniel T. Jones, coauthor of The Machine That Changed the World and Lean Thinking
The Lean Tech Manifesto
Bernhard
Charles-Lavauzelle

Agenda

1. What makes Agile so popular
2. Why the Agile Manifesto does not scale
3. How Lean principles address that
4. What tech adds to the mix

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We started our own company in 2007 because we did not want to work in a bureaucracy.
We wanted:

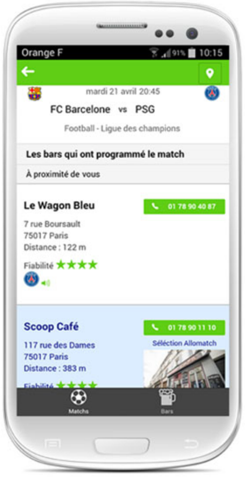
A company to which we would have liked to apply

Me

Benoît

In the industry we were passionate about: **technology**

We started by launching our own product in 2007: Allomatch.com



mardi 21 avril 20:45

FC Barcelone vs PSG

Football - Ligue des champions

Les bars qui ont programmé le match

À proximité de vous

Le Wagon Bleu
7 rue Boursault
75017 Paris
Distance : 122 m
Fiabilité ★★★★
01 78 90 40 87

Scoop Café
117 rue des Dames
75017 Paris
Distance : 383 m
01 78 90 11 10
Séléction Allomatch

ALLOMATCH .com
Pour ne plus jamais manquer un match

And today, we still do the same job at Theodo

Examples of recent projects

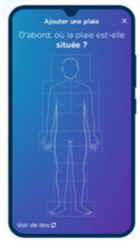
In Banking

Bienvenue sur le site d'attestation Prêt Garanti par l'Etat

bpifrance
Qu'est-ce que l'attestation PGE ?

Digitalisation of the credit factory

In Healthcare



Ajouter une plaie

D'abord, où la plaie est-elle **située ?**

App to collect wound-healing data
for a leading healthcare company

In Energy

Stuck Pipe Risk Prediction

Machine-learning algorithm
to detect oil-drilling risk
on offshore oil rigs

At the beginning, everything's going well: we recruit ...

At the beginning, everything’s going well: we recruit ...

2007

At the beginning, everything’s going well: we recruit ...

2007

2011

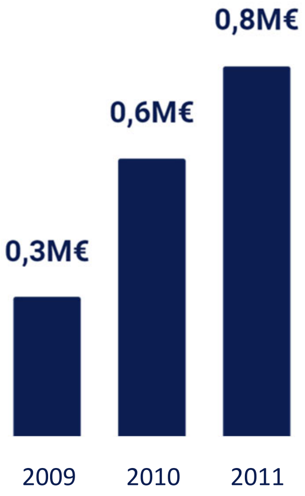
At the beginning, everything’s going well: we recruit ...

2007

2011

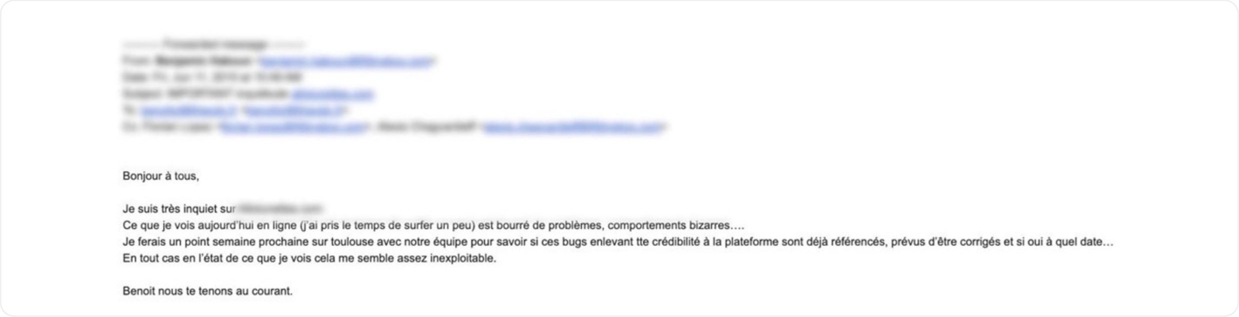
2012

We are growing ...



But in parallel problems start to accumulate

But in parallel problems start to accumulate



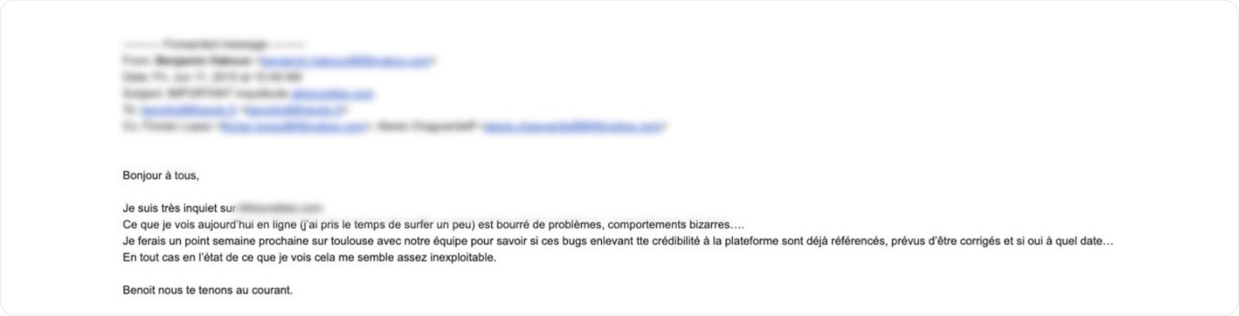
[redacted]

Bonjour à tous,

Je suis très inquiet sur [redacted]
Ce que je vois aujourd'hui en ligne (j'ai pris le temps de surfer un peu) est bourré de problèmes, comportements bizarres….
Je ferais un point semaine prochaine sur toulouse avec notre équipe pour savoir si ces bugs enlevant tte crédibilité à la plateforme sont déjà référencés, prévus d'être corrigés et si oui à quel date…
En tout cas en l'état de ce que je vois cela me semble assez inexploitable.

Benoit nous te tenons au courant.

But in parallel problems start to accumulate



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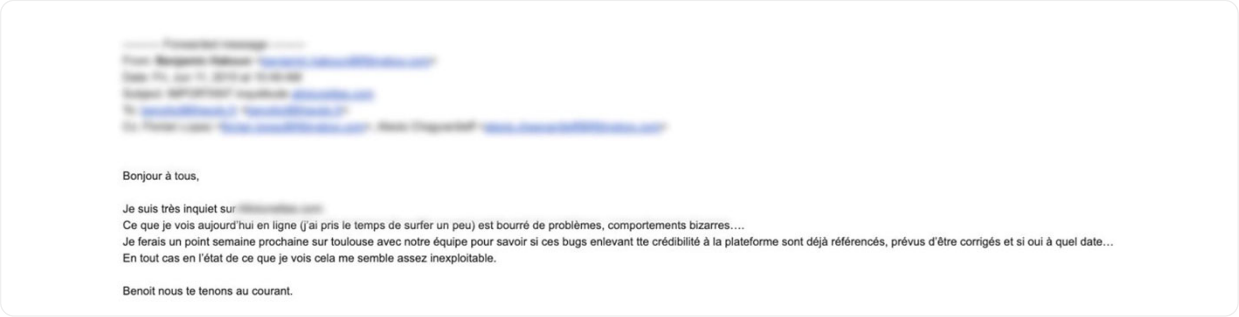
Our clients are more and more unhappy

But in parallel problems start to accumulate



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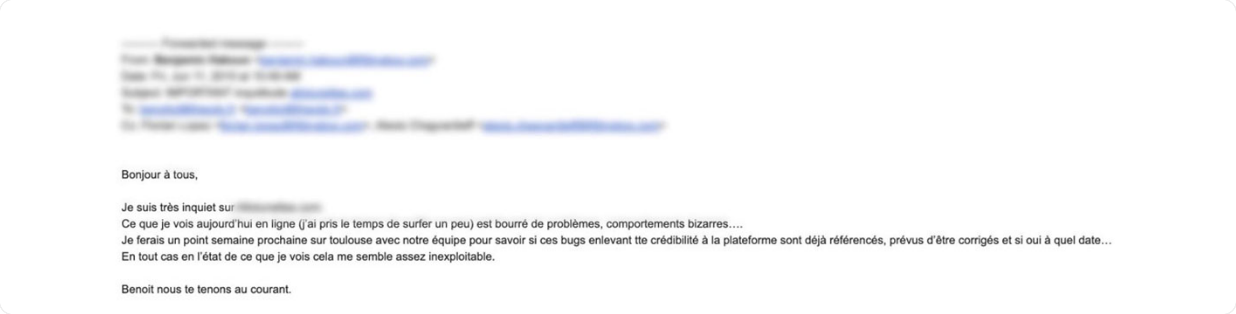
Our clients are more and more unhappy

We lose money on certain projects

But in parallel problems start to accumulate



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Benoit nous te tenons au courant.

Our clients are more and more unhappy

We lose money on certain projects

All the problems are managed directly by Benoît and me

The advice given: more processes and more hierarchy…

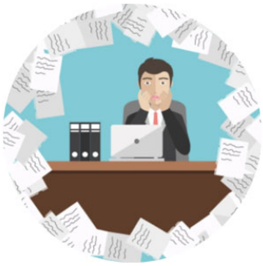
More processes to train, guide and control

+

More hierarchy for better supervision

The advice given: more processes and more hierarchy… the only way to avoid employee mistakes

More processes to train, guide and control **+** More hierarchy for better supervision **=**



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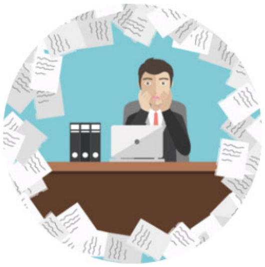

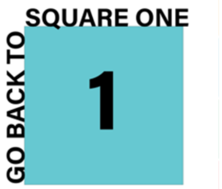

This is around the time I attended my first Agile Open, a three day long “unconference” in the middle of the countryside, with pioneers of Agile

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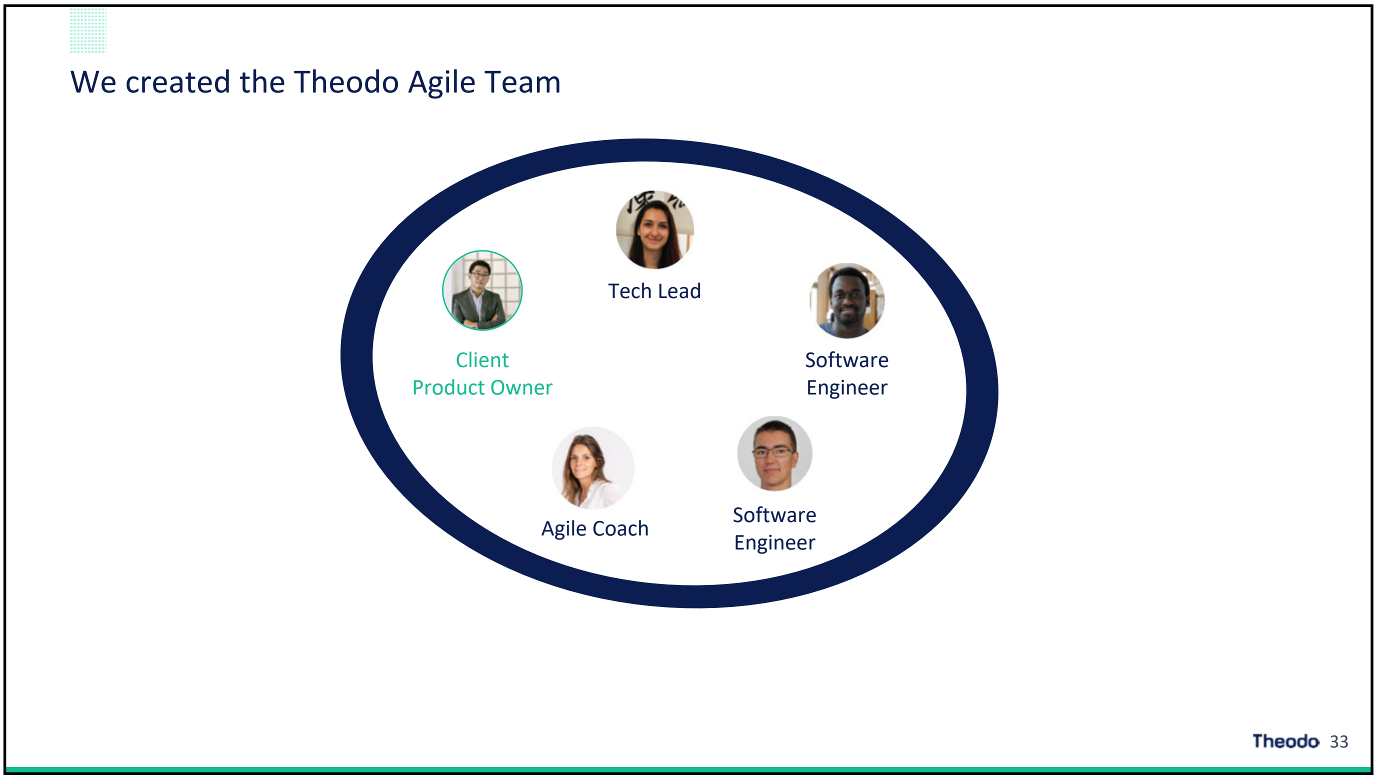
These Agile pioneers convinced us to try Scrum “by the book”
We added principles from eXtreme programming + Devops + Lean Startup

Scrum.org

XP
Extreme Programming

DEVOPS

The Lean Startup



We created the Theodo Agile Team

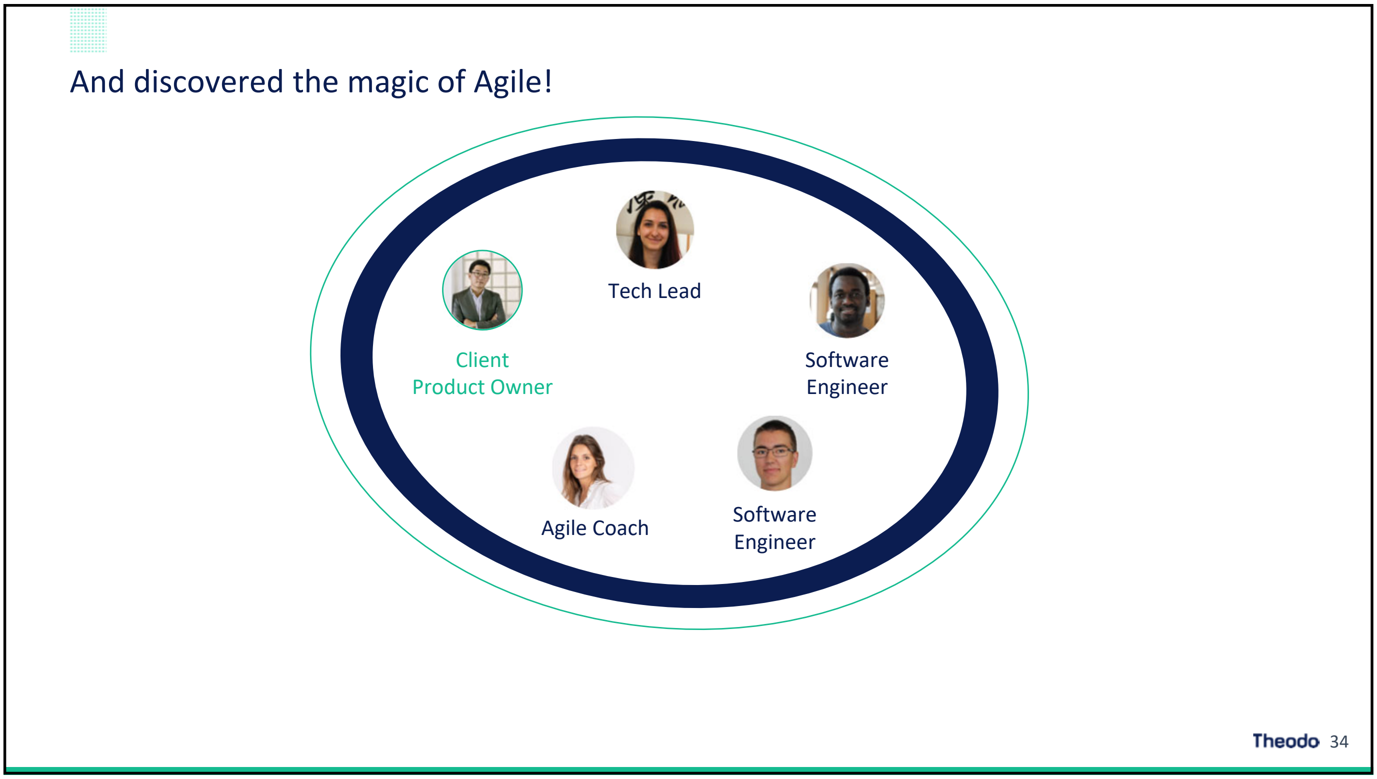
Tech Lead

Client
Product Owner

Software
Engineer

Agile Coach

Software
Engineer



And discovered the magic of Agile!

Tech Lead

Client
Product Owner

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Engineer

Agile Coach

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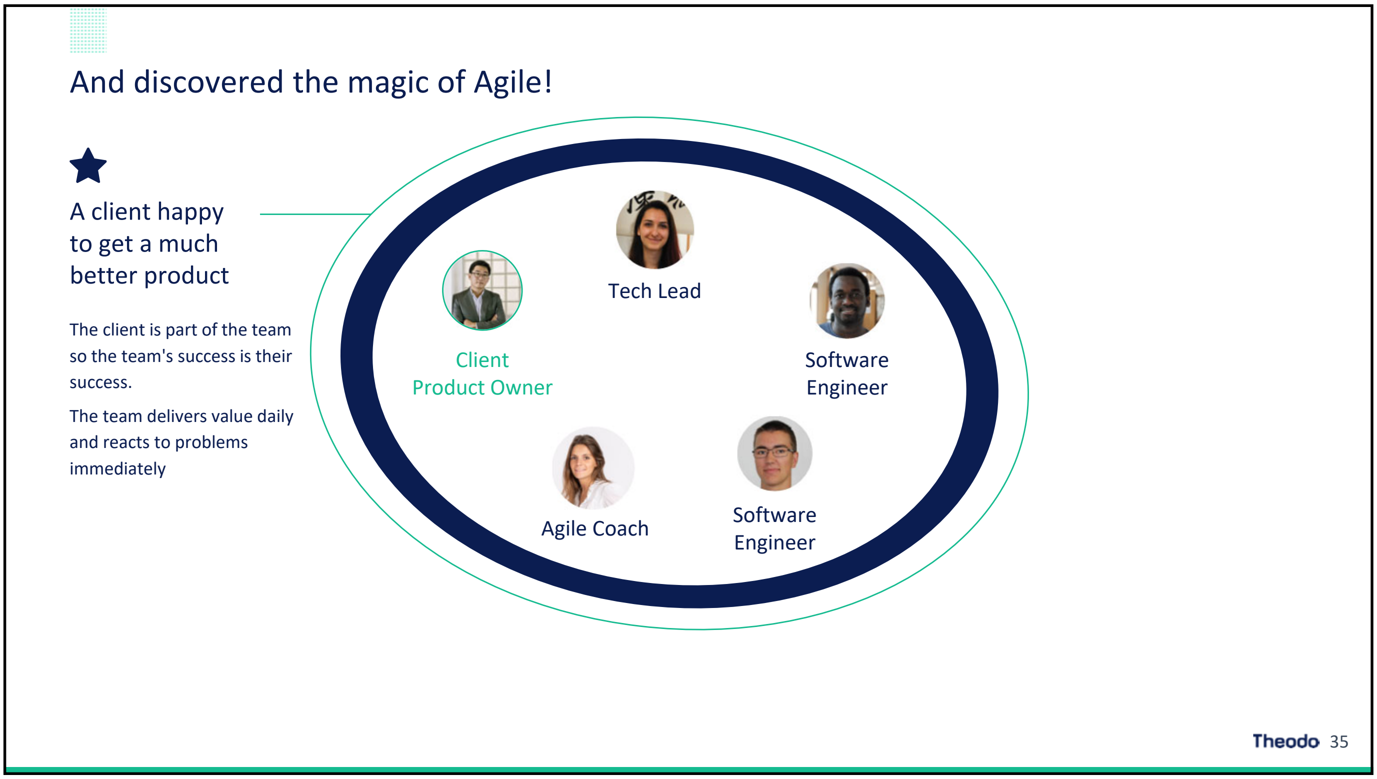


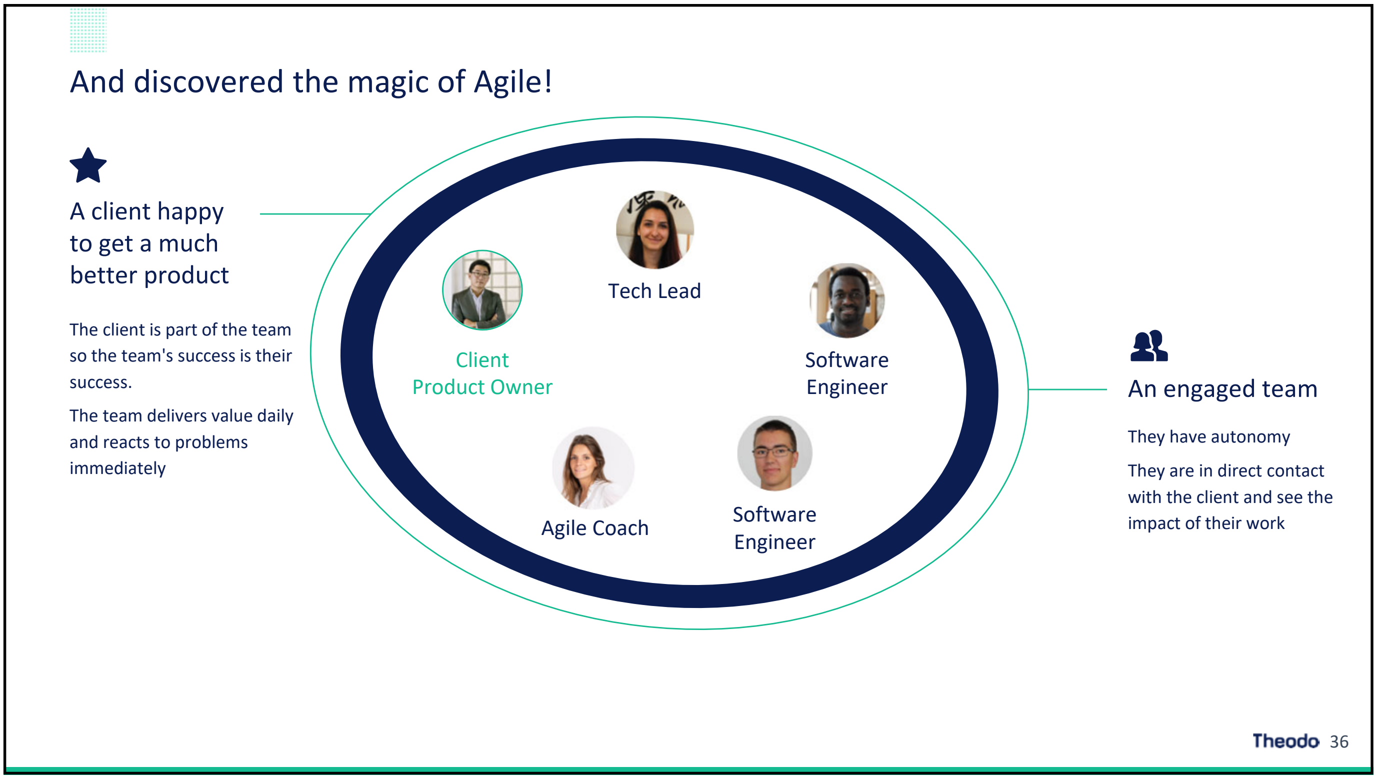
And discovered the magic of Agile!

A client happy to get a much better product

The client is part of the team so the team's success is their success.

The team delivers value daily and reacts to problems immediately

Tech Lead
Client Product Owner
Software Engineer
Agile Coach
Software Engineer



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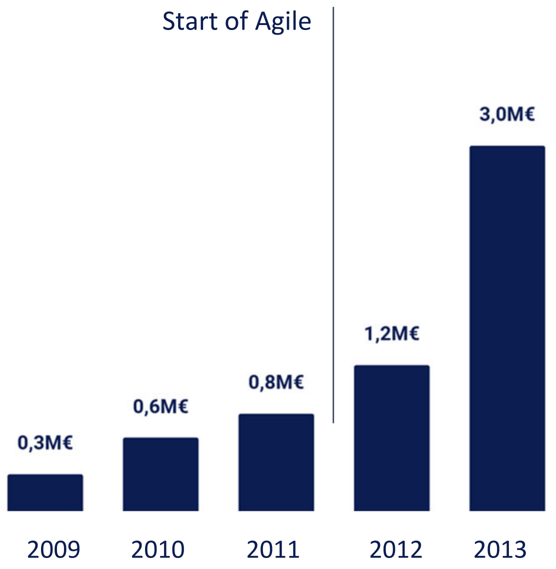
Tech Lead
Client Product Owner
Software Engineer
Agile Coach
Software Engineer

An engaged team

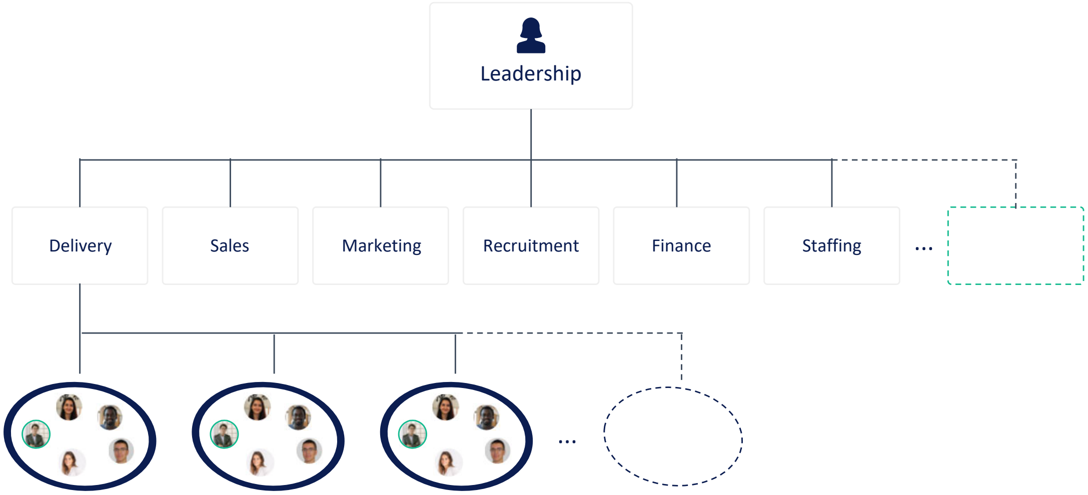
They have autonomy

They are in direct contact with the client and see the impact of their work

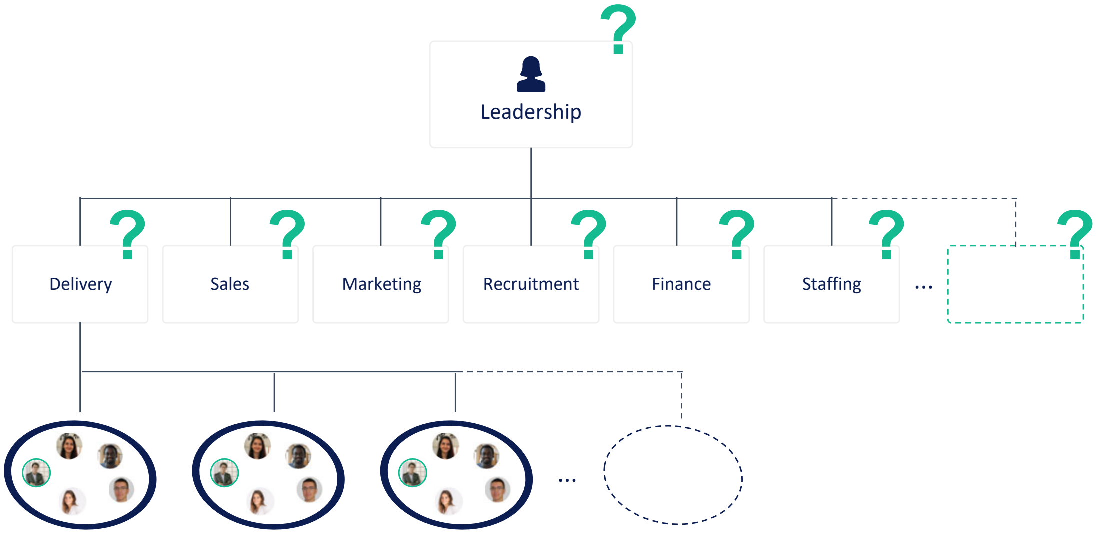
That magic turned into real business value



And helped us grow the number of project teams


Leadership
Delivery
Sales
Marketing
Recruitment
Finance
Staffing
...
...

But it wasn’t clear how to be Agile outside of software teams and more importantly on the challenges of scaling the whole company


?
Leadership
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…
?
…

Agenda

1. What makes Agile so popular
2. **Why the Agile Manifesto does not scale**
3. How Lean principles address that
4. What tech adds to the mix

The Agile Manifesto was not designed with scale in mind

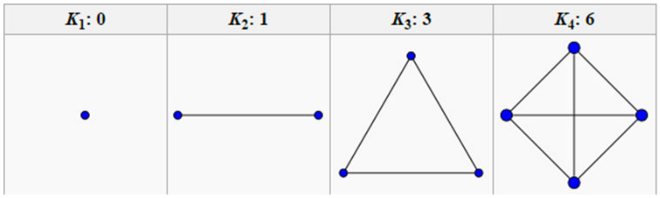
Individuals and interactions over processes and tools

Working software over comprehensive documentation

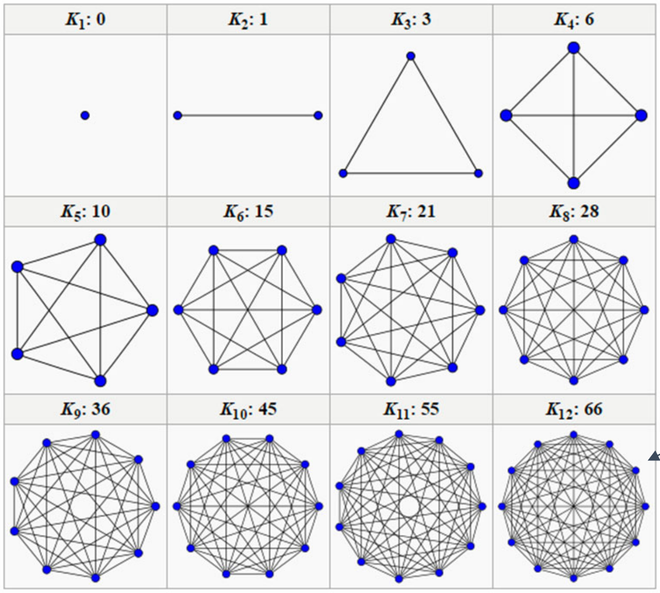
Customer collaboration over contract negotiation

Responding to change over following a plan

Individuals and interactions over processes and tools

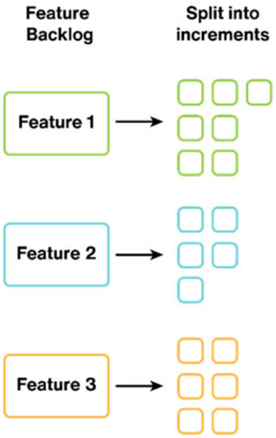


Individuals and interactions over processes and tools


K_1: 0
K_2: 1
K_3: 3
K_4: 6
K_5: 10
K_6: 15
K_7: 21
K_8: 28
K_9: 36
K_{10}: 45
K_{11}: 55
K_{12}: 66

The number of possible interactions grows too fast

Working software over comprehensive documentation



Feature Backlog

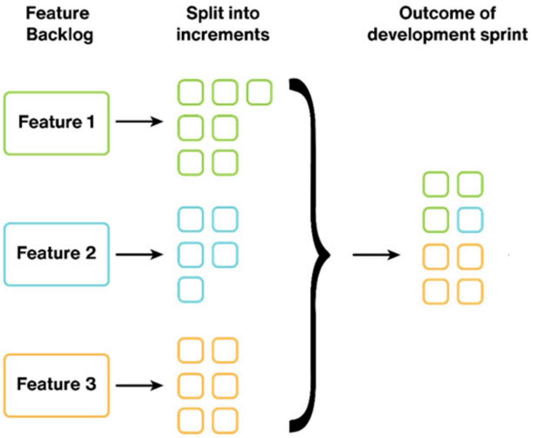
Split into increments

Feature 1

Feature 2

Feature 3

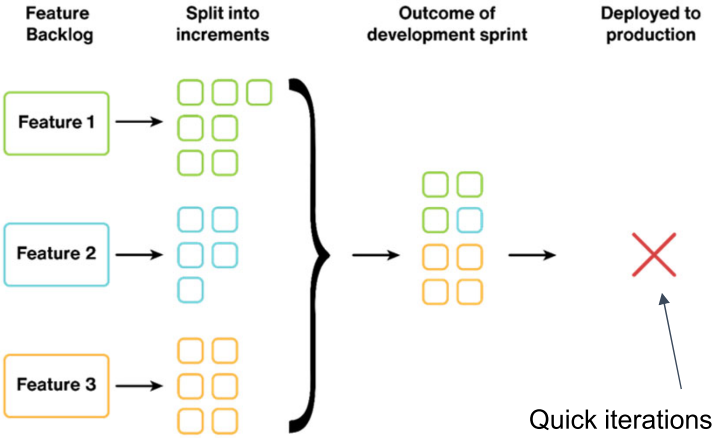
Working software over comprehensive documentation



Feature Backlog
Split into increments
Outcome of development sprint

Feature 1
Feature 2
Feature 3

Working software over comprehensive documentation

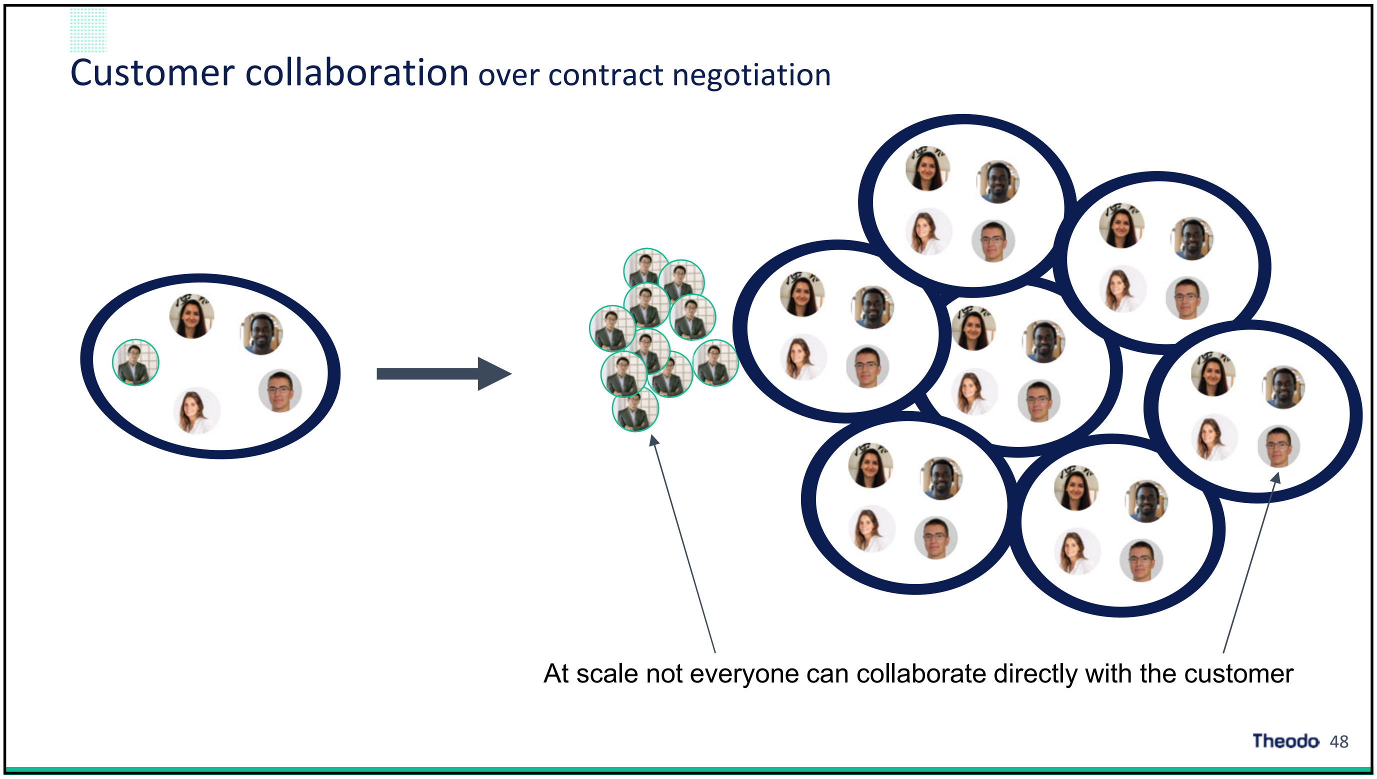


Feature Backlog
Split into increments
Outcome of development sprint
Deployed to production

Feature 1
Feature 2
Feature 3

Quick iterations on small increments is not enough to tackle the complexity when scaling

Customer collaboration over contract negotiation



Customer collaboration over contract negotiation

At scale not everyone can collaborate directly with the customer

Responding to change over following a plan

Imagine an organisation where any team responding to a change could get the whole organisation to immediately follow them?

Responding to change over following a plan

I have never heard of such an organisation.

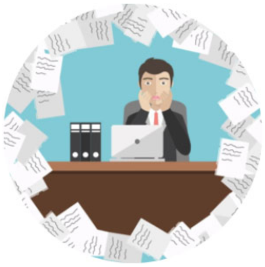
Probably because a change that impacts multiple teams needs to build on their context and past learnings.

Agenda

1. What makes Agile so popular
2. Why the Agile Manifesto does not scale
3. **How Lean principles address that**
4. What tech adds to the mix

Is bureaucracy the only path to scaling?

More processes to train, guide and control + More hierarchy for better supervision =



GO BACK TO
SQUARE ONE
1

Luckily, when we started looking for help on our scaling challenges, we met Lean Coach Antoine Contal, who told us to study Lean Thinking

The solution is Lean, and the secret of Lean is TPS
Respect envers les personnes
Travail en équipe
2012

And indeed, digging into the history of the Agile Manifesto

Source: agilemanifesto.org/history.html

History: The Agile Manifesto

And indeed, digging into the history of the Agile Manifesto revealed that it shared the same purpose…

Source: agilemanifesto.org/history.html

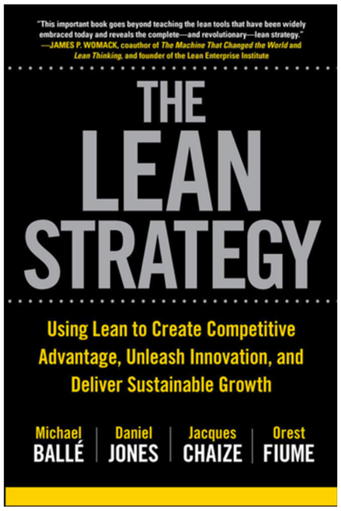
History: The Agile Manifesto

At the core, I believe Agile Methodologists are really about [...]

delivering good products to customers by operating in an environment that

[...] actually "acts" as if people were the most important [...]

…as Lean Thinking: delivering better value for customers through more meaningful work for people


"This important book goes beyond teaching the lean tools that have been widely embraced today and reveals the complete—and revolutionary—lean strategy."
—JAMES P. WOMACK, coauthor of The Machine That Changed the World and Lean Thinking, and founder of the Lean Enterprise Institute
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Using Lean to Create Competitive Advantage, Unleash Innovation, and Deliver Sustainable Growth
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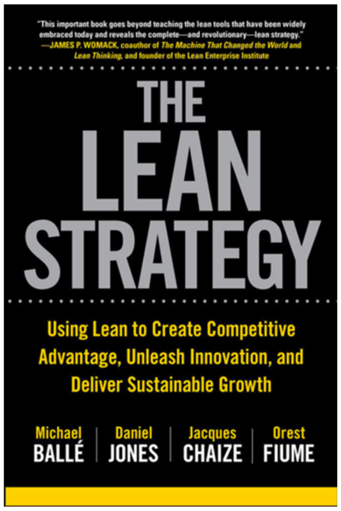
…as Lean Thinking: delivering better value for customers through more meaningful work for people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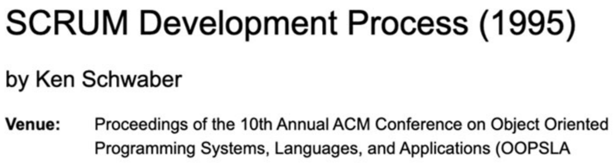
Michael BALLÉ
Daniel JONES
Jacques CHAIZE
Orest FIUME

"Lean thinking combats big company disease by spurring managerial thinking

to provide meaningful work to people who work mindfully,

in order to always deliver better value for customers"

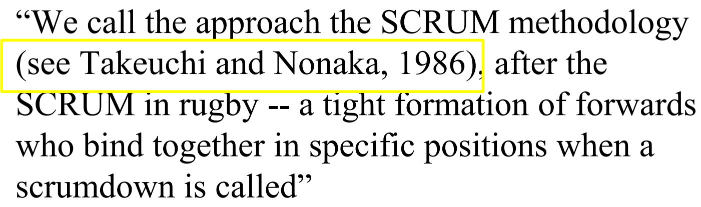
It's not a coincidence
SCRUM, a big influence in the agile movement, came from Takeuchi and Nonaka



SCRUM Development Process (1995)

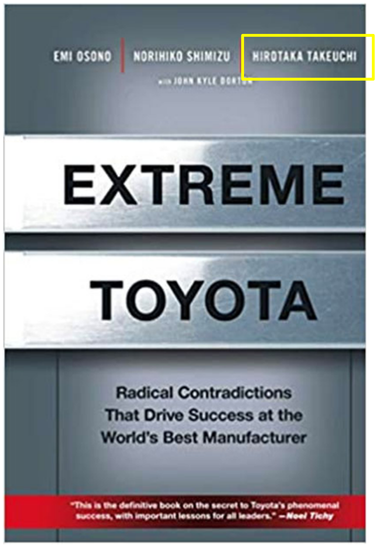
by Ken Schwaber

Venue: Proceedings of the 10th Annual ACM Conference on Object Oriented Programming Systems, Languages, and Applications (OOPSLA



"We call the approach the SCRUM methodology (see Takeuchi and Nonaka, 1986), after the SCRUM in rugby -- a tight formation of forwards who bind together in specific positions when a scrumdown is called"

Takeuchi and Nonaka had studied innovation practices at different Japanese companies including Toyota



EMI OSONO | NORIHIKO SHIMIZU | HIROTAKA TAKEUCHI

with JOHN KYLE DORTON

EXTREME TOYOTA

Radical Contradictions That Drive Success at the World's Best Manufacturer

"This is the definitive book on the secret to Toyota's phenomenal success, with important lessons for all leaders." —*Noel Tichy*

Maybe less well-known, some leading tech entrepreneurs were also directly influenced by Lean

Photo: IT Revolution Press

Steve Jobs in 1990 at Next was coached by Dr Juran

Watch the amazing interview! https://www.youtube.com/watch?v=XbkMcvnNq3g

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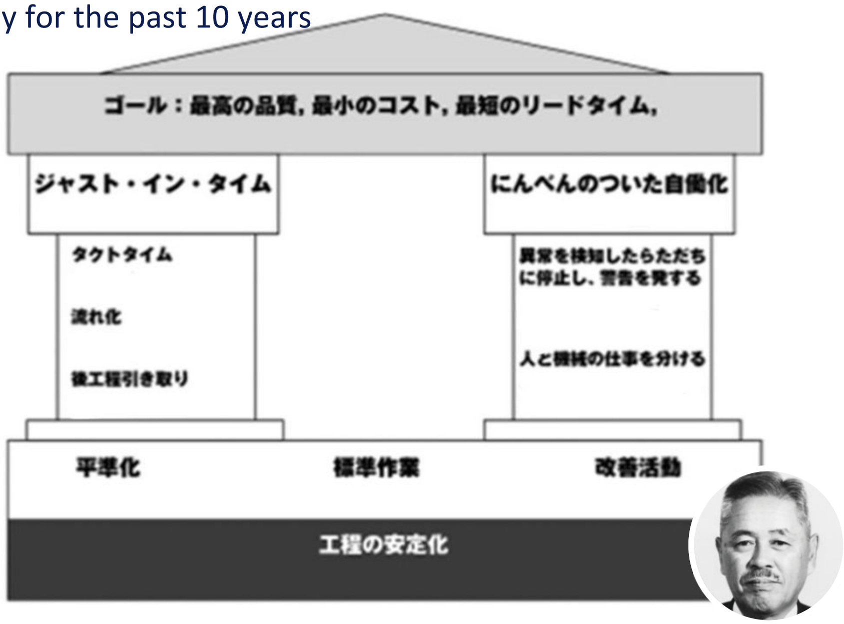
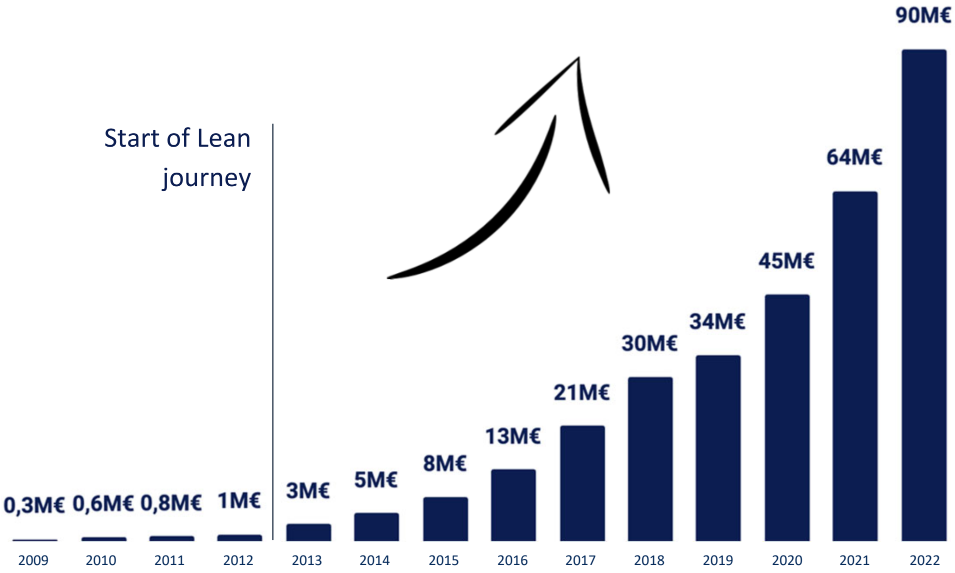
Jeff Bezos studied the Toyota Way in the early 2000s and hired Lean expert Marc Onetto in 2006 as SVP Worldwide Operations and Customer Service

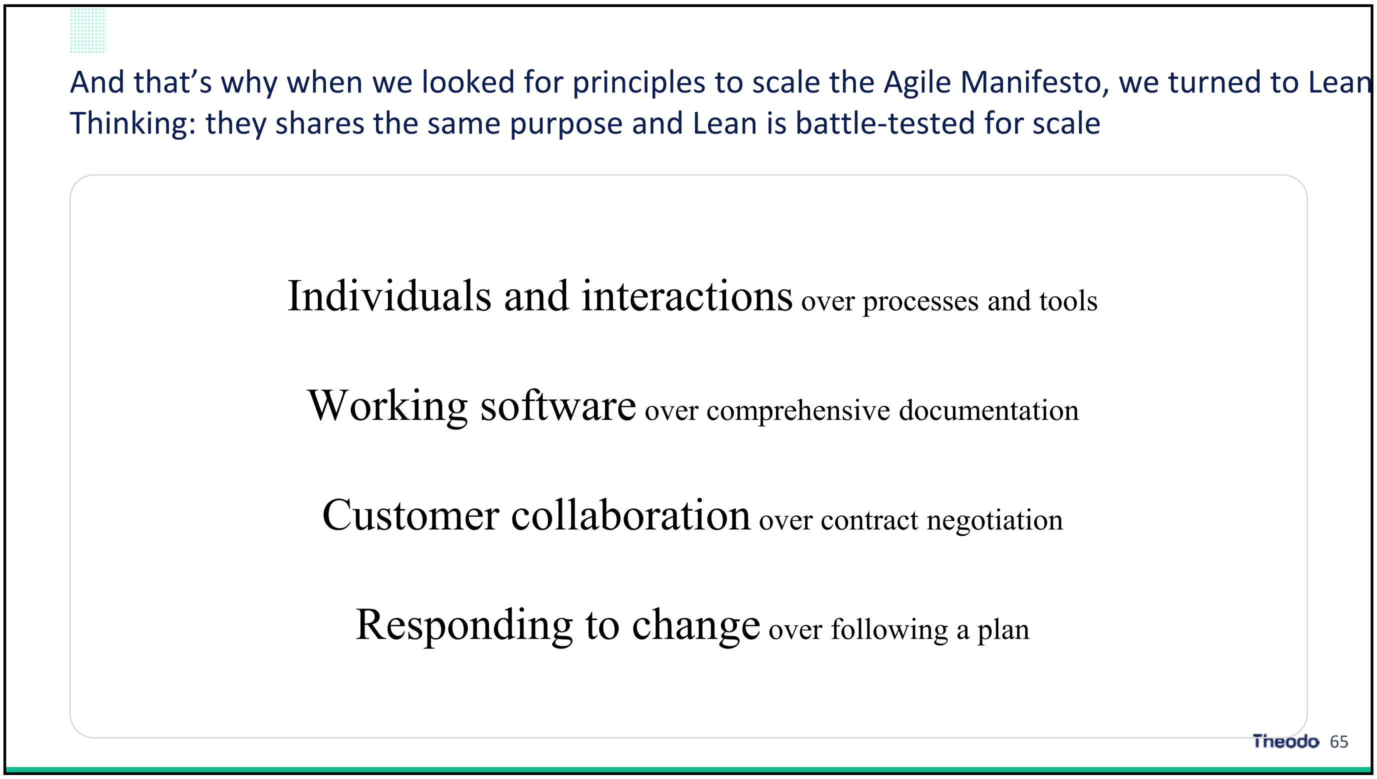
Source: Working Backwards by Colin Bryar and Bill Carr

So, long story short, we found in Lean Thinking what we were looking for and have been on a Lean journey for the past 10 years


ゴール：最高の品質，最小のコスト，最短のリードタイム，
ジャスト・イン・タイム
タクトタイム
流れ化
後工程引き取り
にんべんのついた自働化
異常を検知したらただちに停止し、警告を発する
人と機械の仕事を分ける
平準化
標準作業
改善活動
工程の安定化

With great business results





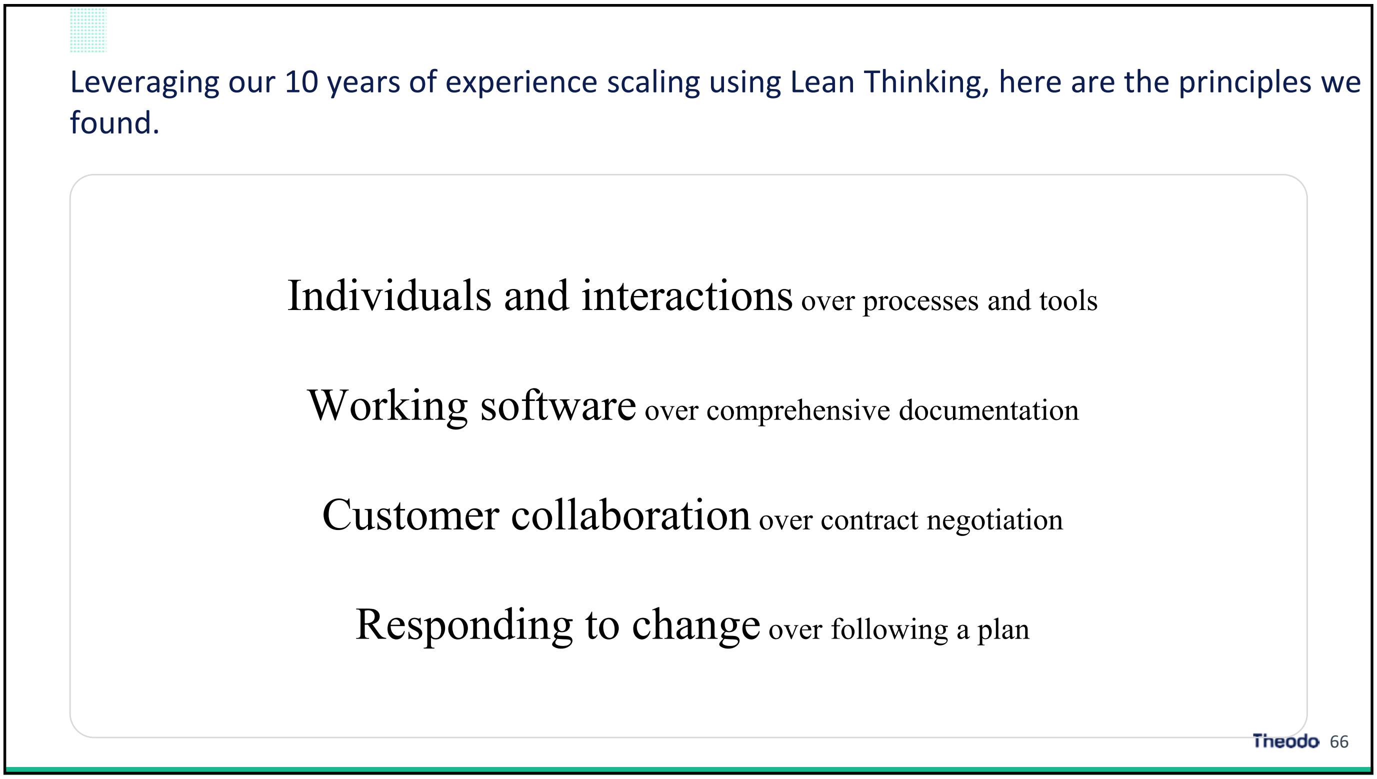
And that’s why when we looked for principles to scale the Agile Manifesto, we turned to Lean Thinking: they shares the same purpose and Lean is battle-tested for scale

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan



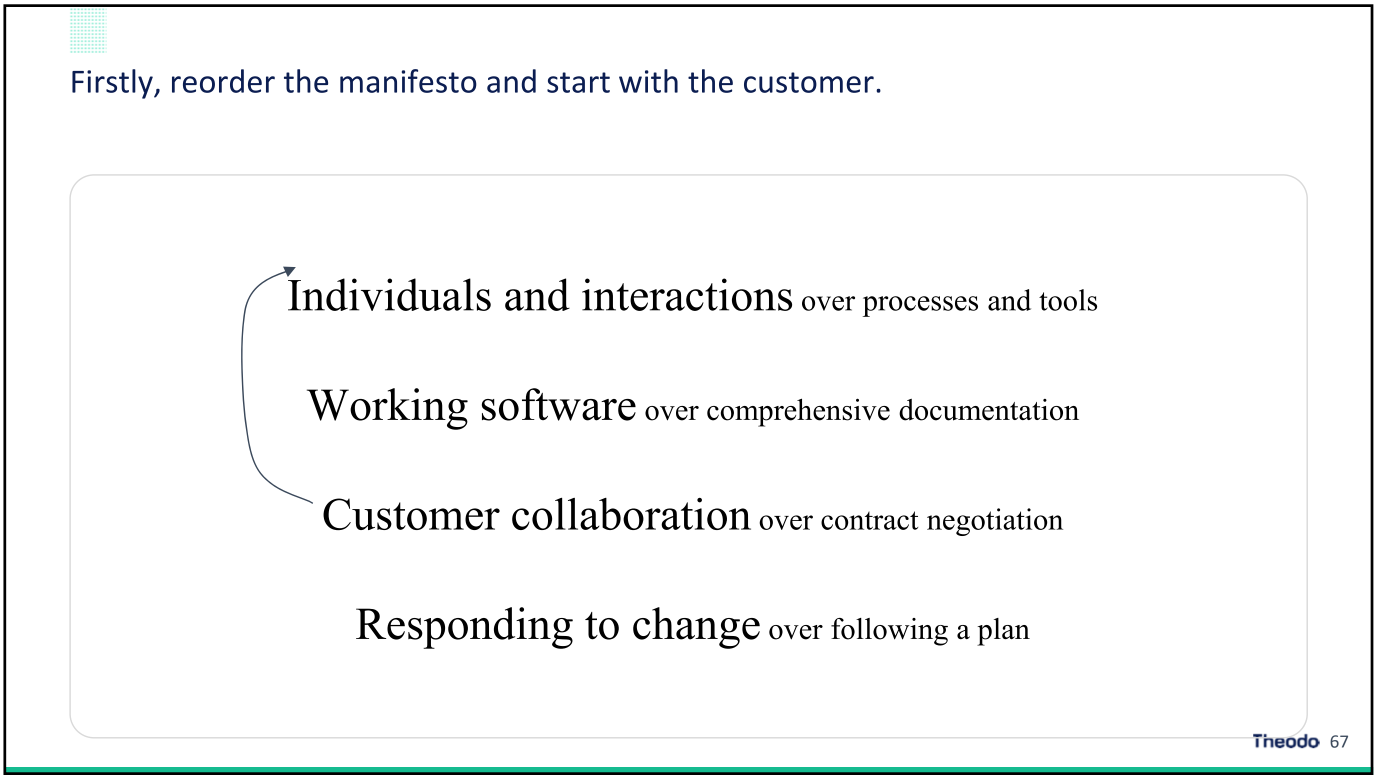
Leveraging our 10 years of experience scaling using Lean Thinking, here are the principles we found.

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan



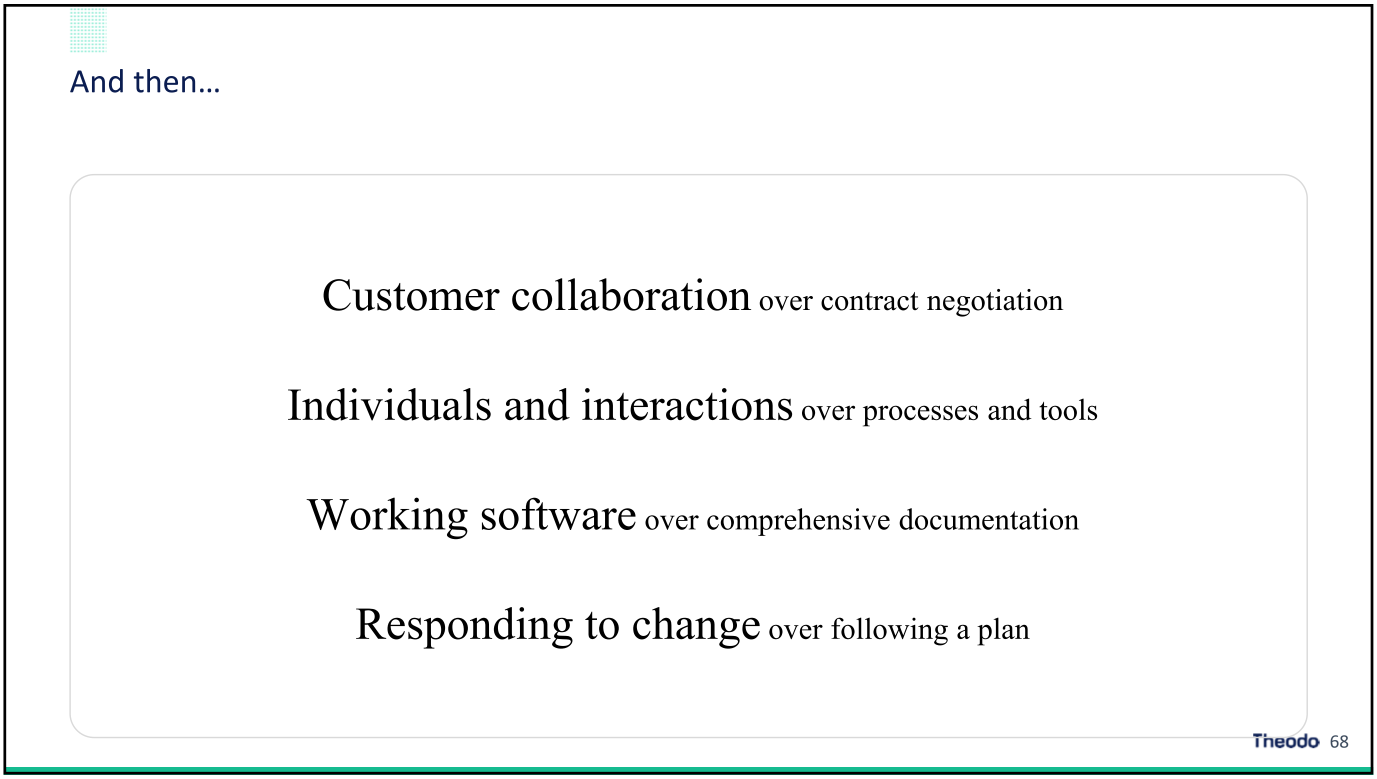
Firstly, reorder the manifesto and start with the customer.

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Customer collaboration over contract negotiation

Responding to change over following a plan



And then…

Customer collaboration over contract negotiation

Individuals and interactions over processes and tools

Working software over comprehensive documentation

Responding to change over following a plan

Value for the Customer, the first principle in Lean Thinking

Value for the Customer over
Customer collaboration over contract negotiation

Individuals and interactions over processes and tools

Working software over comprehensive documentation

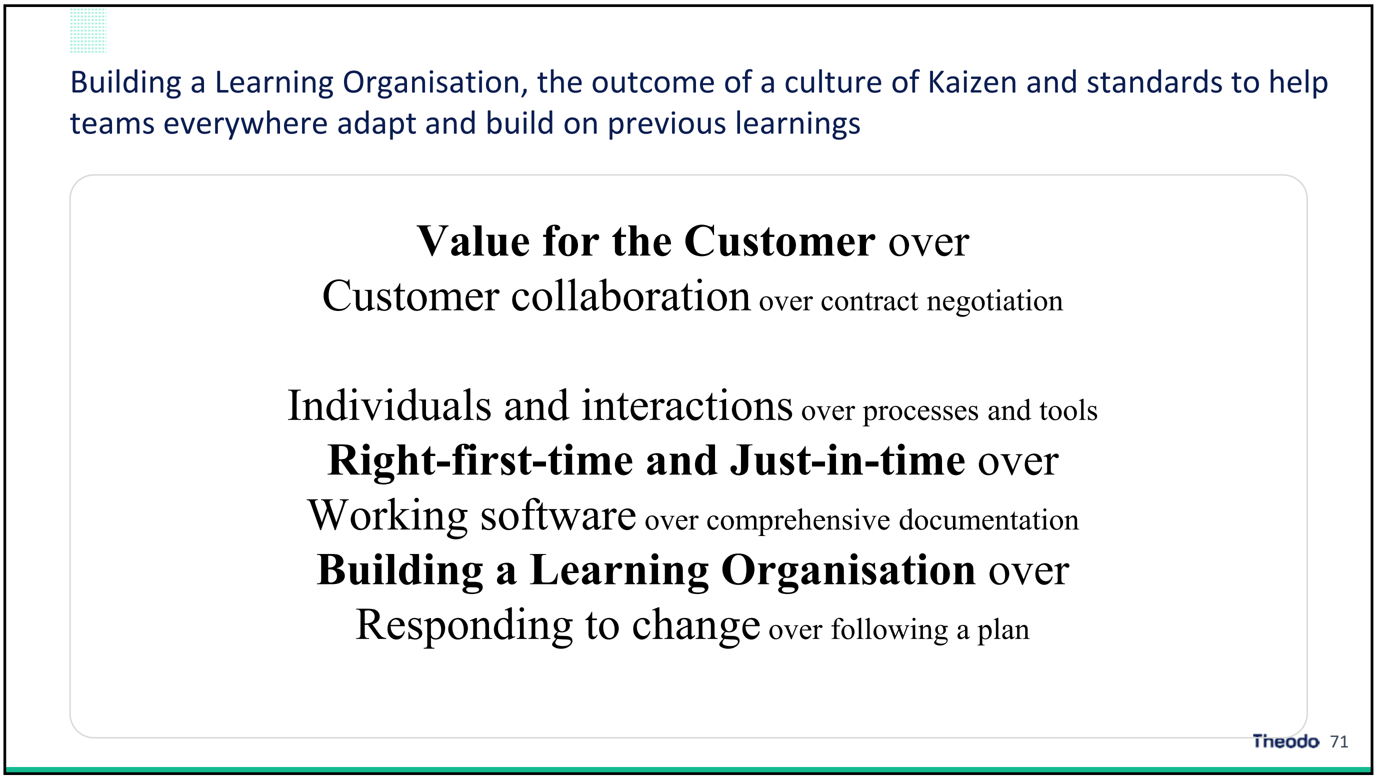
Responding to change over following a plan

Right-first-time and Just-in-time, the Toyota way of producing higher quality and delivering continuously at very large scale

Value for the Customer over
Customer collaboration over contract negotiation

Individuals and interactions over processes and tools
Right-first-time and Just-in-time over
Working software over comprehensive documentation

Responding to change over following a plan



Building a Learning Organisation, the outcome of a culture of Kaizen and standards to help teams everywhere adapt and build on previous learnings

Value for the Customer over
Customer collaboration over contract negotiation

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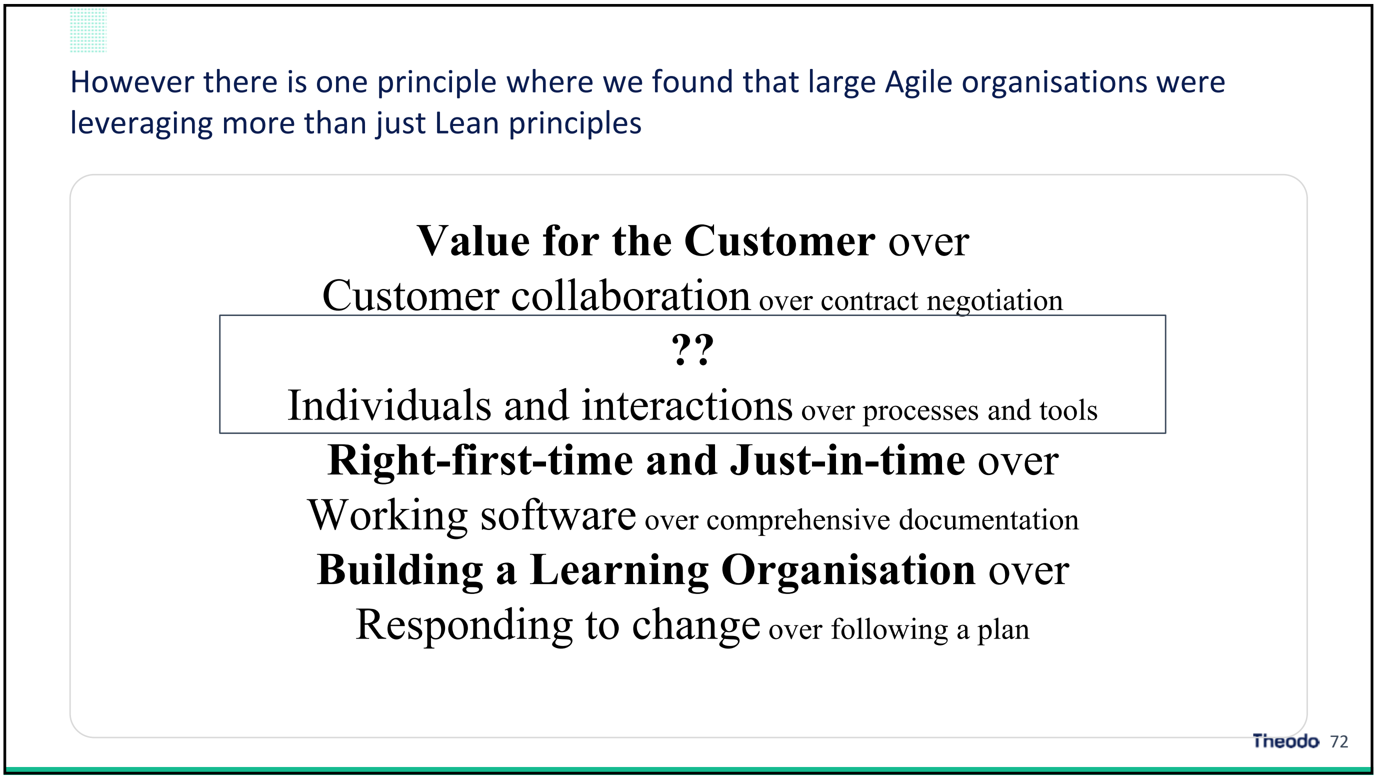

However there is one principle where we found that large Agile organisations were leveraging more than just Lean principles

Value for the Customer over
Customer collaboration over contract negotiation
??
Individuals and interactions over processes and tools
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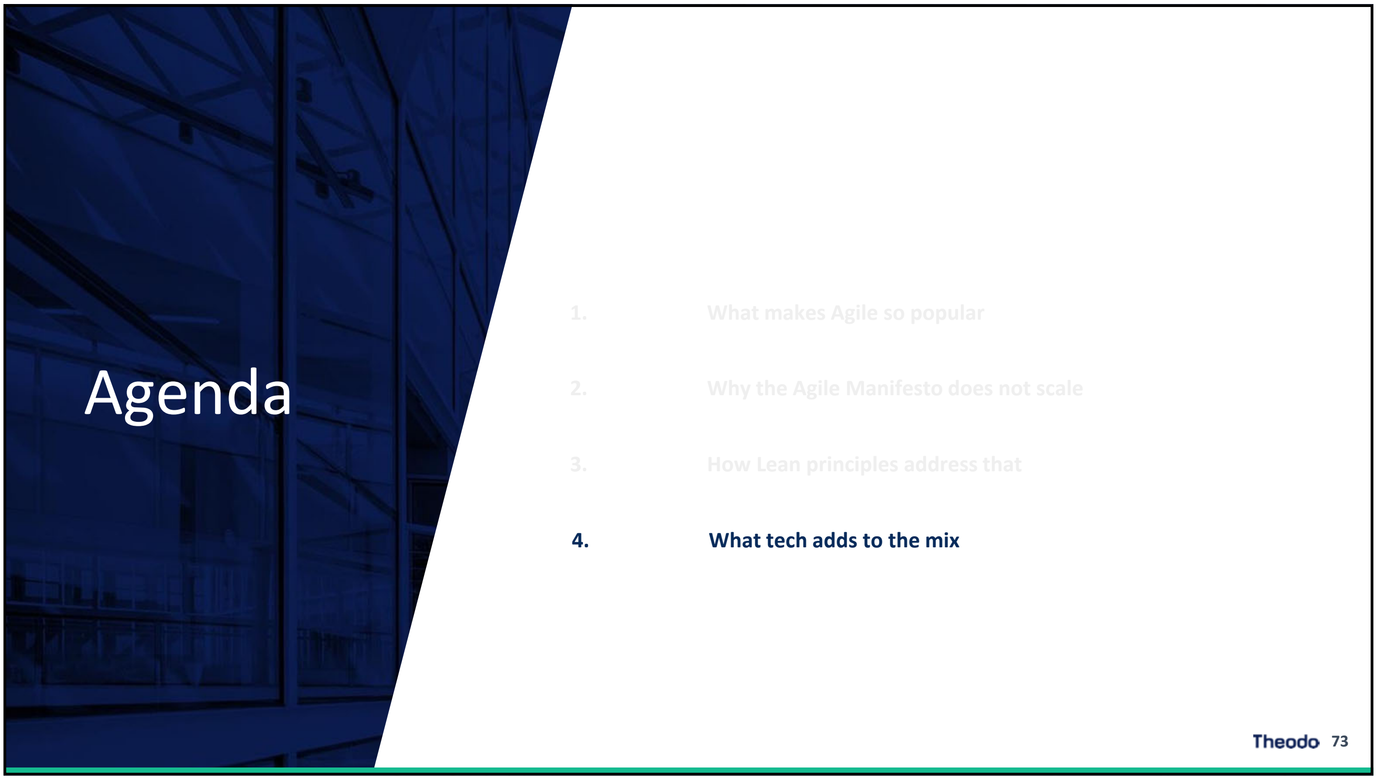
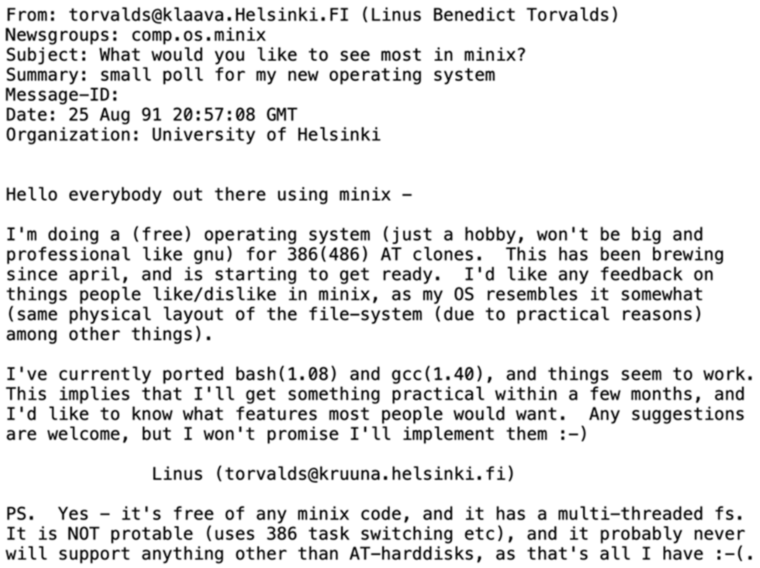


Agenda

1. What makes Agile so popular
2. Why the Agile Manifesto does not scale
3. How Lean principles address that
4. **What tech adds to the mix**

The most iconic example of scaling “individuals and interactions” in an Agile way is probably the open-source project Linux.

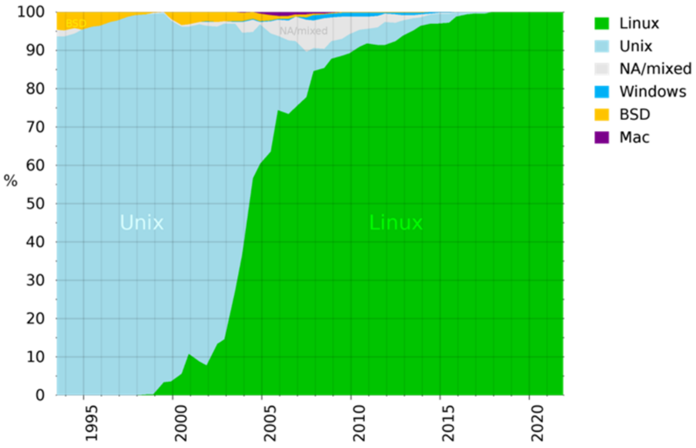
The most iconic example of scaling “individuals and interactions” in an Agile way is probably the open-source project Linux.
It started in 1991, with Linus Torvalds posting a message on the Minix Newsgroup



```
From: torvalds@klaava.Helsinki.FI (Linus Benedict Torvalds)
Newsgroups: comp.os.minix
Subject: What would you like to see most in minix?
Summary: small poll for my new operating system
Message-ID:
Date: 25 Aug 91 20:57:08 GMT
Organization: University of Helsinki


Hello everybody out there using minix -

I'm doing a (free) operating system (just a hobby, won't be big and
professional like gnu) for 386(486) AT clones.  This has been brewing
since april, and is starting to get ready.  I'd like any feedback on
things people like/dislike in minix, as my OS resembles it somewhat
(same physical layout of the file-system (due to practical reasons)
among other things).

I've currently ported bash(1.08) and gcc(1.40), and things seem to work.
This implies that I'll get something practical within a few months, and
I'd like to know what features most people would want.  Any suggestions
are welcome, but I won't promise I'll implement them :-)

              Linus (torvalds@kruuna.helsinki.fi)

PS.  Yes - it's free of any minix code, and it has a multi-threaded fs.
It is NOT protable (uses 386 task switching etc), and it probably never
will support anything other than AT-harddisks, as that's all I have :-(.
```

30 years later, 55,000 people have contributed to Linux

Linux powers
- all top 500 supercomputers in the world
- 96% of the top 1M web servers
- 4 billion smartphone users

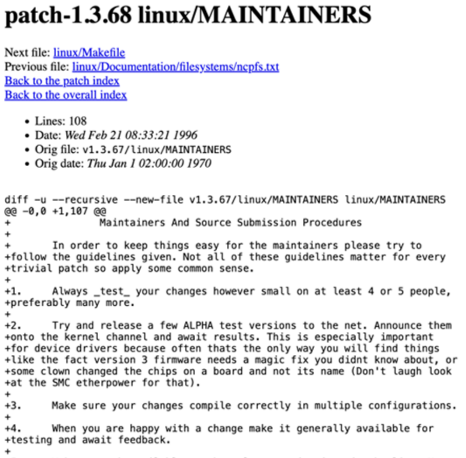


Operating systems in top 500 supercomputers
By Benedikt.Seidl - Eigenes Werk (own work) / source top500.org
Public Domain, https://commons.wikimedia.org/w/index.php?curid=5932978

But scaling to a cumulated 55,000 contributors was not without its challenges

---

The first scaling crisis hit in 1996



patch-1.3.68 linux/MAINTAINERS

Next file: linux/Makefile
Previous file: linux/Documentation/filesystems/ncpfs.txt
Back to the patch index
Back to the overall index

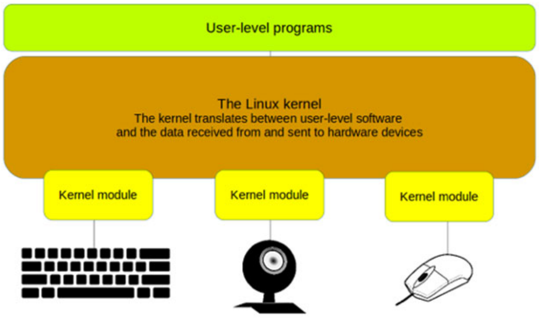
- Lines: 108
- Date: *Wed Feb 21 08:33:21 1996*
- Orig file: `v1.3.67/linux/MAINTAINERS`
- Orig date: *Thu Jan 1 02:00:00 1970*

```
diff -u --recursive --new-file v1.3.67/linux/MAINTAINERS linux/MAINTAINERS
@@ -0,0 +1,107 @@
+                Maintainers And Source Submission Procedures
+
+        In order to keep things easy for the maintainers please try to
+follow the guidelines given. Not all of these guidelines matter for every
+trivial patch so apply some common sense.
+
+1.      Always _test_ your changes however small on at least 4 or 5 people,
+preferably many more.
+
+2.      Try and release a few ALPHA test versions to the net. Announce them
+onto the kernel channel and await results. This is especially important
+for device drivers because often thats the only way you will find things
+like the fact version 3 firmware needs a magic fix you didnt know about, or
+some clown changed the chips on a board and not its name (Don't laugh look
+at the SMC etherpower for that).
+
+3.      Make sure your changes compile correctly in multiple configurations.
+
+4.      When you are happy with a change make it generally available for
+testing and await feedback.
+
+5.      Make a patch available to the relevant maintainer in the list. Use
+'diff -u' to make the patch easy to merge. Be prepared to get your changes
+sent back with seemingly silly requests about formatting and variable names.
+These aren't as silly as they seem, one job the maintainers (and especially
+Linus) do is to keep things looking the same. Sometimes this means that
```

```
+REST:
+P:     Linus Torvalds
+S:     Buried alive in email
```

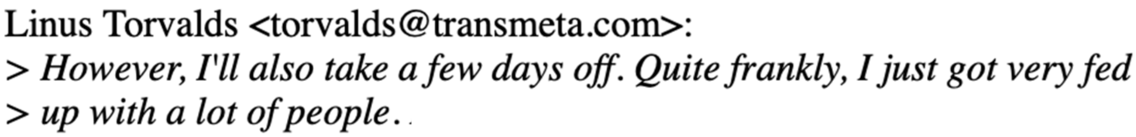
Which was addressed by two changes:

1. The loadable Kernel module architecture


User-level programs
The Linux kernel
The kernel translates between user-level software
and the data received from and sent to hardware devices
Kernel module
Kernel module
Kernel module

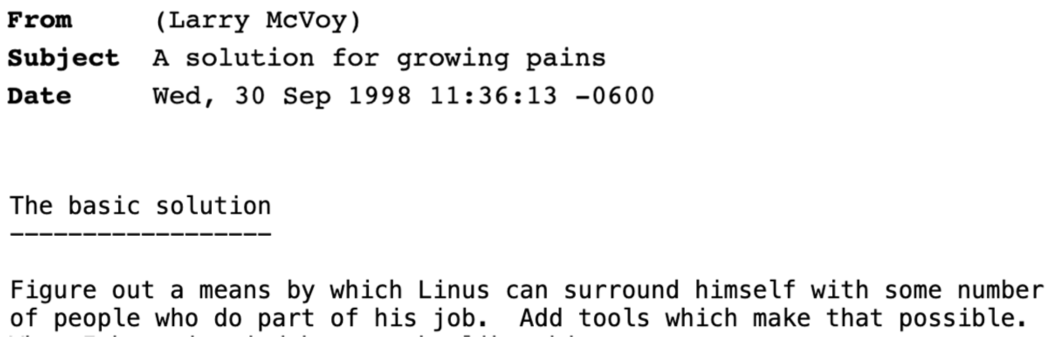
2. The official creation of the maintainers role

Scaling issues restarted in 1998



Linus Torvalds <torvalds@transmeta.com>:
> *However, I'll also take a few days off. Quite frankly, I just got very fed*
> *up with a lot of people..*

Which inspired Larry McVoy to create BitKeeper, to enable distributed software collaboration



From (Larry McVoy)
Subject A solution for growing pains
Date Wed, 30 Sep 1998 11:36:13 -0600

```
The basic solution
------------------

Figure out a means by which Linus can surround himself with some number
of people who do part of his job.  Add tools which make that possible.
```

Problems continued and contributions were lost, until in 2002 Linus decided to adopt BitKeeper. The situation immediately improved

BITKEEPER
Scalable Version Control

(And if you wonder why you have never heard of Bitkeeper…
In 2005 Larry threatened to revoke the free BitKeeper license, so Linus took a few weeks off and created Git to replace it)

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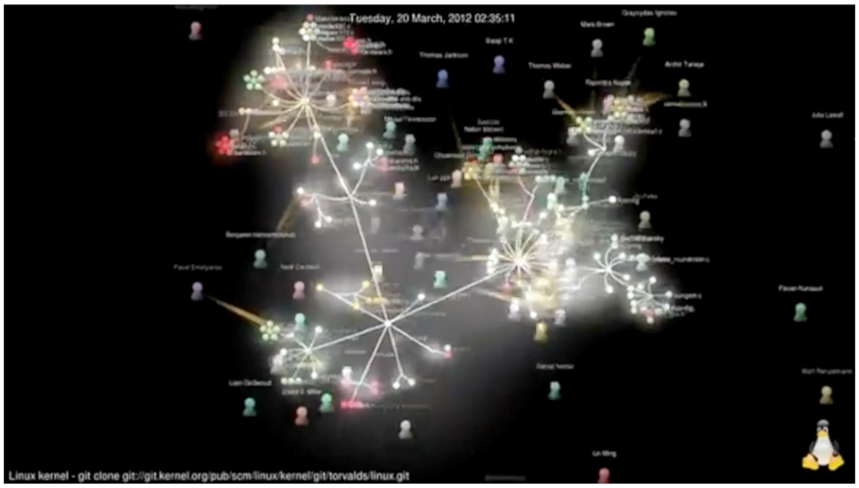
In 2005 Larry threatened to revoke the free BitKeeper license, so Linus took a few weeks off and created Git to replace it)

There has not been any other scaling challenge since!
What do we learn from how the Linux community addressed its scaling challenges?

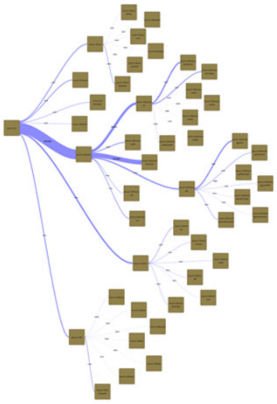
There has not been any other scaling challenge since!
What do we learn from how the Linux community addressed its scaling challenges?

1. A network of empowered teams


Tuesday, 20 March, 2012 02:35:11
Linux kernel - git clone git://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git

There has not been any other scaling challenge since!
What do we learn from how the Linux community addressed its scaling challenges?

2. Enabled by technologies that distribute collaboration between these teams: a modular architecture and git



And this is a pattern I started seeing in every large organisation with Agile cultures!

BUURTZORG, studied in Frederic Lalou’s
Reinventing Organisation

BUURTZORG
De beste zorg thuis!

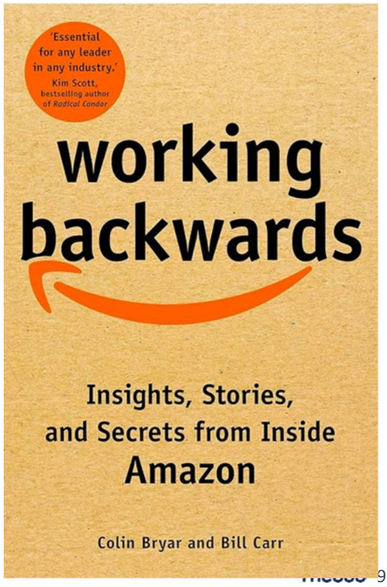
And this is a pattern I started seeing in every large organisation with Agile cultures!

BUURT
Rei

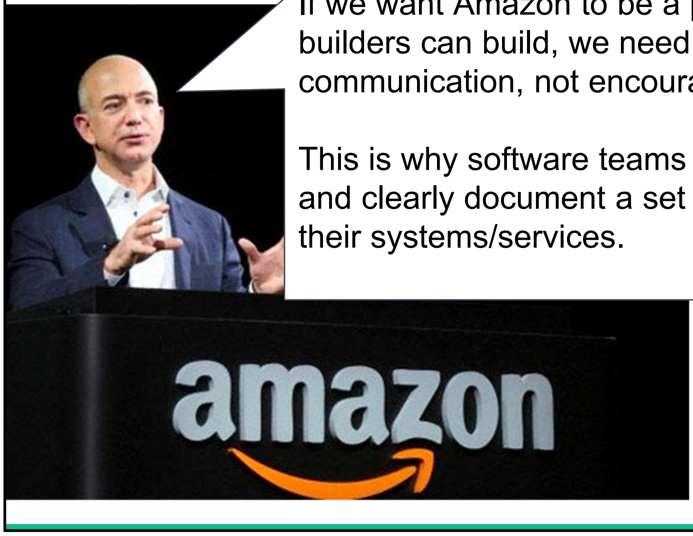
We started by building a tech platform to reduce all the usual admin tasks of nurses and empower them on their P&L

BUURTZORG
De beste zorg thuis!

AMAZON and its famous “API mandate”. A transformation described in Working Backwards by Colin Bryar and Bill Carr

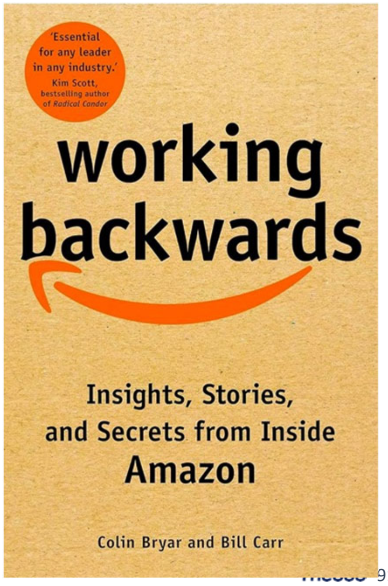

'Essential for any leader in any industry.' Kim Scott, bestselling author of Radical Candor
working backwards
Insights, Stories, and Secrets from Inside Amazon
Colin Bryar and Bill Carr

AMAZON and its famous “API mandate”. A transformation described in Working Backwards by Colin Bryar and Bill Carr



If we want Amazon to be a place where builders can build, we need to eliminate communication, not encourage it.

This is why software teams should build and clearly document a set of APIs for all their systems/services.


'Essential for any leader in any industry.' Kim Scott, bestselling author of Radical Candor
working backwards
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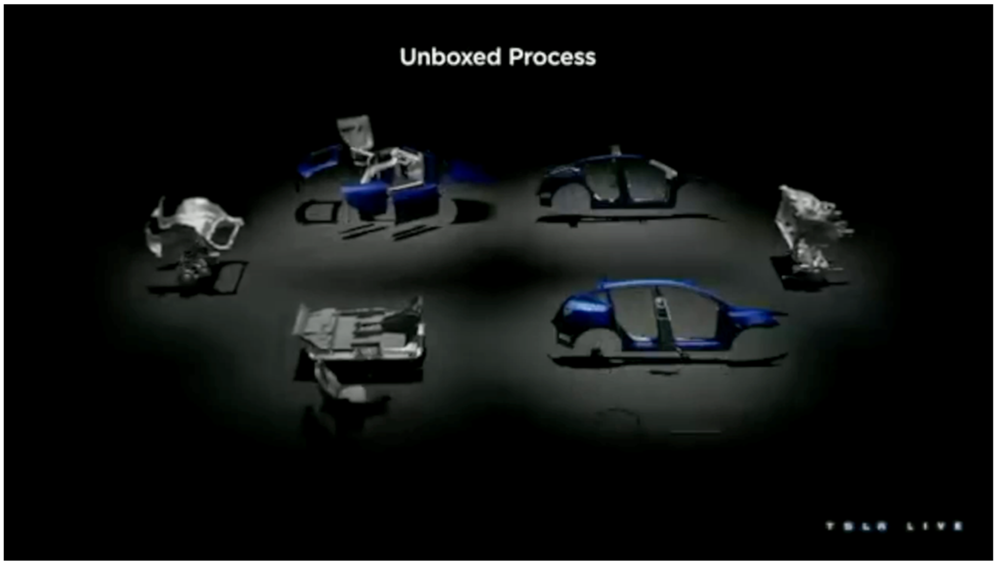
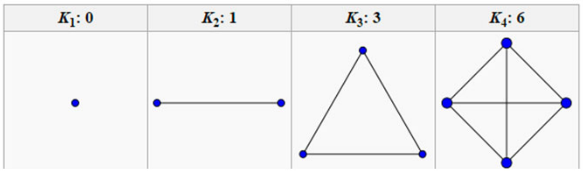
TESLA and its revolutionary tech to enable a modular architecture


Unboxed Process
TESLA LIVE

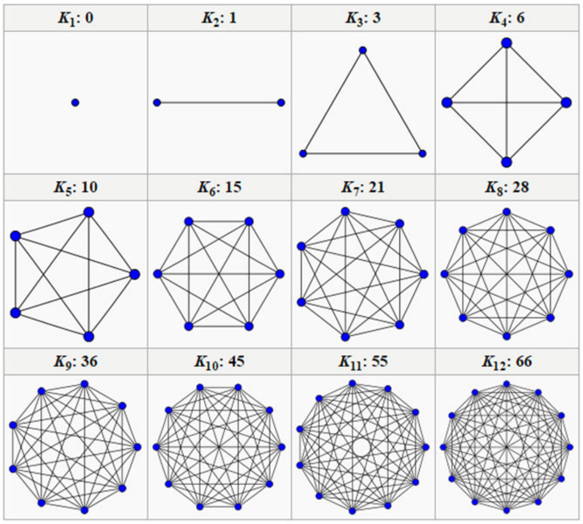
Or in Team of Teams, where the daily video conference enables “empowered execution”

THE NEW YORK TIMES BESTSELLER
'An indispensable guide to organizational change'
TEAM
OF
TEAMS
NEW RULES OF ENGAGEMENT
FOR A COMPLEX WORLD
GENERAL STANLEY
McCHRYSTAL
US Army, retired,
with Tantum Collins, David Silverman and Chris Fussell
ISAF

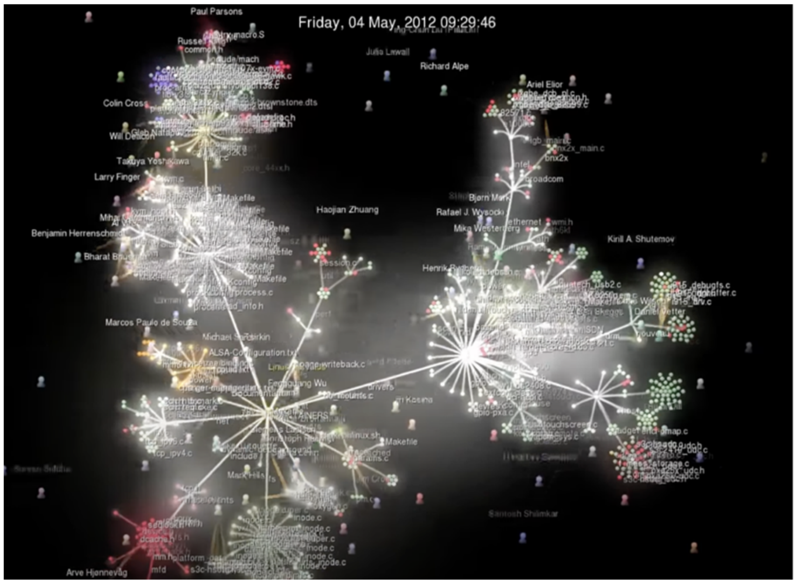
Why? Scaling “individuals and interactions” is about keeping teams empowered


K_1: 0
K_2: 1
K_3: 3
K_4: 6

Why? Scaling “individuals and interactions” is about keeping teams empowered despite the need to collaborate with more and more other teams


K_1: 0
K_2: 1
K_3: 3
K_4: 6
K_5: 10
K_6: 15
K_7: 21
K_8: 28
K_9: 36
K_{10}: 45
K_{11}: 55
K_{12}: 66

Large Agile organisations solve this with tech, to enable teams to collaborate as a network, while each team stays empowered on their module


Friday, 04 May, 2012 09:29:46
Paul Parsons
Richard Alpe
Colin Cross
Larry Finger
Haojian Zhuang
Rafael J. Wysocki
Kirill A. Shutemov
Benjamin Herrenschmidt
Marcos Paulo de Souza
Arve Hjønnevåg

Large Agile organisations solve this with tech, to enable teams to collaborate as a network, while each team stays empowered on their module

Value for the Customer over
Customer collaboration over contract negotiation
??
Individuals and interactions over processes and tools
Right-first-time and Just-in-time over
Working software over comprehensive documentation
Building a Learning Organisation over
Responding to change over following a plan

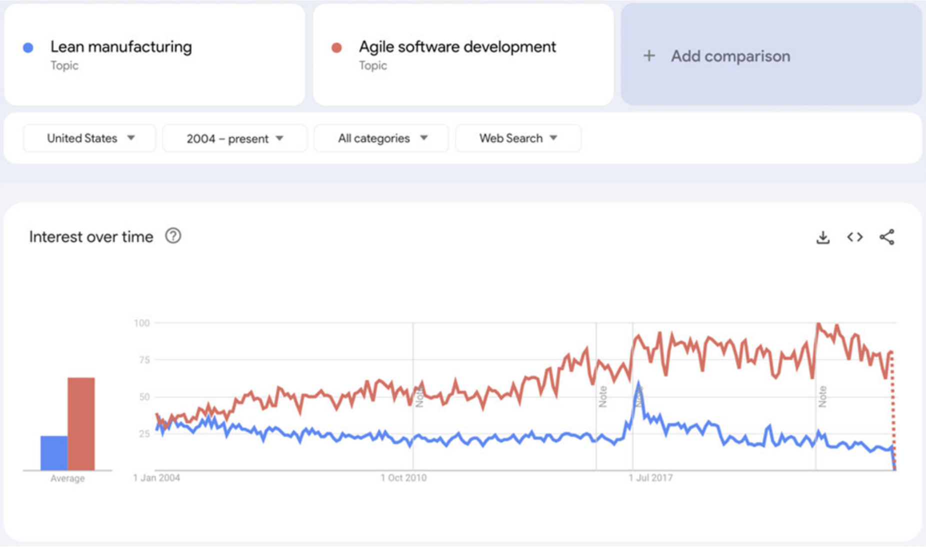
Large Agile organisations solve this with tech, to enable teams to collaborate as a network, while each team stays empowered on their module

Value for the Customer over
Customer collaboration over contract negotiation
Tech-enabled Network of Teams over
Individuals and interactions over processes and tools
Right-first-time and Just-in-time over
Working software over comprehensive documentation
Building a Learning Organisation over
Responding to change over following a plan

Why this Manifesto?

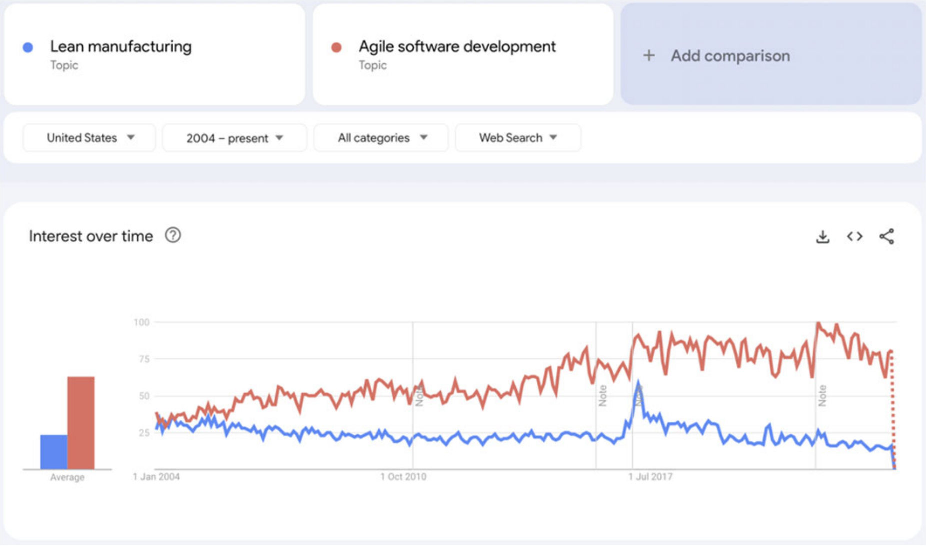
Why this Manifesto?
Because I believe Lean Thinking helps organizations be more ingenious at scale

And I see a gap.


Lean manufacturing
Topic
Agile software development
Topic
+ Add comparison
United States
2004 – present
All categories
Web Search
Interest over time
100
75
50
25
Average
1 Jan 2004
1 Oct 2010
1 Jul 2017
Note
Note
Note

What justifies this gap?

And I see a gap. Quick problem-solving?


Lean manufacturing
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Web Search
Interest over time
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75
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25
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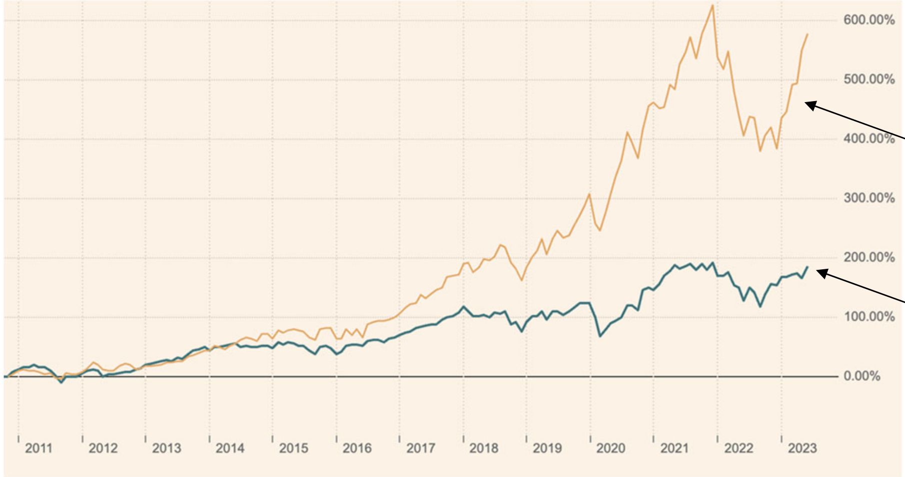
1 Jan 2004
1 Oct 2010
1 Jul 2017
Note
Note
Note

What justifies this gap?

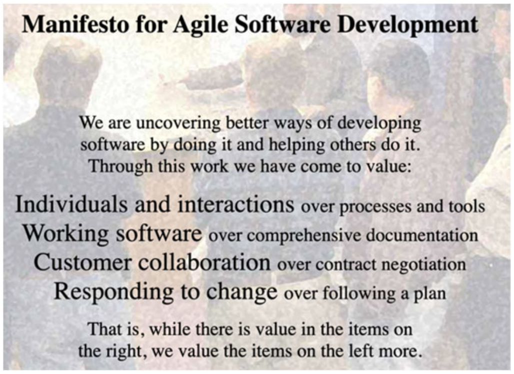
Hypothesis 1: Agile has a market advantage



MSCI World
Information Technology
Index

MSCI World
Industrial Index

Hypothesis 2: Agile is more accessible



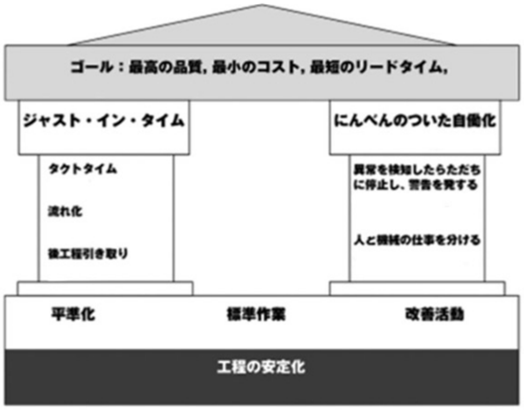
Manifesto for Agile Software Development

We are uncovering better ways of developing
software by doing it and helping others do it.
Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on
the right, we value the items on the left more.

VS



ゴール：最高の品質，最小のコスト，最短のリードタイム，

ジャスト・イン・タイム

タクトタイム

流れ化

後工程引き取り

にんべんのついた自働化

異常を検知したらただちに停止し、警告を発する

人と機械の仕事を分ける

平準化

標準作業

改善活動

工程の安定化

So a countermeasure to deploy Lean Thinking to more organisations could be to bring it to the Tech industry in an accessible way?

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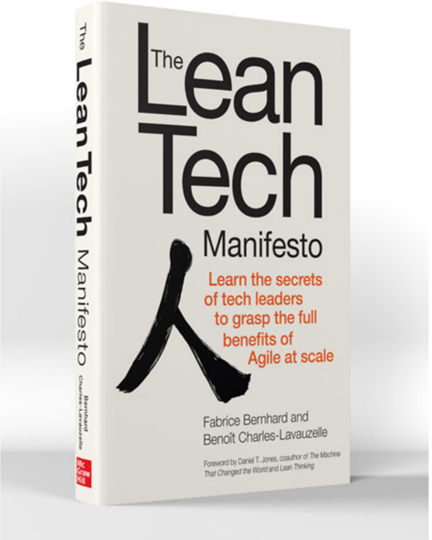
The Lean Tech Manifesto
Learn the secrets of tech leaders to grasp the full benefits of Agile at scale
Fabrice Bernhard and Benoît Charles-Lavauzelle
Foreword by Daniel T. Jones, coauthor of The Machine That Changed the World and Lean Thinking
The Lean Tech Manifesto
Bernhard Charles-Lavauzelle
Mc Graw Hill

I hope The Lean Tech Manifesto will contribute to more ingenious organizations

Thank you!

X: @fabriceb
linkedin.com/in/fabricebernhard/
fabriceb@theodo.co.uk

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Thank you!

X: @fabriceb
linkedin.com/in/fabricebernhard/
fabriceb@theodo.co.uk

You can order the book on Amazon.
It came out today!

The Lean Tech Manifesto
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