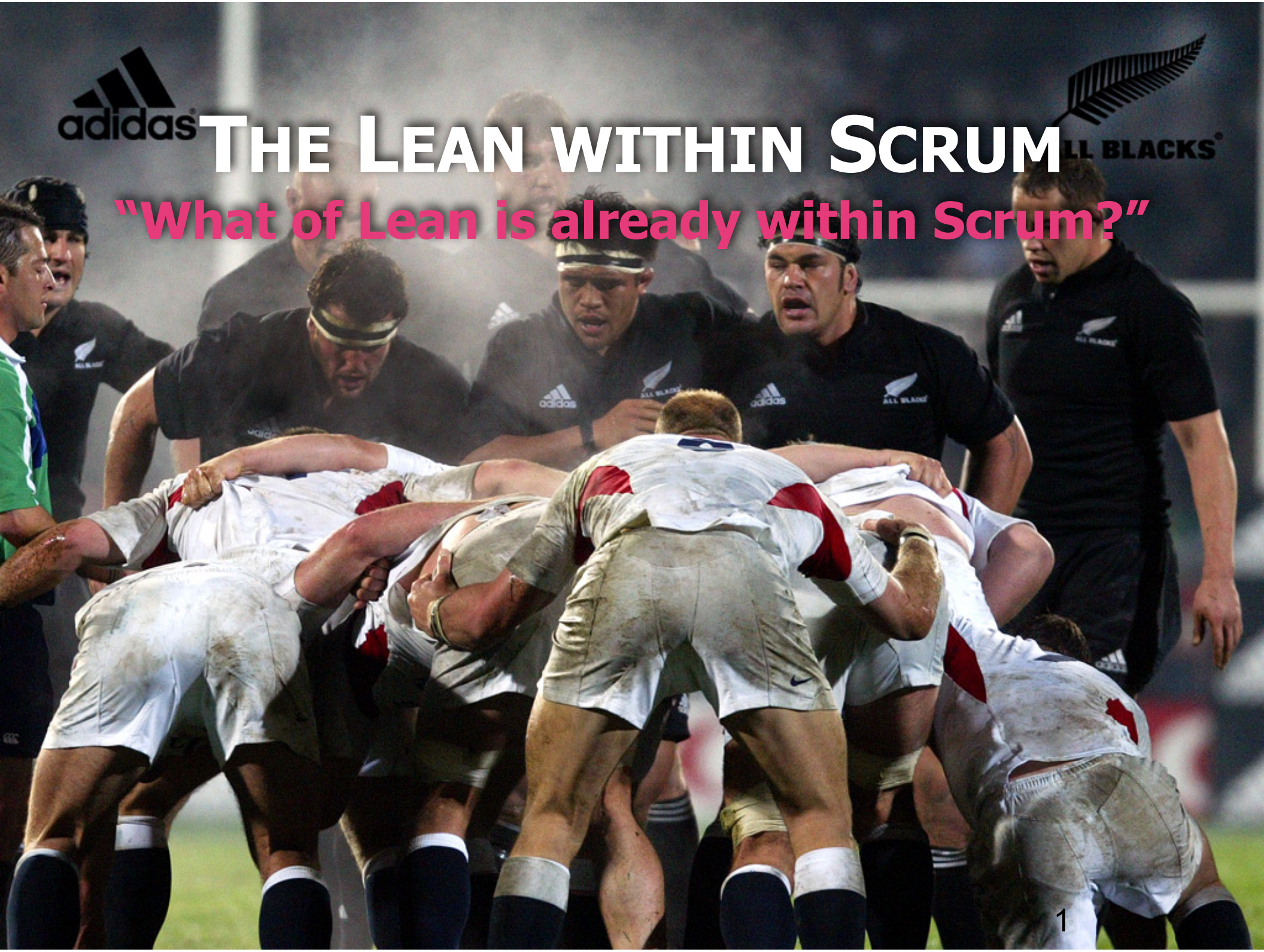

The Lean within Scrum

"What of Lean is already within Scrum?"

Reminder to me

I will send the PDF of the slides.

If I have your email address.

* send me an email: (info@LeanAgileTraining.com)

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With help from...

With help from Accenture, ADI LLC, Alliance Global Services, American Greetings Interactive, AOL, Applied Physics Laboratory, Argonaut Group, Asurion, Avid Technology, Booz Allen Hamilton, CA, CAE, Canada Post, Capital One, Charles Schwab, Citigroup, CNN/Turner, Comcast, Compuware, Cornell, Crisp, Dell, DST, EDR, Exigen Services, FedEx, GE Power Systems, Georgia Institute of Technology, Gilbarco, Google, HP, Huawei, IBM, iContact, INM, Intersect, J Ray McDermott, Mantech, McKesson, McKinsey & Co, Medco, Microsoft, Morrison Management, Motley Fool, MySpace, Nationwide, NC State University, NEA, Nortel, Northrop Grumman, NYSE Euronext, Ontario Legislative Assembly, Pearson, Philips, Polycom, Rally, RealTravel, Red Hat, REMITData, S1, SAIC, Scripps Network Interactive, Scrum Training Institute, Siemens, SirsiDynix, Smart Online, SolutionsIQ, Sonic Boom Media, SteamTheWorld, Sungard, Systematic Software Engineering, The Hartford, The Library Company, The New Teacher Project, Tradeware, Travelocity, Trifork, Ultimate Software, Vanguard, Version One, Vignette, Wake Forest University, Wells Fargo/Wachovia, Wireless Generation, Xebia, and others.

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Attributions

- Taiichi Ohno
- Mary & Tom Poppendieck
- Takeuchi & Nonaka
- Jeff Sutherland
- Jim York
- Many others

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Joe Little

- Agile Coach & Trainer
- 20+ years in senior level consulting to well-known firms in New York, London, Charlotte, elsewhere
- Focus on delivery of Business Value; interest in Lean
- CST, CSP, CSM; MBA
- CST since 2008
- Was Senior Manager in Big 6 consulting
- Head of Kitty Hawk Consulting, Inc. since 1991
- Head of LeanAgileTraining.com
- Started trying to do [Agile] before reading The Mythical Man-Month

  - http://leanagiletraining.com
  - jhlittle@leanagiletraining.com



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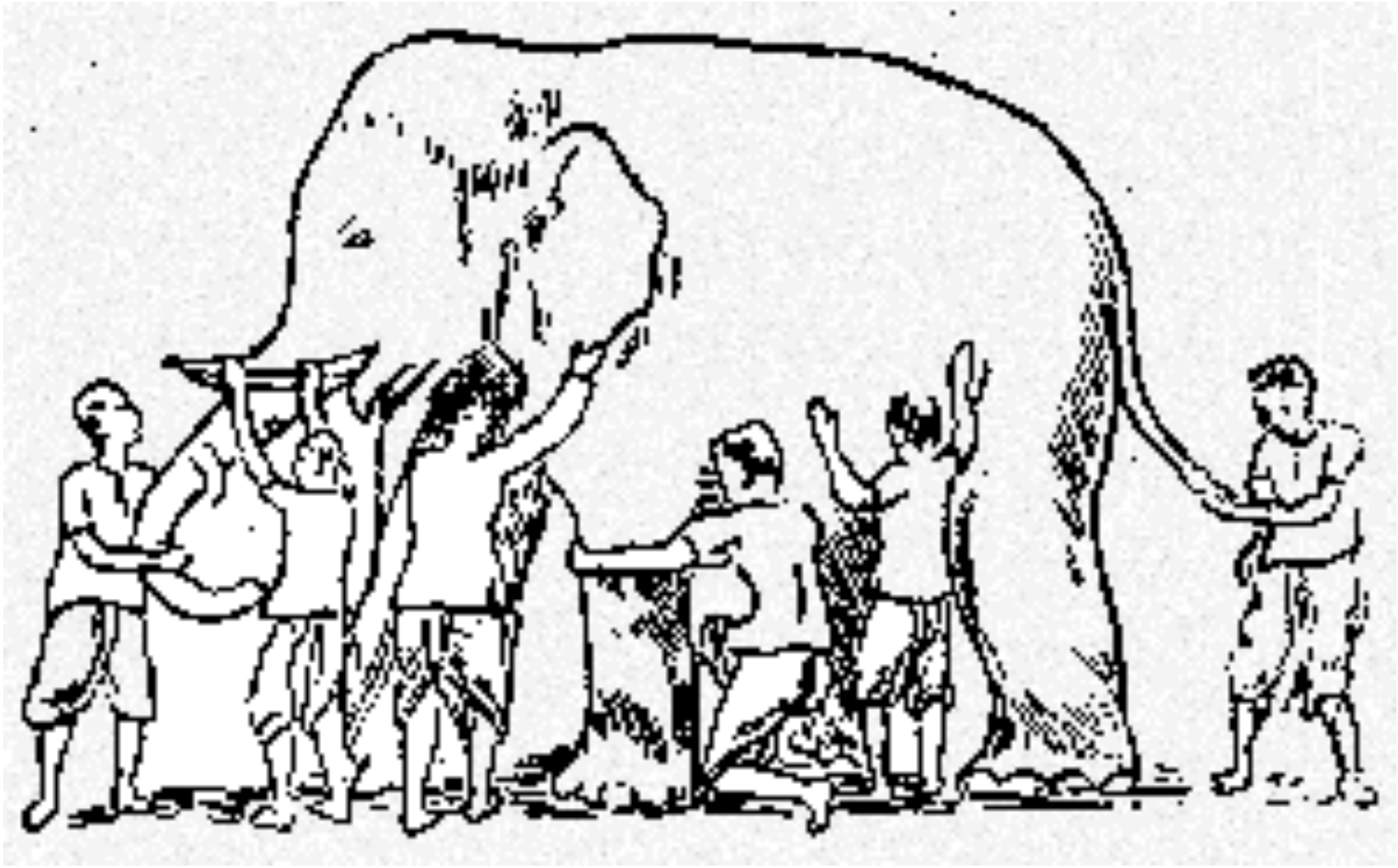

6 Blind Men and an Elephant

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The key thing:
Knowledge creation as a team.

See: “The Concept of Ba” by Takeuchi and Nonaka.

on LeanAgileTraining.com

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One key Lean idea:
Keep It Stupid Simple.
KISS.

Although everything of Lean, altogether, is a lot.

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Is this subject important?

- 2x improvement in velocity
- (times) 2x improvement in Business Value (per SP)
- You are NOT going to get this improvement quickly or easily. But you can, with heart and hard work. And learning.

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PURPOSE

- A Vision of Perfection
- Ever evolving, ever rising.
- For Toyota: eventually, become the best car company in the world.
- Arguably, they did that.
- If they can do it, you can do it.

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What's the most important thing about Lean?

- Respect people?
- No one thing?
- Taiichi Ohno's attitude?
- Continuous Improvement?

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What's the most important thing about Lean? (My choices)

- A willingness to see things "new" (this is hard)
- A willingness to try new things, to improve, to try experiments
- Seeing the whole (not sub-optimize a part); end-to-end
- Focus on speed (explain)

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Mura, Muri, Muda

- Mura: Unevenness of flow
  - In Scrum, we get the small user stories to flow through the team.
- Muri: Overstressing the system
  - In Scrum, we want the team not to take on more story points than they can do
- Muda: Waste
  - In Scrum, we eliminate the impediments that cause “waste” (or reduce process cycle time)

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Flow

- The flow of one single-piece in fulfillment of the customer's request.
- The focus is on the consistent flow; process cycle time. Other things are much less important.
- Similarly, in Scrum, we want the flow of stories.

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Do not over-stress

- The Scrum Team only takes into the Sprint what the Team thinks it can do.
- They work on one story at a time (or two people do).
- Only when that story is done, do they take on a new story. Focus.

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Waste: In Scrum we work on "impediments"

- Working on impediments is our Kaizen.
- Anything that slows us down. Anything that we can add to improve.
- The Team is expected to fine-tune "the process" to eliminate "non-value-added time."

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Kaizen / Continuous Improvement

- Stephen Covey says the biggest problem is saying “too busy right now, I’ll improve tomorrow”
- How much change can your “system” take?

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Kanban (& Scrum Board)

- Every Scrum Team should have a Scrum Board!
- Meaning of “Kanban”: Visual card, or signboard.
- Ohno created the use of kanban as one small means to attaining minimal inventory, and better flow.
  - Idea borrowed from Piggly Wiggly.
  - Implements a pull system.
- The Scrum board, with tasks and stories, is a basic version of a kanban board.

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Work as a team

- Ohno uses the metaphor of a rowing team
- In Scrum we have a team of 7, plus/minus 2
- And we want the Team to self-organize, to reach their higher potential



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Team

- Ohno: The Team must continually improve their process.
- Scrum: Self-organize and self-manage.

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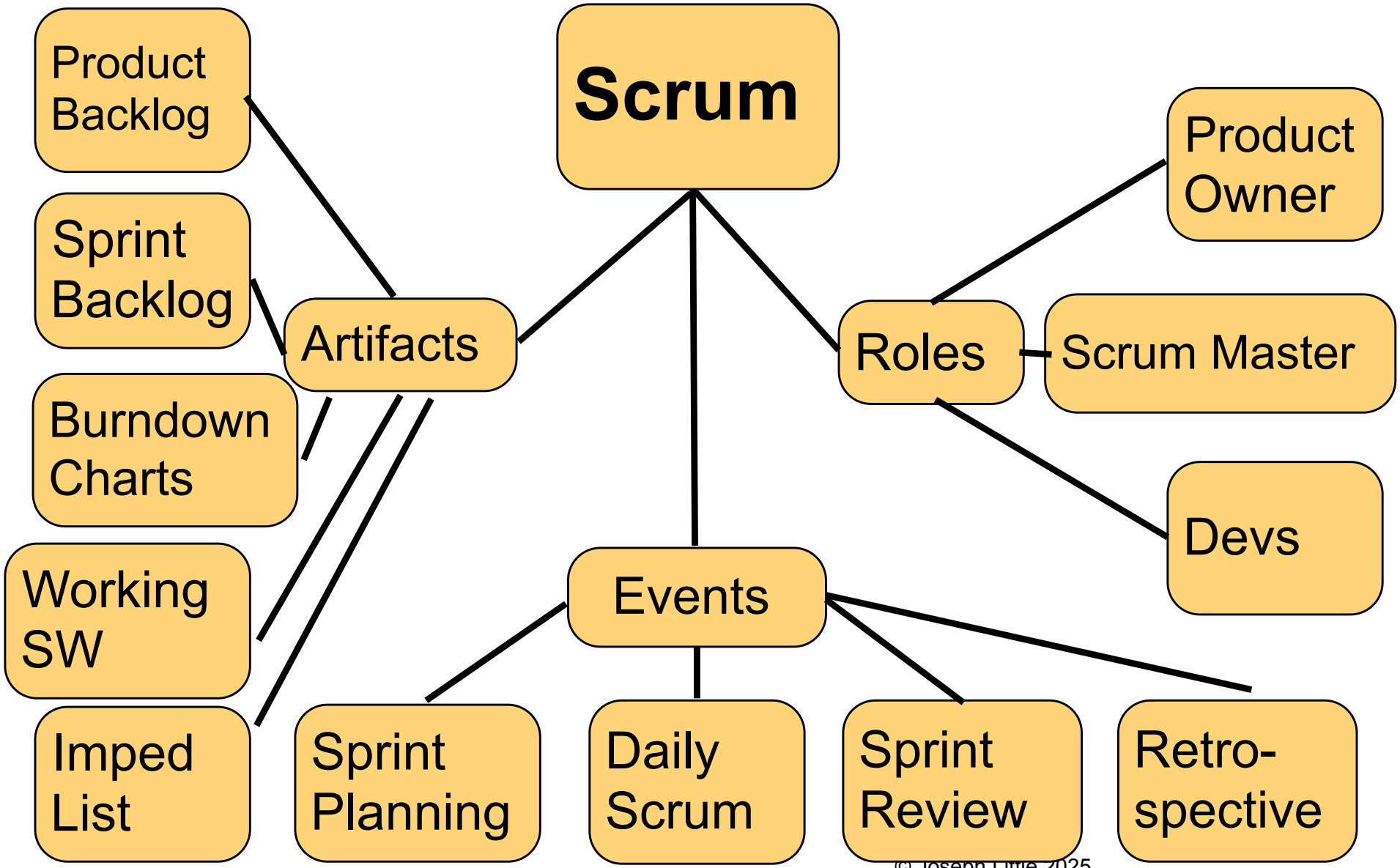
Scrum is a Simple Framework



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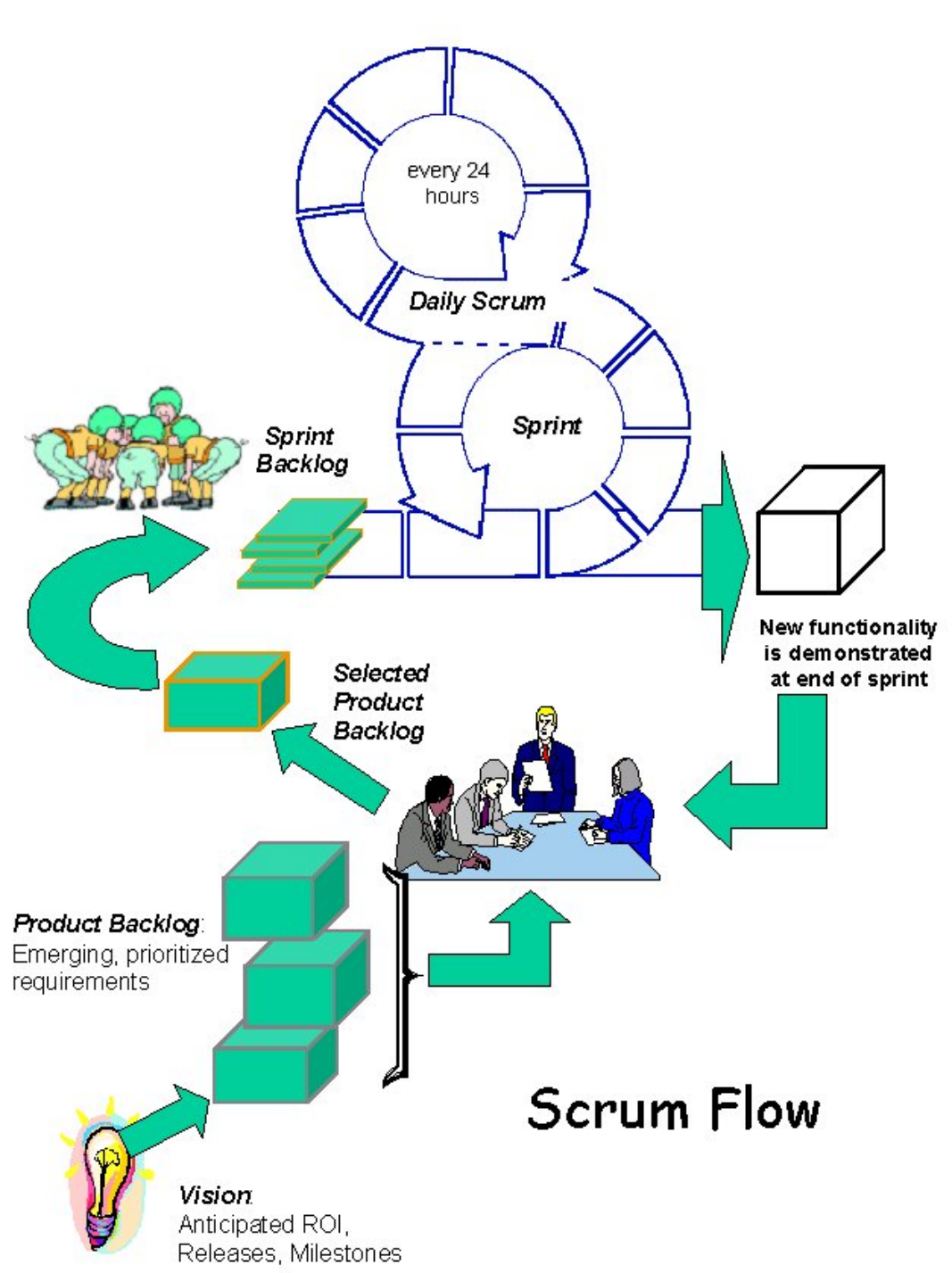

1. What did you do yesterday?
2. What will you do today?
3. What got in your way?

Source: Ken Schwaber

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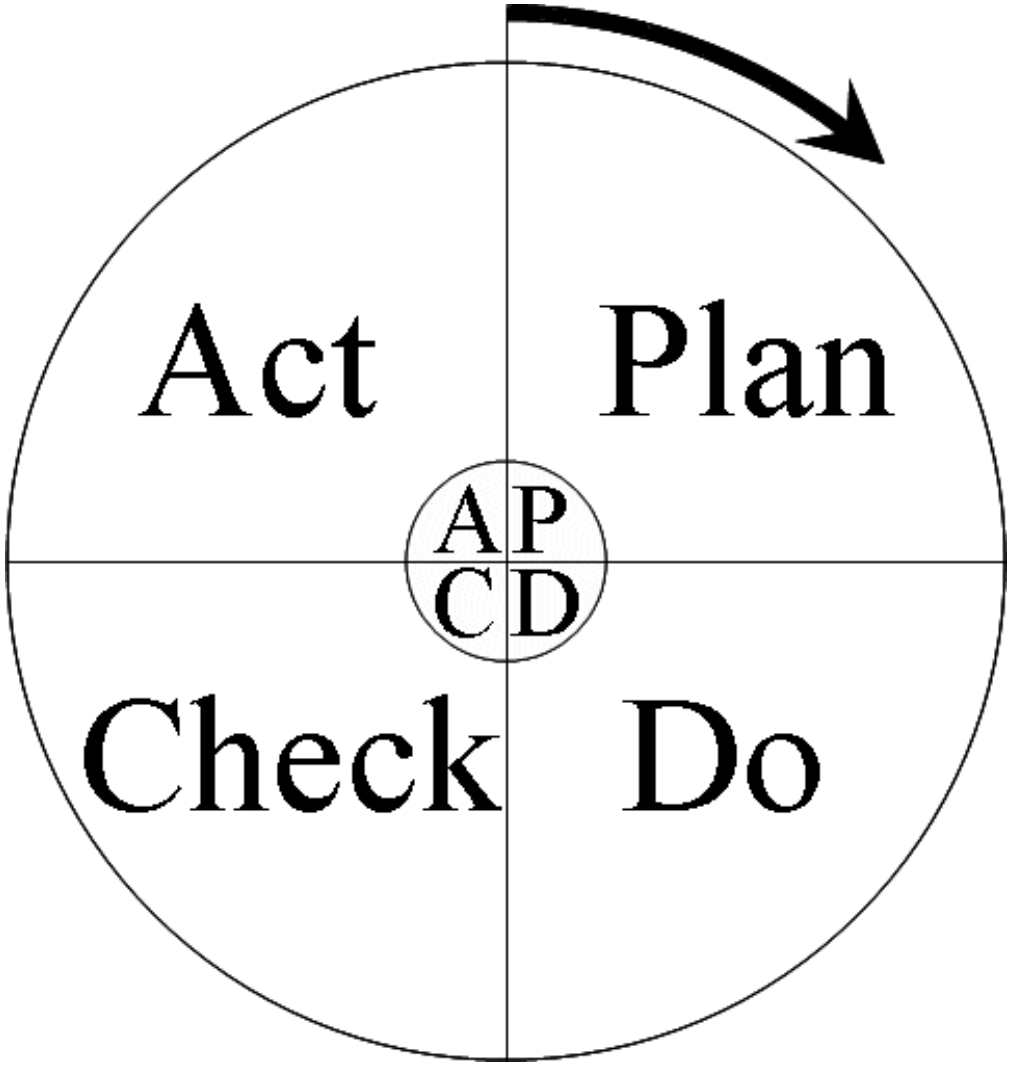
Make fact-based experiments



This is the Deming Cycle

Is this Lean?

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What's this?



An airplane boarding pass is Kanban!

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Kanban

- Meaning: Visual card, or signboard.
- Ohno created the use of kanban as one small means to attaining minimal inventory, and better flow.

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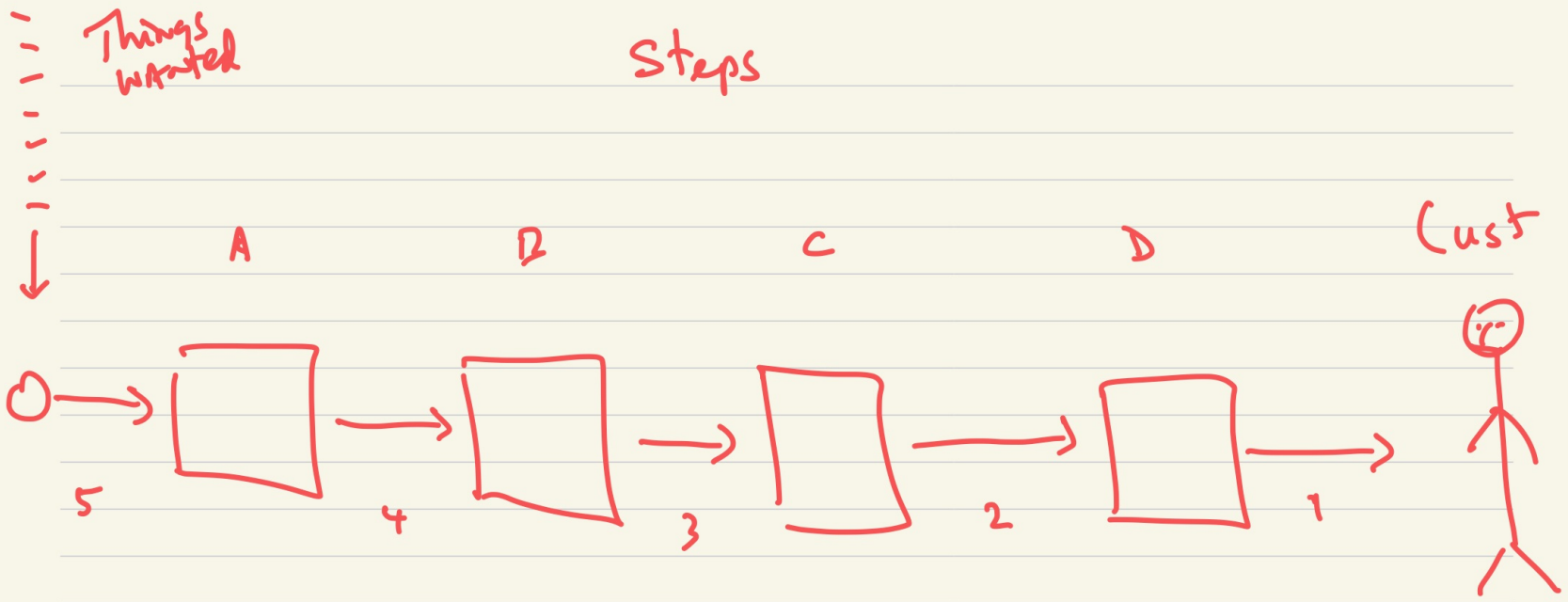
A Pull System



- only deliver what the customer wants
- deliver J-I-T!

Pull System

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Preferred Scrum board style

Story	To Do	Tests Ready	In Process	To Verify	Hours
A user can… 5	Code the … 8 Code the … 5 Test the … 6	X	Code the … SC 6 Code the … DC 4	Code the … LC 2	31
A user can… 2	Code the … 8 Code the … 5				13
A user can… 3	Code the … 3 Code the … 6	X	Code the … MC 4		13

3 roles
- Product owner
- Scrum master
- Team

3 artifacts
- Product backlog
- Sprint backlog
- Sprint burndown

4 activities
- Sprint planning
- Daily scrum
- Sprint review
- Retrospective

Source: Mike Cohn www.mountaingoatsoftware.com

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Toyota Production System; The Toyota Way

- Toyota and Taiichi Ohno recognized that fundamental attitudes were key.
- Hence: Toyota Production System
- Later: The Toyota Way.

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A set of "Attitudes" (internalized)

- Scrum is a simple, basic set of "things" that must be adapted to the situation at hand.
- Not one thing, it is your "way-of-working" that really counts.
- It is more than the bare framework.
- A team that is continuously improving.

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Kaizen

Means: Small incremental, continuous change. Or little change items.

In English it is: continuous improvement.

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Kaizen

- Means: Good change or improvement. Usually used to mean small continuous changes. So, “opposite” of Kaikaku, in a way.

- Scrum: Removing small impediments all the time via the Daily Scrum or the Retrospective.

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Kaikaku

Def: Lean production term which in Japanese means radical overhaul of an activity to eliminate waste and create greater value. Also called breakthrough kaizen.

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Use of Sensei

- For initial setup
- For ongoing improvements
- Sounds like a ScrumMaster or Agile Coach

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Attitude

Watanabe (then President of Toyota): "There's no genius in our company. We just do whatever we believe is right, trying every day to improve every little bit and piece. But when 70 years of very small improvements accumulate, they become a revolution."

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Minimize inventory (WIP)

- Toyota says that inventory is waste. Why?
- How fast does knowledge decay? Compared to a car?
- In Scrum, we also minimize inventory and work-in-process. BIG!!! (We do not talk about enough!!!)

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Genchi Genbutsu

- Meaning: “Go and see for yourself”. Also, more loosely: “Don’t manage from behind the desk”
- This is similar to the Scrum team self-organizing.
- In Scrum, we want the managers to come to the Team room, and see what is really happening there

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Go to the Gemba



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"Half of what we know is wrong"

- This is a quote from Taiichi Ohno's book "Workplace Management"
- The idea is that, to change, we must take the attitude that half of what we take as true is wrong
- And, thus, we must relentlessly pursue perfection. Ex: shown concretely in Scrum by the never-ending removal of impediments

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Stop the line culture

- The Toyota culture says “as soon as we find a problem, we must fix it”. And by stopping to fix the root cause, they get very fast.
- Fixing the root cause improves the cycle time to customer satisfaction.
- Scrum does this partly by a high standard for “definition of done”. And by an insistence that the Team never “dig a hole” of Technical Debt.

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Stop the line culture - 2

- No bug escapes the Sprint.

- Impediments mentioned every Daily Scrum. (Maybe a “process” defect)
- Strong use of the Retrospective.
- Every problem is an opportunity to improve.

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The 5 Whys.

A direct approach to root cause analysis.

Then: fix the most important root cause.

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Defer commitment

- This is a lean phrase attributed to the Poppendiecks.
- Meaning: Don't commit (decide) until the last responsible moment. (When you know more.)

- Example: Set-based innovation

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Key Terms

- Just-in-time*
- Kaizen*
- SMED (Single minute exchange of die)
- Poka-Yoke*
- Production leveling
- Mura, muri, muda*
- Workcell*
- Andon*
- Genchi Genbutsu*
- Gemba*
- 5 Whys*

- Pull system*
- Value stream map
- Optimize cycle time*
- TPS; The Toyota Way*
- "relentless pursuit of perfection"
- one-piece flow*
- visual management*
- zero inventory*
- challenge everything*
- respect for people*
- make the process visible*
- stop the line culture*

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The essence?

"The essence of [the Toyota system] is that each individual employee is given the opportunity to find problems in his own way of working, to solve them and to make improvements."

Wakamatsu & Kondo

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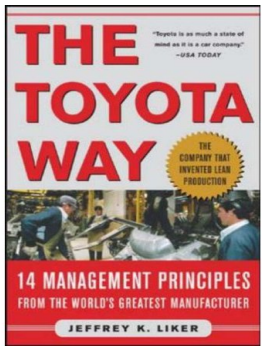

Toyota Way: Learn by Doing

Fujio Cho, Board Chairman

- We place the highest value on actual implementation and taking action. *Agile Principle #1*
- There are many things one doesn't understand, and therefore we ask them why don't you just go ahead and take action; try to do something? *Agile Principle #3, #11*
- You realize how little you know and you face your own failures and redo it again and at the second trial you realize another mistake … so you can redo it once again. *Agile Principle #11, #12*
- So by constant improvement … one can rise to the higher level of practice and knowledge. *Agile Principle #3*

"Anyone who has never made a mistake has never tried anything new." Albert Einstein

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What is the main goal?

Lean thinkers reason this way:

"By greatly reducing the cycle time from customer identification of need until the need is satisfied (and we get the cash), we learn to give the customer better, more, faster, and cheaper."

Most of the delay is in wait time.

This remains a paradox to many.

We optimize cycle time, not minor things.

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The flow of the car, not the busyness of workers

For us: “The cycle time of the story, not whether each person is fully occupied.”

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What's the foundation?

- The Toyota Way
- Managers-teachers imbued with Lean Thinking

- You cannot "phone in" your support for The Toyota Way

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What is "respect for people"?

- Challenging
- Listening
- Demanding
- Asking
- Testing
- Let them devise their own work methods, so they own them, and then can improve them

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Respect

We, as managers, respect them enough to argue with them. (And are humble enough about our own brilliance.)

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Standardize the work

"Standardize work" (write down or draw how you do things)

- important
- mis-understood

...so the standards are easier to change (and will be changed)

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Visual Management

Make things visual…Andon boards, etc.

Similar to Poka-Yoke (mistake-proof)

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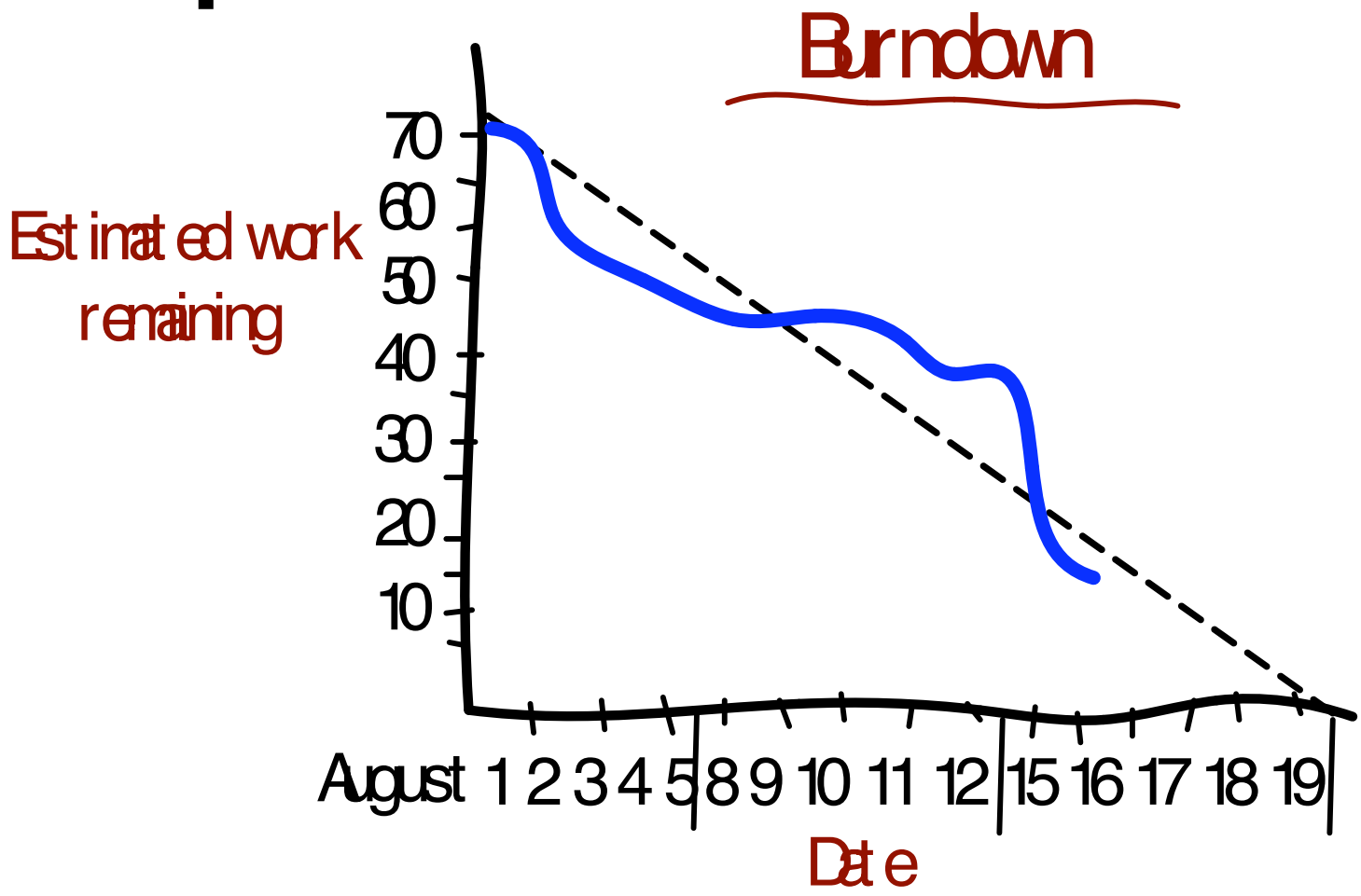
Sprint burndown chart



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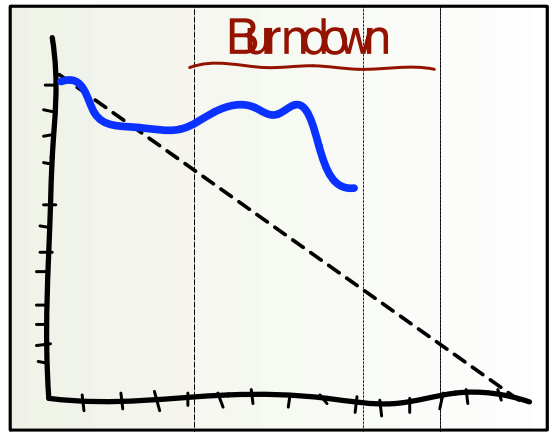

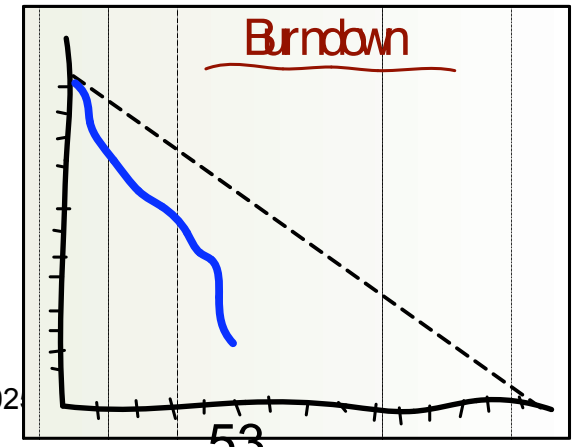

Source: Henrik Kniberg

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Poka-yoke

Not ‘idiot-proofing’, but ‘mistake-proofing’

In standard Scrum: The Daily Scrum, and basic “keep it stupid simple”

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How does one learn process improvement?

- Learn by doing. Practice, practice, practice.
- Who does it? Everyone.
- How often? Always, all-the-time. (Part-time.)

- Is it chaos? No. There are rules. Changes must be reviewed.

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Sprint retrospective

Long term effect

3 roles
- Product owner
- Scrum master
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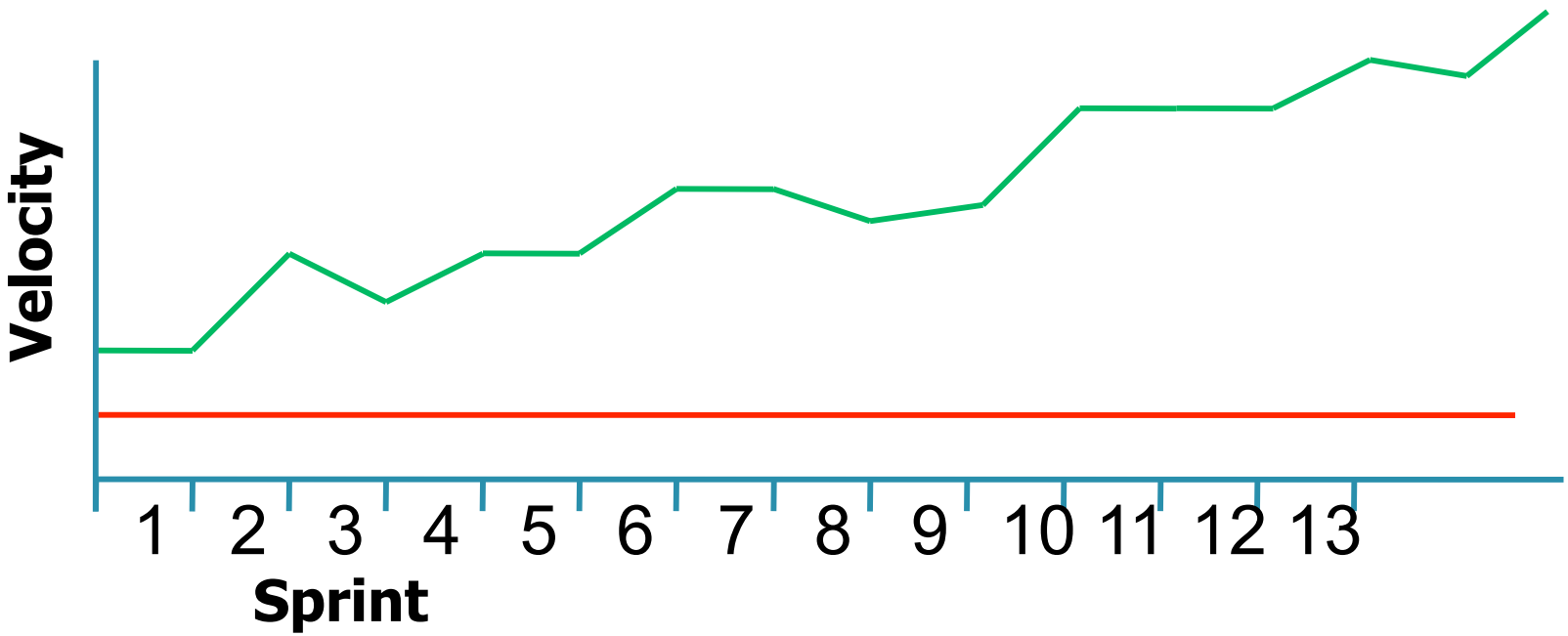
- Retrospective



Effective velocity over time (with retrospectives)

Effective velocity over time (without retrospectives)

Source: Henrik Kniberg

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A Key Goal

- Just-in-time knowledge creation
- Just-in-time knowledge delivery

- This also means:
  MINIMIZE WORK-IN-PROCESS

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A Key Goal

- Toyota generally wants to be 4x the industry average
- Scrum wants similar for software dev teams.

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Action

I hope you will take one or two of these ideas, and start acting on it or them tomorrow.

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What we did not discuss...

- How the Product Owner, starting with the Pareto idea, can improve our productivity (in a different sense).

- Maybe not part of Lean?

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Questions?



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The Test

- What will you act on first?
- How could this be improved?
- Thanks!

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