Creating the future of urban life and work
Building smart cities with Orange Business Services

Orange ™ **Business Services**

Constructing the cities of the future

Cities are complex environments, with many challenges around population growth, resources, pollution and traffic. Smart cities that leverage digital technology to power new services, and ways of living and working can pave the way for a more inclusive and resilient future.

The United Nations[1] forecasts that by 2050 the world will be home to 2.5 billion additional people, 2 billion of whom will add to the population of cities. This reflects the rapid urbanization of our planet, which will see the urbanization level increase to 70% by 2050, up from 50% today. In practice, this means that resources will become more scarce, with urban energy consumption set to grow by 36% between 2008 and 2035.

Smart digital technologies can help cities manage challenges of the urban environment including rapid population growth, climate change, and their consequences, but you must take the right approach.

At Orange, we help you transform your cities and buildings for an improved quality of life and wellbeing at work. Read on to find out more.

Contents

What makes a smart city?

A smart city is an urban environment built on digital technology that is tailored to improving the efficiency, attractiveness and quality of life of the city for residents and visitors. A smart city can comprise downtown business areas with smart office buildings, smart stadiums where fans can use cutting edge technologies to enjoy a next-generation experience, or smart districts that leverage data to make life more pleasant for residents.

The technologies involved include Internet of Things (IoT) sensors for monitoring pollution levels or smart parking solutions, artificial intelligence (AI) for solutions like smart traffic management to make the city flow more efficiently and automation for waste management and smart logistics. Big data analytics can be used to make energy management more efficient in smart cities, and predictive analysis can make cities safer and more secure places to live and work.

$20tn

smart cities are forecast to deliver at least $20 trillion in additional economic benefits by 2026[1]

Smart city example: Flagship greenfield new district project driving Qatar National Vision 2030

Qatar was looking to renovate the ancient Msheireb city center of Doha and create a smart district, marrying modernity and local traditions together. This meant delivering state-of-the-art digital technologies for companies, the city administration and residents to transform living and working and enhance overall day-to-day quality of life. The project also required a centralized and unified neighborhood monitoring system.

To transform the district, Orange provided business consulting and smart city services, and connectivity for an expected total of 645,000 connected objects. Additional services included energy management and smart metering, business intelligence and analytics, digital signage and indoor geolocation as well as an intuitive value-added users application and comprehensive central command center that enables real-time, integrated visibility of all sites and equipment.

The benefits include improved employee, resident and visitor experience, enhanced maintenance operations and improved efficiency in energy consumption and waste management.

$135bn
smart city technology spending around the world by 2021[2]

Making cities and urban operations smarter and more efficient

Sustainability, resource efficiency and cost reductions are key success factors for smart city projects. Municipalities need to work with the right partner to identify and exploit all the areas of a digitalized urban environment that can help achieve these goals.

Orange has the skills, expertise and experience to help you manage the smart city infrastructure and smart services that enhance your overall urban operations.

We use our tailored version of the iViva Hypervision platform to manage daily smart city operations more efficiently. It delivers real-time infrastructure monitoring, building management systems, operational technology systems (CCTV, access control), IoT devices, IT systems and enterprise applications consolidated into one platform. This provides a real-time, top-down overview of building or city status, plus management of all your smart city systems and processes.

To deliver smarter, more efficient urban operations it is essential to analyze performance, costs and energy efficiency measurements to identify any potential issues in infrastructure or equipment, while also driving improved asset utilization, efficiency and reduced downtime to improve performance and reduce costs.

Our Hypervision platform features include:

- **Incident management:** using early warning system tracking plus risk assessment and response, you can predefine incident types and response procedures, including real-time data feeds, dynamic team formation and contact lists.

- **Energy and utility management:** using real-time graphical representations means you can monitor and manage electricity and water consumption along with waste levels.

- **Business process management:** gives you the ability to add, change or modify standard business process flow, while visual tools enable fast, flexible process management.
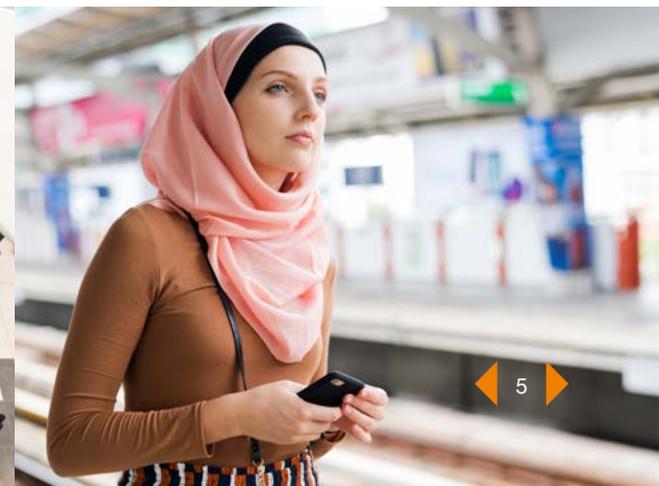
$5tn
costs savings

per year by 2022 for enterprises, governments and citizens around the world from adoption of smart city technologies[3]

Smart city data powers smarter operations

Cities that are already using IoT and digital solutions generate massive volumes of data that can be further analyzed to make urban operations smarter. Smart cities are home to millions of connected devices, from smartphones to smart meters, smart homes to smart buildings, numerous IoT-connected tools and sensors, all generating data all the time.

Orange IoT solutions help you collect data from your smart city connected infrastructure. Our cloud solutions enable you to collect, transport and store all that data securely and effectively. Data can be further shared and analyzed to uncover insights that help make smarter a variety of urban operations:

- Street lighting
- Traffic lights
- Car parks
- Waste management services
- Ecosystem partners and community applications
- Buildings and their management systems

Cybersecurity: ensuring infrastructure, assets and data integrity is vital

As the adoption of IoT devices and cloud solutions grow, so do the associated cyber risks. It is vital to ensure the security of infrastructure, assets and data integrity to avoid any disruption of critical public services. Orange Cyberdefense solutions are tailored to protecting your digital business, assets and city data from end to end, so you can ensure your smart city projects focus on improving life for citizens and businesses.

Case study
Improving mobility for Belgian city

A busy Belgian city wanted to monitor and measure traffic levels to better understand population movement during commuting hours.

Orange helped the city with our Flux Vision solution that enabled them to analyze traffic flows at city center roundabouts, create visitor profiles, and develop customized indicators of tourists, including overnight location of visitors, length of stay, and where they had come from.

Orange was able to help the Belgian city better understand the impact of construction and traffic changes on both residents and tourists, improve communication among local officials, business owners, citizens and tourists. These smarter urban operations provided a range of benefits, such as allowing the city to adapt scheduling of roadworks to limit congestion and optimize public transport operations based on actual needs.

Orange Live Data Hub: improve your visibility using open data

Orange Live Data Hub is a Software as a Service (SaaS) platform hosted on our cloud infrastructure that lets you collect, aggregate, store, transform and visualize your smart city data and manage its governance.

Live Data Hub lets you:

- Collect, organize and publish data sets to comply with open data regulations or create new services or applications
- Enable data sharing between producers and consumers of data using APIs
- Fine-tune access rights using multiple user profiles and analyze your territory's data to build new services on an open, controlled and sustainable infrastructure. This helps ensure data security while guaranteeing correct access levels to a multiplicity of stakeholders.

All this enhances your knowledge of what is happening on the ground in real-time.

Orange Flux Vision: use crowd analytics to optimize your city infrastructure

With real time analysis of smart city data, you can collect statistics, such as on people's mobility patterns or activities in different geographical areas. These insights help you improve transportation services, leverage increased footfall in specific locations to drive urban revitalization projects, and implement tailored, location-based services around accommodation, transportation and other metrics.

Orange Flux Vision lets you analyze population flows in real time to give you reliable statistics on mobility patterns. It converts anonymized mobile network data into statistical indicators to let you analyze geographical area visitor numbers, people movements and event attendance. This includes length of visitor stay and people movements around an event, as well as event impact measurement, enabling you to profile attendees on geographical origin to create insights. Orange Flux Vision also ensures full compliance with local level privacy regulations.

Transforming citizen and visitor engagement

Digital technologies are key to improving residents' quality of life in smart cities, by delivering a more pleasant, connected experience that encourages inclusion and participation.

Orange helps you do this with our web and mobile-based urban services platform, "Welcome to my place". The platform is tailor-made for making life easier for citizens and tourists and delivers a more enjoyable city experience. The platform pulls together all kinds of useful information about your city, events and more and presents it to end-users. It offers details on geolocation of city attractions and areas, opening hours of public services, plus bargains and money-saving information.

In addition, users can read traffic reports and environmental data, all accessible via a simple, personalized and customizable home page. The platform lets your city staff manage content in real time and can be duplicated on any city screen or website, from e-portals to digital signage, and the app is free for citizens to download from the iOS and Android stores.

Case study
Enhancing urban services in Nantes

City authorities in Nantes wanted to aggregate and distribute information around the city and greater region, enhance the quality and efficiency of its public transport and services and improve the everyday life of citizens and visitors.

Orange helped Nantes to achieve this with a mobile application that delivers real time information like events, bus and tram times, security and weather alerts and parking information. It also provides content about points of interest around the city, proactive recommendations, traffic and safety incident reports. All of these tools are delivered in a dashboard fully customizable by the end user. The open platform will evolve and grow with the city and continue to transform citizen access to urban services.

Case study
Smart Services for a ski resort

Orange Business Services worked with the French alpine resort Montgenèvre on the smart resort concept, combining free Wi-Fi, mobile app and big data analytics to enhance the user experience, for residents and visitors, and support the resort's economic and tourism development.

The Montgenèvre mobile app pulls together all kinds of information for tourists, including information about ski lifts, piste opening times, or information about other nearby attractions. The resort also boasts 31 Wi-Fi hotspots to help visitors fully benefit from all the app's features. The app and smart resort project provide an enriched experience for tourists and residents alike.

Smart districts attract residents and businesses

Innovative smart city services help increase citizen and business engagement in their districts, which helps the city overall increase return on investment and support future growth plans. Orange provides a portfolio of urban solutions that enable smart, sustainable neighborhoods and innovative services.

You can transform your districts with:

- Connectivity (public Wi-Fi to fiber)
- Community web portals and district mobile applications
- IoT sensors for monitoring air quality and pollution
- Smart metering to improve gas, electricity and water consumption levels
- Digital signage, interactive displays
- Digital services like shared parking, access control and indoor geolocation

All these services make your districts more pleasant places to live. Tools are underpinned by data aggregation, business intelligence and analytics solutions and a centralized command and control center to give you a real time, integrated view of all your districts' equipment.

Smart buildings at the heart of smart districts

Smart buildings are central to smart cities, and make working life more enjoyable, more efficient and more productive for workers while helping you reduce energy costs and having a positive impact on the environment.

Orange offers smart building services for both residential and commercial buildings.

- Information including news, weather forecasts and traffic
- Support for internal processes such as booking meeting rooms
- Secured access control to buildings
- Mobile identification services to use office equipment or make mobile purchases

$62bn
global smart building market value by 2024 at CAGR of over 34%[4]

Improve your city with smart and safe transportation

Transportation transformation: making travel smarter

Public transportation is another central element of a smart city, and digital technologies enable new passenger-centered mobility services throughout urban areas and provide passengers with an outstanding end-to-end travel experience.

Connectivity on-board enables passenger infotainment, while real-time communication tools enable track and trace of vehicles to help maximize fleet operational efficiency and optimize resources. Command and control services provide an integrated on-board communications system to control and monitor on-board equipment, public announcement and passenger information display system and CCTV.

Case study
Tracking and tracing urban buses in Singapore

Citizens and visitors to your city count improved safety and security as big benefits to their living or working there. The Orange portfolio of urban security solutions includes command and control center, dynamic control of street lighting, access control, video surveillance and people counting to make the city a safer, more secure place overall.

Singapore's Mass Rapid Transit (MRT) department needed enhanced visibility and improved operational efficiency in its public buses. Orange worked with the MRT on a fleet management solution based in a control room that accesses real-time GPS locations of up to 800 buses and communicates directly with drivers. Citizens are better informed on bus time schedules and status of buses, creating an enhanced urban travel experience.

Case study
Making rail travel safer in Taiwan

Taiwan High Speed Rail Corporation needed improved communications between trains, control room and waysides, to deliver better managed, safer railways to citizens and visitors.

Orange integrated TETRA Computer Aided Dispatch and in-train equipment including integrated communication console, digital voice recording system, automatic and direct line telephones and a data transmission network. Taiwan now benefits from easier operation of train controllers, thanks to a unified, single interface for all communications systems and more efficient communications between teams in the field. Passengers benefit through safer travel, thanks to train controllers being able to quickly broadcast information and handle unexpected events more efficiently.

Safe travels: protecting public transport

Orange Transport Video Alert is uniquely designed to enable real-time visualization of video streams that help manage alert situations on public transport. If there is an incident on board a bus for example, the driver can press a button and trigger an alert. Video is sent from the vehicle to the central command center which can assess the live situation on board and if necessary, alert law enforcement agencies.

Transport Video Alert improves both passenger and driver safety, optimizes response times, and reduces the frequency and severity of incidents. Train platform safety is a key use case. Orange Transport Video Alert can give train companies a much more cost-effective solution that leverages existing cameras and uses video analytics to identify situations where people might be about to fall onto train tracks. The solution creates alerts that tell train drivers to slow down in that event, so safety is improved at a fraction of the cost of installing platform screens.

Why Orange?

Our end-to-end approach and integrator expertise ensure you have the right partner.

Our experts have many years of operational experience, innovation expertise and market best practices and can help you define, drive and implement your digital strategy. They will work with you to deploy and manage your equipment and complex multi-vendor projects effectively and efficiently.

Consulting

Define the scope of your project: from strategy and roadmap to delivery

Design

Select the right ICT technologies to support your Smart City project

Build

Implement, integrate and deliver with the right ecosystem of partners, vendors and local suppliers

Operate

Operate the solutions and measure results

Whether you need state-of-the-art solutions and innovative digital services for greenfield projects or support in developing sustainable smart areas and districts in brownfield locations, we can support you every step of the way in planning and executing your smart city initiatives, all underpinned by world class cybersecurity.

Through well-designed and orchestrated projects, citizens are happier, urban operations are more efficient and sustainable, and the city is more attractive to businesses, new residents and tourists alike.

Find out more about how Orange Business Services can help with your smart city transformation by visiting: www.orange-business.com/en/industries/smart-cities