

Introduction “Swiss Smart Factory” – INDUSTRIE 4.0 FROM LAB TO INDUSTRIAL SUCCESS

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Head of Swiss Smart Factory
Research Director I4.0/IoT

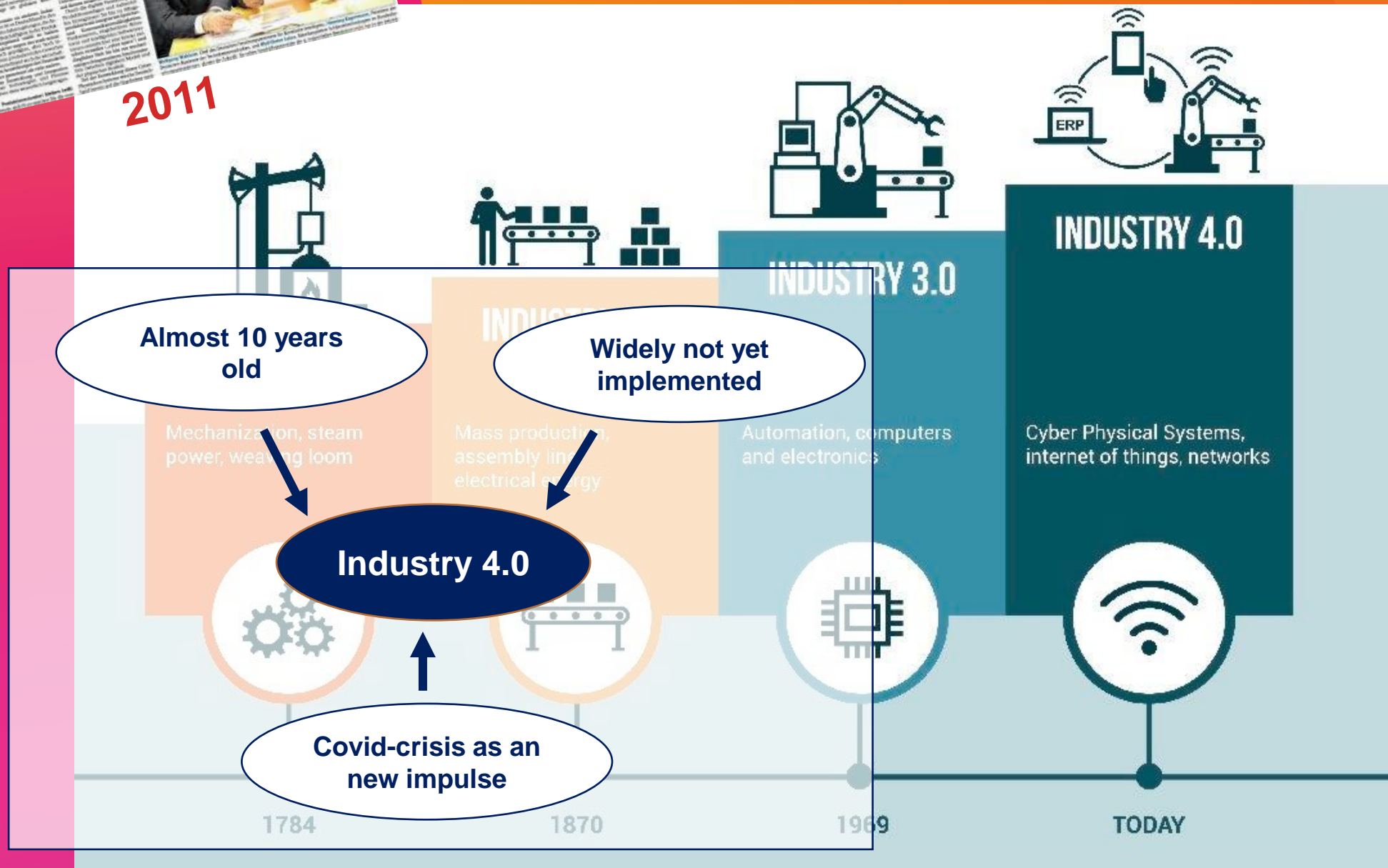
Switzerland Innovation
Park Biel/Bienne



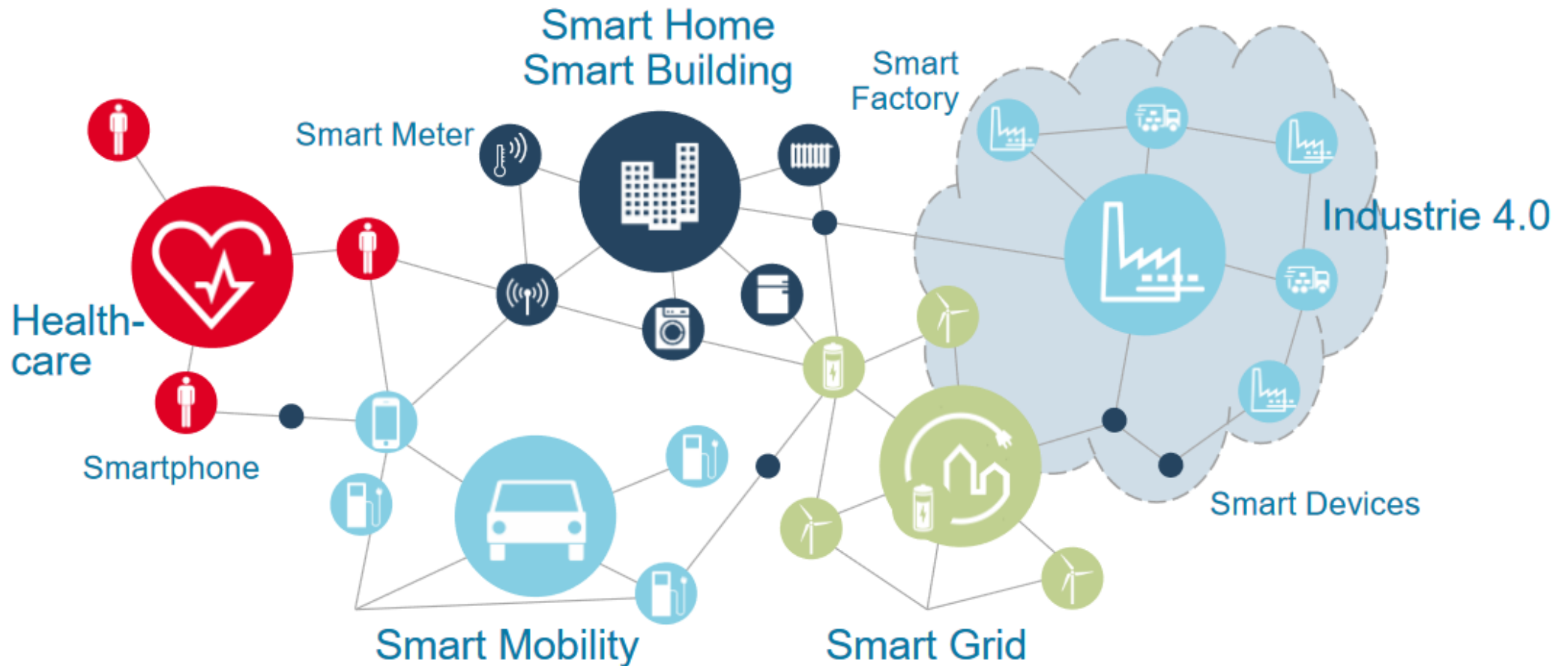


2011

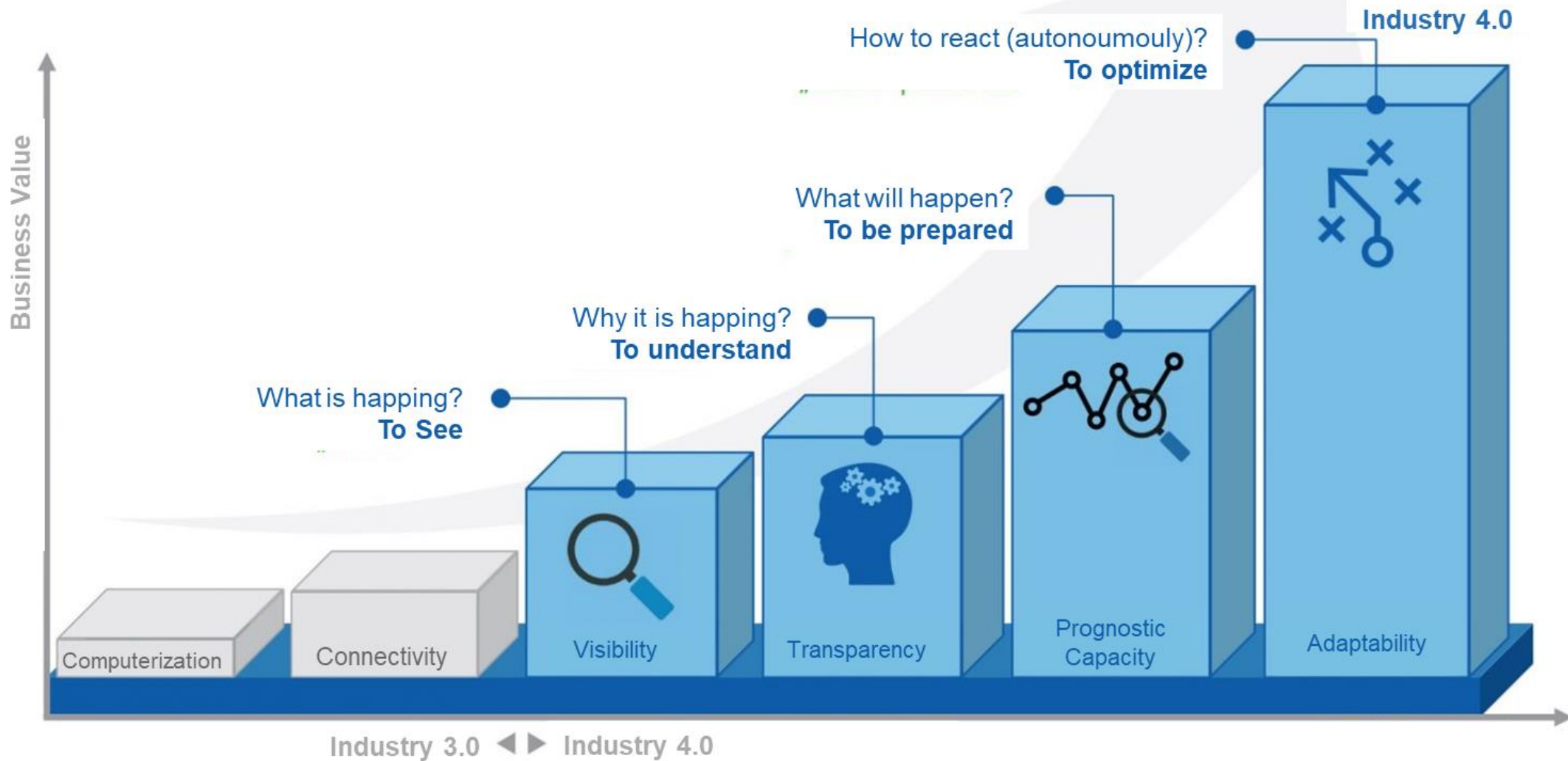
Industry 4.0



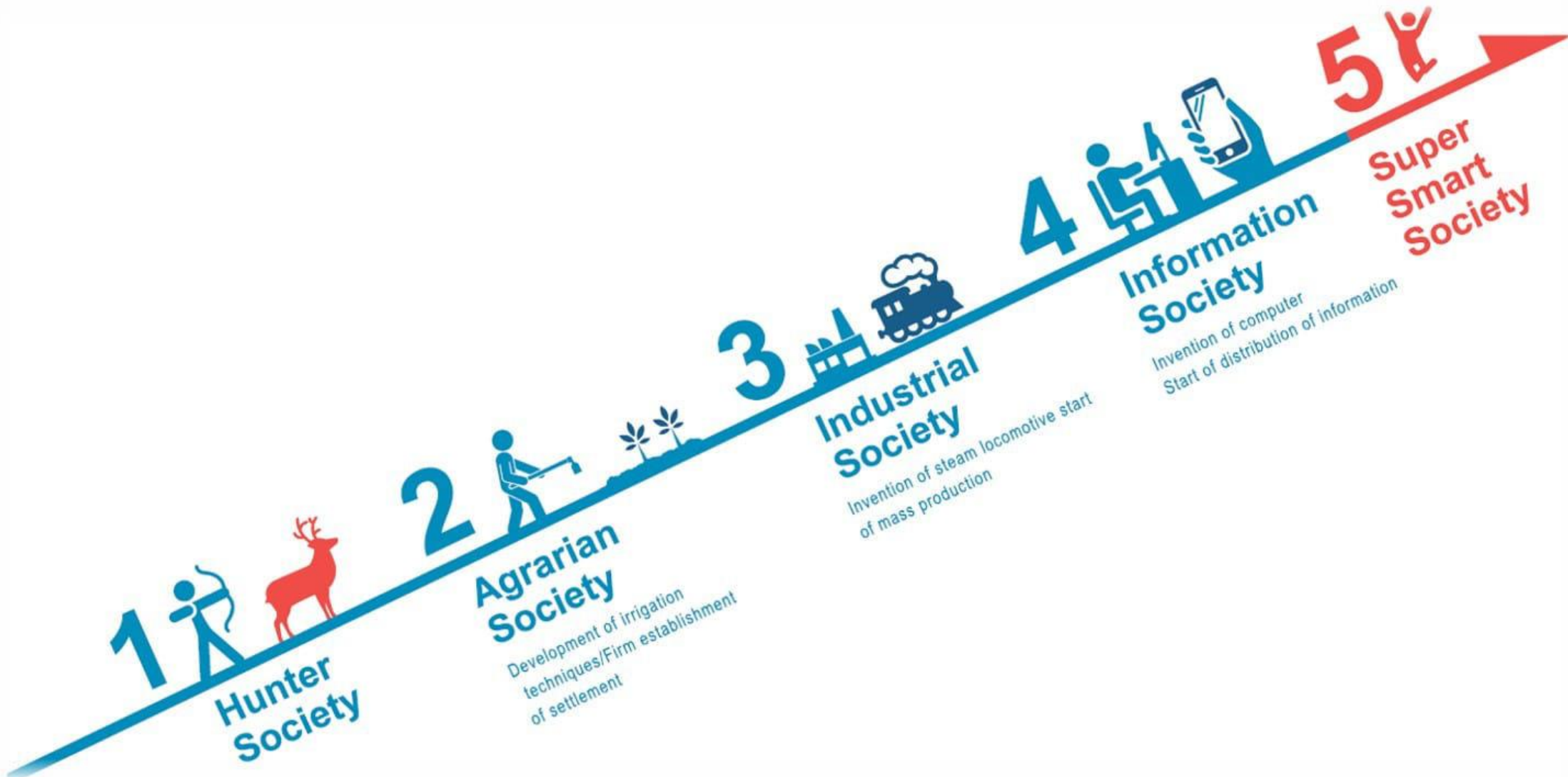
SMART & CONNCETED ECOSYSTEMS



FROM CONNECTIVITY TO SELF-OPTIMISATION



...towards a Super Smart Society





リーダー
鈴木啓之



坂田勇作



穴戸薫子



杉田雄一郎



ルビーちゃん



関口達也



比嘉なつえ



ドルくん



長



松本明日香



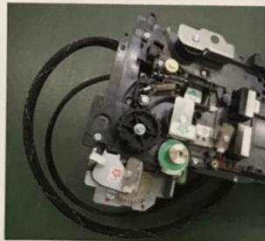
伊藤久美子

業務の紹介

【台板部】

RT-300

RT-300は、硬貨つり銭機です。
スーパー、コンビニなどで活躍。
コスト削減に貢献します。
台板部は、金種を識別して
搬送するユニットです。



台板部



この生産ラインは
ヒト型ロボットN
働くラインです。
変更に、人とロボ
次世代の生産ラ
います。

製造2グループ

RT-300台板ライ



リーダー
鈴木啓之



坂田勇作



穴戸薫子



杉田雄一郎



ルビーちゃん



関口達也



比嘉なつえ



ドルくん



長谷川恵一



ドルくん



松本明日香

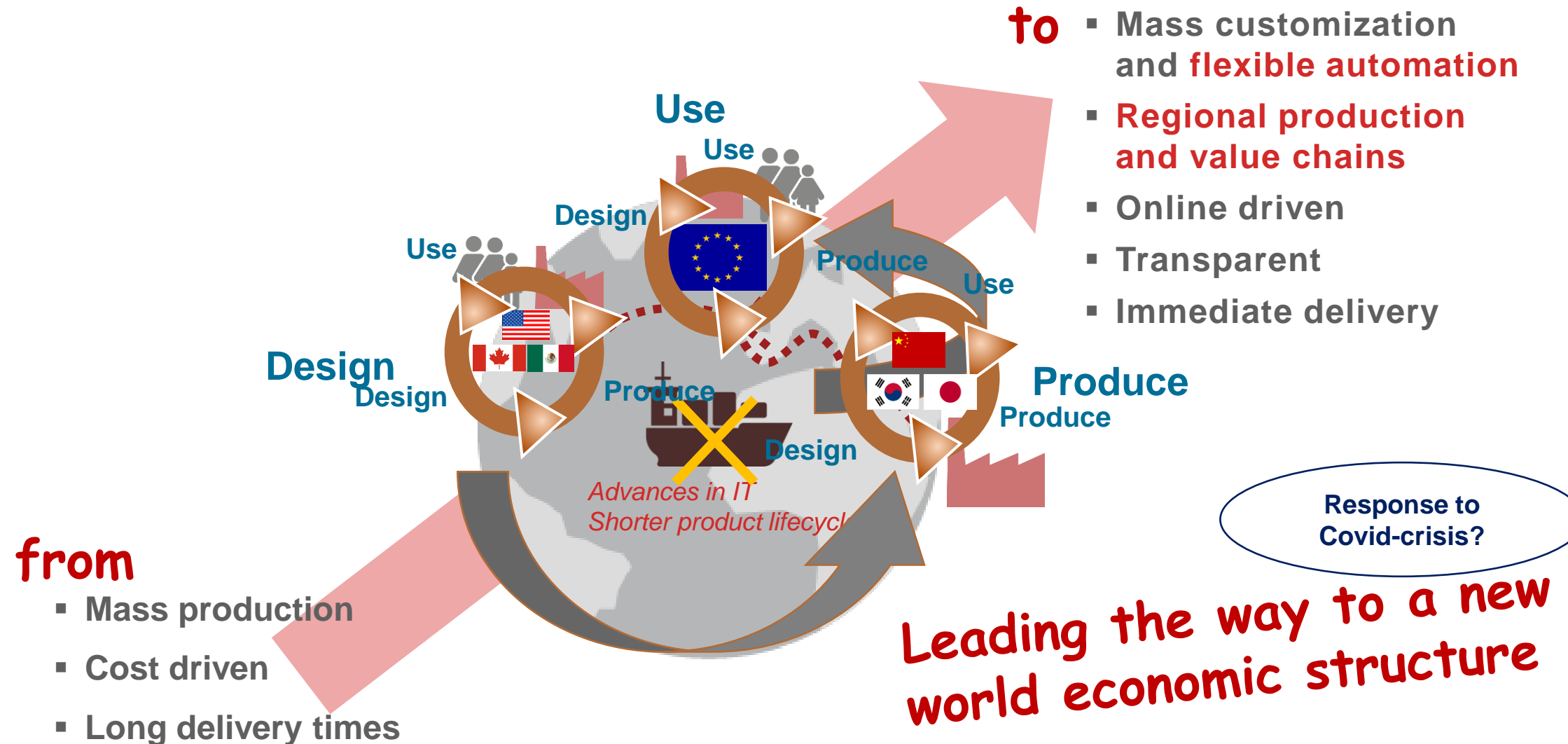


伊藤久美子

心
と
技

Industry 4.0

Changing Markets



Industry 4.0

New production and logistic concepts

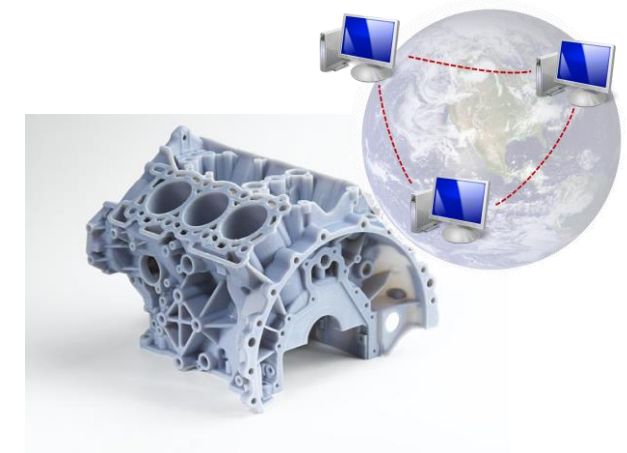
Increasingly customer-oriented value creation...



MY MÜSLI
“custom-made cereals”







ADIDAS / NIKE
“personalized sneakers”



AIRBUS / BOEING
“3D-printed-spareparts”

...requires new production and logistic concepts.

Suche Über uns Für Firmen Hilfe  Land  Konto  Warenkorb

mymuesli  **NILK**

MÜESLI **MIXER** **PORRIDGE** **SOMMER SALE!** **TOPPINGS** **2GO** **RIEGEL** **CHOC** **ZUBEHÖR**

So geht's [Muesli mixen](#) [Porridge mixen](#) [Muesli nachbestellen](#) [Mix Tipps](#)

Mueslibasis

Basis verfeinern

Früchte

Nüsse & Kerne

Schoko

Zutaten filtern




- ☐ laktosefrei
- ☒ hoher Proteingehalt
- ☐ ohne Getreide
- ☒ vegan

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BASIS VERFEINERN

Jetzt kommt die Feinabstimmung für Deine Muesli-Basis. Du möchtest Dir ein gesundes Müsli mixen? Dann probier doch mal unsere Chia-Samen, Quinoa-Flocken oder Leinsamen aus. Diese Zutaten sind entweder glutenfrei (Chia-Samen), überzeugen mit viel Proteinen (Quinoa-Flocken) oder enthalten viele Ballaststoffe (Leinsamen).

LIEBLINGSMÜESLI

 Protein Flakes  Dinkelflocken  Quinoaflocken

Haferflocken

Echter Müesliklassiker mit Kultstatus

CHF 0.35 | 25g

▼ mehr Infos ...

Dinkelflocken

Geschichtsträchtig und herzhaft im Geschmack

CHF 0.35 | 25g

▼ mehr Infos ...

Gerstenflocken

Vollkorn, bio - einfach gut

CHF 0.35 | 25g

▼ mehr Infos ...

Quinoaflocken

Ein südamerikanischer Getreide-Star

CHF 0.50 | 20g

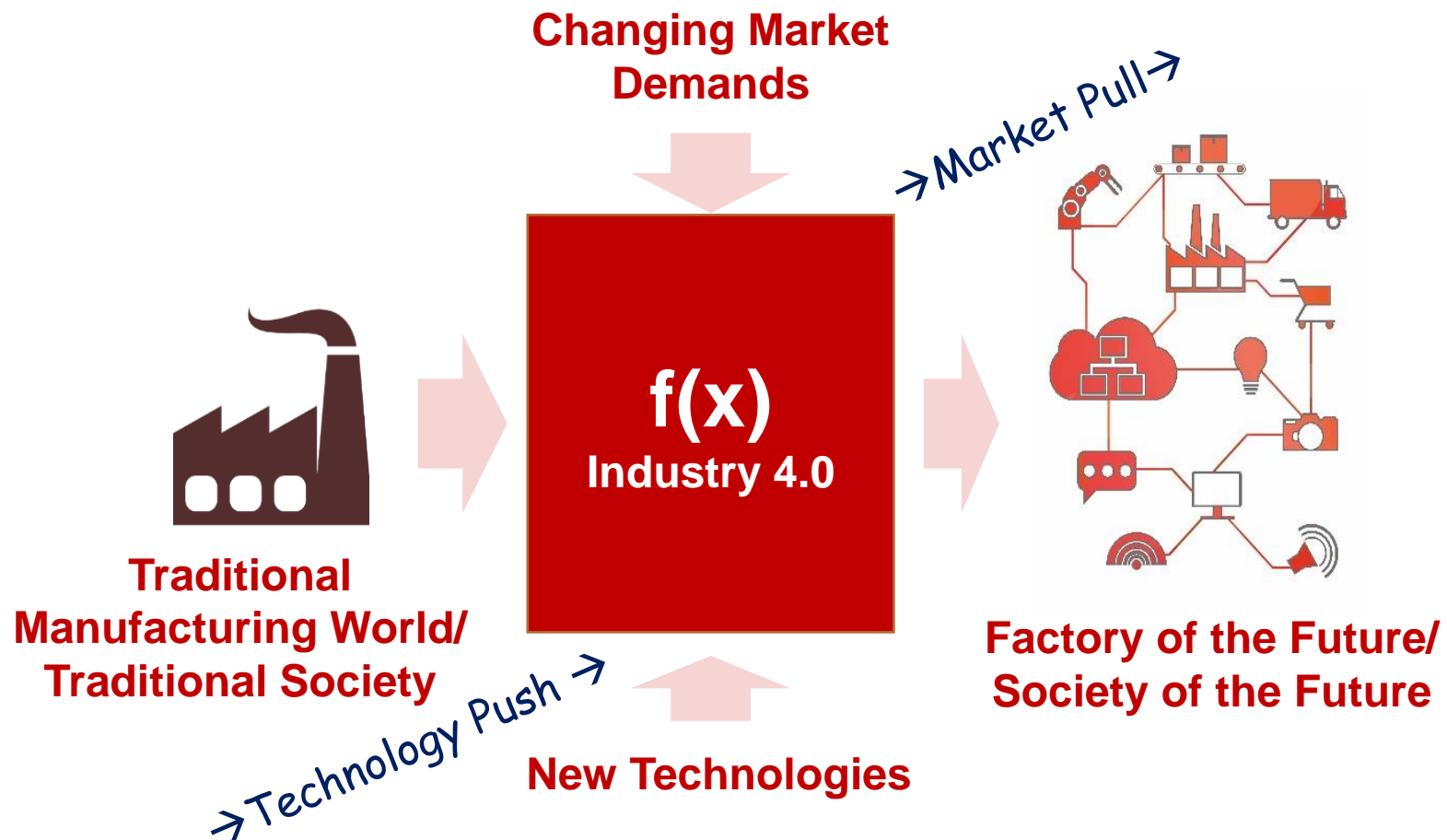


VIDEO

https://www.youtube.com/watch?time_continue=79&v=eUTnKvW4VuM

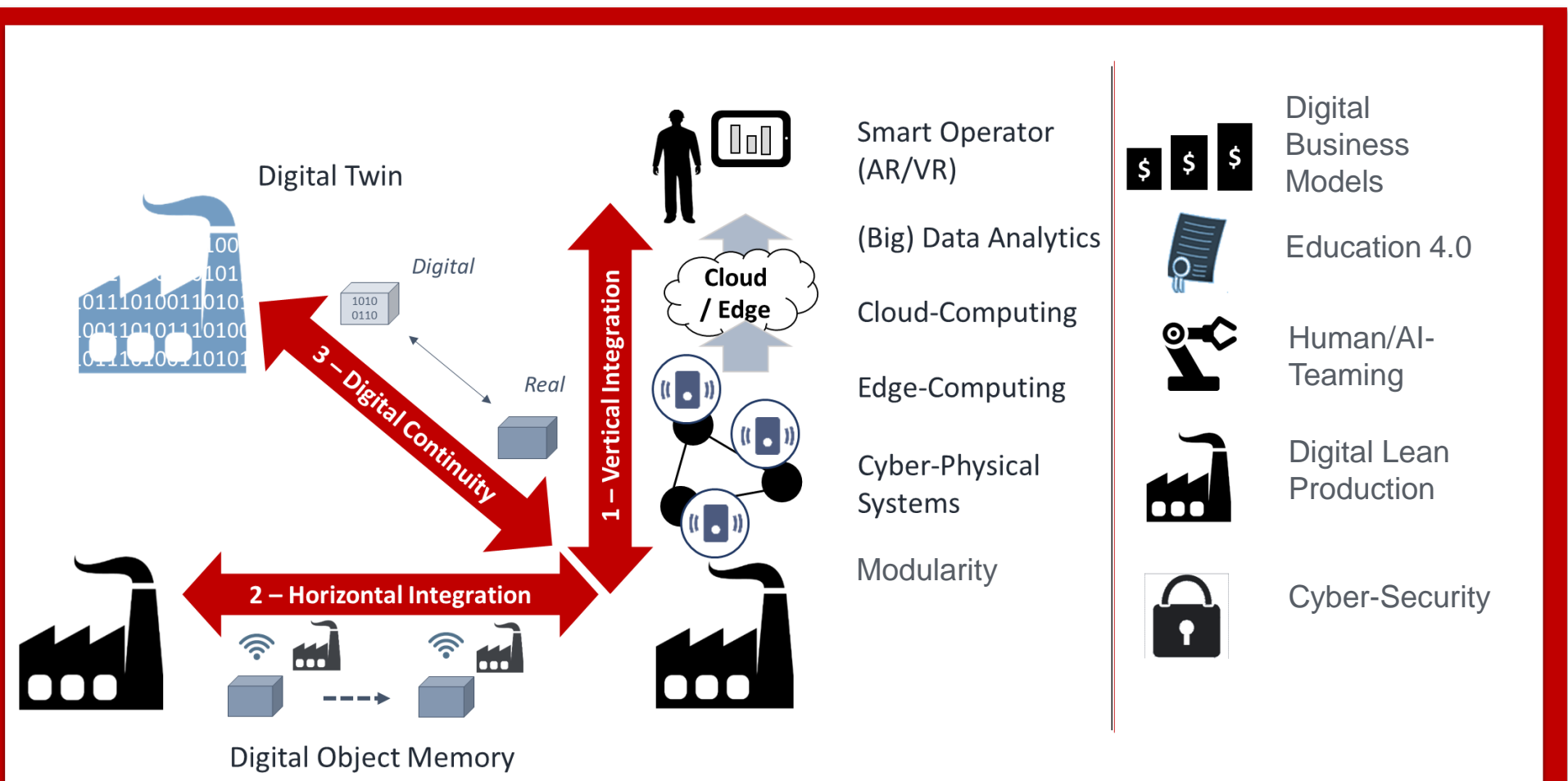
Industry 4.0

...as a Transformation Process

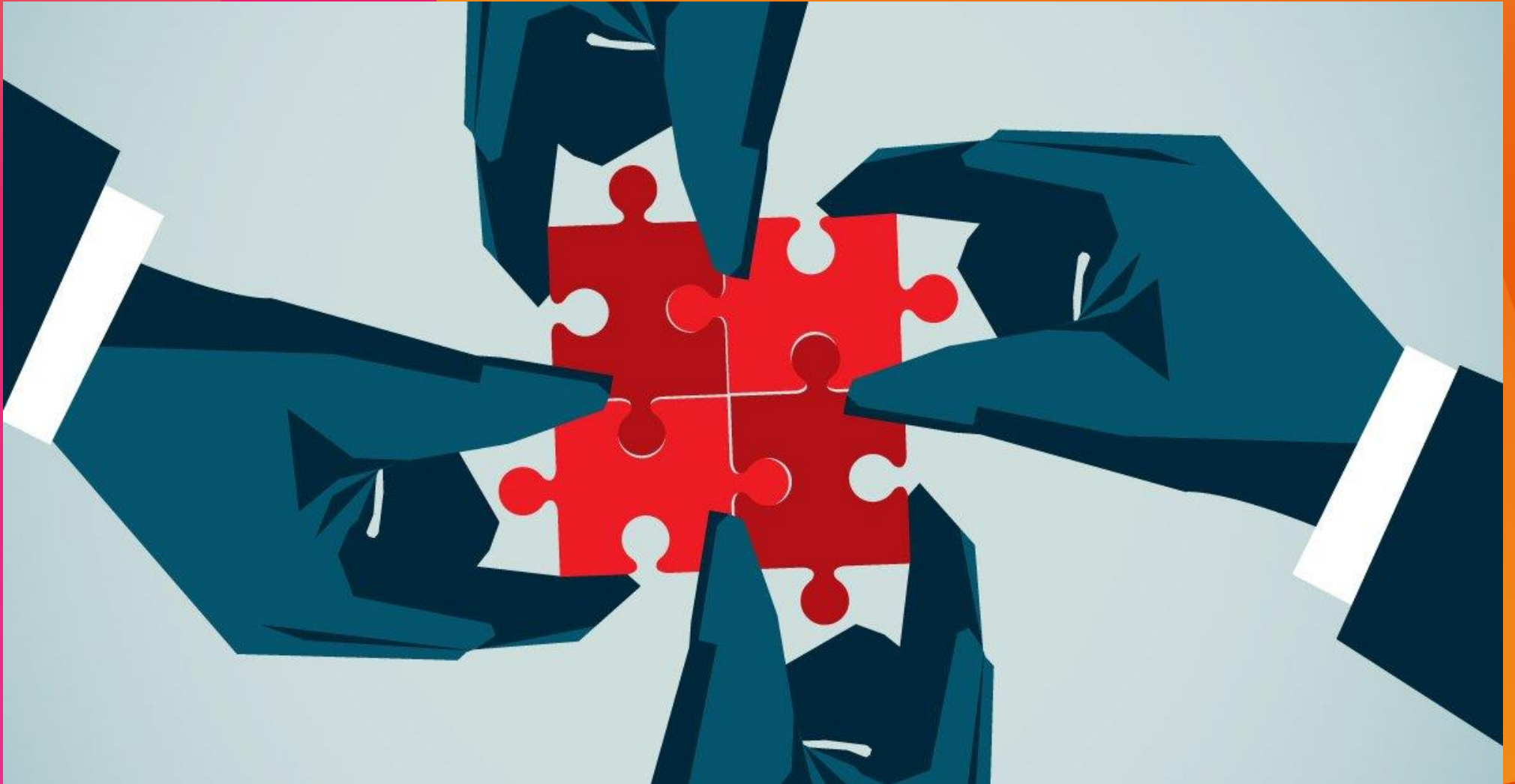


Industry 4.0

A multifaceted and interdisciplinary challenge



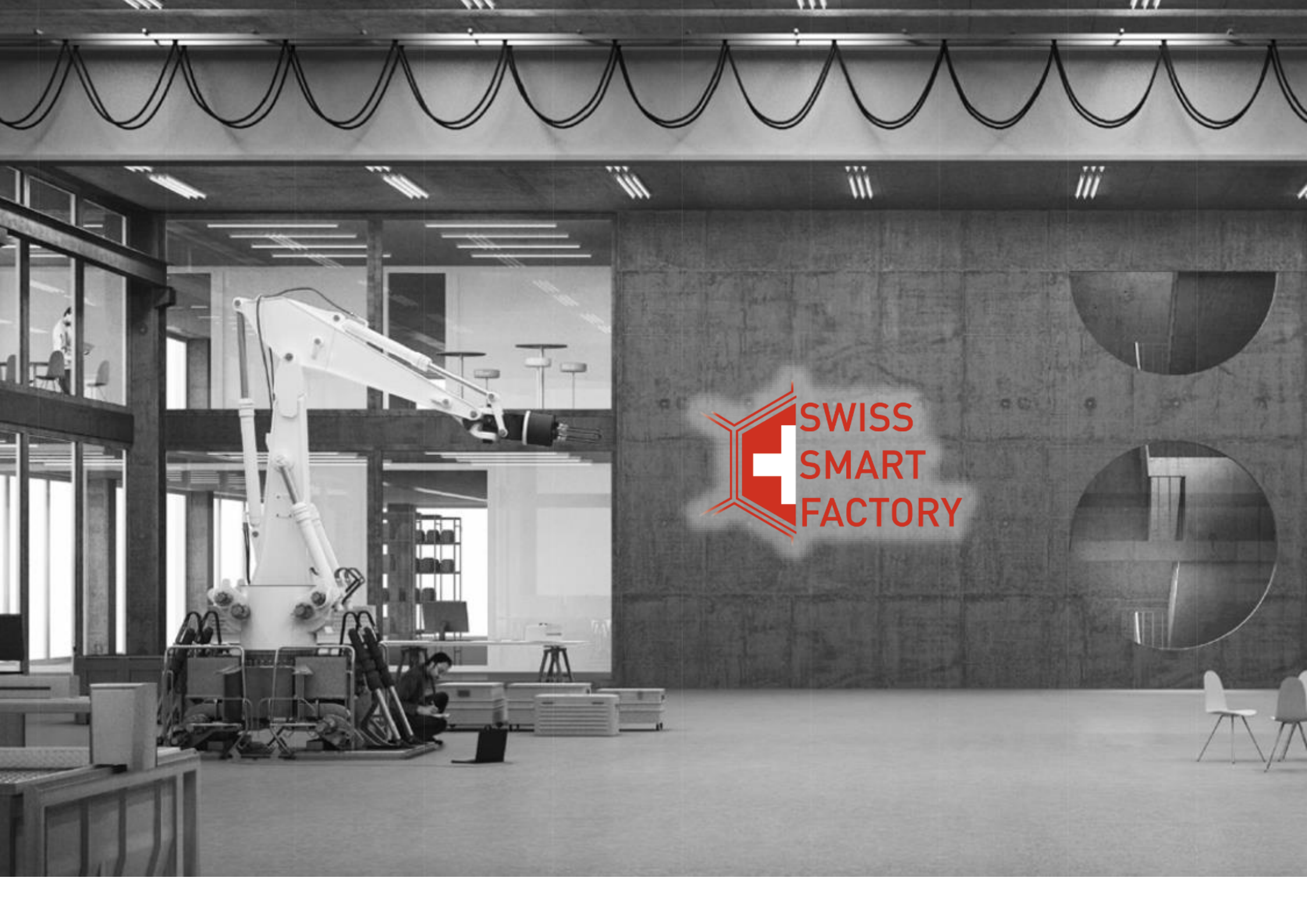
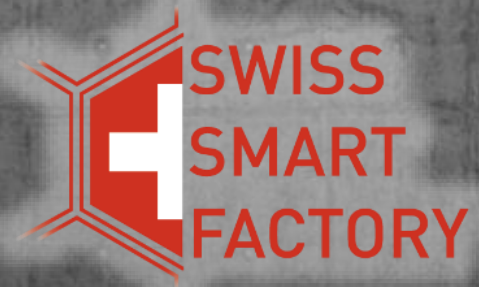
COLLABORATION IS KEY!



GOOD PRACTISE: OPEN PLATFORM FOR THE ADOPTION OF DIGITAL INNOVATION



**Development – Test –
Demonstration – Transfer –
Education & Training**

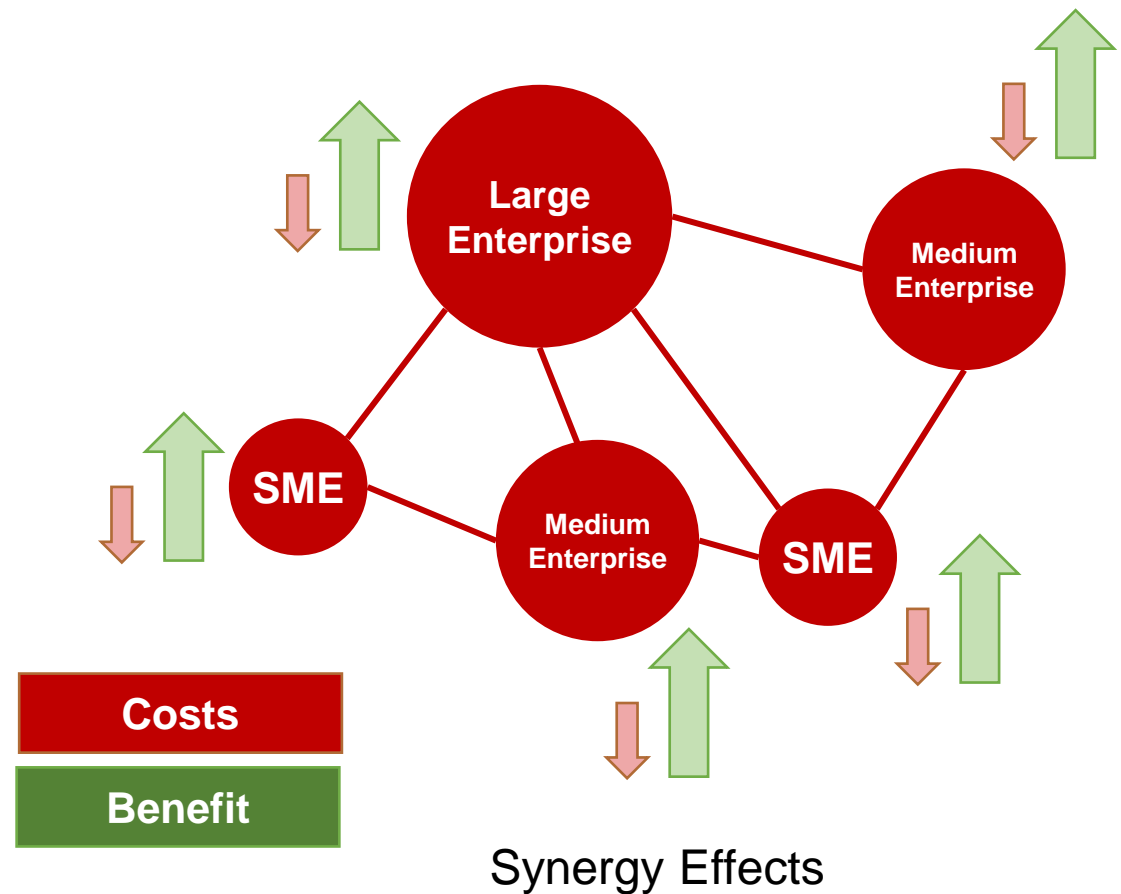


SWISS SMART FACTORY HUB

Collaboration is the Key to Success

- **Test innovation and business models** in interorganizational networks
- **Shared costs and combined know-how** for innovation projects
- **New business relationships** with companies in similar industries

Swiss Smart Factory acts as neutral authority giving confidence among the partners and increasing public relations & visibility



Good Practise: Open Platform for the Adoption of Digital Innovation

An open platform for technology adoption coordinates the collaboration between technology / service providers and technology end-users

The platform is coordinated by a neutral instance, which acts as facilitator for the collaboration providing:

- confidence among the partners
- increasing visibility and support public relations, and
- providing specific service for demonstration, test and development of technologies in an interorganizational network.

SWISS SMART FACTORY

Membership Programme – started March 2018



- Big Players
- SME
- Startups
- National / International

• National / International

SWISS SMART FACTORY

Activities



1. "Inspire & Demonstrate"

Demo-Center



2. "Develop, Test & Transfer"

Research. Innovation &
Transfer Projects



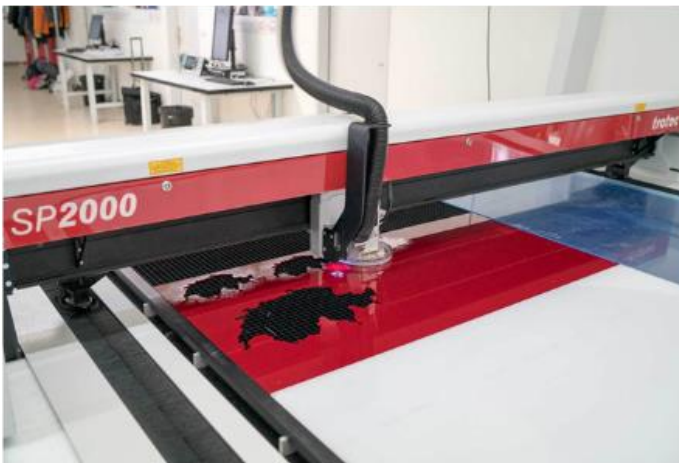
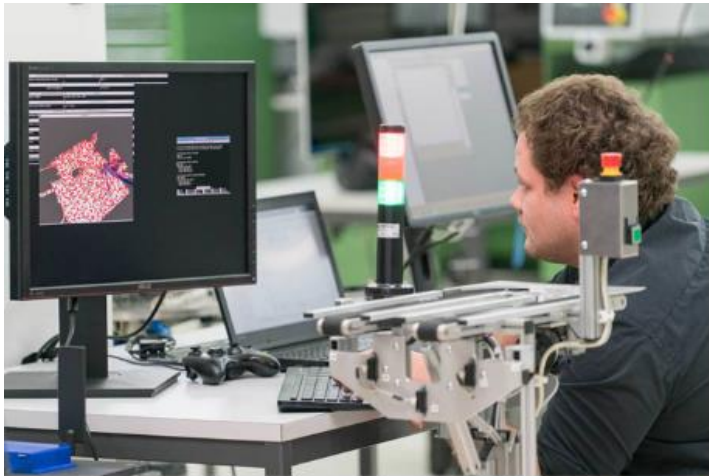
3. "Train & Support"

Training-Center



SWISS SMART FACTORY

1 - Inspire & Demonstrate



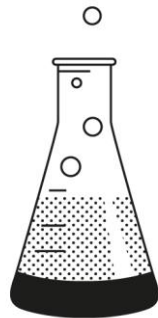
SWISS SMART FACTORY

2 - Test & Develop

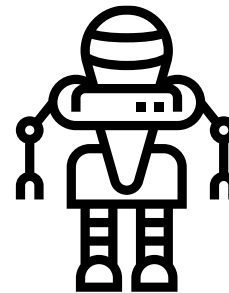
«Your network to go from the
Idea to Industrialisation»



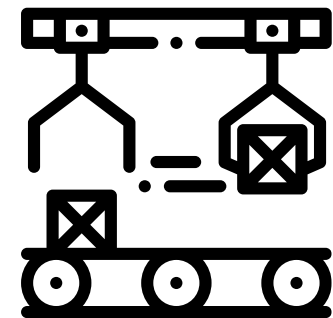
Idea



PoC / Experiment



Prototype

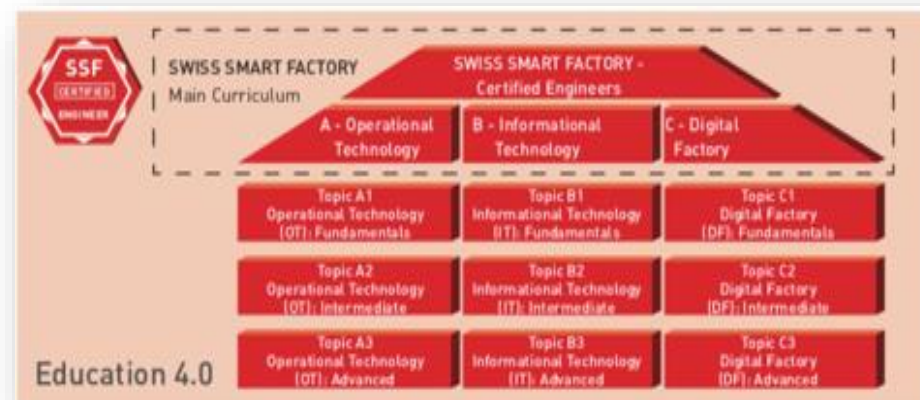


Industrialisation



SWISS SMART FACTORY

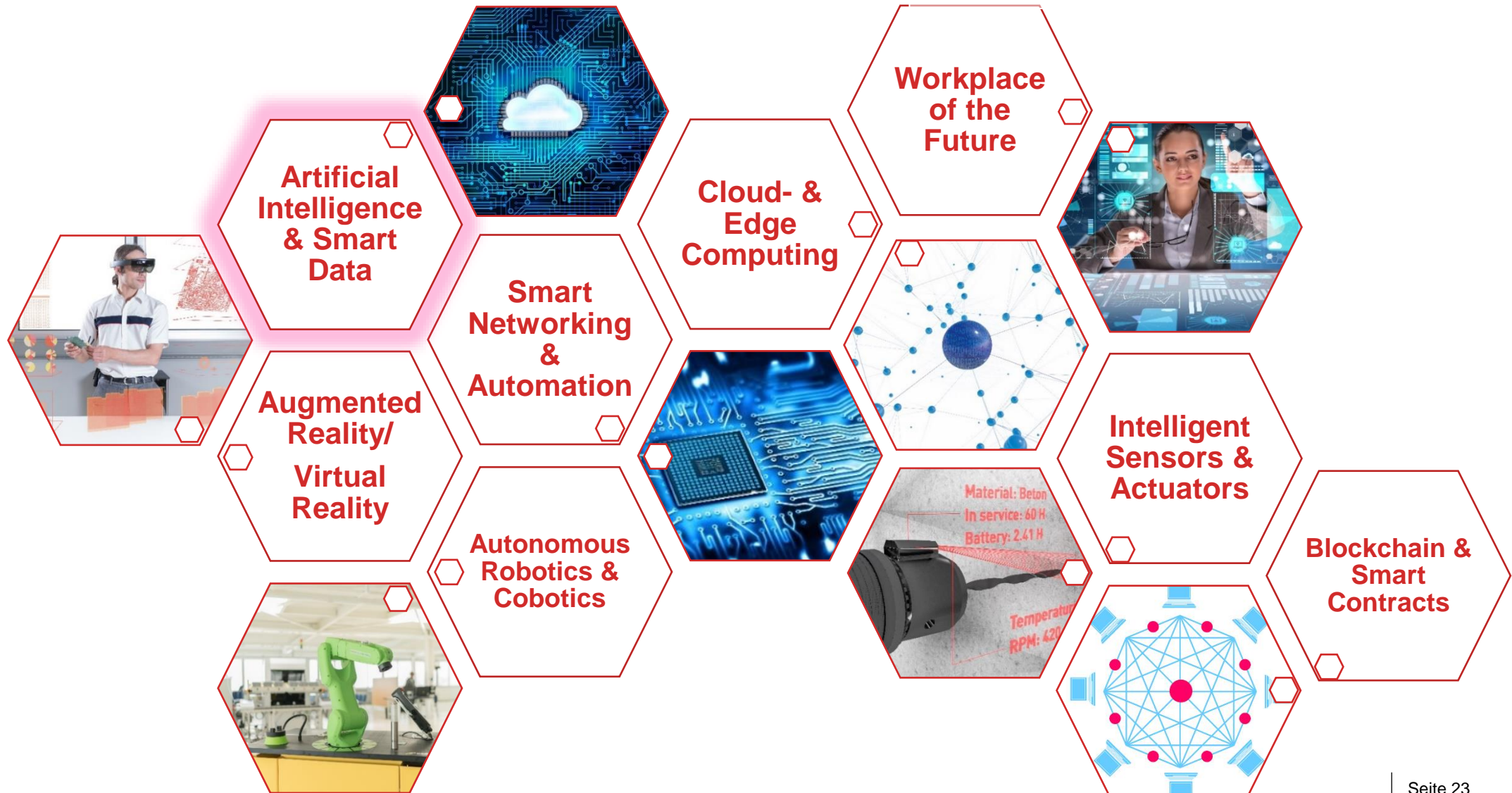
3 - Train & Support



SWISS SMART FACTORY

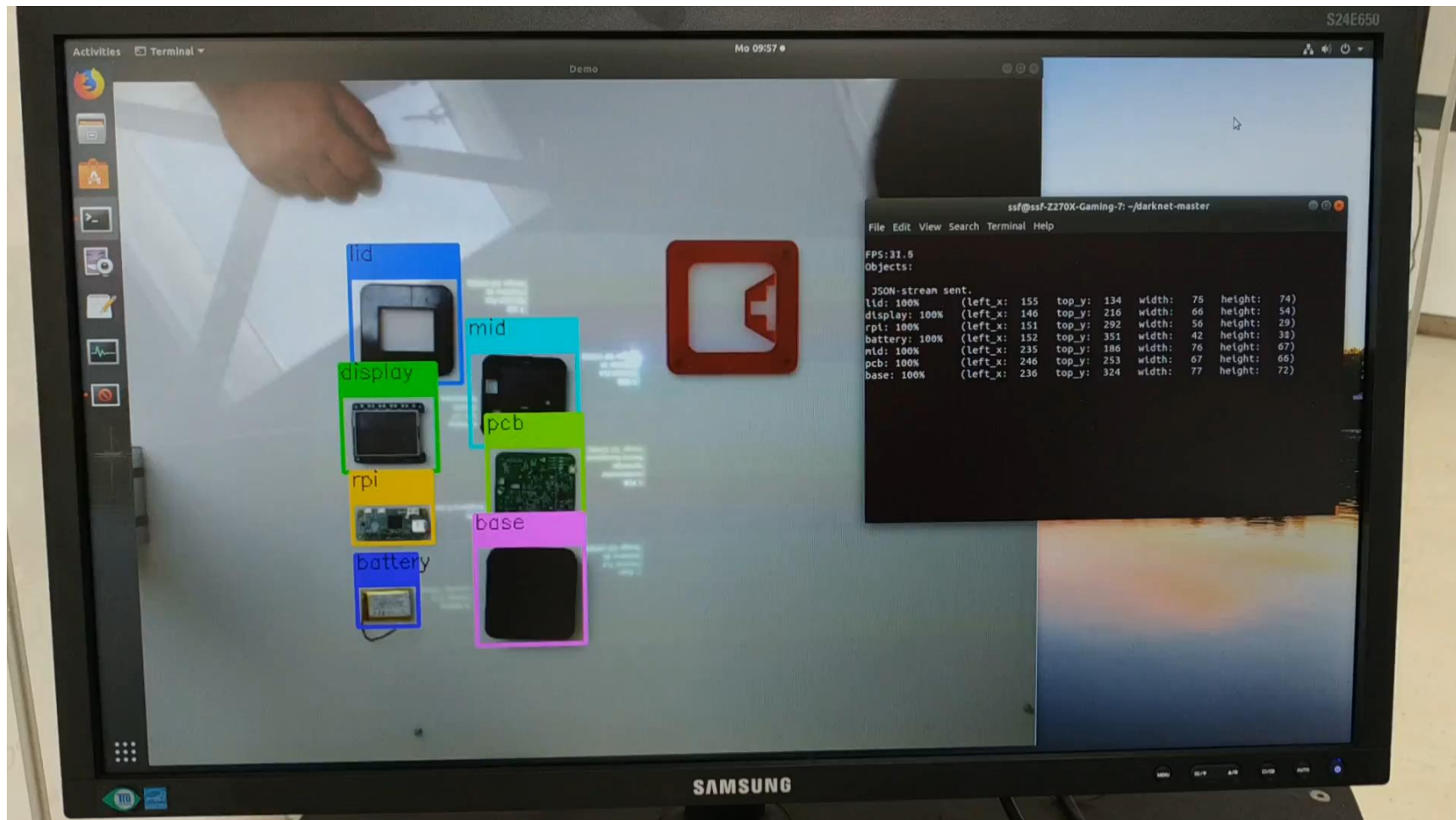
Focus Topics 2020

- 6 Innosuisse-Projects
- 3 EU-/Interreg-Projects



2 – Test & Develop

Example for a Digital Experiment



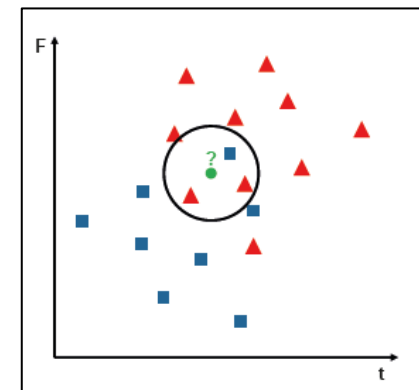
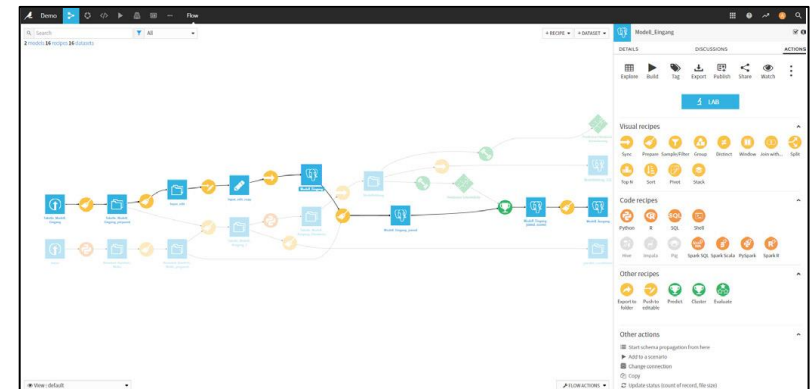
AI-based Assistance

3 – Big Data/Machine Learning Workshop

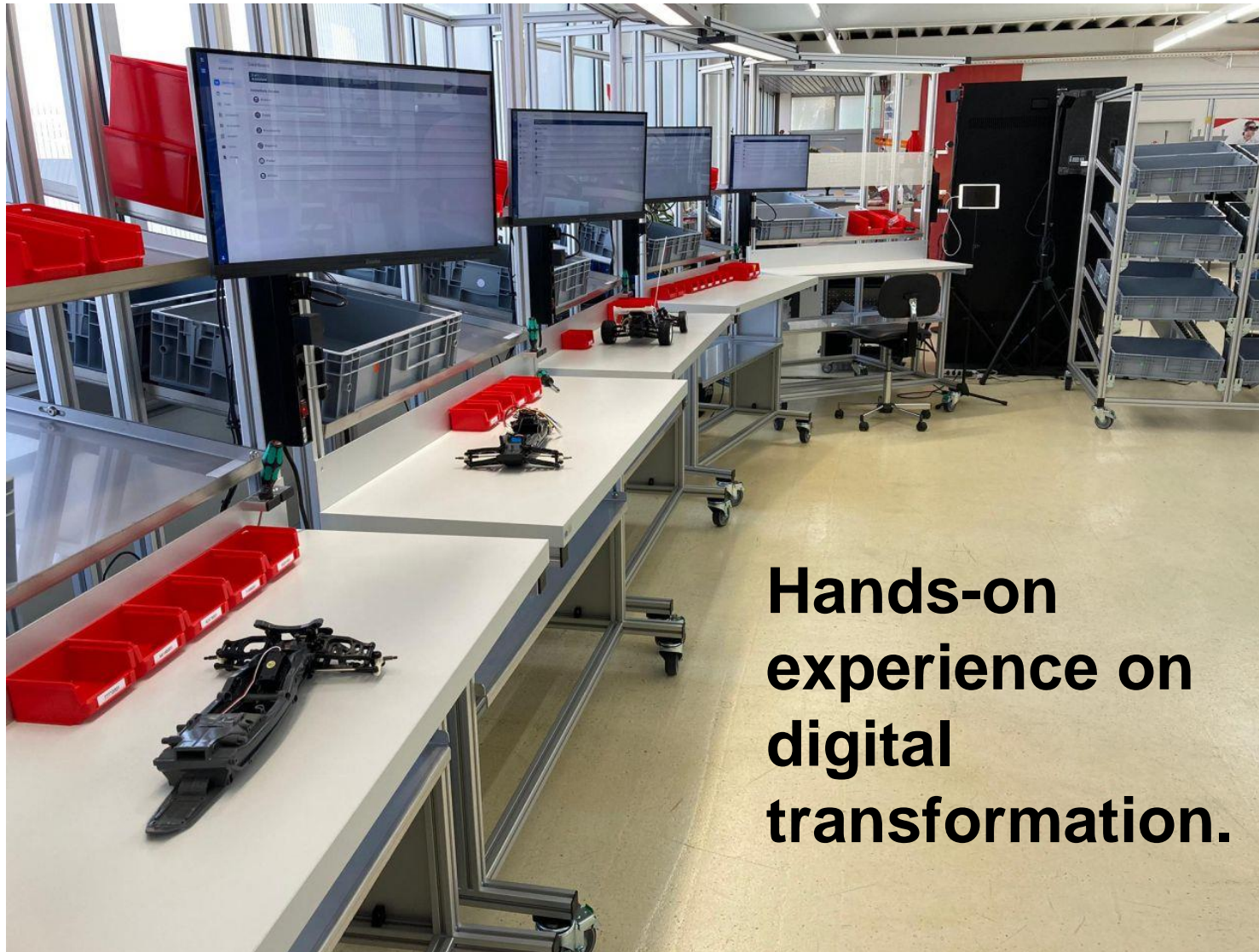
During all the year

For developers and product managers who aim to obtain an overview of all the new possibilities accessible via data analysis. During the workshop, the participants can solve a practical application example from the industry. Theory and practical exercises on your own computers. 12 participants maximum:

- Using real production hardware via *mylivezone.com*
- Exercise to create the data connection between the SQL server and the machine data
- Data visualization in the Dataiku
- Simulations and predictions with Machine Learning
- Discussion of use cases in industry and applications in your daily work



3 – New Industrie 4.0 Training Line Programme Start - Spring 2021



**Hands-on
experience on
digital
transformation.**

3 – New Industrie 4.0 Training Line

Programme Start - Spring 2021

One-Day Team-Workshop

Get to know best practice examples of digitization in production:

- Manufacturing Execution Systems
- Dashboards
- Auto-Id-solutions
- Assistance systems
- Augmented Reality
- ...



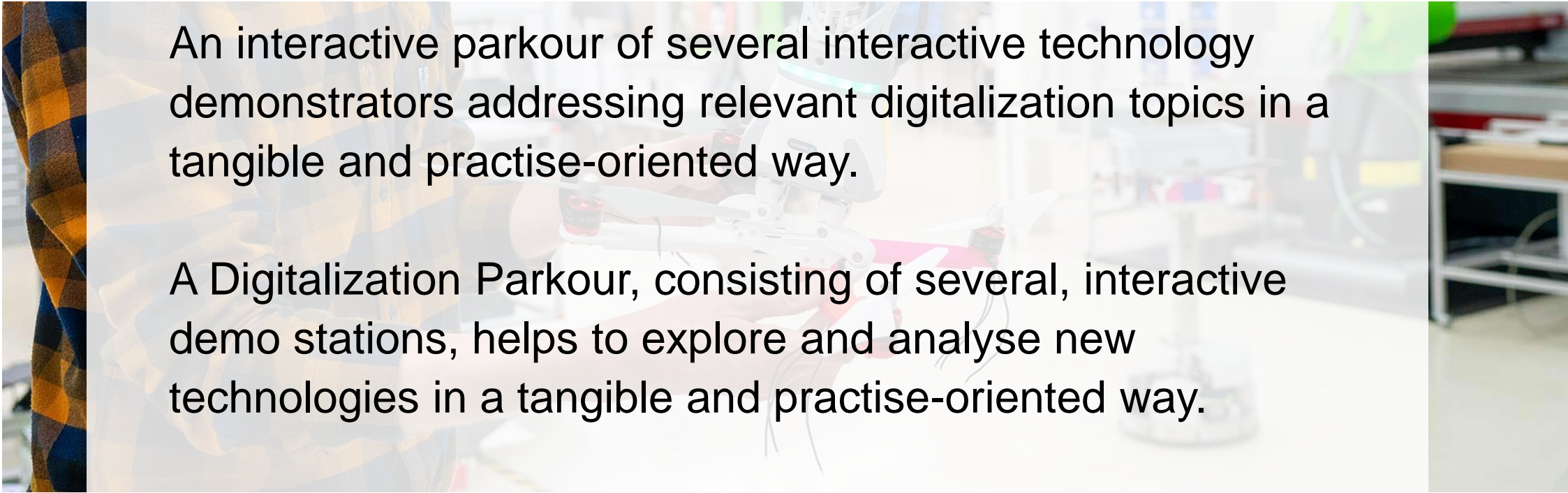
Training in an realistic factory environment within your team. Learn how to use digitization technologies and experience how to improve quality in production.

GOOD PRACTISE: DIGITALIZATION PARKOUR

LIGHTHOUSE PROJECT INDUSTRY 4.0



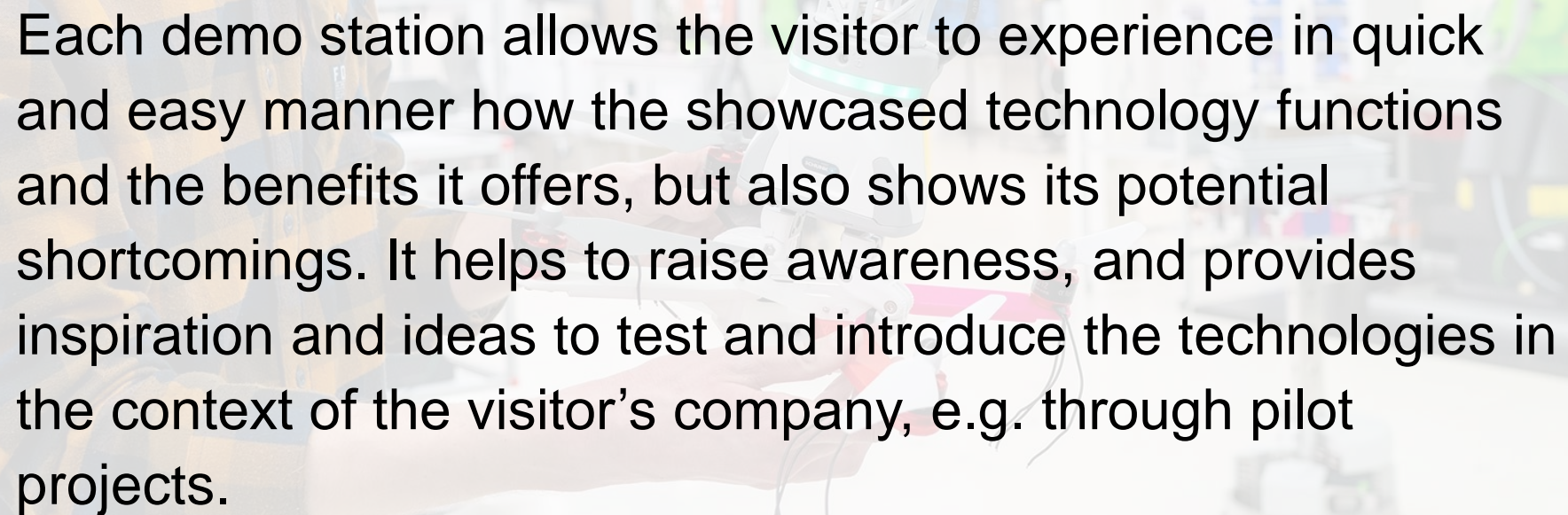
Good Practise: Digitalization Parkour



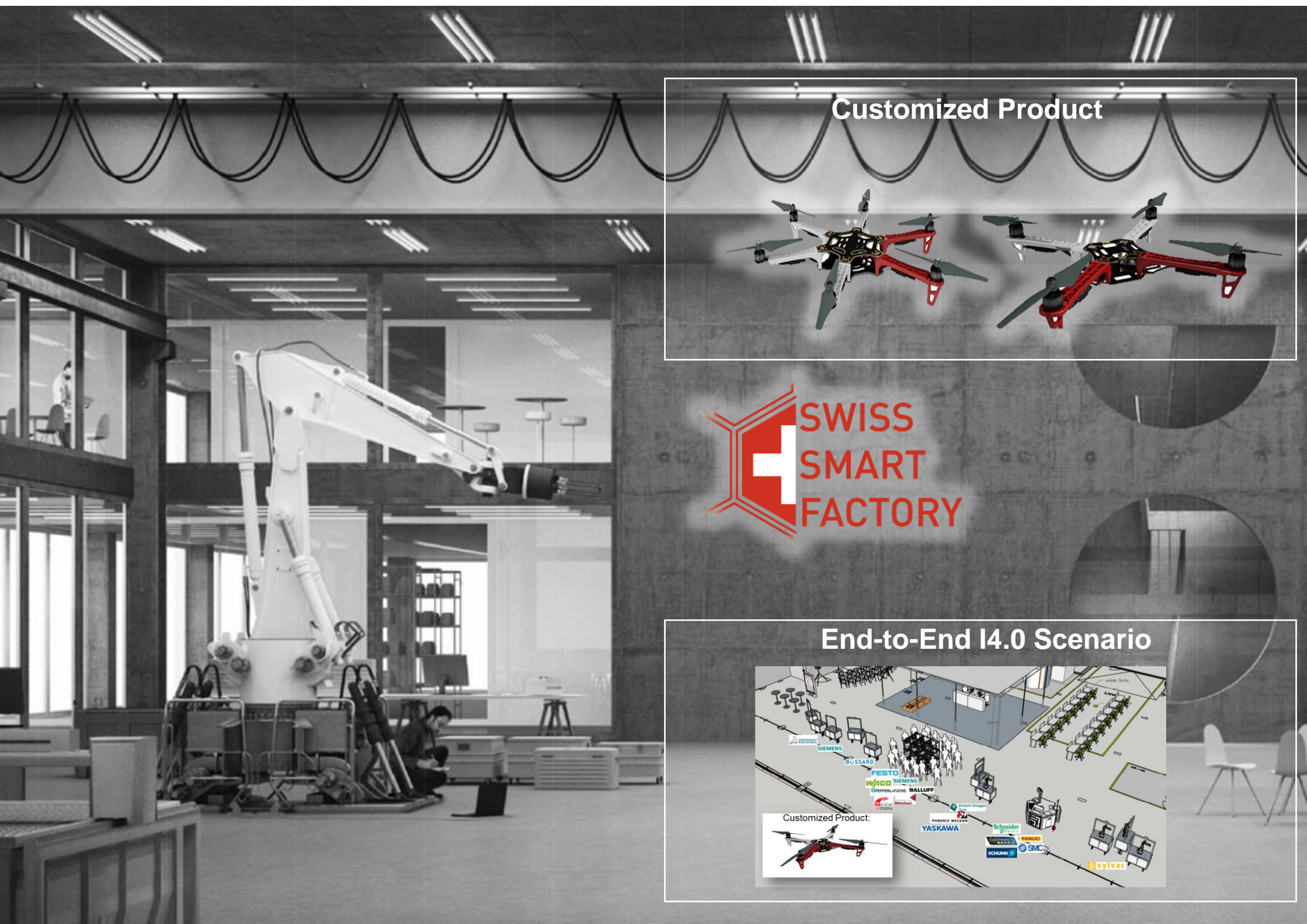
An interactive parkour of several interactive technology demonstrators addressing relevant digitalization topics in a tangible and practise-oriented way.

A Digitalization Parkour, consisting of several, interactive demo stations, helps to explore and analyse new technologies in a tangible and practise-oriented way.

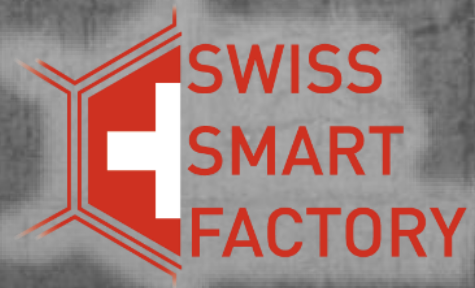
Good Practise: Digitalization Parkour



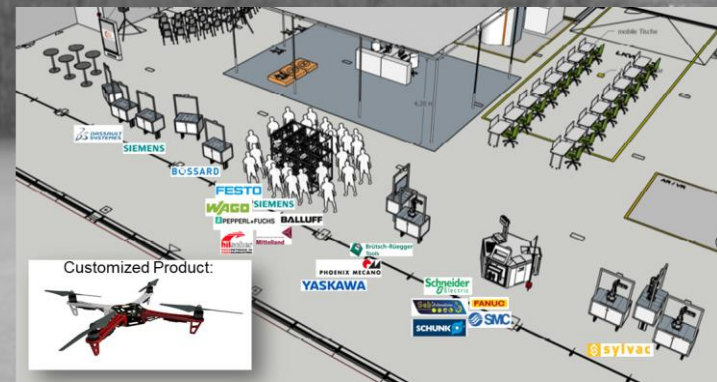
Each demo station allows the visitor to experience in quick and easy manner how the showcased technology functions and the benefits it offers, but also shows its potential shortcomings. It helps to raise awareness, and provides inspiration and ideas to test and introduce the technologies in the context of the visitor's company, e.g. through pilot projects.



Customized Product



End-to-End I4.0 Scenario



Product

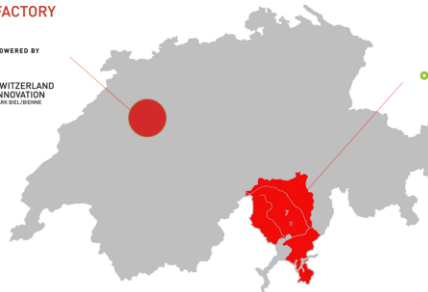
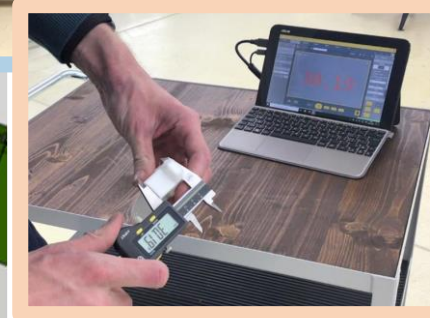
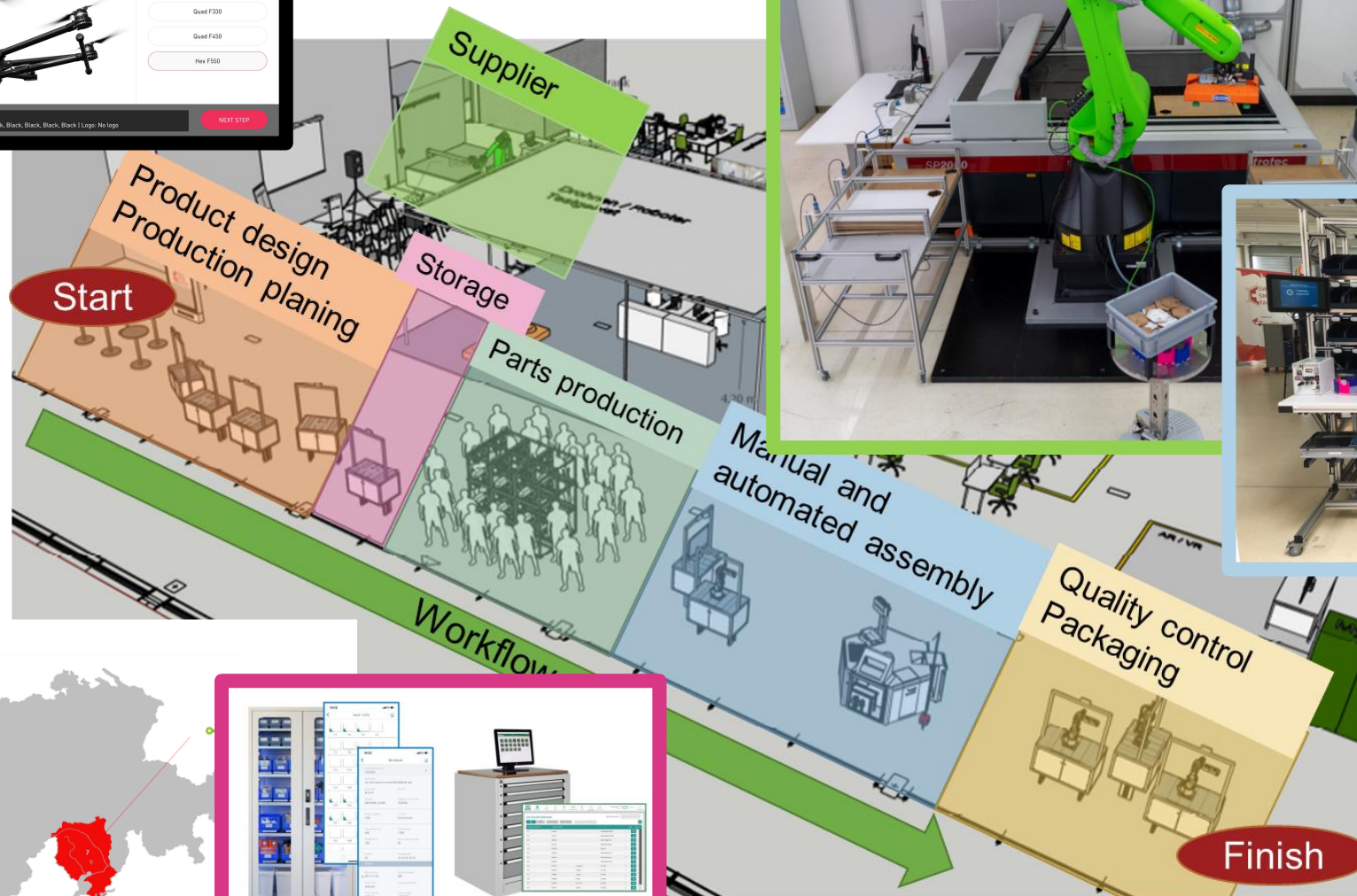
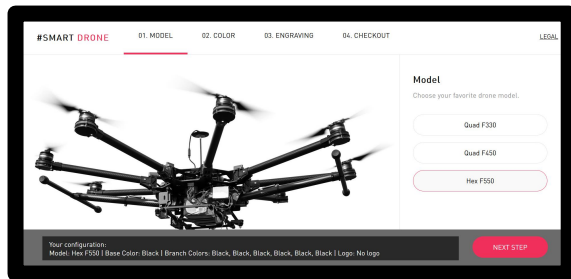
based on DJI F330, F450 and F550 design



Version	Quadcopter 330mm	Quadcopter 450mm	Hexacopter 450mm
Arm	Type 1	Type 2	Type 2
Higher plate	Type 1	Type 2	Type 3
Lower plate	Type 1	Type 2	Type 3
Motor	Type 1	Type 1	Type 2
Control	Type 1	Type 1	Type 1
Propeller	2x Type 1.1, 2x Type 1.2	2x Type 2.1, 2x Type 2.2	2x Type 2.1, 2x Type 2.2
Propeller screw	Type 1	Type 1	Type 1

+ Electronics and Batteries

Overview



1. Configurator

#SMART DRONE

01. MODEL

02. COLOR

03. ENGRAVING

04. CHECKOUT

[LEGAL](#)



Model

Choose your favorite drone model.

Quad F330

Quad F450

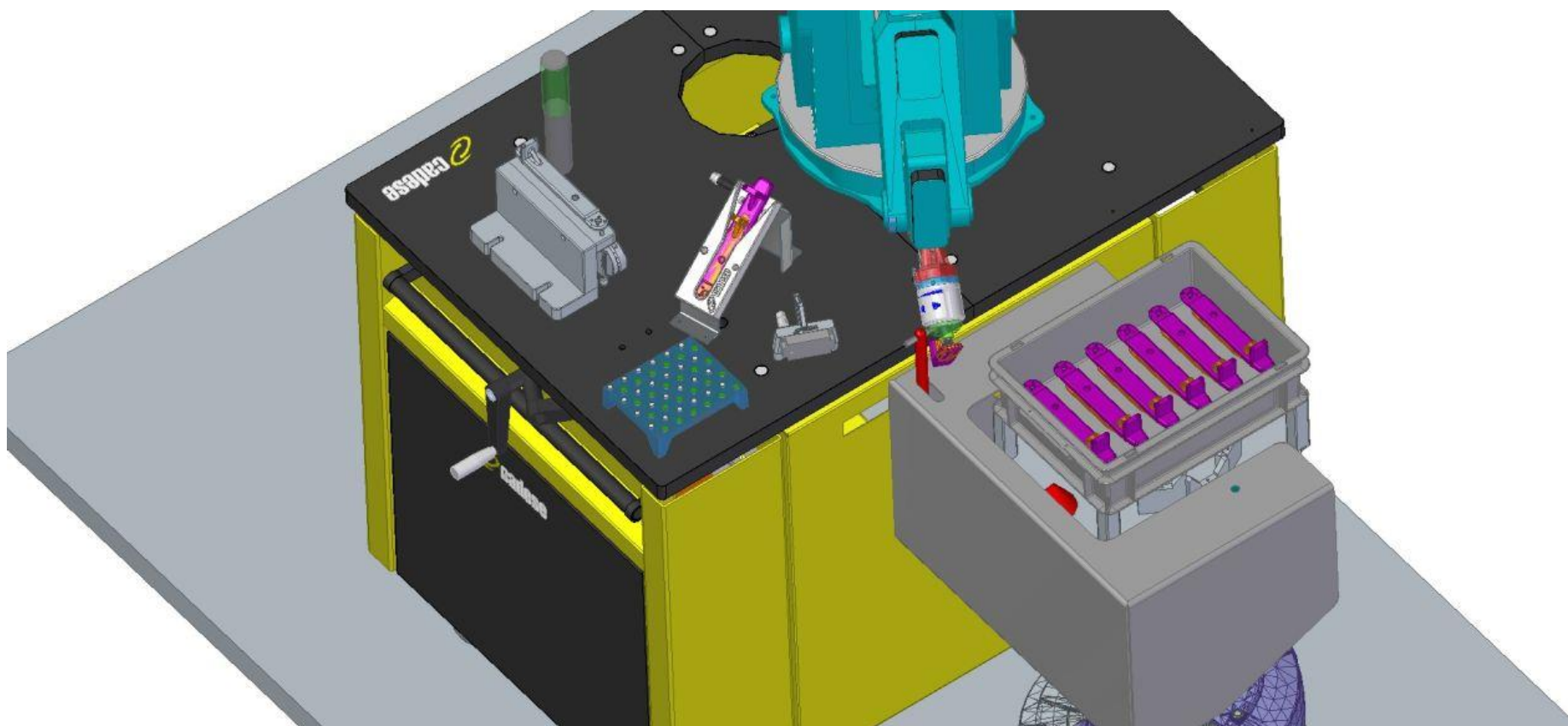
Hex F550

Your configuration:

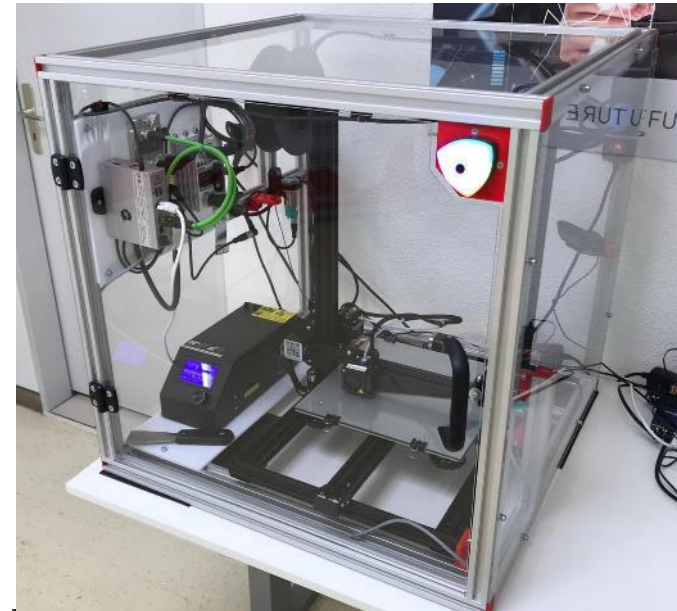
Model: Hex F550 | Base Color: Black | Branch Colors: Black, Black, Black, Black, Black, Black | Logo: No logo

NEXT STEP

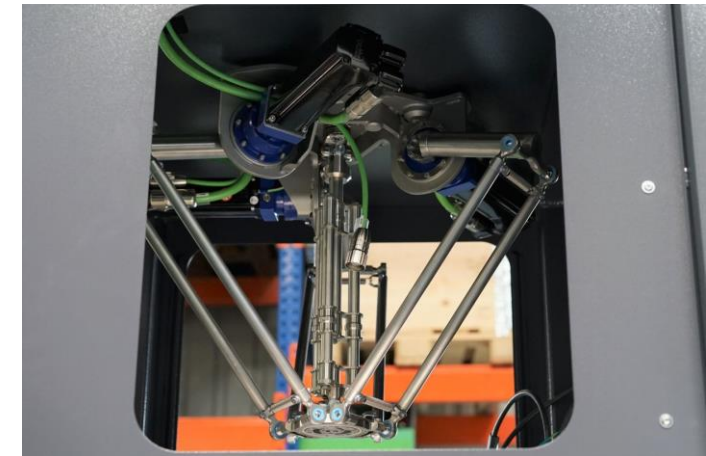
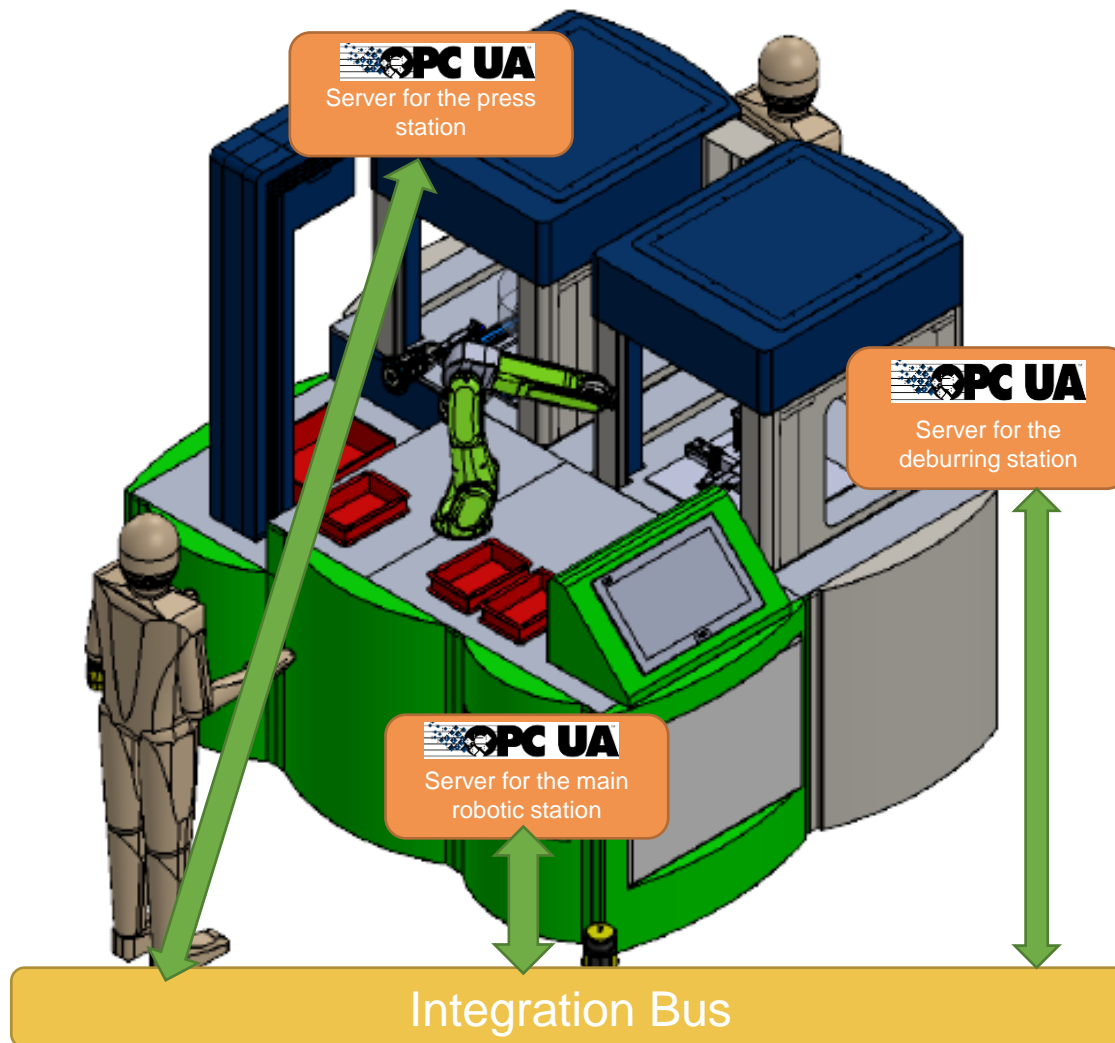
2. Start of Production



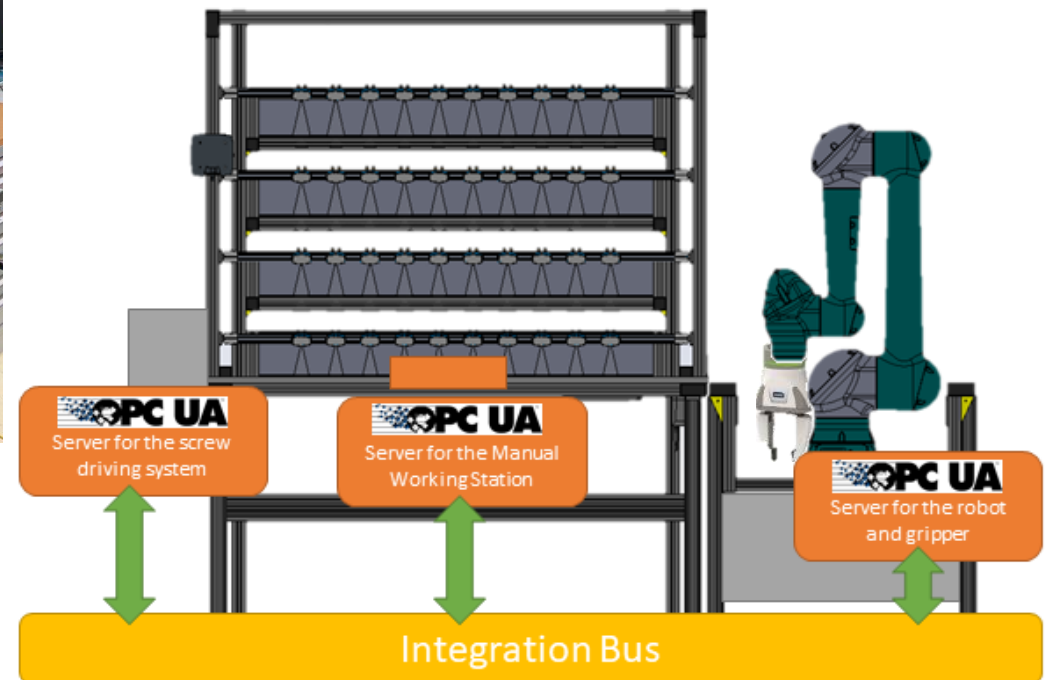
3. 3D Drucker Farm (Work in progress)



4. Automated and collaborative robotic production station



5. Phoenix Mecano/Setago Manual assembly station with collaborative robot

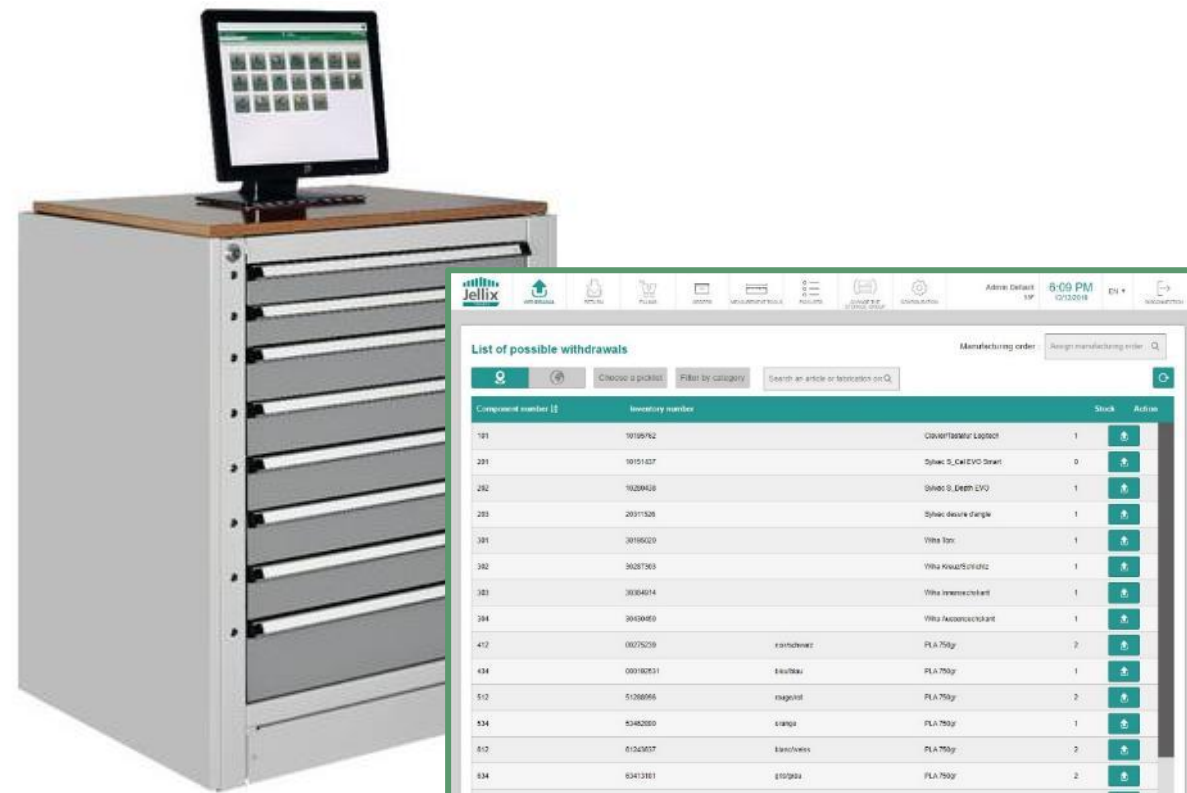


6. Smart and connected storage system

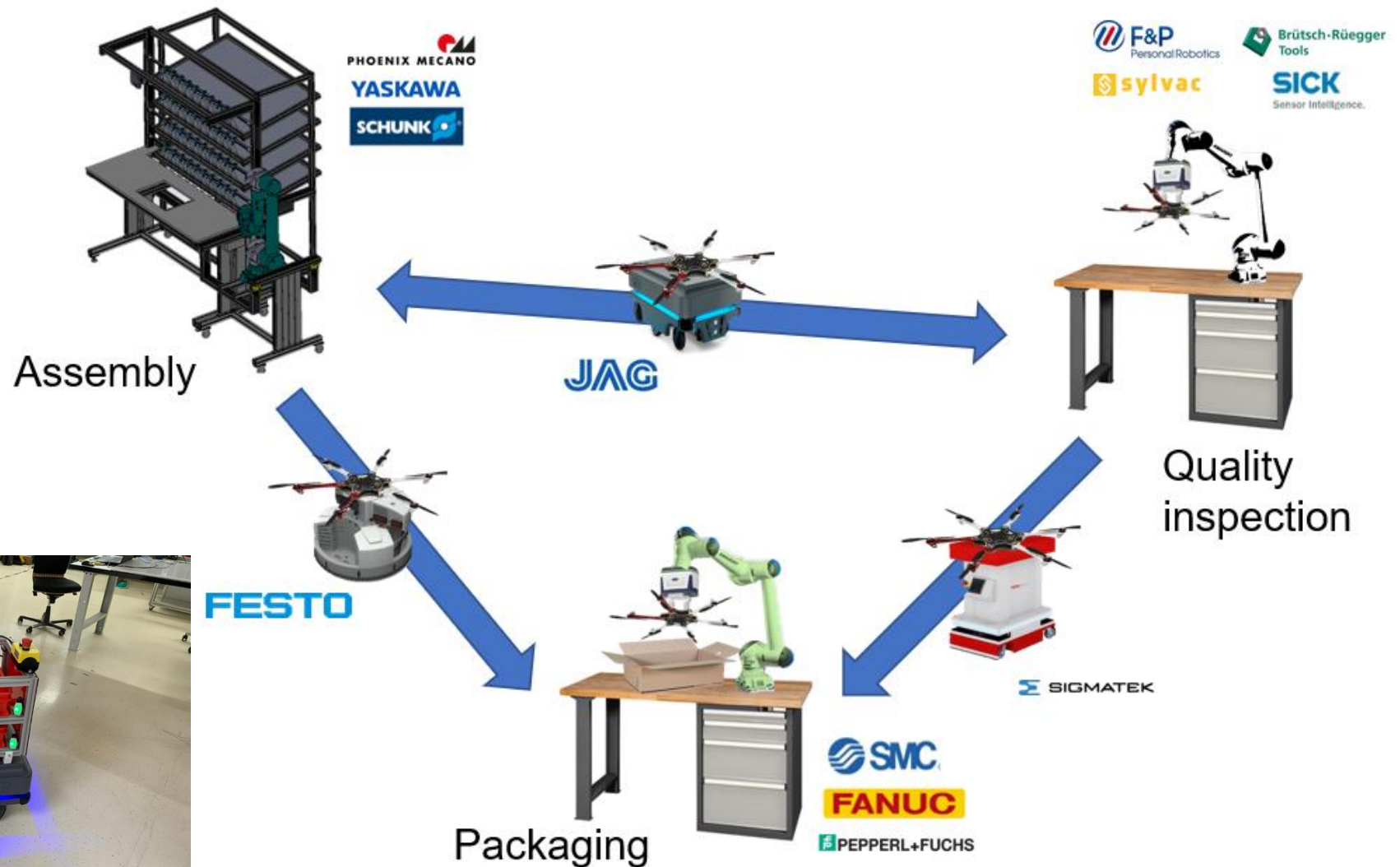
Bossard smartlocker



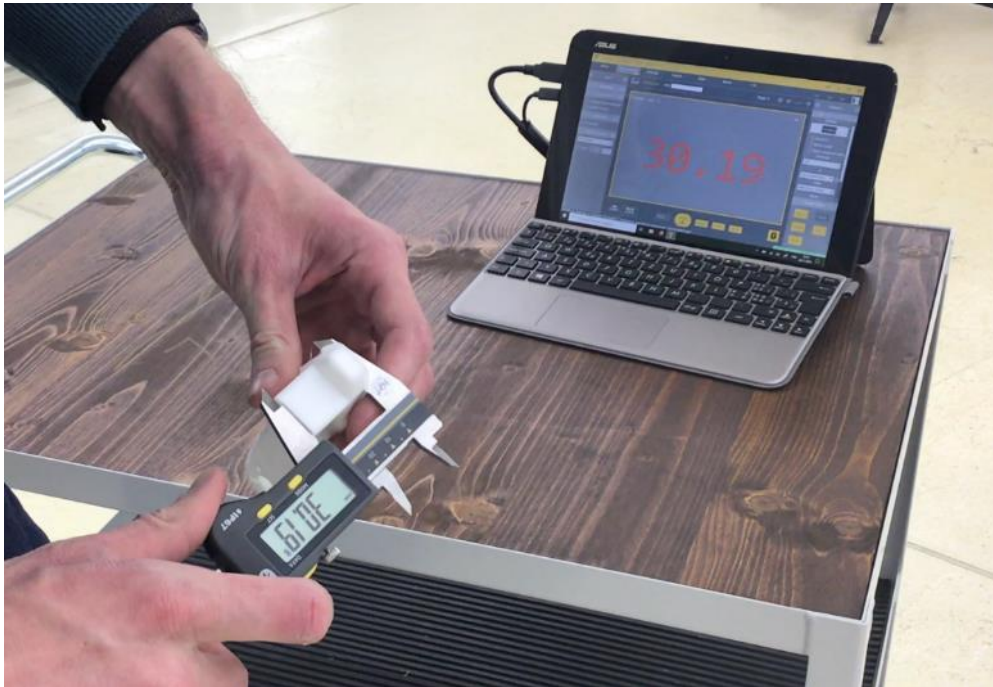
■ Brütsch-Rüegger Toolbox



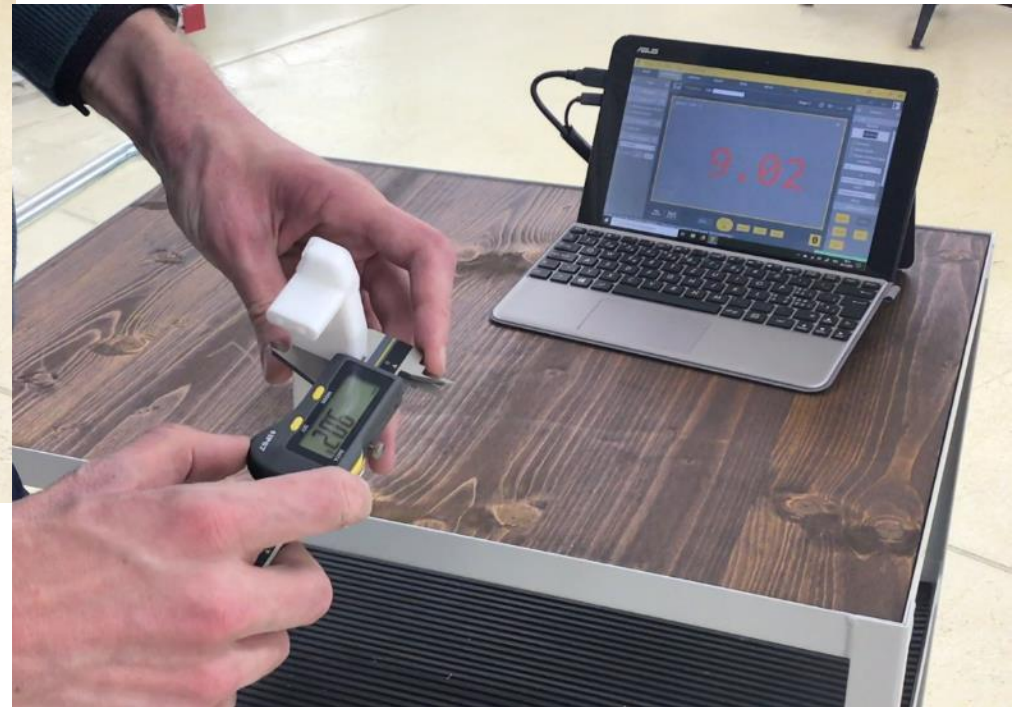
7. Smart Logistics



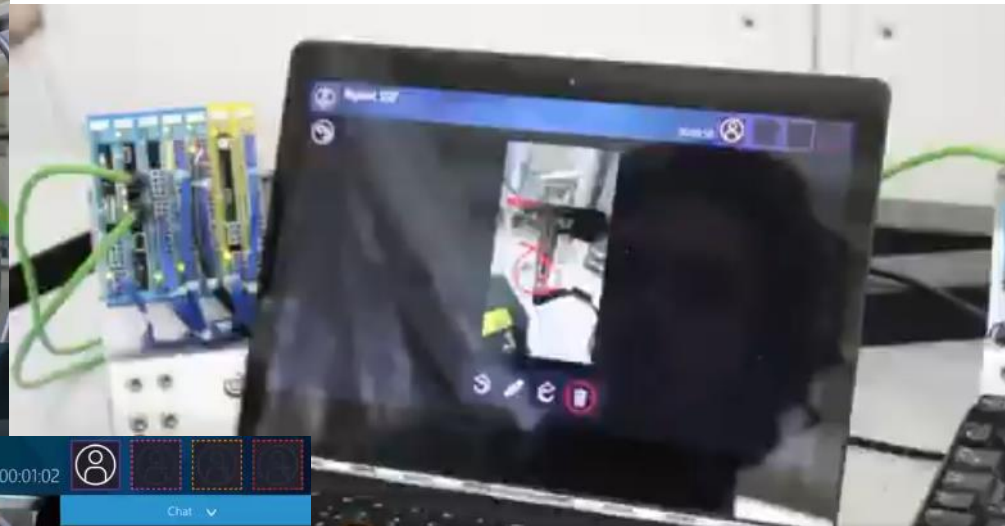
8. Connected and smart quality tools

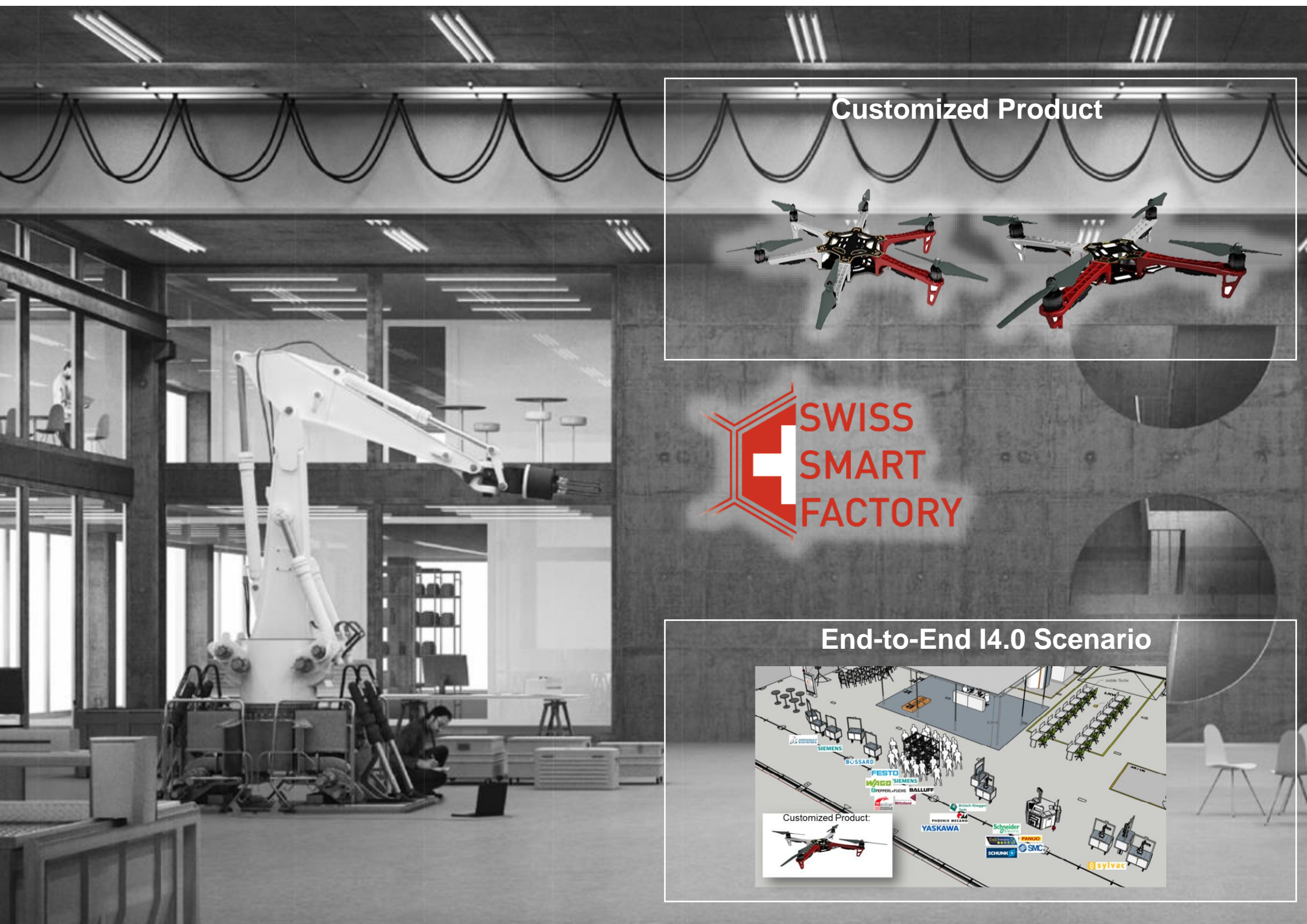


 Brütsch-Rüegger
Tools
 **sylvac**

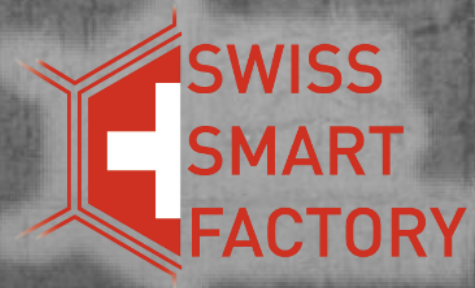


9. Maintenance (Smart Operator)

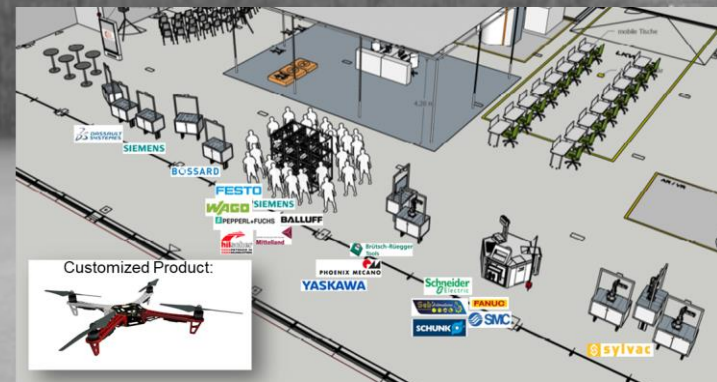




Customized Product

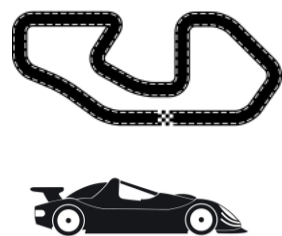


End-to-End I4.0 Scenario



Swiss Smart Factory

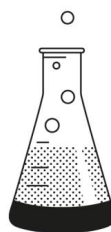
Unique Selling Points (USP)



*„Test before Invest“
Playground*



Technology Supermarket



Development Partnership



Expert Network

THANK YOU FOR YOUR ATTENTION

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RESEARCH DIRECTOR I4.0/IOT
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