REPLY VISION

INDUSTRIE 4.0

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Agenda

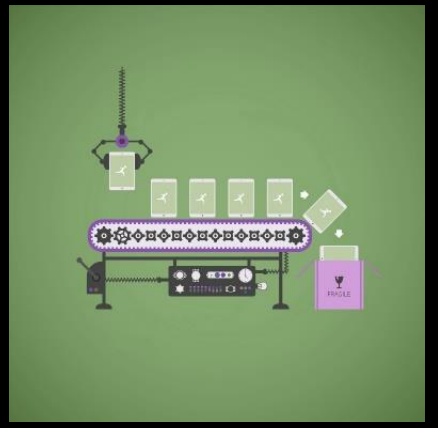
Overview

- 4° Industrial Revolution
- Industrie 4.0
- Digitization

Reply Positioning

- Reply Vision
- Reply Offering
- Brick Platform (MES)

Cases



- Business Cases
- Pilots, Research

Reply Corporate Introduction

To excel in helping our customers exploiting relevant innovation brought about by economic changes and driven by internet technologies

Revenue & People

Where We Are


Germany
Berlin
Bremen
Düsseldorf
Frankfurt
Gütersloh
Hamburg
München
Benelux & France
Amsterdam
Brussels
Luxembourg
Paris
US
Chicago
Detroit
UK
London
Basingstoke
Chester
Cockpole Green
Belarus
Minsk
China
Beijing
Poland & Romania
Katowice
Bucharest
Italy
Bari
Milano
Padova
Roma
Torino
Trieste
Verona
Brazil
Belo Horizonte
Sao Paolo
Headquarters
Main Offices

Reply Network Map

INDUSTRY CONSULTING

Automotive & Manufacturing	CPG & Retail	Banking	Energy	Telco & Media	Insurance	Healthcare

THE BUSINESS CONSULTING FABRIC

DATA FABRIC

Security	IoT
The Technology Stacks Solution Design, Software Development, Enterprise Collaboration, Enterprise Operations	
Cloud Computing	Enterprise Architecture

Video & Gaming	Social & Crowdsourcing
The Agencies Digital Brand, User Experience, Digital Communication	
Mobile	eCommerce

TECHNOLOGY PLATFORM DIGITAL EXPERIENCE

2015-16 Awards & Achievements

2016

Microsoft

WORLDWIDE EMERGING CLOUD PARTNER OF THE YEAR

Cluster Reply
Solidsoft Reply

2015 - 2016

ORACLE PARTNERNETWORK

CLOUD PARTNER OF THE YEAR

Business Reply
Riverland Reply

2016

SAP Partner

GLOBAL SERVICE DELIVERY PARTNER & Hybris TRAVEL ACCELERATOR

Portaltech Reply

2016

shopware

INTERNATIONAL SHOPWARE PARTNER

Portaltech Reply

2016

salesforce

PLATINUMPARTNER Europe - Middle East - Africa

Arlanis Reply

2015

SAP Partner Google

SAP & GOOGLE GLASS CHALLENGE

Reply

2015 Hurban Hub
Tyssenkrupp

2016 ANNUAL MULTIMEDIA

WINNER OF ANNUAL MULTIMEDIA AWARD

Triplesense Reply

2015 Fiesta Ferrero
Ferrero

WINNER IMC Integrated Marketing Communications Council Europe

BEST INTEGRATED COMMUNICATION PROJECT

Bitmama

2016 Bundesverband Digitale Wirtschaft

BVDW Wir sind das Netz

INTERNET AGENCY RANKING 5th PLACE

Reply – Digital Experience

2016 Alfa Romeo

DIGITAL PARTNER OF THE YEAR

Reply

2016

amazon web services

PREMIER CONSULTING PARTNER WW

Storm Reply

2015

Gartner Magic Quadrant Gartner

WMS WORLD WIDE PLATFORM

Click Reply & Sideup Reply

2015

Gartner Magic Quadrant Gartner

CRM SERVICE PROVIDERS

Reply

2016

CISCO

SECURITY PARTNER OF THE YEAR

Communication Valley Reply

2016

PRMIA

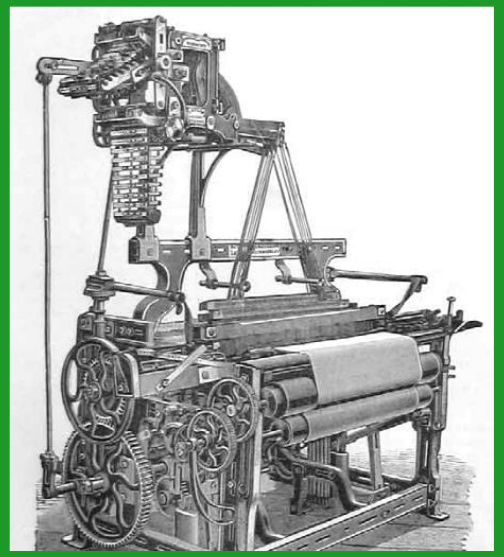
GLOBAL PARTNERSHIP

Avantage Reply
Xuccess Reply

Overview Industrie 4.0

BRIEF HISTORY

FROM THE BEGINNING TILL NOW



1784

MACHINES

1st Mechanical Loom

Mechanical production powered by water and steam

1870

WORK SHARING

1st Conveyor Belt

Mass production based on devision of labor, and powered by electricity

1970

ELECTRONICS

1st PLC

Electronics & IT automate production

Today/Tomorrow

CYBER-PHYSICAL DATA

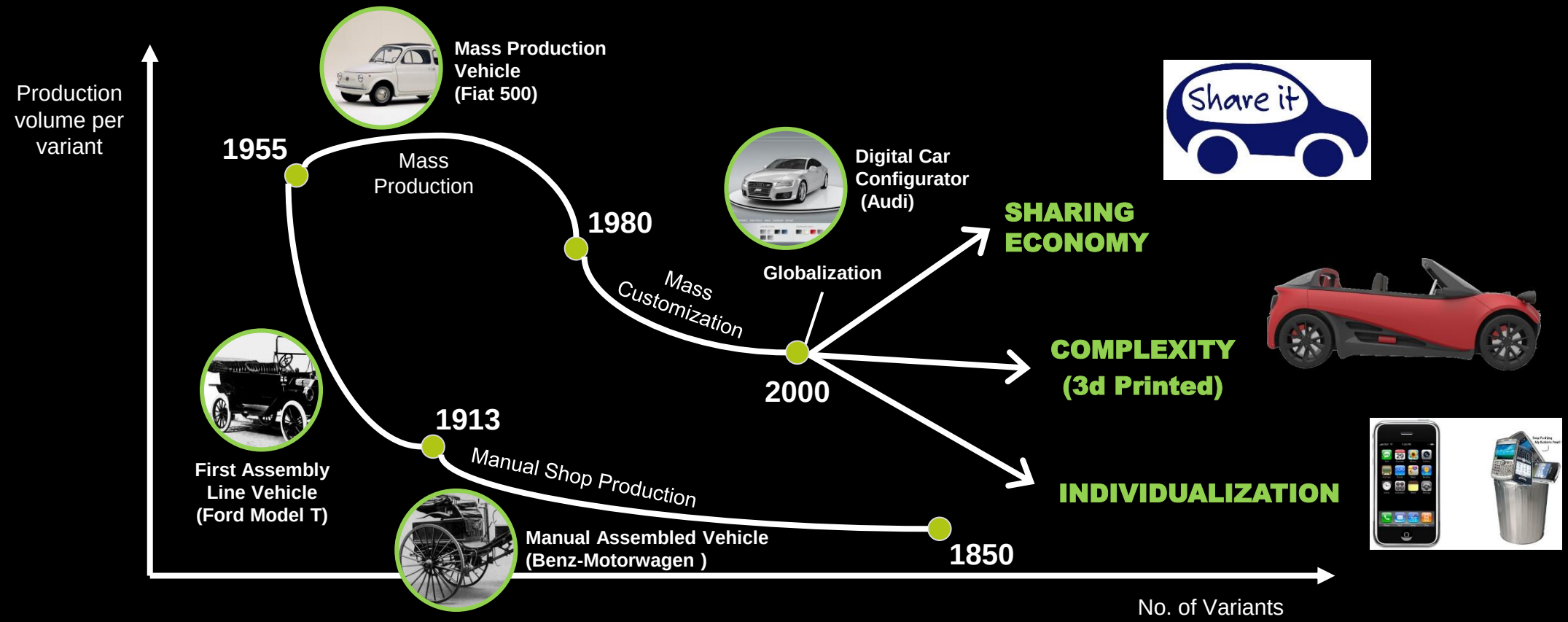
4° Industrial Revolution

Production based on cyber-physical systems, with autonomous decision taking

MACHINE PART	HUMAN STRENGTH	ELECTRICITY	EXECUTOR	DECISION MAKER
HUMAN PART	CRAFTER	SPECIALIST	MACHINE CONTROLLER	SUPERVISOR

Impact of **DIGITALIZATION**

ON PRODUCTION AND SUPPLY CHAIN



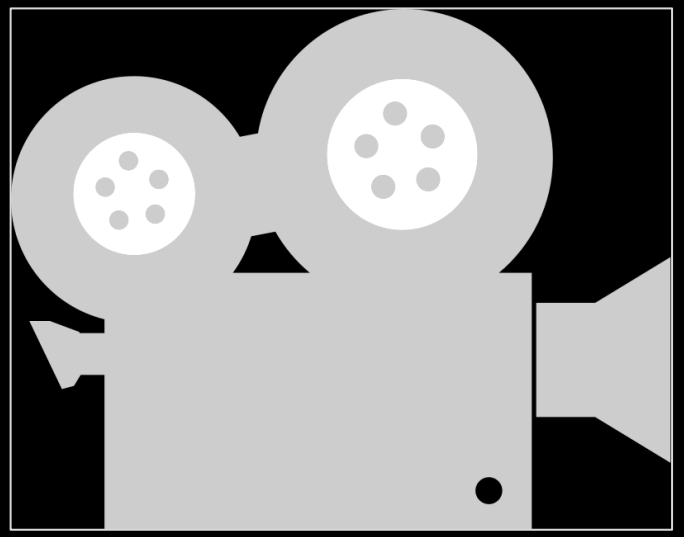
Automotive: Digital Transformation & Human Machine Collaboration

1913

1957

2015

2036



INDUSTRIE 4.0
SIX DESIGN PRINCIPLES

MODULARITY

Flexible adaptation of Smart Factories to changing requirements by replacing or expanding individual modules

SERVICE ORIENTATION

Offering of services (of cyber-physical systems, humans or Smart Factories) via the Internet of Services

DECENTRALIZATION

The ability of cyber-physical systems within Smart Factories to make decisions on their own

REAL-TIME CAPABILITY

The capability to collect and analyze data and provide the derived insights immediately

VIRTUALIZATION

A virtual copy of the Smart Factory which is created by linking sensor data (from monitoring physical processes) with virtual plant models and simulation models

INTEROPERABILITY

The ability of cyber-physical systems (workpiece carriers, assembly stations and products), humans and Smart Factories to connect and communicate with each other via the Internet of Things and the Internet of Services

Reply Positioning

Factory **4.0**

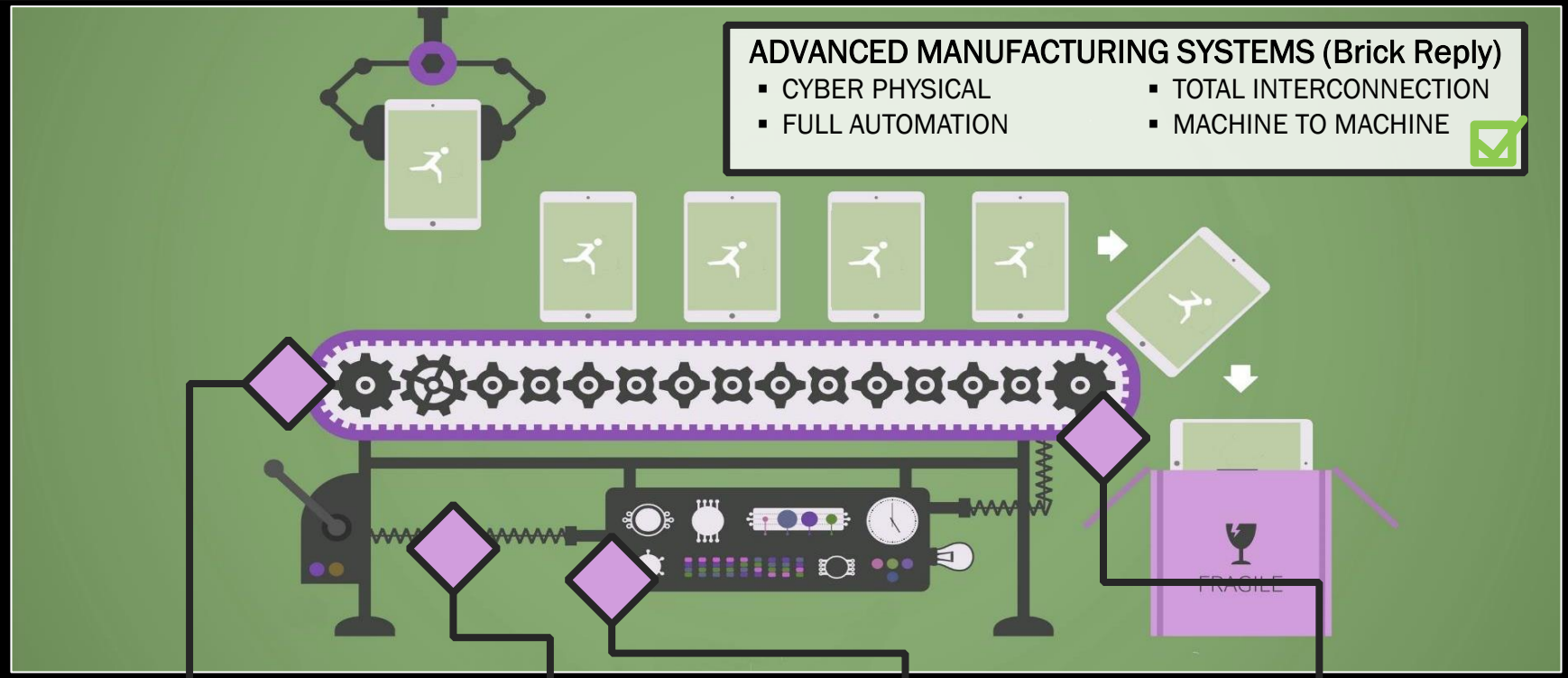
CYBERSECURITY

STRONGER PROTECTION FOR INTERNET BASED MANUFACTURING

CLOUD COMPUTING

BIG DATA

CREATIVITY
COLLABORATIVE MANUFACTURING



SUPPLIERS

CUSTOMERS

LOGISTICS 4.0

LOGISTICS 4.0

INBOUND LOGISTICS

- INTEGRATED SUPPLY CHAIN
- INTERCONNECTED SYSTEMS
- PERFECT COORDINATION

ADDITIVE MANUFACTURING

- MASS CUSTOMIZATION
- RAPID PROTOTYPING

NANOTECH

- SMART VALUE PRODUCTS
- TECH. DIFFERENTIATION
- CONNECTIVITY

ROBOT

- REAL TIME AUTONOMY
- PRODUCTIVITY
- SELF LEARNING

AUTONOMOUS VEHICLES

- FLOW OPTIMIZATION
- INCREASED SECURITY
- LOWER COSTS

INTERNET OF THINGS

- OBJECT TAGGING
- INTERNET-OBJECT COMMUNICATION
- REAL TIME
- OPTIMIZED COSTS

Brick **REPLY**

Overall Requirements

WE LINK
INDUSTRY

Production Manager can **configure** its own production process, modelling workflow and shop floor and production line sequence.

The solution is able to **interact with shop floor equipment** in order to receive alarms, status updates and feedback about manufacturing operations.

All plant departments can base decision making on **equipment Predictive Analysis**.

TO CONNECTED
ENTERPRISE

Manufacturing processes are managed within Brick, that is **completely integrated with ERP systems**.

All departments and production sites can interact through a **browser or a mobile device**.

All standard Manufacturing Operations Management (**MOM**) are performed directly on the **Brick Reply** platform, according to the **self-configured rules and workflows.**

Brick REPLY

Functional Overview

EXECUTION
Receive Production Order
Order workflow control along production lines
Orders Tracking and tracing with Shopfloor Integration (IoT, OPC, etc)
Bluecollar operator support (Workinstructions, rules based activities, etc)
Order closure and dispatching | Manufacturing Quality data acquisition

PLANNING
Production sequencing
Sequencing simulation comparison
Feasibility and Material Coverage
Sequencing Confirmation and
Dispatching to Execution

REPORTING
Production Analysis
Quality Reports
Product History
Traceability Inquiry
Predictive Analytics

MAINTENANCE
Maintenance Operator Notifications
Scheduled Maintenance Plan Mgt
Predictive Maintenance Mgt based on IoT data gathering

MONITORING
Real time Lines Monitoring (Synoptic)
Overall Equipment Effectiveness
Uptime and Downtime Reporting
Operator advice notifications

Brick Core

- External data interfaces and connectors configuration against ERP or other systems
- Plant Layout Design and Configurations (Lines, Stations, Work Phases, etc)
- Definition of available shopfloor devices (Machinery, Input devices, sensors, PLC, etc)
- Product Structure Acquisition or Definition (BOM)
- Production Process and workflow rules design and definition
- Mapping of Product with physical plant layout

Brick **REPLY**

Benefits

IoT Integration

Brick supports IoT protocols of new generation of industrial equipments. Brownfield is supported via OPC-Server on local shopfloor devices.

Cloud Support

Platform tailored to customer needs, whether is completely on cloud, in SaaS model it can also be delivered on-premise or IaaS scenarios.

User Experience

User Experience is designed for all users target, from Bluecollars using workstations to Managers using mobile devices.

Process Control

The platform can be configured and tailored to fit different production processes within different industries and different plant layouts.

Open for the future

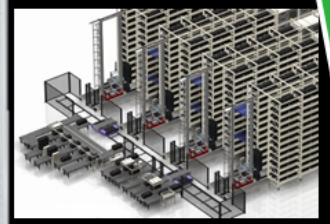
We are working on big data and machine learning capabilities, opening for future support of predictive and prescriptive analysis on client data.

Logistics 4.0 CONVERGENCE

VERTICALS
LIFTS

SORTERS

ASRS



Available

Autonomous Subsystem

Inventory/ Location Logic

Move Logic

Real Time Integration

Real Time Handling

Beta

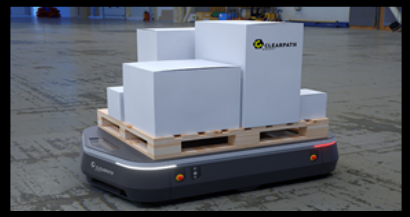
PICK 2 LIGHT

AUGMENTED REALITY

SMART DEVICES

Labs

SELF DRIVINGVEHICLES



ORDER PICKING ROBOT

DRONES

INDUSTRIE 4.0

PREDICTIVE MAINTENANCE FOR SMART SERVICE

- Smart Production
- Condition Monitoring
- Big Data Analytics

INDUSTRIE 4.0

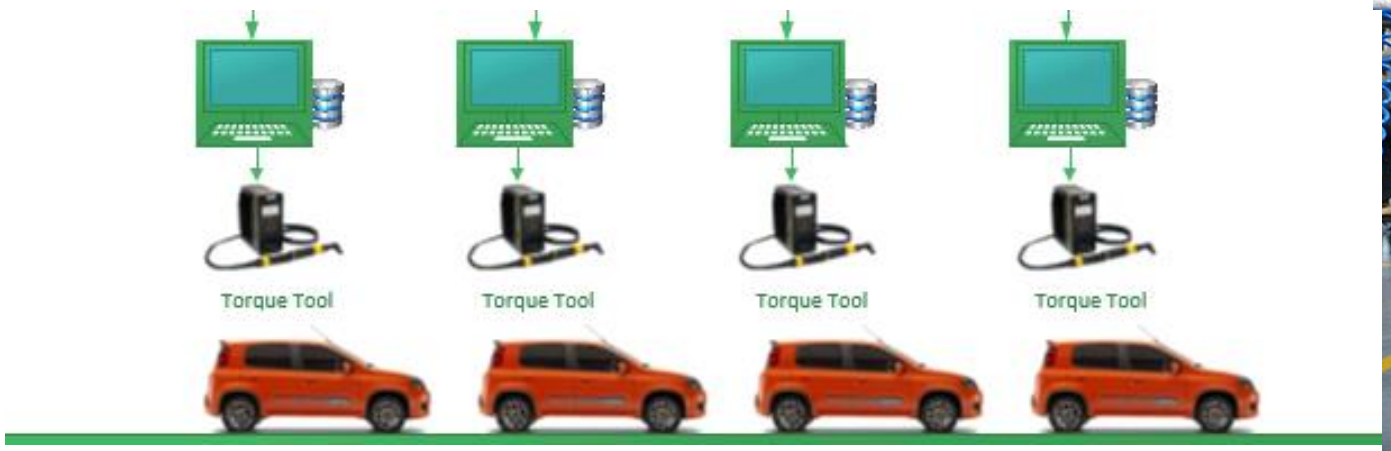
INDUSTRIAL SECURITY

- Cybersecurity for the Industrial Internet
- Secure Software Platform
- Critical Infrastructure Administration

Reply Cases

Automotive - Torque System

- Mission Critical application
- Traceability for torque operations
- Statistical analysis of process
- Monitoring of Stations
- Real time operations
- Integration with MES
- Big data analysis for service, quality, maintenance, recall



3D Printing for **Rapid Prototyping**

Superga 2750
Concept e Realizzazione

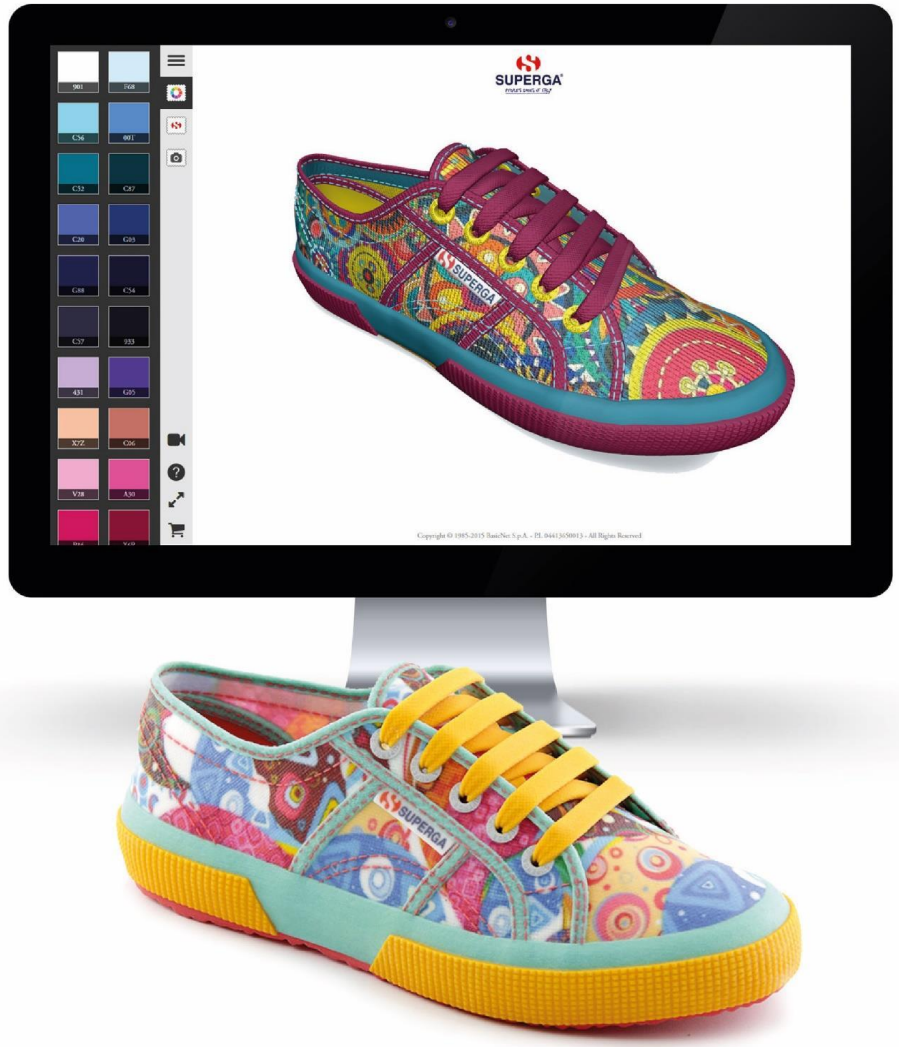
1 mese — 12 mesi

Cliente
Basicnet Spa

Anno
2014

CHALLENGE
Personalizzazione di una vera icona del design italiano: la Superga 2750

Solution
Applicazione web che consente di modificare in maniera diretta ed intuitiva tutte le parti della scarpa, utilizzando colori e texture predefiniti o personalizzati. Una volta configurato il modello, l'applicazione realizza direttamente rendering e stampa in 3D. Tecnologia **WebGL, HTML5** + **API**



PROTOCUBE
3D INNOVATORS

SVILUPPO SOFTWARE 3D REAL TIME VIRTUAL / AUGMENTED REALITY MODELLAZIONE STAMPA 3D UI / UX RENDERING ANIMAZIONE

Virtual Reality for **Configuration and Training**

ABB | Flame Scanner Uvisor

ABB is a leading global technology company that operates in the power and automation markets. It enables utility, industry and infrastructure customers to improve their performance while lowering environmental impact.

In order to explain all the possible configurations and installation procedures of the Uvisor Flame Scanner modular system, Forge reply developed an interactive 3D solution.

The works as a 3D product configurator but with a detailed section dedicated to assembly and maintenance instructions of the various parts.

- Product configurator
- 3D interactive application
- Tutorial and installation guide

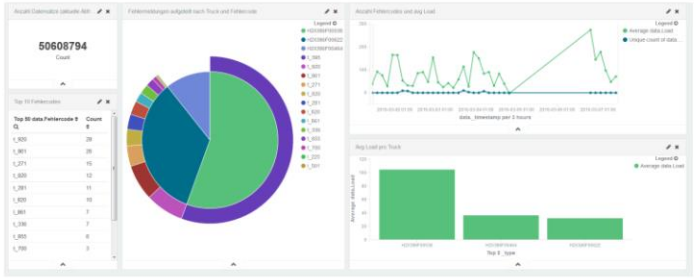
RESEARCH

Real time vehicle data analysis

Context: It would be easy to say the modern vehicle (e.g. car, truck, forklift) is a computer on wheels, but it's more like 30 or more computers on wheels. Tire pressure, oil stand, speed or breaks, nearly everything in a vehicle is controlled electronically. Having access to these internal signals offers a completely new range of applications service and business models. Making use of **big data analysis** and **machine learning** builds the path for a **continuous improvement process** (CIP) and **predictive maintenance**.

Challenge:

- Fast and remote access to vehicle's internal communication bus (CAN)
- Collection, storage, aggregation and analysis of collected data (e.g. Cloud)
- Definition and integration of new business/service models e.g. "Pay as you use", Remote Maintenance, Fleet Management etc.



Solution:

- Telemetry box transfers CAN bus data directly to the cloud
- Integration with AWS cloud architecture using enhanced services for storage and machine learning
- Fast prototyping and agile project management
- Involvement of technical and business experts in order to define relevant use cases and business models