3GPP: 5G Americas MRP Market Update

Chris Pearson
President, 5G Americas
April 27, 2002

5G AMERICAS FACILITATES AND ADVOCATES FOR THE ADVANCEMENT AND TRANSFORMATION OF LTE, 5G AND BEYOND THROUGHOUT THE AMERICAS.

Airspan antel AT&T ciena cisco CROWN CASTLE ERICSSON intel LIBERTY LATIN AMERICA

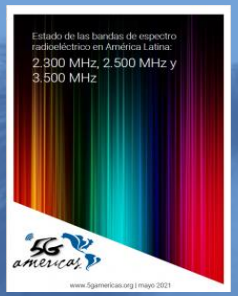
MAVENIR NOKIA Qualcomm SAMSUNG Shaw Telefónica T-Mobile vmware WOM

Technical Work Groups / White Paper Publications

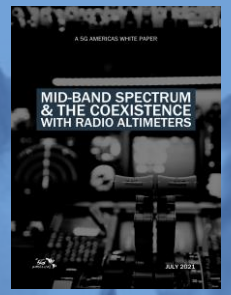
Technical Facilitation & Coordination

Regulatory Policy

Educational Outreach

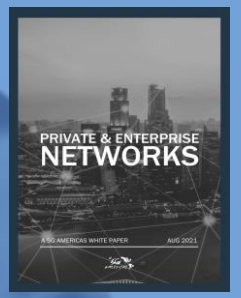


June 1, 2021
State of the Radio Spectrum Bands in Latin America: 2,300 MHz, 2,500 MHz & 3,500 MHz



July 14, 2021
Mid-Band Spectrum & Coexistence with Radio Altimeters

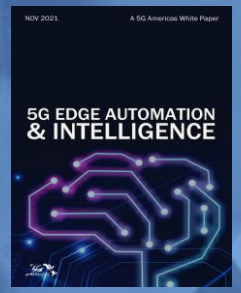
Aug 12, 2021
Analysis of ITU Spectrum Recommendations in Latin America



Aug 19, 2021
Private and Enterprise Networks

Sep 15, 2021
Vehicular Connectivity: C-V2X & 5G

Oct 6, 2021
5G Vertical Use Cases

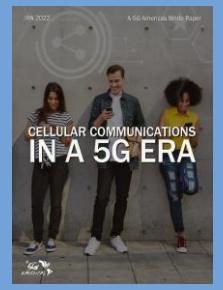


Nov 2, 2021
5G Edge Automation and Intelligence

Nov 10, 2021
Fixed Wireless Access with 5G Networks

Nov 19, 2021
Mobile Communications Towards 2030

Dec 3, 2021
Security for 5G



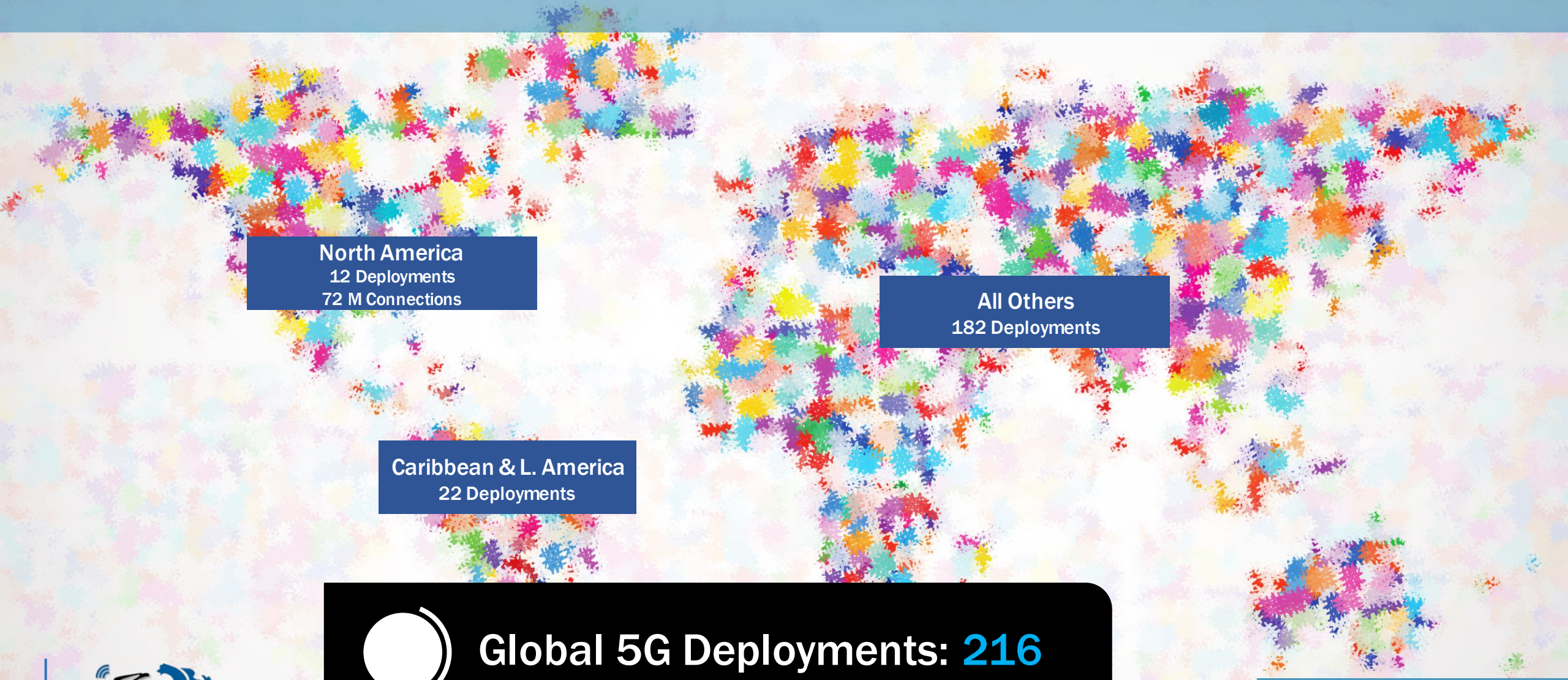
Jan 14, 2022
Cellular Communications in a 5G Era

Jan 26, 2022
5G and Non-Terrestrial Networks

Our white papers can also be found here:

5G EXCHANGE Powered by Light Reading
IoT World Today
HELPNET SECURITY
Microwave Journal
FIERCE Wireless
GovWhitePapers

THE NUMBER OF COMMERCIAL 5G NETWORKS IS QUICKLY INCREASING



Global 5G Deployments: 216

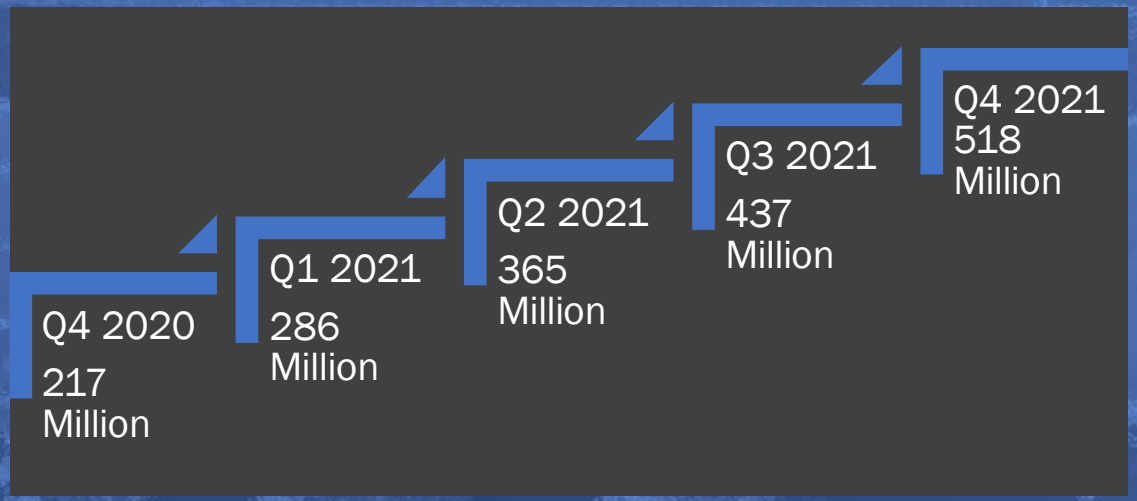
Forecast 2022: 330 Forecast 2024: 346

March 2022

5G CONNECTIONS INCREASED RAPIDLY IN 2021

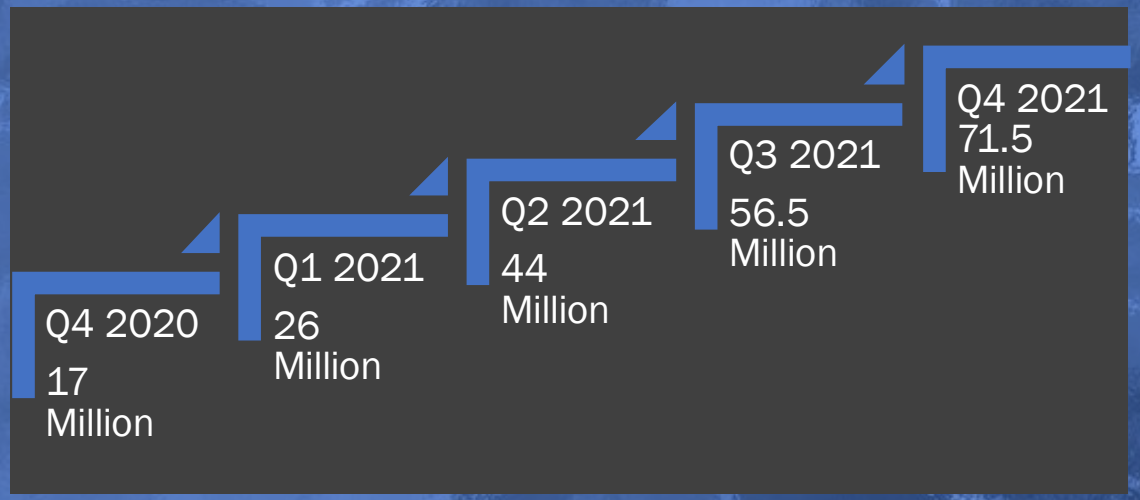
Global Growth in 5G Connections

Q4 2020 – Q4 2021



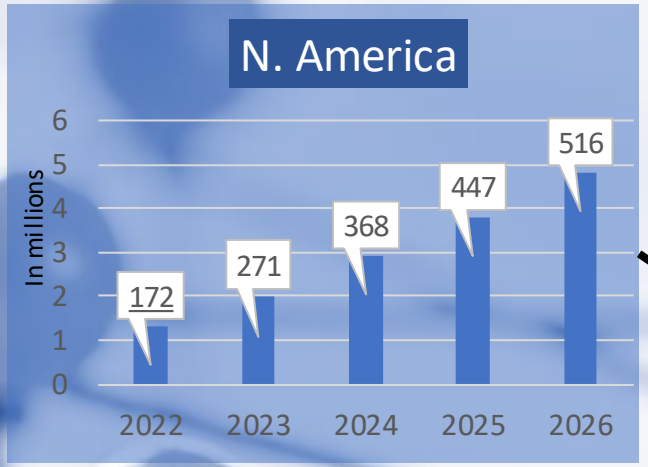
North America Growth in 5G Connections

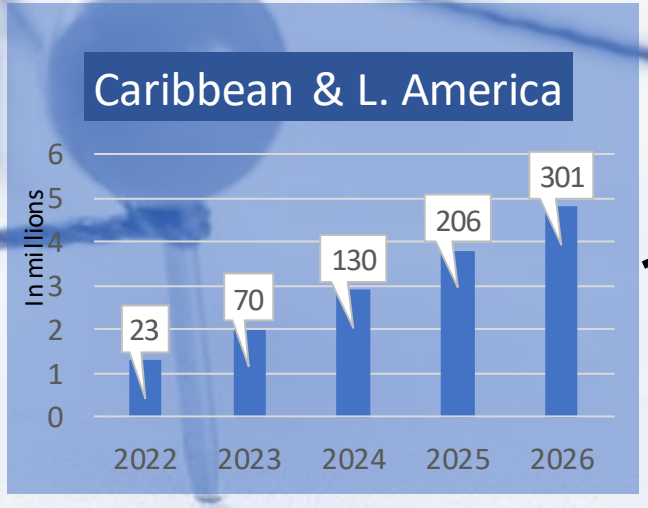
Q4 2020 – Q4 2021

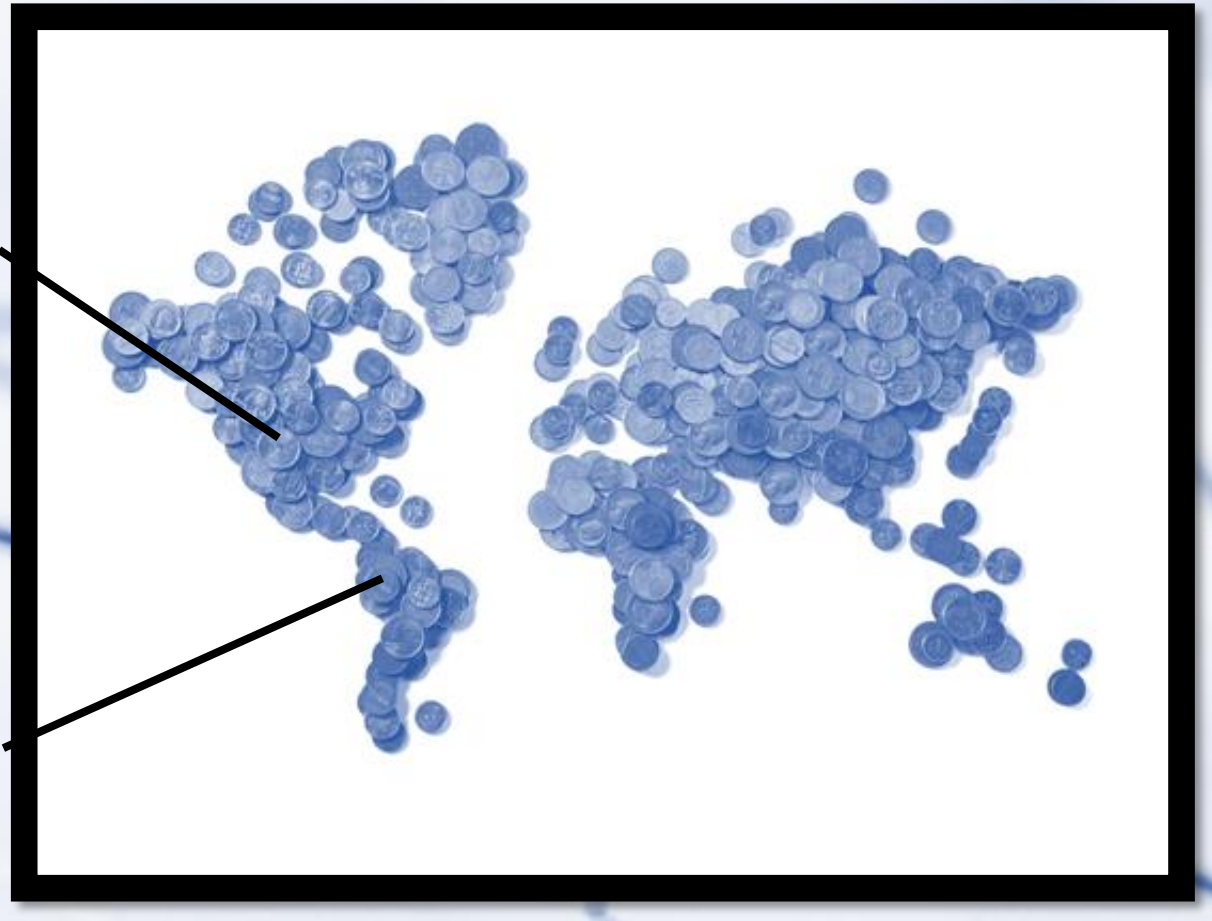


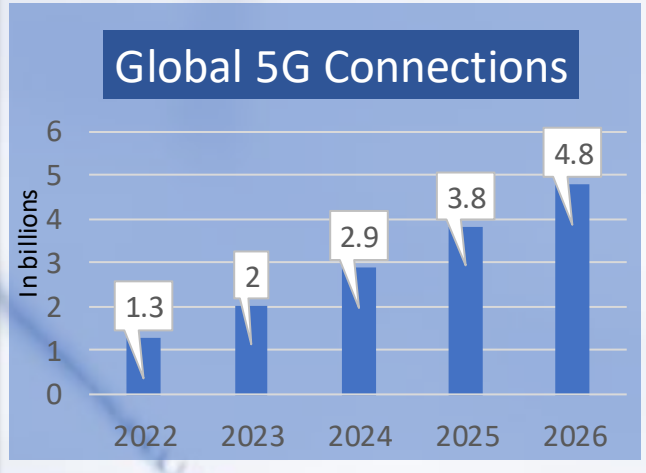
Source: OMDIA 5G americas

5G CONNECTIONS WILL CONTINUE TO INCREASE RAPIDLY BETWEEN 2022 AND 2026









Source: OMDIA

5G ECONOMIC BENEFITS BY STUDY

Table 1: 5G GDP benefits by study

Source: GSMA Intelligence (see References for full list of sources)

Author	Period	Scope	Yearly average % of GDP enabled by 5G
GSMA Intelligence	2020–2040	Global	0.5%
Accenture	2021–2025	US	1.3%
PWC	2020–2030	Global	0.5%
IHS Markit*	2020–2035	Global	0.2%
BCG	2020–2030	US	0.6%

* Includes only the expected 5G contribution to GDP and not higher sales enabled by 5G.

Source: (GSMA, Jan 2022)

ECONOMIC IMPACT OF 5G IN THE US

In the next decade

1.4 – 1.7

Trillion dollars

3.8 – 4.6

Million jobs created

Boston Consulting Group Study, behalf of CTIA – Feb 3, 2021

Between 2021 - 2025

Up to $2.7

Trillion dollars in sales
(indirect effects)

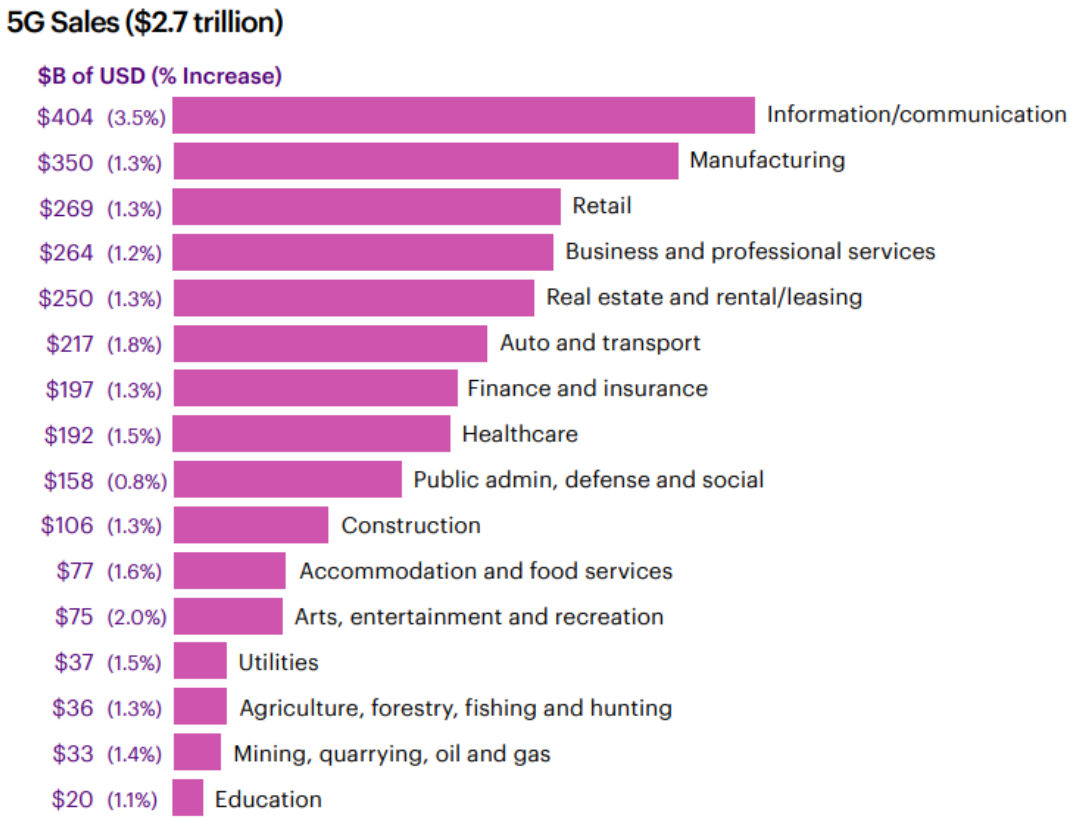
16

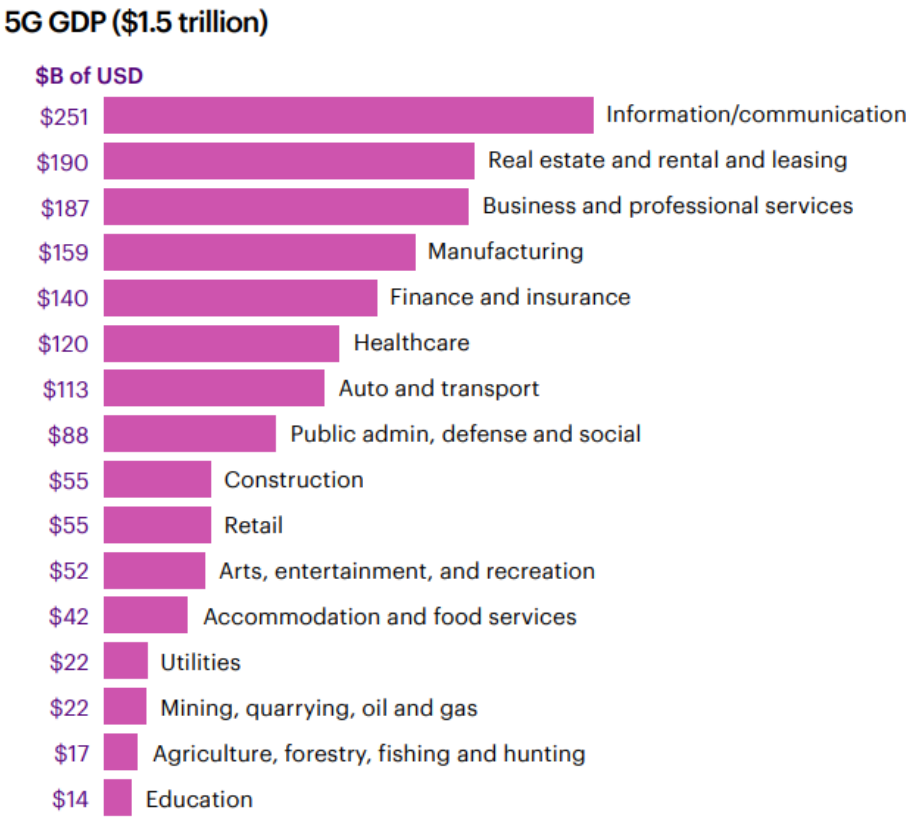
Million jobs transformed

Accenture, behalf of Qualcomm – Feb 2021

5G HAS USE CASES IN VIRTUALLY EVERY INDUSTRY

Impact from 2021-2025 (US)





Source: Accenture Analysis

Accenture (Feb 2021)

US - POSSIBLE FUTURE SPECTRUM BANDS FOR WIRELESS CELLULAR: MID-BAND AND MILLIMETER WAVE

Spectrum Band	Notes
1.3 – 1.35 GHz	• Currently 30 MHz targeted for clearance by NTIA & FCC • Long-range radar systems; air-traffic control • Would provide 50 MHz for next gen wireless
1.78 – 1.83 GHz	• More than 20 federal agencies with 3,100 individual frequency assignments • Fixed point-to-point microwave, military tactical relay, air combat training, etc. • 50 Mhz adjacent to AWS-3 (auction in 2015)
2.5 GHz	• 116 MHz designated for education, 77.5 MHz for Broadband Radio Service. • FCC Auction 108 allowed overlay licenses in 49.5 MHz, 50.5MHz, and 16.5 MHz block sizes
3.1 – 3.55 GHz	• Allocated for federal and non-federal uses • DoD high-powered radar systems • FCC working with NTIA on additional opportunities for commercial purposes
3.45 GHz (3450-3550 MHz)	• Auction 110 recently closed
4.8 GHz	• 4800-4990 MHz is a WRC-23 agenda item; worldwide growing interest • China identified 4800-5000 MHz for 5G; 4400-4990 MHz part of NATO Class A Band • US: 4400-4940 MHz used by federal govt for fixed and mobile services (ie., air ground ops, UAVs)
7.125 – 8.5 GHz	• US-allocated for fixed or satellite, but use of band declining; most agencies use for fixed point-to-point microwave, radar video, weather, vessel traffic, defense satellite communications
12.2 – 12.7 GHz	• Encumbered by fixed satellite service, non-geostationary orbit systems, direct broadcast satellites, MVDDS
26 GHz (25.25-27.5)	• FCC sought comment for use in "Upper Microwave Flexible Use Service" • Could be suitable for flexible fixed and mobile use; adjacent to 24 & 28 GHz, already allocated for fixed and mobile • Over 2GHz potentially useful for 5G
37 – 37.6 GHz	• US-allocated for fixed and mobile services for federal/non-federal use • Space Research Service; Fixed Satellite Service; 2016: FCC order – "Upper Microwave Flexible Use Service"
42 GHz	• US-allocated for fixed and mobile services for federal/non-federal use • No current federal allocation or service rules • Adjacent band allocated to Radio Astronomy Service
Above 95 GHz (96-275 GHz)	• FCC order to provide new opportunities for innovators

5G americas

LATIN AMERICA & CARIBBEAN - POSSIBLE FUTURE SPECTRUM BANDS FOR WIRELESS CELLULAR

Country	Bands	Status
Argentina	26 GHz, 38 GHz	26 GHz & 38 GHz identified as viable for 5G development. Refarming currently in planning. Previously the bands were considered under reserve. 28 GHz – previously reserved; allocated for FSS. 37 – 38 GHz & 40 – 40,5 GHz – previously reserved; allocated for Earth Exploration.
Brazil	26 GHz, 39 GHz.	26 GHz blocks successfully auctioned during 2021; 39 GHz is under consideration.
Chile	26 GHz, 28 GHz	26 GHz blocks successfully auctioned during 2021. 28 GHz was previously considered; no current plans for a 28 GHz public offer.
Colombia	26, 28 GHz, 37-43,5 GHz, 47,2-48,2 GHz, 45,5-47 GHz and 70 GHz	Tentative. Mentioned in 5G planning.
Costa Rica	26, 28 GHz	Part of a public consultation on new IMT spectrum (4Q 2020).
Ecuador	26 GHz	Proposed IMT identification.
México	26, 42, 48 and 51 GHz	Tentative. Mentioned in 5G planning.
Panamá	26 GHz, 28 GHz, 40 GHz, 66 – 71 GHz.	Under reserve for 5G spectrum availability: suspension of new authorizations in 26 GHz, 28 GHz, 40 GHz and 66-71 GHz (national basis).
Paraguay	26 GHz	Identified as IMT band. No current plans for a public offer.
Perú	26, 28 GHz	800 MHz of the 26 GHz are considered for a new spectrum auction. 28 GHz mentioned in 5G studies and planning.
Puerto Rico / Islas Vírgenes Estadounidenses	24, 28, 37, 39 and 47 GHz	Licensed.
República Dominicana	Undefined	Spectrum Plan of 2021 orders to find additional spectrum for IMT systems, including mmWave bands.
Uruguay	26 GHz, 28 GHz	28 GHz licensed (commercial use and trials). 26 GHz used in trials.

5G AMERICAS LINKS

White Papers

Full white papers. 100% free. PDF.

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Regulatory

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