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# Orange Business Services Global Industrial IoT Services

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## PRODUCT ASSESSMENT REPORT - GLOBAL INDUSTRIAL IOT SERVICES

### REPORT SUMMARY

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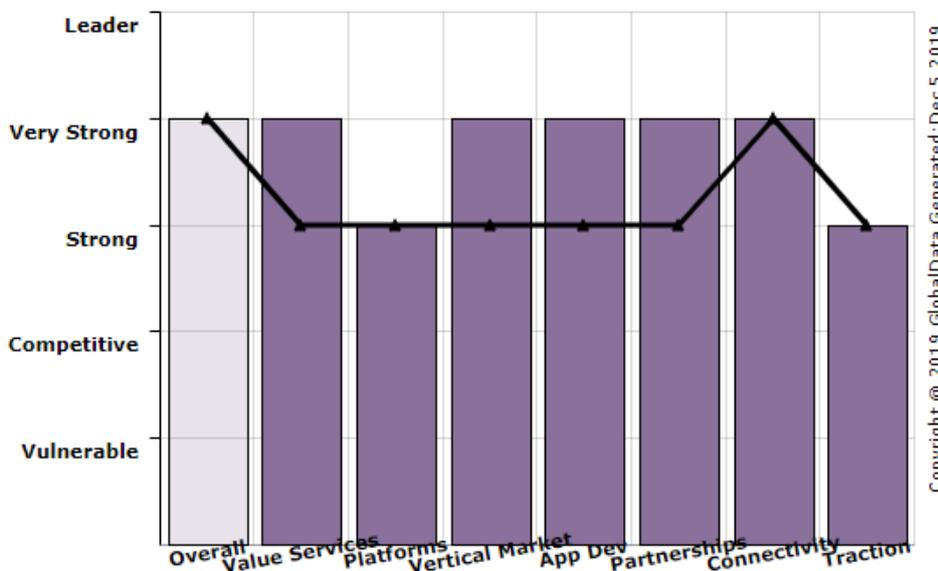
Orange has a very strong, comprehensive, end-to-end approach to IoT, with platforms, analytics, app development, and systems integration resources. With diverse access options, it has connected millions of objects, including a large LoRa user base.

#### WHAT'S NEW

- **July 2019:** Orange Business Services (Orange) announces executive leadership changes as it seeks to reposition itself as the leader in the 'Internet of Enterprise.' Also creates Smart Mobility Services as a 'strategic business unit' incorporating IoT and 5G as well as enterprise mobility.
- **June 2019:** Orange signs cooperation agreement with Sberbank Telecom for joint development of smart city projects.
- **June 2019:** Orange, AT&T, KPN, and Swisscom activate LTE-M roaming across North America and Europe, with additional operators expected to be added.
- **April 2019:** Orange announces tests for 5G use cases, including partnerships with LACROIX Group, Schneider Electric, Renault, and RATP.

#### SUMMARY

Product Ratings



## RATING UPDATE SUMMARY

Product Name	Datavenue B2B
<b>Description</b>	<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's 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 the broader Datavenue portfolio, 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. More narrowly in IoT, its vertical focus is on connected cars and products, smart cities (and buildings), and Industry 4.0. Orange is also pursuing a range of go-to-market models with third parties: embedded connectivity; co-selling offers; integration of third-party solutions.</p>
<b>Components</b>	<ul style="list-style-type: none"> <li>• 'Collect' provides customers with a catalog of objects (devices) and data plans. There are 91 objects are currently in the IoT Marketplace.</li> <li>• 'Transport' provides connectivity services including LoRa, LTE-M, NB-IoT, and cellular 2G, 3G, 4G, and 5G including roaming relationships with alliance and competitive roaming partners. It also includes fixed, satellite, RFID, WiFi, Bluetooth, and UWB options.</li> <li>• 'Protect' includes security solutions from Orange Cyberdefense group including audit and CyberSoC capabilities.</li> <li>• '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.</li> <li>• 'Analyze' includes integration and correlation of data sets, through new Business and Decision acquisition.</li> <li>• 'Share and Create' includes consulting, integration, end-to-end solutions, with local and vertical skills.</li> </ul>
<b>Key Customers</b>	<ul style="list-style-type: none"> <li>• City of Marseille (SmartSeille)</li> <li>• City of Doha (Qatar)</li> <li>• Cotecna</li> <li>• Cargotec</li> <li>• Dobroflot</li> <li>• e.l.m. leblanc</li> <li>• Haga Golf</li> <li>• Octo Telematics</li> <li>• PSA Groupe</li> <li>• SNCF</li> </ul>

Product Name	Datavenue B2B
Key Rivals	<ul style="list-style-type: none"> <li>• Telefónica Business Solutions</li> <li>• Vodafone Global Enterprise</li> <li>• Verizon Enterprise Solutions</li> <li>• Deutsche Telekom</li> <li>• AT&amp;T</li> </ul>

## 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 2,400 employees dedicated to IoT and data analysis (of whom, 700 are identified as IoT experts). 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.
- **Wide-Ranging Connectivity:** Orange has a mobile network in 29 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, U.S., and Japan in H2 2019 and launch 5G in 2020.
- **Strong Growth:** Orange's IoT business has grown to 18.8 million connections (in 35 countries), 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%).

### 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.

## CURRENT PERSPECTIVE

### Very Strong

- Orange Business Services is very strong in the IoT services market, having steadily built the business from basic M2M connectivity to now including end to end solutions that span many network types, horizontal and vertical applications, advanced data analytics, and deep professional expertise in support of development, integration, and operation of IoT deployments. Key benefits include its own IoT service delivery and application enablement platforms; widespread network coverage across fixed, cellular, and local access technologies; and the ability to serve MNCs internationally and SME and national enterprises locally through Orange operating companies.
- On the connectivity side, Orange is capable of supporting almost any potential network type. Cellular solutions include embedded SIMs (eUICC) which have led to large connected car deals, but Orange also provides LPWA support with LoRa, LTE-M, and NB-IoT. In doing so, the provider can offer the right technology for each use case, rather than leading with a particular network and trying to force solutions to fit the technology. Orange will be launching 5G in 2020 with 17 test cities in H2 2019, mainly in France, Poland, Belgium, Luxembourg, and Romania, with a pilot project in Spain. It will focus on mobile broadband and critical IoT use cases. It has also been working on extending its LTE-M footprint in H2 2019, with its own build-outs, plus roaming relationships in Europe, U.S., and Japan.
- Like most players in IoT, Orange recognized early on that a vertical approach is necessary to truly deliver solutions that are fit for purpose. It is now targeting three key “verticals” - connected cars and products, smart cities and buildings, and Industry 4.0. In the highly demanding automotive sector, it has found that its strict compliance to eUICC standards has helped it win big in connected car. In smart cities (and smart buildings), a strong portfolio of customized and product/service offerings and an ability to meet stringent IT requirements of public sector jurisdictions has resulted in 100 contracts, both large and small. In Industry 4.0, Orange is finding traction in applications for the mobile workforce including field personnel, in predictive maintenance, and in connecting OT systems.
- That traction is reflected in nearly 19 million IoT connections across 35 countries, generating revenue from connectivity and services (including consulting for use case development, application development, and integration). 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. It has 2,400+ employees dedicated to IoT and data analytics, as well as a local service integration staff base across 166 countries. Orange’s go-to-market is bolstered by complementary capabilities in security (for audits, network security, device security, and threat monitoring) and in services and support (Orange’s MSI portfolio for services integration has helped it win large IoT deals). Network operator partners are extending its reach and bringing in new customers, for example, with China Telecom’s requirements in Europe, or with KDDI providing access to Japanese customers. Large and small technology vendors are also valuable IoT partners. Siemens is particularly strong in Industry 4.0, providing Orange with a powerful co-selling approach that can successfully target enterprises at both the CIO and line of business levels. It has also been successful in B2B2X models in support of vertical/application specialists rolling out digital services (e.g., Octo, for usage-based insurance in Italy).

## 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 has packaged offers. This could keep custom development costs down and allow it to offer more solutions to SMEs. Orange should also leverage its locally-based support and investments in AI and cybersecurity.
- **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 (where Orange has operations) 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 2,400 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 :**

700 IoT specialists, many involved in development & delivery; team 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. Orange has also launched its Orange Fab start-up accelerator in Russia, which includes IoT as a target development area.

**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 Cital 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 over 100 markets. Alliance with China Telecom. LoRa Alliance partnerships. KPN (Netherlands) and Swisscom (Switzerland) roaming for LTE-M in Europe, as well as AT&T in the U.S. and Mexico.

## CONNECTIVITY

<b>Rating :</b>	<b>Very Strong</b>
<b>Cellular Footprint :</b>	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.
<b>LPWAN Support :</b>	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.
<b>Other Access Options :</b>	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

<b>Rating:</b>	<b>Strong</b>
<b>Number of Connections:</b>	Q3 2019: 18.8 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).
<b>Named Customers:</b>	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).