DXC.technology

Trasformare le operazioni di fabbrica con le Best Practice di DXC

Giuseppe Marengon
27 Novembre 2020

"new DXC"

DXC Technology at a glance

AEROSPACE & DEFENSE
BANKING & CAPITAL MARKETS
CONSUMER & RETAIL
ENERGY, UTILITIES, OIL & GAS
HEALTHCARE & LIFE SCIENCES
INSURANCE
MANUFACTURING & AUTOMOTIVE
PUBLIC SECTOR
TECH, MEDIA & TELECOM
TRAVEL, TRANSPORTATION & HOSPITALITY

ANALYTICS AND ENGINEERING
APPLICATIONS
BUSINESS PROCESS SERVICES
CLOUD AND SECURITY
WORKPLACE
IT OUTSOURCING

GBS
GIS

GBS: Global Business Services
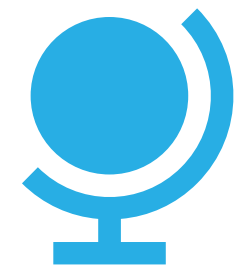*GIS: Global Infrastructure Services*

~$20B
global IT services leader

~138,000
employees worldwide

70+
countries

"We Don't Want to End Up Like Nokia"

Herbert Diess, VW CEO, 6 Nov 2020

"The bigger transition automotive will face is really as the car is becoming more and more of a <u>software device</u>, gathering huge amounts of data, and then building up from the data artificial intelligence, knowledge about the driver, road conditions, safety, and then improving the way this device behaves.

"There's a decision we have to make: are we becoming the providers of kind of a shell, a body style which then is equipped with a computer from a third party that is running the cars, or are we able to convert this exciting, precious device into a real internet device?"
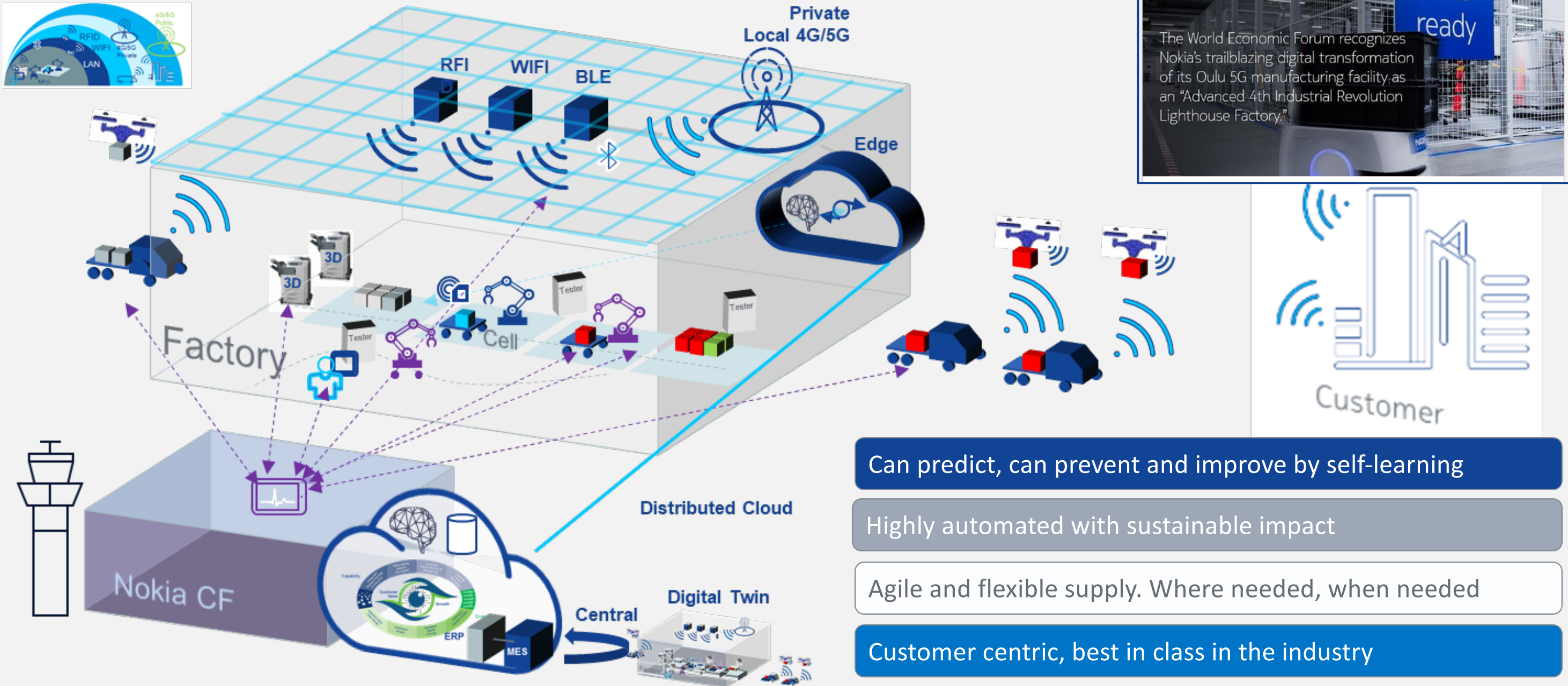

DXC.technology

Nokia Oulu 5G LightHouse Factory

A/R NPI advanced training

Real Time Asset location

Remote Assisted self-driving AGV

Fine predictive maintenance

Nokia Conscious Factory of the future

4ᵗʰ industrial revolution & digitalization at Nokia

Private Local 4G/5G

RFI WIFI BLE

Edge

Factory Cell

Distributed Cloud

Nokia CF

Central Digital Twin

Customer

Can predict, can prevent and improve by self-learning

Highly automated with sustainable impact

Agile and flexible supply. Where needed, when needed

Customer centric, best in class in the industry

© 2018 Nokia

NOKIA

DXC Smart Factory: the roadmap for Industry 4.0

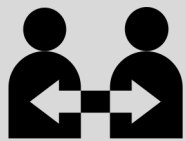Executive   Designer   Planner   Foreman   Inspector   Operator   Maintenance

Enabling Industry 4.0 technologies

Digital Twin   3D Modeling   Virtual Design   Digital Thread   Master Data Management   High Performance Computing   3D Scan
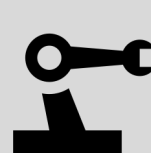
Secure Collaboration   Supply Chain Tower   Robotic Process Automation   Machine Learning / Artificial Intelligence   IIoT   Additive Manufacturing   Augmented Reality

Transforming the Manufacturing Operations
through the experience of the DXC MES Practice

Boosting plants productivity and products quality

► Centralized supervision and visibility of all the distributed manufacturing operations, to enable **better management decisions** in R&D, Supply Chain, Quality and Maintenance

► **Improve Resources utilization**, by optimizing Production processes execution

► **Full "traceability"** (history) of components, machines, operators and timings, to guarantee the final product quality level

► Control, Reduce and Standardize production lead times and operational costs across plants, by implementing the global **Enterprise Manufacturing Execution System**
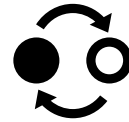
Transformation methodology

► Accelerated *Digital manufacturing implementation program*:

  - adaptive modular kernel design, based on BU's specs

  - parallel massive rollouts deployment

► *Design Thinking* approach to quickly map the full processes flow to cascades of self-driving screens for the operator's mobile devices

► Proved combined expertise of on-site manufacturing consulting and off-shore specialized capacity for scalable implementation and secure & **cost-effective delivery**

Competing through Innovation

► **Advanced Machine Integration**: Remotely monitor plant machines in real time, automatically detect anomalies, and trigger alerts to improve efficiency and quality

► **Flexible Lines Allocation**: Distributing work orders to available lines with on-line switching to alternative machines or materials

► **Friendly User Interface**: to realize the Paperless Factory, enabling the line operators directly managing and controlling in real time the full shop-floor process flow

Preparing for the future

► **Industrial IoT**: exploiting all the shop floor information history (material movement, use and consumption, tasks execution, machines status, defects…) to enable new classes of applications: predictive maintenance, early defect detection, power consumption optimization…

► **Private LTE/5G**: 100x network performance improvement inside and outside the plant, also enabling additional Industry 4.0 applications (augmented reality, autonomous trolleys, full remote control…)

UI process flow through Design Thinking

A Design Thinking approach has been used to adapt the Mobile flow to the physical process.

Handheld mobile devices bridge the gap between desktop system and shopfloor.
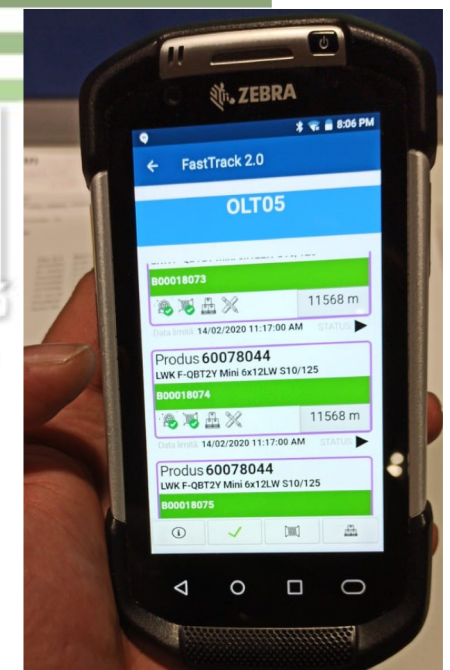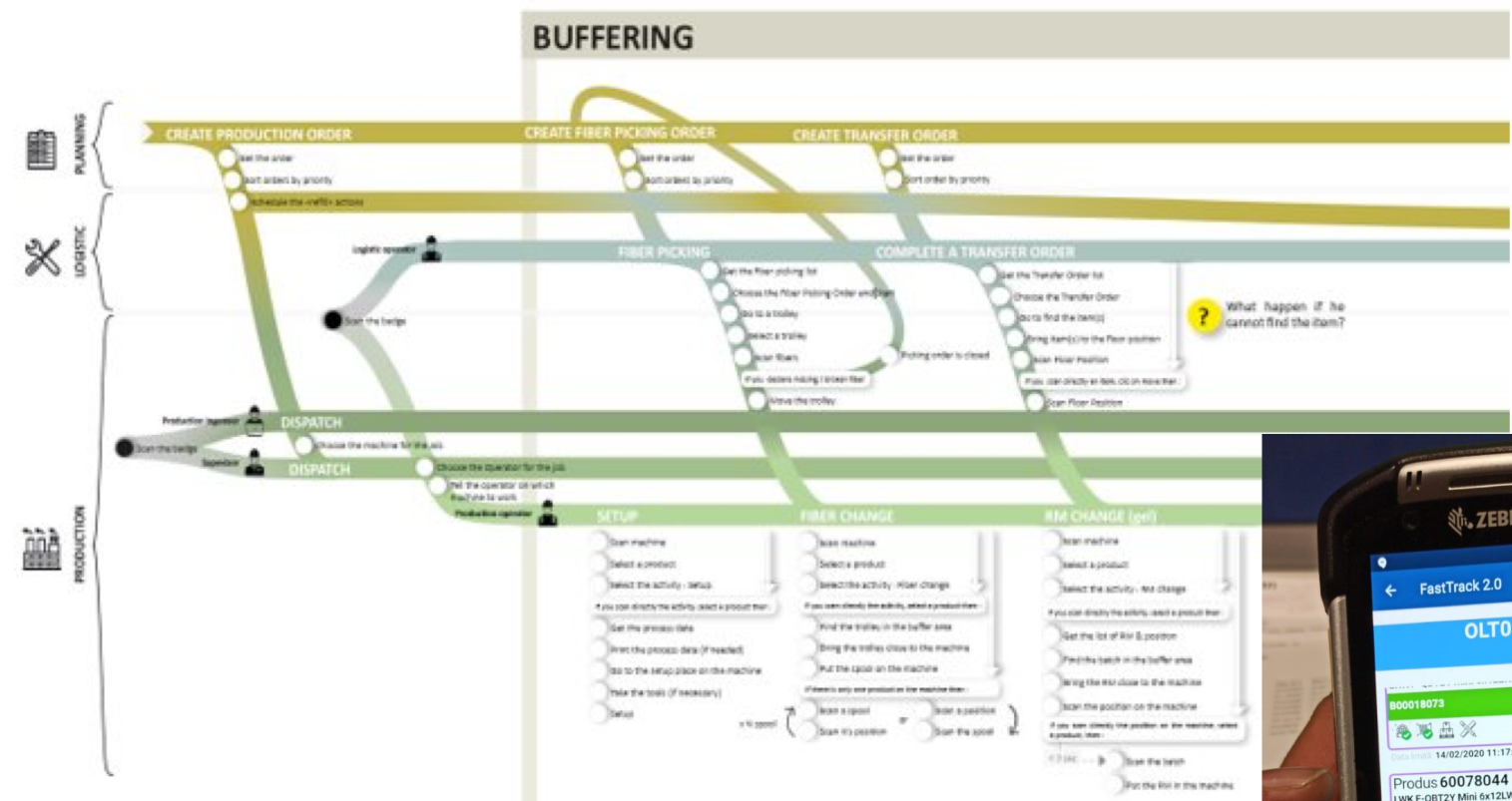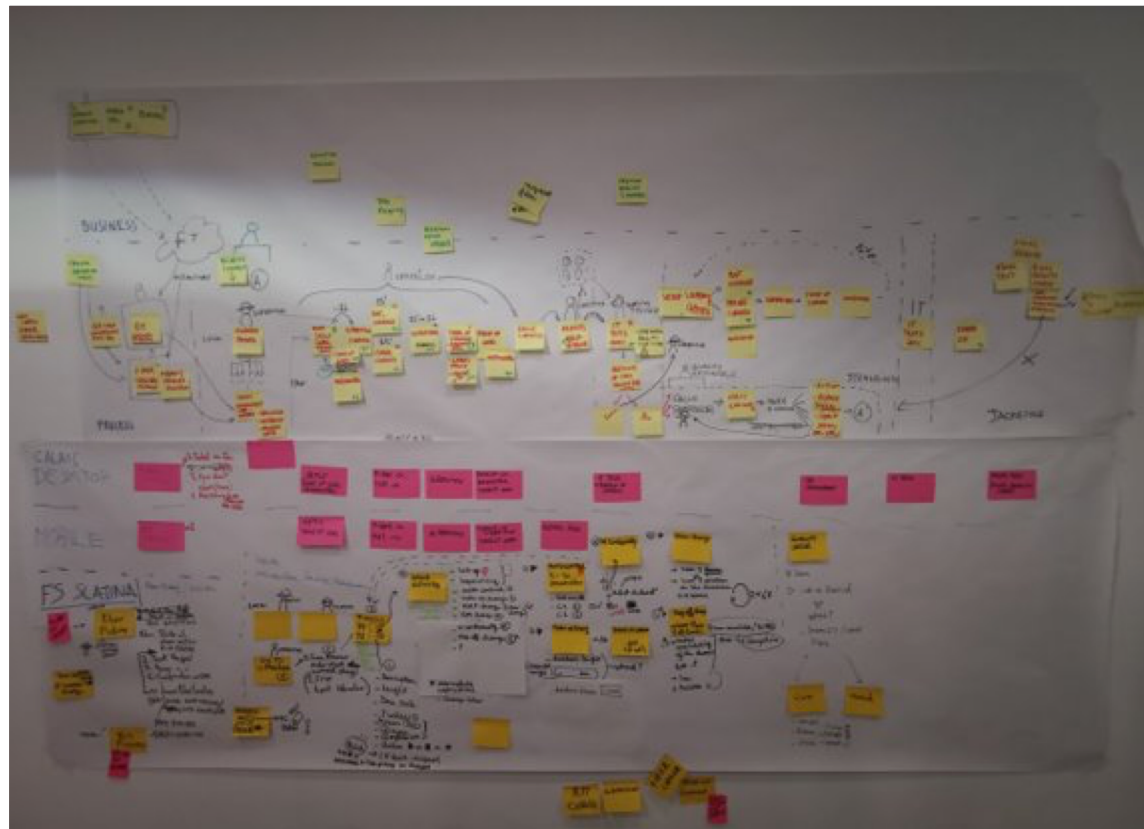
Aiming at helping users not only perform better their job but also make informed decisions (Planning, etc), specific applications have been devised:

· through sprints and by extensive use of use stories, as in Agile Methodology;
· as per Industry 4.0 requirements: Interconnection, Informative Transparency, Technical Assistance.

Plant as a Service: un'architettura integrata

Sincronizzare la piattaforma applicativa con l'infrastruttura tecnologica

Governance

SOLUTION

| Automated Quality Control and Deployment | API Management | Manufacturing Data Lake for Analytics | Business Services Monitoring |
| Centralized Plant Configuration Management | Self Service Portal / Marketplace | Compute Services (containers and VMs) | Enterprise Integration Hub |

DXC.technology

PLATFORM

DELMIA | Apriso

DASSAULT SYSTEMES

Operation Management — Performance

FOUNDATION

Intelligence → *Event* → Orchestration → *Sequence* → Automation

NUTANIX

System Integration