Technology

Taking place on February 23-25, Mobile World Congress 2021 (MWC21) was heralded as the first of its kind to combine virtual and in-person elements since the pandemic began. Around 20,000 physical attendees, plus thousands more online, heard how tech is stepping up when the world needs it most.

Summary

The Covid Effect
There was much talk at MWC21 about the huge challenges that Covid-19 has presented to global businesses. But with delegates reporting surging demand over the past year, the mobile industry sees silver linings. Virtual tools to support remote learners and workers are a key focus.

Streamlining Tech-Led Lifestyles
With consumers now leaning on tech in virtually every aspect of life, user experiences must become more intuitive, fluid and synchronised. Several important debuts at MWC21 chimed with our thinking in Towards Seamless Interfaces, swapping restrictive form factors and multiple apps for holistic systems, tactile flexi-screens and powerful wireless charging.

Ethi-Tech Evolves
Whether to help tackle environmental issues, make our roadways safer or ramp up digital equity in developing countries, technological solutions for a better world were front and centre at this year's congress.

5G Fuels Industry 4.0
From factory floors to transit hubs, 5G networks are enhancing industrial operations – with China leading the way. Echoing our takeaways from Switch Singapore 2020 (see Work Smarter, Not Harder), smart, automated production systems have the potential to not only boost efficiency but protect and redeploy employees.
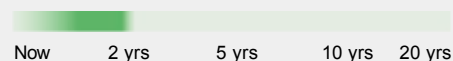
At A Glance   The Regional Focus of this Report – Asia

Major focus

Minor focus

Relevant Industries

Technology/Electronics

Work & Careers

Trend Duration

| Now | 2 yrs | 5 yrs | 10 yrs | 20 yrs |

Key Stats ✚

70%	Seven in 10 small and medium-sized businesses in Europe report a decline in revenues due to Covid-19
900bn	"During the height of the pandemic in 2020, Americans were sending 900 billion texts a day and making 800 billion calls daily on Verizon's mobile network" - Rima Qureshi, chief strategy officer, Verizon
200m	"Nearly 200 million Chinese employees and 140 million students used DingTalk while working from home (WFH)" - Alex Lee, senior director, DingTalk
50	More than 50 of the world's biggest mobile operators are disclosing their climate impacts as part of an industry-wide, climate action roadmap
90%	The Smart Lamppost made by Portuguese IoT company Omniflow can reduce power consumption by 90%, compared to a typical double-headed streetlamp
1.35m	Of the 1.35 million fatal traffic accidents happening worldwide each year, up to 96% are caused by human error
31m	Vodafone has used 5G to connect 31 million road vehicles to date in 169 European cities
3.7bn	Approximately 3.7 billion people, about half of the world's population, still don't have access to the Internet
4%	One year of mobile broadband coverage can reduce poverty by 4%
95%	Huawei is increasing Ghana's mobile coverage from 83% to 95% by deploying base stations to rural locations
75%	China accounts for over 75% of global 5G connections
62%	The majority (62%) of Chinese consumers said they planned to upgrade to 5G last year, up 12% from 2019
50x	"Drone inventory counting has increased efficiency 50-fold at Ericsson's Chinese factories, while AI has reduced the facilities' energy consumption by 15%" - Daniel Liu, IoT programme director, Ericsson
66%	"At a port in Xiamen, rolling out 5G technologies reduced labour costs by 46% and improved efficiency by 66%" - Yang Jie, Chairman, China Mobile
$650bn	5G-specific IoT devices could see the manufacturing sector add an extra $650bn to global GDP impact by 2030

The Covid Effect

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For all customers, whether corporate or education, being online is the new normal

Alex Li, Senior Director, DingTalk

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- **Remote Control:** The pandemic's upheaval of global consumers' lifestyles and working modes has been detrimental to numerous industries; as much as 70% of small and medium-sized businesses in Europe report a decline in revenues (McKinsey 2020). But it's certainly not all doom and gloom as far as tech companies are concerned.

  Rima Qureshi, chief strategy officer of Verizon, revealed that the telecoms company was dealing with 800 million calls and 900 billion texts a day during the height of the pandemic in the US – double what they usually see on Mother's Day in May. Across South-East Asia and South Asia, data consumption rose by 20-40% during lockdowns, according to Malaysia-based carrier Axiata, with traffic remaining higher than usual even when economies started to open up.

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  Digital transformation of society has been accelerated by the pandemic. In 2021, human society is entering a new digitalised era. We must utilise these advantages

  Wang Xiaochu, Chairman & CEO, China Unicom

  Reporting 200% traffic surges during last year's lockdowns, Beijing-based China Unicom put the increased need for digitisation to good use by powering remote medical examinations at Wuhan's newly built makeshift hospitals – enabling doctors to carry out cardiopulmonary ultrasounds of coronavirus patients at-distance (in one case, 700km away) via 5G-equipped medical robots.

  DingTalk, a communication and collaboration platform from the Alibaba Group, saw demand for online offices and education soar during China's ultra-strict national lockdown. In response, the company introduced a 'lite' version of the app for free to small businesses and schools.

  According to the platform's senior director, Alex Li, nearly 200 million employees from thousands of companies used DingTalk while working from home (WFH), in addition to 140 million students and seven million teachers engaging in remote learning.

  For more on edu-tech innovation, see The ABC of New-Era Education, publishing on March 22.

Verizon saw 900bn texts a day in the US at the height of the pandemic
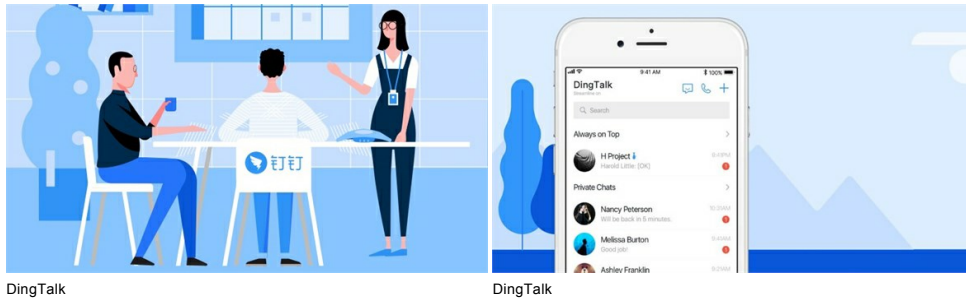
DingTalk

DingTalk

- **Virtual Learning Spheres:** In response to the WFH shift, Beijing-headquartered start-up Nreal launched a corporate version of its popular Nreal Light mixed reality (MR) glasses at MWC2021. The more durable, lightweight Nreal Enterprise Edition – controlled through eye-tracking and gesture recognition – is ideal for remote training and boosting employee productivity, explained founder and chief executive Xu Chi. The device will be available in the US and Europe in spring 2021, with Nreal targeting enterprise customers in manufacturing, retail, tourism, education, logistics and automotive markets.

  Also see our coverage of standout MR and remote working devices from CES 2021.
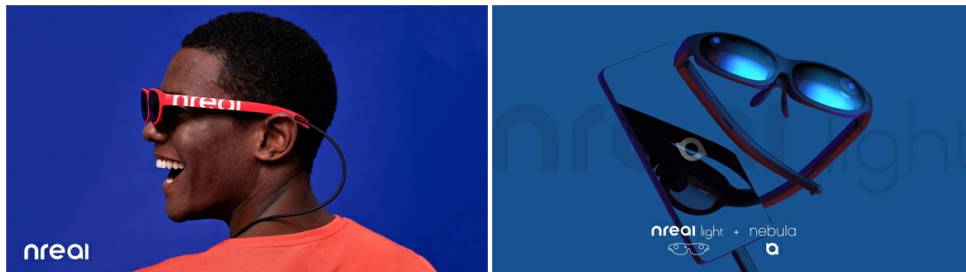
Nreal

Nreal

Streamlining Tech-Led Lifestyles

With consumers now leaning on tech in virtually every aspect of life, user experiences must become more intuitive, fluid and synchronised. Several important debuts at MWC21 chimed with our thinking in Towards Seamless Interfaces, swapping restrictive form factors and multiple apps for holistic systems, tactile flexi-screens and powerful wireless charging.

- **Charge & Roll:** Visitors were introduced to Chinese tech company OPPO's new Wireless Air Charging technology, which uses magnetic resonance to power up devices within 10cm of the charging mat; a 4,000mAh phone battery is rendered 100% full in only 20 minutes.

  This brand also demonstrated its first rollable phone, OPPO X 2021, designed to extend like a caterpillar track from 6.7 to 7.4 inches. Flexible, scroll-like personal electronics were also a highlight of CES 2021.

- **IoT Update:** Chinese tech giant Huawei debuted its Smart Home project in a 550m sq display area, encompassing a kitchen, living room, study, gym, entertainment room and garage. The installation demonstrated how numerous Huawei products, including phones, kitchen appliances and entertainment equipment, could be effortlessly integrated into the company's Seamless AI Life Strategy.

  Huawei said its focus has shifted from creating smart products to creating a smart ecosystem controlled by a repertoire of voice and gesture commands, and AI sensors that detect user behaviour.

OPPOxMWCS

Wireless Air Charging

Huawei's Smart Home project

OPPO X 2021

Ethi-Tech Evolves

Whether to help tackle environmental issues, make our roadways safer or ramp up digital equity in developing countries, technological solutions for a better world were front and centre at this year's congress.

- **Power Up:** Sustainability was a recurring topic at MWC21 – the biggest event in Asia to achieve carbon neutrality certification to date. GSMA director general Granryd opened the congress by calling up tech firms to "run businesses profitably but ethically" flanked by a visual of the 17 UN Sustainable Development Goals.

  Portugal-headquartered Omniflow unveiled the latest addition to its award-winning smart lampposts. While a typical double-headed streetlamp produces 1.3 tonnes of CO2 per year just to provide light, Omniflow lamps can reduce power consumption by up to 90%. The next-gen model incorporates wireless drone charging stations and the ability to support 5G infrastructure, alongside the patented vertical wind turbine, solar panels, air-quality sensors, EV chargers and video/audio capabilities of the existing Omniled 07 and Omniled 035 lamps.

  See Energy Cleans Up for more on eco infrastructure innovation.

Omniflow

- **Driving Progress:** Of the 1.35 million fatal traffic accidents happening worldwide each year, up to 96% are caused by human error (WHO, 2020), which highlights the importance of advancing autonomous driving technology. The conference heard that this realisation is now closer than ever.

5GAA's Maxime Flament talked about how this global, cross-industry organisation is developing vehicles that communicate about upcoming manoeuvres and available parking spaces, as well as recognising subtle indications from pedestrians' behaviour that they intend to cross a road.

Serving 169 cities in Europe with 5G and forming partnerships with vehicle manufacturers, GPS plotters, city planners and roadside vendors, Vodafone has already succeeded in connecting 31 million road vehicles. Head of R&D Luke Ibbetson said that he hopes such collaborations will help the EU reach its target of zero road fatalities by 2050.

Swedish telecoms brand Ericsson also pledged to provide infrastructure for the automated driving ecosystem. "By adopting 5G and CV2X, the future of mobility will be brilliant," predicted its IoT programme director, Daniel Liu.

For more on driverless tech, see The Post-Covid Car Opportunity and CES 2021: Automotive.

Each year, 96% of the 1.35 million fatal traffic accidents worldwide are caused by human error

- **Eyes on Equitable Tech:** While the developed world moves towards an ever-more digital future, the so-called "digital gap" is a very real concern. Approximately 3.6 billion people, about half of the world's population, still don't have access to the internet – yet one year of mobile broadband coverage can reduce poverty by 4% (World Bank, 2020).

In a developing country like Cambodia, where internet penetration now approaches 100% (TRC 2020), digitisation will go a long way towards driving economic growth. Ian Watson, chief executive of Cambodian telecommunications company Cellcard, revealed that his firm plans to launch the world's first 5G digital lifestyle hub – a hybrid venue of VR, AR, virtual attendants and drone deliveries, which will host esports tournaments, interactive shows and concerts (also see Entertainment in the 5G Era).

Tech can equally support the recovery of Cambodia's shattered tourism industry and preventing the scourge of brain-drain. "We must start to build smart cities and we must do it now," Watson said. "Because when we do, our children will stay in these cities and they will grow."

Meanwhile, Qureshi confirmed that Verizon has joined the Edison Alliance, a World Economic Forum-led initiative launched at Davos 2021 that aims to close the digital divide. He said the onus was on tech firms to "make sure as many people as possible can participate in the new world we are creating."

Huawei has also committed to this issue: its new rural infrastructure network in Ghana should increase the country's mobile coverage from 83% to 95%, by deploying base stations to remote locations.

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Countries and businesses without technology innovations are falling far behind. We cannot just look to those who have resources and capacity, we need to look more at the have-nots

Ken Hu, Rotating Chairman, Huawei

Internet penetration now approaches 100% in Cambodia

5G Fuels Industry 4.0

From factory floors to transit hubs, 5G networks are enhancing industrial operations – with China leading the way. Echoing our takeaways from Switch Singapore 2020 (see Work Smarter, Not Harder), automated production systems have the potential to not only boost efficiency but protect and redeploy employees.

- **5G in Focus:** Driven by lowering price-points of 5G handsets and almost 720,000 5G cell sites installed nationwide, China now accounts for over 75% of global 5G connections (GSMA Intelligence, 2020). The majority (62%) of Chinese consumers intended to upgrade to 5G in 2020, a rise of 12% since 2019. Unsurprisingly, then, 5G was one of MWC21's four overarching event themes and the subject of an Advanced Summit.

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By 2030, 5G will have evolved into the most dominant mobile technology that will create huge value to society

Alex Sinclair, Chief Technology Officer, GSMA

- **Productive Partnerships:** In partnership with China Mobile, Ericsson is using 5G enabled procedures – including drone inventory counting, AR training, automated vehicles and remote assist functions – at its Chinese factories to significantly increase production and operation efficiency. AI has reduced the time needed to classify and analyse the complete factory network from one hour to 15 minutes, prevented more than 70% of KPI degradation and reduced energy consumption by 15%, while drone inventory counting reportedly increases efficiency 50-fold.

  China Mobile has also rolled out 5G technologies at a port in Xiamen, replacing dangerous human work with 5G high-definition cameras, autonomous vehicles and remote-controlled machinery. The inspection of shipments has been shortened from minutes to seconds, labour costs have been reduced by 46% and efficiency has increased by 66%, according to Chairman Yang Jie.

- **5G Enhances Safety:** Besides boosting efficiency and smoothing logistics, 5G and AI have a key role to play in worker safety. China Unicom's chief scientist and AI centre head Lean Shiguo told MWC21 that the company's 5G network ensures social distancing and PPE protocols are being observed – tracking whether vehicles and people are passing at safe distances, for example.

  Meanwhile, China Unicom's automated and remote-controlled robots – running on its 5G network – are helping to relieve factory workers of menial tasks, such as quality-control patrols or moving and restocking supplies, Shiguo said.

  For more, see our report Ethical Automation: Getting AI & Robots Right.
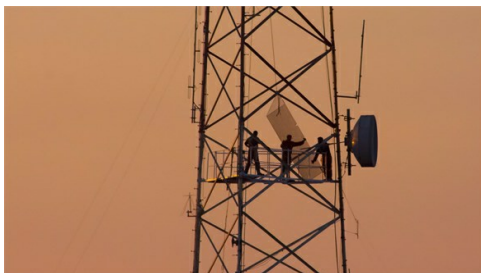
China now accounts for over 75% of global 5G connections

5G powered machinery is helping replace dangerous human work

Future Insights

Address the Digital Have-Nots

As pointed out by Huawei's Ken Hu, digital access is key to getting a foothold out of poverty and fuelling wider economic growth. Now that so much of the working world, education and healthcare has pivoted online, be aware of connectivity blind-spots; ensure no one's left behind in a digital-first society.

Work Smarter with 5G

5G is already making multiple businesses in China safer, more productive and more energy efficient. Embrace these new hyper-connected capabilities to future-proof your company. In fact, McKinsey predicts that 5G-specific IoT devices could help the manufacturing sector add $650bn to global GDP impact by 2030.

Build an Ecosystem

Think beyond single products to the ecosystem in which they live and connect. Take a leaf out of Huawei's book (see its Seamless AI Life Strategy) and imagine a world of multiple tools working together seamlessly on the same network.

Reach Out to Get Ahead

These smart ecosystems won't be built by one company alone. Following the example of Vodafone – making major headway with connected vehicles by teaming up with city planners, GPS plotters and even roadside vendors – collaborate with different stakeholders and even competitors to reach your ethi-tech goals.

Take the next step into your best future

Stylus Advisory's world-class strategists translate our trends intelligence into tailored global and market insights to maximise your unique future business opportunities.

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Let's future-proof your business

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We're experts in trends intelligence. We equip the most forward-thinking brands and agencies with the creative insights they need to make transformative business decisions.