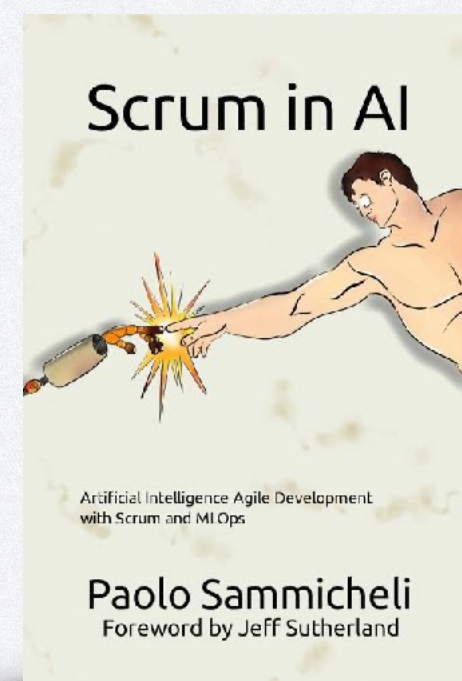
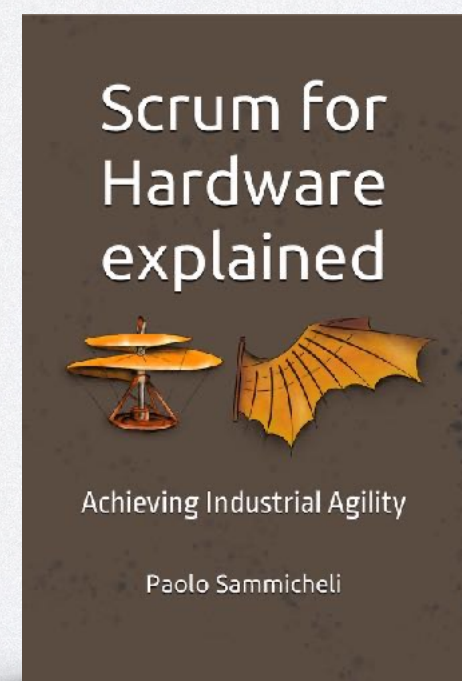
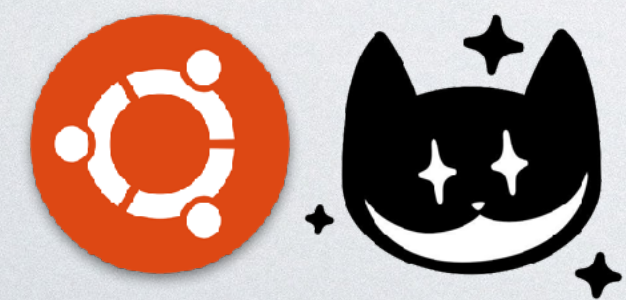


Reducing Time to Market in Hardware Development with Scrum

Pietro Fiorentini Case Study

Paolo Sammicheli

Entrepreneur, Author, Speaker, Scrum Trainer & Coach



Certifications



Registered Scrum Trainer
by Scrum Inc.



Scrum@Scale Trainer
by Scrum Inc.



Lean-Agile
Procurement Trainer



Management 3.0
Licensed Facilitator



IDF Design
Coach

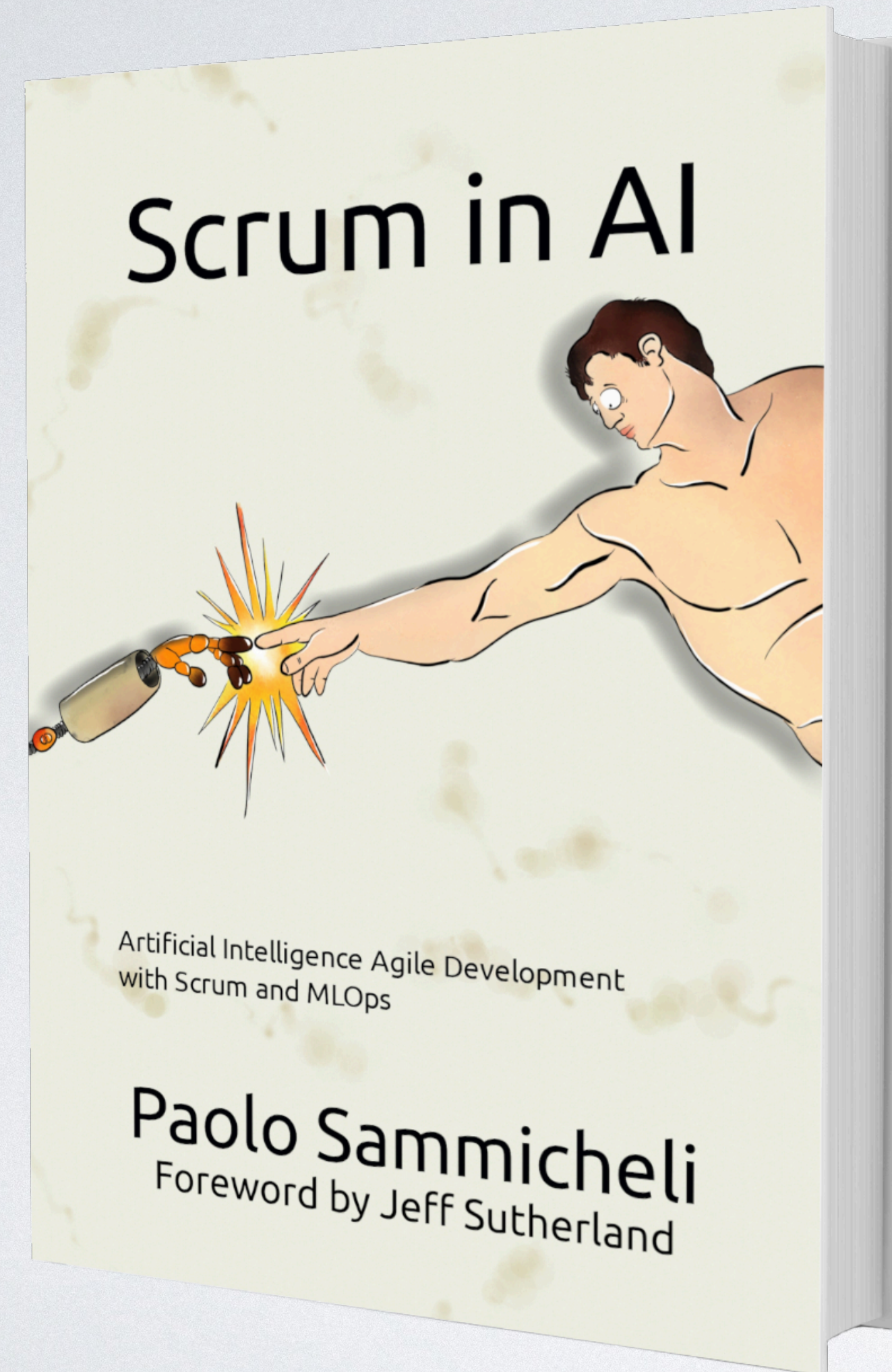


Licensed
NLP Coach

Main Case Studies



Artificial Intelligence Agile Development with Scrum and MLOps



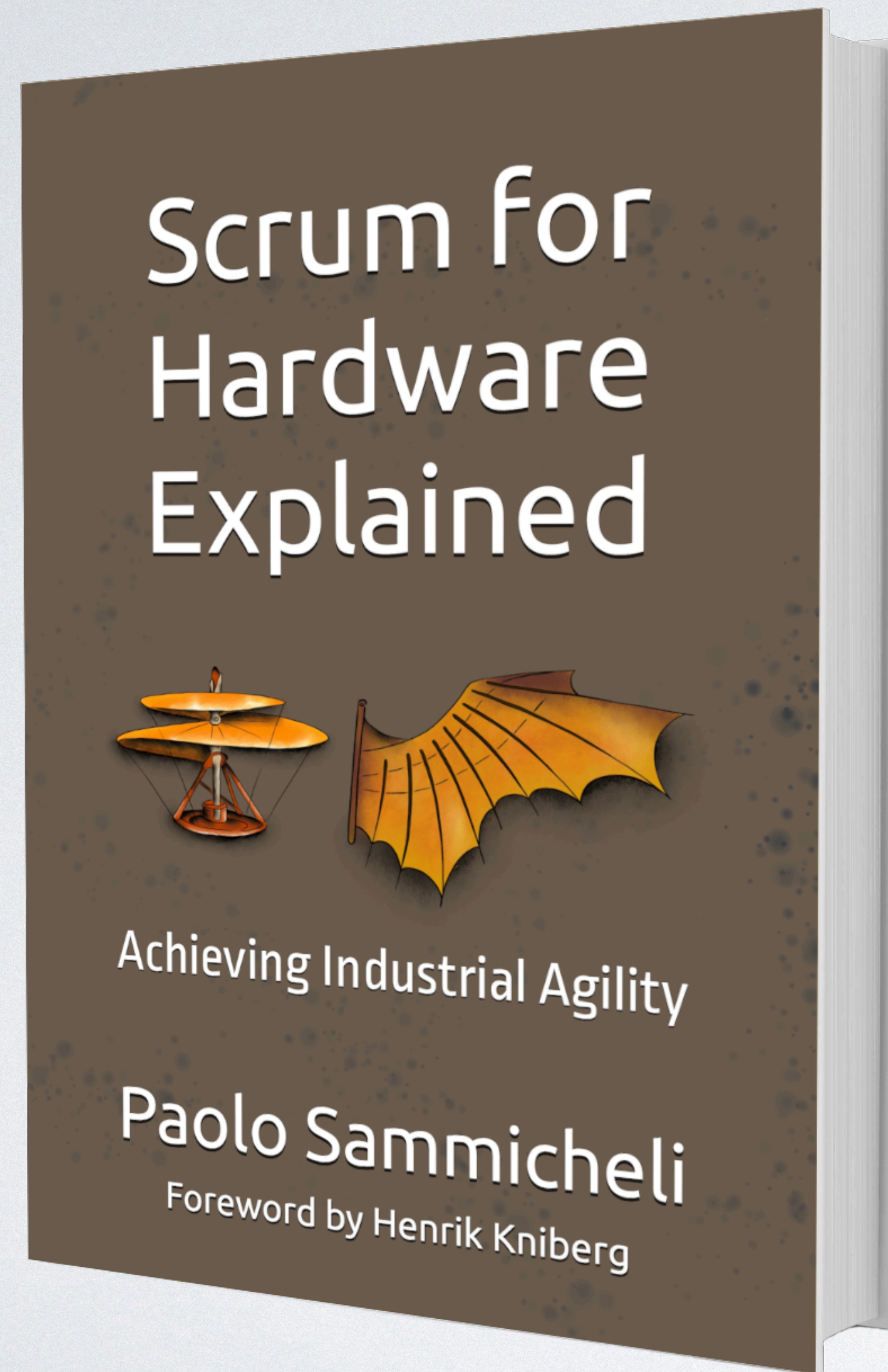
How to develop an Artificial Intelligence application? With Agile and Scrum you will get team spirit, frequent feedback, empirical control, stakeholder involvement and developers motivation. The book includes Agility foundations, the engineering practices, real examples and suggestions on how to implement them in your company. **Foreword by Jeff Sutherland**



«Because Scrum emerged from a hotbed of AI concepts, implementations, and companies, it is with great pleasure that I recommend reading this new book from one of the best Scrum trainers in the world, Paolo Sammicheli. His keen insight into the topic and his ability to show how Scrum can produce better AI solutions brings the relationship between Scrum and AI full circle into contemporary times.»
- Jeff Sutherland

www.scrum-ai.com

Scrum for Hardware Explained



"**Scrum for Hardware Explained - Achieving Industrial Agility**" is your ultimate guide to Agile and Scrum, specially tailored for the manufacturing industry. This comprehensive guide takes you from the basics of Agile and Scrum through detailed Scrum patterns to practical applications for your industry. Whether starting your transformation journey, managing multiple teams, or preparing for production, this book equips you with the knowledge and tools to navigate confidently. As an '**Ultimate Edition**,' your purchase is not just a book but a lifetime of learning; with this special edition, you'll receive all future updates and **free access** to "**Scrum for Hardware**," the first significant publication in the world on the topic. Twice the reading at half the price!



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Scrum for Hardware is not just a must read, it's a must know for all those looking to get twice the work in half the time in manufacturing.

www.scrum-hardware.com



Pietro Fiorentini Spa

We are an international Company that designs, manufactures and installs equipment, complete solutions and services for Oil and Gas treatment, metering and regulation.



Our Numbers

- Over 80 years of history
- Export started in 1956
- Over 1700 employees worldwide
- 6 production facilities in Italy
- 7 production facilities worldwide
- Sales offices located in Europe, America, Africa and Asia

Why Lean and Agile together

- With Lean we achieved Efficiency
- With Agile we want to improve Effectiveness



An organization that simultaneously manages the existing business model and its change

Pietro Fiorentini is serious about Lean

- Lean Production Lines everywhere
- Value Streams + Organizational Functional Units
- Yearly company-wide Lean Transformation Plan
- 1 Kaizen week / month, 15 teams (**3000+ man-hour** per month!)
- Japanese Sensei overlooking the Kaizen process
- 5S for workstation efficiency
- 3P methodology for hardware prototyping
- They've been doing this for two decades
- Lean culture deeply ingrained in the organization



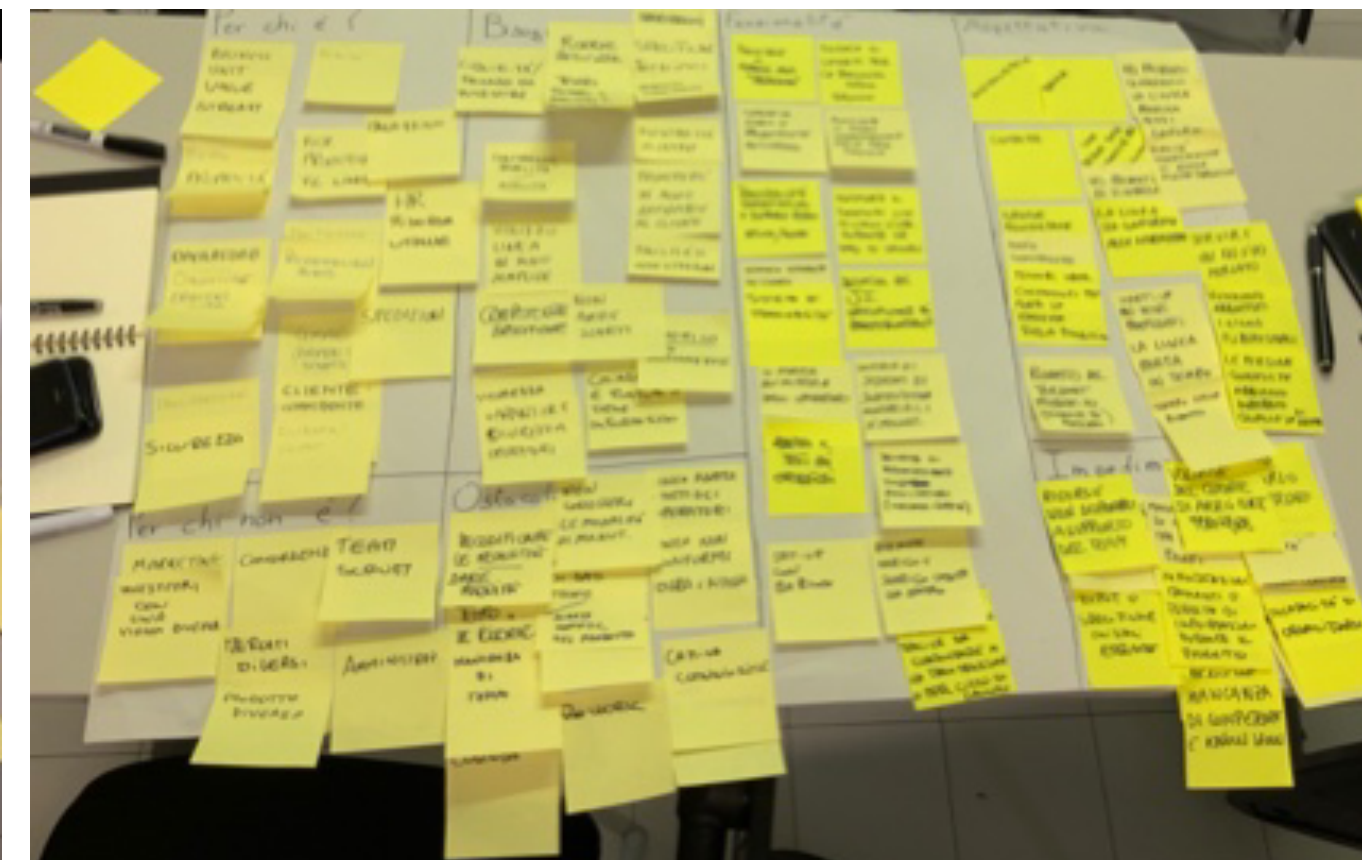
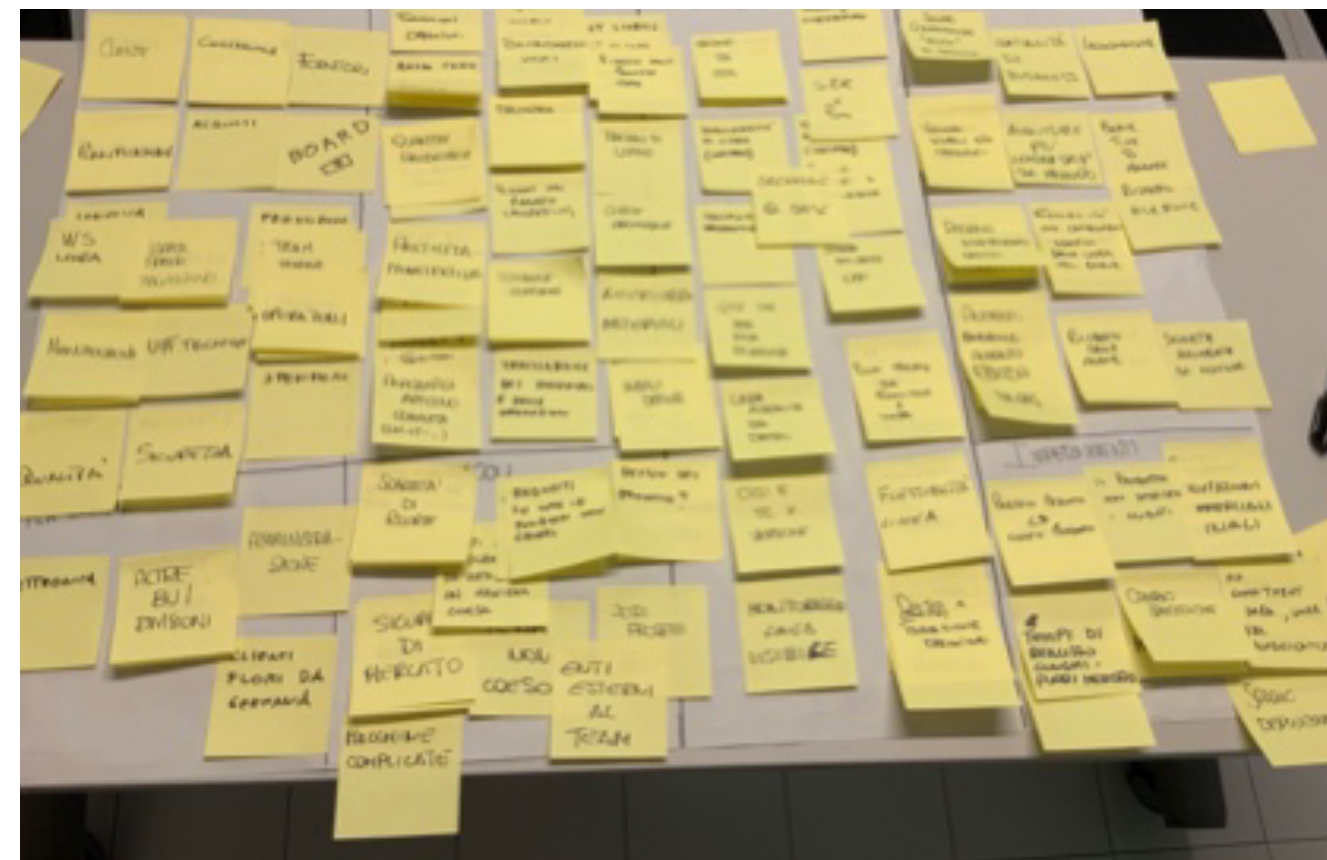
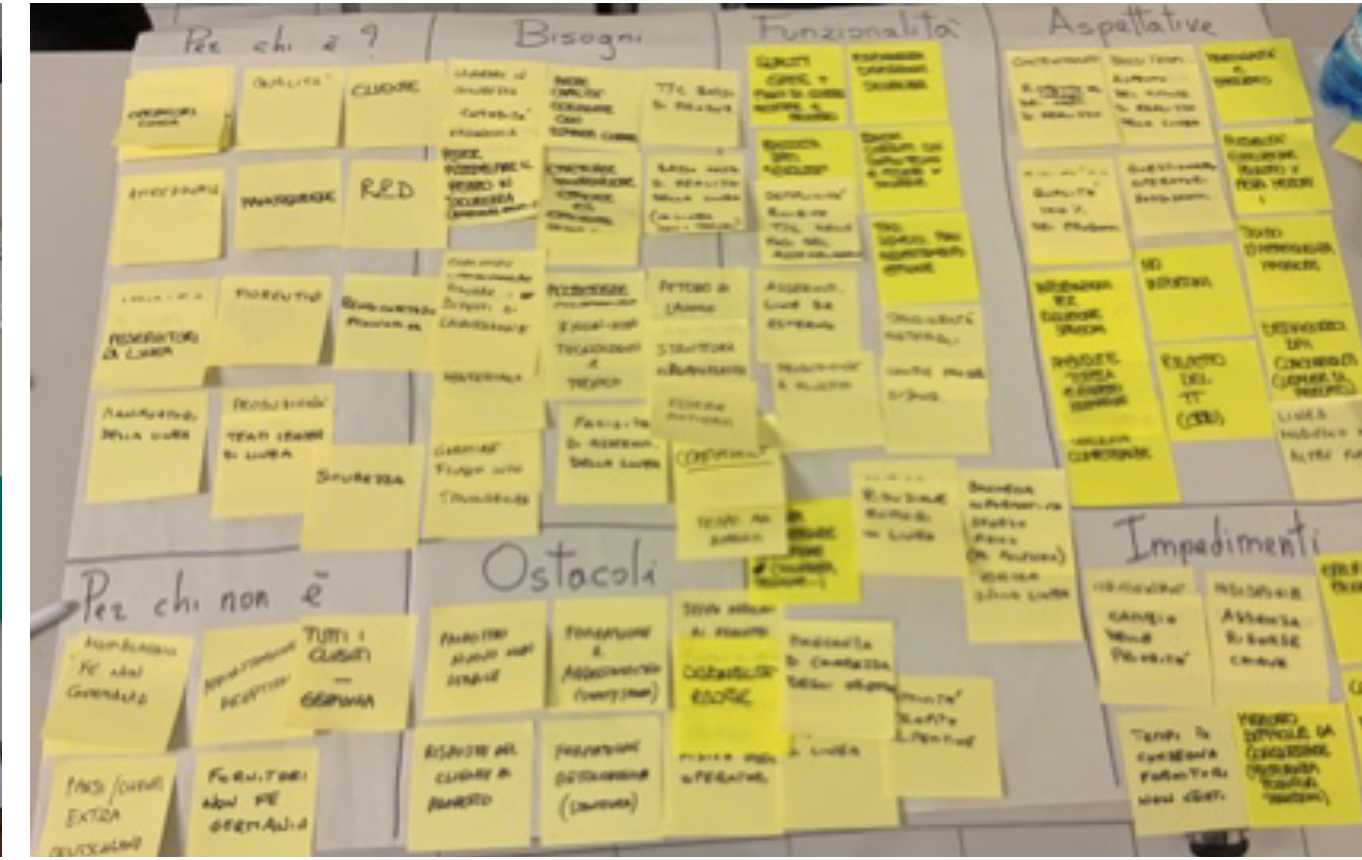
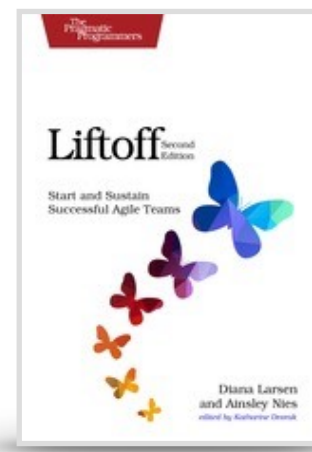
Context

The selected Scrum Team Product was the **Production Line** of a New Gas Pressure Regulator.

The New Gas Pressure Regulator (in the picture) was develop by another Team in another site and started before the production line.



Team Lift Off



Basic Canvas

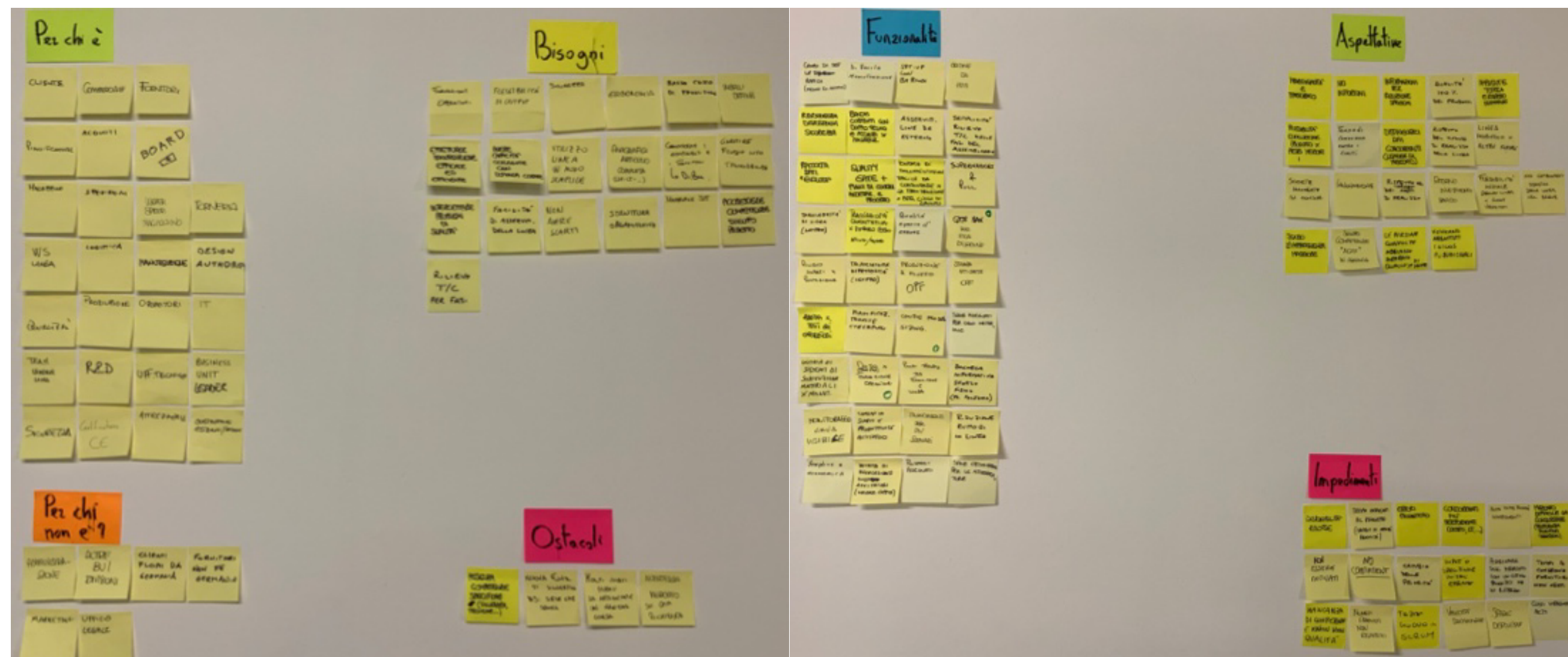
- The brainstorming occurred in 4 different table. All the ideas then have been then merged into a single Canvas explaining the reason why of the new product.

The Basic Canvas		Project:	Date:
For Who is it?	Needs and Desire	Solution	Expectation
For Who is not?	Obstacles	Alternatives	Risks

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The Basic Canvas, by Paolo Sammiceli - <http://paolo.sammiceli.it>
Inspired by the work of Alex Osterwalder, Ash Maurya, Roman Pichler, and others.

Free Download: <https://paolo.sammiceli.it/download>



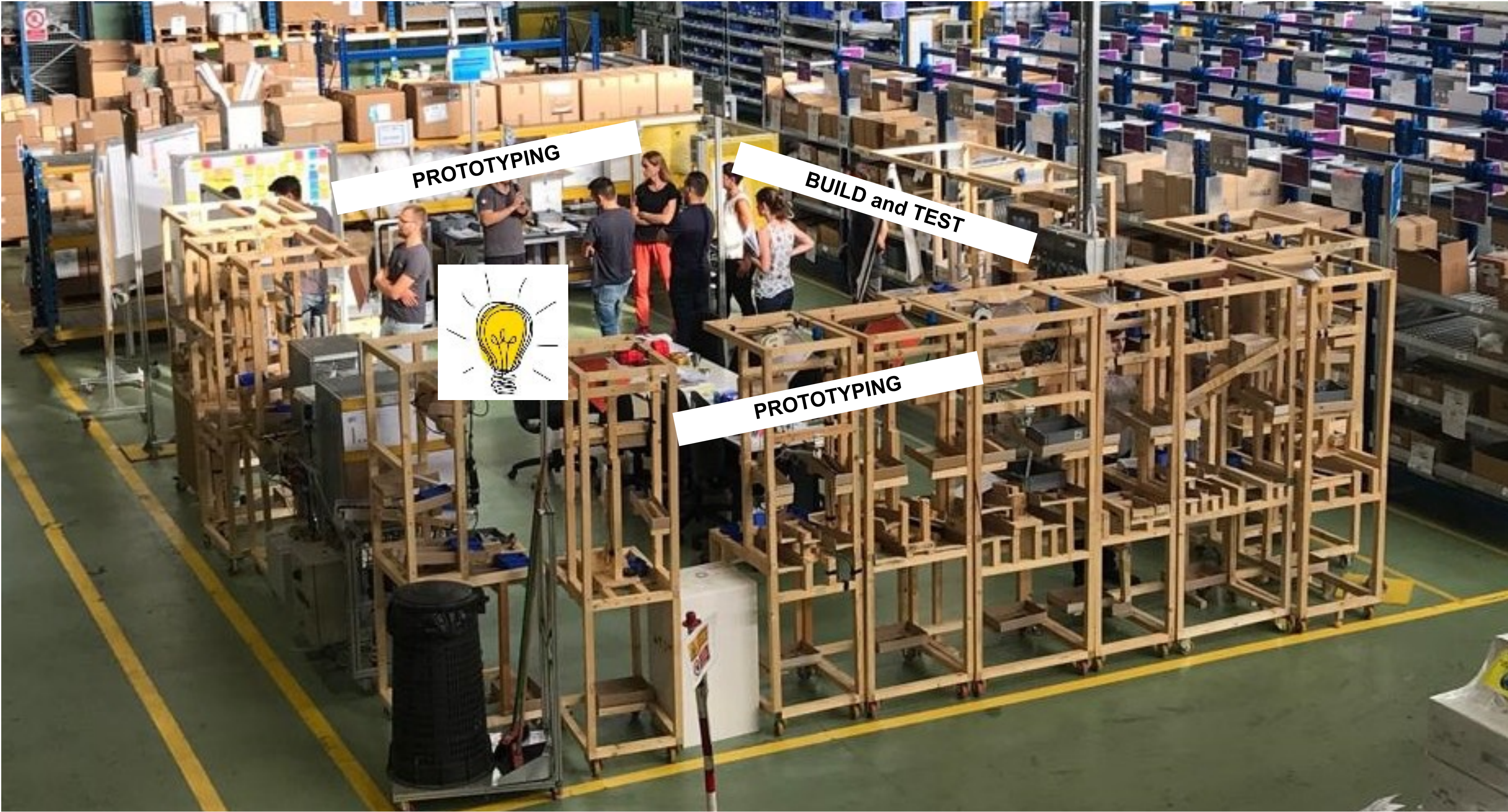


Pilot Team formed: theRollingScrums

- The existing KPO served the team as Scrum Master
- Cross functional team with representatives from: Tooling department, Maintenance and Logistics



Scrum Team Room



Incremental development with Lean 3P

«Lean 3P is an event-driven cross-functional team process.

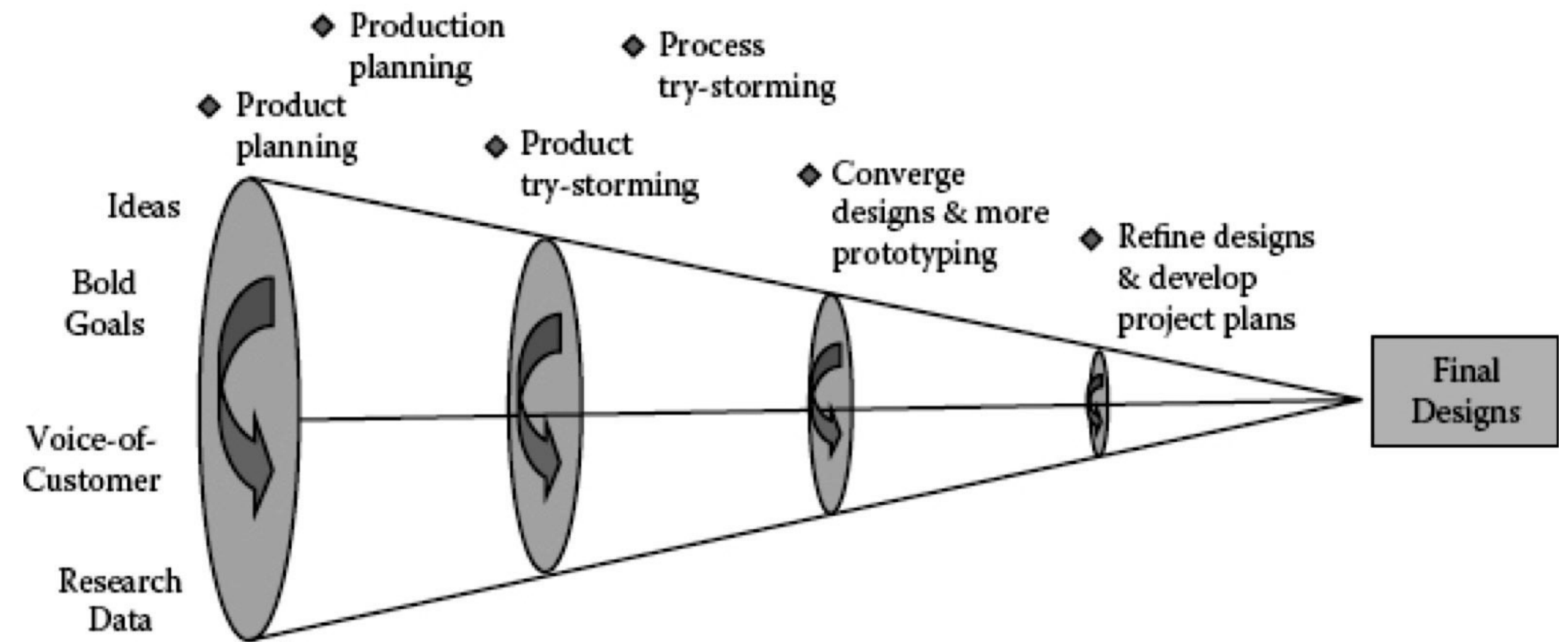
This rapid prototyping process is called *try-storming*, and it involves creation of trial designs to see how well they solve product and process challenges.

Try-storming, like the name implies, is a hands-on extension of the brainstorming process.

Try-storming is a type of prototyping that takes ideas and quickly mocks them up, so they can be evaluated physically.

(...)

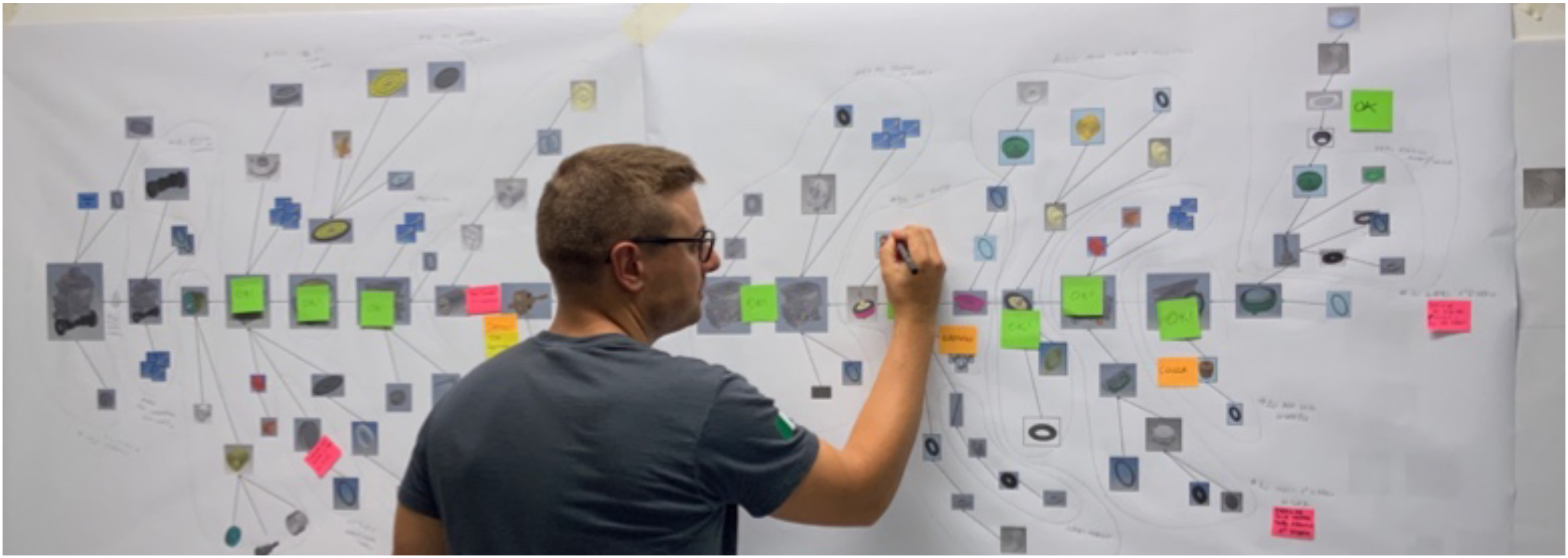
It should be inserted early in the Product Development process to align all of the many vertical functions in our horizontal value stream.»



Information	Innovation	Prototyping & Redesign	Optimization
Knowledge Gathering	Develop Alternatives	Prototyping & Convergence	Evaluation & Detailed Planning

— Extract from: *the Lean 3P Advantage*, Allan R. Coletta, 2012

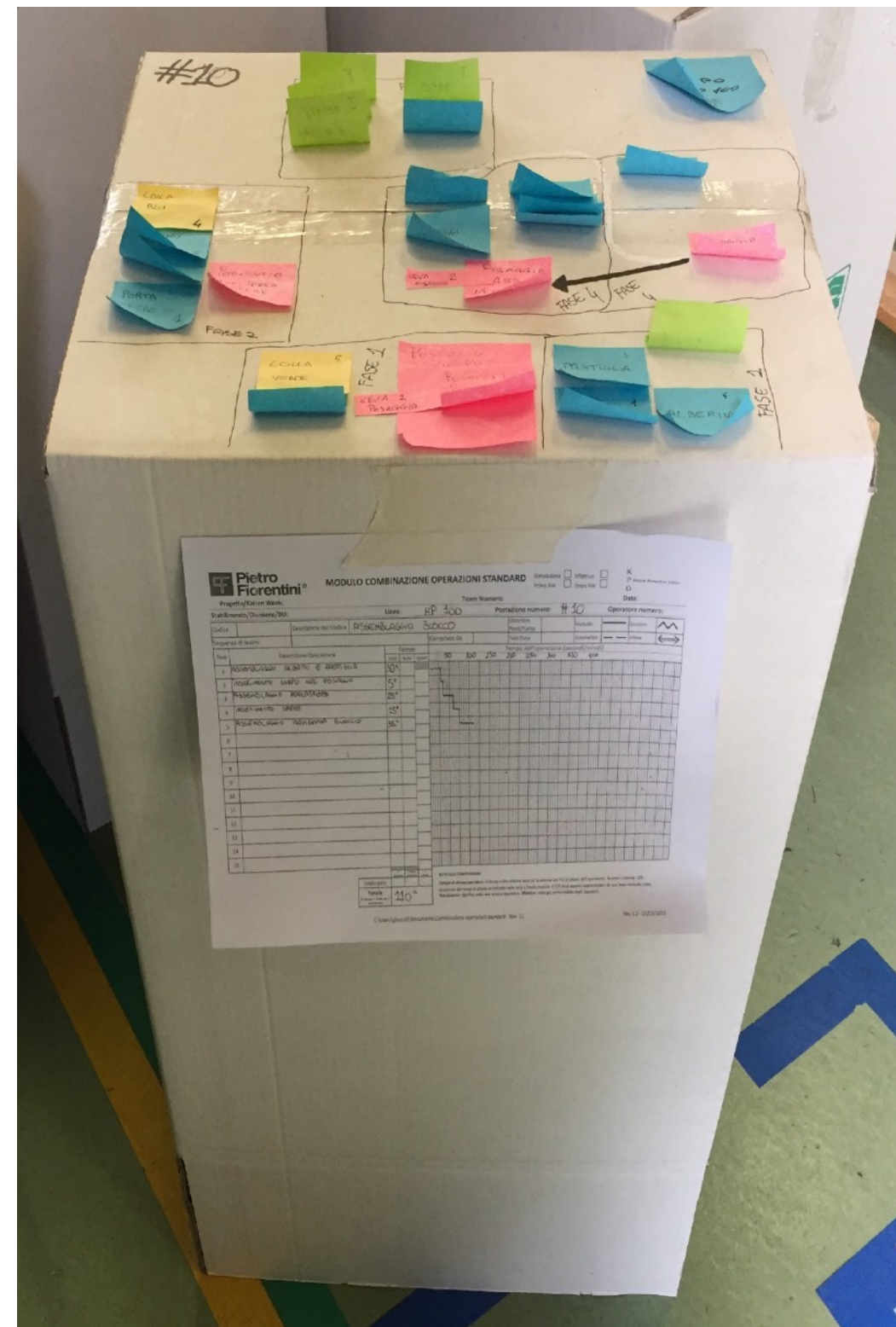
Architectural Fishbone served as User Story Mapping



Lean 3P and Scrum

- Lean 3P incremental level served as User Story's Acceptance Criteria.
- Very smooth adoption since the team members were familiar with the approach from the beginning.

x10



x50



x250



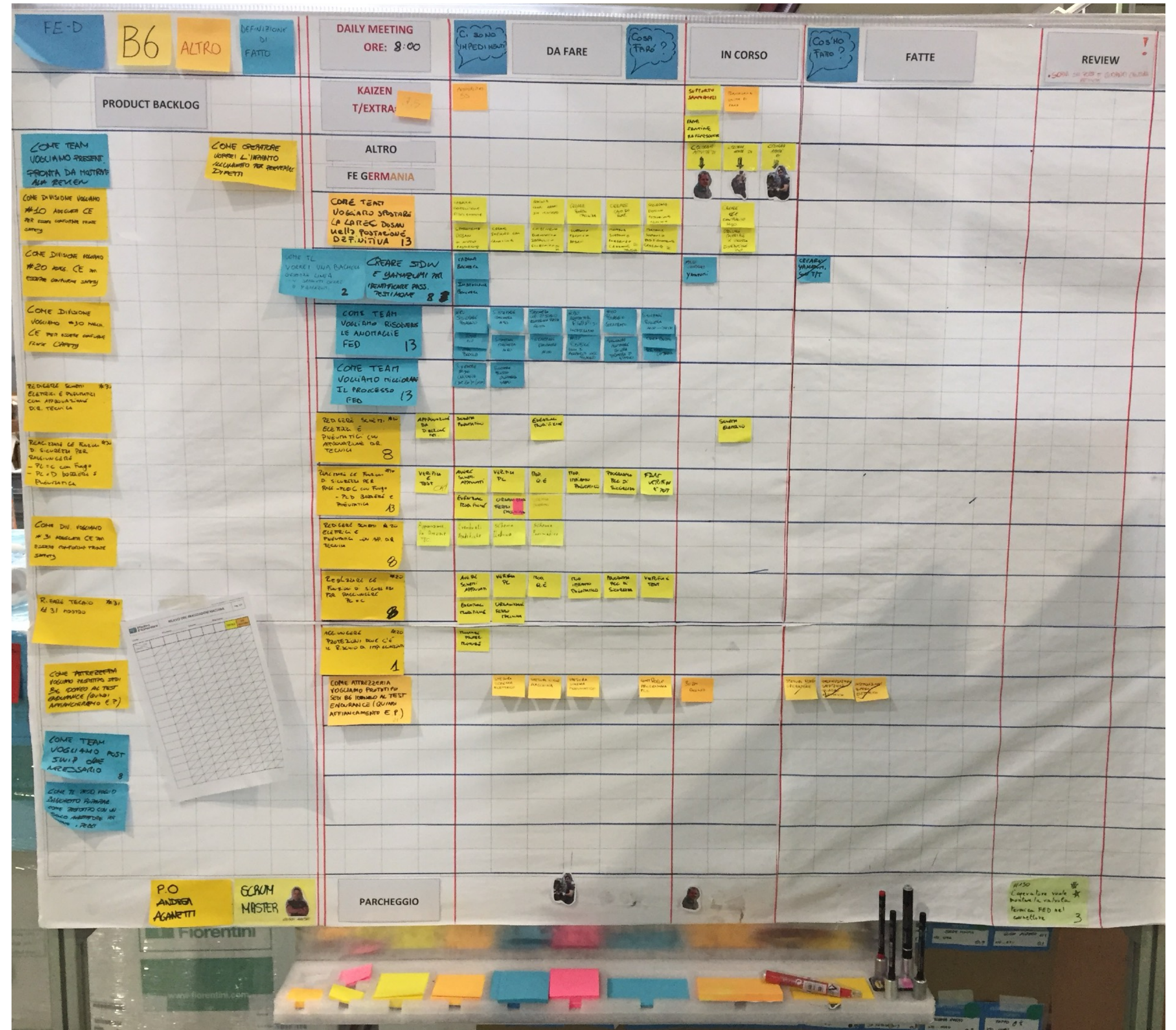
Prototype



Sprint Board



- Including everything: Features, Bugs, Chore, Interruptions and Kaizen.
- Scrum Patterns implemented:
 - Interruption Buffer
 - Scrumming the Scrum
 - Yesterday's Weather
 - Swarming



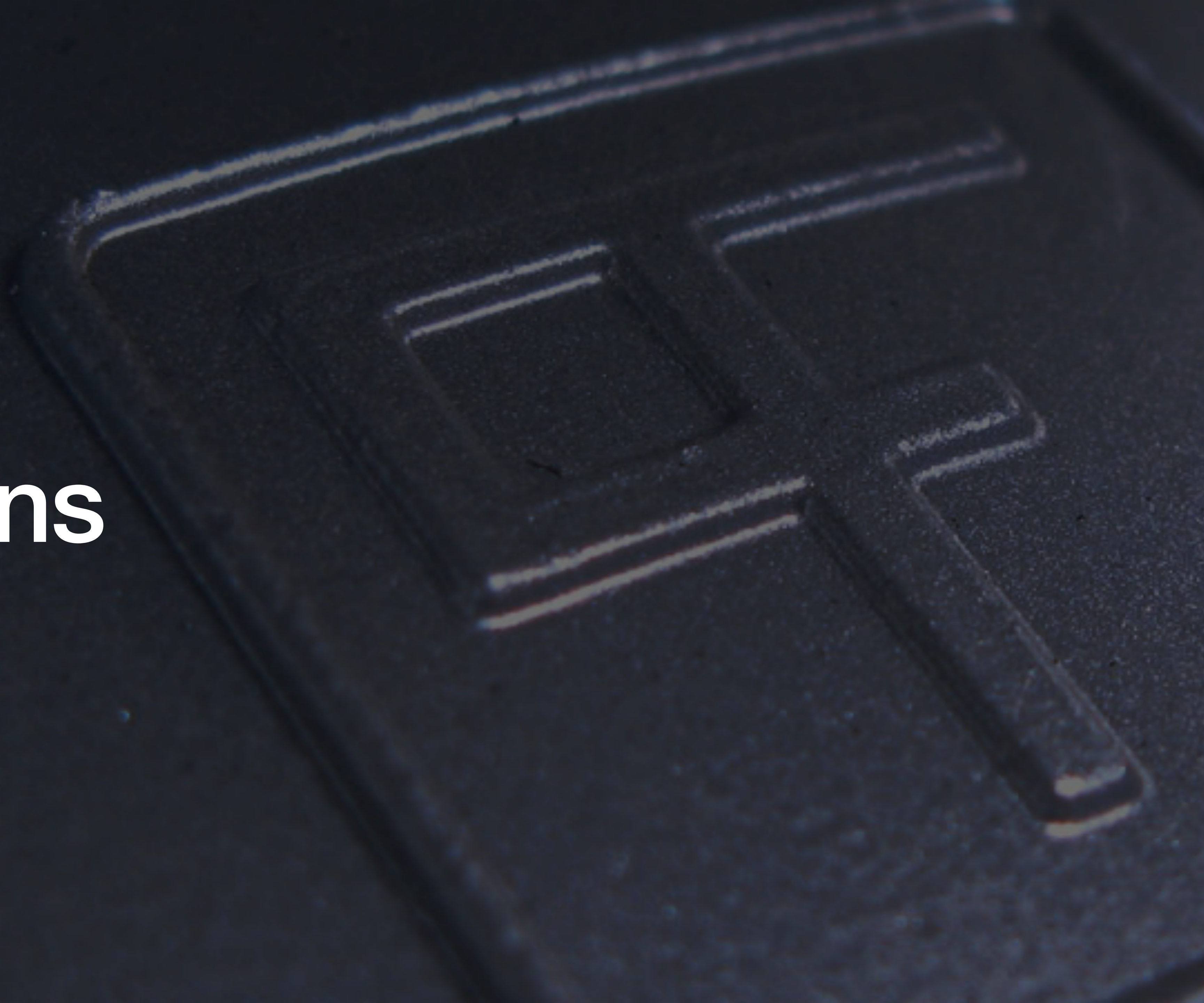
3D Printing to shorten feedback



Sprint Review



Conclusions



Benefits

- Increased know-how sharing across the Team
- Distributed Leadership
- Effectiveness together with Efficiency
- Responding to change — with a stable team, the time required to change priorities or to start a new project moved from weeks to hours
- The Sprint Review structured the feedback in a single moment, increasing stakeholders alignment and reducing risks
- Easier planning with a Single Scrum Board that contains everything: new implementations, fixes, interruptions

Points of Attention

- Better to involve the main stakeholders from the beginning so they enter in the right mindset of cadence and early regular feedback.
- Initial team composition needs to be taken into consideration, since later changes may impact on the performance and the morale of the team
- Management commitment is essential to allow team members to be fully dedicated to the SCRUM team