

ANTICIPARE LE ESIGENZE DEL MERCATO E DIFFERENZIARSI CON I4.0

PAOLO MAIFREDI
OPERATING DIRECTOR – BUFFOLI TRANSFER S.P.A.

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BUFFOLI

MACCHINE TRANSFER
DI PRECISIONE,
AUTOMAZIONE
& SOFTWARE

4.0



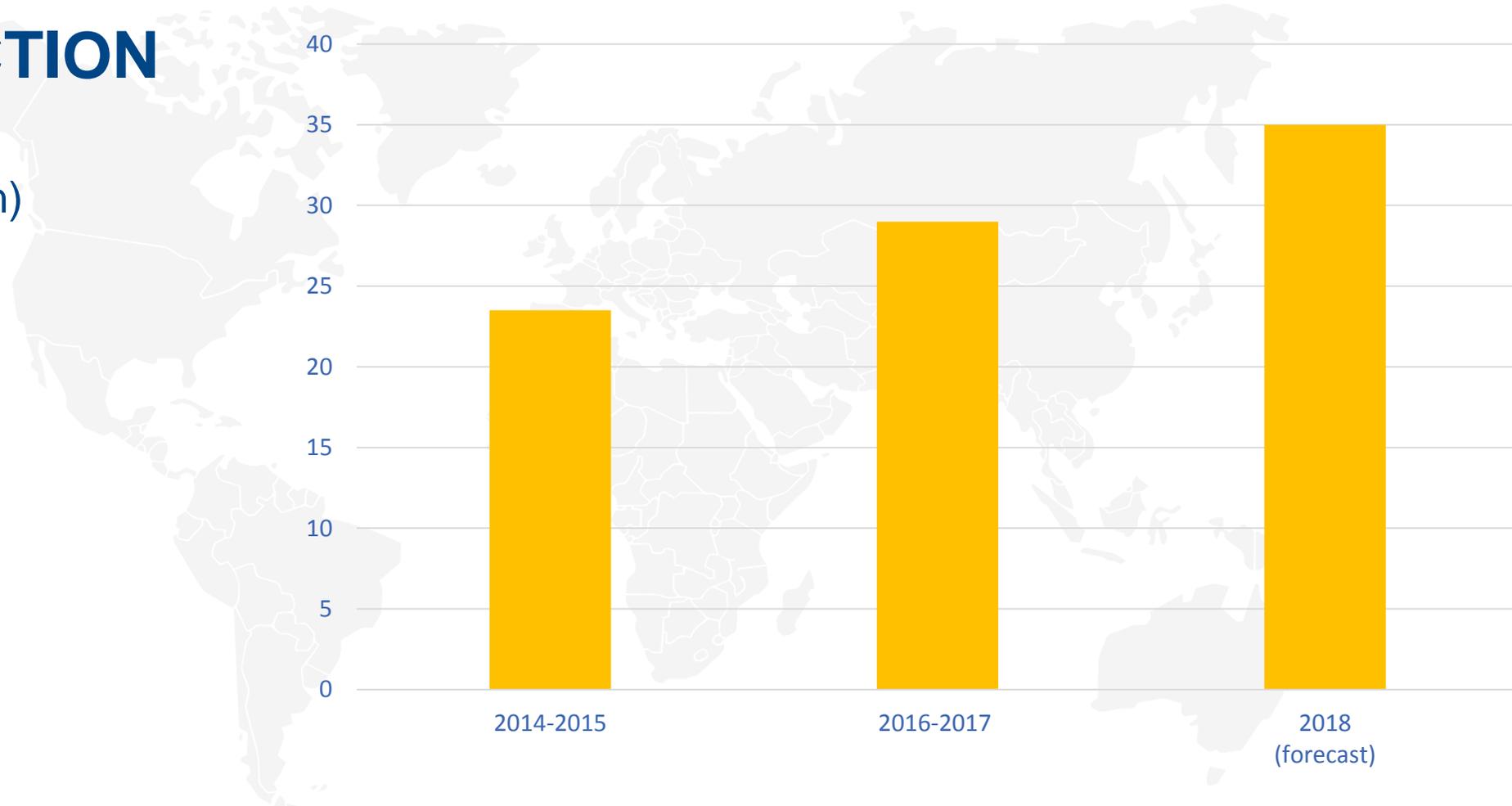
BUFFOLI TRANSFER MACHINES



1000
MACHINES

OVER
30
PATENTS

**PRODUCTION
VALUE**
(in EUR million)



ORGANIC COMPOSITION

NUMBER OF
EMPLOYEES

2013
43

2017
59

2018
72

MEAN AGE

2013
45 years old

2018
40 years old

HIGH
SCHOOL

2013
37%

2017
61%

2018
66%

A CUSTOMER CENTRIC APPROACH



Solutions that make the difference:
a distinctive character



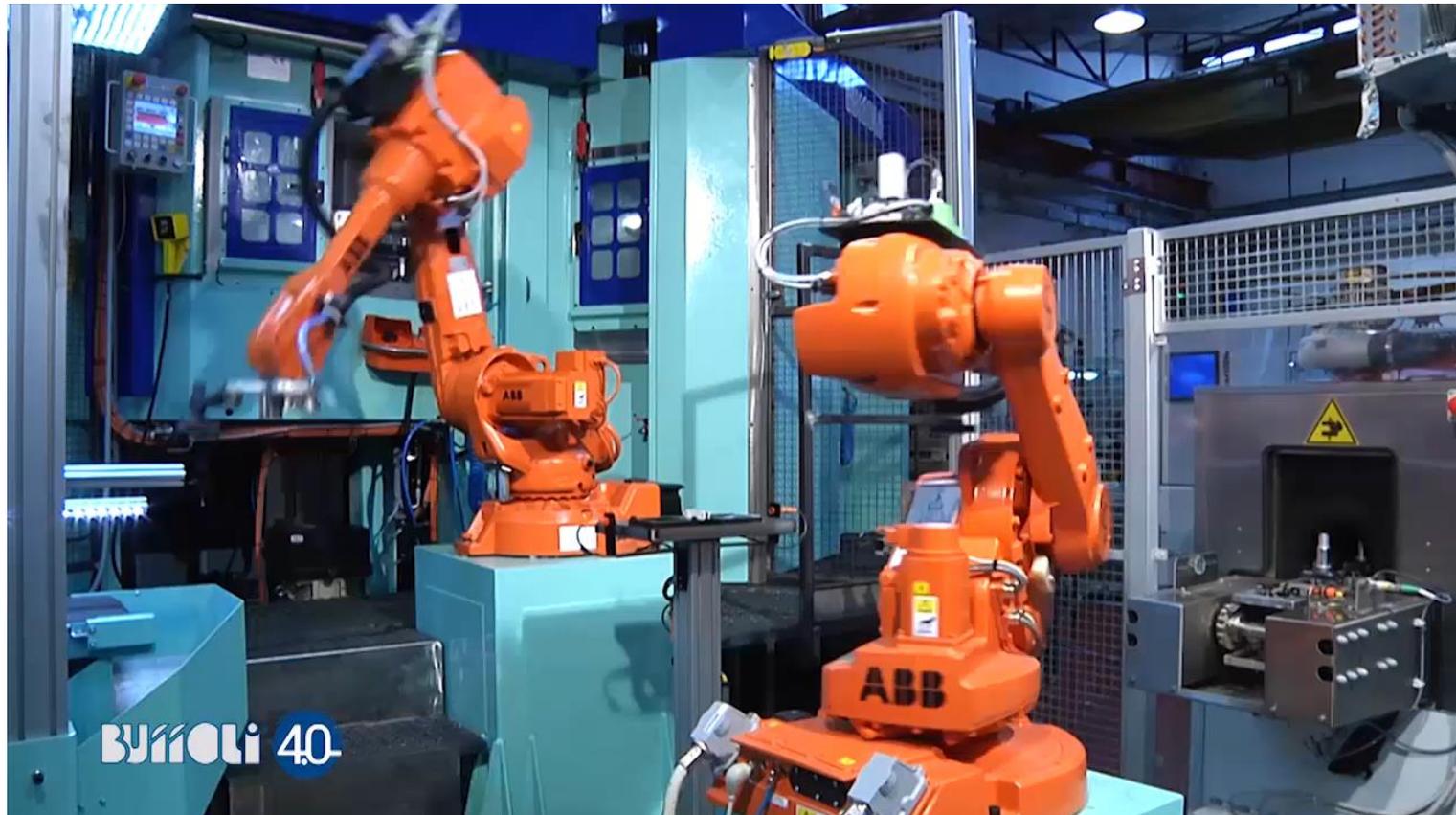
High production processes:
an essential character



Mass customization:
the added value



- Integration of functions inside the machine
- Integration of functions before and after machining cycle



FESTO
 Consulting

**THE STARTING POINT:
 THE VDMA MATURITY ASSESSMENT**

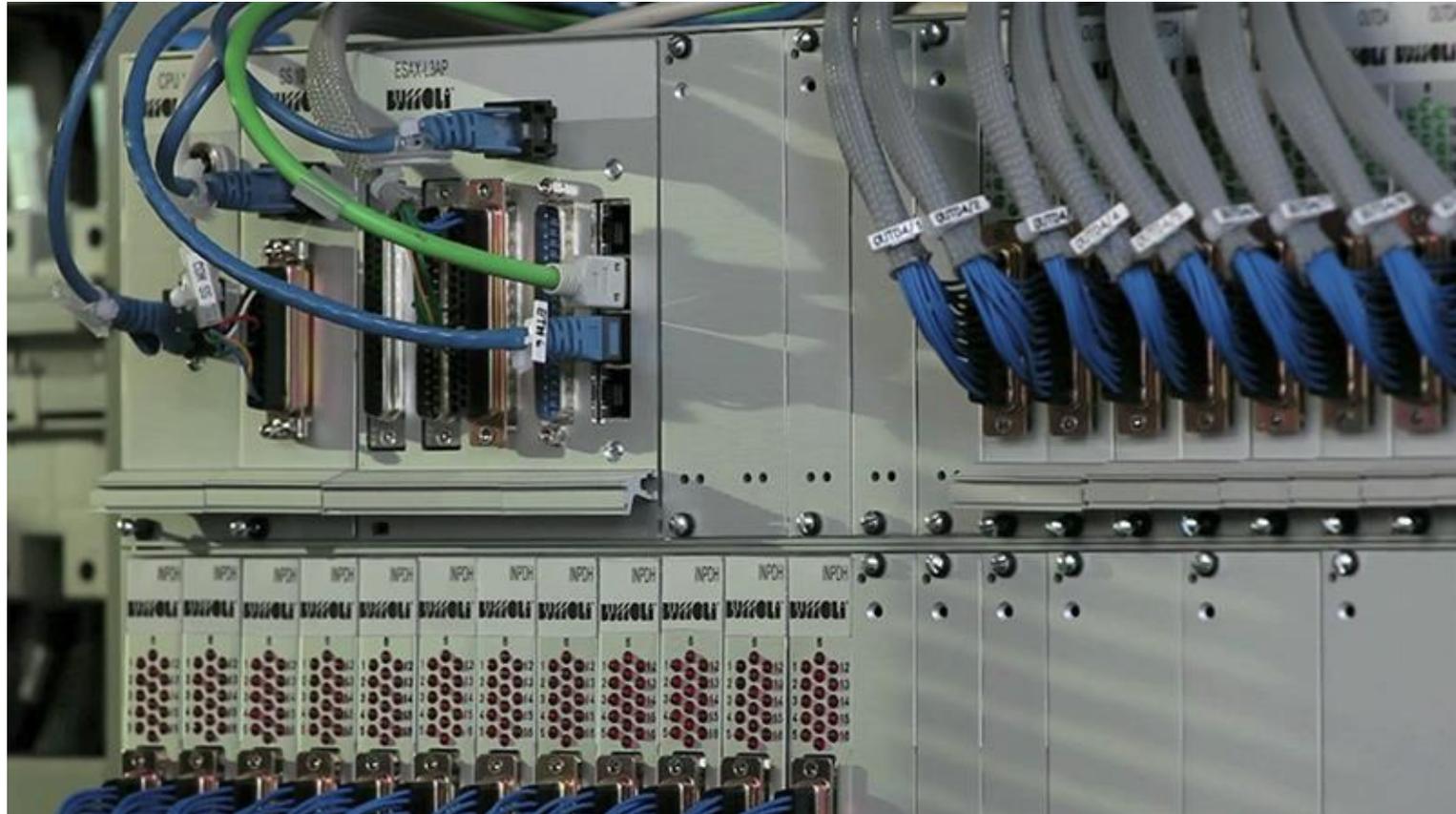


Products				
Integration of sensors / actuators				
	No use of sensors / actuators	Sensors / actuators are integrated	Sensor readings are processed by the product	Data is evaluated for analyses by the product
Communication / Connectivity				
	The product has no interfaces	The product sends or receives I/O signals	The product has field bus interfaces	The product has Industrial Ethernet interfaces
Functionalities for data storage and information exchange				
	No functionalities	Possibility of individual identification	Product has a passive data store	Product with data storage for autonomous information exchange

Monitoring					
	No monitoring by the product	Detection of failures	Recording of operating condition for diagnostic purposes	Prognosis of its own functional condition	Independently adopted control measures
Product-related IT services					
	No services	Services via online portals	Service execution directly via the product	Independently performed services	Complete integration into an infrastructure of IT services
Business models around the product					
	Gaining profits from selling standardized products	Sales and consulting regarding the product	Sales, consulting and adaption of the product to meet customer specifications	Additional sale of product-related services	Sale of product functions

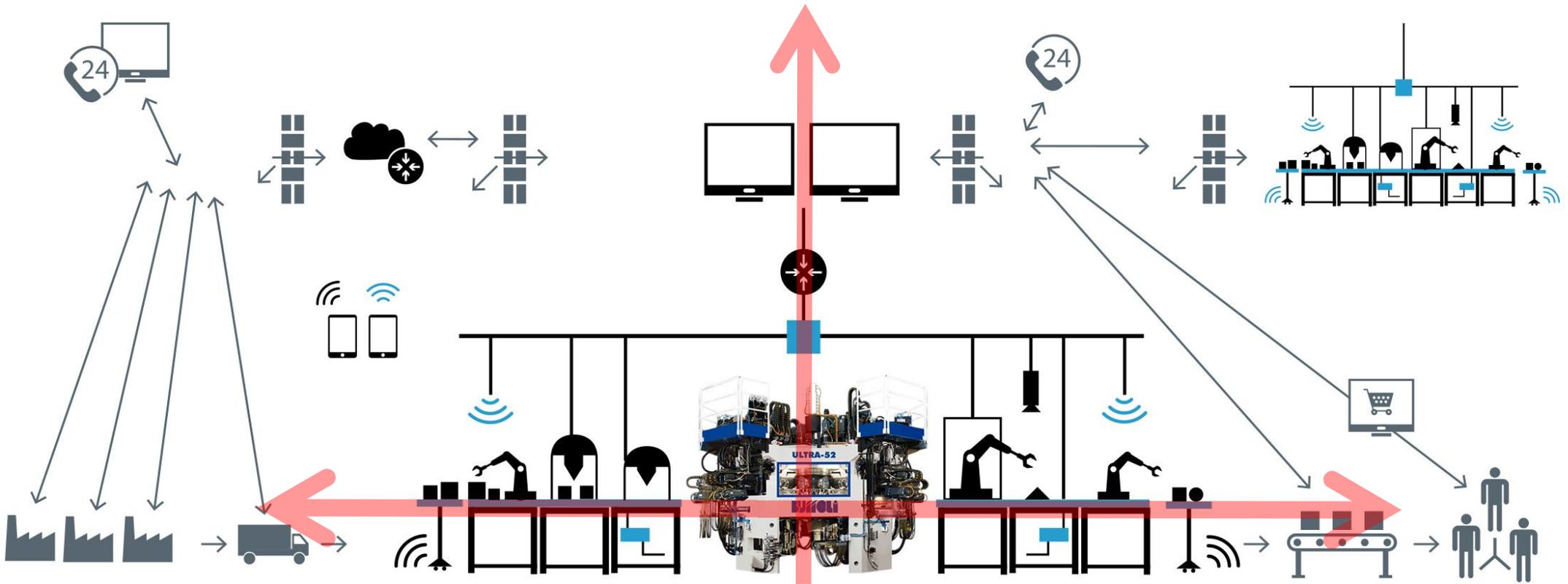
THE FUNDAMENTALS

- KNOW-HOW
- AUTOMATION
- DIGITIZATION
- CONNECTIVITY



THE BACKBONES OF THE DEVELOPMENT

VERTICAL INTEGRATION



HORIZONTAL INTEGRATION

HORIZONTAL INTEGRATION

KEY FACTORS

- From the flexibility to the adaptivity



HORIZONTAL INTEGRATION

KEY FACTORS

- From the flexibility to the adaptivity
- Reduction of the physical work of the operators

BORN TO BE
FLEXIBLE

AN EXAMPLE OF AUTOMATION AND HORIZONTAL INTEGRATION BEFORE...

receiving of
casted parts

manual
extraction

manual loading

machining

manual
unloading

manual insertion into
boxes

manual palletizing

parts
cleaning



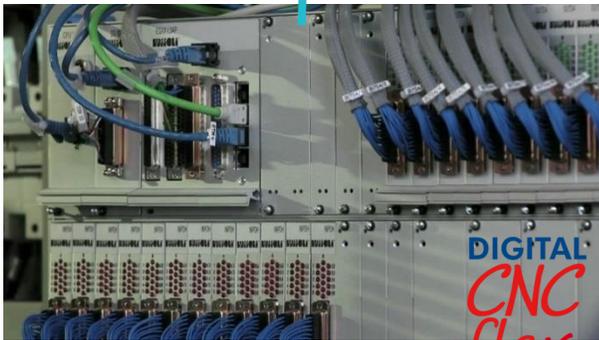
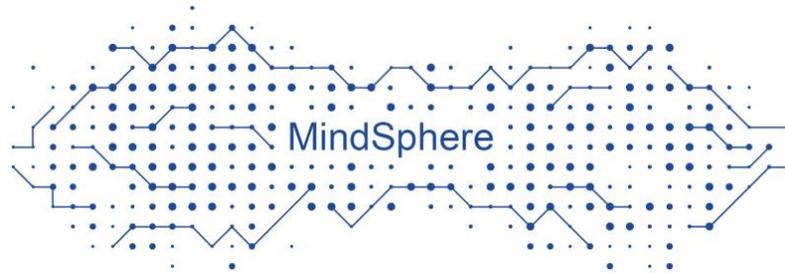
AN EXAMPLE OF AUTOMATION AND HORIZONTAL INTEGRATION AFTER



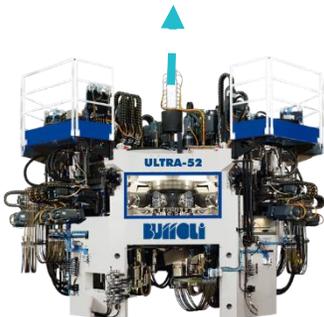
VERTICAL INTEGRATION

- **Communication infrastructures:** IO-Link, ProfiNet, EtherCAT, OPC-UA
- **Applications:** Remote troubleshooting tools, Predictive maintenance, Data Exchange
- **Mobile Devices:** smartphone, tablet, smartwatch

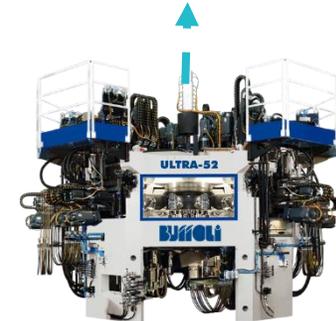




Solution with
CNC BUFFOLI CNC FLEX



Solution with
CNC SIEMENS 840D SL





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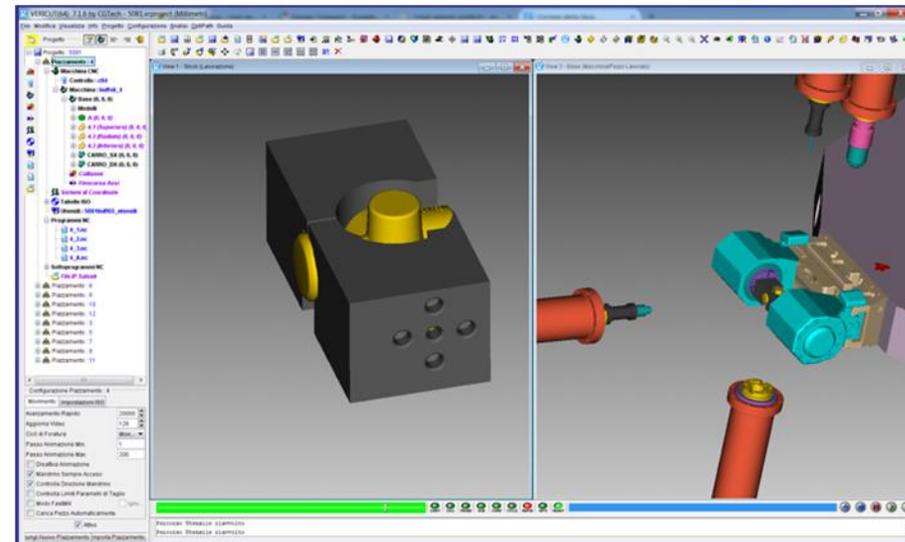
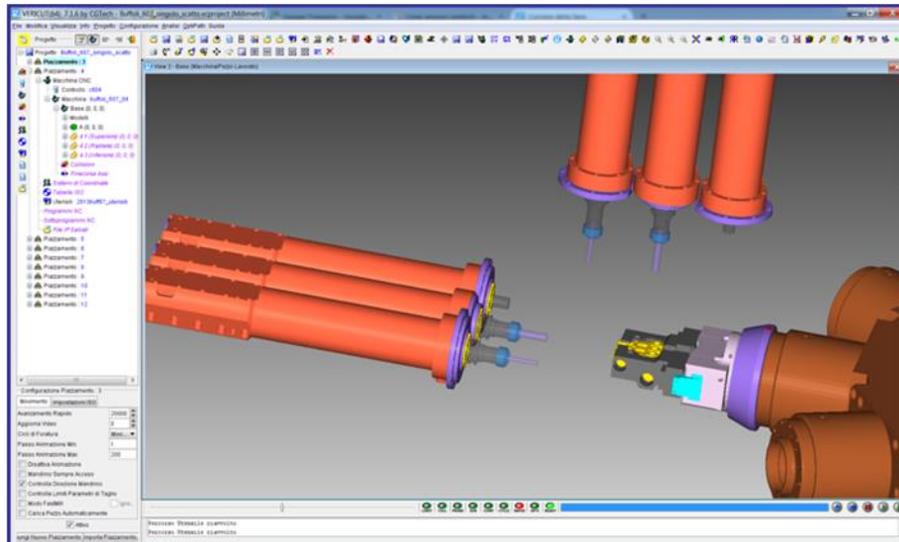
**INDUSTRY 4.0 @ BUFFOLI:
A NEW BUSINESS MODEL**

HARDWARE AND SOFTWARE DEPT.

Buffoli[®]
PRECISION CNC TRANSFER MACHINES

Electro
Engineering

MECHANICAL DESIGN DEPT.



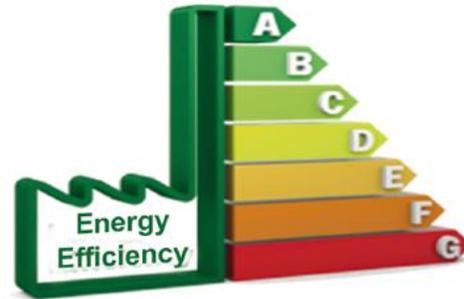
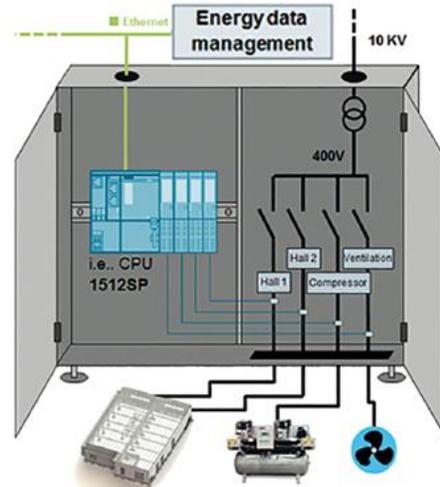
SERVICE DEPT.

- Corrective maintenance
- Scheduled maintenance
- Predictive maintenance



SERVICE DEPT.

- Energy efficiency management



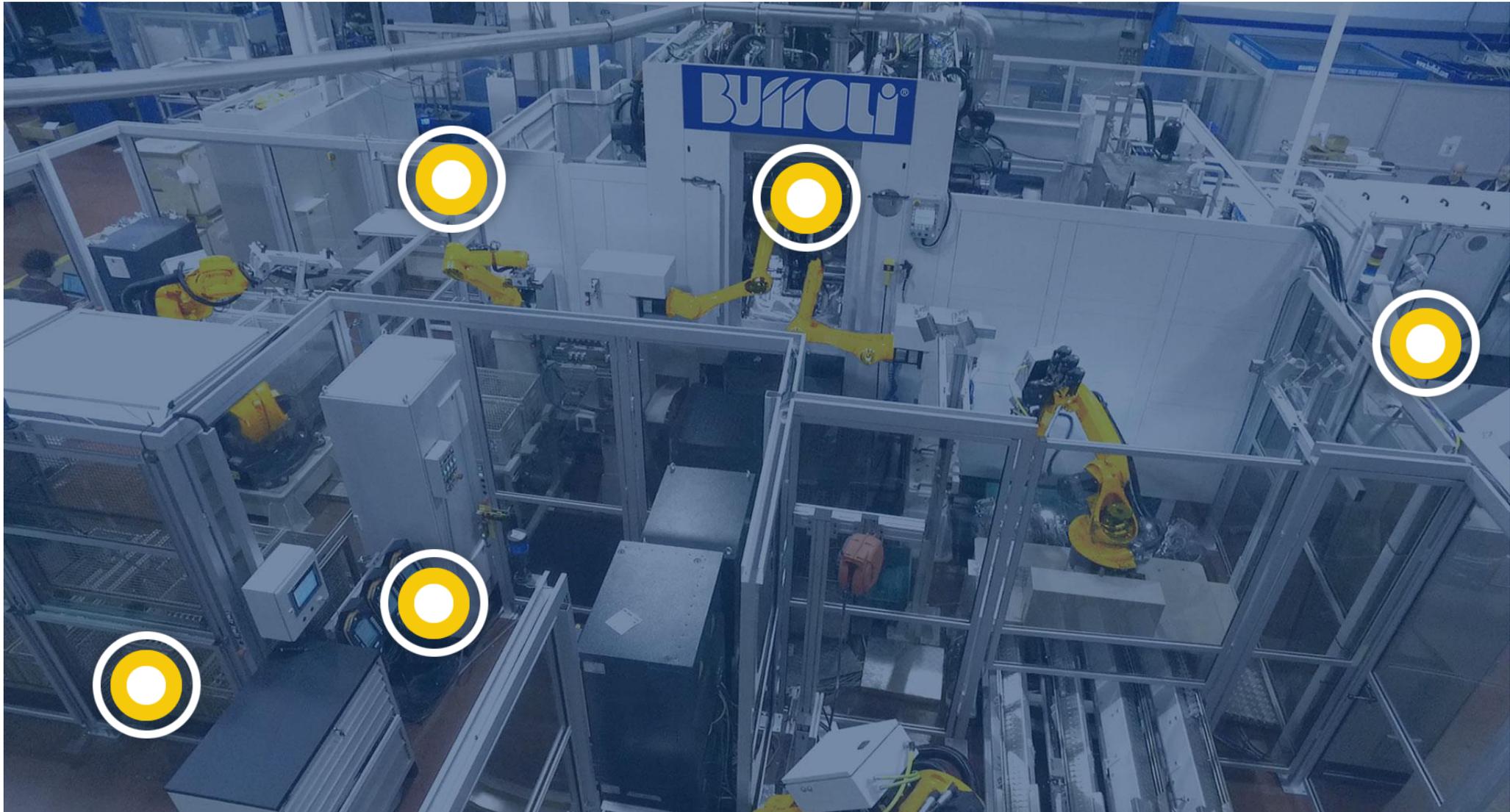
SMED PROJECTS



INDUSTRY 4.0 @ BUFFOLI: A NEW BUSINESS MODEL



INDUSTRY 4.0 @ BUFFOLI: A NEW BUSINESS MODEL



Thanks!

