The journey to smart manufacturing

Responsive, scalable and connected

orange™ Business Services

Manufacturers aiming for excellence with industry 4.0

Manufacturing is facing the fourth industrial revolution, dubbed Industry 4.0, which promises to radically change the complete manufacturing chain.

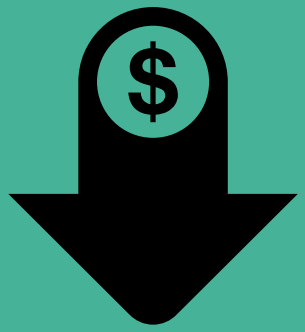
Change is taking place across the entire manufacturing process from production lines to supplier integration and customer communication, thereby creating new business models and opportunities. Staying ahead of your competition in the age of smart manufacturing requires a new approach, including:

- New digital R&D, production, supply chain, logistics, sales and marketing functions
- Lines of business driving continuous deployment of SaaS applications and IoT
- Direct control and monitoring of manufacturing processes
- Easier analysis of data from complex systems from anywhere in the world

The four pillars of smart manufacturing

To help you reach the next level of manufacturing excellence, Orange Business Services provides a range of services that meet the following requirements:

- **Transform your IT foundation to drive future business needs**
- **Optimize operations through industrial intelligence and automation**
- **Drive competitive advantage with customer insights**
- **Control the movement of information and material**



By 2020, Industry 4.0 is forecast to bring an annual average cost reduction of 3.6 percent across process industries globally, totaling $421 billion[1]

1. PwC: Industry 4.0 – building the digital enterprise
https://www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf

Digital agility

Transform your IT foundation to drive future business needs

With manufacturers fast embracing this new smart era, underpinned by widespread connectivity, agility has become one of the most powerful tools for digital transformation.

Manufacturing's new business models will be supported by cloud, mobile, big data and analytics – and the network is the core enabler for this transformation. New networking architectures such as software defined networking (SDN) together with innovations such as virtualization will help deliver industry 4.0, including automation, analytics and enhanced security such as automated alerts and remediation.

The flexibility and agility provided by SDN opens up the potential for self-service provisioning of networks, while providing the adaptability to handle fast changing business needs and growing amounts of data.

Some manufacturing plants are in locations plagued by slow speeds and high latency. This is where SD-WAN comes into its own, alleviating concerns about internet reliability and security at every location.

Successfully execute acquisition strategies
Companies today are entering into transactions and alliances that have their own unique integration challenges. Mergers and acquisitions provide major integration headaches for CIOs. By using a single provider, it is easy to connect and integrate legacy network systems into your own network infrastructure.

Securing the road to industry 4.0
Digitization brings with it constantly evolving security risks in a changing business landscape, and cybercriminals are entering supply chains via multiple points. A multi-layered approach to security is essential to secure the entire industrial ecosystem. Supervisory control and data acquisition (SCADA) networks play an important role in industrial operations, and need to be integrated into the security infrastructure.

Growing in the cloud
Cloud computing will help harness the power robotics and artificial intelligence (AI). With Industry 4.0 producing gargantuan amounts of data via the Industrial Internet of Things (IIoT), cloud is fundamental in analyzing and visualizing it.

Use case

Large industrial manufacturer rethinks its entire network infrastructure with SDN technologies to support data-driven manufacturing

A global manufacturing company was looking to move its entire network infrastructure to SDN technology to support industry 4.0. It needed a partner capable of managing its ambitious roadmap, providing innovation, flexibility and migration-speed. This included increasing bandwidth via internet-based connectivity, whilst simultaneously decreasing costs.

The project involved the migration of a large number of global locations with Internet-based SDN technology and Universal CPE. Together with the change-over, Orange Business Services also provided SDN-management orchestration, integrated business processes and end-to-end security. It can now manage and apply granular levels of control to specific business applications, running alongside end-to-end connectivity, security and a cloud application service delivery chain.

Use case

Automotive supplier integrates acquisition into single global IT governance model

One of the largest automotive suppliers worldwide was looking to integrate its acquisition into the group. The integration process, carried out by Orange Business Services, covered both Business VPN and hybrid networks, along with more than 13 different services and solutions for 350 locations and 137,000 employees worldwide. In addition, its two globally-split support teams and helpdesks were merged. With the integration process now completed, the multinational can expand its customer base and have a consistent voice to customers.

Industrial automation and intelligence

Optimize operations through industrial intelligence

Flexibility, resource efficiency and time-to-market are key success factors for industrial enterprises. So manufacturers need to develop global visibility to respond intelligently to changing market conditions.

Insight from data provided by enterprise intelligent systems will reduce downtime and bottlenecks by identifying problems, pinpointing what is causing them and correcting them.

Industry 4.0 is also helping to support health and safety throughout the factory. Cognitive IoT can analyze data from the employee and the smart factory environment to help managers identify trouble spots or risky behavior.

Greener manufacturing
Industry 4.0 can contribute to a circular economy and greener industry. Embedded intelligence and real-time energy consumption can help you better manage energy consumption and waste production for more eco-friendly operations.

Smart manufacturing will enable data to be gathered on the lifecycle of materials to assess their end-of-life and recycling potential. Consumers will make informed decisions about the sustainability of the products they are buying and supply chains will be more transparent.

Use case

Plant manufacturer uses remote monitoring to reduce maintenance costs

A multinational operating in the construction industry was looking to deploy a diagnostic solution for cranes via a provider that could manage the entire project including sourcing, communications and hosting.

Using connectivity solutions from Orange Business Services, the manufacturer was able to collect real-time data from cranes to carry out diagnostics globally. This has enabled it to prevent problems and reduce maintenance costs. Managing data in real-time enables its technicians to either solve issues remotely or ensure they have the right parts on site, reducing service interruptions.

10-20%

Moving to predictive maintenance can often save 10% to 20% over preventive maintenance[2]

2. Gartner: Top strategic predictions for 2017 and beyond: surviving the storm winds of digital disruption https://www.gartner.com/binaries/content/assets/events/keywords/cio/ciode5/top_strategic_predictions_fo_315910.pdf

Rapid innovation cycles

Drive competitive advantage with customer insights

To survive and thrive in an increasing competitive market, you must differentiate yourself. This makes the move towards customization essential for all manufacturers.

The ability to personalize a product to an individual customer's needs using mass production techniques is one of the game changers offered by Industry 4.0, Big Data and IoT. Better customer understanding, thanks to Big Data analysis, is enabling manufacturers to respond quickly to customer needs and transform products accordingly – be it via customization and personalization, or mass produced items.

This visibility is essential in providing the omnichannel order and fulfillment options your customers demand. Making business processes open and more transparent improves customer satisfaction and loyalty.

18% **increase in productivity forecast by 2020 due to industrial digitization[3]**

Use case

Delivering new services to a boiler specialist's customers

A boiler specialist, wanted to improve the service offering on its boilers to boost its customer satisfaction. Orange Business Services delivered a customized IoT platform on Microsoft Azure, which provides a tailored solution for remote monitoring, along with curative and predictive maintenance. The solution has allowed for more efficient maintenance intervention, providing customers with an innovative new service.

3. PwC: Industry 4.0 – building the digital enterprise
https://www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf

Supply chain evolution

Control the movement of information and material

Logistics is a key part of smart manufacturing, organizing everything that moves in and out of the manufacturing plant – and beyond.

Manufacturing is fast seeing its supply chains change from linear chains to complex, dynamic and highly-connected supply webs that leverage real-time data. Real-time communications together with a continuous flow of data throughout the production cycle is now as important as the flow of raw materials. The result is a rise in data-driven ecosystems designed to speed up innovation and customer service delivery.

Asset tracking
Asset tracking and monitoring is essential to advance product-lifecycle management throughout the supply chain. It provides the ability to efficiently schedule production, and track components and finished goods. By exploiting industry 4.0 and Big Data you can anticipate and react to disruption in the supply chain.

Real-time communication
The goal of smart factories is to connect with global digital supply networks, measure situations in real-time and self-adapt to demand.

However, supply chains often exist in silos. Business needs to integrate suppliers and teams more efficiently into ordering processes, so that materials can be delivered at the point they are needed. Industry 4.0 lets you to adopt a just-in-time supply chain, managing component levels in real-time and ensure on-time delivery. Look at where you can share data now. Supply chain integration can start small and grow at a speed you want.

80% **of companies will have digitized their value chains by 2020[4]**

Use case

Global brewer improves decision making with collaboration

A global brewing company was looking to support better global collaboration to aid decision making and information flow. At the same time, it was looking to cut costs in terms of travel and support its sustainability commitments in terms of carbon footprint.

Orange Business Services deployed a unified communications and collaboration solution for more than 45,000 Skype For Business users that features instant messaging, video and telepresence rooms. It has enabled the company to provide employees with a high-quality, easy to use video experience and enhanced collaboration, without the need for travel.

Use case

Cosmetics manufacturer tracks assets throughout supply chain

A multinational cosmetics company was looking to track its assets throughout production and delivery to manage stock levels, maintain quality and ensure just-in-time delivery. Using Datavenue and Live Objects from Orange Business Services, the company has been able to transform data into actionable business intelligence. This has enabled it to optimize productivity, improve decision making processes, control costs and trace its goods from start to finish.

4. PwC: Industry 4.0 – building the digital enterprise
https://www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf

Orange: your partner in smart manufacturing

Orange has experience as a solution provider, integrator and innovator. We provide a wide range of solutions and services to help you meet your goals.

Global IT, network and communications capabilities with local presence and support

- **26,000 customers in the manufacturing sector**
- **33% of our biggest customers are in manufacturing**
- **Global IoT leader with over 12 million connected objects**
- **700 IoT and data analytics experts can provide end-to-end support for your digitization**
- **Proven experience in digitizing manufacturing enterprises**
- **IT and communications services including network integration, applications, cloud and collaboration**
- **End-to-end security for your digital transformation**

Your partner through every step

Do you have a clear innovation strategy for industry 4.0?
Our experts can help you determine your roadmap. Our innovator DNA is embodied in our 1,000 researchers located in more than 15 labs worldwide, together with start-up incubators. This enables us to customize business innovation through ideation, incubation and proof of concept. Our investment in dedicated research and innovation makes us ideally placed to be your partner in the smart factory of the future.

Contact your account manager to find out about smart manufacturing and industry 4.0 solutions from Orange or visit https://www.orange-business.com/en/industries/manufacturing

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