LIVE WEBINAR
Unlocking the Value of 5G: Beyond Connectivity
A GSMA 5G Futures Community Webinar

Welcome
Wednesday 13 September 2023
Agenda

Keynote presentations
- GSMA Intelligence
- Telefonica

Fireside Q&A
- Digital content creator and influencer

Panel discussion
- All speakers

Audience Q&A
Our Speakers

Peter Jarich
Head of GSMAi
GSMA

Juan Carlos Garcia Lopez
SVP Technology Innovation and Ecosystems
Telefónica

Jordi van den Bussche
(Kwebbelkop)
Influencer | Founder & CEO
JVDB Studios
Network Transformation: 2023
Strategic Agendas for Sustainable, Secure, Open and Profitable Networks

September 2022

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5G Circa 2023: What we Know
5G continues to set the bar for mobile broadband uptake

Spectrum auctions
- GUF
- BLM
- MAF
- GTM
- 270 operators** in 79 markets

Trials
- 10 trials in 8 markets
- 254 operators in 110 markets

Commercial launches*
- 11 operators in 9 markets
- 256 operators in 98 markets

Adoption
- In Q2 2023
- To end of Q2 2023

100 markets*** complete assignments

- 344 operators in 120 markets
- 424 operators in 140 markets
- 648 operators in 225 markets

- 1.3 billion connections (15% adoption)
- 1.5 billion connections (17% adoption)
- 2.5 billion connections (28% adoption)
- 5.3 billion connections (54% adoption)

Data correct to 30 June 2023
For updates, see gsmaintelligence.com
Source: GSMA Intelligence
Network Transformation Strategy Drivers

What is the primary criteria by which you measure the success of your network transformation strategy?

| Generating new revenues, 42% | Improving customer experience, 31% | Saving on CapEx costs, 16% | Saving on OpEx costs, 11% |

Source: GSMA Intelligence Operators in Focus – Network Transformation Survey 2023
# 5G Circa 2023: What we Know

standalone 5G is (finally) beginning to get the attention it deserves

## Network Investment Priorities

*Over the next 24 months, in which technologies and capabilities do you expect to make the greatest network investment?*

<table>
<thead>
<tr>
<th>Technology</th>
<th>Score (%)</th>
<th>Rank 1</th>
<th>Rank 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standalone 5G RAN</td>
<td>43%</td>
<td>41%</td>
<td>3%</td>
</tr>
<tr>
<td>Open RAN (including RAN and supporting management)</td>
<td>32%</td>
<td>12%</td>
<td>40%</td>
</tr>
<tr>
<td>Cloud and Edge</td>
<td>27%</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Standalone 5G Core</td>
<td>21%</td>
<td>11%</td>
<td>19%</td>
</tr>
<tr>
<td>Network and Service Automation</td>
<td>18%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>Private Wireless Networks</td>
<td>11%</td>
<td>5%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: GSMA Intelligence Operators in Focus – Network Transformation Survey 2023
5G Circa 2023: What we Know

early plans for Standalone deployment were overly-optimistic

5G Deployment Timing

Considering your current 5G network assets and network strategy, when do you plan to deploy Standalone 5G?

Source: GSMA Intelligence Operators in Focus – Network Transformation Survey 2023
5G Beyond: What we Need to Figure Out

how will Standalone 5G investments be monetized?

Standalone 5G: Network and Service Operation Implications

How likely are you to leverage Standalone 5G to introduce new network suppliers and technologies into your network?

- **Very likely (or already have)**
- **Somewhat likely**
- **Neither likely nor unlikely**
- **Somewhat unlikely**
- **Very unlikely**
- **No Plans**

### API Exposure
- **Very + Somewhat likely**: 77%
- **API Exposure**: 77%
  - Very likely: 19%
  - Somewhat likely: 32%
  - Neither likely nor unlikely: 19%
  - Somewhat unlikely: 3%
  - Very unlikely: 1%
  - No Plans: 1%

### Open Networking (incl. Open RAN)
- **Very + Somewhat likely**: 70%
- **Open Networking (incl. Open RAN)**: 70%
  - Very likely: 22%
  - Somewhat likely: 40%
  - Neither likely nor unlikely: 22%
  - Somewhat unlikely: 5%
  - Very unlikely: 1%
  - No Plans: 1%

### Generative AI
- **Very + Somewhat likely**: 26%
- **Generative AI**: 26%
  - Very likely: 6%
  - Somewhat likely: 20%
  - Neither likely nor unlikely: 33%
  - Somewhat unlikely: 40%
  - Very unlikely: 1%
  - No Plans: 1%

### New Suppliers
- **Very + Somewhat likely**: 22%
- **New Suppliers**: 22%
  - Very likely: 4%
  - Somewhat likely: 18%
  - Neither likely nor unlikely: 50%
  - Somewhat unlikely: 26%
  - Very unlikely: 1%
  - No Plans: 1%

Source: GSMA Intelligence Operators in Focus – Network Transformation Survey 2023
5G Beyond: What we Need to Figure Out
will 5G-Advanced deployment expectations mirror Standalone?

5G-Advanced Deployment Timing
How long after commercial availability do you expect you will deploy 5G-Advanced?

Source: GSMA Intelligence Operators in Focus – Network Transformation Survey 2023
LINKEDIN POLL

What do you think is the top priority 5G use case for operators in their considerations for 5G-Advanced?
### 5G Advanced Use Cases

Which 5G-Advanced use cases and applications are most important to your network transformation priorities?

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5G Multicast Services</td>
<td>67%</td>
</tr>
<tr>
<td>Low-cost IoT Support</td>
<td>46%</td>
</tr>
<tr>
<td>Enhanced Integration with Satellite Resources</td>
<td>29%</td>
</tr>
<tr>
<td>Enhanced Integration with Drone Resources</td>
<td>6%</td>
</tr>
<tr>
<td>Improved Device Positioning Accuracy</td>
<td>2%</td>
</tr>
<tr>
<td>Improved AR/VR Support</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: GSMA Intelligence Operators in Focus – Network Transformation Survey 2023
EU regional perspective on customer & enterprise markets

Juan Carlos Garcia Lopez
SVP Technology Innovation and Ecosystems
Telefónica

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5G and fiber capabilities have been widely tested and shown in multiple use case trials.

Telecom operators and their potential customers know quite well what are the technical capabilities 5G provide.

if 5G capabilities are so valuable and spectrum, devices, technology are ready, why 5G is not fully realizing its benefits and business potential?

MNOs heavily invested on 5G spectrum, fiber and coverage but 5G radio deployment is still driven from MBB capacity demand (higher spectral efficiency in 5G, more bps per Hertz).

Population coverage reached 82% as of March 2023 (58% on New Radio) in Spain.

https://www.telefonica.es/es/servicios/casos-de-uso-5g/

Being a key player to enable them, MNOs have not captured the big value digital services generate

**All change**

Evolution of telecom operators and Big Tech Companies performance between 2010 and 2021

“**Our industry’s investment, some $1 trillion in the last 5 years, has delivered 0.9% growth. This is simply not sustainable, we’ve become disconnected from growth...**”
Nik Willets, TMForum

“**Telco’s inability to evolve quickly has led them to be commoditized, asset-intensive businesses ...**”
TMForum’s CEO Playbook

Source: Roland Berger 2022
We must face the reality in terms of revenues...

**Global CSP revenues worldwide 2011-2022 (M USD)**

**B2C revenues are flattening** at best:
- Mobile penetration above 100% for many years.
- High competition (100s of operators in Europe).
- New 5G revenue sources are limited (e.g., FWA succeeds only where Fiber is not available)

Consumers seem to have **appetite for digital services and applications** (like XR, gaming, etc, built over the top), but not on the connectivity itself.
- In the case of XR, affordable devices and contents are an issue, in addition to the need of some network capabilities.

Shift of **focus to B2B**, although growth is slow in that segment (long sales cycle). Many prospects still in PoC phase. Lack of solution industrialization (e.g., Edge, IOT).

Need to increase **innovation, agility and flexibility**.

Sources: TMForum, CEO Playbook. 31 August 2023.
Competition is especially strong in Europe

Limited revenue growth and high investment requirements...

...while its contribution to economy and society is recognized

As a consequence, not much motivation:

Source: GSMA Intelligence. The Mobile Economy in Europe 2022.
But other related sectors are getting into a similar situation…

Quarterly app and game downloads 2015-2023 (billions)

Smartphone sales are also flattening or even decreasing…

Everything points to the need of:

- **New capabilities** accessible to application and solution developers to create the next wave of applications and devices

But also:

- **A new business paradigm** to make telco sector again sustainable and attractive for investors

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**Smartphones sold to end users 2007-2022**

(million units)

We need to change the model...
The Network needs to complete its digital transformation...

Digital capability exposure

**Open Source Telco Service APIs**

**Telco Capability Exposure Platform**

**Operator Platform**

Facilitates NaaS usage by developers

Facilitates NaaS implementation by telcos

Facilitates Telco Cloud operation & management

Cloud native intent-based automation

Carrier-grade, packaged, industrial Cloud environment
… in order to improve all business parameters...

Digital capability exposure

Cloud-Native Network

Carrier-grade, packaged, industrial Cloud Infrastructure

Increase agility and flexibility to generate new business and revenue opportunities

Improve margins: streamline operating costs
Increase quality of experience

Rationalize infrastructure investment: increase asset utilization
Traditional telecom architecture was vertical…
...and is moving to horizontal solutions based on cloud.
…with new functionality to cope with the increased complexity

Data/AI by design: Operations are data-driven, AI/ML-assisted, Data/AI distributed across domains

Security by design: Security considered in all domains and E2E systems from Day 0
...and adding new capabilities and mechanisms to monetize them

New generations of telco services

Telco Services  Third Party Services

D/AlaaS  NaaS  F/SaaS  I/PaaS  SecaaS

API Gateway

Data/Al  Network  IT  Security

Telco Cloud

3rd parties provide services using telco capabilities

Diverse capabilities exposed via Standard Service APIs

Challenges:
- New elements: API Gateway, Data/Al.
- 3rd Party Services may affect Network and IT performance.
- Security gain relevance when the Network is open.

Telco Cloud is open to host 3rd party applications as well
... and setting up new digital business models (B2B2X)
Conclusions

• We should face the current situation of the Telecom Industry.
  • It suffers structural problems that require a deep model transformation

• Technology offers new capabilities that enable a new wave of services and applications, most of them coming from third parties,
  • but the enablers to expose and monetize these capabilities are missing

• Technology progress in Cloud, NaaS (APIs), Slicing, Edge and Automation/AI is required to make all these capabilities available
  • the investment to deploy them will have to be backed by a sustainable model

• Good news is that the Industry is already working to deliver solutions for this in the short term with initiatives like
  • Open Gateway and Slicing initiatives at GSMA, CAMARA, Sylva, Anuket, Nephio at Linux Foundation, and Operate APIs and ODA at the TMForum (among many others...)
As an example, Telefonica is building a rich and dynamic portfolio of capabilities based on GSMA Open Gateway APIs.

Visit: https://opengateway.telefonica.com/
Fireside Chat
The consumer standpoint

Jordi van den Bussche (Kwebbelkop)
Influencer | Founder & CEO
JVDB Studios

Barbara Pareglio
Technical Director
GSMA
Panel discussion

Peter Jarich
Head of GSMAi
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Juan Carlos Garcia Lopez
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Upcoming GSMA webinars & in-person events

**LIVE Webinar**

5G New Calling

- **Date**: Wednesday 20 September 2023
- **Time**: 11:00 – 12:15 BST
- **Platform**: LinkedIn Live (online)
- **Register here**

**MWC23 Las Vegas**

5G Futures Summit

- **Date**: Tuesday 26 September 2023
- **Time**: 14:00 – 17:30 PDT
- **Location**: Las Vegas Convention Center
- **Register here**

**MWL Unwrapped Webinar**

The 5G Evolution

- **Date**: 14 – 16 November 2023
- **Platform**: Online webinar
- **Register here**
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