

The background is a vibrant, futuristic digital landscape. At the top right, a satellite orbits in space. On the left, a tall radio tower stands against a dark blue sky. The center is dominated by glowing blue and green circuit patterns that resemble a complex network or data flow. In the foreground, a laptop on the left shows a globe on its screen. In the middle, two silhouetted figures stand on a dark ground, looking up at a glowing red and purple structure that looks like a bridge or a futuristic building. On the right, a large, glowing white and blue object, possibly a rocket or a futuristic vehicle, is partially visible. The overall scene is illuminated with bright, colorful light effects, creating a sense of high-tech innovation and future exploration.

# TECHNOLOGY FUTURES INC.

*Your Bridge to the Future*

# TFI Wireless Forecast



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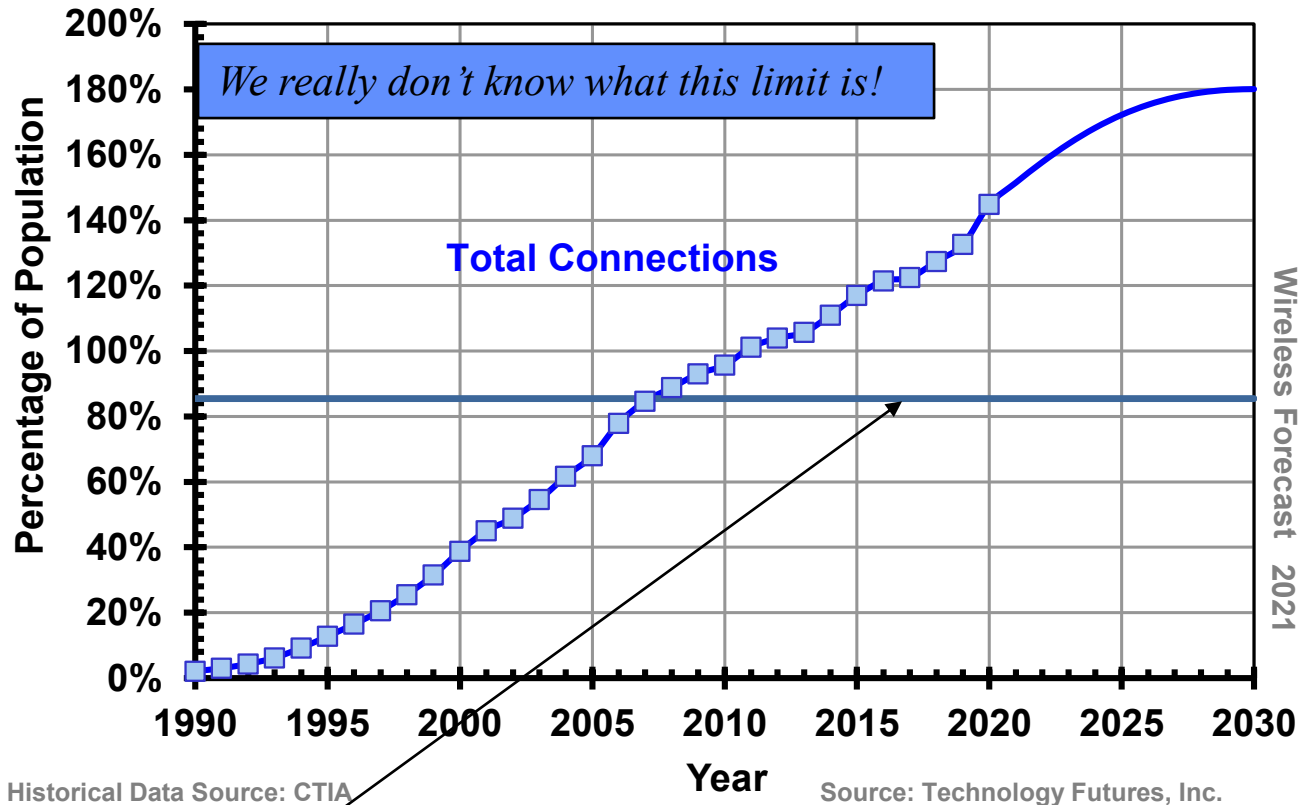
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# Wireless Universe?

- Wireline – Places
- Wireless Voice – People
- Wireless Data – Devices
- Wireless Potential – All things fixed or mobile, person or machine (Internet of Things)
- We separately forecast standard connections and data only connections (such as connected cars, IoT devices and wearables)

# U.S. Cellular Connections

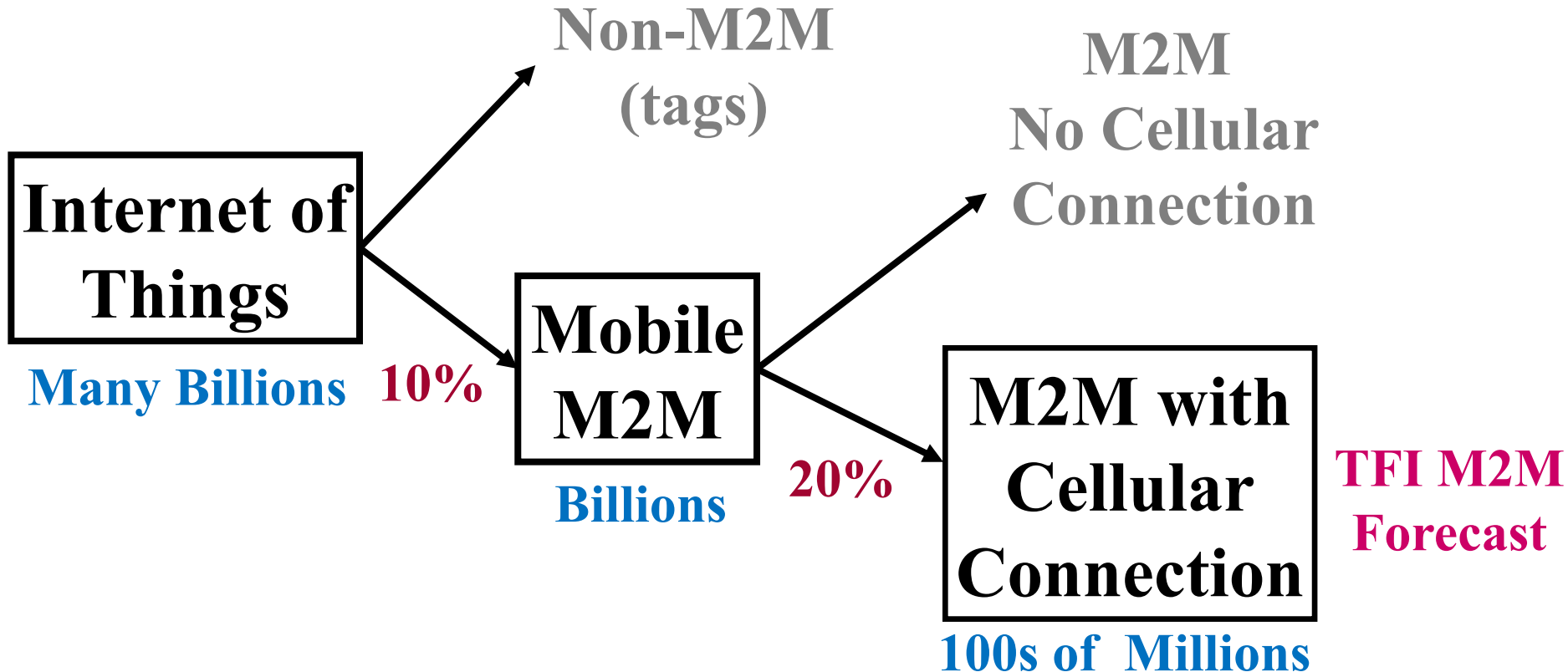


At YE 2020, 86% of population had cellphones so everything over this line are additional penetration after 2020, additional devices, or M2M

# M2M (Data Only) Connections Vs Standard Connections

- M2M has vast range of bandwidth requirements.
- M2M often needs different geographic coverage.
- M2M needs low cost, low power solutions.
- 5G is designed for M2M from ground up.

# The IoT will include many items unconnected to the cellular network



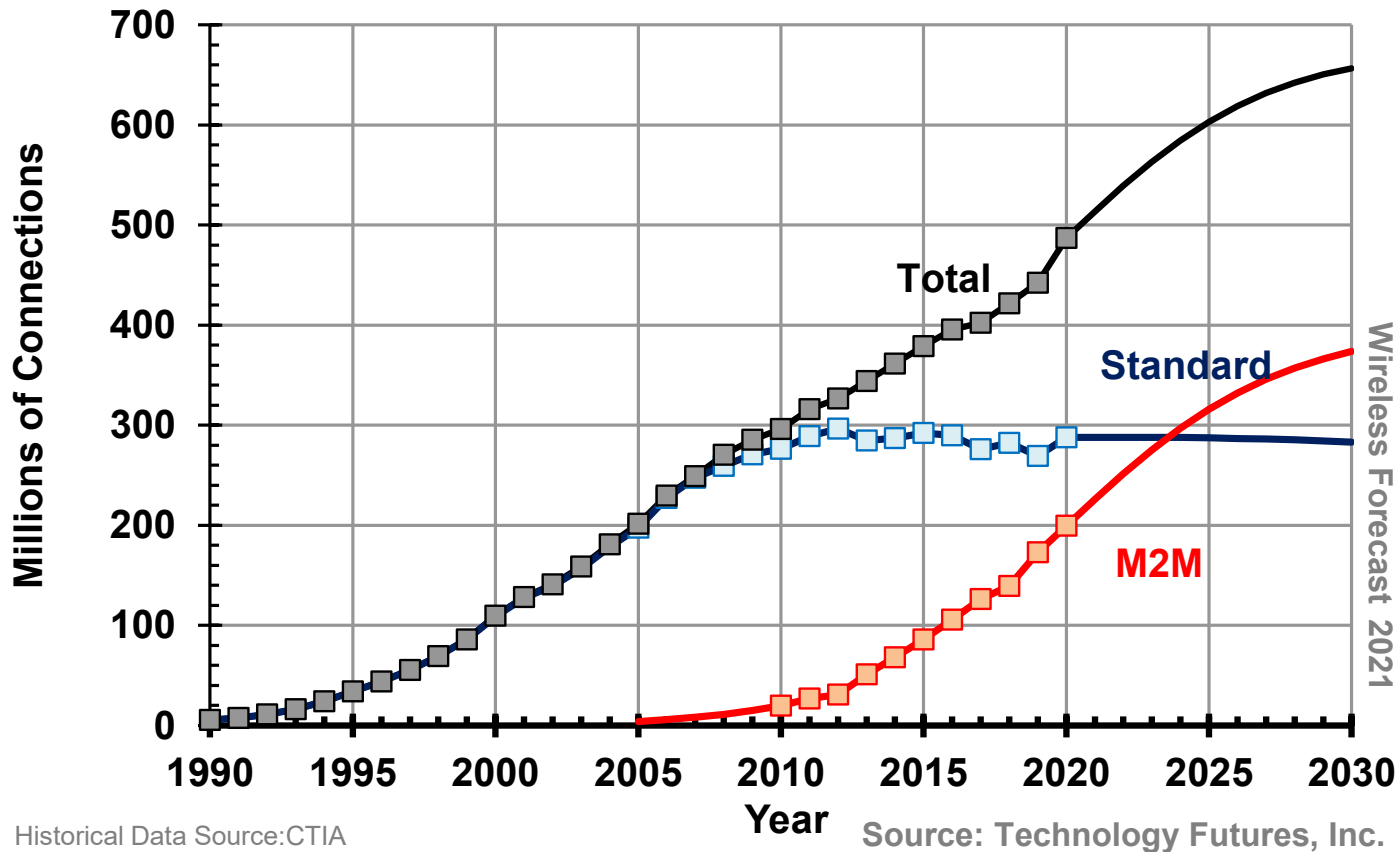
*Based on GSMA estimates*

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# Forecast of Data Only Connections

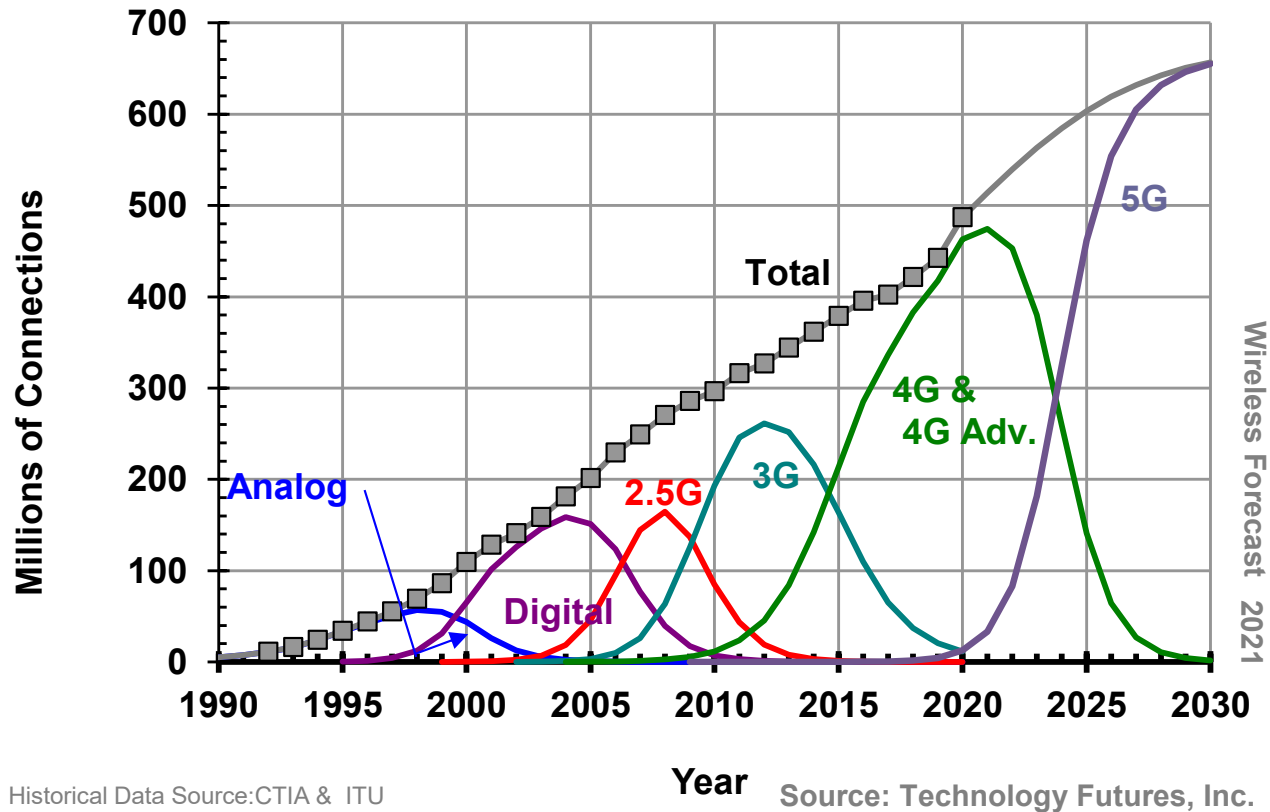
- Historical data points are primarily from CTIA and carrier provided data.
- The YE 2020 the estimation is 199 M.

# 2021 TFI Wireless Connection Forecast





# 2021 TFI Wireless Generations Forecast



# Drivers for New Generations

- Mobile data traffic is growing much more rapidly than connections
- M2M connections are growing faster than standard connections
- Greatly improving cost/performance of newer technology

5G is the right technology at the right time

A stylized graphic of a bridge with two main supports and a central arch, rendered in light blue and pink tones. The bridge spans across the middle of the page.

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