

A woman with long dark hair, wearing a red knit sweater, is looking down at a smartphone she is holding in her hands. The background is blurred, showing warm, bokeh lights. A large, red, hand-drawn speech bubble graphic is positioned around the text '5G Insights'.

5G Insights

Ignacio Gonzalez
Vodafone Group Technology



Vodafone is one of the world's largest telecoms operators

25 countries in which we have mobile operations

18 countries in which we have fixed operations

46 Partner Markets

77m IoT connections

100 countries connected by our submarine cables

£49bn market capitalisation (August 2018)

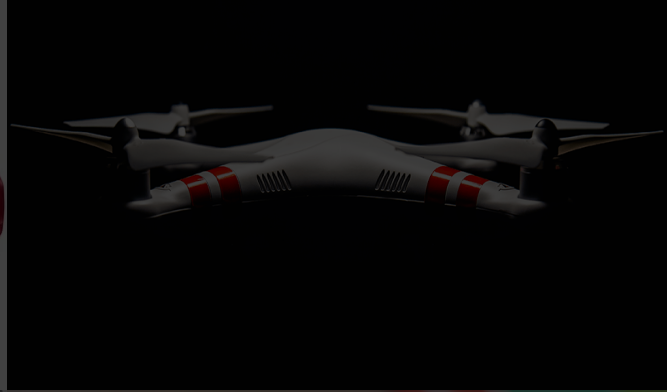


Every 24 hours, Vodafone customers:



- Make **5.7bn minutes** of mobile calls
- Stream the equivalent of **7bn songs** on their smartphones
- Watch the equivalent of **1.1bn 3 minute HD videos** over their fixed broadband connections¹
- Make **20m financial transactions** using M-Pesa





We connect for a better future



Innovation

4G
Evo/5G
New
Radio

5G
4G/5G
architectural
enablers

Drones

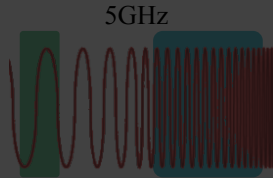


Open RAN



TELECOM INFRA PROJECT

New spectrum



Massive MIMO



Carrier Aggregation &
Larger bandwidth

100's MHz or GHz

Gigabit speeds

Low latency



Reduced by 10x

Gigabit Network

NFV



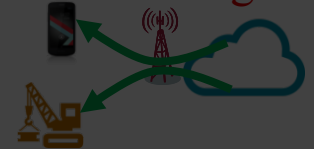
SDN



Mobile Edge Computing



NW slicing



2006 → 2017

Network Opex

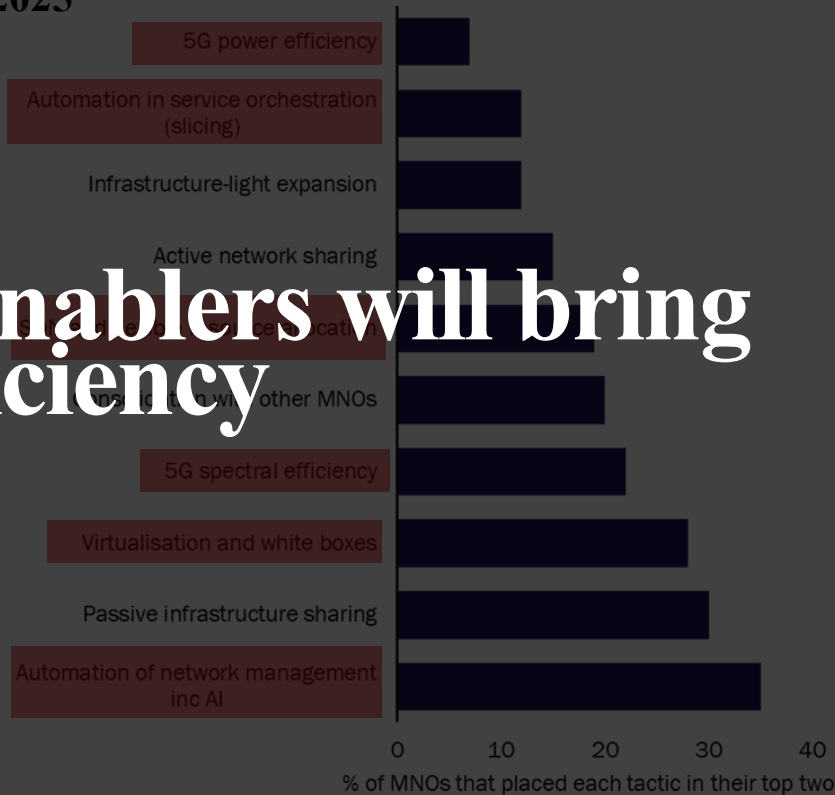


5G and Tech enablers will bring efficiency

Service Revenue



MNOs' key tactics for reducing network Opex by 2025



Vodafone 5G Technology Trials



RAN vendors



NOKIA



Italy

Device suppliers



Qualcomm



Milan 5G Trial

41 Use Cases

28 Partners

10 Endorsers

80%
coverage by 2018
(Milano covered by 2019)

90 Mln euro
investments

10 Mln
«Action for 5G»



41 Use Cases in applications with high social relevance and high scalability



Health & Wellness

9	Connected Ambulance Medical Robotics Wearables	Access and efficiency of health services
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Safety and security

5	Safety in the stations Public security and emergency services	Public Safety
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Smart Energy, Smart Grid, Smart City

5	Smart Energy & Smart Grid Smart City & Smart Campus 4.0	Sustainability of public service management models
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Mobility

4	Cooperative Urban Cross Traffic Assisted driving evolution	Mobility security
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Industry 4.0

12	Collaborative Robotics Enhanced Retail Experience Smart Agriculture	Production efficiency and intelligent use of scarce resources
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Education, Learning, Entertainment

7	Lesson 4.0 & Augmented Reality Virtual reality Tourism 4.0	Access to education and culture
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Digital

1	Fixed Wireless Access	Broadband connectivity to peripheral areas
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Health & Wellness

Connected Ambulance



Real uses cases are key to bring
Innovation and new business
opportunities

- Highly reliable 5G connection for new Intervention Protocols in the ambulance avoiding repetition of exams at the hospital
- Timely management of critical situations during transport
- Sharing of vital parameters and real time imaging to a wide range of devices
- Video consultation and remote intervention by specialists



NOKIA

QUALCOMM

Endorser

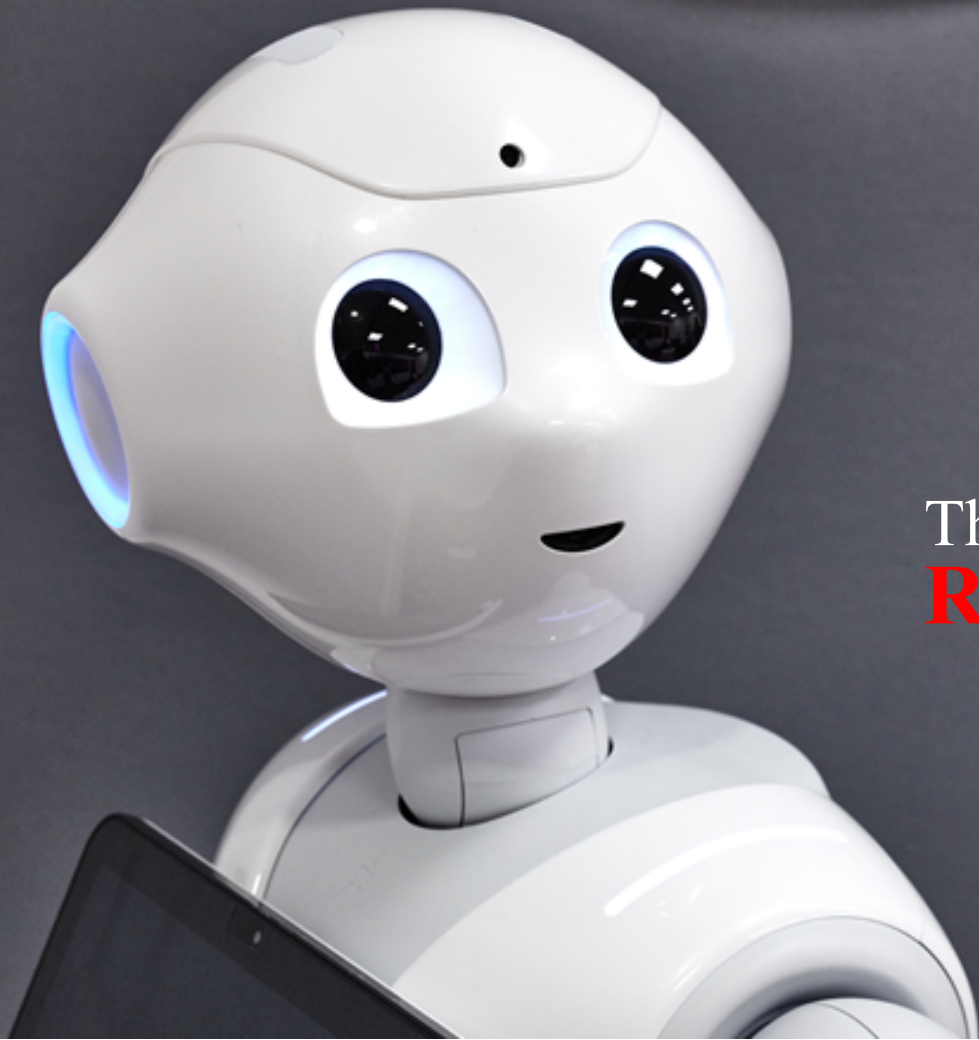


Regione
Lombardia



Croce Rossa Italiana
Comitato di Milano





The future is exciting
Ready?

