



FESTO


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FESTO, TECHEDGE E ALLEANTIA PRESENTANO
INDUSTRY 4.0 PLUG & PLAY: OPEN
INTEGRATED FACTORY I 4.0

20 | 10 | 2016
SAP FORUM MILANO

What does I4.0 mean for Techedge and SAP?

I4.0 scenarios

Technological and applicational architecture

Open Integrated Factory I 4.0



Soluzioni Industry 4.0 plug & play Industry 4.0 plug & play solution

CPX Festo

- Motion control
- Advanced diagnosis
- Multitechnology connectivity

SAP HANA

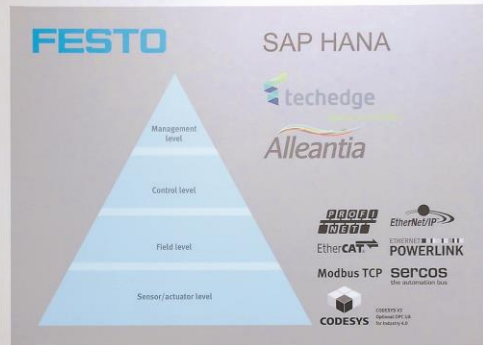
- Real Time cloud based technology foundation big data designed

Techedge

- Pattern analysis & preventive maintenance
- Enterprise application integration

ALLEANTIA

- Smart IoT gateways
- Plug & Play Industry 4.0 middleware



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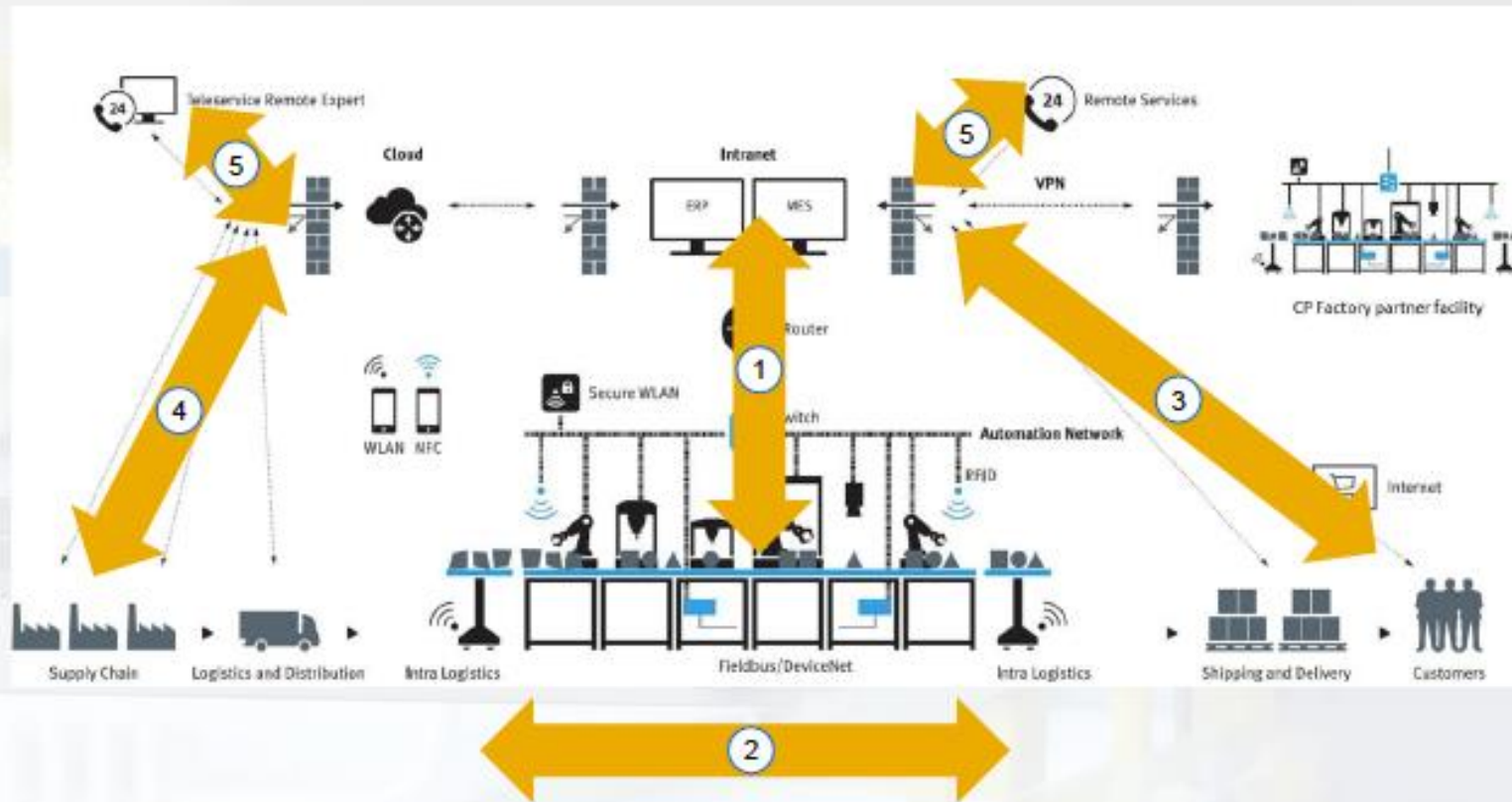


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Three examples



What scenarios can we enable?



5 Scenarios:

- 1. Shop floor to Top floor**
Intra company vertical integration
- 2. Machine to Machine**
Autonomous machines
- 3. eCommerce Integration**
Direct integration of online configurators
- 4. Manufacturing Collaboration**
 - Visibility
 - Genealogy
 - Quality
 - Kanban / Direct replenishment
- 5. Machine Cloud**
 - Predictive maintenance
 - Predictive quality

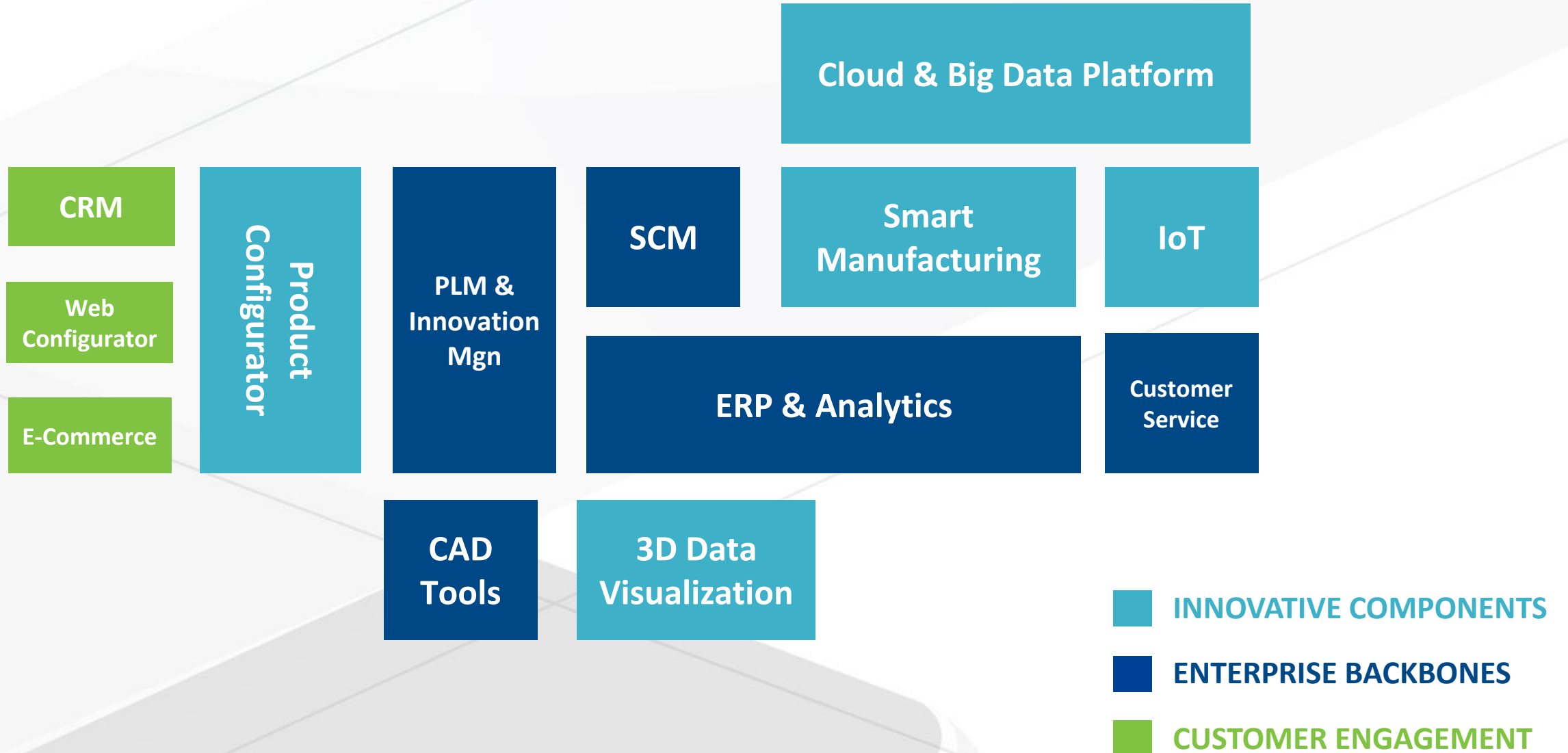
What changes for IT Organizations?



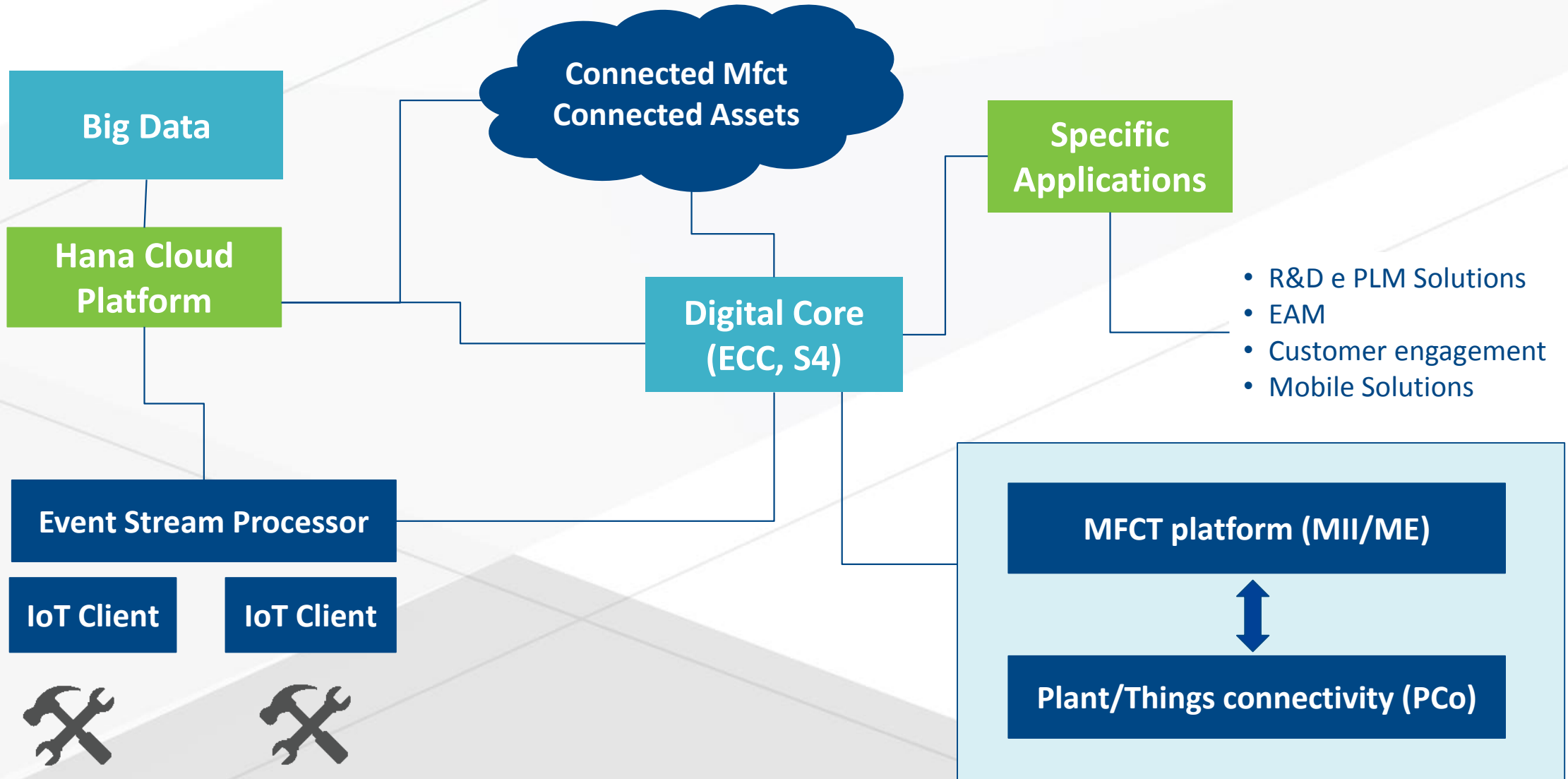
Changes are related to several aspects:

- ▶ **Organizational:** in order to enable the adoption of I4.0, it is needed to work on a better integration of existing back-end systems (MES, ERP, CRM...)
- ▶ **Technology:** once you have a robust and consistent back-end, you can initiate the adoption of new enabling technologies - the objects and IoT, Big Data, Cloud Predictive, Machine Learning
- ▶ **Compliance:** a robust standard, which adheres to IT standards, is ensured, working on communications security, access management, etc...
- ▶ Then we talk both about **applicational** and **technological architecture**

Applicational Architecture



Technological Architecture



An IoT Example



- GPS location of trucks and containers

LoRa™

SIGFOX



3G/4G

INTERNET

SAP HANA
Cloud Platform



IoT Solution

- RFID reader to locate container
- GPS to locate trucks



- RFID for containers monitoring:
 - Filling
 - Humidity
 - Temperature

Pre-configured Scenarios @Techedge



Pre-configured solutions

- Energy Management (for Retailers or Real Estate)
- Energy Management based on MII preconfigured solution (Smart Manufacturing Edition)
- Equipment monitor for Festo/Alleantia Devices (on MII+HCP)
- Wearable device integration (Samsung Gear)
- Smart mobility (Smart bikes)

Possible Scenario of Open Integrated Factory



Analytics & Equipment ID

Data Collection



Equipment - User 1

Digital Twins



Data Collection



Equipment - User 2



Equipment - Manufacturer

Benefits



For the manufacturer

- Real time and accurate installed based management
- Provide additional services on top of manufacturing assets
- Push additional spare parts/retrofitting on customer equipment ID card
- Provide 3D contents related to the equipment

For the users

- Real time monitoring and up to date info's about the asset
- Seamless integration with ERP and Plant Maintenance
- Predictive and Condition Based Maintenance scenarios
- Leverage on 3D contents for maintenance and training



JOIN THE CONVERSATION!



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