



Orange Business Services Global Industrial IoT Services

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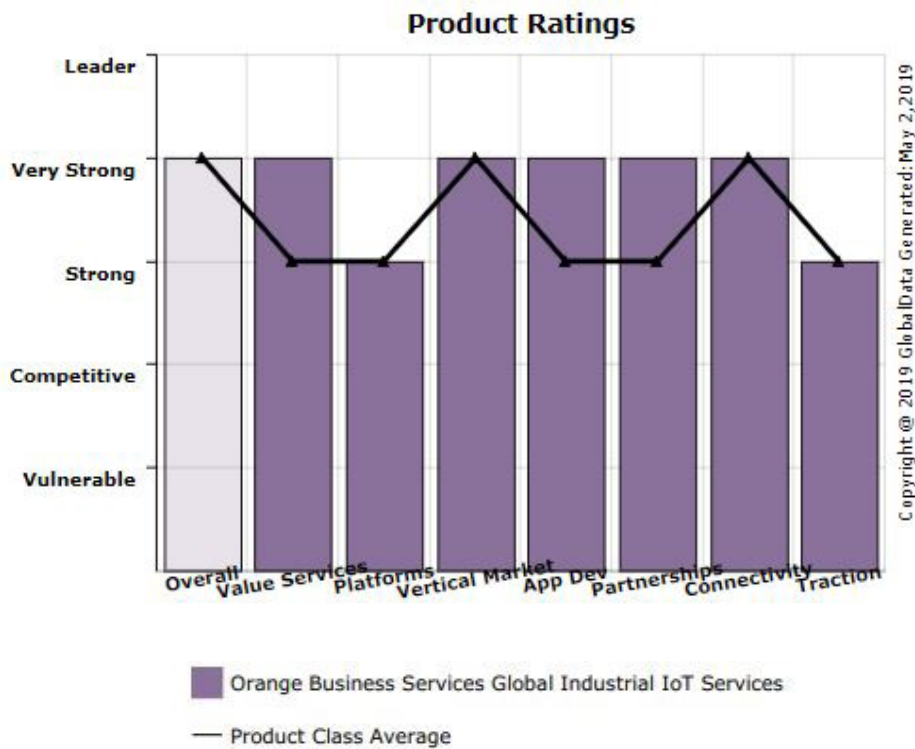
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PRODUCT ASSESSMENT REPORT - GLOBAL INDUSTRIAL IOT SERVICES

REPORT SUMMARY

Orange has a very strong, comprehensive, end-to-end approach to IoT, with platforms, analytics, app development, and systems integration resources. With diverse access options, it has 17.1 million connections, including a large LoRa user base.

SUMMARY



WHAT'S NEW

- **December 2018:** Nova Veolia and subsidiary Birdz chose Orange Business Services to help digitalize Veolia's remote water meter reading services in France. This is the largest LoRa deployment of any operator to-date, with 3 million water meters to be connected.
- **October 2018:** IoT Connect Anywhere from Orange Business Services enables companies to set up private on-premise LoRa networks for IoT projects.
- **June 2018:** Orange Business Services confirmed the acquisition of Business & Decision, a company with expertise in business intelligence and data science.

PRODUCT OVERVIEW

Product Name	Datavenue B2B
Description	<p>Orange has been offering IoT services since 2009. In 2015, a group initiative brought together all Orange IoT and analytics expertise, structured to find profitable and addressable growth with the right value proposition, verticals, and geographies, leveraging Orange organic assets and partners. Orange launched the Datavenue suite of services for developers, startups, and enterprises. It offers a comprehensive set of building blocks for IoT, with connectivity management, object integration, data and app platforms, and professional services. It features solutions to 'Collect', 'Transport', 'Protect', 'Store and Process', 'Analyze', and 'Share and Create'. Within Datavenue, Orange targets four main verticals- automotive/transport, smart territories and cities, industry and manufacturing, and healthcare/daily life- with a dedicated go-to-market strategy for each.</p>
Components	<ul style="list-style-type: none"> • 'Collect' provides customers with a catalog of objects (devices) and data plans. There are 91 objects currently in the IoT Marketplace. • 'Transport' provides connectivity services including LoRa, LTE-M, NB-IoT, and cellular 2G, 3G, and 4G, including roaming relationships with alliance and competitive roaming partners. It also includes fixed, satellite, RFID, WiFi, Bluetooth, and UWB options. • 'Protect' includes security solutions from Orange Cyberdefense group including audit and CyberSoC capabilities. • 'Store and Process' includes Orange-developed Live Objects and Flexible Data platforms, provided on-premises or via a SaaS platform to capture, manage, visualize, and analyze IoT data. • 'Analyze' includes integration and correlation of data sets, through new Business and Decision acquisition. • 'Share and Create' includes consulting, integration, end-to-end solutions, with local and vertical skills.

Key Customers

- City of Alba Lulia, Romania
- City of Marseille (SmartSeille)
- City of Qatar (Meeza/Msheireb- Downtown Doha)
- Cotecna
- Cargotec
- Dobroflot
- e.l.m. leblanc
- Hertz
- LivaNova
- Renault
- Viasat
- Veolia

Key Rivals

- Telefónica Business Solutions
- Vodafone Global Enterprise
- Verizon Enterprise Solutions
- Deutsche Telekom
- AT&T

ESSENTIAL ANALYSIS**Strengths**

- **Comprehensive Portfolio:** Orange's Datavenue offers a comprehensive set of building blocks for IoT, with connectivity management, object integration, data and app platforms, partner solutions, and professional services. 2018 Partnerships with Microsoft and Siemens fleshed out application development options while acquisition of Business and Decision expanded data correlation and analytics.
- **Technical Resources:** Orange has a growing set of app developers, analytics experts, R&D engineers, and regional resources, with over 2,500 employees dedicated to IoT and data analysis. In addition, Live Objects is a platform allowing businesses to design and implement IoT projects by connecting objects and machines, extracting data from connected objects, presenting the data, and transforming it into relevant information.

Limitations

- **Strong Competition:** Vodafone remains the European leader with over 80 million connections, leveraging its large wireless network, dedicated IoT BU, internally developed SDP, and acquisitions of integrators and connected car specialists.
- **Competitive Differentiation:** While Orange has many strengths, other operators and large SIs are differentiating with end-to-end vertical solutions; others have a more global customer base. Others are blending cognitive/machine learning into analytics engines.

- **Wide-Ranging Connectivity:** Orange has a mobile network in 28 countries, global MPLS connectivity, 500+ roaming agreements, WiFi, satellite, radio/mesh networks, and a LoRa network in France covering 95% of the population. It has both LTE-M and NB-IoT in Belgium, with LTE-M in six countries. Future plans are to extend LTE-M in Europe, US, and Japan in H2 2019 and launch 5G in 2020.
- **Strong Growth:** Orange's IoT business has grown to 17.1 million connections, a growth rate of 26% since 2014. Connections are split into automotive/transport (45%), smart cities and territories (34%), industry/manufacturing (10%), and daily life/healthcare (11%).

CURRENT PERSPECTIVE

Very Strong

Orange Business Services holds a very strong position within the global IoT services market. Orange targets four main verticals- automotive/transport, smart cities and territories, industry and manufacturing, and daily life/healthcare- with a dedicated go-to-market strategy for each, including vertical partnerships.

Orange has a number of key benefits in offering IoT services: it has its own IoT service delivery and application enablement platforms; offers widespread network coverage across fixed, cellular, and local access technologies (with a LoRa-based LPWAN network in France which serves 300 B2B customers, as well as a growing LTE-M footprint in Europe); is dedicated to mobile and IoT connectivity solutions for MNCs (in addition to local enterprise solutions from Orange operating companies); has experience in many vertical industries; and differentiates with Orange Applications for Business (OAB), dedicated to application development. Orange has also made a stake in data analytics empowered by its Flux Vision platform that provides indexing, prediction, log correlation, and collaboration tools, and strengthened with Business and Decision data correlation capabilities. It has 2,500+ employees dedicated to IoT and data analytics. Orange has also strengthened its IoT security proposition through collaboration with its new Cybersecurity business unit which offers security audit and CyberSoC services, among other capabilities.

The Datavenue suite of services for developers, startups, and enterprises, provides professional services, systems integration, security and identity management, and co-innovation enablement. Orange also offers Live Objects, a platform allowing businesses to design and implement IoT projects by connecting objects and machines, extracting data from connected objects, and transforming this data into relevant information.

Orange provides integration and end-to-end IT solutions. It helps select compliant modules, devices, sensors, etc. from a large catalog to fulfill the customer's requirements. Orange develops and implements business applications that process, consolidate, and deliver information and offers storage and management of data collected from IoT devices, leveraging its cloud solutions. Throughout the project lifecycle, Orange Business Services provides consulting, project, and service management.

The acquisition of Business & Decision, with its expertise in business intelligence and data science, has significantly strengthened Orange Business Services' operations in data analysis and governance in France and internationally. The partnership with Siemens also added the ability to bridge the gap between industrial operations and IT, thanks to joint solutions with MindSphere. Orange will be launching 5G in 2020 (with 17 test cities in H2 2019) with a focus on mobile broadband and critical IoT use cases. It will also be extending its LTE-M footprint in H2 2019, with its own build-outs, plus roaming relationships in Europe, U.S., and Japan.

COMPETITIVE RECOMMENDATIONS

Provider

- **End-to-End Vertical Solutions:** While Orange has end-to-end fleet management solutions and divides up its target market into four primary verticals it does not have a portfolio of re-playable solutions for each vertical. Orange should note that, for mature use cases, it can offer packaged offers. This could keep custom development costs down and allow it to offer more solutions to SMEs.
- **App Platform Partners:** Orange has Live Objects and FluxVision, but does not have an all-purpose application enablement platform (AEP) that customers can use to develop their own solutions. It should note that recent alliances with Microsoft and Siemens, which are well-recognized brands with heavy investments in IoT, add significantly to its ability to develop applications or help customers' developers to do so.
- **Alliance Traction:** Orange and the GMA do not disclose IoT customers that use multiple access providers in the alliance. Orange should note that this does not mean there are no reference customers; rather, Orange and other GMA partners are not authorized to disclose this kind of information.

Competitors

- **MNCs:** Other global operators can note that they have more multinational deals compared to Orange. They can note that the majority of Orange IoT engagements appear to be in-country and are also mostly for connections within the same countries.
- **Application Development:** Orange has unusually extensive systems integration and application development capabilities. Competitors should delve more deeply into app development and analytics or lose business to Orange and to traditional ITSPs.
- **End-to-End Security:** Many operators only provide security that touches their network or end-devices, although lack of security is a primary deterrent to IoT deployment. They should use partnerships if they don't have their own resources to provide IoT security solutions that span end-devices, edge computing, networks/cloud services, data centers, and applications.

Metrics

VALUE-ADDED SERVICES

Rating:

Very Strong

Consulting Services:

Orange has end-to-end expertise in IoT including information systems integration, project management, and security and privacy management. It has 2,500 IoT and analytics consultants and 5,000+ R&D researchers. Specific consulting capabilities include: definition of ecosystems, business analysis, analysis of enterprise value chain, evaluation/ideation process, use cases identification, and development of business case and business plan. Also provides connectivity and smart technical solutions, help in choosing relevant partners, expertise in IT integration and network design, and standardization. Consulting services are also part of the 'Share and Create' offer. A new partnership with Siemens MindSphere adds consulting, integration, and app development skills.

Pro Services:	350 people in IoT development & delivery teams; leverages local integrators to provide security, integration, and application development and management as part of Share and Create function within Datavenue.
Security Services:	End to end IoT security approach throughout Transport, and Store and Process phases of Datavenue, with focus on objects and perimeter security. New Protect function leverages security capabilities from Orange Cybersecurity unit, including Audit and CyberSoC. Performs 50 industrial plant security audits per year, provides security advice to device manufacturers, runs secure data center and operations with ISO 27001 certification, monitors 15 million security events per minute. Identity management of employees and customers is a prerequisite to support GDPR privacy requirements in Europe.
Data Analytics:	Orange Experts include a big data consultancy team, data architects, data scientists, data analysts, developers, and big data integrators. Uses Flexible Data platform, a global secure service environment to implement big data projects. Platform allows customers to build and host their infrastructure and big data tools in a secure cloud environment. Also offers Flux Vision tool to measure population movements and attendance at specific areas by analyzing technical data points from Orange's mobile network.

PLATFORMS

Rating:	Strong
Connectivity Platforms:	IoT Managed Global Connectivity portfolio has two product lines: IoT Connect Express and IoT Connect Advanced. Offer includes access to the Orange global mobile network enhanced by alliance of operators and roaming agreements. SIM and connectivity management includes: IoT dedicated SIM cards portfolio, Web-based connectivity management tools (portal, APIs) to manage and monitor mobile lines, with a global invoice mechanism. Provides SIM lifecycle management, traffic monitoring, subscriptions inventory and customized alarms.
App Enablement Platforms :	Datavenue App Enablement Platform is called Live Objects. Communication layer includes: SMS, Mail, SIM, LPWA Manager, MQTT/REST bridges, cloud to cloud platforms adapters, protocol adapter. Application layer includes: admin, billing, user management; device, data and message management, application tools (dashboards, visualization, rules, event processing). Provides APIs for developers, integrators, professional services. Partnerships with Siemens (MindSphere) and Microsoft (Azure) enhance app development options for customers.
Differentiators:	Orange IoT Platform is both horizontal (API mode) and supports verticalization, derived from use cases from LoRa customer base. Orange also invests in its national and international coverage (for instance, in France with 4,900 LoRa gateways for indoor deployments and for national outdoor coverage, covering 95% of the country). In Belgium, Orange offers both LTE-M and NB-IoT. The new Datavenue online marketplace, launched in 2018, allows customers to order objects and postpaid connectivity.

VERTICAL MARKETS

Rating: **Very Strong**

Target Verticals: Automotive and transport, e.g., cars, buses, trains, planes (44% of connections); smart territories, e.g., cities, utilities, offices, stores (35% of connections); industry, e.g., manufacturing and field operations (10% of connections); Daily Life & B2B2C, e.g., healthcare, smart home, and personal IoT (11% of connections).

Partnerships for Verticals: Different kinds of partners for each of Datavenue functions. Collect: data & objects providers with vertical relevance or standards and security expertise; Transport: operators with complementary & competitive roaming; Store and Process: platform providers with recognized leadership, in country presence, or vertical expertise; Share and Create: integrators/ consultants with local recognized skills. Key partners by vertical: Fleet/OEM: Renault, PSA, Meitrack, Abeeway, Ercogener. Smart territories: Fludia, Connit, One Situ, Adeunis. Asset tracking/monitoring: Meitrack, Ercogener, TMI, Eolane, Sagemcom, LoRa Alliance, Microsoft. Senior Care: Geotonome; Banking/ retail: Splunk.

APP DEV

Rating: **Very Strong**

App Dev Capabilities: Orange Application for Business develops applications to help customers build the digital experience with on-premises, hybrid, or cloud applications. It has 2,300 employees and builds 950 applications per year.

Application Examples: Hertz 24/7 is a car sharing service to rent vehicles by the hour. Orange provides Hertz a global SIM along with its connectivity management platform. All Hertz affiliates in Europe managed via single point of contact with continuous technical and commercial support. Orange provides end-to-end logistics and project & service management.

City of Alba Iulia, Transylvania, Romania: Orange LoRa WAN IoT architecture and Business Retail Analytics solution. Public Wi-Fi at the Citald and on buses. Bus/traffic management. Pedestrian optimization, Beacons for Smart Tourism, Intelligent Lighting Solution, Waste Management. Consultancy & Project Management.

Harmonie Mutuelle health insurance: remote assistance for elderly patients. Orange provided end-to-end solution relying on all of Live Objects bricks: Select, Connect, Manage and Control. Orange contributed in all stages of the project from the innovation phase to delivery. Orange designed and built the objects with the help of specific partners.

Developer Resources: Approximately 2,500 dedicated experts for IoT & Analytics. Provides third-party data sources: data catalog, outdoor and indoor mobility data; management platform for data collection and processing; end-to-end expertise: IS integration and project management, with data scientists, security and privacy experts. Has solid UX/UI expertise and tested methodologies.

PARTNERSHIPS

Rating: **Very Strong**

Application Partners:

Different kinds of partners for each of Datavenue's functions. Collect: data & objects providers with vertical relevance or standards and security expertise; Transport: operators with complementary & competitive roaming; Store and Process: platform providers with recognized leadership, in country presence, or vertical expertise; Share and Create: integrators/ consultants with local recognized skills. Key partners by vertical: Fleet/OEM: Renault, PSA, Meitrack, Abeeway, Ercogener. Smart territories: Fludia, Connit, One Situ, Adeunis. Asset tracking/monitoring: Meitrack, Ercogener, TMI, Eolane, Sagemcom, LoRa Alliance, Microsoft. Senior Care: Geotonome; Banking/retail: Splunk

Service Provider Partners:

Partners with operators with complementary and competitive roaming. Member of the Global M2M Association along with Deutsche Telekom, Telecom Italia, Telia, SoftBank, Bell Canada, Swisscom. GMA and Bridge Alliance provide cellular connectivity in 77 markets. Alliance with China Telecom. LoRa Alliance partnerships. KPN roaming for LTE-M in Europe.

CONNECTIVITY

Rating: **Very Strong**

Cellular Footprint:

2G/3G in Europe with 98% coverage. 4G 100 Mbps and 4G Cat-M. Supports over 17.1 million connections/objects including 3 million LoRa connections. With GMA and Bridge Alliance provides cellular connectivity in 77 markets.

LPWAN Support:

LoRa network covers 95% of French population. LTE-M and NB-IoT in Belgium, with LTE-M in six countries. Roaming with KPN will provide broader LTE-M coverage in Europe, with expansion in US and Japan in H2 2019.

Other Access Options:

Fixed, WiFi, RFID for asset tracking, Home Gateway (e.g., Live Intercom), Bluetooth/zWave/ZigBee, and UWB). The IoT Device Catalogue has 91 devices, including 65 for LoRa, and is part of the Datavenue offering which includes devices, gateways, modems, modules and starter kits for numerous applications: asset tracking, smart metering, smart operations, smart buildings and daily life.

TRACTION

Rating: **Strong**

Number of Connections: Q4 2018: 17.1 million connections (cellular and LPWAN). Connections by Vertical: automotive/transport (44% of connections); smart cities and territories (35% of connections); industry/manufacturing (10% of connections); daily life & healthcare (11% of connections).

Named Customers: LivaNova, Qualcomm Life, Medical Objects (healthcare); SITA, Splitsecnd, Transics (connected transportation); flaik, Cotecna (track and trace); IntraTone (security systems); Renault, PSA, SNCB, Tesla, Peugeot (connected car); SIA (point of sale); m2o city (JV with Veolia Water), Lubomierz (utilities); Dacom (smart agriculture); Manitowoc (remote crane monitoring solution); EMT Malaga (fleet management and connected buses); WayRay (automotive aftermarket); C&P Rental (fleet management, Singapore); Tractive, Yummypets (GPS + cellular trackers for pets); Smartseille (eco city in Marseille), Qatar, Alba Lulia Romania (Smart City); Harmonie Mutuelle (insurance, remote assistance). Hertz, Viasat (service providers); Vinci Autoroutes (asset management); e.l.m. leblanc, Securitas (daily life); Dobroflot (fuel optimization); Veolia (water metering/monitoring).