Orange Data and AI

Breaking silos and Building a Data Democracy

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AI is the science of making machines smarter and automating tasks normally done by people.

Lady Ada Lovelace, 1843

Alan Turing, 1950
AI will be in everything

Imagine running a business before Excel existed...
Our vision for AI

AI will help improve the lives of all people, our society, and our planet.
Our goal is to Become a data-driven and AI-powered Telco company
Why change?

Offer rich personalization, a growing expectation from all customers.

Master the complexity of software-centric networks and the challenge of data traffic growth.

Compete with cloud-and-data natives, including those on GAMAZURE solutions.

Retain and empower employees with fact-based and faster decision making.

Help Orange become more agile, efficient, and profitable.
Data and AI central to our Engage 2025 strategic plan

Key priorities

- Smarter Networks
- Reinvented Customer Experience
- Greater Operational Efficiency
- Responsible and Sustainable Data and AI

Ambition #3
Place data & AI at the heart of our innovation model
Our Engage 2025 mission is to

“Place data and AI at the heart of the innovation model of Orange”
...but the mountain of data and AI opportunity is actually an iceberg.
High value from AI in only 11% of companies

Very limited financial impact of AI unless culture AND many processes adapt

Source: Expanding AI's Impact with Organizational Learning, 2020. MIT and Boston Consulting Group
How can we achieve our goal?

**Be customer-centric and value-focused**
High impact projects with executive support

**Co-build a Data Democracy**
Public cloud tools that preserve data protection, privacy, and security while breaking data silos

**Adapt our culture to be Data-Driven**
Collaborative AI + business operational teams
Co-create a **Data Democracy**

Data Democracy is tools AND a way of working that maximizes data value through sharing.

### Three pillars of Data Democracy

#### Data Architecture and Tools
Data access is democratized across org silos. **DataOps** and **DataGovOps** mitigate security and privacy risks, enable data observation, and drive data quality.

#### Training
Help people learn new skills but also understand the value of sharing data between functional silos.

#### Operational Culture Shift
AI + operational squads with rapid ‘test and learn’ cycles, with shared goals, continuous measurement, and transparency.
Break silos with datalakehouses
Some use cases
WHY? Customer interaction is expensive and poor NPS drives churn

1.2 Billion people in Africa and < 50% fluent in French, Arabic, or English

600+ million people reachable by voice in their local language

Wolof Bot = Automatic speech recognition + Natural Language understanding + Dialog + Text To Speech

Significant technical challenges due to the scarcity of language samples (corpora), non-fixed spelling of Wolof, limited academic definitions of the language
Online personalized recommendations based on an AI model that predicts the customer’s propensity to buy
Reduce Power Consumption with AI in our Network

WHY? Reduce cost and also our impact on the environment

- AI monitors energy consumption of every cellular base station and compares it with the prediction
- The AI detects consumption anomalies, does a root cause analysis, and recommends corrective actions

Results
4% decrease in power consumption vs previous year in Poland
Q&A
AI for Security

• WHY? Fraud generates millions of Euros of loss every year
• Countries and BUs include WIN, France, Orange Bank, MEA countries with Orange Money

- Use AI algorithms to detect threats/attacks and fraud in networks of the future
- Detection of International call fraud on WIN networks
- Detection of fraud in Orange Money
- AI-based credit scoring of people applying for accounts in MEA for Orange Bank
Smart Capex for Mobile Access Network Extension

- WHY? Mobile CAPEX is high and 5G deployments will be very complex
- Countries include Spain, Ivory Coast, Cameroun and many others in MEA

Traditional Investment Process based on Population and Traffic

Smarter Investment Process based on Value Drivers (P&L) using Big Data & Machine Learning

- “EBITDA” margin of each site
- 10 to 20% optimization
- Replicability
- New value drivers (Orange Money)
Real-time radio energy optimization and savings

• WHY ? Reduce network power consumption while keeping high quality of service

C-SON performs automated real time radio optimization using neighboring and QoS parameters according predefined rules

2 Orange AI modules deployed in C-SON to anticipate traffic evolution and adapt network in advance:

- Switch on/off radio modules for energy saving
- Perform load balancing between cells for QoS and user throughput
Quantum Secure Fiber - Ultra-secure communication

• WHY? Anticipate Quantum computers threat regarding RSA algorithm
• Research project in collaboration Ile de France Region + Industrial partners (Thales, Nokia, ...) and Academic labs (Telecom Paris, Sorbonne University, Institut d’Optique Graduate School) + 4 Start-ups from quantum ecosystem

- Leverage on already deployed fiber to build the quantum backbone
- Customized fibers in order to be compliant with Quantum Technologies requirements
- Next steps is to perform a seamless integration of Quantum Key distribution systems (QKD)
- in //, building a package of QKD services in collaboration with OBS and Orange customers

Finally connect this backbone to the future
European Quantum networks EuroQCI by 2025-2027
(quantum communication infrastructure).