



Data helps make our lives better



No. 1 Essentials

Orange 2014 – 2015

The alliance between **information and communications technologies (ICT), wellbeing and healthcare** (with medical protocol) offers countless opportunities. Orange has stepped up to the challenge.



In 2014, with Orange, you took care of yourself.

100,000 mobile health apps. **300** million medical treatments are provided each year using Orange's solutions.

29% of Europeans will be 60 or over by 2025. **60%** of deaths worldwide are attributed to chronic diseases.

22 countries in which Orange supports the digitization of healthcare systems.

80%

of French people believe that ICT offer effective solutions for managing certain chronic diseases.

x2



Over 170 million people suffer from diabetes worldwide, and this figure could more than double by 2030.

Innovative

A 48-hour session

In February 2014, more than 60 healthcare establishments, professionals, sociologists and designers came together to conceive the e-health solutions of the future. This "eHealth Innovation Marathon", organized by Orange Healthcare and Harmonie Mutuelle, became a supersize brainstorming session to think creatively and come up with a range of disruptive solutions. How?

Participants used real-life situations to rethink the healthcare system over a person's entire lifespan. The two-day event centred on a "design thinking" approach, a multi-disciplinary process employed by designers to quickly resolve innovation-related issues. Starting with the customer experience and customers' desires and needs, the participants used systemic thinking and an open-minded approach to avoid simply falling back on preconceived notions. At the end of the 48-hour session, a "trend book" was given to each participant to spark their imagination and inspire fresh "patient-centric" ideas.



Interconnected healthcare network
The Aquitaine region in south-western France switched to Télé-AVC in 2014 for teleconsultations and teleimaging. Orange Healthcare's telemedicine platform interconnects healthcare providers in the region to deliver faster treatment for patients and save precious time.

You're putting on too much weight, a doctor is on the way...

In the Auvergne region of central France, patients with heart problems are given a connected scale as part of the Cardiauvergne telemonitoring system. If a patient's weight exceeds a certain limit, an alert is triggered and the patient receives a home visit from a healthcare professional. The system has led to improved responsiveness and fewer hospital admissions.



Parcours Ambulatoire (outpatient care). This Orange Healthcare designed solution enables healthcare professionals and administrative staff to support patients before and after their procedures via e-mail and/or text messages.



Information and communication technologies are sources of wellbeing, fluid exchanges and cost-savings. They are a natural fit with the healthcare sector, provided that data confidentiality is scrupulously respected. Which is why Orange pledges to safeguard your data.

Connected health: a bright future

e-health – a broad concept that encompasses wellbeing and prevention, chronic diseases, day-to-day health management and acute conditions, and dependent or vulnerable patients – is revolutionizing how we treat diseases and how patients interact with healthcare professionals. With an ageing population in developed countries and a still nascent medical infrastructure in some emerging regions, connected health has a bright future. What's more, the sector is not extensively digitized. Orange has supported the digital transformation and connected health applications for more than fifteen years, developing proven expertise.

Our position in e-health is backed by powerful networks, the innovation capabilities of Orange Labs and an array of premium partners. Most importantly, our approach centres on patient needs and expectations.

Seamless care for improved patient outcomes

Collaborative working is especially relevant in healthcare industry solutions to improve patient care, especially given a medical ecosystem that remains fragmented and compartmentalized. To improve this situation, Orange helps create digital care networks and optimize medical treatment programmes. The goal is to make communications between the patient's home, the doctor's surgery and the hospital more fluid and more traceable. Hospitals are at the heart of the plan. To boost efficiency and digitization, Orange has developed its modular Connected Hospital service to assist hospitalized patients, healthcare professionals and administrative

staff. In 2014, Orange rolled out the "IPsoins" solution for the Montpellier teaching hospital in southern France to allow secure sharing of patient data. Everyone involved in a patient's treatment can access their complete medical records in real time. And because medical information must be shared securely and in complete confidentiality, the Group has designed digital solutions to simplify procedures. One example is "Région sans film", a cloud-based platform to share medical imaging in the Paris region.

Bringing down barriers

The largest possible number of people should be able to access healthcare services that are more efficient, simpler and cheaper. ICT help deliver high-quality healthcare, even in the most isolated regions. These technologies are effective in meeting challenges related to ageing populations in industrialized countries, the shortage of physicians in some rural areas, and difficulty travelling to

reach health services in emerging countries. In Cameroon, Orange offers an easy and fast way of accessing health information via text message. And under the Botswana-UPenn Partnership, Orange has developed an mhealth solution for dermatology, radiology and ENT. By overcoming distance, connected devices also open up new opportunities. Orange Healthcare has made them a strategic priority, developing services to simplify the caregiver-patient relationship.

For chronic disease sufferers who need regular medical care, ICT enable doctors to monitor their patient's health remotely, and especially, right in their homes. According to the results of a survey conducted by Orange Healthcare and MNH, released in early 2015, 70% of doctors believe that connected devices are particularly well-suited to patients suffering from chronic conditions. However, they are currently only prescribed to 5% of all patients with a medical condition. These results show that while connected health is considered effective, it still has a long way to go and some prejudices may need to be overcome. Teleconsultation and teleradiology solutions are promising applications for telemedicine. For example, Orange developed a telemedicine platform for the Aquitaine region in south-western France in 2014 for remote diagnostics and consultations.

Empowering people to take control over their health

Health and wellbeing are precious assets that we need to protect. We have a host of tools at our fingertips to manage our health, including nutritional advice, personal trainers and forums for swapping experiences. Meanwhile, relationships with our health and with our physician have become easier thanks to constant progress in connected devices. Patients are now actively involved in their own health, starting with their day-to-day wellbeing. The rise of the Quantified Self movement is a case in point. It involves using connected devices to measure your own physical activity and health and fitness levels. Data are collected and tracked every day via smartphone, watch or even clothing, and then uploaded to websites. You may decide to walk 70,000 steps a week, as recommended by the WHO. Using a connected device, you can measure how many steps you actually walk, upload the data and get congratulated by friends and family. Citizen Sciences' "Pops" is a t-shirt connected to a Pops bracelet which monitors physical activity and tracks fitness levels... Pops uses Orange M2M platforms to operate over mobile networks. The opportunities for expansion are endless in this field. Orange works alongside start-ups like NaturalPad, which has developed a fun movement-based physiotherapy and exercise programme together with healthcare professionals. The goal is to motivate patients to do their rehabilitation exercises and provide practitioners with an effective work tool.

Data, the ultimate weapon

For both wellbeing and medical care, personal data are the focus of considerable debate. Orange has created a secure data exchange and aggregation platform for the healthcare industry to host telemedicine services. Designed for practitioners, Connected Health Center facilitates the use of connected devices for medical treatment programmes. To guarantee complete data security, Orange has developed Flexible Computing Santé, a cloud-based solution to host personal medical data. Data protection is a very sensitive issue, making the reliability of Orange security solutions more important than ever.

mhealth alliance with USAID in Africa

Orange and the US Agency for International Development (USAID) have joined forces to boost mhealth innovations across Africa. The goals are to help treat and care for patients in Africa, reduce the cost of health services and accelerate access to health information.

Drug authentication service

Some parts of the world are flooded with counterfeit medicines. In Kenya, where the percentage of counterfeit drugs is as high as 50%, Orange and NGO mPedigree provide a drug authentication service via text message, funded by pharmaceutical companies. Orange teamed up with new partners in 2014 to extend the service to other countries in Africa.

My Healthline

People in Cameroon can now text a health query to the short code 929 and receive a reply in one hour from a nurse and/or doctor. The service will soon be available in other African countries and improves access to medical information in complete confidentiality. My Healthline improves prevention in areas suffering from a serious shortage of health workers.

Télé-AVC

Medical practitioners have a window of four hours maximum to start treatment for a stroke. The first minutes in a diagnosis are crucial – and can save the patient's life. The Télé-AVC service allows emergency doctors to consult a neurologist and/or a radiologist instantly and remotely in order to assess the patient's symptoms.

Otono-me by Telegrafik

Falling down alone in an apartment can be extremely dangerous for the elderly. Otono-me, one of the five start-ups supported in 2014 by the Orange Fab France accelerator, has developed a telecare service which helps elderly or vulnerable people stay safe at home for longer. With their permission, sensors are installed around their home to monitor movements and activity. An alert is triggered if the sensors stop detecting activity. The system does not use the Internet.

Medaplix – complete support, complete reliability

Medaplix is a simple, comprehensive and affordable management tool designed for medical practices. It includes a patient record system, assistance with prescriptions and technical support from our Orange experts.

"Région sans film"

"Do you have your x-rays with you?" The "Région sans film" platform from Orange Business Services is a medical teleimaging solution. Medical practitioners simply log on to a website using their ID card for each imaging request – patients no longer need to bring their scans or x-rays to consultations. Doctors can then review the images in the comfort of their own surgery and zoom in on sections of the scans. In 2014, the French Health Ministry renewed Orange's approval for medical image sharing.

5 minutes to... learn about e-health and ageing well

In 2015, France will count nearly two million people over 85 years old. While much needs to be done to care for an ageing population, information and communication technologies can make a game-changing contribution. Although the underlying technologies are mature, their deployment must be structured in coordination with all the different stakeholders.

80% of seniors surveyed say they want to remain at home when they age.

- Home care for dependent people costs much less than hospitalization. Home care also creates local employment and strengthens social ties.
- An ageing population also represents significant pathways to economic growth. In France, the government launched the "Silver Economy" initiative in which

Orange is playing an active role in identifying and developing solutions.

- Information and communication technologies enable physicians to monitor their patients daily, particularly for chronic diseases, and to provide assistance if necessary.



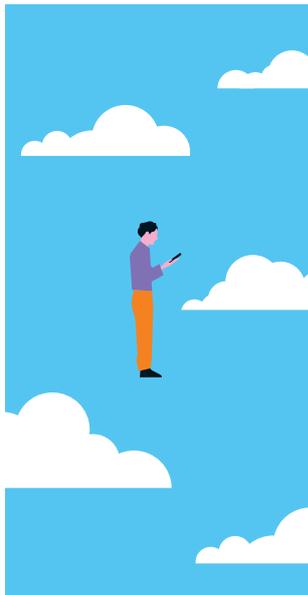
In the same collection, Family, Work, Money, Home and Fun.



The Orange advantage

Big data

The digital world generates trillions of bytes each day from a myriad of sources, including mobile phone signals. Big data is a term used to describe sets of unstructured data collected and processed on a massive scale. The science of big data has given rise to predictive analytics. Big data makes it possible to predict and anticipate some types of individual behaviour, like purchases, as well as collective events such as traffic jams.



Development and performance

Big data opens up new horizons. To explore the many promising possibilities we launched the “Data for Development” challenge, an open innovation approach to boosting a country’s economic growth by using mobile network management statistics and data supplied by local organizations. This competition is aimed at the international science community, challenging experts to find concrete solutions based on anonymous mobile phone statistical data. The second competition took place in 2014 in Senegal. Entrants focused their creativity on five areas: healthcare,

agriculture, transport/urban planning, energy and national statistics. As a data operator, Orange Business Services helps businesses turn their data into information to support strategic decision-making. Our Flux Vision solution uses “irreversible anonymization” to convert millions of data per minute into valuable information about individuals’ movements in a specific area. The information is particularly useful for tourism professionals and retailers.

Confidentiality and security

Data from individuals and businesses are highly valuable – and much coveted – assets. For Big data to be used effectively, there needs to be mutual trust between everyone involved. This is precisely why Orange has made data confidentiality a top priority. In the healthcare industry, we were the first operator in France to obtain approval from the French Health Ministry and the CNIL to host personal data. As a global telecommunications operator, we are strongly committed to safeguarding our customers’ data and privacy. We also help them protect their own data. Our Lookout Premium app locks mobile handsets in the event of a virus attack, loss or theft. Orange Business Services has also made security a pillar in its products and services portfolio.

Healthcare and Big data

Collecting and analyzing data are key to making diagnoses and preventing disease. An unexpected sharp increase in the sale of a medication in a country, for example, can signal the outbreak of an epidemic and trigger an alert. With Big data, new approaches are emerging in epidemiology, and preventive and personalized medicine, and new services are being developed to support patients. Orange is at the forefront of these advances. In late 2014, we co-founded the Healthcare Data Institute with a number of top-tier partners. This think-tank is dedicated to Big data for the healthcare industry.

