

Enabling excellence in digital manufacturing, today

Carlo Moretti

Industry Principal Solution Specialist,
Microsoft Western Europe



Digital Disruption and the 4th Industrial Revolution

Mechanized
production



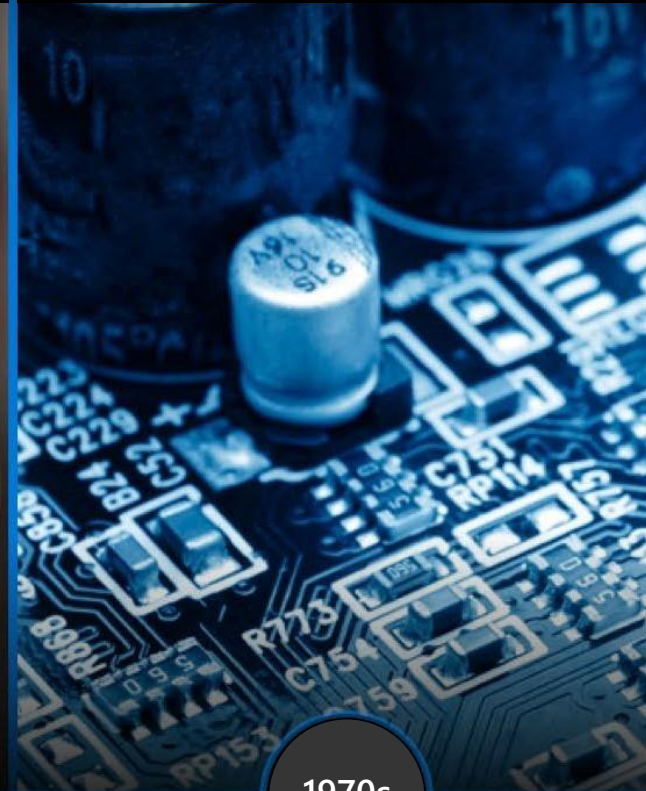
1780s

Mass
production



1870s

Automated
production



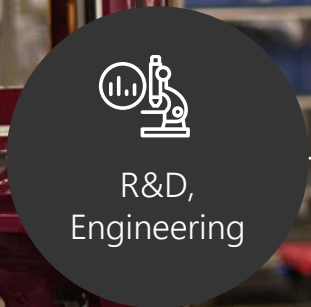
1970s

Digitized
production



2015+

Achieve digital excellence with connected products and services



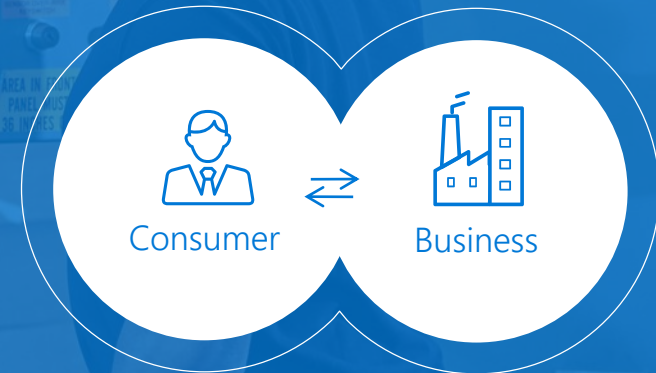
Smart product
innovation



Plants and supply
chains of the
future



Connected
marketing, sales,
and services



IoT enabling rich
connected consumer
experiences

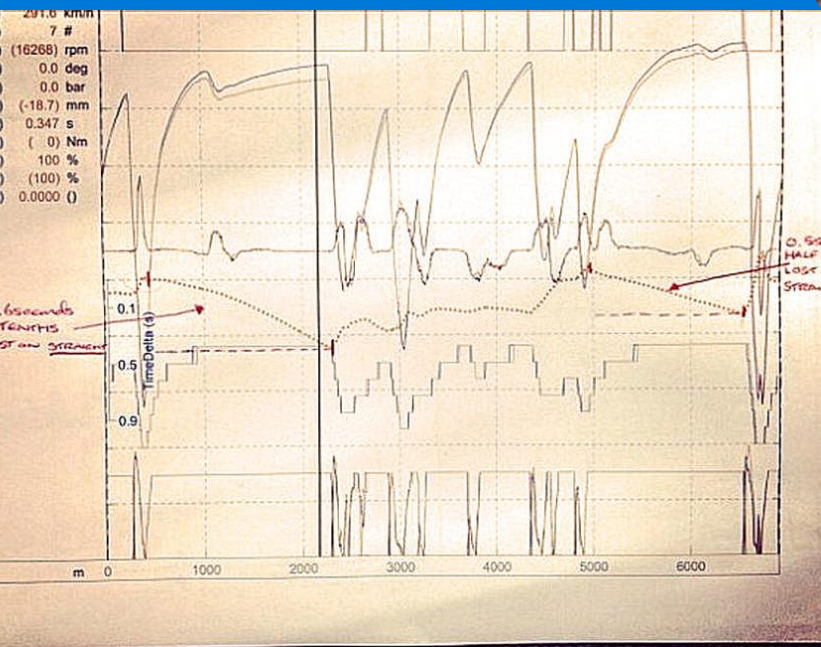
Pervasive connectivity
enabling new offerings
and revenue

CONNECTED VALUE NETWORKS

Transforming how products are designed,
manufactured, and sold

CONNECTED SERVICES AND EXPERIENCES

Creating new business models
as a service provider



Renault

Artificial Intelligence and Formula One: Bots on pole position in the race for technology

"We have around 200 sensors on our car. As soon as it is running on the track, those sensors send data through thousands of channels.

Instead of having so many engineers looking at those thousands of channels, we want something like an AI engine behind the scenes, looking at the combined behavior between channels.

We need help to take the best decisions that have to be taken during each lap time."

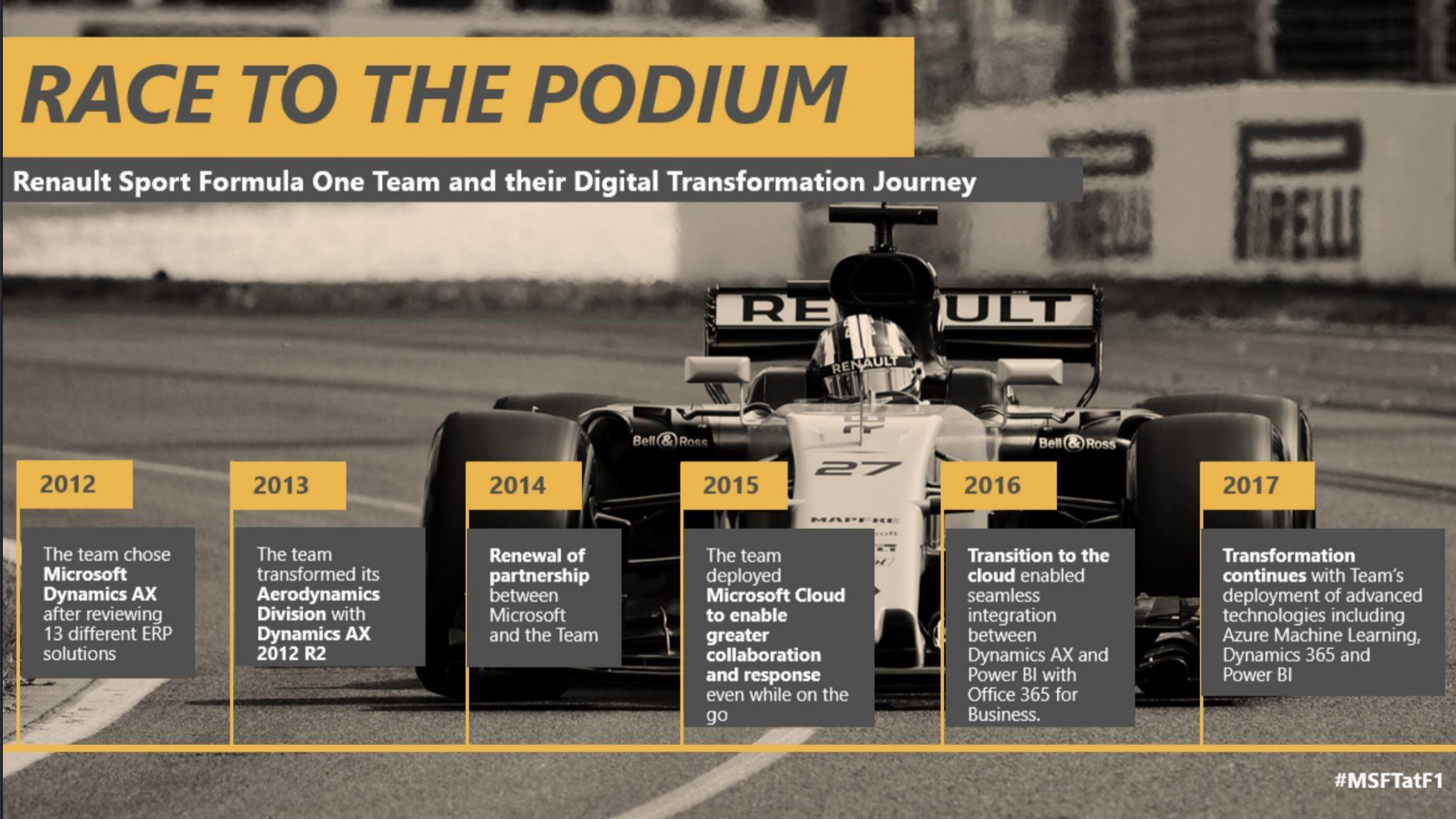
— Pierre d'Imbleval, CIO,

Renault Sport Formula One Team



RENAULT





RACE TO THE PODIUM

Renault Sport Formula One Team and their Digital Transformation Journey

2012

The team chose **Microsoft Dynamics AX** after reviewing 13 different ERP solutions

2013

The team transformed its **Aerodynamics Division** with **Dynamics AX 2012 R2**

2014

Renewal of partnership between Microsoft and the Team

2015

The team deployed **Microsoft Cloud** to enable **greater collaboration and response** even while on the go

2016

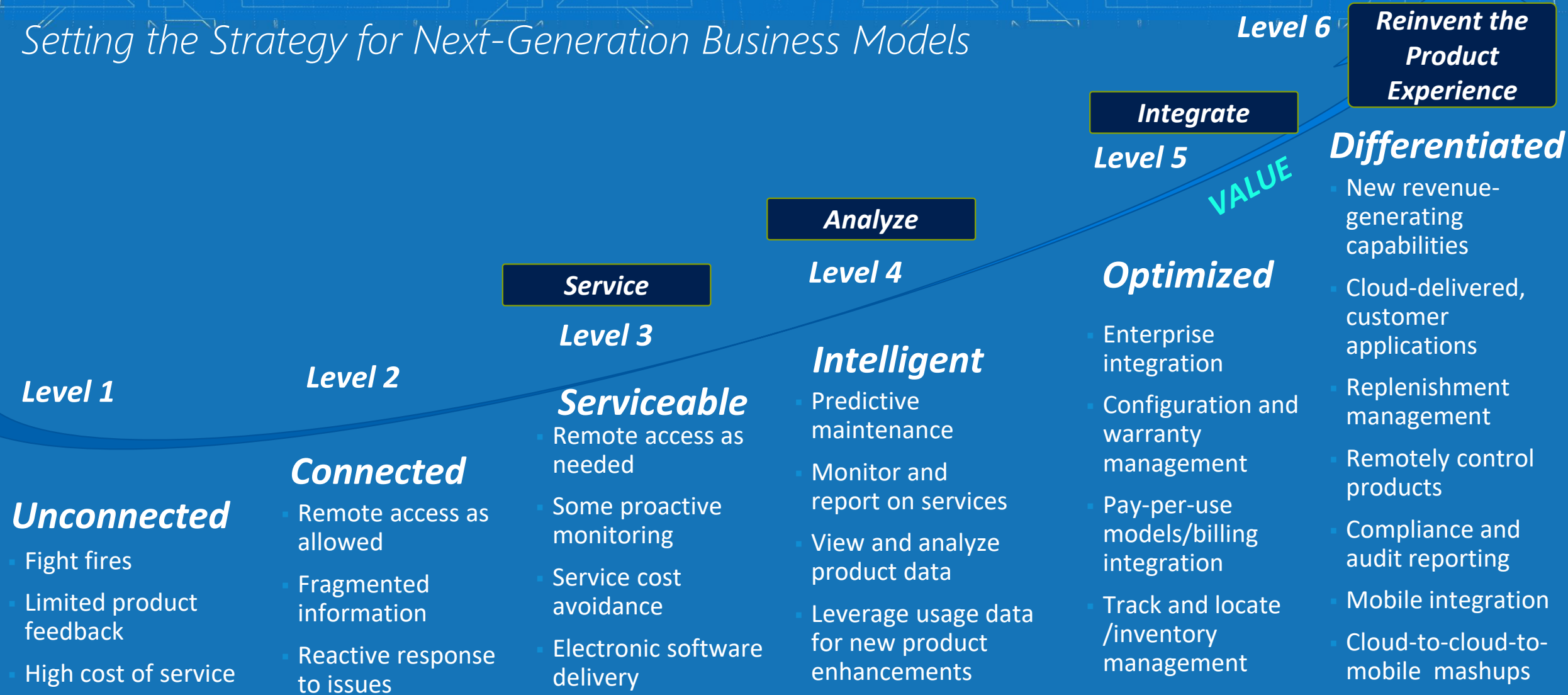
Transition to the cloud enabled seamless integration between Dynamics AX and Power BI with Office 365 for Business.

2017

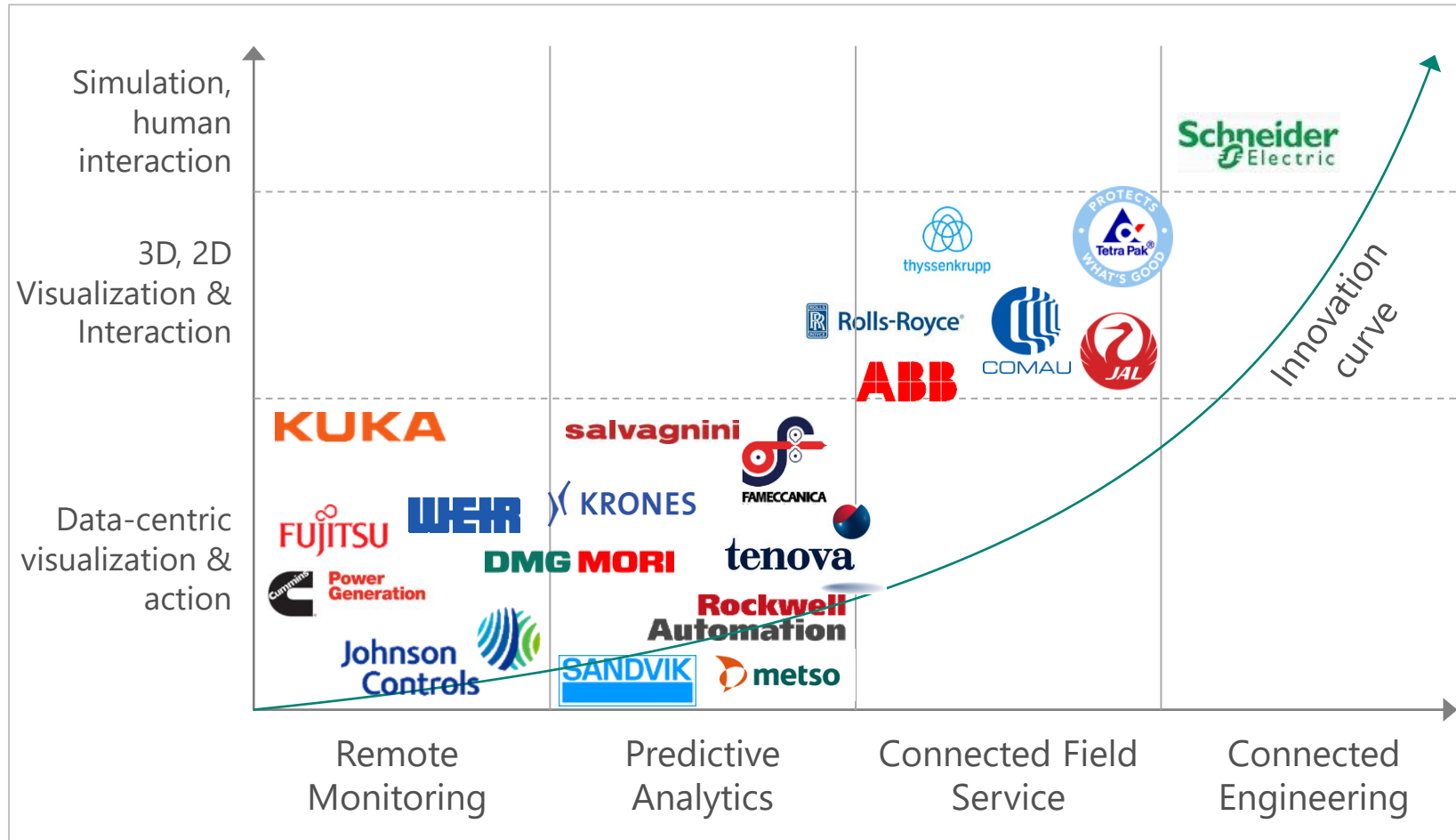
Transformation continues with Team's deployment of advanced technologies including Azure Machine Learning, Dynamics 365 and Power BI

Connected Product/Systems Value Curve and Maturity Levels

Setting the Strategy for Next-Generation Business Models



Digital Excellence is a Strategic Journey



The Connected Customer

- Monitor performance & maximize efficiency, reliability
- Refine or add value-added equipment features & services
- Mitigate downtime and increase availability

The Connected Enterprise

- Drive design & engineering innovation through customer & equipment insights
- Improve quality and reliability
- Differentiate with 360 degree customer service

WHAT DO ALL THESE COMPANIES HAVE IN COMMON?

THEY ACCELERATED THE PACE OF THEIR BUSINESS TRANSFORMATION WITH A DIGITAL STRATEGY

Business model transformation - from selling jet engines to selling “power by the hour” airtime

Challenge

- Help aviation customers minimize the cost and disruption of maintenance activities
- Help customers better manage fuel costs

Solution

- Use IoT technology to collect, aggregate, and analyze engine and other data
- Provide dashboard for insights from data

Benefits

- Improves the efficiency of maintenance activities and fuel usage for customers
- Delivers insights to the right stakeholders at the right time
- Saves customers money



Rolls-Royce

■ **VIDEO 1**

■ **VIDEO 2**

“We can use data and insight in new ways to refine our customers’ operations to add more value to them and allow them to do more with less.”

— Nick Farrant, Senior Vice President, Rolls-Royce

Rolls-Royce intelligent engine (1 of 2)



Operating KPI's

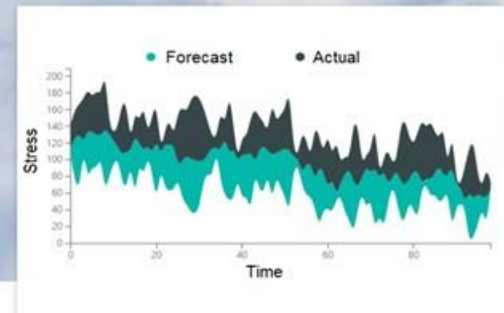
NORMALIZED FUEL EFFICIENCY

89%

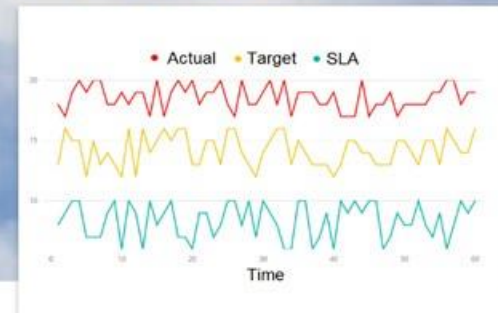
FLEET UTILIZATION

91%

Schedule Stress



On-time Performance



Fleet Status

STATUS	TAIL ID#	TYPE	DEST	TIME REM	ADVISORY
Early Watch List					
Red Octagon	7INTG	A350	LHR	3:45 (hr)	Primary Fuel Pump
Orange Octagon	7IALK	787	FRA	7:16 (hr)	Hydraulic System
Orange Octagon	7TJWB	A350	KEF	0:18 (hr)	Control Surface
Orange Octagon	7CEEP	A380	DFW	2:11 (hr)	Main Door Seal
Orange Octagon	7JLJW	787	CDG	0:45 (hr)	Engine Bleed Air
Orange Octagon	7VSKA	777	GVA	12:18 (hr)	Oxygen System
Orange Octagon	7HOLS	A320	DTW	2:10 (hr)	Scheduled Maintenance

Flight Scheduling (UTC)

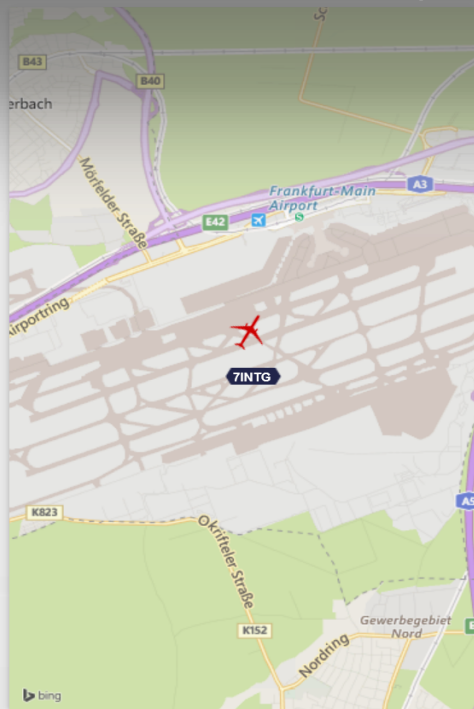
7CEEP	SIN 0119	PVG 0602	SIN 1626	CDG 0552
7INTG	AKL 0024	FRA 1067	SIN 1067	
7VSKA	SIN 0134	HKG 0606	SIN 1121	SIN 1458 LHR 0504
7HOLS	LHR 1059			
7VLQK	CDG 1003		SIN 2310	
7JLJW	SIN 0039	PEK 0834	SIN 1523	

Maintenance Scheduling


TAIL ID#	TYPE	LOC	TIME REM	SYSTEM	Service
7SKAJ	A380	FRA	16 hrs	Engine	Engine Wash Service
7ASKO	A320	LHR	2 hrs	Fuel Pump	Preventative Maintenance
7MNWL	777	FRA	2 days	ALL	Scheduled Service
7XOWK	787	FRA	2 days	Engine	Engine Overhaul
7PLKA	A350	CDG	6 hrs	Hydraulic System	Preventative Maintenance
7WKAL	747	FRA	5 days	ALL	Scheduled Service
7UOSL	A340	CDG	1.5 hrs	Fuel Pump	Preventative Maintenance
7QKAO	737	FRA	18 hrs	Engine	Engine Wash Service

Rolls-Royce intelligent engine (2 of 2)

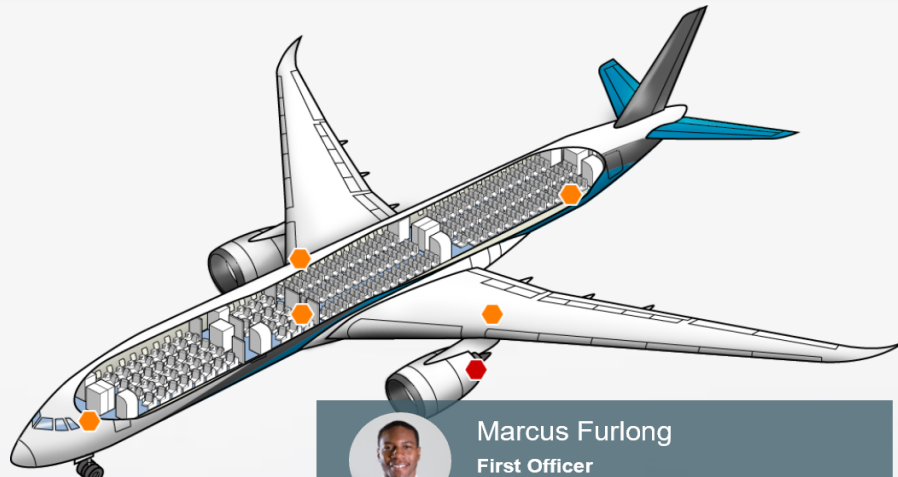
Simon
Engineering Supervisor



Aircraft Overview

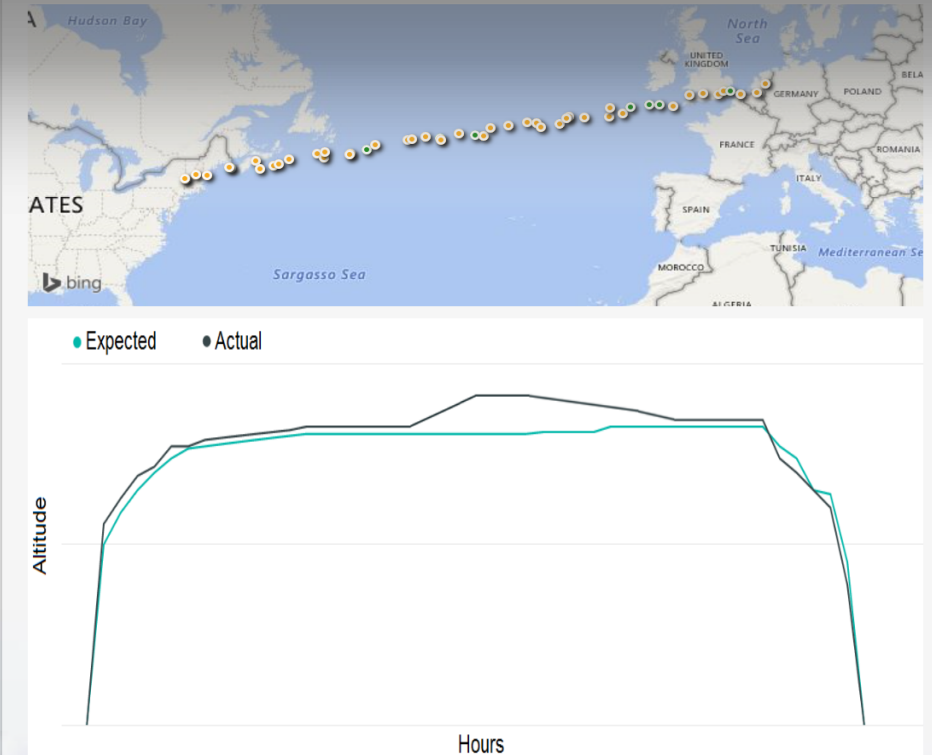


Elise Armstrong
Captain
(SEA) Fuel VAR: +12%



Marcus Furlong
First Officer
(SEA) Fuel VAR: +12%






Flight Variance - Last Flight



Flight Details

TAIL NUMBER	7INTG
TYPE	Airbus A350
POWER PLANT	2 x Trent XWB
LOCATION	Frankfurt, Germany
TERMINAL	A, Concourse C, Gate C16
NEXT FLIGHT	FRA – SEA – 06:30 UTC
TIME UNTIL DEPARTURE	3:45
LAST SERVICE	LHR – 02/11/2016
NEXT SERVICE	LHR – 07/06/2016
ON TIME PERFORMANCE	94%

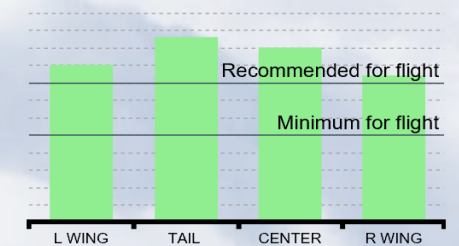
Aircraft Systems

STATUS	ATA CODE	LOCATION	Flight Critical
	ATA 85	Propulsion Systems	Pilot Discretion
	ATA 75	Engine Bleed Air Valve	No
	ATA 52	Primary Door Seal	No
	ATA 50	Cargo Door	No
	ATA 33	Lights - Cargo Hold	No
	ATA 38	Water/Waste System	No
	ATA 21	Air Conditioning	No

Engine Details



Aircraft Fuel Level



The total package: keeping food and drink flowing safely from farm to table

Objectives

- Tetra Pak wanted to prevent process disruptions across the food industry, that could take the entire packaging operation offline for days

Solution

- Adopt a digital strategy using Azure IoT Suite + Advanced Analytics + Remote Field Service to enable its cloud-connected machines to predict exactly when equipment needs maintenance, avoiding breakdowns.

Benefits

- Predictive maintenance for anomaly detection
- Tetra Pak service engineers use HoloLens to more quickly diagnose and fix machine issues
- Reduce operational costs, downtime
- Business model innovation
- Improve customer services and satisfaction



VIDEO

"We will take over a lot of risk on behalf of our customers. To do that, we need cutting-edge technologies to control and minimize these risks. When you have plants around the world, the service knowledge we gain from one plant comes to benefit another. This prevents issues from happening."

— Johan Nilsson, Vice President of Tetra Pak Services



DIGITALISED SERVICES

We use cutting-edge digital tools and innovations like connected machines, advanced data analytics, mobility apps, virtual training, and remote support to help you stay ahead of operation issues, increase efficiency and optimise plant performance.

[See the digitalisation of services movie](#)

Disrupt
Competition,
Find new revenues

Reinvent the product experience

WHAT OUR SERVICES DO FOR YOU



Stair Lifts

■ VIDEO

Overview

[Stair Lift Installation](#)[Flow II](#)[Levant Comfort](#)[Levant](#)

Buying in 3 steps

1 EXPLORE
View our products

2 CONNECT
with a Local Dealer

3 SCHEDULE
Arrange a visit



ThyssenKrupp Access Stair Lifts

Stair lifts are a practical and economical solution for people who face mobility and accessibility problems within their own homes, but want to maintain a healthy, happy, and active lifestyle without having to relocate. A ThyssenKrupp Access chair lift is the solution. We engineer every stair chair with a wide variety of smart and innovative products designed to fit your unique needs.



Fameccanica sceglie il cloud di Microsoft.



Cliente

[Fameccanica](#)

Prodotti e servizi

[Azure IoT Suite](#)

Settore

[Produzione](#)

December 19, 2016

■ **VIDEO**

 Stampa

Fameccanica ha scelto Microsoft per il suo progetto EasyLife sul monitoraggio dei macchinari, adottando Azure IoT Suite.

La rivoluzione IoT di Fameccanica

Fameccanica, azienda di Chieti, è leader nella progettazione, costruzione e vendita di macchinari per la produzione di prodotti igienici monouso e vanta oltre 120 clienti in tutto il mondo. Fin dalla sua nascita, nel 1975, si è contraddistinta per la tecnologia all'avanguardia e per l'innovazione costante e in quest'ottica ha ora scelto di puntare sull'Internet of Things.

“Non solo otteniamo un beneficio in prima persona, ma lo trasferiamo anche ai nostri clienti con un nuovo modello di servizio che ci consente di distinguerci sul mercato e di cogliere nuove opportunità di business”

– *Roberto Lemme, Customer Service Director di Fameccanica*

Salvagnini

Digital Evolution

" L'esperienza nell'utilizzo del prodotto diviene a tendere l'elemento di forte differenziazione. Non basta un prodotto di eccellenza; serve creare le condizioni affinché l'utilizzo del prodotto sia "quello giusto", con il miglior risultato possibile in termini di efficienza produttiva per il cliente."

" Siamo partiti con l'obiettivo di estrarre valore dai dati, di poter osservare tutte le variabili del processo produttivo intorno alla nostra tecnologia. L'essere connessi, grazie a Microsoft, ci ha rapidamente portato a voler comunicare in maniera nuova con il cliente, cercando di garantirgli supporto costante durante tutto il ciclo di vita post-vendita del prodotto. "

— Roberto Franchini,
Digital Innovation Manager
Salvagnini Group

salvagnini



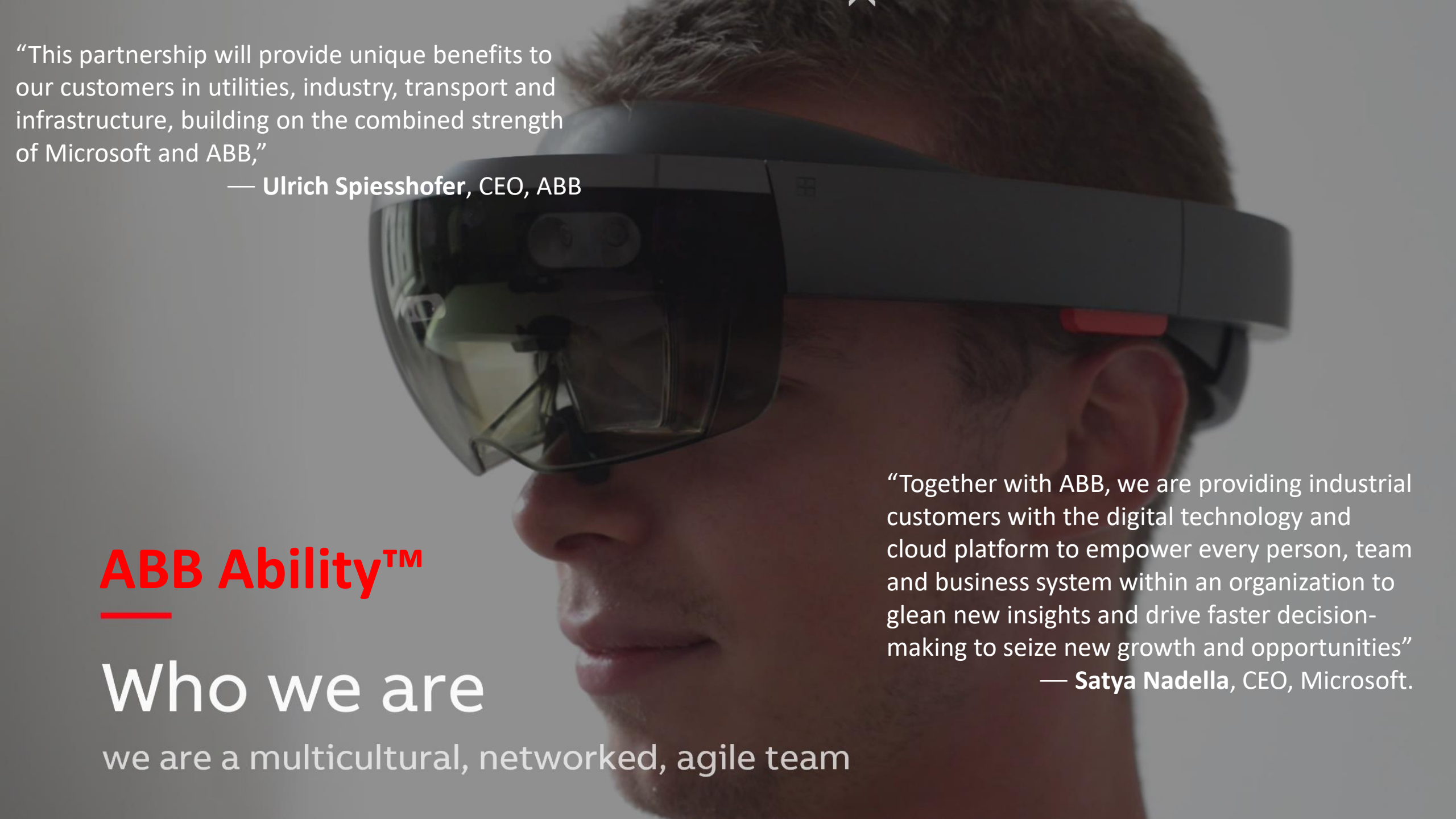
TENOVA

Data Mining & Smart Steel

"Technological innovation represents a major commitment for Tenova and a crucial factor in the company's growth strategy, and we found in Microsoft a key ally to bring about digital transformation. Thanks to cloud computing, IoT, and machine learning technologies by Microsoft, we are able to develop a 4.0 solution which represents our best recipe to contribute the future of the iron and steel industry. The goal is to make plants always more intelligent and connected, to offer services of high added value by analyzing the data from machines to optimize production, and to help our customers to achieve their business objectives."

— Andrea Lovato, CEO, Tenova



A close-up, side-profile photograph of a man wearing a Microsoft HoloLens augmented reality headset. The headset is black with a clear visor. The man has short, light brown hair and is looking slightly downwards and to the left. The background is a soft, out-of-focus grey.

“This partnership will provide unique benefits to our customers in utilities, industry, transport and infrastructure, building on the combined strength of Microsoft and ABB,”

— **Ulrich Spiesshofer**, CEO, ABB

ABB Ability™

Who we are

we are a multicultural, networked, agile team

“Together with ABB, we are providing industrial customers with the digital technology and cloud platform to empower every person, team and business system within an organization to glean new insights and drive faster decision-making to seize new growth and opportunities”

— **Satya Nadella**, CEO, Microsoft.

Lo sapevate che i flussi di energia funzionano come i flussi di dati? Parola di ABB, che nel settore ha progetti ambiziosi.

2017-06-13 - In un mondo sempre più affamato di energia elettrica la sfida del futuro si potrebbe giocare in nanosecondi: gestione e controllo di flussi di elettroni e di dati. Con auto elettriche che diventano salvadanai energetici, relè innovativi, smart grid e altre innovazioni. Ecco le soluzioni digitali di ABB Ability, che viaggiano sul cloud Microsoft Azure

Per gentile concessione di www.industriaitaliana.it/ - Articolo di Marco De' Francesco



Lo smart lab di ABB a Dalmine

Produzione persa, impianti e manodopera inattiva, prodotti difettosi, danni, attrezzature danneggiate sono fra gli effetti delle interruzioni di potenza nell'industria manifatturiera. In generale, secondo il sondaggio "Alliance Risk Barometer 2018" (condotto su 1.237 esperti di rischio di 55 paesi) il rischio più sentito dalle aziende a livello globale è il blocco delle attività.

CERCA [→ OK](#)

☒ Solo Notizie

+ Vota questa pagina

+ Condividi questa pagina



Links

- Leggi l'articolo sul sito di Industria Italiana
- ABB Ability, l'offerta digitale integrata di ABB
- Internet of Things (IoT)

Altri link utili

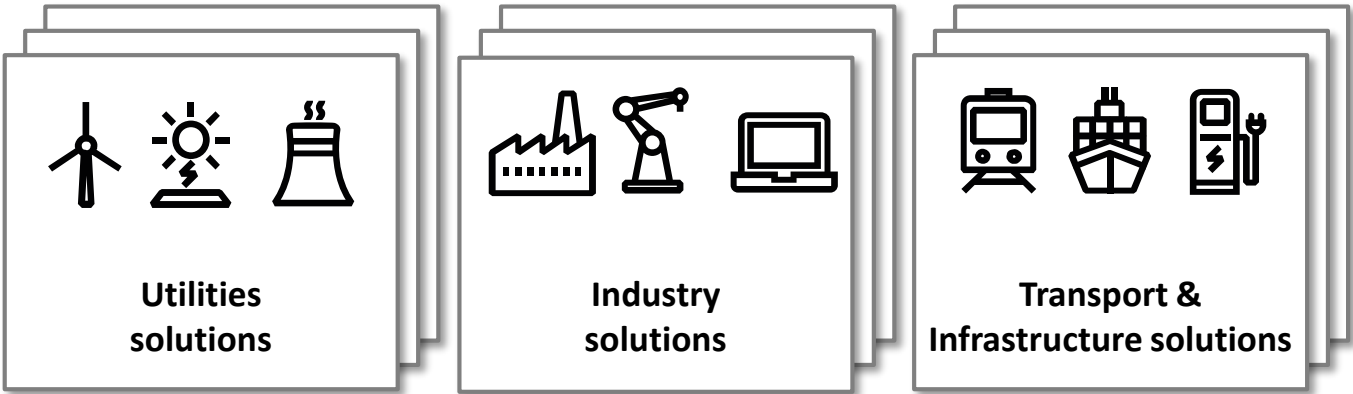
- ABB lancia ABB Ability™, l'offerta per soluzioni digitali industriali all'avanguardia



ABB Ability™ solutions & platform

180+ ABB Ability™ solutions

ABB Ability™



What Delivers customer benefit (uptime, speed, yield...)

How Provides ABB with efficiency and scale



Rockwell Automation's Industrial IoT Platform

CLIENT



Present information to users on mobile devices & desktops & to other systems

SERVER



Data Storage & Aggregation | Data Model

Computation | Notification | Elasticity

Contextualize information to provide insights on Microsoft Azure

GATEWAY



Small



Medium



Large

Collect data from devices & other sources in various form factors

DEVICE



SCALABLE ANALYTICS

Digital Twin and AI for Asset Maintenance

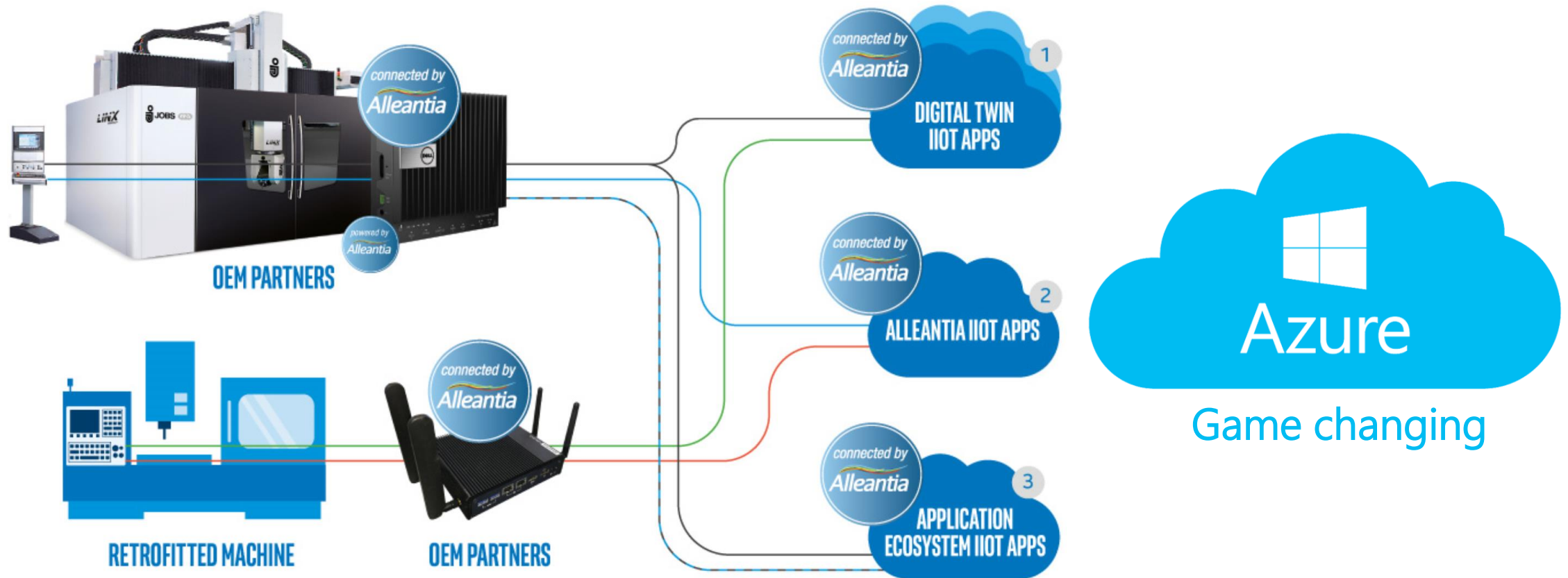
Enabling Asset Lifecycle

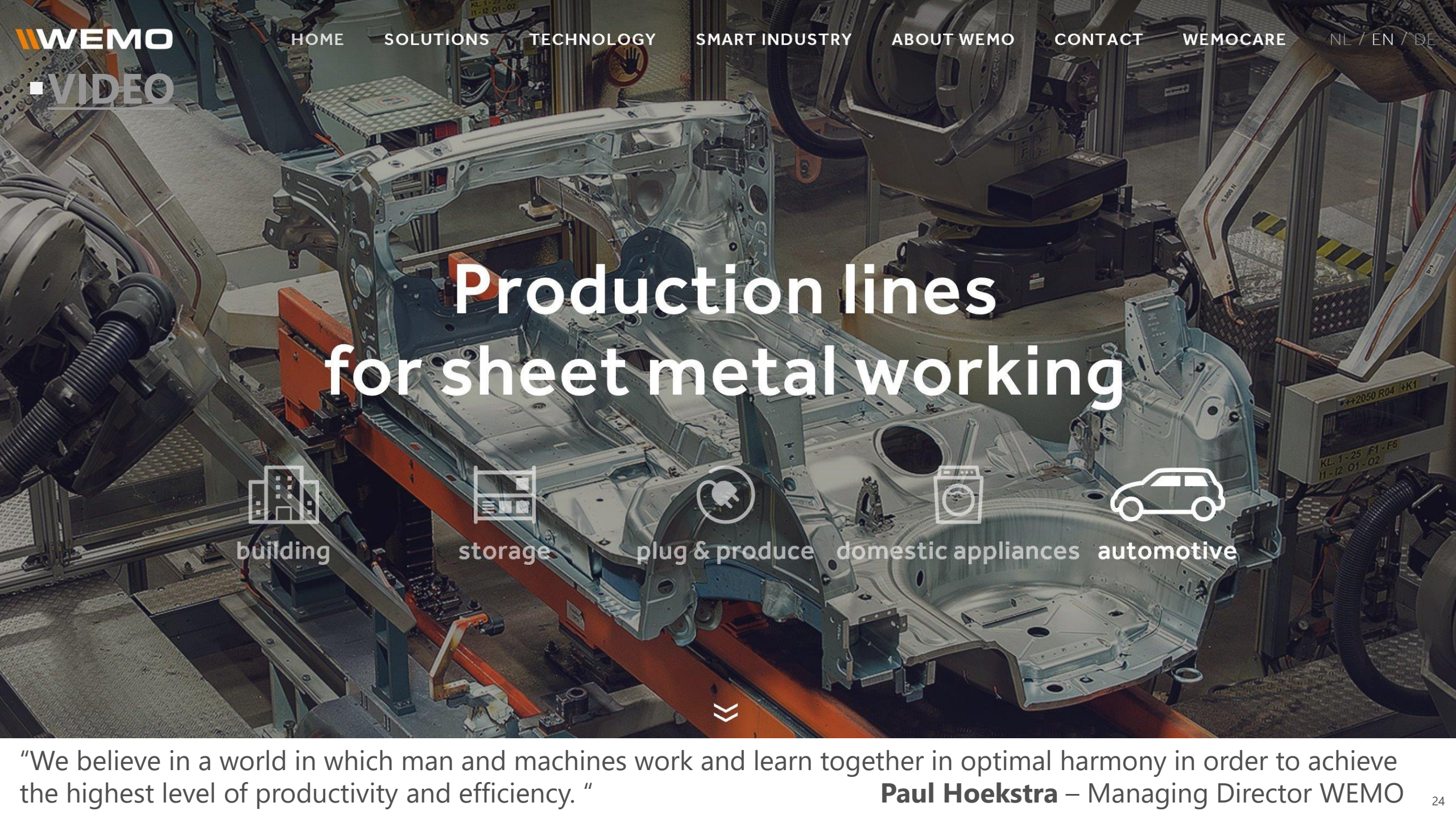
[VIDEO](#)



Alleantia, the Library of Things

Zero-coding integration upstream and downstream, *from wire to cloud in 10 seconds*





Production lines for sheet metal working



building



storage



plug & produce



domestic appliances



automotive



“We believe in a world in which man and machines work and learn together in optimal harmony in order to achieve the highest level of productivity and efficiency.”
Paul Hoekstra – Managing Director WEMO

Assisting Plant Operations using Hololens @Bentley

VIDEO

"Virtual tutors make sense when the steps necessary to execute the task are known in advance. But what if something unexpected happens? For instance, a pipe bursts, or an instrument stops working properly. A tutor app would not be of any use here, because it has not been programmed to deal with such situations. In such cases the user is on his own..."

As a solution to this, we proposed the concept of an AR assistant. It would take the form of an Augmented Reality voice operated system that the user could ask questions to, and that would provide him with all the data he needs to resolve the issue he is facing."

Stephane Cote, Augmented Reality Research Scientist at Bentley Systems



Summary | Empowering discrete manufacturing

Transforming how products are
designed, manufactured, and sold

Creating new business models
as a service provider



ENGAGE YOUR CUSTOMERS

with personalized
experiences



EMPOWER YOUR EMPLOYEES

to work
productively



OPTIMIZE YOUR OPERATIONS

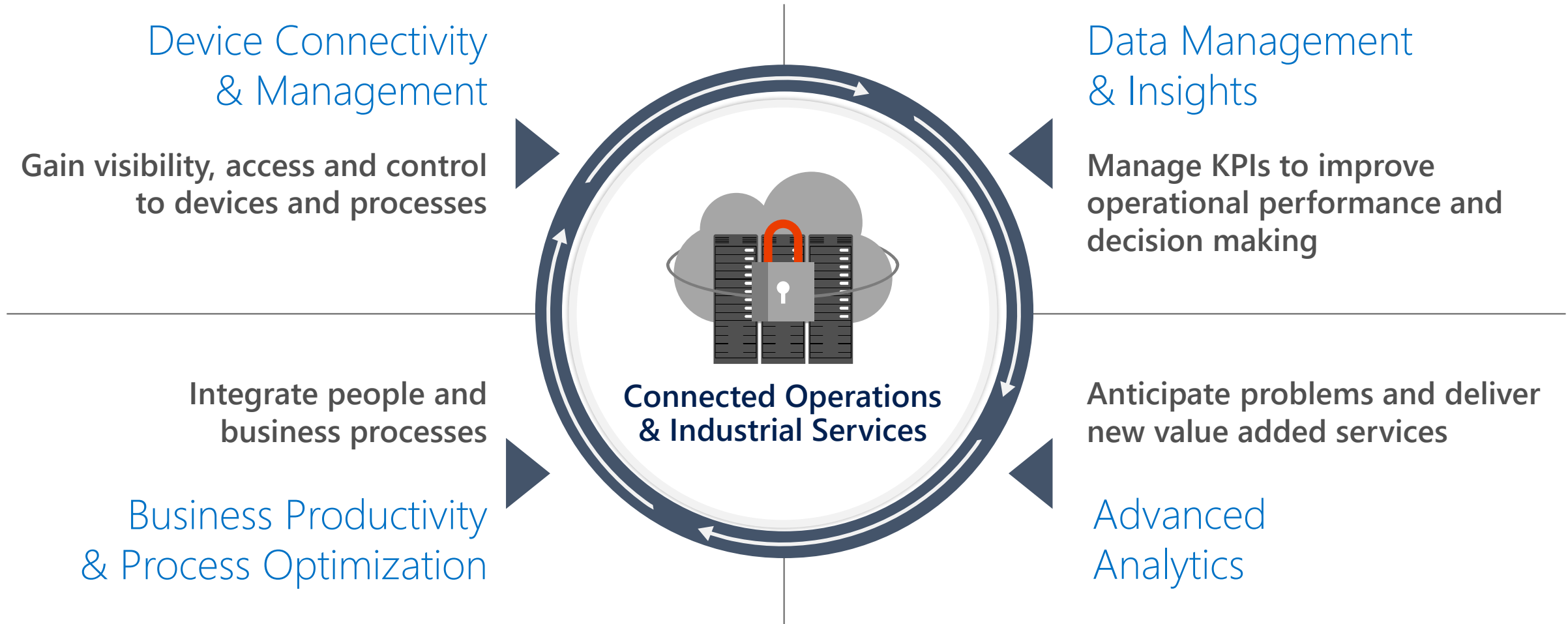
and achieve
excellence



TRANSFORM YOUR PRODUCTS

by unlocking new
opportunities

Microsoft provides all of the components for a comprehensive solution



You don't have to
run (your business)
faster, you have to
change the way you
run (your business)



Carlo.Moretti@microsoft.com

<http://www.microsoft.com/industry>

