GSMA

Annual Report 2023

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GSMA

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach.

Connectivity for Good engages members, governments and civil society, to advance positive policy and spectrum outcomes, facilitate digital innovation to reduce inequalities in our world, and tackle todays' biggest societal challenges such as digital inclusion, climate change and sustainability.

Industry Services and Solutions underpins the technology and interoperability that make mobile work. Via our projects, working groups and promotional activities we facilitate the industry's focus on areas such as 5G, Mobile IoT, fraud and security. And our technical services offer tools, data and resources to enable even more efficient and robust mobile experiences for users.

Outreach provides the world's largest platform for convening and informing the mobile ecosystem at MWC Barcelona, Shanghai, Las Vegas, Africa and the M360 series, and through Mobile World Live and GSMA Intelligence with breaking news, insights and expert analysis.

For more information, please visit the GSMA corporate website at **www.gsma.com**.

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Chairman's Foreword

As I reflect on the year that has passed, I count myself incredibly lucky to be leading alongside the GSMA Board in the biggest technological revolution in human history, a revolution with mobile connectivity at its core.

The year that has passed has been a challenging one for us all, but also an invigorating one, reminding us of the power of sticking together and supporting each other in a world that has become increasingly complex and fractured.

As the GSMA Board, we have been united in the areas that count and significantly advanced several key challenges facing the industry, including the investment gap, spectrum harmonisation and the usage gap.

The launch of GSMA Open Gateway was a significant step forward for us this year, a clear indication of our commitment as an industry to lead the way in the technological revolution. I am incredibly proud of our work together as a Board in making this happen, and even prouder of the GSMA team who went above and beyond to ensure that we launched in February with proofs of concept that demonstrated this was not just another lofty idea, but a reality that could work.

With 39 operator groups representing over 228 network operators onboard by year-end, and the first commercial network APIs launched, momentum is growing, but this is just the beginning. Over the next few years Open Gateway will enable us to build a deep ecosystem for innovation across industries. I look forward to seeing what the future holds in store.

As we head into 2024, this Annual Report gives us the opportunity to reflect on the year that has passed and celebrate the incredible strides we have made.

José María Álvarez-Pallete López
GSMA Chair and Chairman & CEO of Telefónica

Director General's Foreword

I am incredibly proud of the impact of the GSMA this year, driving connectivity for billions in the midst of an increasingly fractured global landscape. The power of teamwork and collaboration was clear as we led the way forward on behalf of the mobile industry.

The year started with the launch of GSMA Open Gateway at MWC Barcelona, with a vision to unlock the full potential of 5G digital services. It was fantastic to see momentum build, with 39 operator groups representing over 64% of global mobile connections signing onto the initiative, and more growth expected in 2024.

The World Radiocommunication Conference 2023 meant that spectrum was top of mind for us all. As an industry, we worked together to advocate for more harmonised spectrum, and welcomed an agreement between governments on new mobile low-band spectrum (below 1 GHz) and mid-band spectrum in the 3.5 GHz and 6 GHz ranges.

Another key focus was highlighting the investment gap, and our collaborative efforts as an industry drove significant momentum around this challenge. As mobile data traffic grows exponentially, our industry finds itself under increasing pressure to shoulder the costs of network infrastructure investment to keep up with customer demands. In Europe, for example, it is estimated that an additional €174 billion of investment is required to reach the 2030 Digital Decade targets. This year we helped galvanise more than 20 European operators to jointly call for regulation to address this investment gap, and as a result, high-level EU policymakers now recognise the need to significantly improve the regulatory environment for our industry.

Of course, driving digital inclusion to address the usage gap remained a priority in 2023, and the power of collaboration was clear as we established the Affordability Coalition, bringing together operators, device manufacturers and organisations such as the World Bank, to advance handset affordability. Our Mobile for Development work in low- and middle- income countries also reached an important milestone – impacting the lives of over 220 million people.

Lingering uncertainties in early 2023 meant we were unsure if we could hold MWC Shanghai. But hold it we did, for almost 37,000 attendees from 115 countries and territories. This year, MWC Barcelona, with over 88,500 attendees, and MWC Shanghai demonstrated that the value of doing business in person remains very much at a premium.

This year was also important financially as we delivered the final phase of our financial recovery strategy, rebuilding reserves to above pre-pandemic and target levels. 2024 now marks a new phase in the GSMA's development with a new corporate and financial strategy and the rollout of a culture reinvigoration programme – ensuring that the organisation is very well equipped for the future.

A sincere thank you to the GSMA team, our members, partners and stakeholders. And gratitude also for the continued support of our Board and our Chairman Mr José María Álvarez-Pallete López.

Mats Granryd
Director General, GSMA

Chapter 1

Strategy

Vision, Mission and Strategy

Today's societal, economic, and environmental challenges are more complex than ever, and the mobile industry's ongoing investment and innovation are crucial for affordable, accessible, and sustainable solutions across all geographies.

The GSMA's vision is to unlock the full power of connectivity so that people, industry and society thrive.

The GSMA's mission is to be recognised as THE global industry association for the advancement of mobile technology by representing, promoting, serving and unifying mobile operators, the broader mobile ecosystem and industries around the world who are pursuing digital transformation to deliver real impact for business and society.

The GSMA's strategy is to:

- represent our members to governments, regulators, international institutions and development organisations.
- promote the industry through reports, thought leadership, events, media and marketing channels.
- serve the industry through GSMA services, training, news, data insights and research to inform, improve and support our members.
- unify through collaboration which drives innovation, global interoperability and business opportunities.

The GSMA operates across three pillars – Connectivity for Good, Industry Services and Solutions, and Outreach, with threefold organisational KPIs – engagement, impact, and financial.

Financial Strategy

The GSMA Group is overall not-for-profit and relies on contributions from events, services and membership fees to provide funding for its activities.

In 2023, the GSMA delivered, for the first time since 2019, a full annual series of events. Diversification of funding sources continued with growth across Services and Membership products. The GSMA's financial recovery strategy, developed in the wake of the Covid-19 pandemic, enabled the GSMA to survive and thrive with an overarching ambition to rebuild reserves.

As 2023 closes, reserves now exceed pre-pandemic levels and as the GSMA looks forward to 2024, a new financial strategy has been developed. The new strategy builds on the lessons learned from the pandemic and ensures the GSMA can return to its non-profit purpose with a stable foundation for future growth and impact.

Scale Member Benefit | **Safeguard Member Interests** | **Maximise Industry Impact**

Chapter 2

Governance

GSMA Board 2023

The GSMA Board is comprised of Group CEOs, CEOs and C-level representatives from the world's leading mobile operators. Collectively they set the GSMA's strategic direction, ensuring its work is fully aligned with the needs of mobile operators and their customers across the world. The Board ensures that the GSMA's resources are focused on activities where collective action can deliver significant benefits to the mobile industry's customers, beyond those that individual operators could achieve through their own pursuits. Board members serve a 2-year term.

GSMA Chair

José María Álvarez-Pallete
Telefonica

GSMA Deputy Chair

Gopal Vittal
Bharti Airtel

GSMA Director General

Mats Granryd
GSMA

Carlos M. Jarque
America Movil

Igal Elbaz
AT&T

Hans Wijayasuriya
Axiata

Gao Tongqin
China Mobile

Li Jun
China Telecom

Baojun Liang
China Unicom

Dominique Leroy
Deutsche Telekom

Hatem Dowidar
e&

Frehiwot Tamru
Ethio Telecom

Makoto Takahashi
KDDI

Young Shub Kim
KT

Jens Schulte-Bockum
MTN

Michaël Trabbia
Orange

Mathew Oommen
Reliance Jio

Yuen Kuan Moon
Singtel

Olayan Alwetaid
STC

Roberto Nobile
Telecom Argentina

Pietro Labriola
Telecom Italia

Sigve Brekke
Telenor

Vicki Brady
Telstra

Kaan Terzioğlu
Veon

Rima Qureshi
Verizon

Ahmed Essam
Vodafone

Board updates throughout 2023

KT: Hyeonmo Ku, President & CEO, served as KT representative to the Board until March 2023. Young Shub Kim, President & CEO, was appointed to the Board as KT representative on 11 September 2023.

Orange: Michaël Trabbia, Chief Technology & Innovation Officer, served as Orange representative to the Board until September 2023. Bruno Zerbib, Chief Technology and Innovation Officer, was appointed to the Board as Orange representative on 11 September 2023.

GSMA Leadership Team

As a member of the Board, the Director General is responsible for the day-to-day management of the GSMA. The Director General is supported by a leadership team comprising individual officers, each responsible for specific aspects of the GSMA's work.

Mats Granryd
Director General

Lara Dewar
Chief Marketing Officer

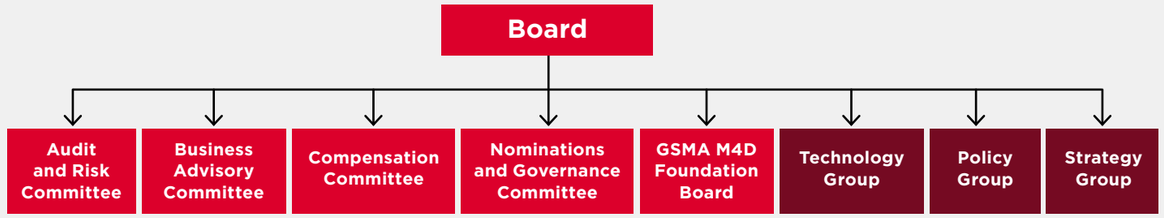
Louise Easterbrook
Chief Financial Officer

John Giusti
Chief Regulatory Officer

John Hoffman
CEO and Director, GSMA Ltd.

Alex Sinclair
Chief Technology Officer

Committees



The Board delegates specific responsibilities to the following boards and committees:

- The **Audit and Risk Committee** is responsible for overseeing the GSMA's financial controls, risk management and financial performance.
- The **Business Advisory Committee** provides advice to the Board on specific issues relating to events and other commercial activities of the GSMA to convene or support the mobile industry.
- The **Compensation Committee** is responsible for determining the compensation of the Director General and the GSMA Leadership Team and the compensation policies and practices of the GSMA, reviewing and approving the annual organisational performance objectives and reviewing Leadership Team succession planning.
- The **Nominations and Governance Committee** is responsible for managing the process of nominating, appointing and electing members to the Board, its committees and its expert groups and for overseeing and managing the governance processes of the GSMA Board, Committees and Groups.
- The **GSMA Mobile for Development Foundation Inc. Board** is responsible for oversight of the GSMA Mobile for Development Foundation donor-funded programmes. A dedicated in-house compliance team provides oversight of all grant-funded programmes to ensure that the specific contractual requirements of each donor are met.

Three groups, each chaired by a member of the Board, act as advisors to the Board:

- The **Strategy Group** supports the Board by developing and proposing strategies for overall strategic focus and direction of the GSMA, the industry, and matters of strategic importance to the operator community.
- The **Policy Group** advises the Board on specific issues relating to public policy, regulation, spectrum management, industry reputation, advocacy and the use of mobile technology to achieve scale in delivering developmental and social goals.
- The **Technology Group** provides expert advice to the Board on matters relating to products and technology architecture evolution, including interoperability.

Membership

As of 31 December 2023, the GSMA had 1,112 members, comprising mobile operators and ecosystem players.

Operator Member	652
Industry Member	326
Rapporteur	65
Parent Company Member	19
Sector, 5GIN and Activity Contributor Members	45
Telecommunications Administration Member	5
Total	**1,112**

Working Groups

The GSMA's global technology working groups, comprising over 150 groups and sub-groups, held more than 1,250 meetings with over 6,000 member participants. These groups updated or released approximately 200 essential documents, covering all aspects of system specifications, including interoperability, roaming and interconnect.

Prominent Working Groups & Taskforces	Acronym	Members December 2023*
Wholesale Agreements and Solutions Group	WAS	2,326
eSIM Group	eSIM	495
Fraud and Security Group	FASG	1,281
Networks Group	NG	641
Interoperability Data Specifications and Settlements Group	IDS	375
Terminal Steering Group	TSG	313
Internet Group	IG	219
Intellectual Property Rights Working Group	IPR	12
Automotive Identity Group	AID	60

*Individual participants

Risk Management

The Risk and Compliance Committee is responsible for the provision of effective and appropriate internal governance relating to risk management and compliance. The Committee has oversight of the organisation's risk management, internal controls and related compliance activities. Comprised of the GSMA's Leadership Team, and supported by senior advisors from the finance, people and culture, information technology and legal functions, the Risk and Compliance Committee reports on its activities to the Audit and Risk Committee.

The Risk and Compliance Committee is responsible for:

- Ensuring effective operation of the risk management framework
- Reviewing the organisation's principal risks
- Reviewing the quality, adequacy and effectiveness of the internal controls and mitigation plans
- Monitoring emerging and future principal risks
- Reviewing any material risk materialisation
- Ensuring rigorous compliance with laws and regulations relating to business conduct

In January 2024, the Risk & Compliance Committee assessed the principal risks of the GSMA as follows:

Consequence \ Likelihood	Rare	Unlikely	Possible	Likely	Almost Certain
Catastrophic					
Major			2 9	1 5 6	
Moderate			3 4 7 8		
Minor					
Insignificant					

1. **Reliance of GSMA on events (including risks to delivery of MWC B)**
2. **Compliance with antitrust law**
3. **Safety and security at GSMA**
4. **Management of donor funds**
5. **Cyber threat and information security**
6. **Compliance with data protection regulations**
7. **Third party reliance**
8. **Regulatory changes/scrutiny impacting GSMA's operating model**
9. **Impact of geopolitical developments on the GSMA**

The Committee considered three risks as no longer principal risks for the GSMA due to the decrease in risk profile:

1. **Impact of pandemic on events**
2. **Intercompany interdependencies**
3. **Maintaining the GSMA's impact within the industry**

Note: The risk heat map indicates the 'Net Risk' rating after taking mitigations into account. Numbers in the key are for reference only and do imply a ranking of the risks.

Chapter 3

Our people: Diversity, equity and inclusion

Our Values

Our people: Diversity, equity and inclusion

As a global organisation representing an industry that covers 95% of the world's population, it is the GSMA's imperative to build a team that is truly diverse and inclusive. The GSMA unites a global ecosystem and leads by example, working with the wider industry to make commitments and strive for best practice in diversity and inclusion across the world.

Diversity, Equity and Inclusion (DEI) is an essential part of the GSMA's culture, and the organisation strives to produce tangible results that bring about long-term sustainable change through a DEI agenda with three core principles:

- **Transparency:** Open reporting of diversity data and progress internally and externally
- **Inclusive Culture:** Creating an environment of psychological safety through investment in the DEI agenda and education
- **Accountability:** Removing bias and empowering GSMA leaders to drive the DEI agenda

Ensuring we deliver on our actions

The Steering Committee provides direction in developing the DEI strategy and promotes the DEI agenda within the organisation.

Louise Easterbrook
Chief Financial Officer
UK

John Giusti
Chief Regulatory Officer
UK

Lizzie Chilton
People and Culture Director
UK

The GSMA DEI team ensures that the GSMA has appropriate tools and support to deliver the DEI strategy and goals to promote a diverse and inclusive working environment.

Fiona Onochie
Head of Talent and DEI
UK

Nadia Mastantuono
DEI and Wellbeing Partner
UK

OneGSMA Co-chairs. OneGSMA is an employee-led forum that engages staff to get involved in delivering the DEI strategy and goals. They are key in fostering a truly inclusive culture by understanding where we can improve through grassroots interventions.

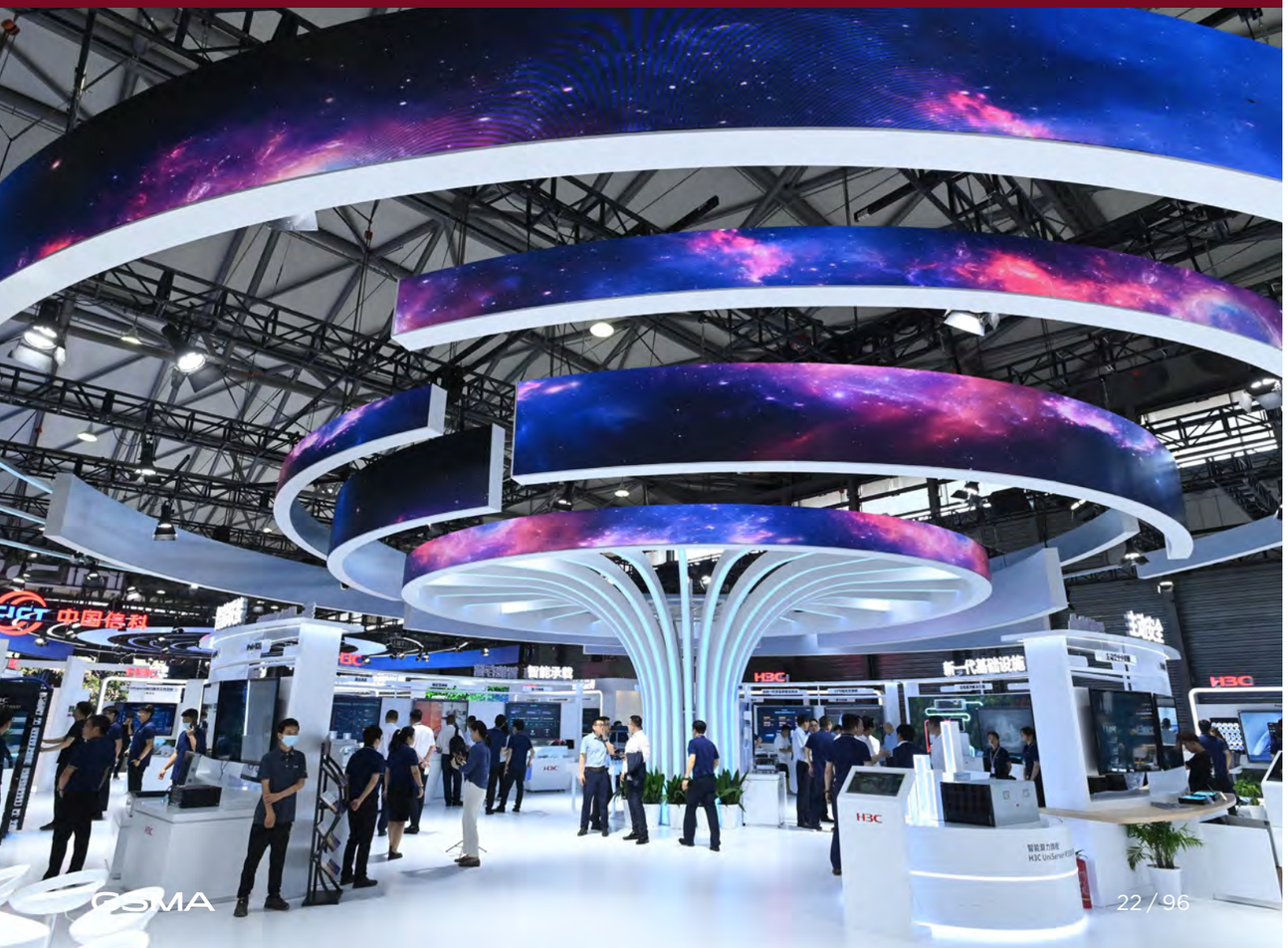
Ankur Vashishtha
Workplace Services Manager
INDIA

Radhika Gupta
Head of Data Acquisition
INDIA

Carol Gitobu
M4D Senior Market Engagement Manager
KENYA

Chapter 4

Highlights from the year



Connectivity for Good

Engaging public and private sectors to advance positive policy and spectrum outcomes, and tackle today's biggest societal challenges

Alignment of the industry for **WRC-23,** advocating for digital equality through enhanced low-band capacity for rural 5G, global harmonisation through access to 5G launch band at 3.3-3.8 GHz, and IMT expansion through 6 GHz for future 5G.

Pioneered thought leadership with endorsements from EU Equals, World Bank, ITU, OECD, Broadband Commission and ICC on the Usage Gap, Affordability, AI Ethics, and the Investment Gap.

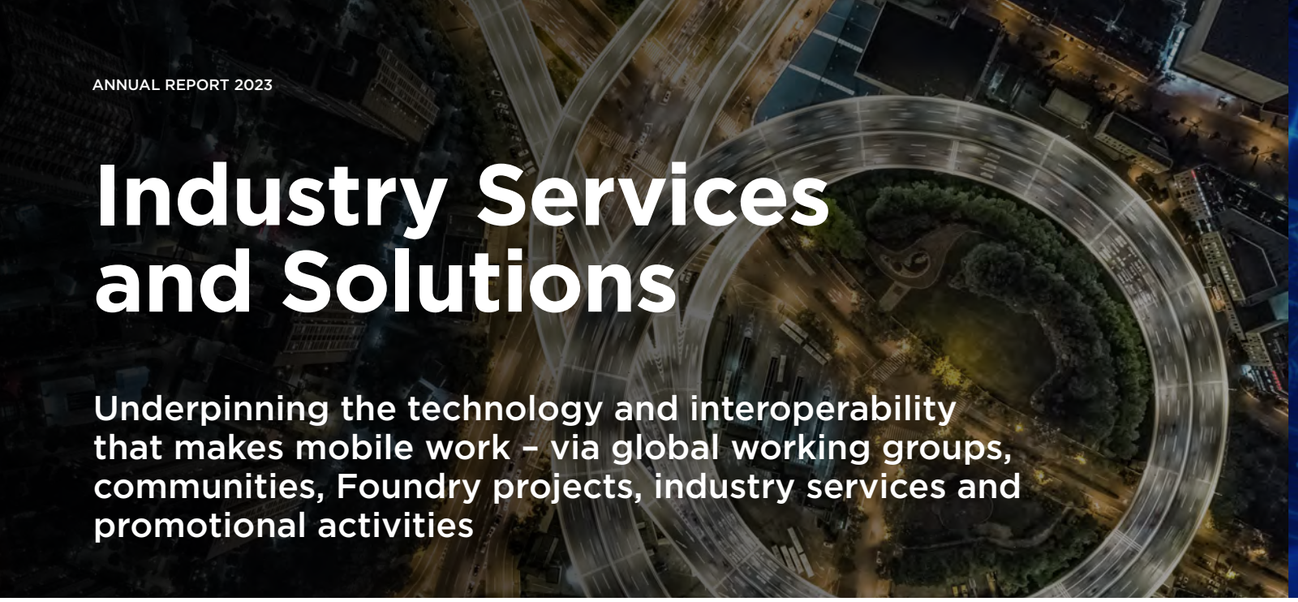
The **EU Fair Contribution to network investment** advocacy campaign resulted in an acknowledgement of the infrastructure investment gap and the need to significantly improve the regulatory environment for the European telecoms industry at the highest levels of EU policy makers.

Launch of the multi-year **Breaking Barriers** campaign, calling on governments, regulators, device manufacturers and the industry, to drive mobile internet adoption and close the usage gap. Linked to this, the **Affordability Coalition** is working to drive action on the affordability of mobile devices, one of the key barriers in addressing the usage gap.

Positive advocacy results in over **21 markets** relating to annual license fees, tax, data and privacy, single wholesale networks, tech neutrality and mid- and low-band spectrum auctions, deployment fees and regulation.

Leadership role in the UN Secretary General's **Early Warning for All Initiative**, including membership of the High-Level Advisory Panel and the Pillar 3 Working Group on 'Warning dissemination and communication'.

Over **14 policy positions** uniting the voice of the industry on Climate NetZero, industry circularity targets, the mobile industry and AI, and Network Shutdowns.



Industry Services and Solutions

Underpinning the technology and interoperability that makes mobile work – via global working groups, communities, Foundry projects, industry services and promotional activities

Technology Working Groups

2023 was the key year for GSMA's roaming group (WAS) returning to pre-pandemic normal. Through bilateral negotiation sessions, WAS plenary meetings are key to operators being able to maintain the tens of thousands of roaming agreements that they manage.

Industry Services

The GSMA continued to serve some 1900 customers during 2023 with a range of data and tools in the device, network and certification space that solve connectivity challenges.

Networks

The 2023 5G Futures Summit series saw over 1000 attendees from 543 companies, fostering crucial industry partnerships. This was complemented by the launch of the 5G Futures Community, with a specific focus on advancing core 5G technologies, including 5G mmWave, 5GSA, 5G-Advanced, 5GNC and AI for networks.

GSMA Foundry

The Home of Mobile Innovation, bringing together GSMA members and industry partners, delivered 30 projects this year addressing industry-level challenges. For example, 'Connecting the Unconnected' - the first commercial connectivity aerostat by World Mobile in Mozambique.

Security

MWC Barcelona 2023 and M360 UK emphasised mobile security, underscoring the need for safe communications during times of conflict. Quadrupling the professional database demonstrated the growing importance of mobile security to the wider ecosystem.

Vertical Communities

Activity increased with even more impactful communities for Advanced Air Mobility, Digital Industries, Fintech, Identity & Data and 5G IoT. Over 100 sessions with 11,000 participants and 45 content pieces created an interest group of over 60,000 contacts.

Open Gateway

Launched at MWC Barcelona 2023, 39 group operators representing more than 228 operators and over 60% of mobile connections worldwide are participating in the GSMA Open Gateway initiative.*

* As of 31 December 2023

Outreach

Convening and informing the mobile ecosystem

Almost **140,000** in-person attendees at MWCs in Barcelona, Shanghai, Las Vegas and Kigali and M360s in Baku, Mexico City, London, Seoul and Riyadh.

Mobile World Live daily news to **177,000+** tech and telecoms professionals.

Ministerial Programme at MWC Barcelona was attended by 196 delegations representing 151 countries and 45 intergovernmental organisations. This year also saw the consolidation of the **Policy Leaders Forum** at MWC Kigali – attended by 59 delegations from across the African continent, cementing our regional presence.

170+ reports from GSMA Intelligence, forecasting the future with **50 million** data points.

150,000+ media mentions at MWC Barcelona.

MWC Shanghai **10-year** anniversary celebrated with a full return to in-person attendance after Covid restrictions lifted.

35 million impressions were delivered for MWC Barcelona across our inhouse paid media channels.

Regional Highlights

NORTH AMERICA

Carlos Bosch
Head of North America

In 2023, the North America region strengthened its ties with the Caribbean through two successful Caribbean Coalition Roundtables, attended by operators and regulators. Additionally, 9 working groups, across 3 well-attended Regional Interest Groups events, collaborated on industry challenges, aiming for consensus and harmonisation. The region also achieved success with Ericsson's "Drone commercial network field test" in the Foundry Project. Of course, we were also proud to host MWC Las Vegas again, which included a Verizon-funded Tech4Girls Programme, benefiting 300+ girls in the USA and the Caribbean.

EUROPE

Daniel Pataki
Head of Europe

This year our European members presented a united front in the European Commission Consultation on "the future of the electronic communications sector and its infrastructure" response. These efforts led to this topic being discussed among the EU telecoms ministers and we welcome the European Commission's forward-looking leadership on the topic. We also started to prepare for the European elections 2024, working on the industry's manifesto for incoming policymakers and new EU Commissioners. We were also proud to host our first M360 Eurasia event in Baku, Azerbaijan, which exceeded all expectations.

CHINA

Sihan Chen
Head of Greater China

2023 saw the successful return of MWC Shanghai with participants from 115 countries and regions. 5G IN continued to grow and more than doubled its membership base, with more than 30 members expected by the end of this year. Operators continued to advance their 5G business and actively contributed to Open Gateway, Foundry & 5G-Advanced First Adopters programmes, indicating a strong commitment from the region to the future of connectivity. We also expanded our vertical stakeholder engagements across regions with a successful Digital Leaders programme at both MWC Barcelona and Shanghai.

MIDDLE EAST AND NORTH AFRICA

Jawad Abbassi
Head of Middle East and North Africa

This year we were pleased to see several well attended workshops and events, including the Networks Group NG#18 in Doha, Qatar, a 5G Capacity Building session in Jordan, and a successful spectrum workshop in Saudi Arabia. We were also pleased to host a successful M360 Riyadh for the second year in a row, bringing together key mobile industry stakeholders from across the region.

LATIN AMERICA

Lucas Gallitto
Head of Latin America

A powerful CEO panel opened our successful M360 LATAM in Mexico at the end of May, attended by over 700 delegates from 24 countries. At MWC Shanghai, we held the inaugural LATAM roundtable with industry members and governments, promoting best international practices though GSMA´s global platforms. We championed our industry's priorities with a We Care commitment focused on closing the usage gap and an Open Gateway multi-operator launch in Brazil. We also continued our work in supporting our members' advocacy agendas, covering traditional topics as well as new discussions on Artificial Intelligence, where we signed a regional partnership with UNESCO that quickly turned global.

SUB-SAHARAN AFRICA

Angela Wamola
Head of Sub-Saharan Africa

A successful MWC Kigali brought together 6 of the biggest mobile network operators in the region and His Excellency President Paul Kagame to forge partnerships for driving greater digital inclusion with African governments. Our advocacy engagements on reducing the usage gap and investment gap resulted in GSMA aligned spectrum assignment in Senegal and Uganda, the suspension of 5% excise duty on mobile services in Nigeria, the complete removal of mobile money levies in Tanzania, as well as publication of two flagship reports: USF in Africa and the Mobile Tax Policy and Digital Development: A study of markets in Sub-Saharan Africa.

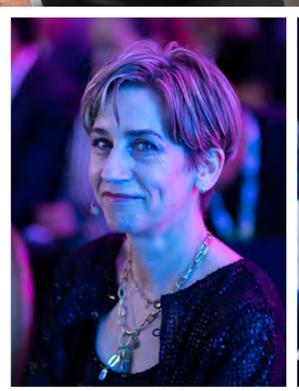
ASIA PACIFIC

Julian Gorman
Head of Asia Pacific

Our advocacy efforts were instrumental in driving policy reforms in India that have enabled MNOs to achieve the world's fastest rollout of 5G, now serving 120 million customers in the country. Engagement across multiple channels expanded our influence with governments on policy reforms such as Rights of Way in India, provision of additional affordable spectrum in Bangladesh, and encouraging voluntary infrastructure sharing required to drive digital transformation in the region. Of course, we also hosted a very successful M360 in Seoul, with over 40% of attendees from vertical industries.

Chapter 5

Operational review



Global impact

Influence

Positive advocacy results in **21 markets**

151 countries + 45 intergovernmental organisations at Ministerial Programme at MWC Barcelona

Prosperity

WRC-23

Agreement reached between governments on new mobile low-band spectrum below 1 GHz and mid-band spectrum in the 3.5 GHz and 6 GHz ranges

130 GSMA Future Spectrum Group members at WRC-23

50,000 views on social media of GSMA Board video for WRC-23

Strength

Over **140,000** in-person attendees at GSMA events

Tens of thousands of **roaming agreements** managed by WAS Roaming Group

14 policy positions uniting the industry on global challenges

150,000+ media mentions at MWC Barcelona

Growth

GSMA Open Gateway

39 group operators representing **>228** operators

Mobile for Development

>220 million lives impacted since 2007

Breaking Barriers campaign and **Affordability Coalition** to close the usage gap

Speed

Mobile World Live

Daily news to **177,000+** professionals

GSMA Intelligence

170+ reports from 50 million data points

5G Digital Futures Summit

543 companies attended

GSMA Foundry

30 projects delivered

Vertical Communities

11,000 participants at **100+** sessions

2023 Reality
An increasingly fractured world

The economic and geopolitical uncertainty that characterised 2022 continued in 2023, as the war in Ukraine continued and conflict erupted in the Middle East and Africa.

With the ongoing disruption to both energy and food supplies, the cost of living continued to rise rapidly in many parts of the world, compounding the negative socio-economic impact of the pandemic. The climate crisis was also increasingly apparent, as many parts of the world experienced extreme weather conditions in 2023.

In 2024, geopolitical uncertainty is likely to continue, particularly as elections are set to take place in several of the world's largest economies. With the global economy facing so many unpredictable headwinds, it is hard for the mobile industry to gauge how much to invest and where.

Still, both the public and private sectors are increasingly reliant on mobile connectivity and services to underpin the much-needed digital transformations and the technological advances required to address the world's gravest challenges.

Delivering positive impact

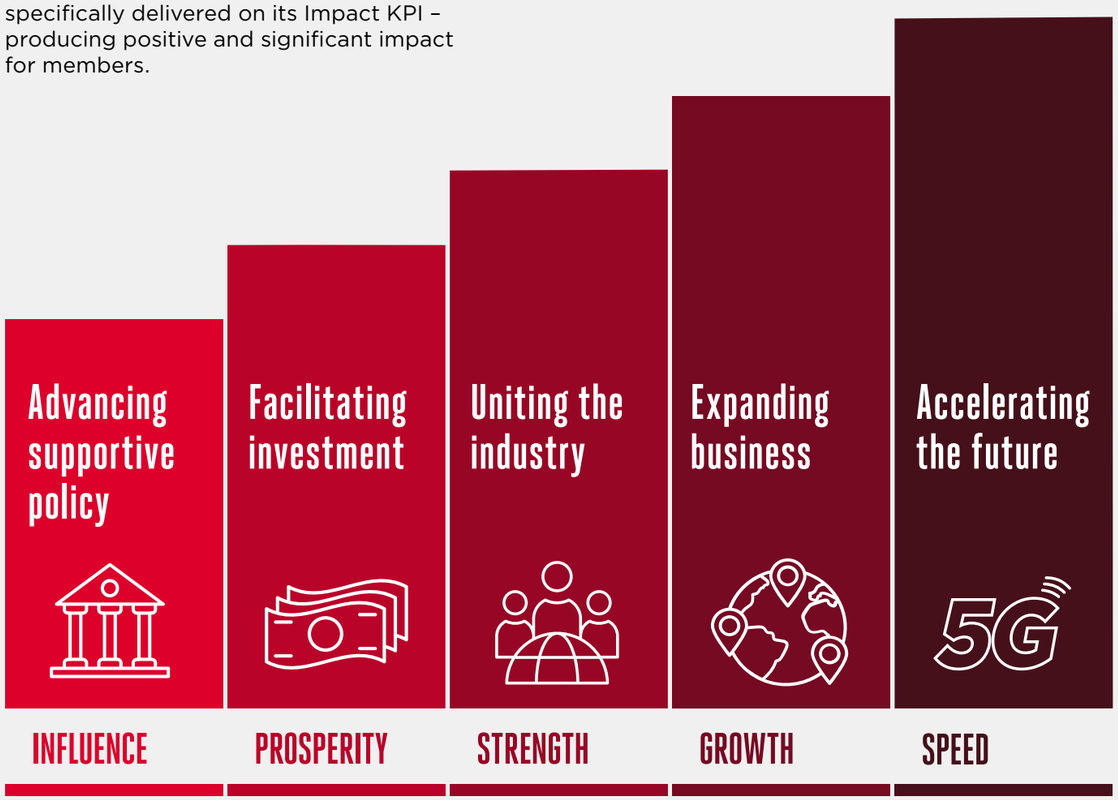
The GSMA's vision is to unlock the full power of connectivity so that people, industry and society thrive. Investment and innovation by the mobile industry are crucial to develop affordable, accessible, and sustainable solutions to the world's most pressing societal, economic, and environmental challenges.

As the global representative of the mobile industry, the GSMA operates across three pillars – Connectivity for Good, Industry Services and Solutions, and Outreach, with threefold organisational Key Performance Indicators (KPIs) – Financial, Engagement and Impact. To help it pursue these KPIs effectively in an increasingly complex and dynamic world, this year the GSMA has refreshed its organisational culture and governance, launched initiatives to further increase diversity, equity, and inclusion, and embedded an approach to risk management across the organisation.

This chapter highlights how the GSMA specifically delivered on its Impact KPI – producing positive and significant impact for members.

Impact is demonstrated across five areas of value to the mobile industry – advancing supportive policy, facilitating investment, uniting the industry, extending access, and accelerating the future.

Following the economic fallout from the pandemic, the GSMA is now emerging from the third and final year of a financial recovery plan with a reshaped organisation, new ways of working and a resilient financial position. With the scope to step up investment in 2024, the GSMA can amplify its impact going forward.



5.1 INFLUENCE
Advancing supportive policy

Today, more than 5.4 billion people rely on mobile connectivity, which contributes US$5.2 trillion to annual global GDP.[1] To continue investing, operating and innovating at the level that consumers, businesses and governments demand, mobile operators need supportive public policy.

Progress in supportive policy and regulation is achieved by consistent long-term engagement with governments and regulatory authorities, drawing from detailed in-country experience, extensive data analytics and a broad understanding of regional and global trends and perceptions. Under the auspices of the global and regional Policy Groups, the GSMA balances a well-informed global view, ongoing engagement with members and governments, and the agility to quickly address urgent in-country challenges. Dependent on political and budget cycles, positive outcomes are generally the result of multi-year efforts. In 2023, GSMA employees travelled extensively to advance supportive public policy through productive face-to-face meetings.

Reflecting the value of the GSMA's forward thinking and expertise in addressing multiple stakeholders and audiences across the public and private sectors, experts from all levels and areas of the organisation are continually invited to speak at events. In 2023, Mats Granryd and the leadership team received over 100 invitations to speak, including from governments and multilateral organisations.

Mobile connectivity

is essential in the lives of **5.4 billion people**

contributes **$5.2 trillion** to global GDP

1. www.gsma.com/mobileeconomy/

Addressing the Investment Gap

During 2023, the GSMA focused on possible policy solutions for the investment challenges that mobile operators face in Europe and beyond. These solutions include a proposal to the EU that would lead to a fair and proportionate contribution from the largest traffic generators towards the costs of network infrastructure.

After inputting to the European Commission's consultation *on the future of the electronic communications sector and its infrastructure*,[2] the GSMA convened EU policymakers and the broad connectivity ecosystem at the GSMA Brussels office for an in-depth public discussion on the possible solutions for the fair contribution debate. Speakers included representatives of the European Commission, industry, academia, regulators and big tech.

At another public event on this topic, José María Álvarez-Pallete, Chairman & CEO of Telefónica and Chairman of the GSMA Board, delivered a keynote to the audience of EU policymakers, members and EU digital stakeholders. The GSMA also partnered with POLITICO to host a panel debate on *Europe's Telecoms Single Market Potential*.

Furthermore, 21 mobile operator CEOs published an open joint letter calling for Europe to act to protect its digital future. The letter was widely covered by European and national media. The fair contribution messages were again highlighted in the GSMA's *Mobile Economy Europe 2023*[3] report, launched during a European Parliament plenary session in Strasbourg.

As a result of this advocacy campaign, high-level EU policymakers now recognise the infrastructure investment gap and the need to significantly improve the regulatory environment for the European telecoms industry. EU Commissioner Breton acknowledged that "too many regulatory barriers to a true telecoms Single Market still exist, on spectrum acquisition, consolidation, legacy networks, security, and so on" and pledged that "Europe will do 'whatever it takes' to keep its competitive edge" when announcing the upcoming Digital Networks Act.

Beyond Europe, the GSMA launched the *Connectivity Gaps in Latin America report*[4] to help frame the Investment Gap debate in the region, while in India, the GSMA highlighted the need for policy reforms to support investment by mobile network operators in a consultation response. The GSMA also convened government and industry stakeholders for a roundtable at M360 APAC in Seoul to trigger the debate on fair contribution in the APAC region.

2. https://www.gsma.com/newsroom/press-release/telecom-sector-joins-forces-in-call-for-new-policies-to-drive-eu-connectivity-leadership/
3. https://www.gsma.com/mobileeconomy/europe/
4. https://www.gsma.com/latinamerica/resources/connectivity-gaps-in-latin-america/

FINANCIAL TIMES

Telecoms + Add to myFT

European telecom groups ask Brussels to make Big Tech pay more for networks

BT, Deutsche Telekom and Telefónica CEOs among those calling for internet traffic drivers to contribute to investment

The European Commission has said perhaps €200bn of additional investment is required to meet its connectivity targets © FT montage/Dreamstime

Working with governments

At the behest of members, the GSMA applied its regulatory and policy expertise extensively in 2023, backed by GSMA primary data and analysis, and facilitated industry positions on the issues that most occupied national governments.

In 2023, the GSMA Ministerial Programme at MWC Barcelona – the world's leading forum for policymakers and global industry leaders – welcomed a record 196 delegations representing 151 countries and 45 intergovernmental organisations. Regional Policy Leaders Forums also took place at MWC Kigali, convening over 500 attendees from Africa, and at M360 APAC in Seoul.

Asia Pacific

- India enacted new **data protection** laws reflecting elements of GSMA advocacy work over many years on smart data privacy laws.
- The GSMA's input into 5G spectrum and rights of way policy in India helped to pave the way for mobile network operators to achieve the world's fastest **rollout of 5G**, resulting in approximately 120 million 5G customers within a year. To drive further progress, the GSMA established a community dedicated to the development of a sustainable 5G mobile ecosystem in India.
- The GSMA ran an online workshop in Pakistan to support its campaign to reduce the number, impact and scale of **network shutdowns** on mobile operators. It was attended by more than 30 key stakeholders.

Europe

- The GSMA successfully engaged with the European Parliament on proposed **child sexual abuse material (CSAM) regulation**, obtaining amendments which recognise the different roles and responsibilities of the actors in the internet value chain and balance the prevention of harm whilst safeguarding encryption and privacy of communications.
- With respect to the implementation of the Digital Markets Act, the GSMA advocated to include Apple iMessage as a digital gatekeeper to allow for **messaging interoperability with RCS** (rich communications services). The European Commission opened a market investigation into the gatekeeping nature of iMessage, which is set to conclude in February 2024. In November, Apple announced that its products will support RCS.
- Following GSMA advocacy efforts, the EU excluded all the use cases for the telecoms industry from the category of high-risk AI systems and the corresponding stricter obligations in its proposed **Artificial Intelligence Act**. The final text of the legislation also includes clearer and more detailed definitions, as well as large parts of the GSMA's position on data sharing and data processing services switching.
- In partnership with the ITU, the GSMA organised **5G training** for the regulators and industry stakeholders in Tajikistan and Turkmenistan.
- The GSMA helped to facilitate an extension of the **EU roaming** area to Moldova through a voluntary agreement between EU and Moldovan operators to lower roaming costs.
- Ahead of the **EU elections** in 2024, the GSMA welcomed almost 500 EU stakeholders to events at its Brussels office in 2023, including Members of the European Parliament, EU Commission officials, Member State ambassadors and government representatives, members and broader digital ecosystem players. An online video of an event featuring the GSMA Board Chairman and a discussion on the EU Telecoms Single Market was streamed more than 8,000 times.

Greater China

- The Minister of the Cyberspace Administration of China endorsed and participated in MWC Shanghai, and the GSMA secured stronger investment for the event from the city government with the first Digital Shanghai exhibition zone, and 5G city tour for **ministerial delegations**.

Latin America

- Across the LATAM region, the GSMA responded to 17 **public consultations** in Brazil, Uruguay, Chile, Perú, Honduras, Costa Rica and México, communicating its members' positions, and generating more than 400 pieces of media coverage.
- In Honduras, the GSMA helped prevent a **mandatory SIM registration** bill of law.
- Trustworthy relationships were established with **new governments** in Argentina and Ecuador, preceding and after Presidential elections, to facilitate industry priorities.

Middle East and North Africa

- GSMA Intelligence conducted a mobile operator-funded benchmarking study of the Kuwaiti market, initiated after engagement with the CITRA Chair and team. This will now lead to essential discussions with Kuwaiti regulators on **fibre, international gateways, and 5G spectrum**.
- The GSMA facilitated discussions between UN agencies, Egyptian regulators, and mobile operators with regard to the situation in **Gaza**.
- Engagement with the UNDP at the 2023 UN General Assembly led to the commitment to host a high-level **Digital Day** at MWC Barcelona 2024 and convene 70 high-level regional representatives to launch **digital cooperation initiatives**.

North America

- With the support of local governments, the GSMA's **Tech4Girls** programme benefitted more than 300 young women across the US and the Caribbean islands, including Trinidad and Tobago, Jamaica, Guyana, St. Vincent and the Grenadines, Turks and Caicos, Saint Lucia, and Belize.

Sub-Saharan Africa

- GSMA-led advocacy in Madagascar culminated in the liberalisation of **fibre optic infrastructure deployment** and the introduction of a universal licensing regime ensuring equal opportunities for all operators.
- The GSMA advocated for progressive **data protection** laws in the DRC, leading to the promulgation of digital code and law by the government. The **new law** made it possible for the DRC to sign the Malabo Convention for cybersecurity and personal data protection, making it easier for mobile operators and other ecosystem players to do business in the country.
- Following long-standing advocacy, participation in public consultations and written submissions by the GSMA, Nigeria enacted a new Data Protection Act that safeguards individual privacy and opens opportunities for **growth in emerging technologies**, such as AI, cloud-based solutions and IoT.

Capacity Building

GSMA Capacity Building develops and delivers training for policymakers and regulators as they strive to keep pace with the evolving mobile industry. These courses underpin the organisation's advocacy efforts, ensuring regulatory frameworks support growth to extend connectivity for good across the globe. The 15 courses, which are available for online and face-to-face training, were delivered to over 600 policy makers and regulators, via 1,500 training days, in 61 countries.

New courses in 2023 included Child Rights and Connectivity, Addressing the Digital Divide, The Evolution of Radio Access Networks, and Climate, which was launched at MWC Kigali to regulatory authorities and ministries from 17 Sub-Saharan countries.

"The GSMA is a trusted partner in this space... it is valuable that we are getting trained by an entity such as GSMA that has the credibility to bring out these issues in a neutral and independent way. I am very grateful to the GSMA for taking the bold step to create (the Climate course) and launch it with us. I would like to encourage the GSMA to continue to do this."

Dorothy Akello, Chair of the Ugandan Communications Commission and Dean of the School of Engineering, Makerere University

"The training has provided me with valuable insights that I intend to implement towards enhancing Malawi's digital sector. The knowledge and skills I have acquired have equipped me with the necessary tools to effect the desired change. I am committed to applying these elements on the ground, fostering an environment conducive to growth and innovation."

Daud Elvin Suleman, Director General Malawi Communications Regulatory Authority – MACRA

Working with multilateral organisations

In 2023, the GSMA continued to engage with influential international organisations to support global technology and digital development policy. On behalf of the mobile industry, the GSMA prioritised engagement with the ITU, the OECD, the World Bank Group, and selected agencies from the United Nations, including the UN Leadership team, on the following topics:

- Connectivity to address both coverage and usage gaps
- Internet governance, data and AI
- Mobile's transformational impact in achieving the UN Sustainable Development Goals (SDGs)

In September, the GSMA participated in the **UN General Assembly** in New York, highlighting the impact of the mobile sector on societies and economies. The annual *Industry SDG Impact Report*[5] was launched at the UN SDG Digital Day, showcasing the role of ICT solutions in scaling SDG impact.

In 2023, the GSMA prioritised establishing a strong partnership with the newly elected **ITU** leadership team, headed by Secretary-General Doreen Bogdan-Martin. For the first time, the GSMA welcomed all ITU elected officials at MWC Barcelona, and introduced the new leadership team to mobile industry C-suite executives and ministerial-level government stakeholders. This engagement was highly valued by ITU leadership, which is committed to enhancing collaboration with the private sector.

Engagement with the ITU-D and ITU-T sector focussed on internet adoption, digital skills, usage gap, mobile data costs, roaming, mobile money and climate. The GSMA also submitted five pledges to the ITU's Partner2Connect Digital Coalition, related to the development of digital skills in low- and middle-income countries, capacity building, and its Connectivity for Refugees Initiative.

In collaboration with the ITU and GeSI, the GSMA launched "Scope 3" guidance[6] to support the telecom industry to measure the carbon emissions of the whole value chain of ICT companies. The GSMA also supported the creation of the ITU's new Green Digital Action initiative, providing strategic direction for the *ICT sector decarbonisation* and *Early Warning System* pillars of the initiative.

During 2023, the GSMA also deepened collaboration with the **World Bank** on digital development, and is one of the few private sector advisors to the Digital Development Partnership.

At MWC Kigali, the GSMA launched a new research paper on the energy challenges in Sub-Saharan Africa, with input from the World Bank and IEA. The GSMA and World Bank agreed to work together on the topic in more detail in 2024.

In parallel, the GSMA provided input to the World Bank report *Affordable Devices for All*, which includes a recommendation to lower taxes on equipment as a measure to increase smartphone adoption. The GSMA also launched a multi-stakeholder alliance on smartphone affordability of which the the World Bank and IFC are active participants. As part of this initiative, the Bank will be launching a programme in 2024 focused on de-risking smartphone financing.

Throughout 2023, the GSMA closely engaged in the activities of the **Broadband Commission**, co-chairing the Working Group on Connectivity for micro, small, and medium-sized enterprises (MSMEs) with the International Trade Centre (ITC). The Working Group produced an UN-endorsed report aligned to GSMA findings and recommendations on obstacles and solutions to driving increased use of mobile connectivity by MSMEs in low- and middle-income countries. The GSMA also informed the Broadband Commission's *2023 State of Broadband* report, driving adoption of investment gap and usage gap messages aligned to mobile industry positions.

In 2023, the GSMA increased its engagement with the **OECD**, which has been expanding the scope of its traditional telco activities to include new players in the digital ecosystem. The GSMA contributed to the development of an upcoming OECD report *Financing Broadband Networks of the Future* to ensure views of the mobile industry are captured in the OECD's recommendations. The GSMA continues to be part of the private sector group at the OECD (BIAC) and the Global Working Party on AI.

Under the **W20** India Presidency, the GSMA, which is represented in the EU delegation to W20, was elected as Co-Chair of the Taskforce on Bridging the Digital Gender Divide. As a result, the W20 Communique adopted a call for halving the digital gender gap (including mobile) by 2030 by addressing barriers around affordability, literacy and digital skills, accessibility, and online safety which was subsequently also reflected in the G20 India Leaders Declaration.

As part of its active contribution to the **EQUALS** Global Partnership for Gender Equality in the Digital Age, the GSMA celebrated the successful completion of a three-year EU funded project EQUALS EU,[7] which included:

- the mapping of gender-inclusive innovation ecosystems across 22 countries
- innovation camps and hackathons attended by around 450 participants across 25 countries
- an incubator programme on gender-inclusive entrepreneurship
- an international summer school for future leaders in gender-inclusive innovation
- and the release of two gender equity tools for digital inclusion

The EQUALS Her Digital Skills initiative co-led by the GSMA received a renewed financial endorsement by Verizon and a new financial commitment from Qualcomm. To date, the initiative has directly or indirectly benefitted 100,000 women across 40 countries.

5. https://www.gsma.com/betterfuture/2022sdgimpactreport
6. https://www.gsma.com/betterfuture/wp-content/uploads/2023/07/Scope-3-Guidance-2023.pdf

7. https://equals-eu.org/

5.2 PROSPERITY Facilitating investment

The mobile connectivity that is at the heart of the expanding global digital economy depends on continual large-scale investment by mobile operators. The GSMA forecasts mobile operators will together invest US$1.5 trillion in capital spending between 2023 and 2030, of which 92% will be in 5G networks, bringing considerable benefits to consumers, businesses and governments.[8]

As they seek to build out 5G as cost-effectively as possible, mobile operators continue to explore new innovations and opportunities, including Open RAN technologies (which reduce the proprietary components and interfaces in radio access networks), cloud-native core networks and greater automation.

8. www.gsma.com/mobileeconomy/

Securing spectrum capacity

Spectrum access is a critical issue for the GSMA as we support our members' spectrum capacity requirements to improve and expand services, break down barriers to digital equality and address the usage and coverage gaps.

The biggest event of the year was WRC-23, held in Dubai during November and December under the auspices of the International Telecommunication Union (ITU). The GSMA advocated for three main issues: low-band capacity for rural 5G, harmonisation of the 5G pioneer band at 3.5 GHz, and future expansion into the upper 6 GHz band for 5G-Advanced while ensuring studies for future IMT identification to develop in the new cycle. The GSMA's campaign for WRC-23 took place over four years, encompassing technical and engineering work, economic studies, marketing, and advocacy to ensure that the needs of the mobile industry were met.

GSMA board members participated in a WRC-23 social and marketing campaign. Chairman José María Álvarez-Pallete, Mats Granryd and 13 other board members came together as one voice in videos to convey the '*WRC-23: For the Benefit of Billions*' campaign,[9] which have achieved over 50,000 views to date. Members of the GSMA's Future Spectrum Group featured in chairperson roles at WRC-23, as did the GSMA's Veena Rawat and Luciana Camargos.

It was a successful WRC and GSMA targets were exceeded. The agenda for WRC-27 is now decided and it will be another busy four-year cycle. However, the work done at WRC is only the first step towards MNO use of spectrum. Issues, such as spectrum pricing, licensing conditions, and roadmaps for what happens next also need to be addressed before MNOs can utilise spectrum to improve and expand mobile connectivity.

One welcome trend during 2023 was the continued demise of single wholesale networks. This has been the subject of long-term, analysis-based advocacy from the GSMA. Proponents of these government-initiated monopolies believed they would offer better coverage and more affordable services but these networks have not proved successful to date and are being abandoned in favour of competition-based approaches.

The negative practice of setting aside spectrum for applications other than public mobile networks, including private networks for companies, industries or public sector organisations unfortunately continued in 2023. This constrains the amount of spectrum available for mobile operators and impacts the quality and reach of mobile networks. The GSMA's *Impact of Spectrum Set-Asides on 5G*[10] report outlines this issue, which was a concern raised at Board level in 2023 and our government engagement work on it will continue as prominently in 2024 as it did this year.

Spectrum management can be a useful tool in combatting climate change while simultaneously generating economic benefits for society. This link between spectrum and carbon emissions reduction was made clear by a GSMA report: *Spectrum: The Climate Connection*.[11] Ensuring that spectrum management decisions have a positive impact on the journey to net zero is an issue which infiltrates all spectrum engagement as we help mobile deliver a cleaner, greener future.

9. https://www.youtube.com/watch?v=WXTUCXOIzII
10. https://www.gsma.com/spectrum/wp-content/uploads/2023/06/Impact-of-Spectrum-Set-Asides-on-5G.pdf
11. https://www.gsma.com/spectrum/resources/spectrum-climate-connection/

In 2023, there were important advances for ongoing work in multiple regions of the world:

Asia Pacific

- A GSMA-led advocacy campaign, highlighting how infrastructure competition can unleash innovation, resulted in the Malaysian Government revising its strategy of a **5G single wholesale network** and instead introducing a second network to help drive consumer and enterprise innovation.
- Following GSMA engagement on **private 5G networks**, India reversed its decision to allow spectrum to be set-aside in prime IMT bands.

Europe

- The GSMA intensified engagement with the European Commission and the RSPG (Radio Spectrum Policy Group) through quarterly meetings and regular written submissions, the publication of a position paper on options for EU **spectrum policy** and a dedicated workshop for policymakers. The latter was attended by more than 20 stakeholders, including representatives from five EU Member States.

Greater China

- The GSMA worked with the Ministry of Industry and Information Technology to secure China's national identification of the **6 GHz band** for IMT, which was announced at MWC Shanghai.
- Following GSMA engagement, China Mobile, China Telecom and China Unicom joined the GSMA Open Gateway, demonstrating their commitment to collaborate on the open network API framework.

Latin America

- Following discussions and correspondence with the GSMA, the government in Peru assigned the **AWS-3 and 2.3 GHz bands** to mobile connectivity.
- Following a GSMA intervention in Mexico, the regulator made the lower part of the 6 GHz band licence-exempt, and kept **annual spectrum fees** at the same levels, without inflation adjustments. Mexico, Brazil and several other countries together representing more than 60% of the world's population, asked to be included in the identification of the upper part of 6 GHz for IMT at WRC-23.
- The GSMA published the *Brazil Market Insight | The 6 GHz Band* report,[12] which prompted conversations at Congress level to reassess **spectrum policy** for this band.
- In Ecuador, the government reduced its **spectrum-related charges** by 83% following GSMA calls to lower these fees.
- In Colombia, GSMA advocacy contributed to lower **reserve prices** in a 5G auction, compared to previous auctions and other improved conditions.

MENA

- The GSMA in partnership with the Saudi Telecommunication Company hosted a successful Spectrum Workshop with 85 attendees in Saudi Arabia, which deepened the **relationship between the regulator and the industry** and led to the updated auction process that is to happen in 2024.

12. https://www.gsma.com/spectrum/wp-content/uploads/2023/01/Brazil-Market-Insight-The-6-GHz-Band.pdf

Sub-Saharan Africa

— In Uganda, engagements by the GSMA and mobile operators led to the release of spectrum in the 700 MHz and 3500 MHz bands. These bands are critical to bridging the **rural-urban connectivity gap** and the technology evolution to 5G.

— After the regulator in Senegal invited applications for **5G spectrum licenses**, the GSMA held a pre-auction workshop on the importance of affordable and technology-neutral mid- and low-band spectrum in bringing socio-economic benefits. Two operators were successfully awarded spectrum in 700 MhHz and 3.5 GHz. All operators are now able to use any bands to provide 5G, paving the way to Technology Neutrality in the country.

— In Cameroon, the GSMA and mobile operators successfully advocated for reasonable **spectrum pricing**, countering a proposal to increase fees from 1% to 8.5% of operators' annual revenues. After the GSMA highlighted the impact of such a measure on mobile service affordability, the government capped fees at 3.3%, saving mobile operators 5% of annual revenue.

— Low broadband usage in Rwanda prompted a policy review in 2022, which led to the **liberalisation of 4G** and future technologies in place of the existing Single Wholesale Licensing Framework. GSMA engagement led to the granting of the necessary license to MTN and Airtel for these services, driving a 60% increase in 4G traffic in the first two months as customers adopted more affordable mobile broadband services.

Reforming taxation

The GSMA promotes best practice principles of taxation, thereby making mobile services more affordable for consumers and facilitating investment in networks and services by operators. Efforts are reinforced with GSMA-produced research and analysis on mobile sector tax reforms, highlighting the corresponding benefits of broader internet adoption, economic growth and social inclusion.

In 2023, there were important advances in several markets:

- The GSMA updated its analysis of the impact of the **mobile money levy** in Tanzania and presented the results to in-market stakeholders. The government responded with the complete removal of the levy on receiving and transfer transactions and the removal of the airtime levy. Tanzania also reduced right of ways charges by 80-90%, which will contribute to reducing the investment gap and usage gap in that market.
- Kenya reduced its **excise duty** on telephone and internet data services from 20% to 15%, following the submission of a GSMA case study and recommendation to the Ministry of Finance.
- The GSMA opposed DRC's proposed **license fee** hike from 3% to 5%, citing hindrance to network investment, which is crucial for bridging the coverage gap. These advocacy efforts kept fees at 3%, saving mobile operators US$23 million annually.
- The government in Nigeria had imposed a 5% excise duty on telecom services despite the GSMA's recommendations, but the newly elected regime suspended the tax, ensuring **cost stability**, continuous service usage, and reducing mobile operators' overheads.

The "Crowding-In" effect

In low- and middle-income countries, the GSMA is focused on attracting large-scale investment to increase the impact of digital solutions on the lives of underserved populations and to bolster innovation and commercial viability for mobile operators.

Governments and institutions provide donor funding to the GSMA Mobile for Development Foundation, which runs thematic programmes that research impact opportunities, engage on the ground in target countries, and provide advocacy expertise to partners. Donor funding is also used to provide direct funding to innovative local entrepreneurs, who are, by nature, early-stage higher-risk investments. Through the GSMA Innovation Fund (covered in more detail in Addressing digital divides), the GSMA supports these start-ups on their path to sustainability and scale, facilitating partnerships with mobile operators and connections with investors.

Between 2017 and 2023, the GSMA Innovation Fund, funded by donors, invested in 136 organisations in low- and middle-income countries that have gone on to raise over £651 million in additional funding from private investors, equivalent to 27 times the investment made by those donors up to November 2023.

In October 2023, GSMA Innovation Fund start-up ReCircle closed a pre Series-A funding round with investments from Flipkart Ventures, 3i Partners (Impact India Investment Partners) and Acumen Fund. This will enable ReCircle to enhance its waste management and recycling service offerings, utilising mobile technology, and to develop its partner network, which includes more than 350 collectors.

In November 2023, GSMA Innovation Fund start-up J-Palm Liberia secured a US$1.2 million investment from the USAID Africa Trade and Investment programme. This investment is part of the USAID Agribusiness Incubator and Development activity, a five-year, US$20 million programme aimed at boosting Liberia's agricultural sector. This will help to foster growth, expansion, and the creation of new domestic and international markets for Liberian agribusinesses. J-Palm Liberia is using the GSMA Innovation Fund grant to develop two mobile blockchain apps to deliver transparency and traceability to Liberian wild-harvest palm oil supply chains.

5.3 STRENGTH Uniting the industry

The GSMA's vision is to unlock the full power of connectivity so that people, industry and society thrive.

Serving the needs of members

The annual survey of operator member CEOs received its highest response rate in recent years, with 32% of CEOs responding. The survey revealed a hugely encouraging NPS score of 45, an increase of 7 points over 2022, reflecting Heads of Regions' efforts in reaching out to CEOs, promoting working group participation, and increasing regional C-level meetings and communications.

> **My message for members, and especially the MNOs, I encourage them to actively take part in the working groups, in order to shape the future of this industry as we have done for the last 30 years"**
>
> **Sergio Cozzolino,** International & European Affairs, TIM, GSMA SIM/eSIM Working Group Chairman, GSMA ISAG Working Group Deputy Chairman

Key Category Results Dashboard

Annual CEO Survey (& Board/All-Member)

Strategy
▲2%
2022: 89%
2021: 92%
91%
Board: 100%
All-Member: 92%
Strategy and remit aligned to the needs of my business

Governance
▲8%
2022: 81%
2021: 89%
89%
Board: 100%
All-Member: 80%
Governed in an open and transparent manner

Technology
▲5%
2022: 81%
2021: 86%
86%
Board: 100%
All-Member: 88%
The most significant technology topics

Advocacy
▲4%
2022: 82%
2021: 84%
86%
Board: 100%
All-Member: 73%
Effectively advocates for industry positions

Public Policy
▲6%
2022: 82%
2021: 86%
88%
Board: 95%
All-Member: 79%
Effectively addresses the most relevant policy and regulatory topics

Outreach
▲4%
2022: 85%
2021: 92%
89%
Board: 95%
All-Member: 80%
The GSMA's world-class in-person events are important to my business

Impact
No change
2022: 92%
2021: 95%
92%
Board: 100%
All-Member: 81%
Plays an impactful role in the development of the mobile communications industry

Membership
▲5%
2022: 78%
2021: 81%
83%
Board: 100%
All-Member: 74%
Membership delivers measurable, tangible value for my business

In light of 6% margin of error, scores remain largely unchanged

In April, the GSMA launched Member Gateway, the new member portal. Leveraging Microsoft 365 technology, the platform is scalable and is designed to enhance collaboration among working group members. Complementing the Member Gateway is Roaming Gateway, a single hub for the GSMA's numerous roaming tools, which had previously resided in both the GSMA InfoCentre2 and RAEX platforms.

> **The GSMA is an industry group that can truly converge all the different forces into what the operators, vendors, software developers and others in the ecosystem require. Not only this, the GSMA plays a crucial role in policy and spectrum, the lifeblood of what makes this industry successful."**
>
> **Caroline Chan,** Vice President, Network and Edge Group, Intel

> **I'm impressed by GSMA's initiatives like NESAS, Signalling, Interconnect PRD's, IoT, 5GCKB, and more. These are not just guidelines, but potential regulatory foundations to enhance security. This continuous focus on Regulatory Compliance is proof to GSMA's dedication to the industry's security and compliance."**
>
> **Muhammad Moqeet ur Rab,** Senior Manager, Security Architecture & Governance, Omantel

2023 marked a triumphant chapter for Wholesale Agreements and Solutions (WAS) events, with two events attracting more than 1,100 in-person attendees – in line with pre-pandemic attendance records. This success owes much to the members that hosted them – TELUS and Infobip – and the support of valued sponsors. Moreover, members who contribute their expertise during conference sessions enrich knowledge sharing among attendees, and importantly, the dedicated roaming community that conducts critical negotiations for the tens of thousands of roaming agreements necessary for the year ahead.

To optimise processes and align with industry advancements, the Interoperability Data Specifications and Settlement (IDS) working group decided that the TAP (Transferred Account Procedures) standard will no longer be enhanced for 5G billing. The TAP replacement is a more streamlined, simplified and adaptable process known as BCE (Billing and Charging Evolution). To facilitate a smooth transition and ensure members are well equipped, the GSMA offers comprehensive training on this process, while encouraging participation and promoting the opportunity to contribute to the shaping of future standards.

Completion of IoT eSIM

In response to member requests to simplify the eSIM architectures, in May the GSMA published the new eSIM standard for IoT devices. This new architecture[13] is the largest enhancement for provisioning IoT devices since the original M2M standard introduced for the M2M market nearly 10 years ago. A significant benefit is that the new standard requires very low levels of integration.

13. https://www.gsma.com/esim/esim-specification/

Addressing global and regional challenges

The scale of mobile connectivity, and its importance in the daily lives of more than 5.4 billion people, means that the GSMA is uniquely placed to help address the world's biggest societal and economic challenges, by developing industry-wide positions.

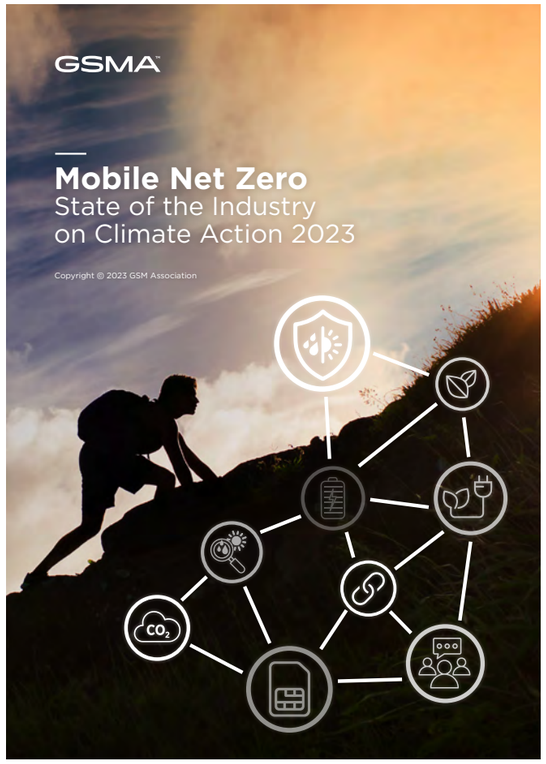
Climate

The climate crisis remains one of the world's most pressing challenges. In March, the GSMA released its third annual report *Mobile Net Zero: State of the Industry on Climate Action 2023*,[14] highlighting how the mobile industry is progressing against its ambition to be net zero by 2050. To date, 62 operators, representing 61% of the industry by revenue and 46% by connections, have committed to rapidly cutting their emissions over the next decade, an increase of 12 operators from last year's report.

The GSMA continues to encourage key companies across the industry to disclose climate impacts and set targets in line with the net zero ambition. In 2023, the GSMA sent CDP (Carbon Disclosure Project) disclosure requests to more than 100 operators and 200 industry suppliers, the data from which is used to produce the *Mobile Net Zero* report[15] updates.

In June, 12 leading operators signed up to circularity targets developed jointly with the GSMA to encourage the number of take back schemes of mobile devices and to ensure no device would end up as waste in landfill. In 2024, the GSMA will support further engagement with suppliers around circularity.

The GSMA also announced 12 new grantees from the GSMA Innovation Fund for Climate Resilience and Adaptation, which is supported by the UK Foreign, Commonwealth and Development Office (FCDO) and the Swedish International Development Cooperation Agency (Sida).[16] This Innovation Fund aims to accelerate the testing, adoption and scalability of digital innovations that help the world's most vulnerable populations anticipate and respond to the negative impacts of climate change.



2023 also saw the launch of the GSMA Innovation Fund for Climate Resilience and Adaptation 2.0,[17] which attracted nearly 600 applications from innovators spanning Africa, Asia, Latin America and beyond, harnessing the power of mobile and digital technology to tackle urgent climate challenges.

Digital technology also offers significant potential to address biodiversity loss and strengthen the management of the world's natural resources.

14. https://www.gsma.com/betterfuture/resources/mobile-net-zero-state-of-the-industry-on-climate-action-2022-report
15. https://www.gsma.com/betterfuture/resources/mobile-net-zero-state-of-the-industry-on-climate-action-2023
16. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2023/06/GSMA_Emerging-trends-for-climate-tech-innovations_2023.pdf
17. https://www.gsma.com/mobilefordevelopment/the-gsma-innovation-fund-for-climate-resilience-and-adaptation/

In 2023, the GSMA ClimateTech and FCDO-funded Reversing Environmental Degradation in Africa and Asia (REDAA) programmes released a new study exploring barriers and opportunities to such solutions.[18]

The GSMA also published reports on the role of digital technologies in enabling climate financing. Mobile connectivity serves as the foundation for a range of digital technologies, such as payments, platforms, artificial intelligence, the Internet of Things and blockchain, which are unlocking access to climate financing for start-ups, businesses and service providers operating in low- and middle-income countries.

With cities accounting for 70% of global carbon emissions, positive change in urban areas is a specific focus for the GSMA. This is true particularly across Africa and Asia, where 90% of urban growth from now until 2050 will be concentrated. Cities need to embrace digital innovation and public-private collaboration to adapt to climate change and deliver climate-resilient and sustainable services such as energy, water, sanitation, waste management and transport. The GSMA has supported urban innovators to scale their solutions, while also building partnerships for climate impact between private and public sector stakeholders, and the mobile industry across cities in LMICs.[19]

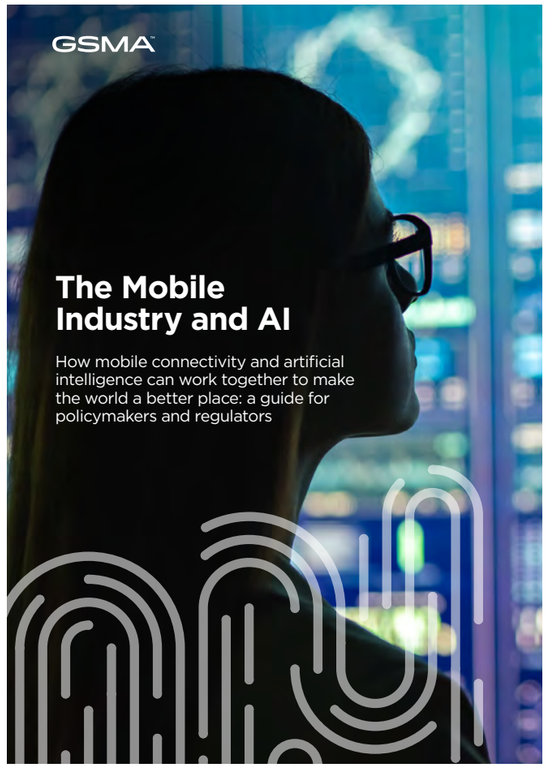
Environmental, social and governance

Environmental, social and governance (ESG) frameworks help stakeholders understand how organisations are managing risks and opportunities related to ESG criteria. In 2022, the GSMA published an industry-wide ESG reporting metrics framework[20] in close collaboration with a taskforce of mobile operators, EY and the Yale Center for Business and the Environment, and experts from the investment community. In 2023, six operators – Telefónica, stc, Globe, Singtel, Axiata and Airtel – serving hundreds of millions of subscribers, adopted the ESG Framework in their sustainability reports. As well as aiming to further increase operators' adoption of this framework in 2024, the GSMA continues to support mobile operators on industry best practice on key material issues for the sector.

Artificial intelligence

Artificial intelligence has advanced to a point where it is now playing a major role in automating processes across the economy. Together with its global taskforce, the GSMA created *The mobile industry and AI guide*[21] for policymakers and regulators, outlining how mobile connectivity and artificial intelligence (AI) can work together to deliver impactful ethical AI solutions. A roundtable at the Ministerial Programme at MWC Barcelona brought together policymakers, leading mobile operators and international organisations to discuss the role each stakeholder should play in building a thriving, trustworthy and innovative AI environment. The GSMA also submitted input to various public consultations (in Europe, India, Pakistan, Senegal and ASEAN) and delivered capacity building courses to governments and regulators around the world.

Following the publication of the *AI Ethics Playbook*[22] and tools[23] in 2022, the GSMA helped mobile operators in different regions of the world integrate the tools into business practice. This resulted in increased adoption and requests to support the implementation of responsible AI activities within industry. Furthermore, the GSMA's work was recognised by leading international organisations. For example, UNESCO invited the GSMA to present at key fora[24] and the OECD incorporated the GSMA guidance into its *OECD.AI Policy Observatory*,[25] and the AI Verify Foundation invited the GSMA to join and provide recommendations on responsible AI by design.



The GSMA continued its AI for Impact (AI4I) initiative to commercially scale AI, while protecting privacy and implementing ethics by design. In 2023, three additional AI leads from mobile operators joined the initiative, taking the total to 27 mobile operators and a network of global thought leaders (including the OECD, UNESCO, AI Verify Foundation).

To identify and progress priority use cases, the GSMA collaborated with the Humane AI Net project, the German Research Centre for Artificial Intelligence (DFKI), Telefónica, the European Telecommunications Network Operators' Association (ETNO) and German Entrepreneurship, to jointly publish an *AI Research agenda for the telecommunications industry.*[26] The GSMA further identified how mobile AI could be used to aid disaster preparedness and response, as input to the UN Early Warning Systems for All (EWS4A) initiative.

The GSMA Governance model for AI is to be featured as an illustration of how internal governance structures can be designed in the ASEAN Guide on AI Governance and Ethics.

18. https://www.gsma.com/mobilefordevelopment/resources/exploring-barriers-and-incentives-to-digital-solutions-in-natural-resource-management/
19. https://www.gsma.com/mobilefordevelopment/blog/introducing-freetown-waste-transformers-organic-waste-to-energy-in-sierra-leone/, https://www.gsma.com/mobilefordevelopment/digitalutilities/the-digital-utilities-partnerships-hub/
20. https://www.gsma.com/betterfuture/resources/esg-metrics-for-mobile
21. https://www.gsma.com/betterfuture/resources/the-mobile-industry-and-ai
22. https://www.gsma.com/betterfuture/wp-content/uploads/2022/01/The-Mobile-Industry-Ethics-Playbook_Feb-2022.pdf
23. https://www.gsma.com/aiethics-saq/
24. https://foroialac.org/en/
25. https://oecd.ai/en/catalogue/tools/the-ai-ethics-playbook:-implementing-ethical-principles-into-everyday-business
26. https://www.humane-ai.eu/humaneai-research-telecoms/

Shaping media narratives

In 2023, the GSMA's communications strategy had three objectives:

1

Position the GSMA as a thought leader, prioritising earned-first media relations

2

Create more connections with vertical industries, to demonstrate the breadth of GSMA members

3

Modernise year-round communications approach, supported by data-driven insights

The GSMA crafted new and refined messaging, tailored for selected spokespeople, and cultivated stronger connections with both tier-one and trade media. The overarching goals were to uphold the clarity and consistency of messaging, and to foster a deeper comprehension among new readers of the unique role of the GSMA.

Communications emphasised the pivotal role that the GSMA plays in the industry's efforts to address global challenges, with a focus on key themes such as the investment gap, spectrum, GSMA Open Gateway, the usage gap and 5G momentum.

Positioning GSMA events as unmissable within the industry and spotlighting their expansion into adjacent and vertical sectors was also a focus, to reinforce the relevance of MWCs and M360s for media professionals.

GSMA welcomed 2,400 international journalists to MWC Barcelona, which generated 136,500 media stories throughout the event. Notably, 26,900 of these stories featured prominent GSMA references, and 116 pre-event and on-site interviews/briefings were organised with GSMA spokespeople.

The GSMA continues to diversify PR content by reducing the number of press releases, maximising the impact of the most newsworthy topics, and shifting focus to other channels, such as external speaker platforms, blogs, influencer relationships, open letters, media roundtables, and in-person briefings. This approach emphasises quality and relevance in the GSMA's interactions with the media.

Bloomberg · CNBC · CNN · EL PAÍS · FT FINANCIAL TIMES · Forbes · POLITICO

THE TIMES · THE WALL STREET JOURNAL. · REUTERS

5.4 GROWTH Extending access

The GSMA supports the growth of the mobile industry in multiple ways. One key area of focus is helping mobile operators to fully monetise the capabilities of their new 5G networks by providing the developer community with the tools and access they need to create compelling services. Another priority is helping mobile operators to close the multiple digital divides, broaden financial inclusion and reduce the gender gap in adoption and usage of mobile services.

Monetising 5G

Mobile operators and developers need to work together to unlock the full potential of 5G networks to realise monetisable value. At the GSMA Board meeting in September 2022, 14 mobile operators signed an MoU to create a framework of open application programming interfaces (APIs), designed to provide universal access to mobile networks, allowing developers and cloud service providers to improve and build new digital services and accelerate the development of immersive technologies.

This MoU led to the launch of the GSMA Open Gateway initiative at MWC Barcelona 2023, with the support of 21 mobile operators. Facilitated and driven by the GSMA, the initiative is designed to expose and monetise telecommunication network capabilities through open APIs and universal federation.

GSMA Open Gateway APIs are defined, developed and published in CAMARA, the open source project for developers to access enhanced network capabilities, driven by the Linux Foundation in collaboration with the GSMA. Working in CAMARA, simple and clear APIs between telcos and enterprise developers can be delivered quickly, using developer-friendly tools and software code.

By the end of 2023, a total of 39 operator groups, encompassing around 228 operators representing over 64% of mobile connections globally, were supporting the GSMA Open Gateway initiative. Each committed to launch at least one CAMARA API by the end of 2023, and by 31 December 21 operators had achieved this.

GSMA Open Gateway works with industry partners, such as Azure, AWS, Ericsson/Vonage, Infobip and Nokia, to provide three go-to-market structures for enterprise developers through marketplaces, reseller channels and directly to operators.

Local mobile operators are acting as champions in 15 markets with the aim of aligning go-to-market APIs and facilitating commercial product launches by MWC Barcelona 2024, giving enterprise developers simple, ubiquitous access to operators' customers. Two markets have already launched, Sri Lanka and Brazil. In Sri Lanka, all four of the country's mobile operators – Bharti Airtel Lanka (Private) Limited, Dialog Axiata PLC, Hutchison Telecommunications Lanka Ltd, and SLT-Mobitel – have each launched three APIs: One Time Password Validation, Device Location and Carrier Billing, giving developers and enterprises a standard way to technically and commercially reach over 21 million Sri Lankans regardless of their network operator. In Brazil, mobile operators Claro, TIM and Vivo have announced the commercial launch of three network API services focused on improving online security: Number Verify, SIM Swap and Device Location.

To date,* 26 CAMARA APIs have been published and are ready for service. The GSMA is certifying deployments of Open Gateway APIs with operators so that the only thing the developer will need to change for global mobility is their credentials. Certification will ensure consistent and pure adoption of APIs, no matter which federation methodology is chosen. The *Northbound Open Service Level Agreement* template, which looks to standardise the terms of service between the enterprise developer and either a channel partner, or directly with the operators, has been approved and is available for operators for use. The template will speed up the contracting for each API individually.

A *Channel Partner On-boarding guide*, which provides an implementation manual for business integration, commercial principles and technical integration between channel partners and operators to support marketplace and reseller business models, has been developed and is available for use.

The *East-West Open Federation Agreement* template, which interconnects operators so API network capability calls can be provided between their networks, allowing enterprise developers a single direct ubiquitous connectivity, is set to be developed within the GSMA's Wholesale Agreements & Solutions working group by February 2024.

In 2024, the GSMA will publish a global catalogue and marketplace ensuring that enterprise developers have access to a view of live Open Gateway API deployments. This will signpost to the operators' own portals to encourage adoption.

Since the launch of Open Gateway at MWC Barcelona, there have been 5,000 media articles and six pieces of broadcast coverage (including Bloomberg and CNBC) covering the initiative.

*as of 31 December 2023

The inaugural GSMA Open Gateway Developer Conference, DevCon, sponsored by Nokia, 5GFF and Telefónica, was held at MWC Las Vegas, along with launch of the Open Gateway Challenge[27] – an awards programme to recognise developers who utilise public CAMARA APIs to create commercial cloud-based services. Outreach to developers has been ramping up, with Open Gateway evangelists presenting at 21 events to date, such as Kubecon, API Days, Openatom and DSP Leaders World.

In addition, the GSMA has launched the Open Gateway Community,[28] which provides a knowledge sharing space for operator and developer communities to meet and present use cases, proof of concepts and best practices. To date, more than 350 people have engaged with the Community.

27. https://www.mwcbarcelona.com/mobile-awards/categories-and-awards?name=2g-open-gateway-challenge&id=1700941&type=glomos#category-digital-everything
28. https://www.gsma.com/futurenetworks/gsma_events/gsma-open-gateway-community-meeting-1/

Addressing digital divides

The GSMA helps drive innovation in digital technology to reduce inequalities, particularly in low- and middle-income countries. The GSMA is singularly positioned at the intersection of the mobile ecosystem and the development sector, stimulating digital innovation to deliver both sustainable business and large-scale socio-economic impact for the underserved.

Governments and institutions provide donor funding to the GSMA Mobile for Development Foundation, which runs thematic programmes that research impact opportunities, engage on the ground in target countries, and provide advocacy expertise to partners.

Bill & Melinda Gates foundation

UK International Development
Partnership | Progress | Prosperity

german cooperation
DEUTSCHE ZUSAMMENARBEIT
Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Sweden Sverige

USAID FROM THE AMERICAN PEOPLE

VISA

Digital inclusion

Mobile internet adoption and usage brings with it information and opportunity, by placing everyday services within easy reach, benefitting individuals, their families and communities.

With 95% of the world's population already covered by a mobile broadband network, addressing the usage gap – the 38% of the global population with coverage, but not using the internet – is the main challenge. While important progress has been achieved in increasing internet adoption and usage, there is a growing digital divide between and within countries.

The GSMA helps the mobile industry address the usage gap by conducting research and analysis, engaging with governments, intergovernmental organisations and partners, and advocating across all channels. The GSMA's *State of Mobile Internet Connectivity 2023*[29] was downloaded 1,200 times in the first month following publication, and attracted over 2,800 page views, reinforcing the importance of this work. Key messages from the report were shared at UNESCO's Digital Learning week, the UN Global Development Conference, and the ITU-D's Regional Development Forum for Africa, and were cited by the World Bank, ITU and the OECD.

The GSMA also published the *2023 Mobile Connectivity Index*,[30] which measures the performance of 170 countries against the key enablers of mobile internet adoption – infrastructure, affordability, consumer readiness, and content and services – which is integral to the mobile industry's commitment to drive mobile internet connectivity and accelerate digital inclusion.

The GSMA's *Mobile Internet Skills Training Toolkit* has now been used to train more than 65 million people across 27 countries with the basic digital skills needed to use the mobile internet. That figure rose by more than 10 million in the year to June 2023. In 2023, modules were translated into 10 new languages, bringing the total number of languages to over 30.

The GSMA supported governments on policies to help accelerate mobile internet adoption, including by women, in India, Ghana, Nigeria, Pakistan, the Philippines, Rwanda, Tanzania and Zambia. For example, the GSMA worked with UNCDF Zambia on the development of Zambia's Digital Transformation Strategy, which was published by Zambia's Ministry of Science and Technology in October 2023. It includes objectives related to improving digital skills, affordability, and establishing a national governance framework to support digital transformation.

29. https://www.gsma.com/r/somic/
30. https://www.mobileconnectivityindex.com/

Financial inclusion

Financial inclusion is critical for fostering economic development, reducing poverty, and promoting social equity. There have been many advances in financial inclusion in the past decade with account ownership in low- and middle-income countries increasing by 30% since 2011, bringing the total account ownership for adults in low- and middle-income countries up to 71% in 2021. Yet, globally, some 1.4 billion people remain unbanked, and millions more are underserved. Across Africa, the un- and under-banked make up around 50% of the population.

Mobile money is an important enabler of financial inclusion, currently offering 1.6 billion registered users access to safe, innovative and inclusive digital financial services. As mobile money services continue to diversify and reach new markets and regions, the GSMA has supported the expansion of the ecosystem, by developing certifications, initiatives and publications, including the *State of the Industry Report on Mobile Money*,[31] the GSMA Mobile Money API, the GSMA Mobile Money Certification and the Mobile Money Regulatory Index.[32]

The State of the Industry Report on Mobile Money is the only source of supply-side data for the industry. In April, the GSMA published the 11th edition showing the continued growth of the industry, and the role of mobile money as a mainstream financial service across low- and middle-income countries. Today, the industry is processing over US$1.26 trillion annually (this is $3.45 billion/day), a 22% increase year-on-year. The report was downloaded nearly 8,000 times.

The GSMA Mobile Money Certification independently assesses a provider's ability to deliver secure and reliable services, while protecting consumers' rights and combating money laundering and the financing of terrorism. Some 244 million active accounts are covered by the 14 GSMA Mobile Money Certified Providers, with five newly certified providers being added in 2023.

The GSMA engages with policymakers, regulators, and international organisations to ensure an enabling regulatory environment, and tracks the progress of this work and the evolution of mobile money regulatory environments through the Regulatory Index. In 2023, GSMA engagement with members and central banks led to three documented cases of positive change of policies:

- a reduction in the transaction levy of 1.5% to 1% in Ghana,
- a removal of the levy entirely in Tanzania; and
- an increase in both the daily transaction limit and wallet size allowed in Kenya

In Kenya, this change saw the volume of merchant payments increase 433% and the value increase by 166%. These changes impact millions of users, driving down the costs of using mobile money and increasing the convenience and efficiency of services.

31. https://www.gsma.com/mobilefordevelopment/resources/state-of-the-industry-report-on-mobile-money-2023-2/
32. https://www.gsma.com/mobilemoneymetrics/#regulatory-index

GSMA Innovation Fund

The GSMA Innovation Fund, funded by the UK Foreign, Commonwealth and Development Office (FCDO) and the Swedish International Development Cooperation Agency (Sida), accelerates the development of mobile tech solutions that are addressing key global challenges. Through grant funding and tailored technical assistance, it positions innovators in low- and middle-income countries to scale operations and amplify their social and environmental impact. The fund's current strategic focus is on mobile internet adoption and digital inclusion, assistive tech solutions that target persons with disabilities, digital urban services that provide access to energy, water, sanitation, promote plastic recycling and waste management, climate resilience and adaptation, and humanitarian innovation.

In November, with a £1.5 million investment from the UK Foreign, Commonwealth and Development Office (FCDO), eight grantees were selected for support by the GSMA Innovation Fund for Anticipatory Humanitarian Action, using mobile technology to help anticipate potential humanitarian impacts and enable effective early response.

The GSMA Innovation Fund supports innovators by facilitating partnerships with mobile operators and public sector organisations, providing technical assistance as well as specialist advisory, tools and templates to accelerate, test, adopt and scale digital innovation. For example, the Fund is supporting Crop2Cash in Nigeria, ReCircle in India (see The "Crowding-In" effect section for more details) and Diyalo in Nepal.

Crop2Cash

In Nigeria, Crop2Cash provides smallholder farmers with access to formal financing for agricultural inputs and enables them to receive digital payments and access to other digital financial services, such as credit. The GSMA supported Crop2Cash in November 2022 to connect farmers to high-yielding drought-resistant seeds via USSD, and to provide tailored SMS weather advisory to smallholder farmers on best agricultural practices. As of March 2023, Crop2Cash had 20,011 smallholder farmers accessing its USSD solution, of which 5,513 were women.

Diyalo

In Nepal, Diyalo provides automation of water production using IoT technology and water sensors at water pump station sites. It offers IoT-based water quality monitoring technology which comprises a water intelligence system, a mobile application, and IoT-enabled web-based software known as "Watermark". The GSMA supported Diyalo in March 2022 to further develop its offering through a mobile app and enterprise dashboard for urban utility providers. As of August 2023, 16 B2B utility companies had registered on the 'Watermark' app and experienced a 10% reduction in non-revenue water. In addition, Diyalo grew the number of total app users from zero to 10,434.

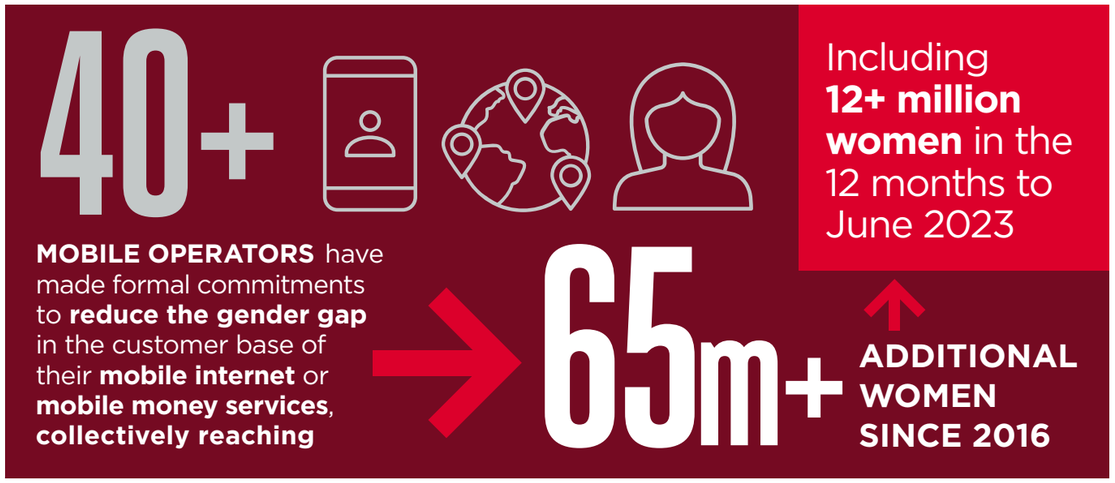
The mobile gender gap

The GSMA continues to measure the persistent mobile gender gap – women in low- and middle-income countries are 7% less likely to own a phone than men, and 19% less likely than men to use mobile internet. In May, the GSMA released the annual *Mobile Gender Gap Report 2023*[33] which shows that although more women in low- and middle-income countries are using mobile internet than ever before, their rate of adoption has slowed for the second year in a row and a significant gender gap remains. The report revealed the latest statistics and explored the key barriers to equal mobile ownership and mobile internet use in low- and middle-income countries. Key messages from the report were shared on high profile platforms, such as EQUALS and the United Nations General Assembly, and were cited by the UNCDF, Women's World Banking and USAID.

The report received tier 1 media coverage through interviews with CNBC Africa, Business Insider Africa and CNBC India and generated 25+ articles. Media and social media mentions were 84% up from the previous edition, while "the predicted reach" of the campaign rose by 73%. The report also saw 2,100 downloads and 5,000 page views in the first five months.

To reduce the gender gap, the GSMA has forged long-term partnerships. Through the GSMA Connected Women Commitment initiative, over 40 mobile operators across low- and middle-income countries have made formal commitments to reduce the gender gap in the customer base of their mobile internet or mobile money services, collectively reaching over 65 million additional women with these services since 2016, including over 12 million additional women in the 12 months to June 2023.

In July, the GSMA presented its work on digital and financial inclusion of women to the President of Pakistan, and in September shared knowledge on the mobile gender gap with the Economic Research Unit, Department of Telecommunications in India. The GSMA also launched the 'Outstanding Women Digital Leadership Awards' at M360 APAC.



33. https://www.gsma.com/r/gender-gap/

Humanitarian preparedness, response and recovery

Global humanitarian needs continue to rise sharply, with 360 million people now in need of humanitarian assistance and protection. Communities affected by natural disasters, food insecurity, conflict and displacement rely on digital technologies to communicate with loved ones, seek and share crucial information, and to access humanitarian assistance.

At COP-27 the UN Secretary General launched the Early Warnings for All (EW4A) Initiative, with the ambition for every person in the world to be protected by an early warning system by 2027. In 2023, the GSMA played a leading role in the initiative, reflecting the life-saving potential of mobile connectivity in disseminating early warning messages. The GSMA joined the High-Level Advisory Panel, attending the inaugural advisory board meeting in March 2023, and the Pillar 3 working group on "warning dissemination and communication", and is investing in early warning solutions through donor-funded innovation funds, conducting research on risk communications, and convening multi-stakeholder events.

In July, the GSMA, UNHCR, the ITU and the Government of Luxembourg launched the Connectivity for Refugees initiative,[34] which aims to ensure all major refugee hosting areas have available and affordable connectivity by 2030, advancing the digital inclusion of more than 20 million people forced to flee, and their hosts.

The GSMA is putting renewed focus on the Humanitarian Connectivity Charter – a set of principles and best practices developed by mobile operators on how to prepare for, respond to and recover from a sudden onset emergency.

The GSMA has to date* provided more than 11 million people with improved access to and use of life-enhancing mobile services during humanitarian preparedness, response, and recovery, which includes 1.4 million people added in 2023. During the year, the GSMA facilitated seven new partnerships between mobile operators and private sector and humanitarian organisations, taking the total to 38 partnerships.

> **The GSMA continues to play an important role as a broker between the humanitarian aid and development sector and the mobile industry, whose contribution is as critical as it ever has been in helping us solve the complex problems forcibly displaced people and their hosting communities face in a challenging global environment. The investments made through the Mobile for Humanitarian programme play a catalytic role in nudging the entire sector forward, improving the way we do business, supporting communities and ensuring that forcibly displaced communities around the world can access connectivity."**
>
> **Hovig Etyemezian,** Head of Innovation Service, UNHCR

34. https://www.unhcr.org/innovation/connectivity-for-refugees/

*as of 31 December 2023

5.5 SPEED Accelerating the future

As a major investor in information and communications infrastructure, the mobile industry is pivotal to the ongoing digital transformation of the global economy and individual sectors. Mobile connectivity is vital to realise the digital ambitions of governments and the private sector alike.

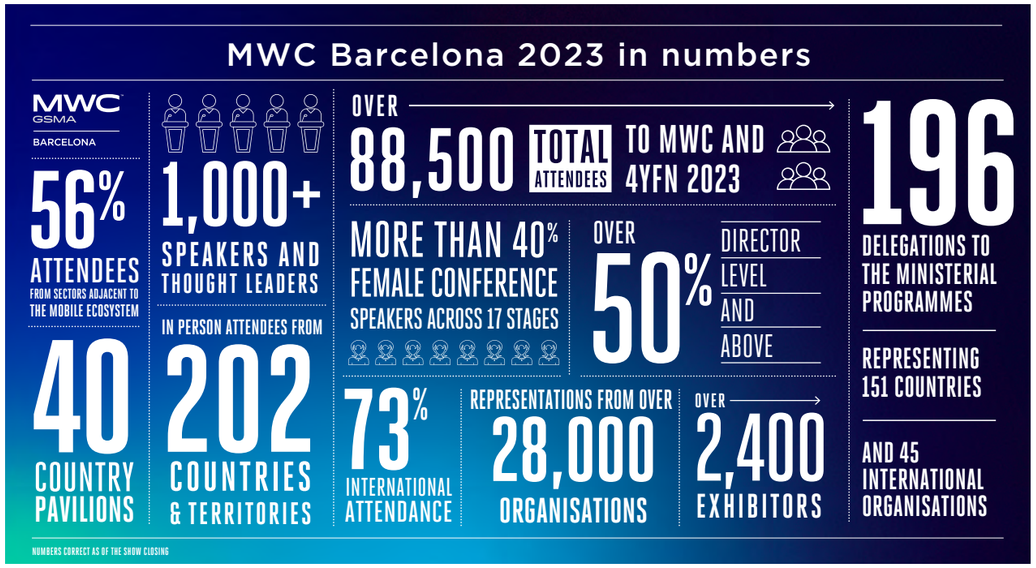
The GSMA continues to facilitate the mobile industry's future investment in multiple ways – including membership, working groups and communities, the development of industry-standard specifications, ecosystem engagement and cross-sector collaboration, access to the GSMA Foundry, global events, and analysis and insights from proprietary data. GSMA expertise across these areas helps inform the business strategy and decision making of members in an ever more complex world.

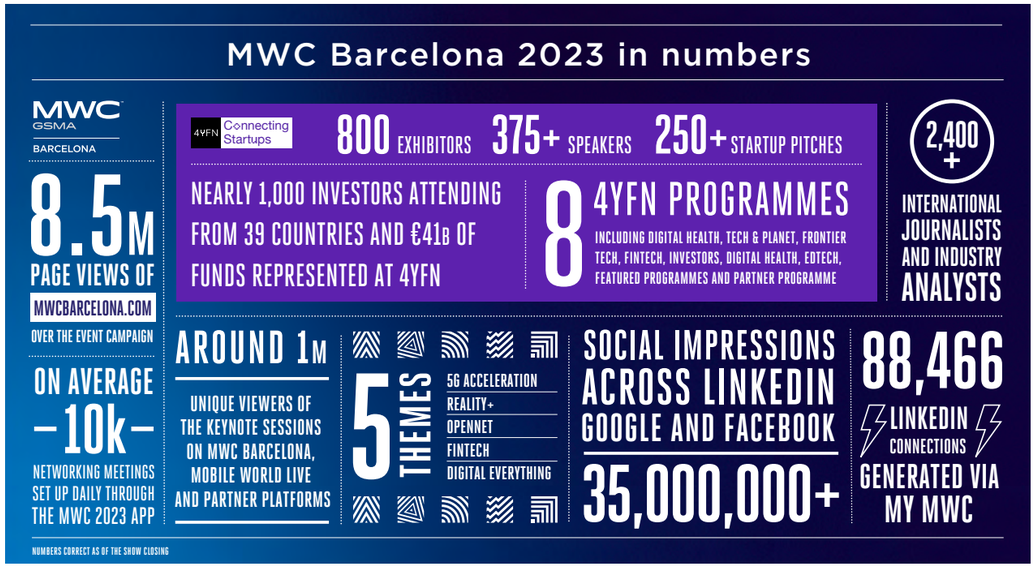
Convening our global community

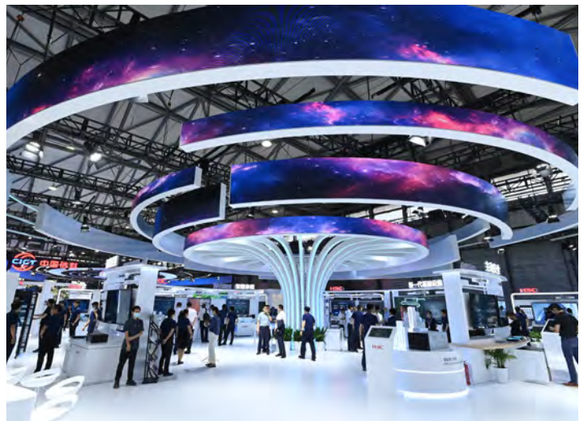
The convening power of the GSMA is central to its full value to members and its impact on society. GSMA events bring together key players from the private and public sectors, as well as partners from across other industries and regions, to progress the industry and therefore, wider society.

MWC Barcelona 2023 saw 88,500 people attend from every country in the world. It was a very strong reminder of what is possible when people convene face to face – progressing relationships, sales, policies, international co-operation, social issues and much more.

In 2023, the percentage of female speakers and non-mobile industry speakers continued to rise at GSMA events. Female speakers increased from 24% (2018, 2019 and 2021 three-year average) and 35% in 2022, to 38% in 2023, for MWC Barcelona and MWC Las Vegas. Non-mobile industry speakers increased from 19% in 2022 to 20% in 2023 for MWC Barcelona.







MWC Shanghai 2023 in numbers

MWC GSMA SHANGHAI

IN PERSON ATTENDEES FROM **115** COUNTRIES & TERRITORIES

NEARLY **37,000** TOTAL ATTENDEES TO MWC SHANGHAI

NEARLY **1,850,000** UNIQUE VIEWERS OF THE KEYNOTE SESSIONS ACROSS MEDIA PARTNER PLATFORMS

>1M IMPRESSIONS ON OUTSIDE-OF-CHINA MEDIA PLATFORMS

300 SPEAKERS AND THOUGHT LEADERS

NEARLY **30%** DIRECTOR LEVEL AND ABOVE

OVER **2,000** C-SUITE EXECUTIVES

ATTENDEES REPRESENTING **8,000** COMPANIES

NUMBERS CORRECT AS OF THE SHOW CLOSING

MWC Shanghai 2023 in numbers

MWC GSMA SHANGHAI

NEARLY **300** EXHIBITORS, SPONSORS AND PARTNERS

OVER **460** INTERNATIONAL MEDIA OUTLETS AND INDUSTRY ANALYSTS

>3.5M BANNER IMPRESSIONS ON INTERNATIONAL MEDIA PARTNER PLATFORMS, INCLUDING

>2.5M ON TIME.COM

NEARLY **50%** OF CONFERENCE ATTENDEES ARE HOLDING SENIOR LEVEL POSITIONS

OVER **30%** FROM INTERNATIONAL MARKETS

OVER **20%** FEMALE KEYNOTE SPEAKERS

OVER **30%** ATTENDEES FROM ADJACENT INDUSTRIES BEYOND THE MOBILE SECTOR

NUMBERS CORRECT AS OF THE SHOW CLOSING

MWC Las Vegas 2023 in numbers

MWC GSMA In partnership with ctia

OVER **120** HOURS OF CONTENT DELIVERED

IN PERSON ATTENDEES FROM **80** COUNTRIES

19% INTERNATIONAL AUDIENCE

17% C-SUITE EXECUTIVES AMONG ATTENDEES

57% DIRECTOR LEVEL & ABOVE

4 THEMES
- 5G ACCELERATION
- AGE OF AI
- DIGITAL EVERYTHING
- ENTERPRISE MOBILITY

380 SPONSORS & PARTNERS

60% ATTENDED FROM CORE INDUSTRIES

40% ATTENDED FROM VERTICAL INDUSTRIES

300 SPEAKERS

35% FEMALE SPEAKERS

NUMBERS CORRECT AS OF THE SHOW CLOSING

MWC Las Vegas 2023 in numbers

MWC GSMA In partnership with ctia

65 JOURNALISTS

OVER **896,000** EMAILS DELIVERED ACROSS CAMPAIGN

1.4M SEARCH IMPRESSIONS TO MWCLASVEGAS.COM

ONLINE IMPRESSIONS ACROSS SOCIAL PLATFORMS **238,000+**

12 COUNTRY PAVILIONS

NEARLY **1,900** LIVE VIEWS OF KEYNOTE SESSIONS ONLINE AT MOBILE WORLD LIVE

The HUB STARTUP & INNOVATION ZONE

2 STAGES, 18 SESSIONS, 43 SPEAKERS

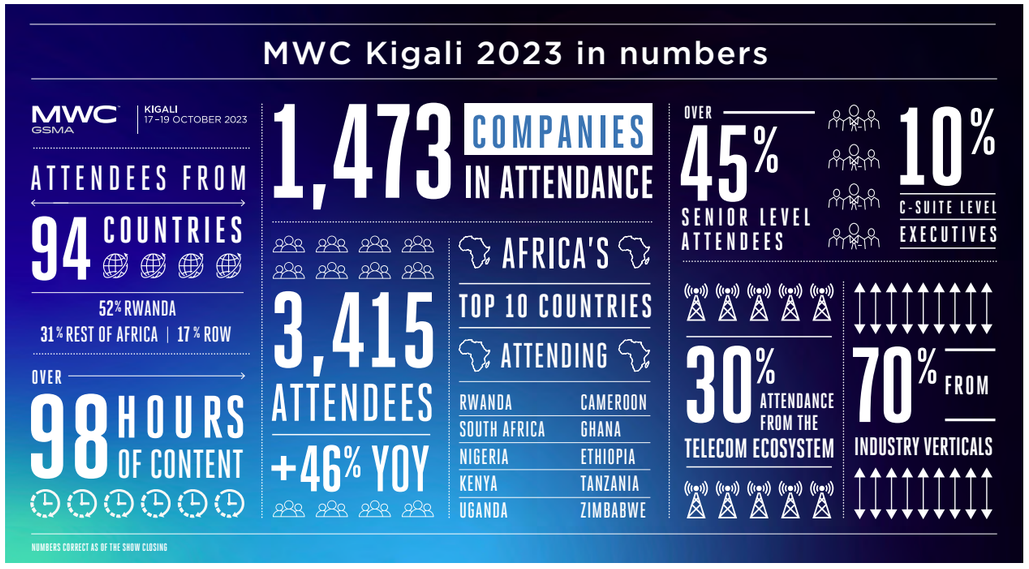
SESSIONS INCLUDED THE GSMA INTELLIGENCE SATELLITE SUMMIT, SUSTAINABILITY SUMMIT AND DEV CON

INDUSTRY CITY

13 SESSIONS, OVER 1,000 ATTENDEES

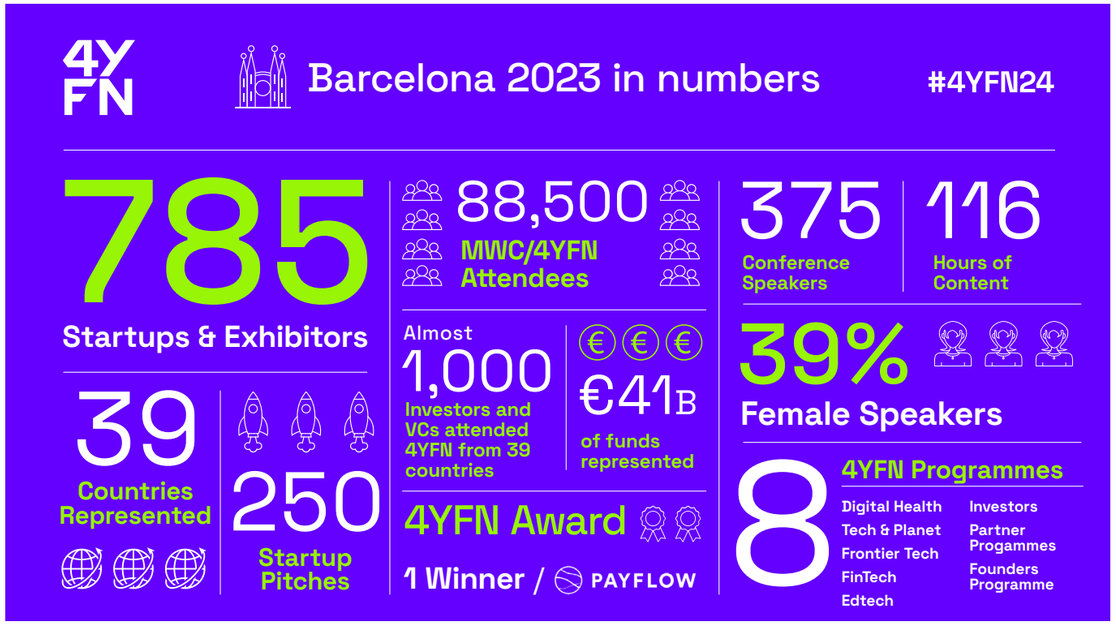
JOINING THE SPORTS & ENTERTAINMENT, MANUFACTURING, FINTECH AND SMART MOBILITY SUMMITS

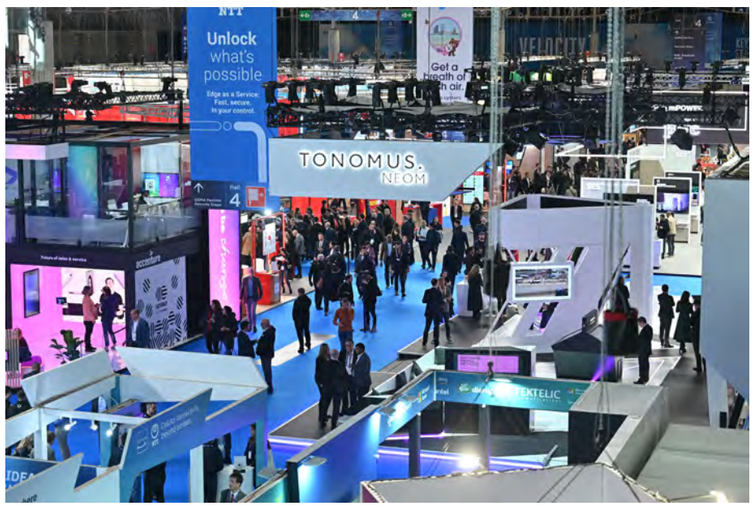
NUMBERS CORRECT AS OF THE SHOW CLOSING



MWC Kigali 2023 in numbers
MWC GSMA
KIGALI
17–19 OCTOBER 2023
ATTENDEES FROM
94 COUNTRIES
52% RWANDA
31% REST OF AFRICA | 17% ROW
OVER
98 HOURS
OF CONTENT
1,473 COMPANIES IN ATTENDANCE
3,415 ATTENDEES
+46% YOY
AFRICA'S
TOP 10 COUNTRIES
ATTENDING
RWANDA
SOUTH AFRICA
NIGERIA
KENYA
UGANDA
CAMEROON
GHANA
ETHIOPIA
TANZANIA
ZIMBABWE
OVER
45% SENIOR LEVEL ATTENDEES
10% C-SUITE LEVEL EXECUTIVES
30% ATTENDANCE FROM THE TELECOM ECOSYSTEM
70% FROM INDUSTRY VERTICALS
NUMBERS CORRECT AS OF THE SHOW CLOSING

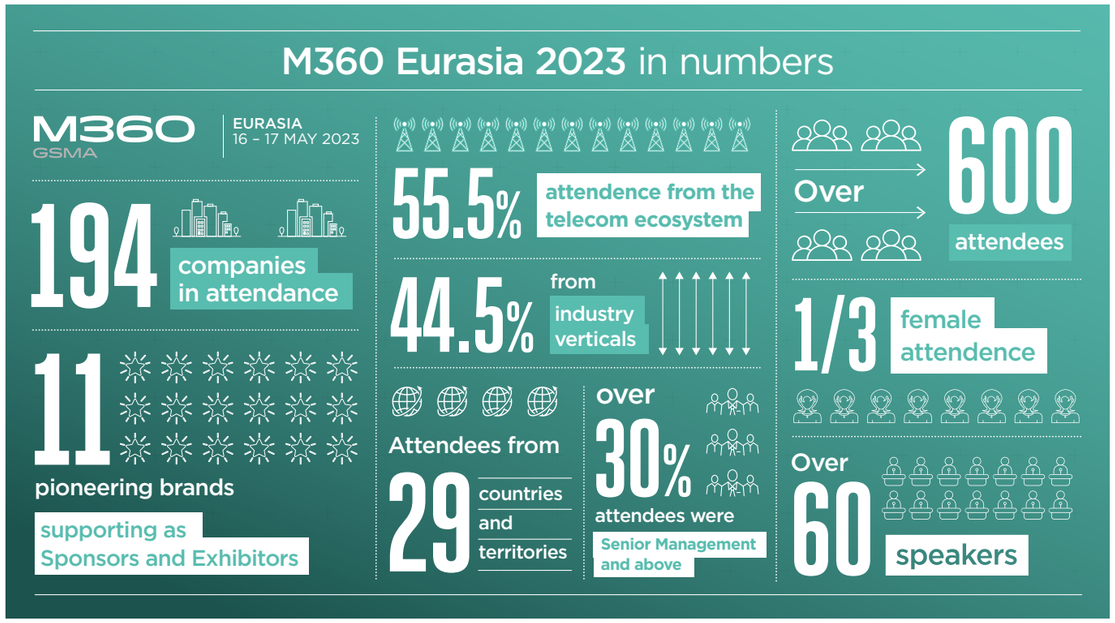
4YFN, the startup event at MWC Barcelona, connects entrepreneurs, investors, and companies to launch new business ventures together. 4YFN will celebrate its 10-year anniversary in 2024, after welcoming 22,000 attendees in 2023, and rebranding for a more dynamic and modern look and feel, to reinforce future growth.



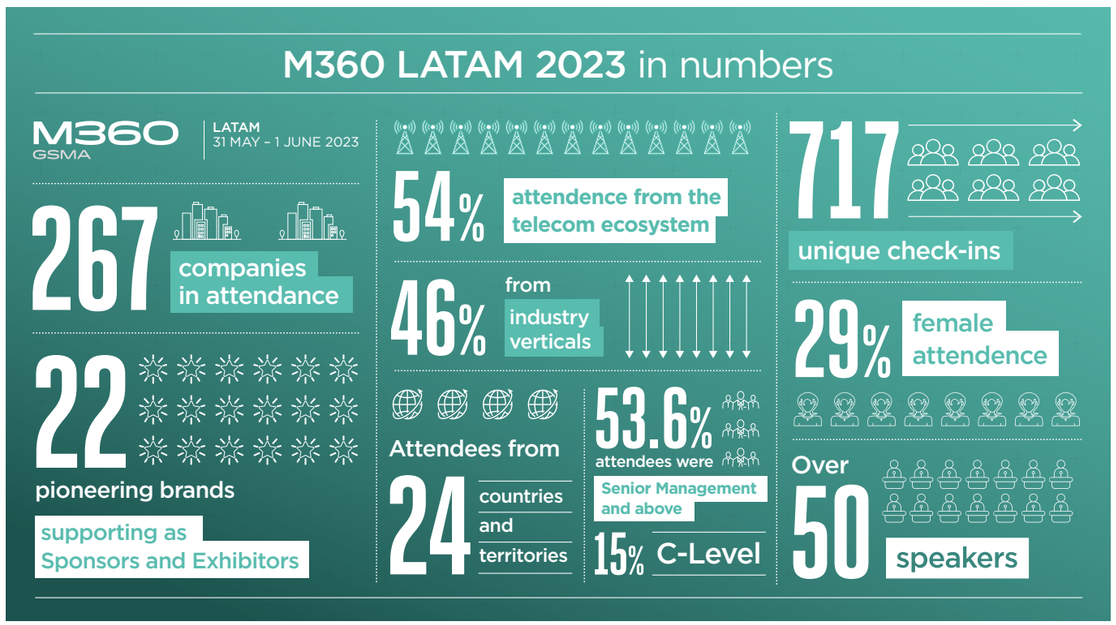


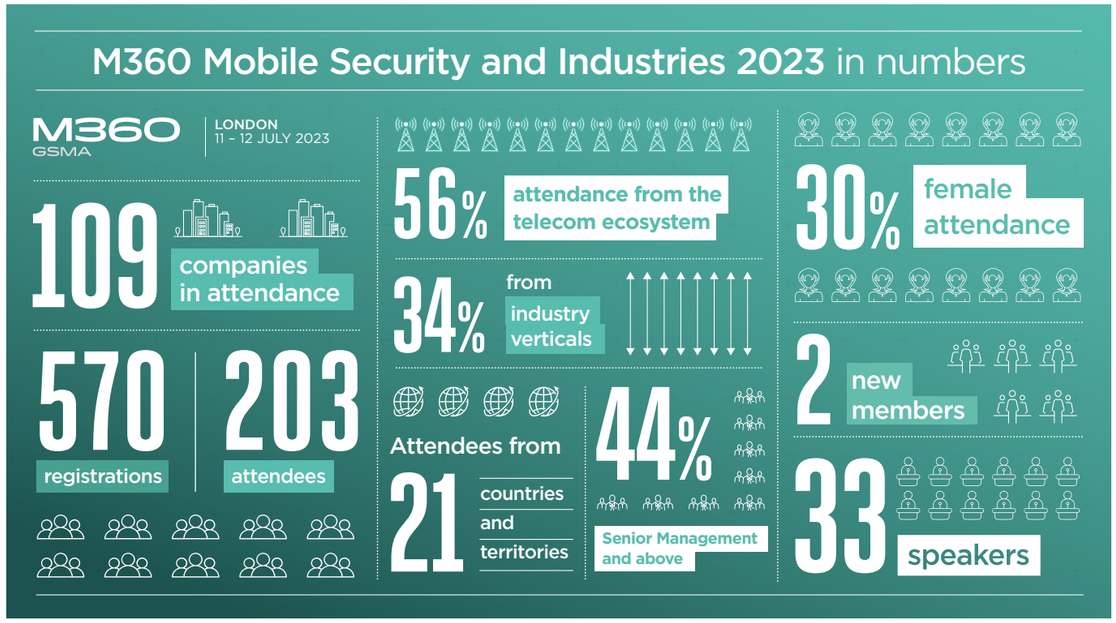
The GSMA's regional M360 series is designed to reach all GSMA members and address their needs very specifically.

In May, M360 Eurasia welcomed over 600 attendees, from 194 organisations and 29 countries and territories to the inaugural event in Azerbaijan's capital city, Baku, including speakers from Azercell, Veon, Google, the World Bank and the ITU.



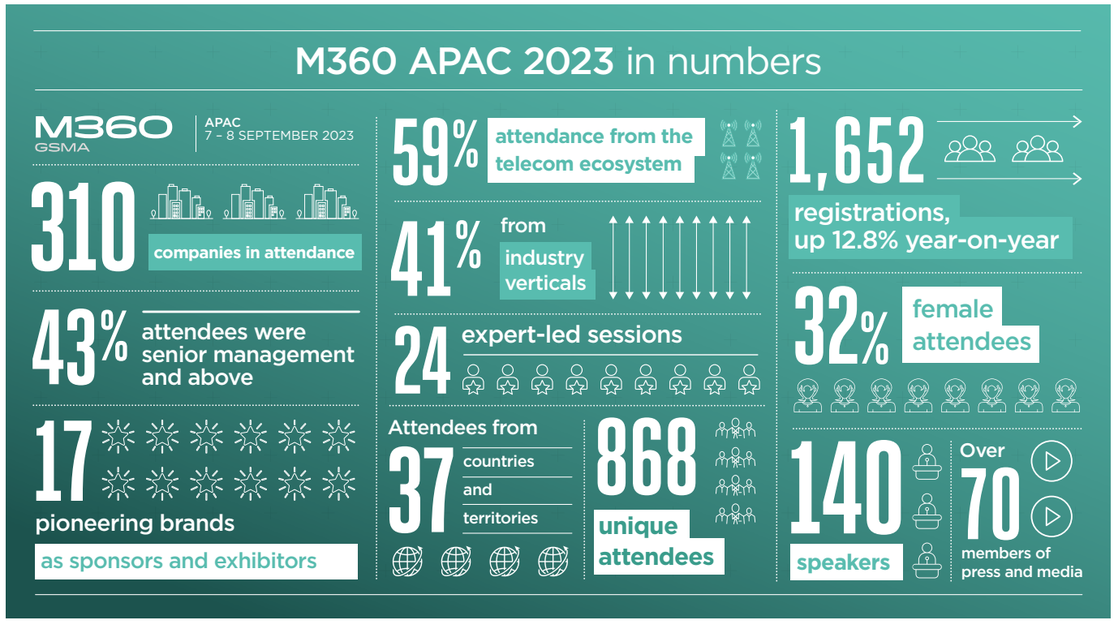
M360 LATAM hosted over 700 attendees in México City in May, providing a conference platform to cultivate public and private co-operation in mobile and adjacent industry verticals, to discuss their challenges and successes, as well as network with peers.



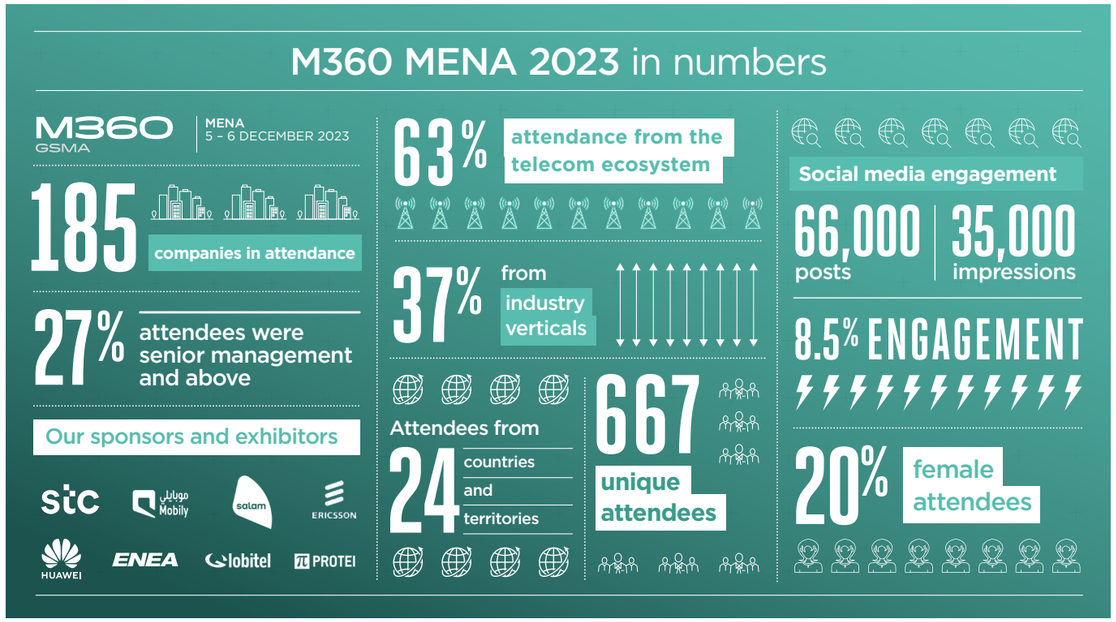


In July, the GSMA hosted its first M360 in the UK – M360 Mobile Security and Industries – at the GSMA offices in London, and welcomed over 200 security industry professionals to share best practices on how to securely unlock the value of mobile technologies and transform industries including aviation, automotive, banking, fintech, manufacturing and telecoms. The conference covered the latest industry developments in establishing trust and identity, securely deploying IoT solutions, the importance of eSIM, and successfully managing the overall threat landscape.

More than 850 people attended the M360 APAC in Seoul, Korea in September. Leaders from the private and public sector met to discuss how to realise the full potential of the digital economy.



And in December, the GSMA hosted M360 MENA in Riyadh for the second year, where leaders from the private and public sectors discussed how to realise the full potential of the digital economy.



Forecasting the future

In 2023, a dedication to delivering market-leading insights and comprehensive data firmly established **GSMA Intelligence** as the go-to source of information for operators and the broader technology ecosystem worldwide. Delivering over 170 reports in 2023 alongside an expansive database of over 50 million datapoints, GSMA Intelligence remains at the forefront of the mobile, telecoms, and digital ecosystem landscape.

The research agenda continued to build upon work on operator strategies, commercial models, and digital trends, expanding into critical industry priorities, such as drones, gaming, eSIM, and private networks. Additional drivers of growth and relevance in 2023 include:

- Ahead of WRC-23, GSMA Intelligence upgraded its market-leading spectrum navigator platform with an all-new interactive user interface, and updated data covering spectrum assets in all markets around the world.
- The GSMA Intelligence operator energy efficiency benchmark, and cloud versus edge energy implication research, provided important insights to support sustainability planning, a strategic priority for operators.
- GSMA Intelligence's research into the role network API exposure and generative AI play in operator network transformation strategies, alongside enterprise and consumer service offers, delivered actionable insights.

30+
analysts and industry experts

350+
data metrics tracked

50m+
data points updated continuously

170+
research insights published annually

2k+
industry updates curated by our analysts

2030
forecast horizon for all data

6k+
operator networks tracked worldwide

9/10
of the top mobile operators in the world work with GSMA Intelligence

7/10
of Forbes Top Digital Companies rely on our data and insights

Mobile World Live (MWL), the GSMA's media operation, continued to play a forward-reaching role by bringing daily breaking news, expert analysis and intelligence to industry professionals. In-house editorial and production specialists worked directly with brand partners to produce bespoke strategic content and deliver it to a global audience via website and media channels.

In 2023, MWL launched a new brand and website, to modernise look and feel, and align to other GSMA brand refreshes.

MWL's flagship daily newsletter continued to serve a global community of over 177,000 mobile, tech and telecommunications professionals, with strategic emphasis on curating engaging editorial content for its audience.

As the lead media partner for the GSMA, MWL played an active role across GSMA events. At MWC Barcelona, MWL TV live-streamed keynotes, CxO interviews, show floor features and the GLOMO Awards, making all content available on-demand immediately on MobileWorldLive.com. This generated more than 283,000 live views and 4,500 + hours of viewing time. MWL also streamed the Mobile 360 event series to attract a wider audience, and provided MWC Las Vegas with live keynote streaming, analysis review programmes and onsite interviews.

Audience Breakdown

Mobile World Live is the leading source of news, insights and trends for the global mobile industry and currently has over **2.1 million unique visitors each year**

5.5M Total page views

2.1M Total Visitors to MWL.com

177k+ Subscribers to MWL Daily

51% business **decision makers,** made up of **C-Level, VP's** and **senior management**

- Europe 67%
- Asia 15%
- Americas 15%
- Africa 2%
- Oceania 1%

- Europe 42%
- Asia 31%
- Americas 20%
- Africa 6%
- Oceania 1%

SOCIAL MEDIA FOLLOWERS

30k Facebook
6k YouTube
50k Twitter
3k LinkedIn

Shaping the future

GSMA Foundry – The home of mobile innovation

The GSMA Foundry is the hub for cross-industry collaboration and business development, where GSMA members rapidly develop real-world solutions, nurture new ideas, and scale proven solutions globally to shape the digital future.

In 2023, the Foundry focused on project delivery in four areas – digital transformation, network efficiency, 5G monetisation and non-core revenues. Following the successful delivery of 15 new projects in 2022, Foundry activity scaled rapidly in 2023 with 30 projects delivered. One of these, World Mobile's Connecting the Unconnected project aims to close the digital divide in Africa with tethered aerostats providing connectivity from up to 300 metres in the air. The project launched the first commercial telecommunications aerostat in Mozambique in October.

The Foundry Innovation Showcase was prominent at GSMA Pavilions at MWCs in 2023. In Barcelona, eight demos featured, including Cellnex's immersive learning with bi-directional holograms, a 5G MEC Powered Digital Twin Store and the Bridge Alliance Federated Edge Hub. The annual Foundry Excellence Awards at MWC Barcelona recognised five successful projects, and at MWC Las Vegas, the Foundry promoted BeWhere's 5G CV2X trial, Ericsson's Connected Drone Testing and Nokia's Network as Code. The Foundry's networking breakfast in Las Vegas convened over 200 industry professionals, twice as many as the same event the year before.

The Foundry is supporting the development of 5G New Calling (5GNC), which brings ultra-HD, intelligent, and interactive calling capabilities to enhance basic voice and video calls. The Foundry worked with Huawei and partners to deliver a roundtable at MWC Shanghai, a webinar in September (with 980 live attendees and more than 1,400 on-demand views), three case studies, and a white paper on the role 5GNC will play in the global communications landscape over the next few years, following 3GPP's Release 18.

Also part of 3GPP Release 18, the launch of 5G-Advanced will mark the next milestone in the 5G Era. The Foundry is supporting the development of 5G-Advanced, which will improve throughput speeds, maximise coverage, enhance mobility and increase power efficiency.

The 5G Transformation Hub Challenge, which concluded at MWC Barcelona, announced six challenge winners in the categories of 5G Smart Production, Energy, Living, Entertainment, Productivity and Innovation.

In July, the Foundry and the European Space Agency announced a partnership to enhance collaboration between mobile and satellite industries and accelerate innovation in integrating satellite communications with 5G and future 6G networks. In November, the Foundry announced a new partnership with 4YFN to further align and consolidate innovation.

In 2024, the GSMA Foundry will develop and strengthen new partnerships and encourage more companies from across the industry to collaborate and drive mobile innovation forward.

> **We are excited to partner with the GSMA Foundry to bring this innovative solution to Mozambique. Our goal is to connect the unconnected and close the digital divide in Africa. We believe that everyone has the right to access the opportunities that mobile internet can offer. By using aerostats and a blockchain-based sharing economy, we can provide low-cost, high-quality, and community-owned connectivity to millions of people."**
>
> **Micky Watkins,** World Mobile's CEO

> **5G-Advanced, the next milestone in the 5G era, has demonstrated the innovativeness and future potential of the already standing 5G ecosystem with improvements to speed, coverage, and efficiency. Enhancing the XR capabilities and sustainability within AI & Machine Learning designs, 5G-A has created several business opportunities for the global enterprise market."**
>
> **Richard Cockle,** Head of GSMA Foundry

Industry communities – engaging with key customer markets

Beyond the traditional working groups, the GSMA engages with organisations to build essential connections between the mobile market and key customer markets. Industry communities focus on customer vertical markets – advanced air mobility, fintech, manufacturing and telecoms – and enabling technologies – IoT, telco edge cloud, and identity and data. This focused industry engagement enables the mobile industry to better understand market requirements and inform these key sectors about the capability and value of new mobile technology. This helps scale the mobile market for the benefit of members, their customers and the world.

Identity and data

Mobile identity and data APIs are delivering the next generation of mobile authentication, fraud detection and prevention solutions, benefitting users across the economy. The adoption of commercial solutions from the mobile industry grew substantially in 2023, with transaction volume growth remaining above 50%, even in more mature markets. Financial services widely use SIM swap data to protect against account takeovers, whilst many enterprises secure their onboarding processes by verifying customer data against mobile operator records. Analysts are recognising Number Verify – which seamlessly verifies a user's mobile number with their mobile operator - as the next generation in mobile authentication.

The GSMA Identity and Data Community supports this progress by connecting the ecosystem through sharing knowledge and best practices. In 2023, the community engaged with 105 companies, focusing on GSMA operator and industry members, and organised three online events. The community also hosted seminars at MWC Barcelona (attracting 217 attendees) and the UK M360 Mobile Security and Industries event, highlighting new opportunities for mobile identity in the enterprise market, how to scale adoption and emerging solutions, such as for age verification. To further raise market awareness, the GSMA presented the power of mobile identity enablers at four key events, including the European Identity and Cloud Conference, and participated in the OECD Recommendation on the Governance of Digital Identity.

Collaboration within the community has helped build worldwide momentum to address the issue of social engineering scams and resulted in

the initiation of a new industry specification to enable Number Verify support over Wi-Fi.

Finally, the mobile industry stepped up its involvement in the European Digital Identity project in 2023. Through the European Identity Group, the GSMA continued to engage with the European Commission and liaised with relevant standard bodies. These efforts were supported by three whitepapers highlighting how mobile assets could participate in the delivery of secure, privacy-preserving European identity wallets at scale.

FinTech

The FinTech and Mobile Economy community continued to have good momentum, growing to over 100 companies. Four member sessions exploring key trends were attended by over 300 members, and featured presentations by Telefónica, Airtel, MTN, Ethio Telecom and associate members including Alipay, Worldpay, Huawei and Ericsson. Summits at MWC Barcelona, MWC Las Vegas and MWC Kigali were well attended, providing platforms for high quality presentations from senior partners sharing compelling insights.

The community's project work focused on supporting market development of APIs. It also supported collaboration between UK Finance, UK banks and UK mobile operators to create a new scam call solution, with the first operator going live in November and others to follow. Parallel work in the US has created a successful pilot of a similar scam call solution, with roll-out earmarked for 2024. The development of a cross-industry approach in Italy has led to the development of a pilot, and work is underway in South Africa to create a cross-industry approach with the banks. Finally, the momentum from the fraud workshop at MWC Kigali, in conjunction with the Rwanda Banking Association, will enable the GSMA to shape a cross-industry approach in that market.

Security

Security has continued to be a priority area for the GSMA. In 2023 there was a focus on increasing the visibility of GSMA security activities with the launch of a new security conference at MWC Barcelona and MWC Las Vegas. The GSMA hosted the industry's first global mobile operator Chief Information Security Officer (CISO) roundtable, supplemented by the launch of regional CISO roundtables throughout the year. The GSMA also launched a Fraud and Security LinkedIn channel, reaching 1,000 subscribers.

The GSMA Telecommunication Information Sharing and Analysis Center continues to develop with a focus on new regional and topic-related data sharing groups, complementing the new Fraud & Security Intelligence Sharing sub-group. The Coordinated Vulnerability Disclosure programme has received 15 new vulnerability cases and there has been a continued focus on building closer links with security researchers. Meanwhile, the GSMA Network Equipment Security Assurance Scheme is now firmly established as the basis for an EU certification on 5G network equipment to be developed by the European Union Agency for Cybersecurity.

Digital Industries

As the fourth industrial revolution continues towards digitalisation and intelligent connectivity, the Digital Industries community is focused on driving the adoption of mobile technologies in the industrial sector through regular forums, webinars, publications and events, including the highly popular Manufacturing Summits at MWC. More than 178 attendees, representing 67 organisations from industrial enterprises, mobile operators and the wider ecosystem, joined the GSMA Digital Industries Forum in 2023 to share knowledge, lift the barriers to digital transformation in the sector, and identify innovation and collaboration opportunities.

In China, the GSMA has launched the Convergent Network Architecture of 5G and Manufacturing initiative with the three largest operators and nearly 100 vertical ecosystem partners to accelerate the usage of 5G in vertical industries.

Smart Mobility

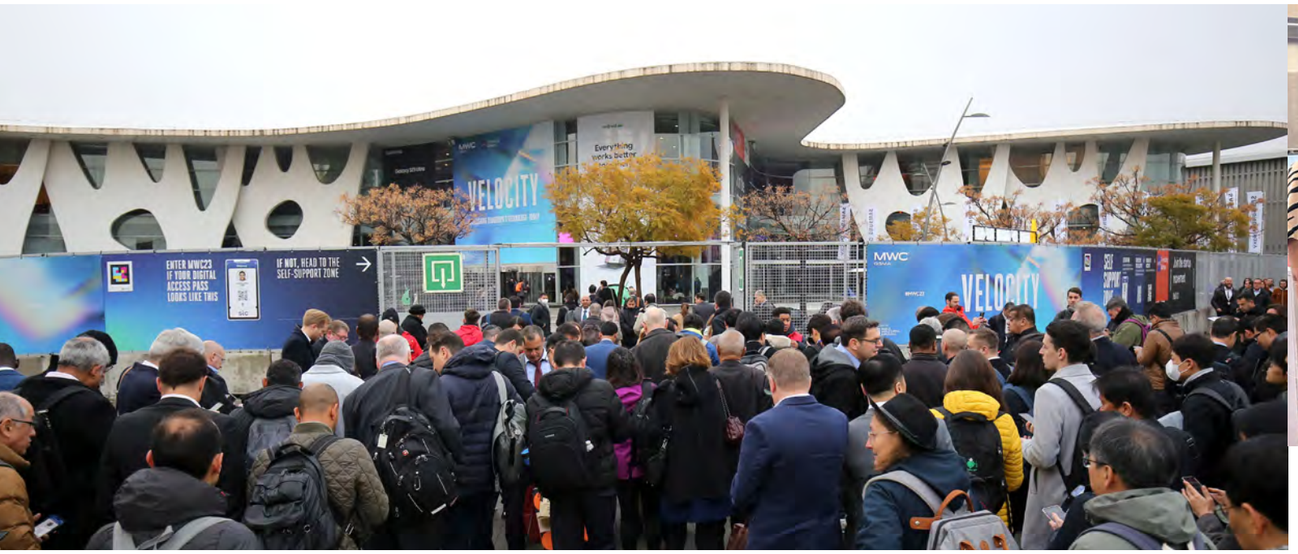
The GSMA's Smart Mobility community seeks to use mobile connectivity and services to improve the efficiency, safety and sustainability of transportation systems. The number of companies participating in either the Drone Interest Group or the Aerial Connectivity Joint Activity (the cooperation with the Global UTM Association) jumped from 65 to 123 in 2023.

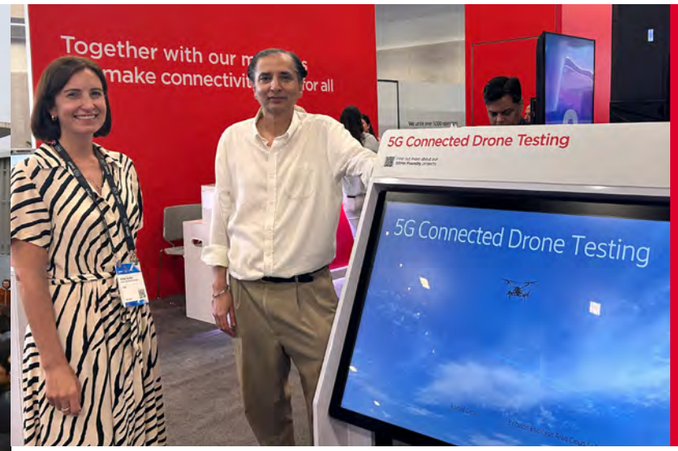
In 2023, input from GSMA members helped to drive the formulation of decisions and policies in some countries, such as the release of the Spectrum for Unmanned Aircraft Systems (UAS) licence by Ofcom in the UK, while nine major mobile network operators and 10 specialist stakeholders inputted into the GSMA report *MNO Drone Services Business Models*.[35]

To help understand the role of mobile operators in supporting UAS, the Aerial Connectivity Joint Activity produced a *Landscape Whitepaper on UAS Cellular Ecosystem*.[36] In 2023, the group also published a revised version of the *Interface for Data Exchange between MNOs and the UAS Ecosystem*[37] including information about people density. The work on people density gathered a lot of interest from EASA (European Union Aviation Safety Agency) in support of the SORA 2.5,[38] and the work is now officially part of the phase 3 of the Open Gateway API.

The GSMA has been asked to present to the International Civil Aviation Organization (ICAO) annual symposium called Drone Enable, marking the first time a representative of the mobile industry will address the aviation industry stakeholders in the ICAO symposium. The GSMA was also invited to participate in the ICAO Panel on the Trust Framework – which is also a first for an organisation from the mobile industry.

In 2023, the GSMA's new Smart Mobility website[39] attracted 10,257 page views, while the Smart Mobility sessions at the four main GSMA event featured 60 speakers and attracted over 1,200 attendees.





35. https://www.gsma.com/smartmobility/wp-content/uploads/2023/09/MNO_Drone_Services_Business_Models_Whitepaper_20231020.pdf
36. https://www.gsma.com/smartmobility/wp-content/uploads/2023/07/UAS_Cellular_Ecosystem_Whitepaper.pdf
37. https://www.gsma.com/iot/resources/gsma-foundry-case-study-digital-eyes-in-the-sky/
38. specific operations risk assessment
39. https://www.gsma.com/smartmobility/

IoT Community

The 20-member 5G IoT Strategy Group promotes IoT technology and capabilities and accelerates the adoption of 5G IoT solutions, including LTE-M and NB-IoT. It is also involved in preparations for the launch of Massive IoT and the requirements needed for the introduction of non-terrestrial networks (NTN). The community's action groups also address specific customer needs, such as provisioning, SIM, Roaming, and capacity management. In 2023, the focus for the IoT community was on energy and the environment and how IoT solutions are impacting those sectors.

In 2023, the GSMA published two factsheets[40] on energy/environment IoT solutions based on LTE-M/NB-IoT, and showcased IoT solutions in the energy sector by presenting at the ETSI IoT Conference in July. The IoT Summit at MWC Las Vegas attracted over 100 attendees and 12 speakers, and the GSMA and members Semtech and Thales showcased demos at the Enlit Europe event in Paris. The GSMA audited and updated the Mobile IoT Deployment map[41] to track a total of 252 mobile IoT networks, and held two 5G IoT Forums, to attract members to new action groups.

Advancing the 5G era

5G has been the fastest adopted generation of mobile technology. Since its initial deployment in 2019, 5G has rapidly expanded to nearly 270 countries worldwide, achieving a 16% market penetration. This achievement is testament to industry collaboration and the speed, responsiveness, and versatility of 5G networks, enabling reliable and secure connections for a multitude of simultaneous users.

As 5G industry applications continue to evolve, and demand increases for the advanced capabilities 5G networks provide, the GSMA launched the 5G Futures Community[42] at MWC Barcelona 2023, with a strategic focus of supporting key opportunities and areas of growth within industry, including 5G New Calling, 5G Advanced, 5G mmWave, 5GSA (standalone) and AI for networks. The community works closely with international ecosystem participants to share benefits, best practices, success stories and opportunities of 5G technologies, while also serving as a channel for identifying and addressing the real-world, salient challenges faced by mobile network operators and global enterprise markets.

The GSMA hosted the 5G Futures Summit 2023 series during MWC Barcelona, MWC Shanghai and MWC Las Vegas, attracting over 1,000 attendees across all three, helping to drive discussions forward and achieve change in the industry.

With the forthcoming release of 3GPP's Release 18 and 19, the GSMA is undertaking an industry-led campaign on 5G Advanced, focusing on the innovative applications that are likely to emerge over the next few years and how key players are making huge strides in this space.

Operator Platform for Telco Edge Cloud (TEC)

The Operator Platform Group brings together developers, operators, platform providers and the broader ecosystem to transform operator's exposed edge and network services and create the level of commonality required to achieve global, interoperable scale, as demonstrated by the GSMA Open Gateway (see Chapter 6).

40. https://www.gsma.com/iot/mobile-iot-resources/
41. https://www.gsma.com/iot/deployment-map/
42. https://www.gsma.com/futurenetworks/resources/watch-on-demand-5g-futures-community-webinar-1/

GSMA Services

GSMA Services help operators, device manufacturers, services providers and aggregators do business together more effectively, ultimately leading to better customer experiences. GSMA Services deliver key capabilities to the industry in the areas of device intelligence, networks certification, all operating 24x7, with high availability. There are more than 20 services in the portfolio serving more than 2,000 customers in more than 150 countries.

Some services are based on the accurate and comprehensive collated mobile device data gathered by the GSMA, some rely on the GSMA acting as a data exchange for the common good and other services underpin important interoperable service functions, ensuring the mobile ecosystem runs smoothly, such as VoLTE testing and remote SIM provisioning.

In 2023, the GSMA launched the International Revenue Share Fraud (IRSF) Prevention service, which is an important development to counter telecom fraud. It provides the most extensive and real-time database to prevent international revenue share fraud (IRSF) before it happens.

More broadly, GSMA Services' new Showcase Live bi-monthly webinar highlights key challenges being faced by the industry and offers solutions to them. The GSMA will continue to investigate new opportunities to deliver value to the mobile ecosystem in 2024 and beyond.

> Now we can create future strategies from a RAN perspective and better define radio and capacity issues, meaning our customers get optimal connectivity."
>
> **Olivier Noppe,** Handsets & Hardware CoE Lead, Commercial, Telenet, GSMA Device Map customer.

> The TAC data provided by the GSMA Device Database is our source of truth for device identification across all our products. We use GSMA Device Database to source detailed and accurate device information"
>
> **Sachie Bristow,** Head of Sales, WDS-Sicap GSMA Device Database customer

> From Vodafone's perspective, we find its use in our direct distribution provides the best customer experience, by giving an almost no-touch device activation experience."
>
> **Fabrice Denis,** Principal Manager Services & Platforms at Vodafone Group, GSMA eSIM Discovery Customer

Device

GSMA TAC Allocation
Industry appointed issuer of TAC (type allocation codes) for all connected devices to identify unique mobile equipment types

GSMA eUICC Identity Scheme
The industry appointed issuer of EINs (eUICC identification numbers) so manufacturers can create their own EIDs

GSMA Device Database
Direct access to TAC showing device and band performance-based attributes

GSMA Device Check™
Remove the risk of handling stolen or fraud-ulent devices, by checking a device's status

GSMA Device Map
TAC data overlaid with 150+ curated attributes to assist with advanced customer insights

GSMA Device Registry
Be part of the collective fight against device crime. Flag fraudulent and stolen devices

GSMA eSIM Discovery
Enable seamless eSIM provisioning with industry standard service

GSMA Network Settings Exchange
One location housing all device network settings for OEMs to retrieve so services run reliably

Certification

GSMA Security Accreditation Scheme
Security assessment of UICCC and eUICC suppliers, and of eUICC subscription management service providers

GSMA Network Equipment Security Assurance Scheme
Facilitates improvements in network equipment security and resilience levels

GSMA eUICC Security Assurance
Principles and procedures to evidence industry security standards are met to instil confidence

Network

GSMA IRSF Prevention
A global database of international revenue share fraud numbers to enable preventative action

GSMA Interoperability Testing
Tests to demonstrate that networks and devices are VoLTE capable for both non-roaming and roaming scenarios

GSMA Root DNS
Private inter-operator internet to enable roaming of packet-based network services

GSMA PathFinder™
Access 8.6+ billion numbers to r oute important and timely customer service messages

TAC: Type Allocation Code,
EID: eUICC Identifier
EIN: EUM Identification Number

For more information on GSMA Services visit: www.gsma.com/solutions-and-impact/industry-services/

Chapter 6

Looking ahead

In 2024, the GSMA will continue to help its members unlock the full potential of this new technological era, characterised by ongoing advances in the capabilities of mobile networks and related areas.

The GSMA has now completed its three-year financial recovery programme, enabling it to begin investing on behalf of members at levels similar to those before the pandemic. The GSMA has developed a strategic multi-year business plan for 2024 and beyond that prioritises resources in line with the needs of members, commits it to delivery and allows room for learning and pivoting as the market or opportunities dictate.

As well as investing in core capabilities, such as the working groups, policy, events, research, and product development, the GSMA has prioritised helping its members to monetise the massive investment they have made in 5G by opening up new revenue opportunities and developing new cost efficiencies. In this regard, a key priority for 2024 is to ensure that GSMA Open Gateway becomes a seamless, secure, open solution for developers to access 5G capabilities, akin to the SWIFT payment system in the financial services sector.

The GSMA will also continue to pursue solutions to the infrastructure investment gap, while building policy, regulatory and technological expertise in AI, quantum computing, 5G evolution and 6G, utilising existing platforms to ensure its value propositions are aligned with the industry's direction and priorities.

At the same time, the GSMA is reinforcing its Connectivity for Good work to advance positive policy, reduce inequalities and tackle the big societal challenges. In this domain, the GSMA will build depth across its core, broaden its expertise in emerging technologies, and reinvigorate its profile on the international stage. In partnership with donors, the GSMA will also continue to focus on improving lives through the use of mobile solutions that support underserved and vulnerable populations.

In an increasingly complex geopolitical landscape, the GSMA will address regional specific service needs, by building and strengthening scalable products and continuing to develop strategic partnerships and joint initiatives with industry solution partners. And, of course, GSMA events will continue to be a world-class platform for the industry and a strong financial contributor to the association.

Contact the GSMA

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Buenos Aires	Av. Del Libertador 6810, 15th Floor, C1429BMO, Ciudad Autónoma de Buenos Aires, Argentina
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Hong Kong	46/F, Lee Garden One, 33 Hysan Avenue, Causeway Bay, Hong Kong
London	1 Angel Lane, London, EC4R 3AB, UK
Nairobi	Floor 2, Delta Corner Annex, Ring Road, Westlands Lane, PO Box 45651-000100, Nairobi, Kenya
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