



The Innovation Lab initiative: development of digital twin models and digital simulations to accelerate and make the machine, plant and product development phase more efficient

Presentation by
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Automation R&D manager



COMPANY PROFILE



SACMI

SACMI is the leading international designer, producer and marketer of manufacturing plants and industrial technology for the ceramic and packaging sectors. SACMI has enjoyed market success for 100 years and is now a major Italian enterprise in terms of size, sales, areas covered and services provided.



LEADING THE WAY, WORLDWIDE

QUALITY OF BUSINESS, QUALITY OF LIFE



€ 1.256 BILLION
of sales revenue in 2019



€ 253 MILLION IN 5 YEARS
invested in Research & Development



4,500 REGISTERED PATENTS
along history, of which 3000 patents
registered by SACMI Imola alone



4,646 EMPLOYEES
of whom 1,240 operate abroad



INTEGRATED CERTIFIED SYSTEMS
for quality, safety and the environment abroad

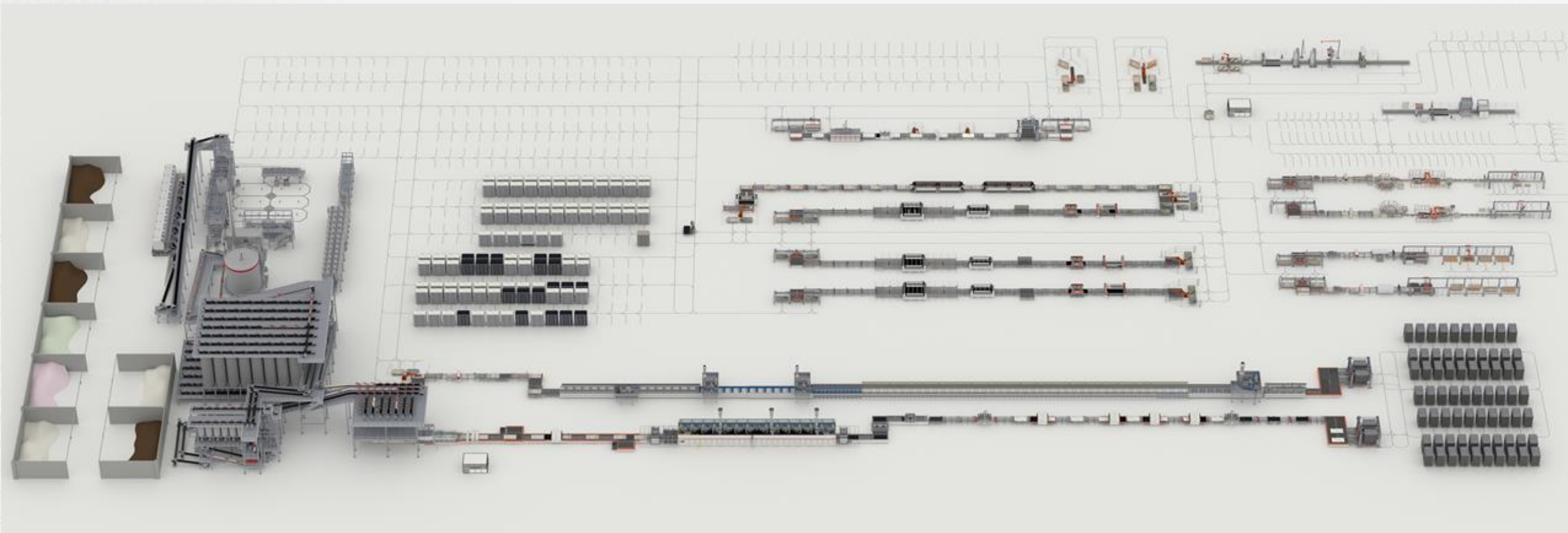


INTERNATIONALIZATION & CSR
83% of turnover created abroad, over 2 million spent
along last ten years on sustaining the local community

SACMI BUSINESS UNITS



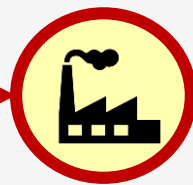
TILE MANUFACTURING PROCESS



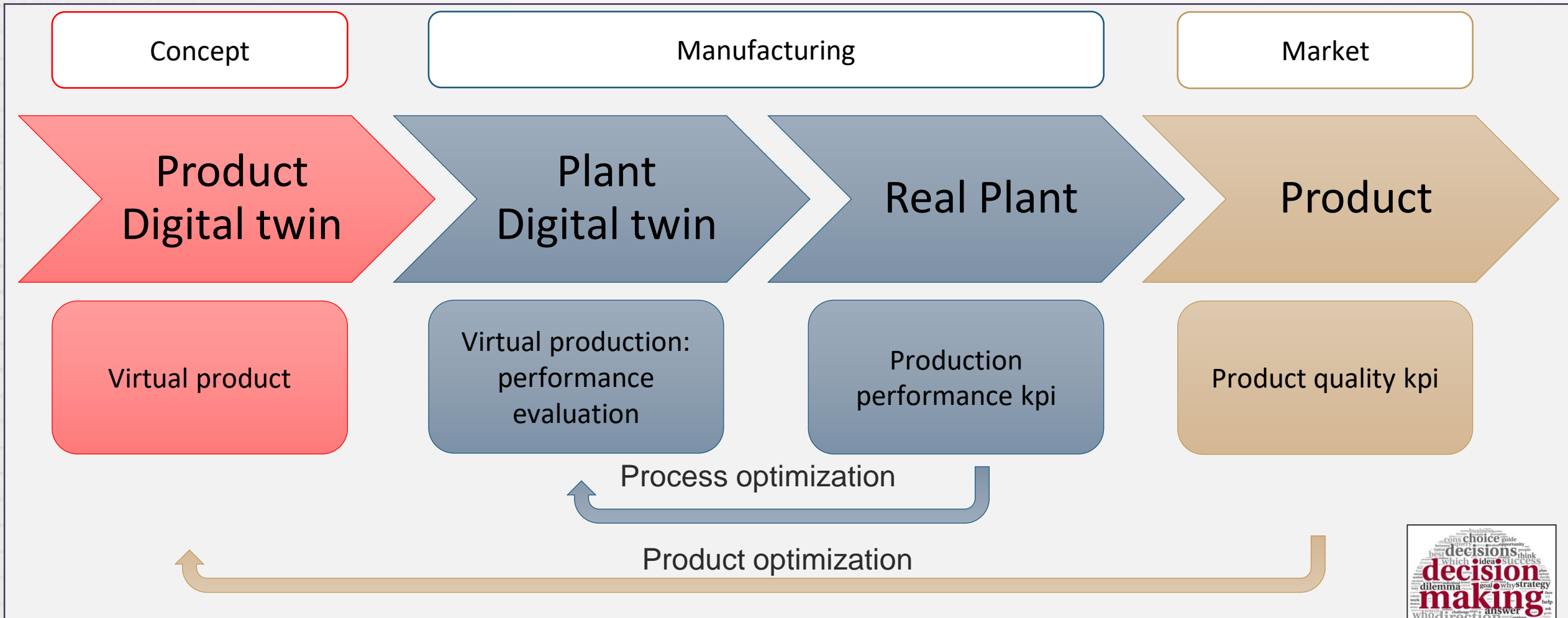
Smart Powder Plant

Smart Core Line

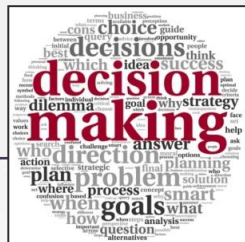
Finishing & Logistics



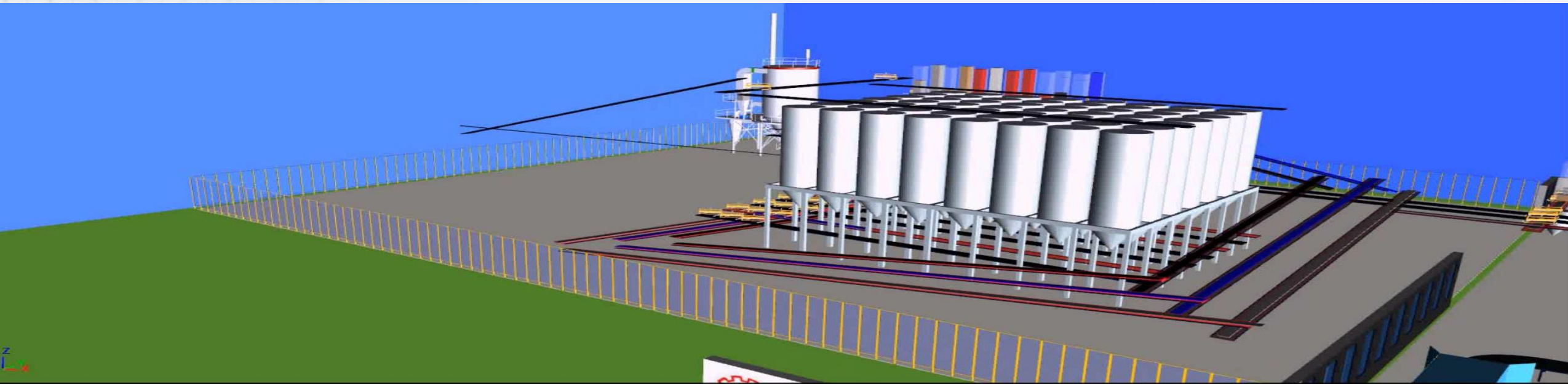
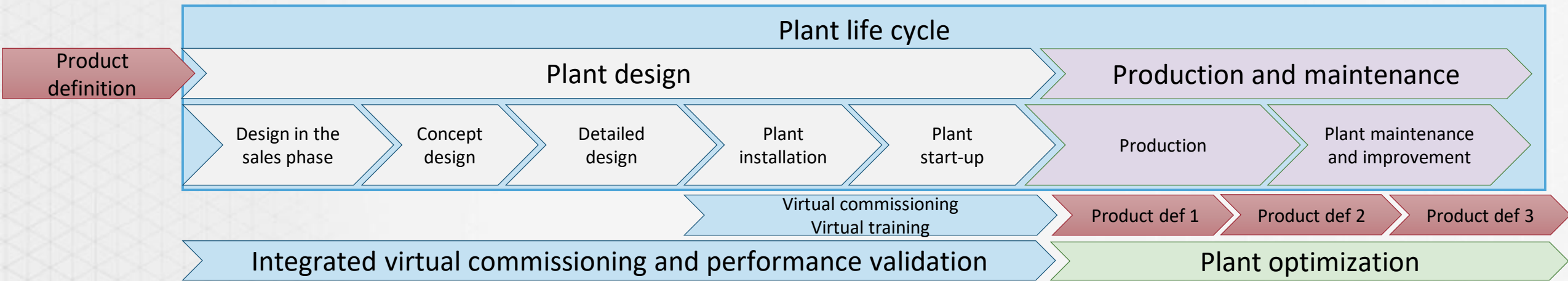
DIGITAL TWIN



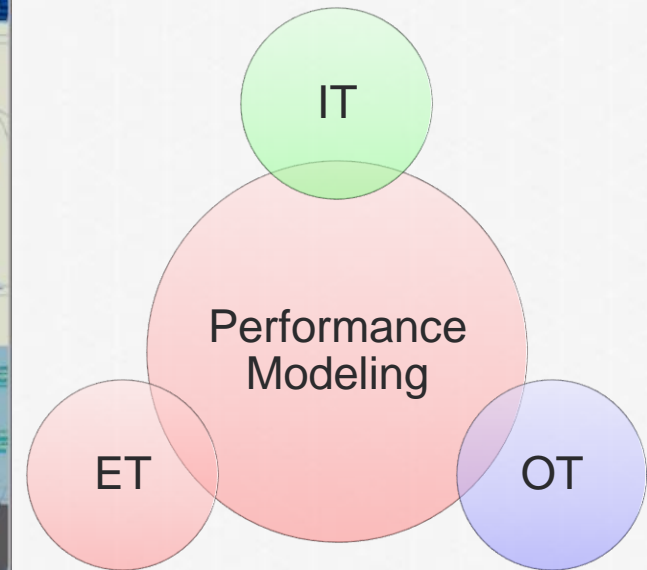
- Collaboration platforms(PLM,BIM)
- Digital Workflow



DIGITAL TWIN (DIGITAL WORKFLOW)

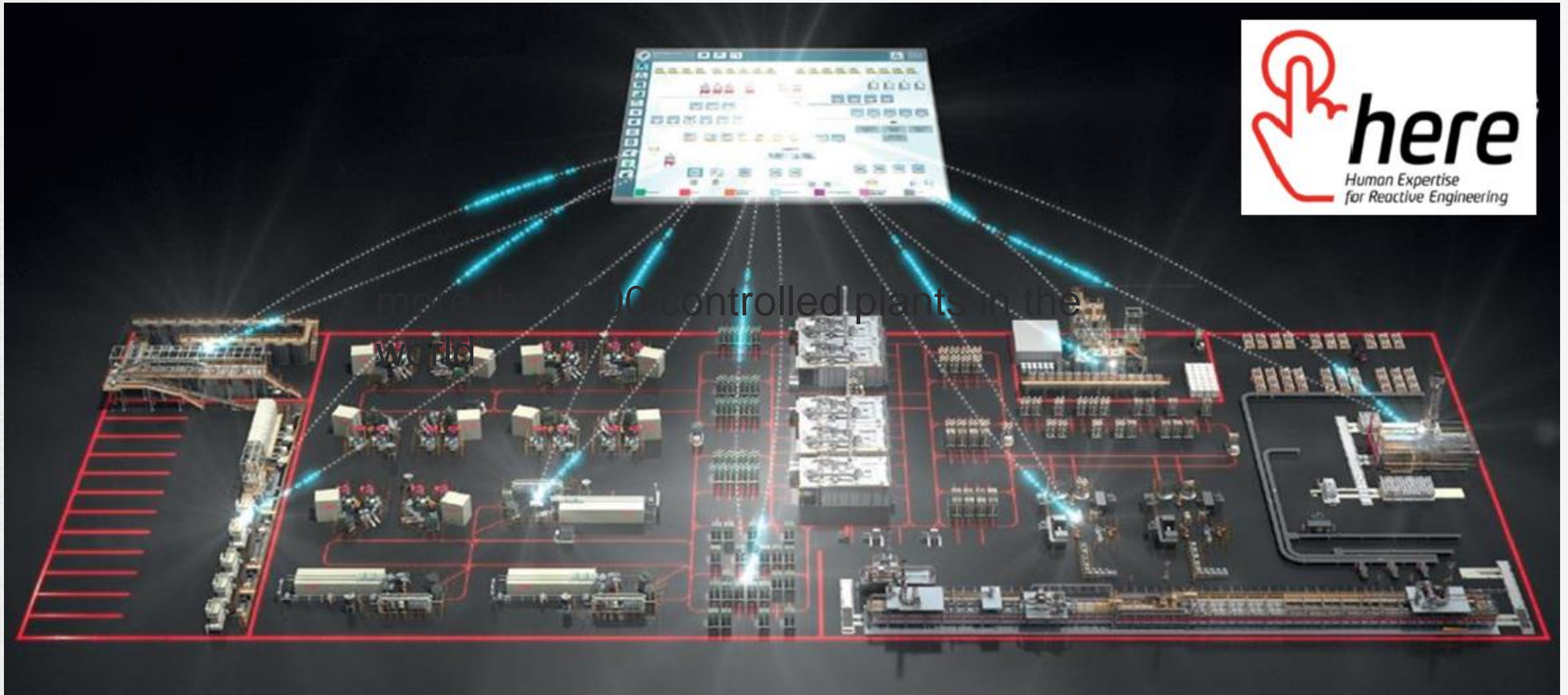


DIGITAL TWIN



Recover manufacturing added value through digitalization

DIGITAL TWIN



more than 100 controlled plants in the world



DIGITAL TWIN

Market scenario evaluation (what if analysis)

Digital model



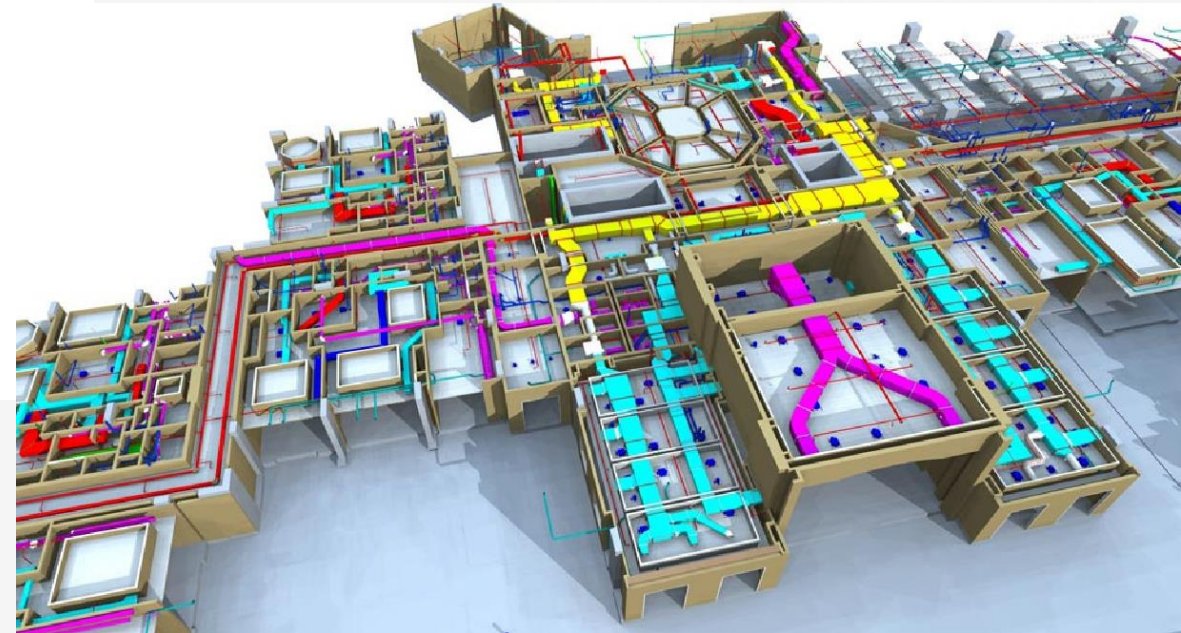
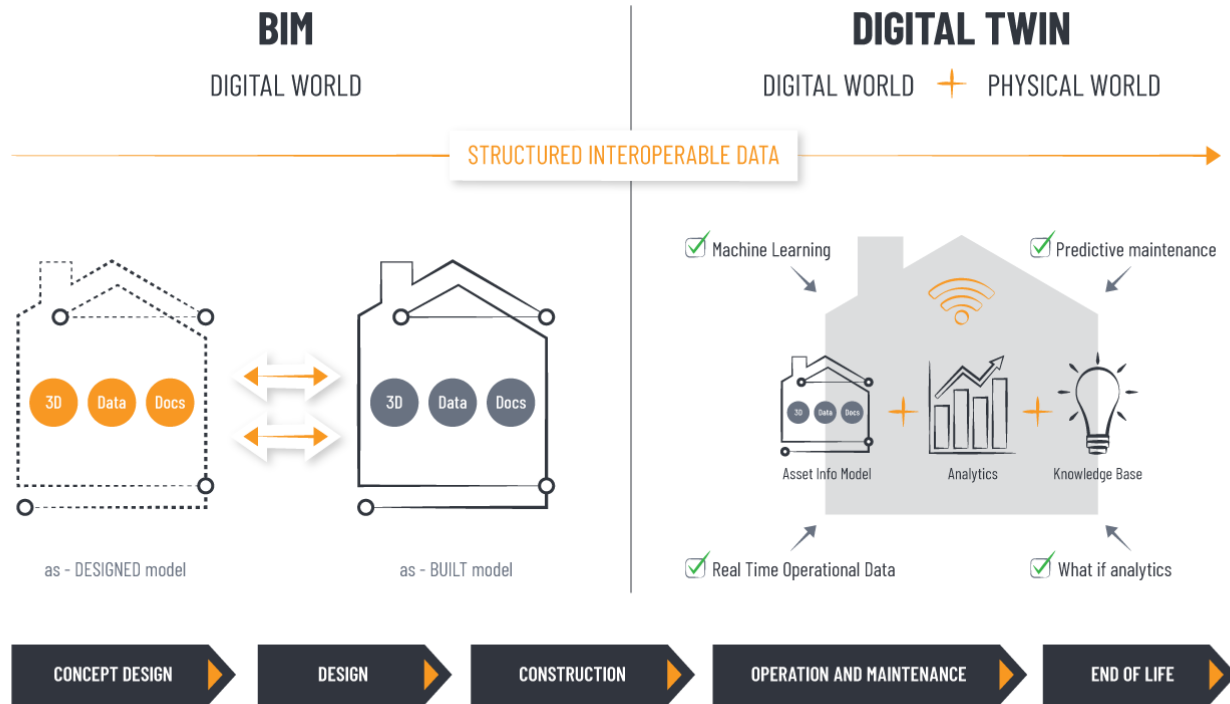
↓ Download production strategy - Plant optimization
(operational scheduling, batch management, automatic set up change)

↑ Plant performance measurement
(Real time data, machine learning)



Impianto reale

BUILD INFORMATION MODELING



Source: <https://cobuilder.com/en/the-digital-twin-a-bridge-between-the-physical-and-the-digital-world/>

INTEROPERABILITY STANDARDS



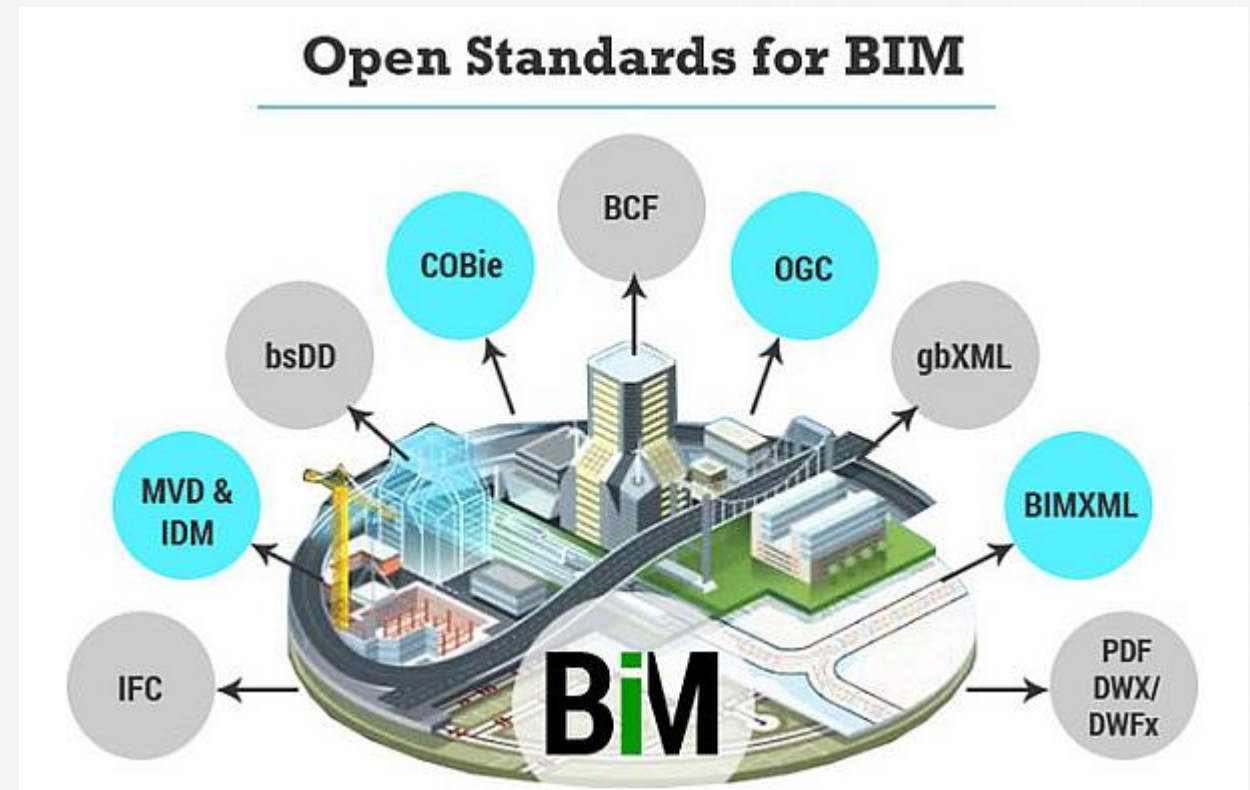
What is interoperability

Interoperability is a characteristic of a product or system, whose interfaces are completely understood, to work with other products or systems, present or future, in either implementation or access, without any restrictions.

**you cannot have interoperability
without open standards**

Benefits:

- No vendor lock-in
- True cross collaboration
- Long support in life cycle



Source: <https://www.bimmodel.co/single-post/2016/09/05/What-Interoperability-really-means-in-a-BIM-context>

BUILD INFORMATION MODELING

BIM COORDINATOR



The BIM coordinator has the skills necessary to manage and coordinate users and teams on a BIM project.

BIM SPECIALIST



A BIM specialist contributes to a project by using advanced software modeling throughout the project's full lifecycle.

BIM EXPERT



A BIM expert will learn the management of advanced BIM systems and their interoperability. The expert will also demonstrate IT manager skills, and will manage and develop libraries.

BIM MANAGER



The BIM Manager has the skills necessary for the management of collaborative teams and the implementation of BIM systems across all workstations.

		BIM INTERIOR ARCHITECT			BIM ARCHITECT				BIM MEP/STRUCTURE ENGINEER			BIM PROJECT MANAGER			BIM CONSTRUCTION ENGINEER				BIM BIOCLIMATIC DESIGNER			BIM FM FACILITIES MANAGER															
A1	B1	A1	A3	B1	A1	A2	A3	B1	A1	B1	B3	A1	B1	B2	A1	B1	B2	A1	B1	A1	A2	A3	B1	B2	B3	C1	C2	C3	A1	A2	A3	B1	B2	B3	C1	C2	C3
Digital Model		Digital Model			Digital Model				Digital Model			Digital Model			Digital Model				Digital Model			Digital Model															
Collaborative Teamwork		Advanced Modeling			Model Documentation				Collaborative Teamwork			Collaborative Teamwork			Collaborative Teamwork				Collaborative Teamwork			Model Documentation															
		Collaborative Teamwork			Advanced Modeling				MEP/ Struct. Interoperability			4D, 5D, 6D ,7D Interoperability			4D, 5D, 6D ,7D Interoperability				4D, 5D, 6D ,7D Interoperability			Advanced Modeling															
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																						BIM Objects Development BIM Libraries Management															
																						BIM Style Guide															
																						IT Management															
																						BIM Systems Implementation															
																						BIM Systems Management															

A1: Digital Model
A2: Model Documentation
A3: Advanced Modeling
B1: Collaborative Teamwork
B2: 4D, 5D, 6D Interoperability
B3: MEP/Struct. Interoperability
C1: BIM Objects Development. BIM Libraries Management
C2: BIM Style Guide
C3: Information Management

DATA & ANALYTICS

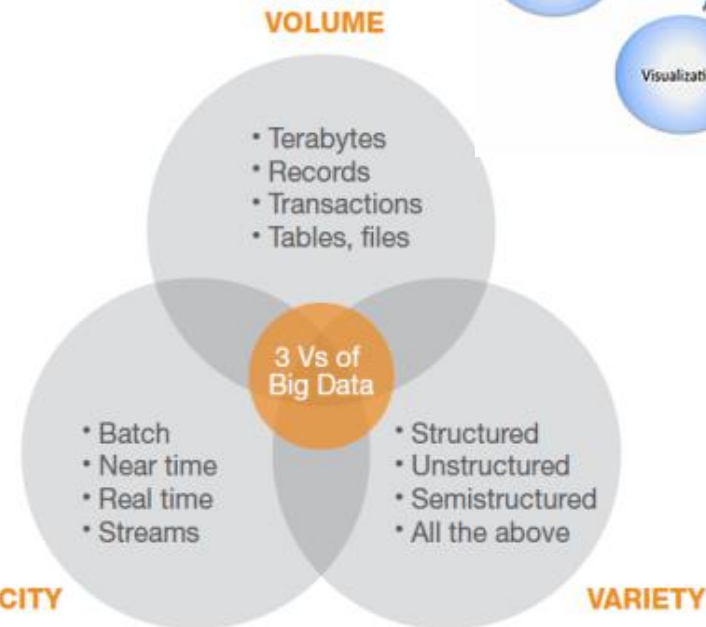
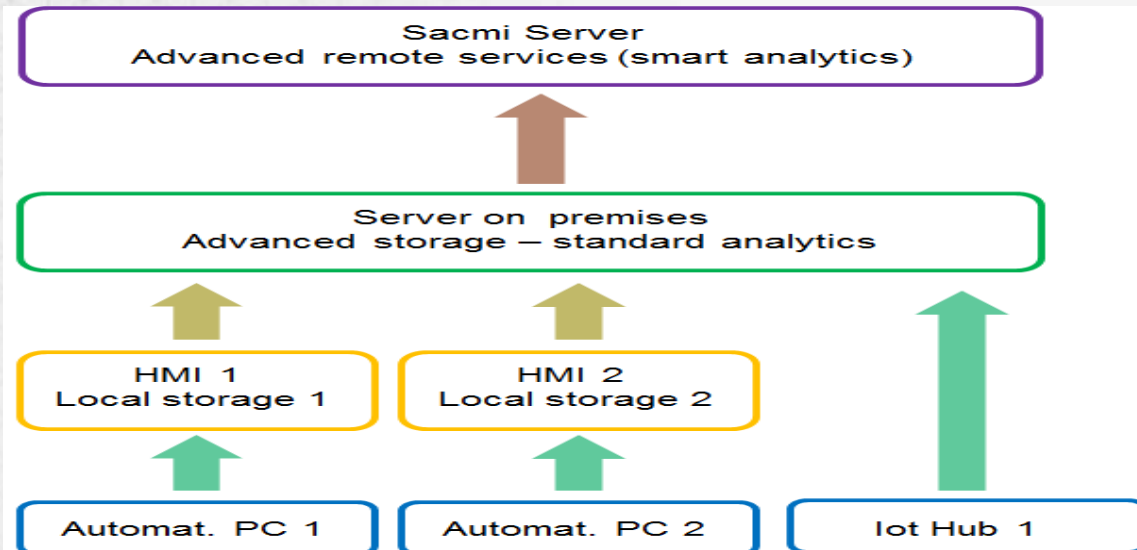
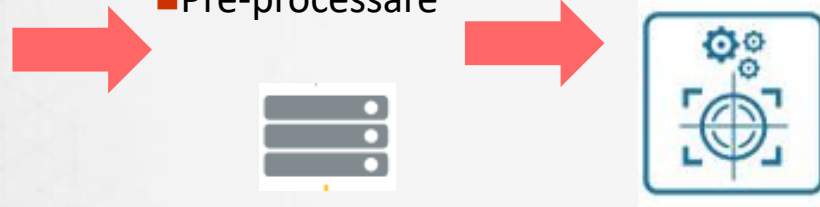


Data Lake

- Raccogliere
- Ordinare
- Pre-processare

Analytics

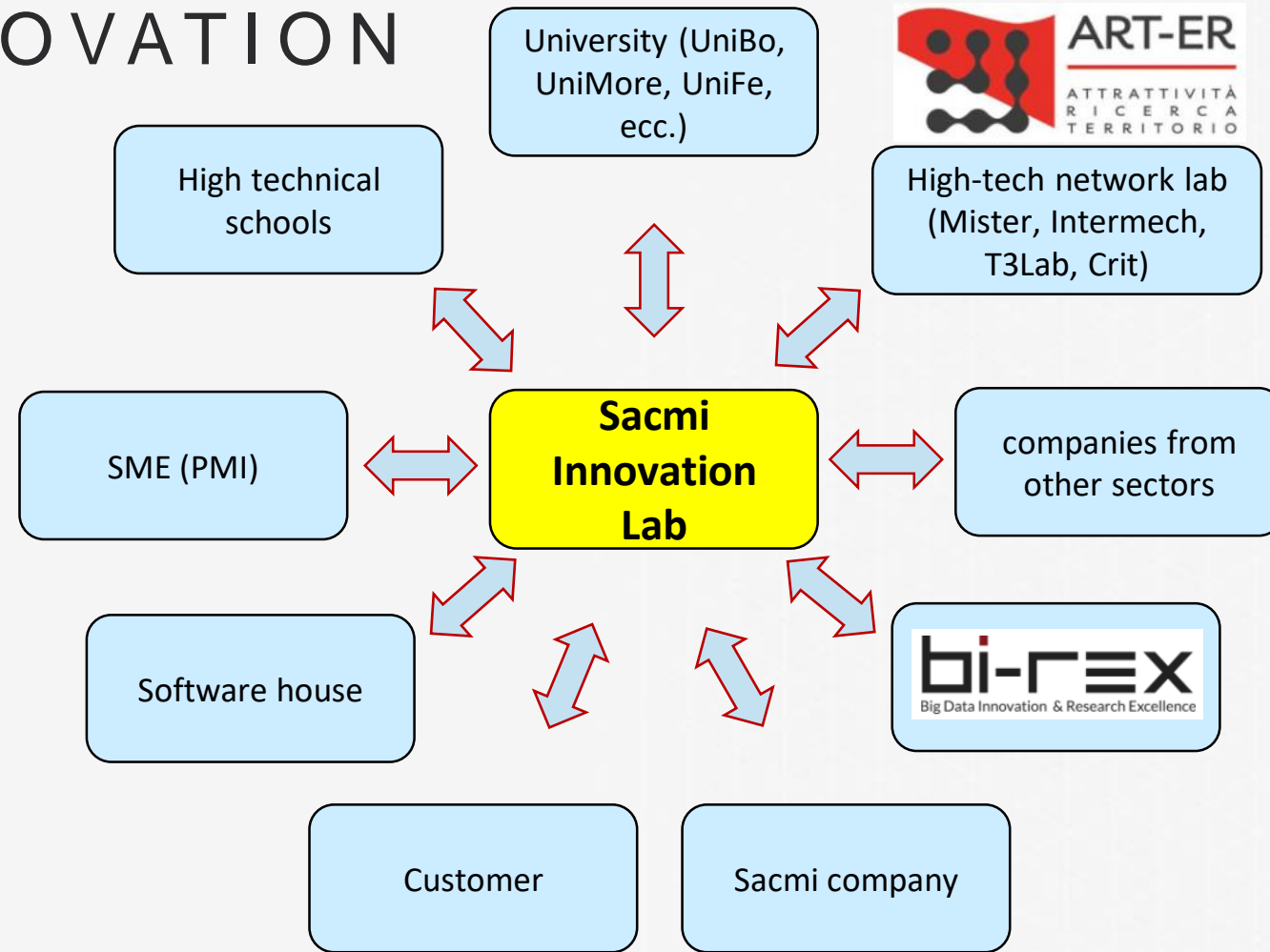
- Modelli



PROMOTE OPEN INNOVATION

Integration of the laboratory on the territory:
'Create an innovation ecosystem'

The laboratory has the function of integrating the world of research with Sacmi industrial application sectors, bridging the gap known as **'death valley'**





THANK YOU FOR YOUR KIND ATTENTION