

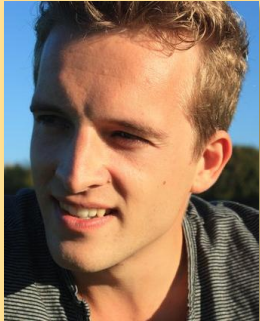
From User Research to Product Backlog

Hands-on Experience in Applying Design Thinking in SAP's Lean and Agile Environment

Dr. Tobias Hildenbrand (SAP CPO Cross-Dev Lean Center) & Johannes Meyer (Design Thinking Team), XP Days, Karlsruhe, 17 November 2011



The „Personas“ you will face for the next 58 minutes...



Johannes, 28

“Growing up is the one thing I refuse to try out”

- Design thinking coach
- Development consultant
- Creativity facilitator

- *Singing in a rock band*



Tobias, 33, married

“Imagine your whole life is just a sitcom”

- Dev consultant, lean/agile coach
- Continuous improvement expert
- Requirements engineering

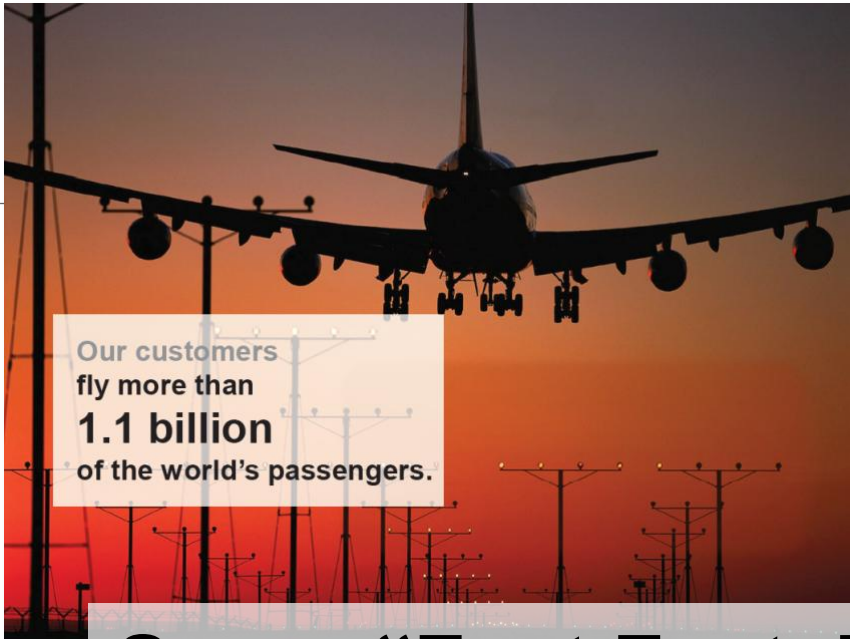
- *Baseball & cooking*

-
1. How Can Design Thinking Complement Lean Software Product Development?
 2. What is Design Thinking in the First Place?
 3. How Can Both Thinking Schools be Combined and Applied in Practice?
 4. Conclusions
 5. Questions & Answers...

SAP's "Lean Way"

How Can Design Thinking Complement Lean Software Product Development?





Our customers fly more than **1.1 billion** of the world's passengers.



Our customers manufacture more than **77,000** automobiles per day.

Some “Fast Facts” on SAP’s Products

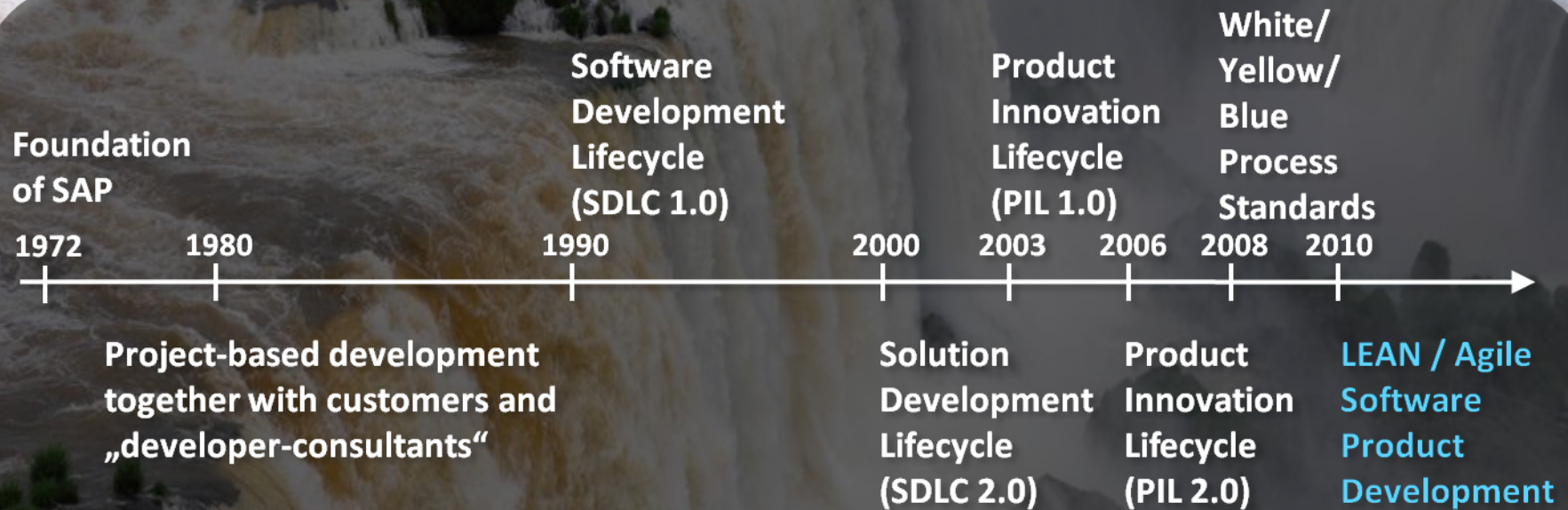


Our customers produce more than **70%** of the world's chocolate.



Our customers produce more than **72%** of the world's beer.

Process-Wise, it has been a Long Journey...

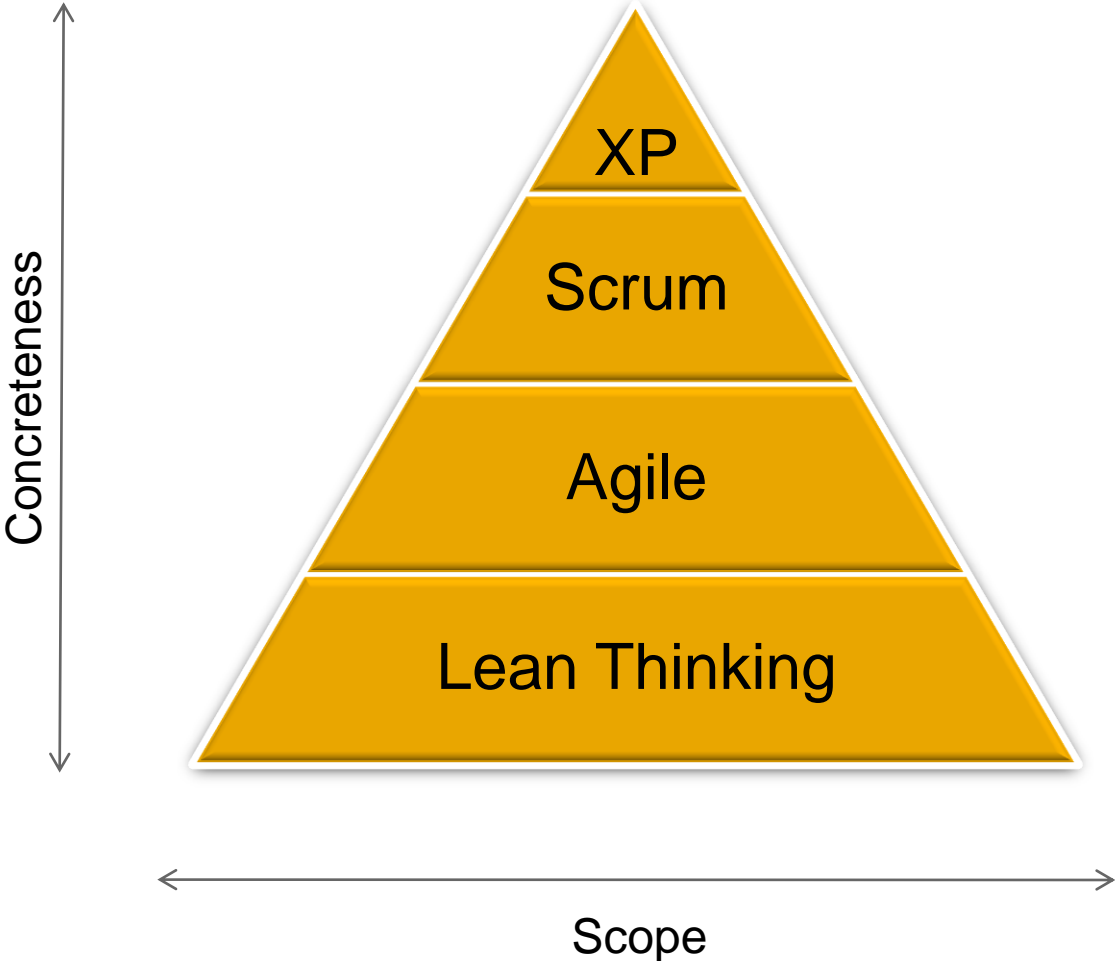


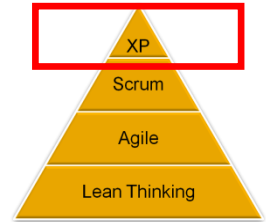
Motivation – Scaling Requires Changes to the Processes

More employees did not help us to come back into economies scale...



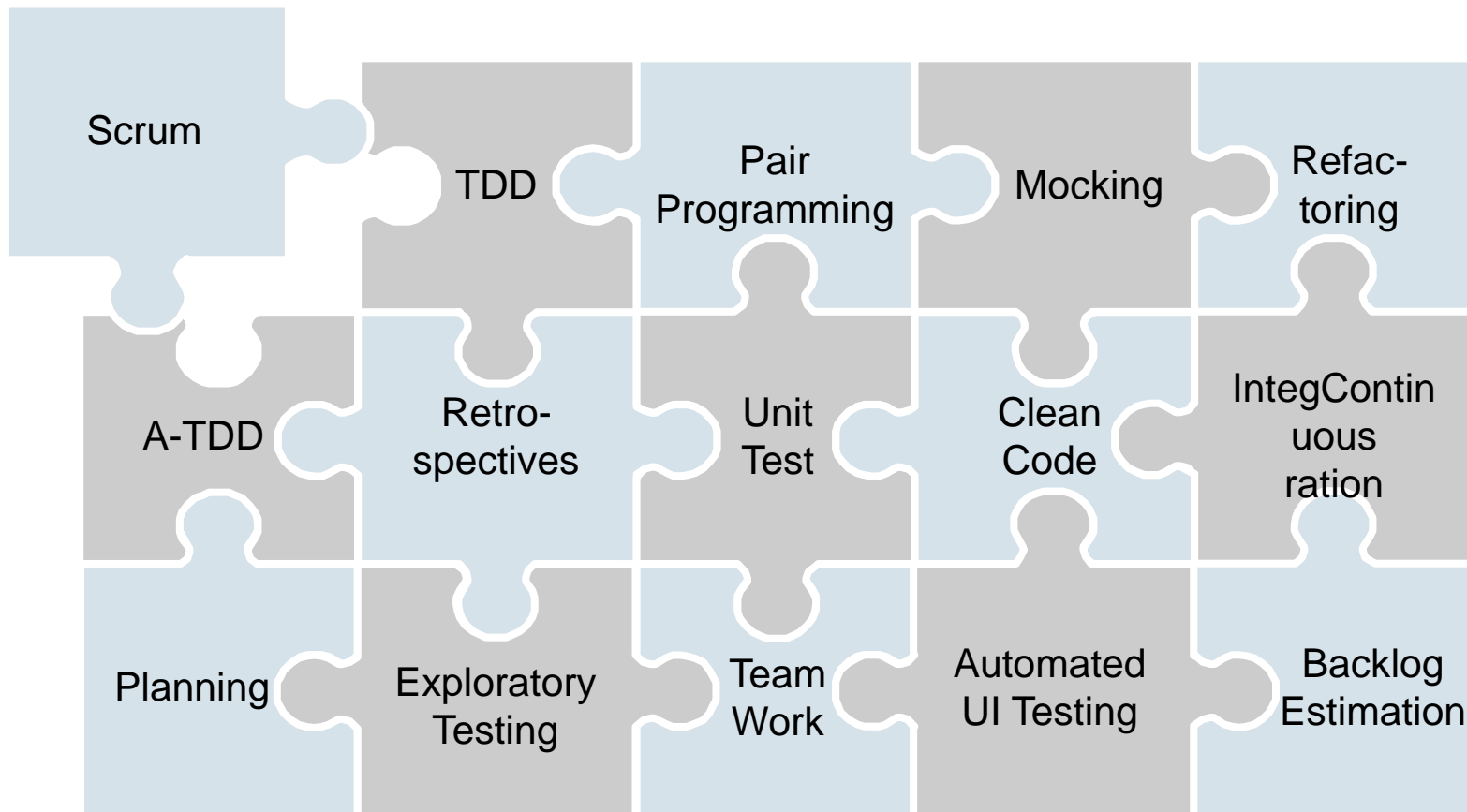
Approach: From Lean Thinking to XP Practices...



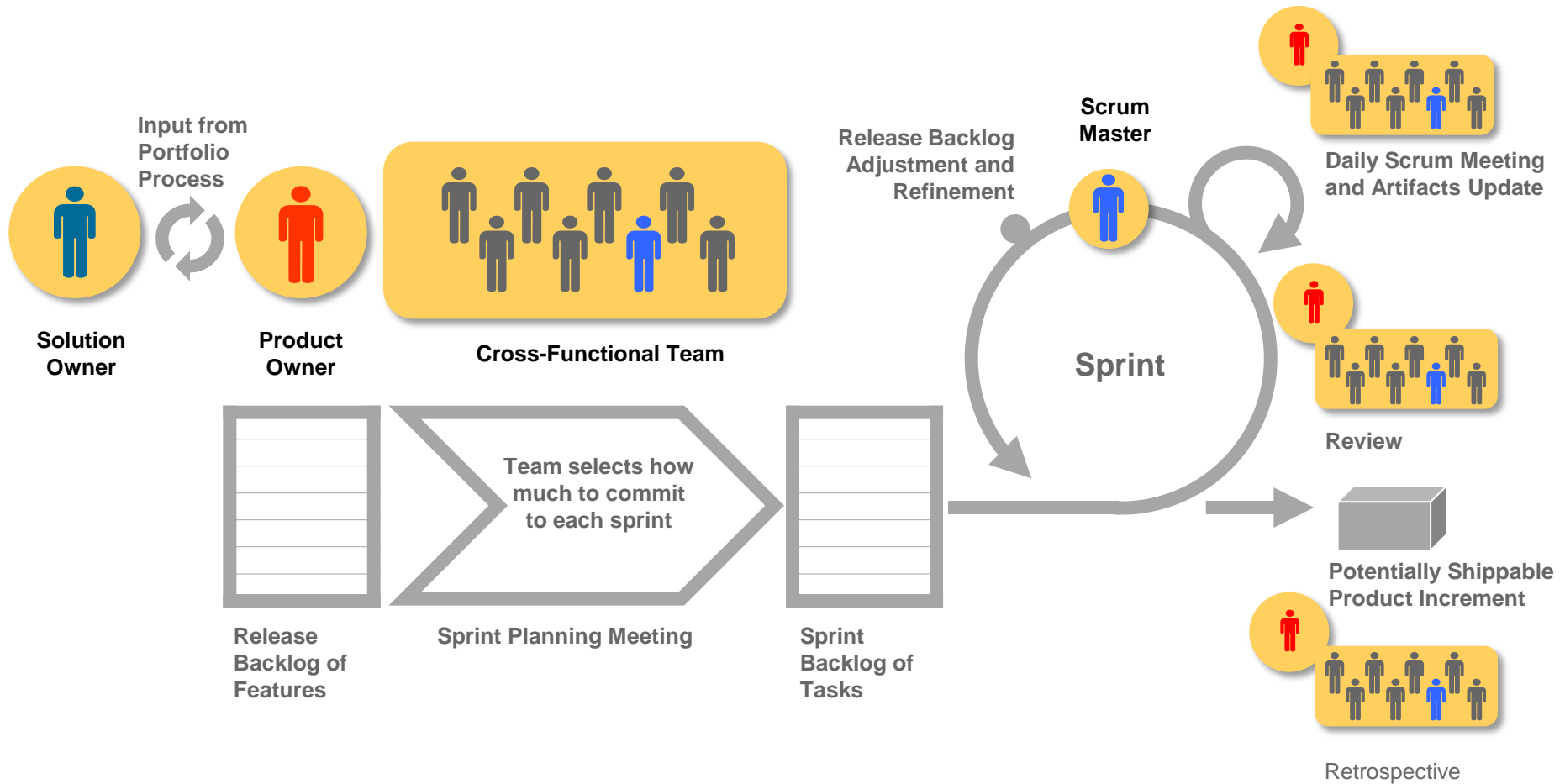
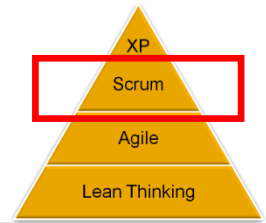


Agile Software Engineering Practices from XP

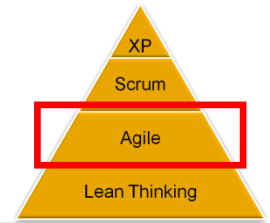
"However, concrete software engineering techniques are among the key success factors in agile software projects" (Chow and Cao, 2008).



On the Team Level, We Apply Standard Scrum



Agile Manifesto (source: agilemanifesto.org)

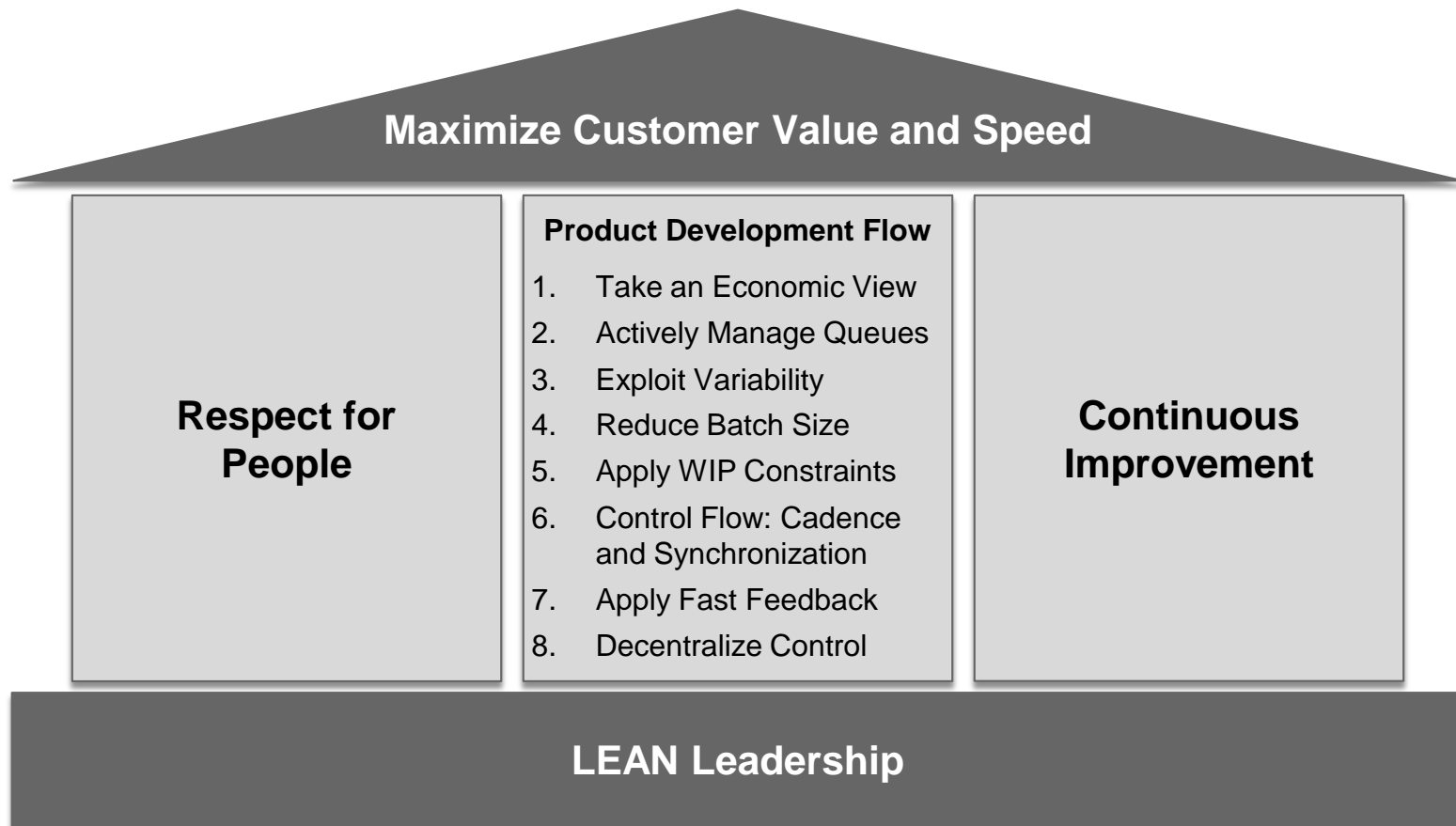
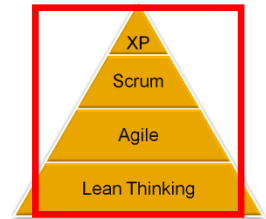


We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

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

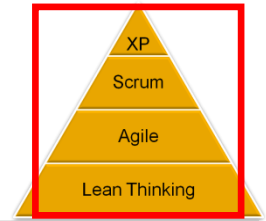
That is, while there is value in the items on the right, we value the items on the left more.

SAP's Lean Thinking House



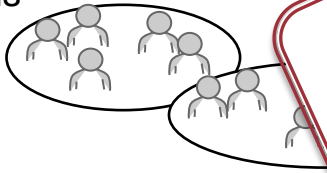
Adjusted and derived from Derived from (c): Toyota Production System (2004) , Larman and Vodde (2009), Dean Leffingwell, Agile software requirements (2011)

SAP's Lean Approach – Key Principles



Split your organization

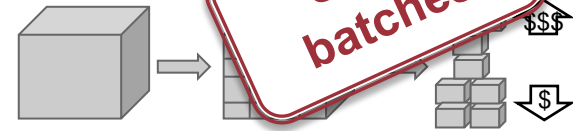
small, cross-functional, self-organizing teams



Decentralize control with alignment

Split your work

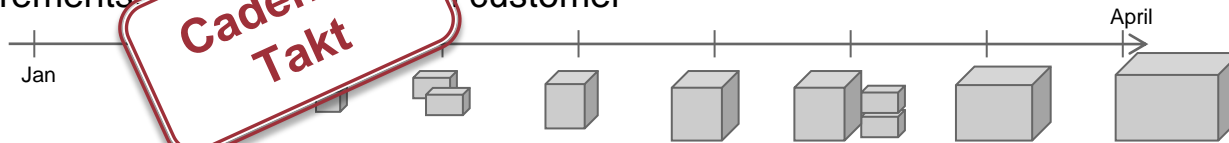
small, frequent releases – small batches – small, frequent releases – small batches – small, frequent releases – small batches



Small batches

Split time

fixed-length iterations (1-4 weeks) deliver potentially shippable increments for the customer



Cadence/Takt

Optimize the release plan

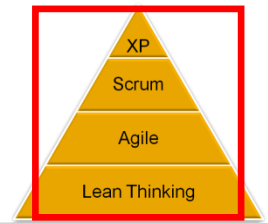
optimize release priorities in collaboration with the customer based on insights gained by inspecting the release plan after each iteration

Flow-control

Continuously Improve

retrospective after each iteration

SAP's Lean Approach in a Nutshell



Instead of a **large group**
spending a **long time**
building a **big thing,**

we have **small teams**
spending a **short time**
building **small things.**

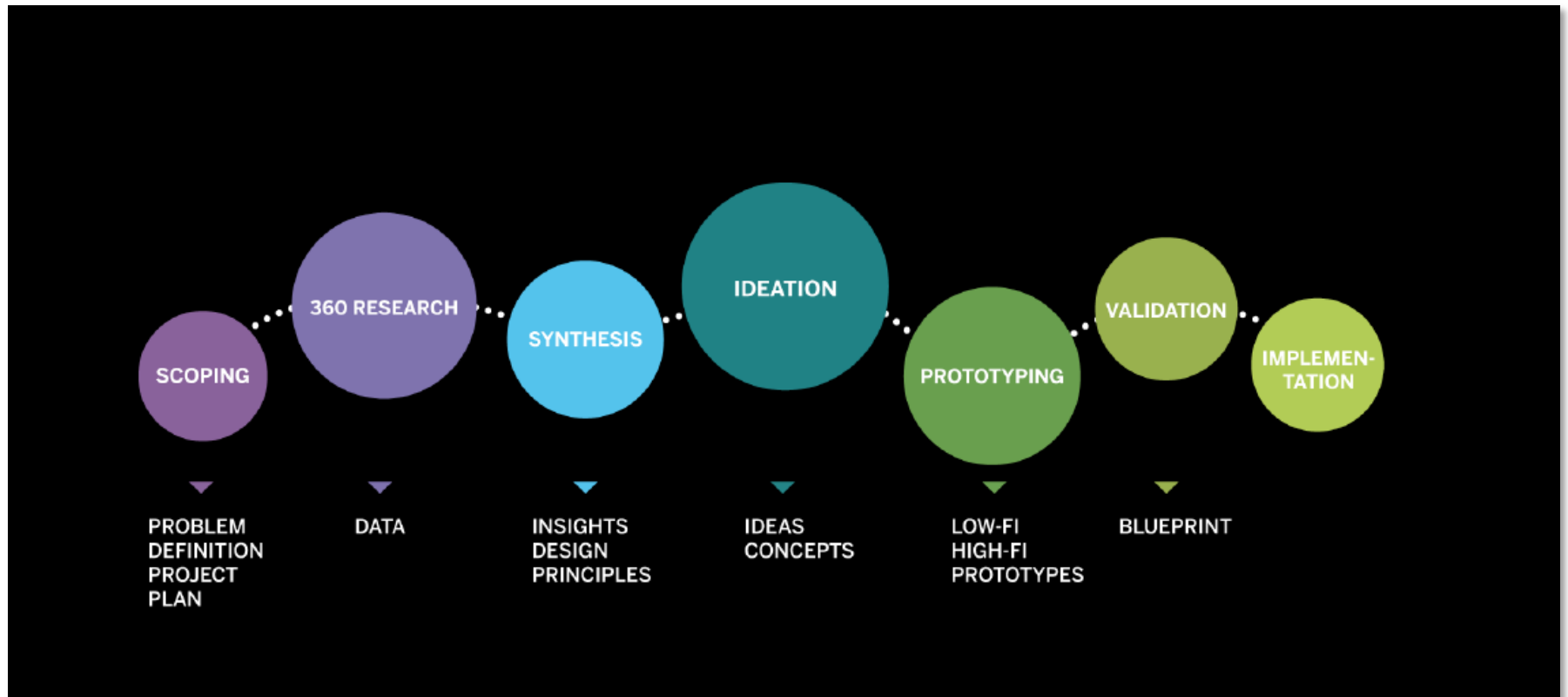
...while **integrating regularly** to see the whole.

Here comes Design Thinking

What is Design Thinking in the First Place?

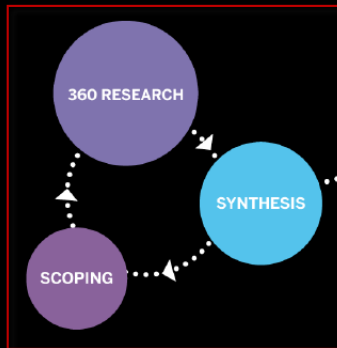


Design Thinking Follows a Basic Process



Iterations

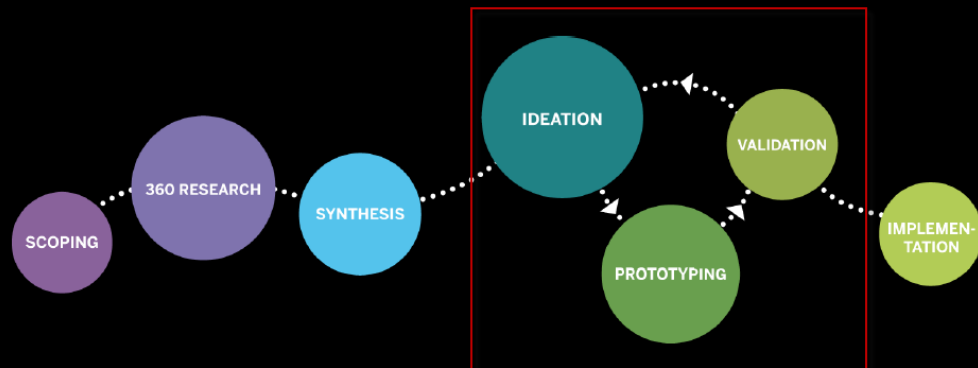
Design Thinking Overview – Scope Iteration



Problem Space

Solution Finding

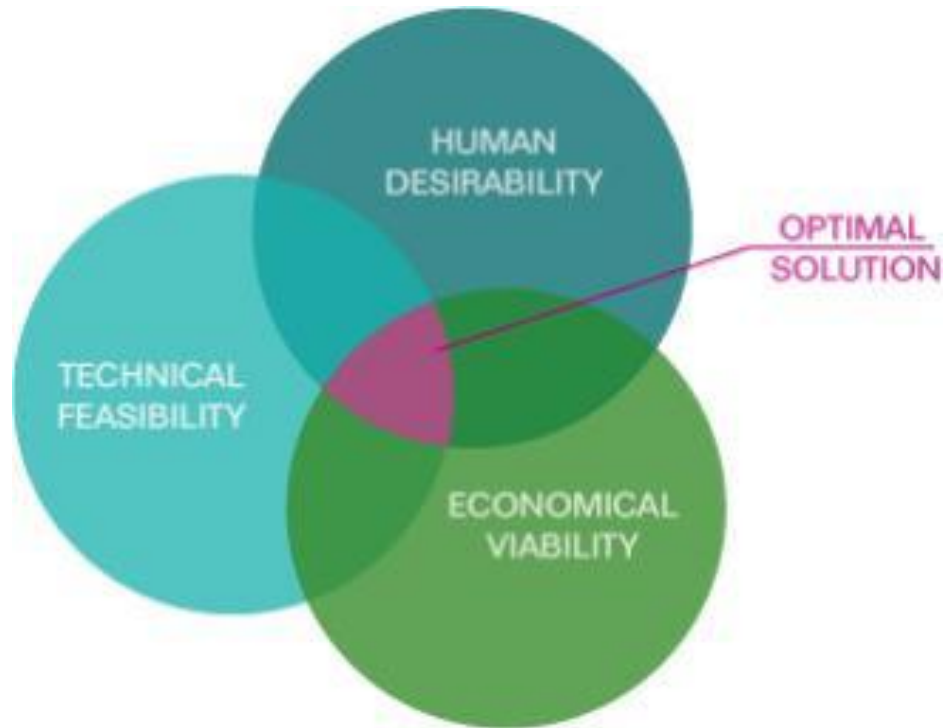
Design Thinking Overview – Prototype Iteration



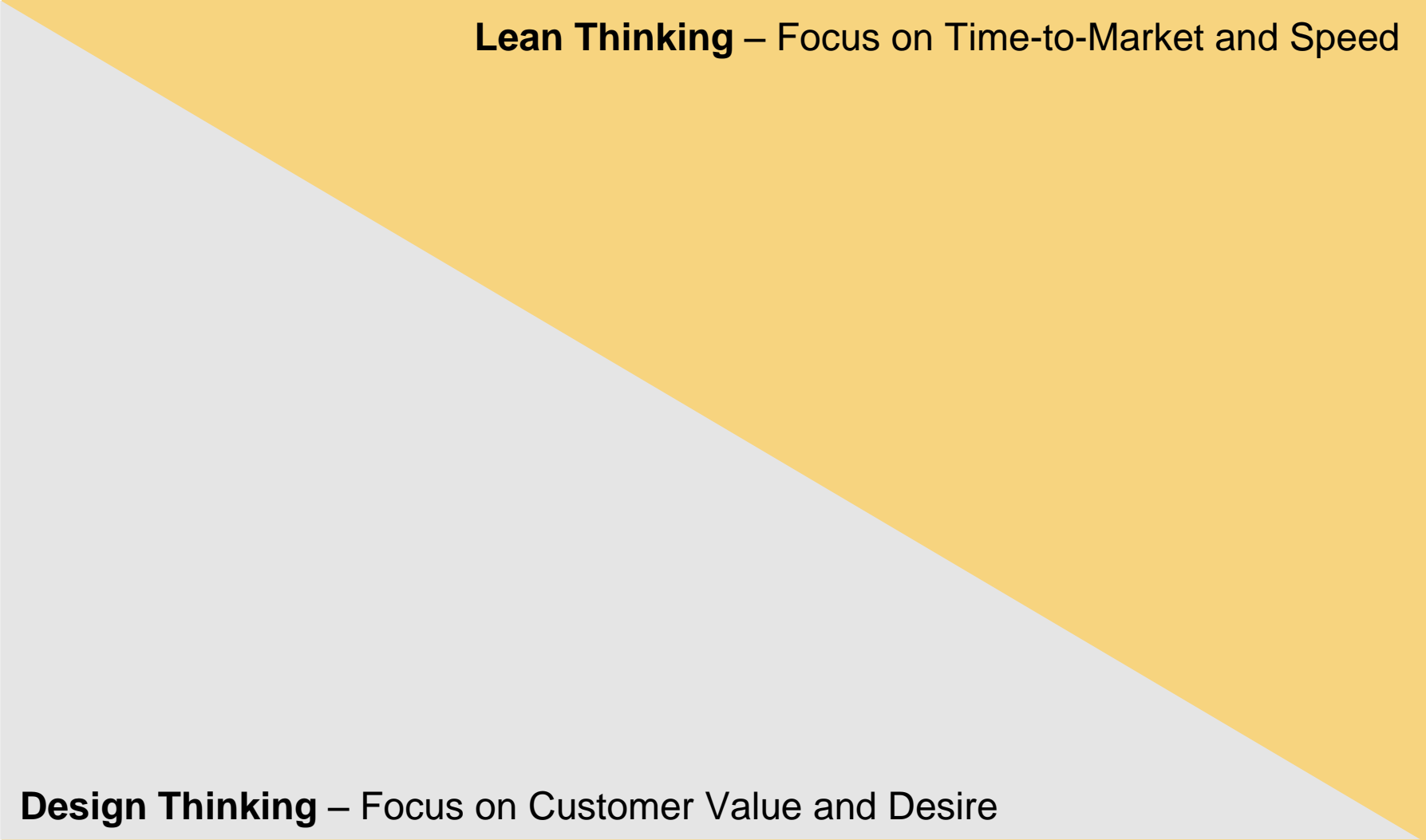
It's NOT just a Process

Bringing together a good
approach, with the right **people**,
in the right **environment**.

Design Thinking Value Proposition



Design Thinking and Lean Can Complement Each Other



Lean Thinking – Focus on Time-to-Market and Speed

Design Thinking – Focus on Customer Value and Desire

(Lean + Design) * Thinking = STOP TO THINK!

Lean Thinking

- **Stop to** find out which development processes induce direct value
- **Stop to** eliminate waste
- **Stop to** continuously improve...

Design Thinking

- **Stop to** observe the customer
- **Stop to** develop empathy
- **Stop to** ideate and restart...



SAP's Sailing Program

How Can Both Thinking Schools be Combined and Applied in Practice?



Design Challenge and Methodological Approach

Challenge: *How might we provide software for sailors and coaches that helps them to perform better and win at the Olympic Games 2012?*

First Goal: Develop product vision and backlog for sailor and coach solution based on user research conducted at home and at actual venue (Kiel)

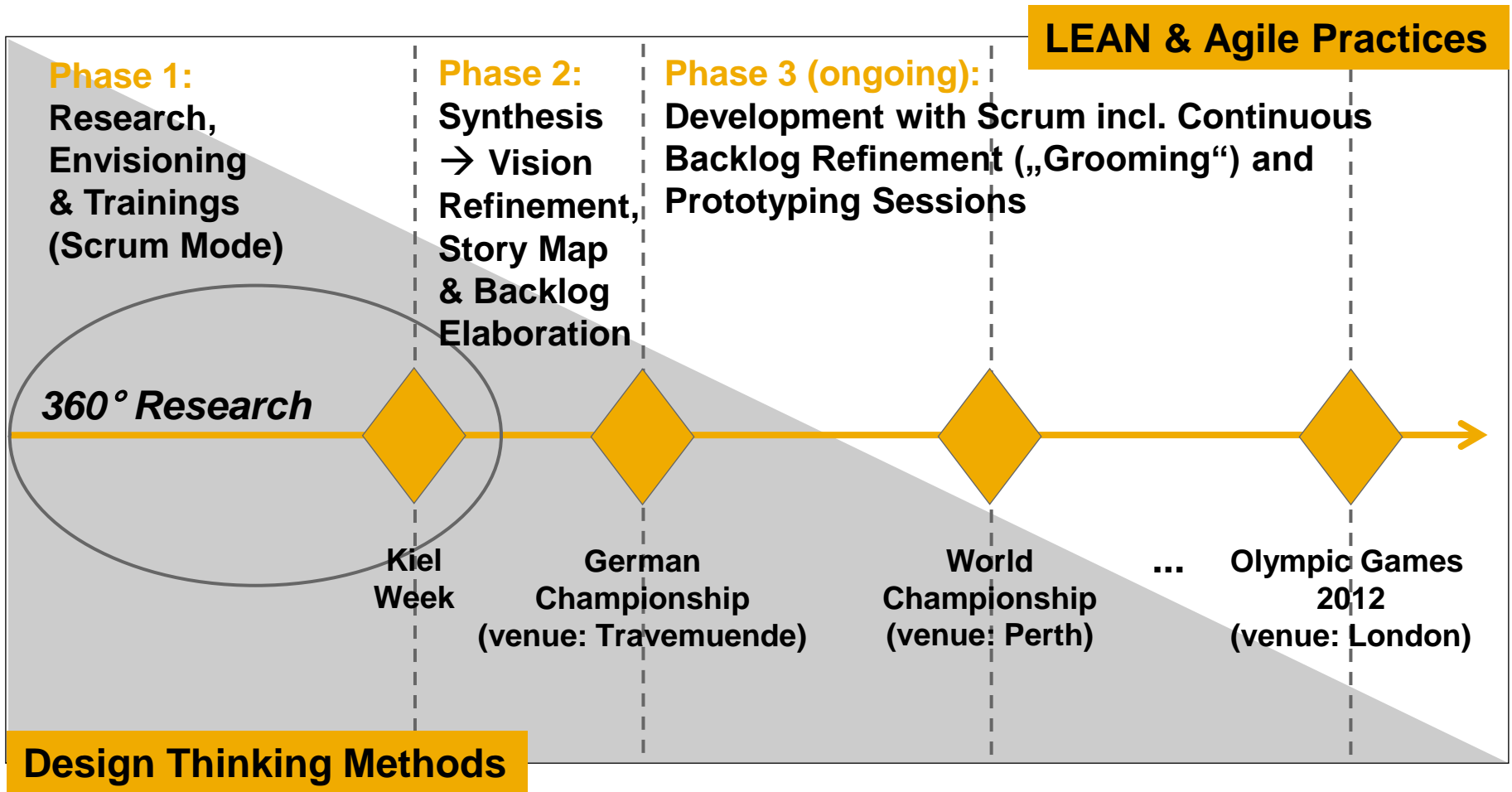
Method: Design Thinking plus Lean and agile software development practices at SAP

Team:

TIP Innovation Center development team, UX and mobile experts, chief dev architect, mentors for Design Thinking, LEAN, and agile methods (us)



Our approach combines design thinking and lean/agile...

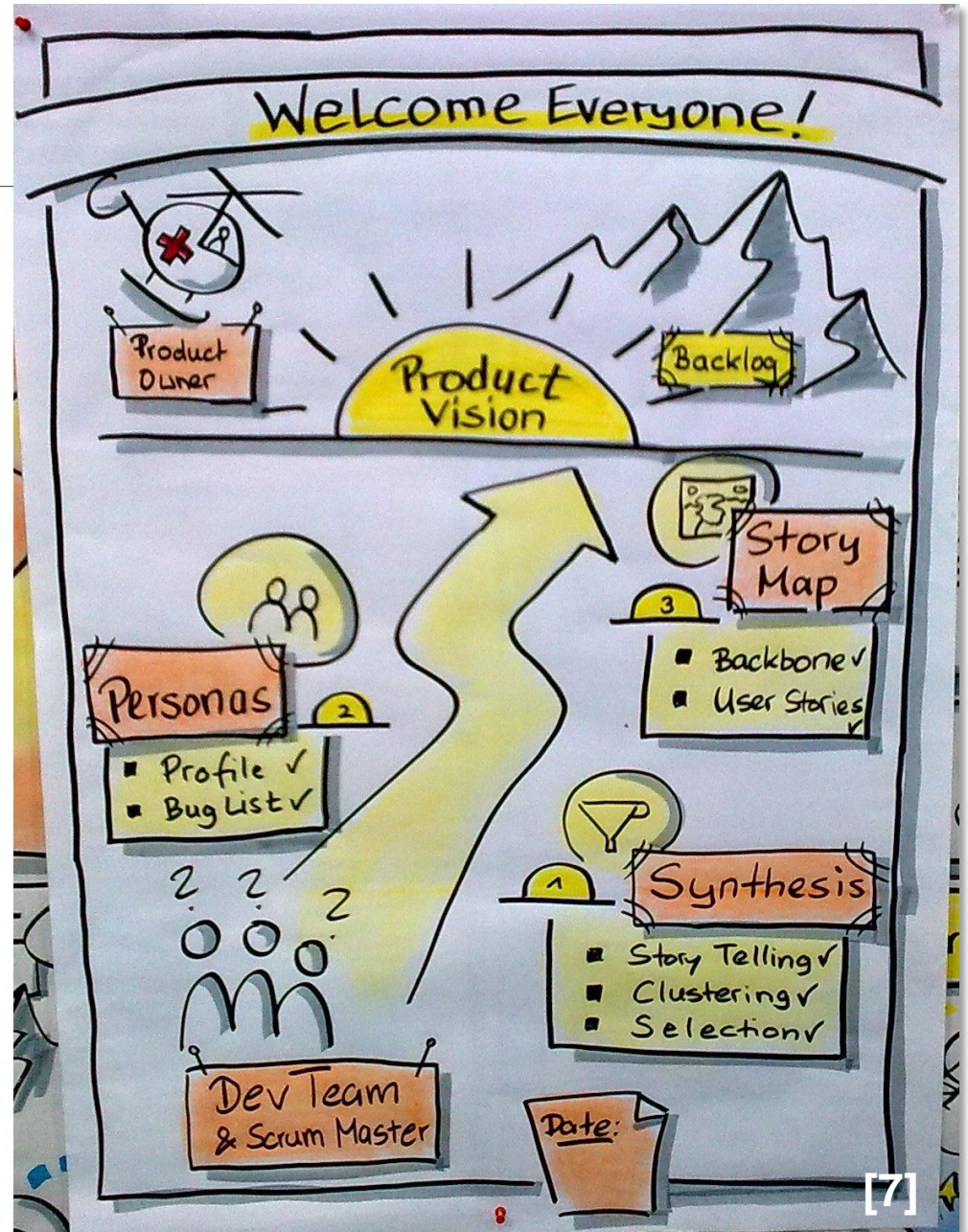


Our Goal: Conduct 360° User Research and Understand...

Some Facts & Figures...

- 15 **interviews** with various sailors, coaches, and other experts
- **Observation** of race preparation at venue site
- **Immersion** by actual sailing
- Study of **article** and **books**
- Sailing simulation **games**
- Scanning of existing sailing content on **web sites**
- ...

Post-Kiel Workshop



Synthesis – „Story Telling“

Goal: capture and channel experience, empathy, and spirit from user research at Kiel Week in order to develop product vision, personas, and first prototypes

Approach: actual statement on „post-its“



Post-race Analysis

I often make **analyses**
of the **winning**
boat

Robert, Bayerischer Landestrainer, Johannes

3

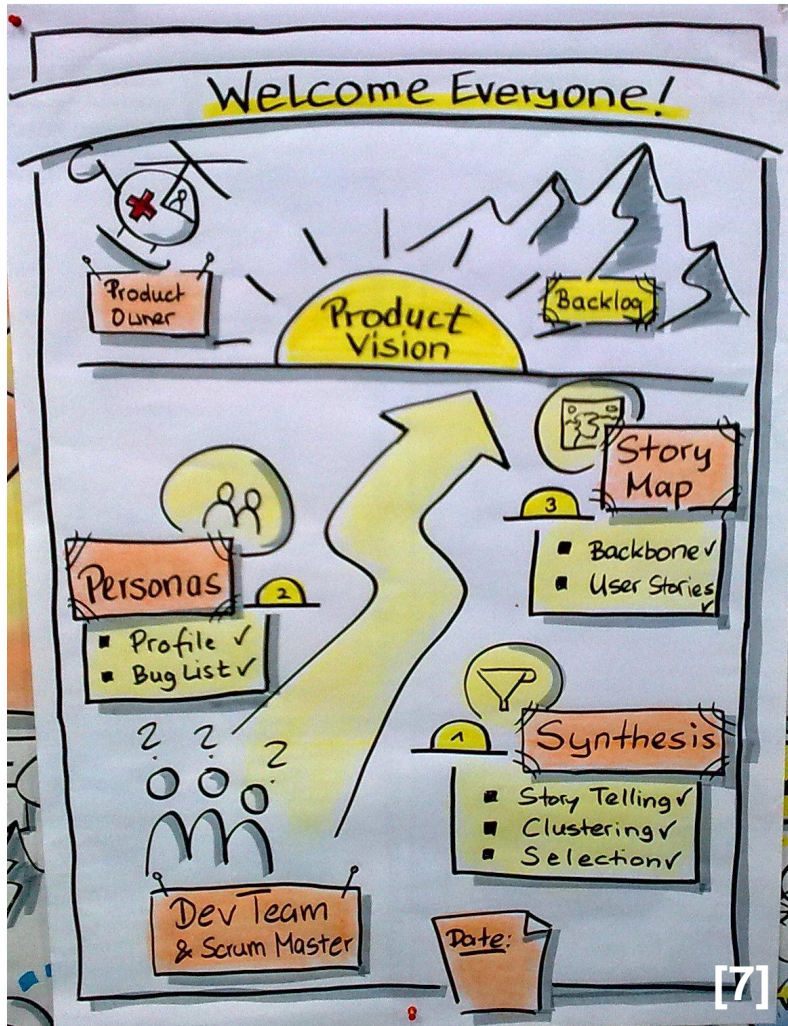
Sharing of information

We would **not** share this
information **inter-**
nationally, but among
us. Those who give should also get.

Michael, 470 Trainer, Daniel&Frederik&Johannes

9

Results of Post-Kiel Workshop



- We had a clear **product vision and backlog** – aligned with customer
- The team decided on a **working model** (Scrum, 3-week sprints, etc.)
- **Story mapping** helps us to see the whole and continuously refine it
- **Personas** keep us focussed on the users and facilitate communication within the team
- **Paper prototypes** and other cheap artifacts enable fast feedback from customers and colleagues

Feedback from the Sail Better Team (Quotes)

“We had no clue at the beginning and were ready to develop after Kiel...” (SM)

“What? We only do design thinking at the beginning – let’s do it each sprint!” (Dev)

“Our story map helped me to communicate with our customers” (PO)

“Having the team write the user stories based on Design Thinking was a tremendous boost!” (PO)

“What the team built goes way beyond our own thinking and will improve our preparation for the Olympic Games 2012.” (STG)

Conclusions and Roadmap



“Design Thinking and Lean Development helped us creating and delivering products that customers love”

- Both “thinking schools” go hand in hand
- **Design Thinking** rather focuses on *building the right products*, i.e. generating **desire** on the customers’ side
- **Lean Thinking**, including agile practices, tells us how to *build the product right*, i.e. how to achieve **speed** at scale
- Sail Better shipped a first version of the software for the German sailing championships in Travemuende (Sept 2011)
- Upcoming events: World Championships & Olympic Games



Thank You – Any Questions?

Contact information

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Attribution and Sources (all last visited 16.11.2011)

[1] SAP Sailing Program

[2] SAP: <https://www.sapbrandtools.com/content/home.php>

[3] stock.xchng: <http://www.sxc.hu/photo/1336338>

[4] SAP: <https://www.sapbrandtools.com/content/home.php>

[5] stock.xchng: <http://www.sxc.hu/photo/622699>

[6] SAP Sailing Program

[7] Tobias Hildenbrand: <http://software-requirements-engineering.blogspot.com/>