

National Association for Business Economics 5G Economic Impact Report & 5G Manufacturing Summary

**Jefferson Wang
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Background



Jefferson Wang

Accenture Technology, Senior Managing Director
Global Cloud First Networks Lead



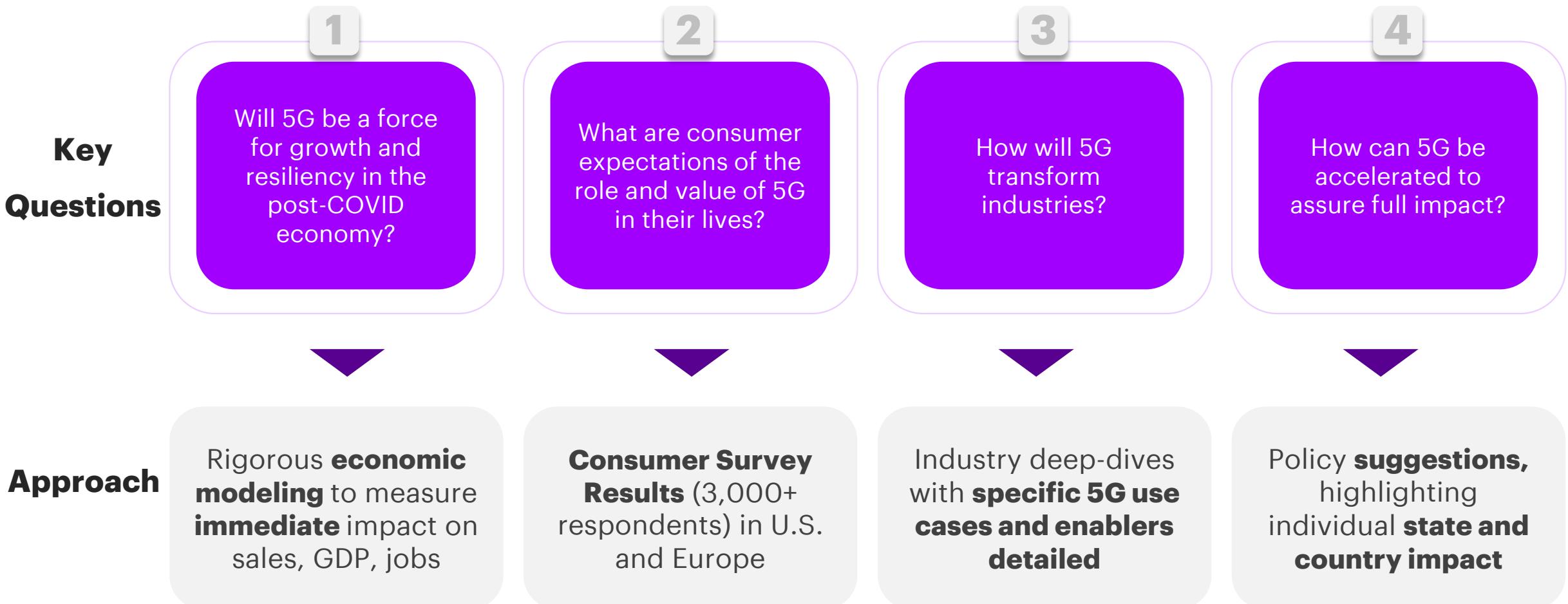
<https://www.linkedin.com/in/jeffersonwang/>



@jeffersonwang13

Key Questions and Approach

Within our 5G economic impact analysis in the U.S. and Europe, there are four key questions we addressed

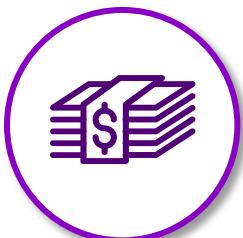


U.S. 5G Economic Impact Summary

5G will be an immediate economic force for growth from 2021-2025, driven by new 5G connections



UP TO \$2.7 TRILLION ADDITIONAL SALES*



UP TO \$1.5 TRILLION NEW GDP



POTENTIAL TO CREATE UP TO 16 MILLION NEW JOBS**

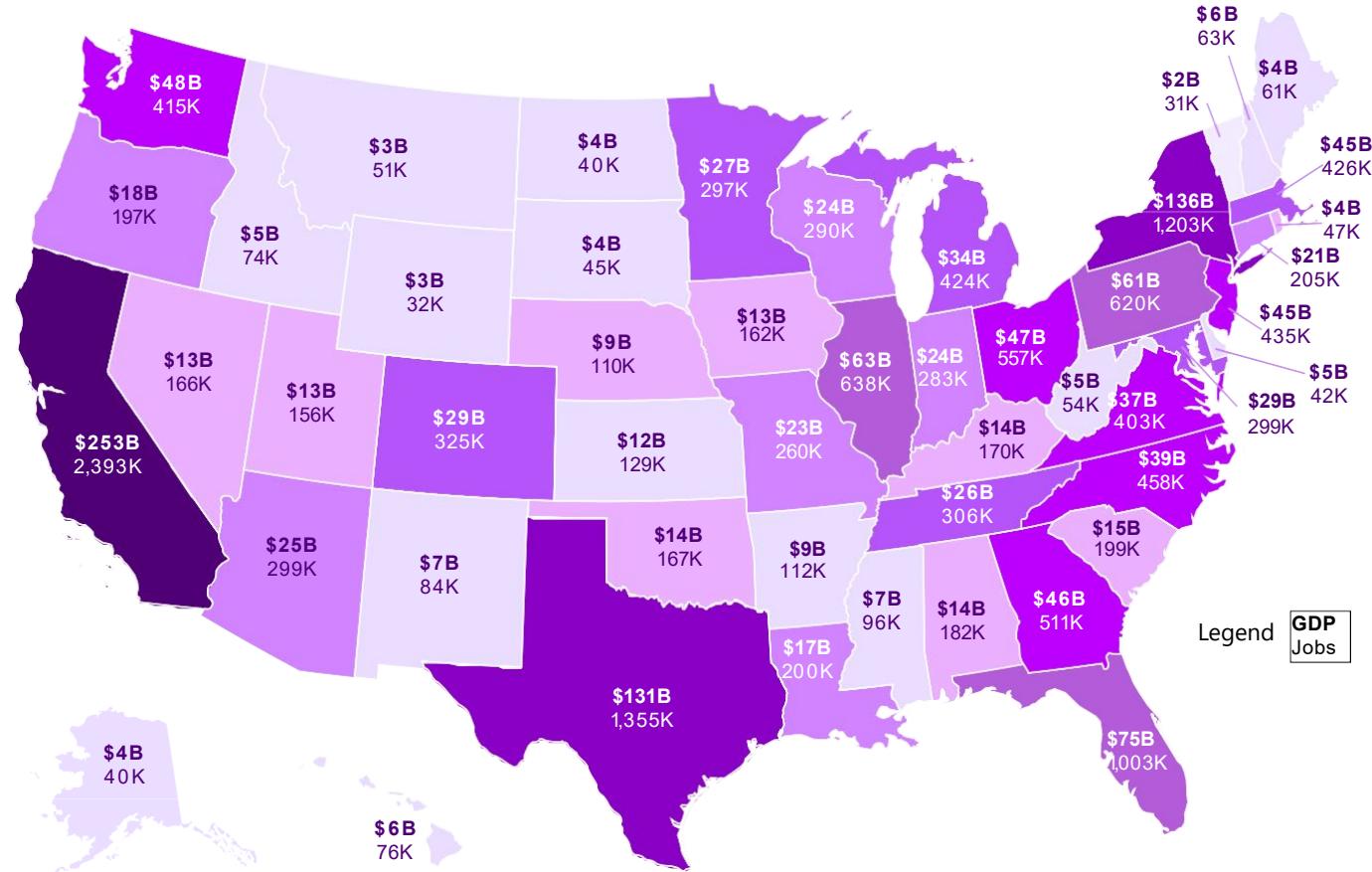
(Includes full, part-time and seasonal jobs)

* 5G sales value indicates additional sales increase based on new 5G connections

** Not net new jobs. Based on partial equilibrium model, full employment scenario may offset the projected job growth

US GDP and Jobs Breakdown by State

5G's economic impact will be felt across the United States, cascading through every state.



US Report 5G Report

<https://www.accenture.com/us-en/insights/high-tech/5g-economic-impact>

Europe 5G Report

https://www.accenture.com/_acnmedia/PDF-144/Accenture-5G-WP-EU-Feb26.pdf

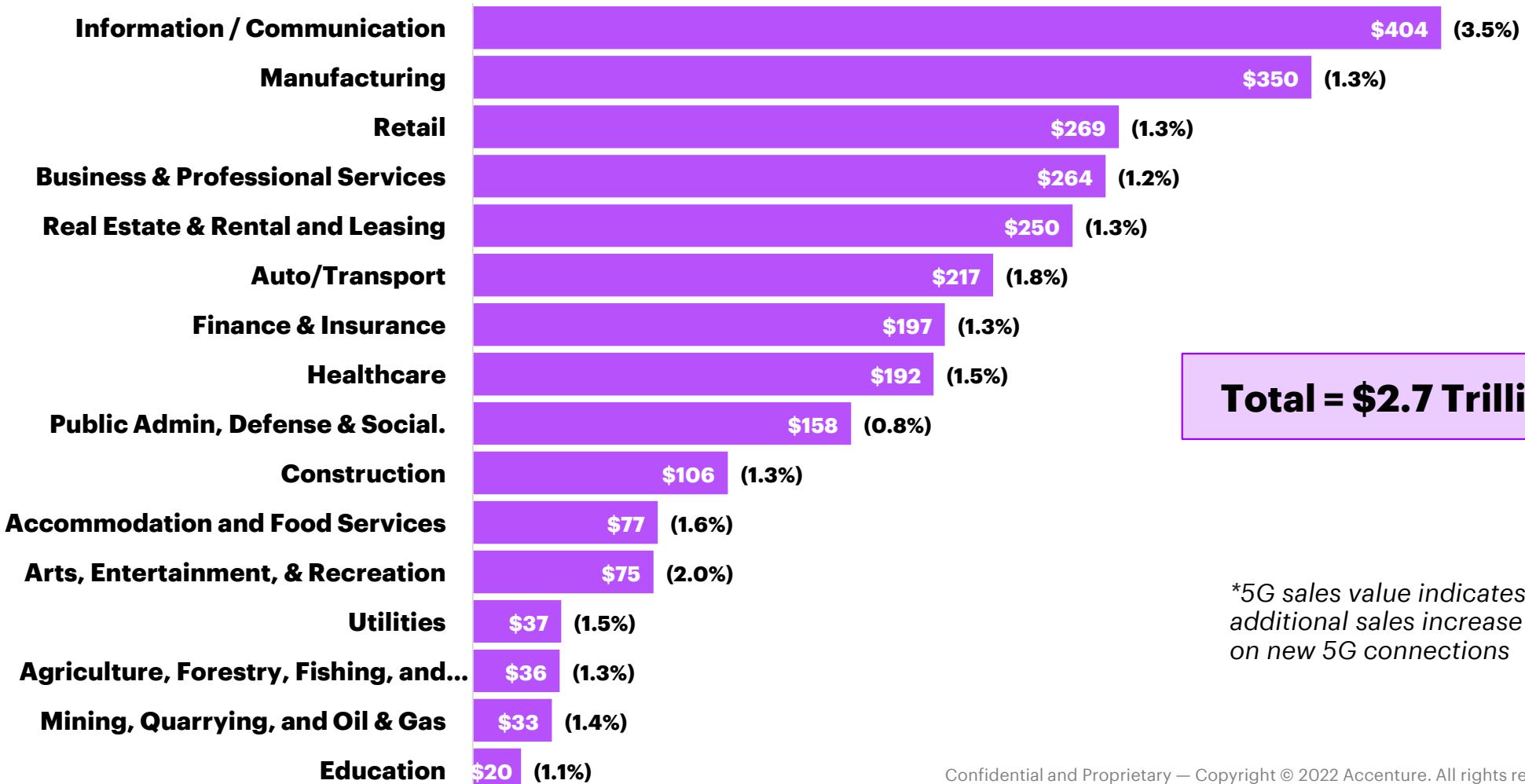
LEGEND

\$GDP
Jobs

5G US Sales Impacts by Industry

This benefit spans all major industries in the U.S., as 5G unlocks new demand and productivity improvements.

5G Sales* (\$B of USD, % Increase)



5G Manufacturing – Economic Summary



KEY 5G USE CASES

- Factory Floor Automation
 - Intelligent Asset Management
 - Connected Worker
 - Quality Assurance



KEY HIGHLIGHTS

5G-enabled factories can see up to **20-30%** in overall productivity gains, including improvements of **50%** in assembly time, **20%** in asset life, and **90%** in defect detection

MANUFACTURING INDUSTRY (U.S.)



\$349.9B

in New 5G Revenue

Direct Industry Impact



GROSS DOMESTIC PRODUCT

\$159.2B

Total Value Chain Impact

\$314.4B



LABOR INCOME

\$81.6B

Total Value Chain Impact

\$161.4B



JOBS AND EMPLOYMENT

1.2M

Total Value Chain Impact

2.9M

MANUFACTURING INDUSTRY (Europe)



€458.3B

in New 5G Revenue

Direct Industry Impact



GROSS DOMESTIC PRODUCT

€131.8B

Total Value Chain Impact

€431.9B



LABOR INCOME

€112.3B

Total Value Chain Impact

€222.2B



JOBS AND EMPLOYMENT

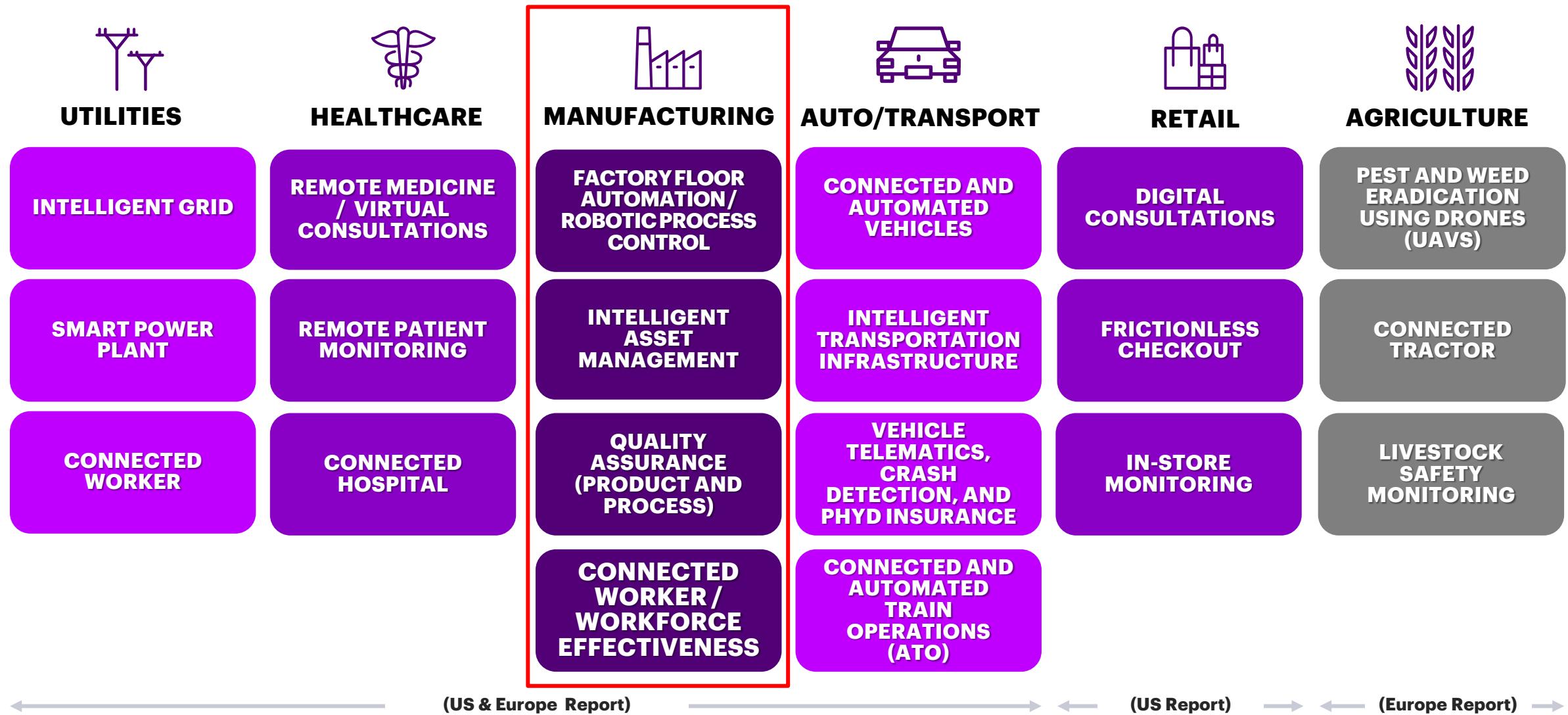
5.4M

Total Value Chain Impact

13.6M

Note: Multiplier is calculated as the ratio of Total Value Chain Impact to Direct Industry Impact.

Priority Use Cases, by Industry (non-exhaustive)



5G Manufacturing – Context and Challenges

INDUSTRY & TECHNOLOGY CONTEXT

Rising Demand of Customization



Manufacturers must shift production to accommodate higher demand for personalized products.

Competitive Production



Manufacturers face increasing pressure to produce against lower prices to stay competitive.

Worker Safety and Health



Compliance with health and safety standards is top of mind, but manufacturing still reports the highest non-fatal injury rate.

Connectivity and the Need for Data



Current data collection is patchy due to connectivity interference, thus unable to yield insights or actions.

ADOPTION CHALLENGES

Legacy Infrastructure and Standardized Protocols



Manufacturers have heavily invested into legacy infrastructure that is built to last 10-20 years.

Investments and Proof of Concept



Companies are hesitant to invest before they have a clear idea of benefits due to the high impact on business output.

Device and Ecosystem Readiness



There are few commercially ready 5G-ready devices beyond the Smartphone available in the ecosystem.

Additional 5G Manufacturing Use Cases – (non-exhaustive)

Private Cellular Networks

Private 5G networks enable pervasive connectivity across an area connecting machines and personal devices. Accenture partnered with a global network provider and a large refinery to enable 5G campus connectivity.

Remote Connectivity



Connected Worker + Safety

5G and edge enable worker connectivity. A leading office furniture manufacturer used 5G, edge compute, and analytics with video cameras to respond to hazardous situations and autonomously power down hazardous equipment – before an injury occurred.

Connected Worker + Safety



Drone Asset Inspection

5G and edge enable Drones to operate autonomously and create digital twins with minimal latency. Accenture partnered with a German port authority using 5G to inspect port assets with fully autonomous drones.

Asset Inspection



Modular Factory

5G enables machinery to autonomously reconfigure with different production lines depending on sudden shifts in demand. A leading manufacturing operator and distributor plans to launch 5G modular factories in all 250 of their plants, globally.

Automated Process Control



Digital Twin

Digitally modeling physical processes and data virtually providing remote visibility and enabling simulation of different scenarios.

Asset Inspection



AR-Guided Work Instructions

Using smart glasses and building applications utilizing AR/VR technology to provide users with step-by-step, live instructions. An industrial controls developer explored 5G as an enabling technology to enable remote coaching during COVID-19.

Connected Worker + Safety



Autonomous Guided Vehicles

5G and Edge computing enable intelligent AGVs to be the future for shopfloor management. Accenture's Garching lab showcases the ability for AGVs to navigate autonomously through complex spaces of a shopfloor.

Automated Transport-AGVs + Robotics



Remote Asset Inspection

Careful monitoring / maintenance of valuable assets to ensure optimal performance and lifetime. An industrial inspection firm in France partnered with Accenture to use drones to remotely inspect oil tanks for corrosion.

Remote Connectivity



Digital Quality Inspection

Inspecting quality of yield through use of cameras, AI, and network technologies enabling automatic, highly accurate inspection of goods. A leading automotive technology developer enabled digital quality inspection using computer vision to inspect the quality of the stitching in their products.

Asset Inspection

