Orange Data and AI

Breaking silos and Building a Data Democracy

@TheWebConf
28 April 2022

Steve Jarrett
Senior VP Orange Innovation - Data and AI

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,
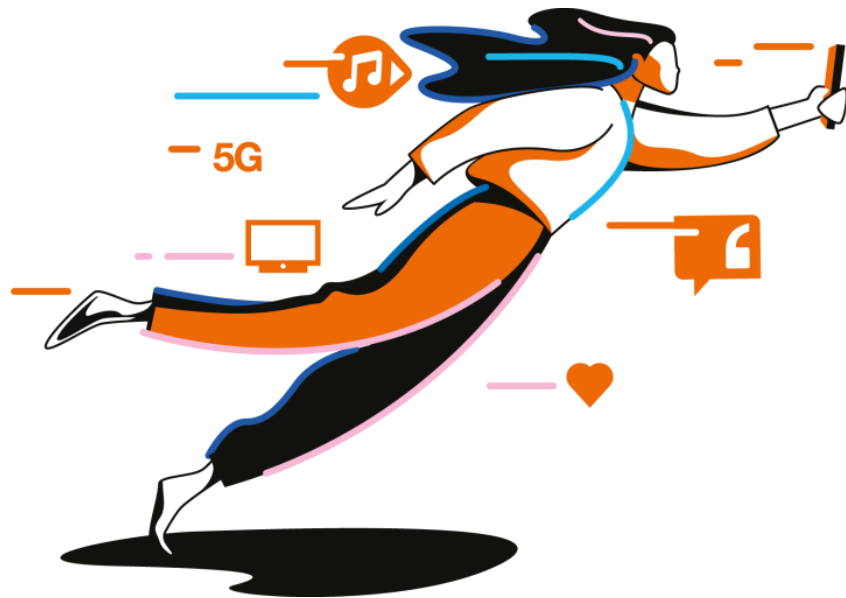our society,
and our planet.

Our goal is to
Become a data-driven and AI-powered Telco company

Why change?

Orange is going to face ever-increasing margin pressure...

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

Ambition #3

Place data & AI at the heart of our innovation model

Key priorities

Smarter Networks

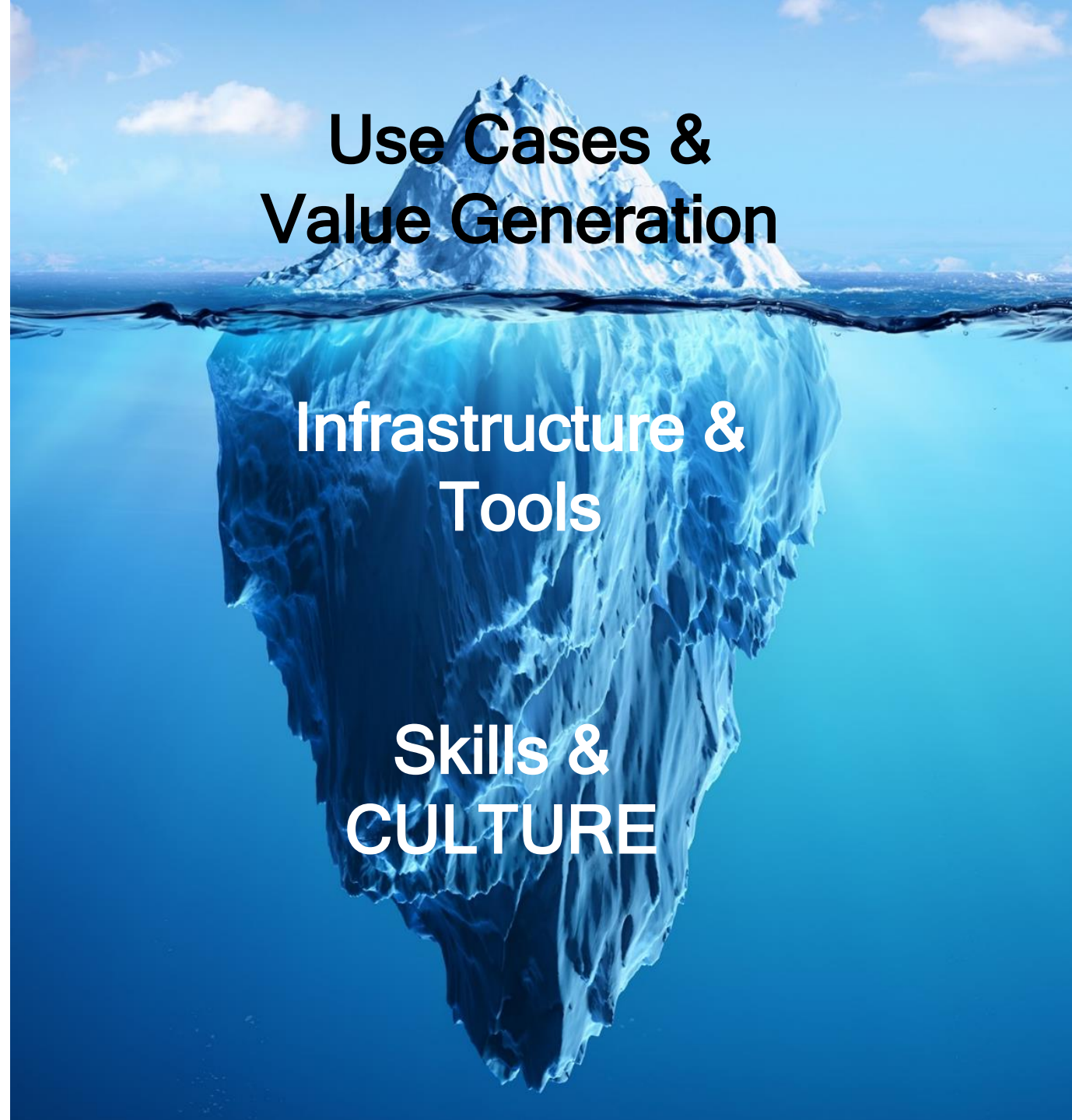Reinvented Customer Experience

Greater Operational Efficiency

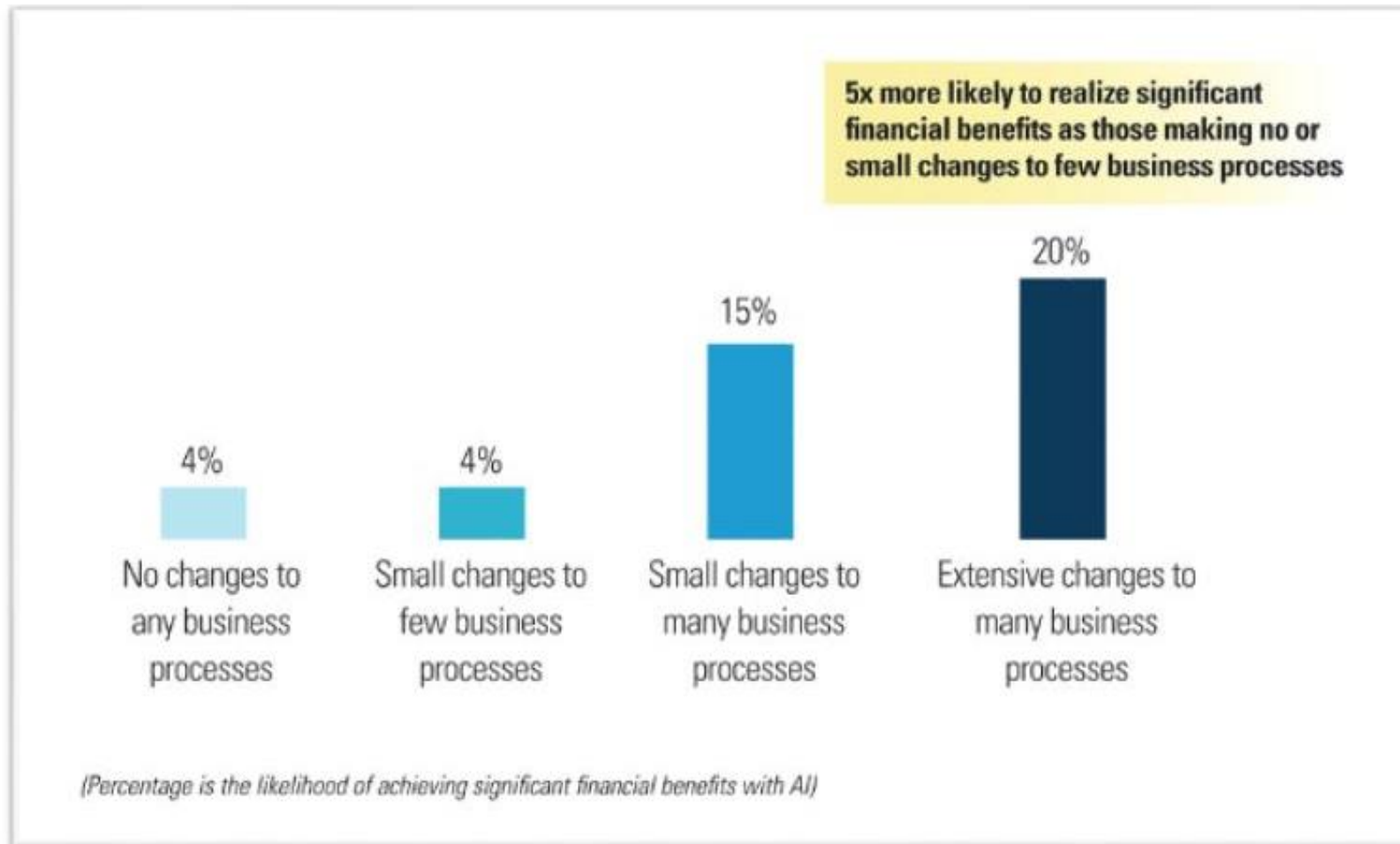Responsible and Sustainable Data and AI

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

Use Cases & Value Generation

Infrastructure & Tools

Skills & CULTURE

High value from AI in only 11% of companies

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

5x more likely to realize significant financial benefits as those making no or small changes to few business processes

20% — Extensive changes to many business processes

15% — Small changes to many business processes

4% — Small changes to few business processes

4% — No changes to any business processes

(Percentage is the likelihood of achieving significant financial benefits with AI)

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

Use Cases &
Value Generation

Infrastructure &
Tools

Skills &
CULTURE

Co-create a Data Democracy

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

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
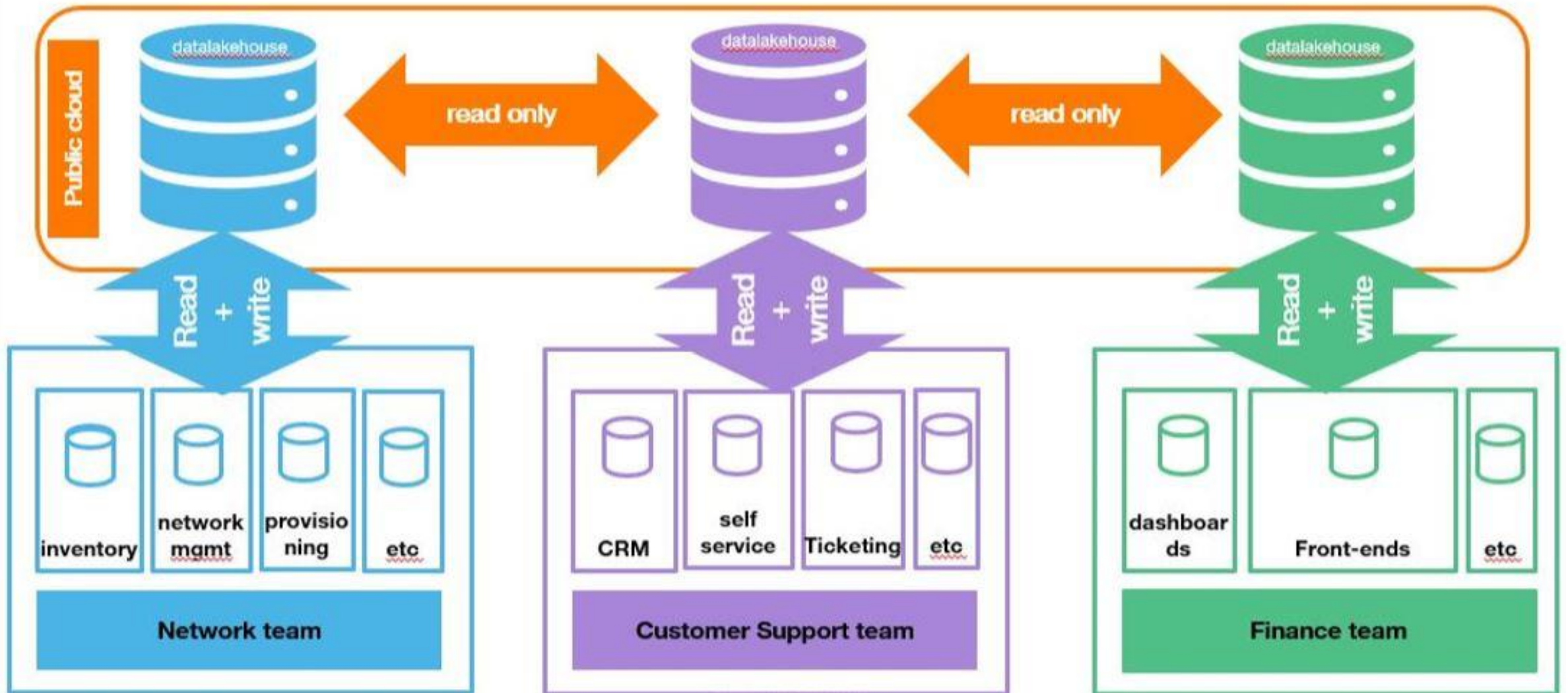
Operational Culture Shift

AI + operational squads with rapid 'test and learn' cycles, with shared goals, continuous measurement, and transparency

Three pillars of Data Democracy

Some use cases

Sub-Saharian Voice AI

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

## WHY ? Cross-selling to customers ➔ increased revenue and loyalty

Results

Significant incremental revenue across Belgium, France, Romania, and Slovakia

Les terminaux recommandés pour vous

orange.fr

| Redmi 9C NFC gris | P smart 2021 noir | Y6P noir | Xperia L4 noir |
| à partir de 121.00 € | à partir de 199.00 € | à partir de 139.00 € | à partir de 199.00 € |

Équipement mobile

iPhone | Premium | Reconditionnés | Petits prix

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

Results

4% decrease in power consumption vs previous year in Poland
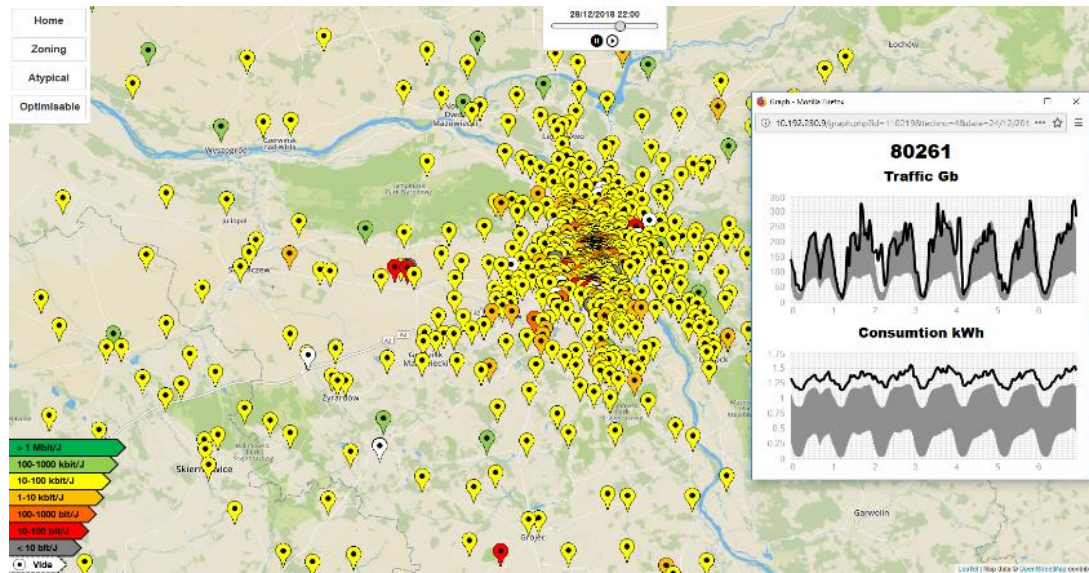
- AI monitors energy consumption of every cellular base station and compares it with the prediction

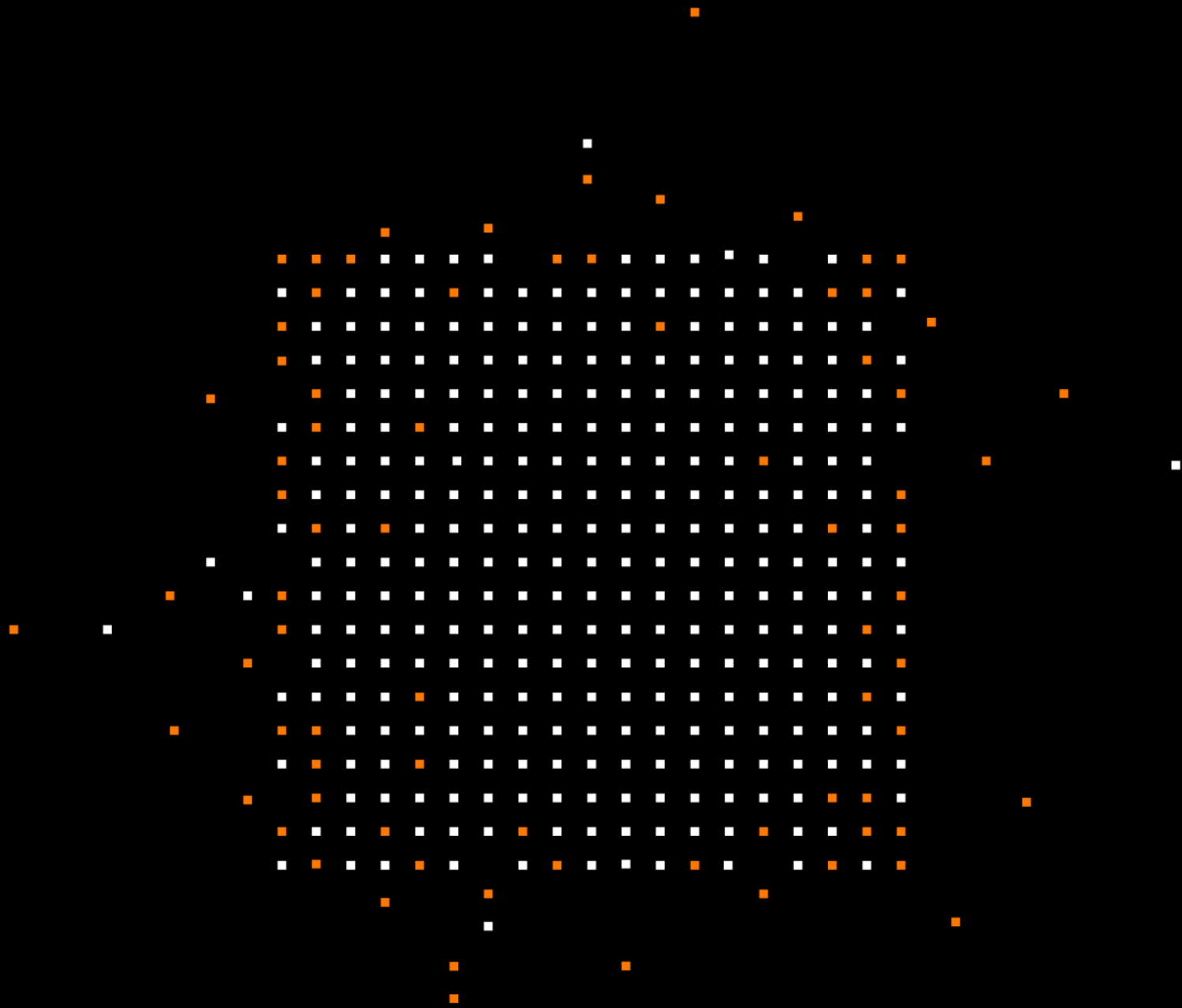- The AI detects consumption anomalies, does a root cause analysis, and recommends corrective actions

Thank you

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
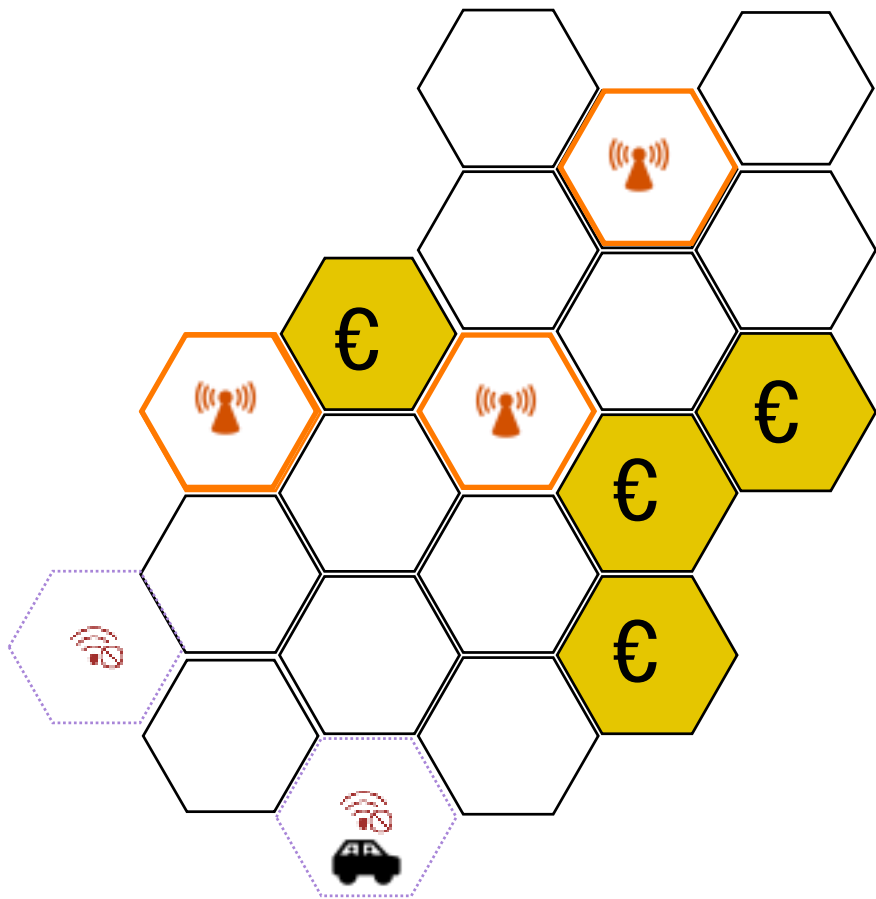
Traditional Investment Process
based on Population and Traffic

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

Past daily traffic profiles

real time radio parameters update
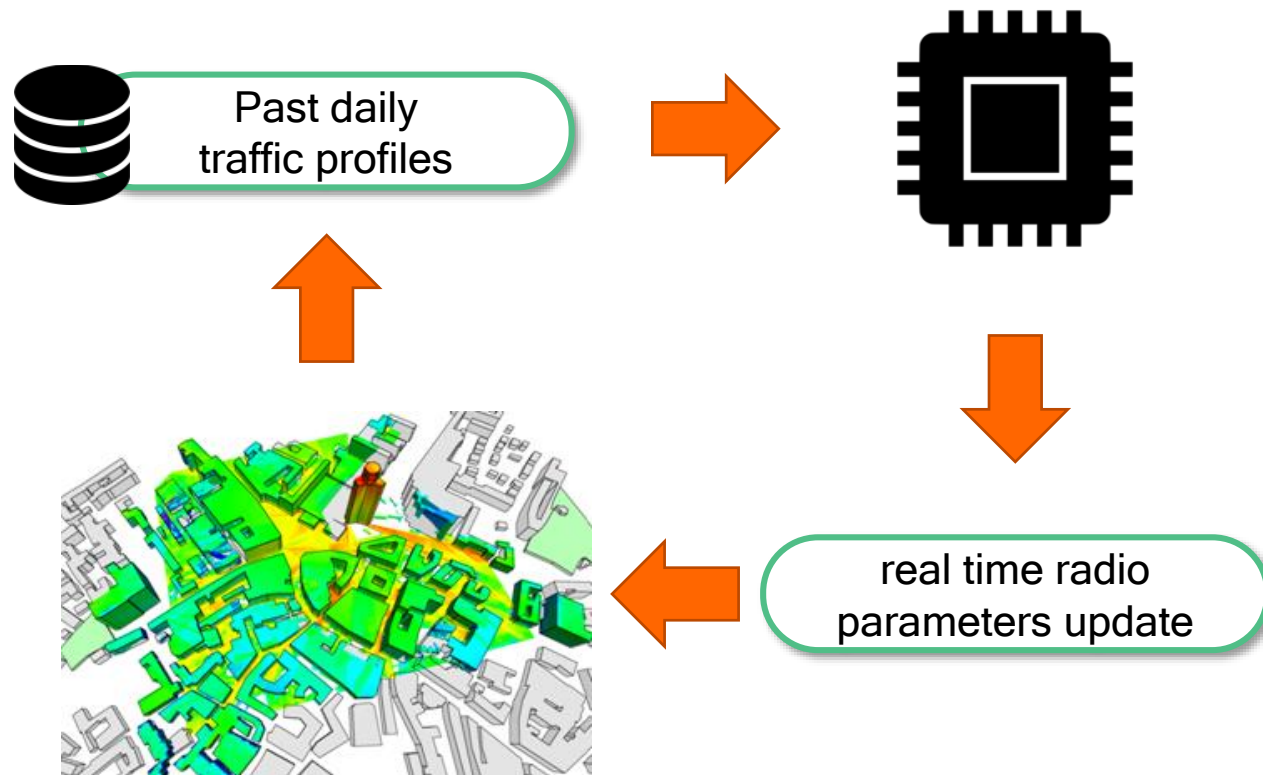
2 Orange AI modules deployed in C-SON to anticipate traffic evolution and adapt network in advance:

- 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
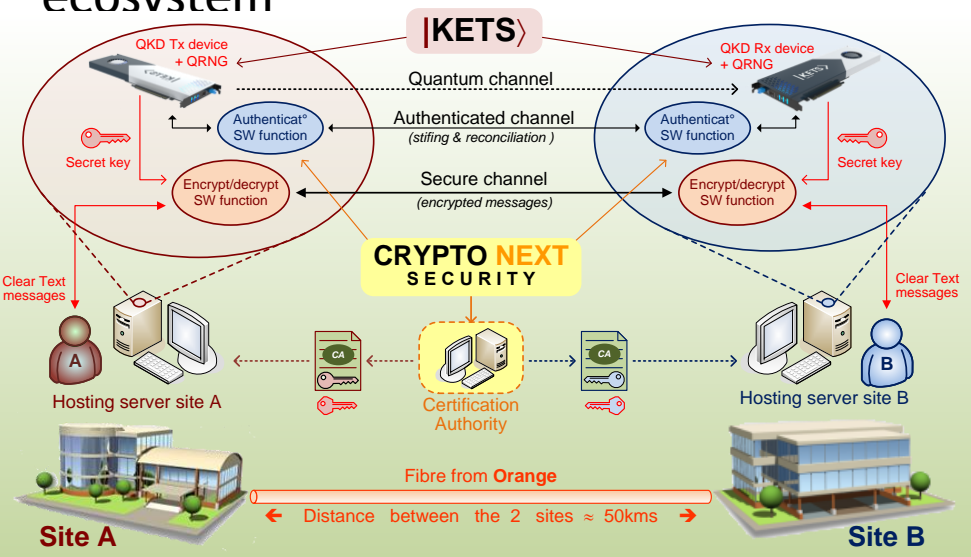
- Leverage on already deployed fiber to build the quantum backbone

- 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).