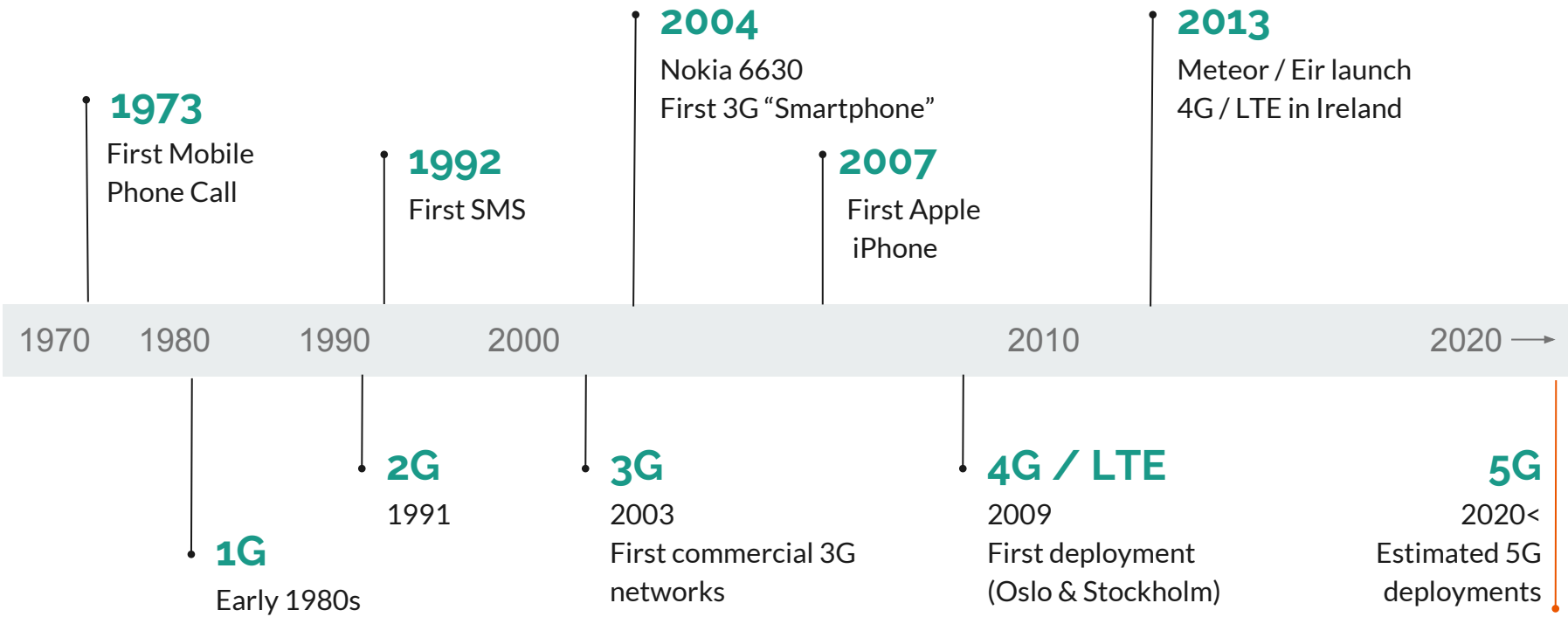
5G

The Next Step in Mobile Communications

Rebecca Kane

A Brief History



18 Billion
Connected Devices, 2017

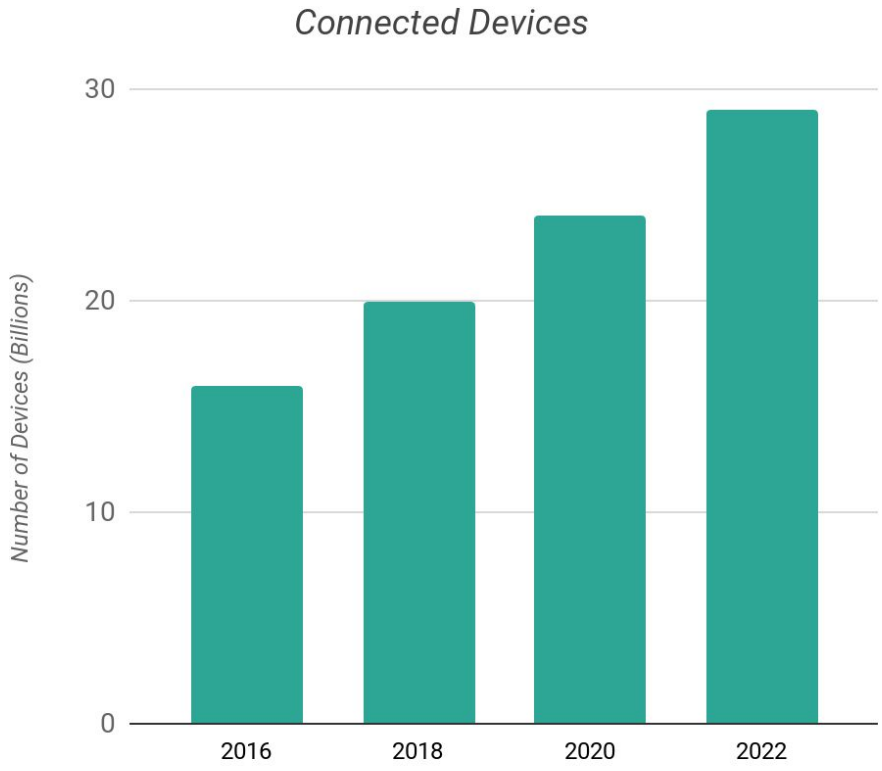
7.5 Billion
People

2.4 Devices Per Person

29 Billion
Estimated Connected Devices, 2022

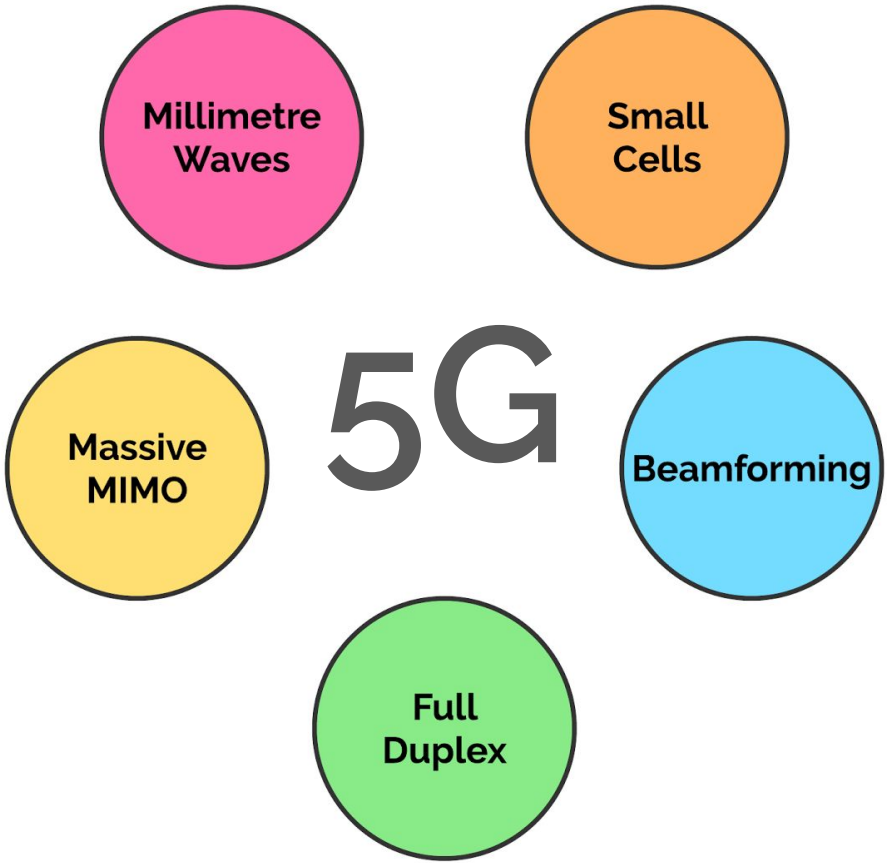
7.7 Billion
People

3.7 Devices Per Person

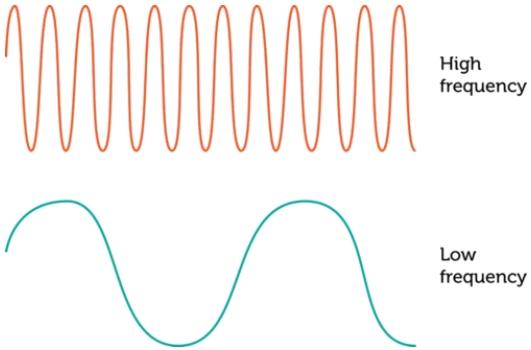


Source: Ericsson IoT Outlook, 2017

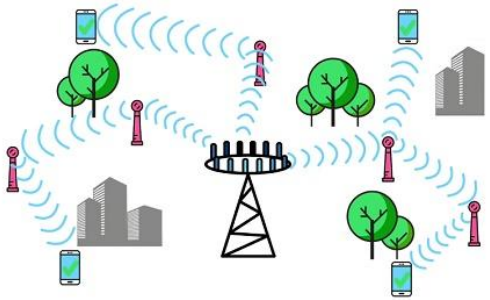
Proposed Technologies



Millimetre Waves



Small Cells



Electromagnetic Spectrum in GHz

Whole New Area of the Spectrum

=

More Bandwidth for Everyone

What about the obstacles?

Portable Miniature Base Stations

=

Stronger Signals

Massive MIMO

Multiple Input Multiple Output

4G Stations > 12 Ports

> 8 Transmitting

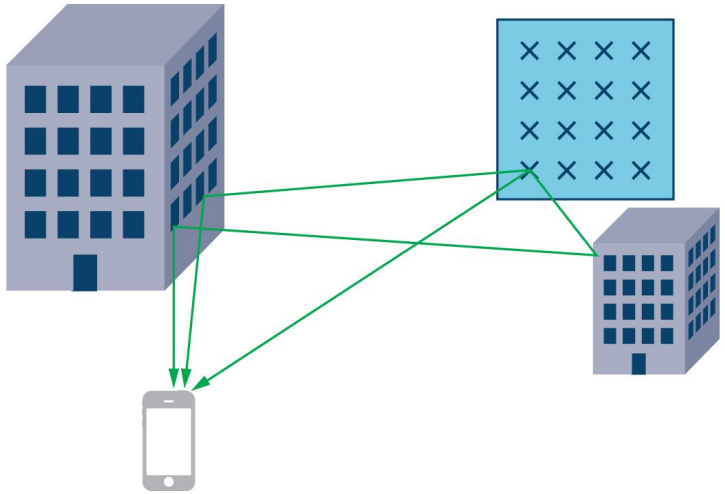
> 4 Receiving

5G Stations > *100 Ports*

Handling more data at once

More Antennae = More Interference

Beamforming



Identify the most efficient route,
reduce interference

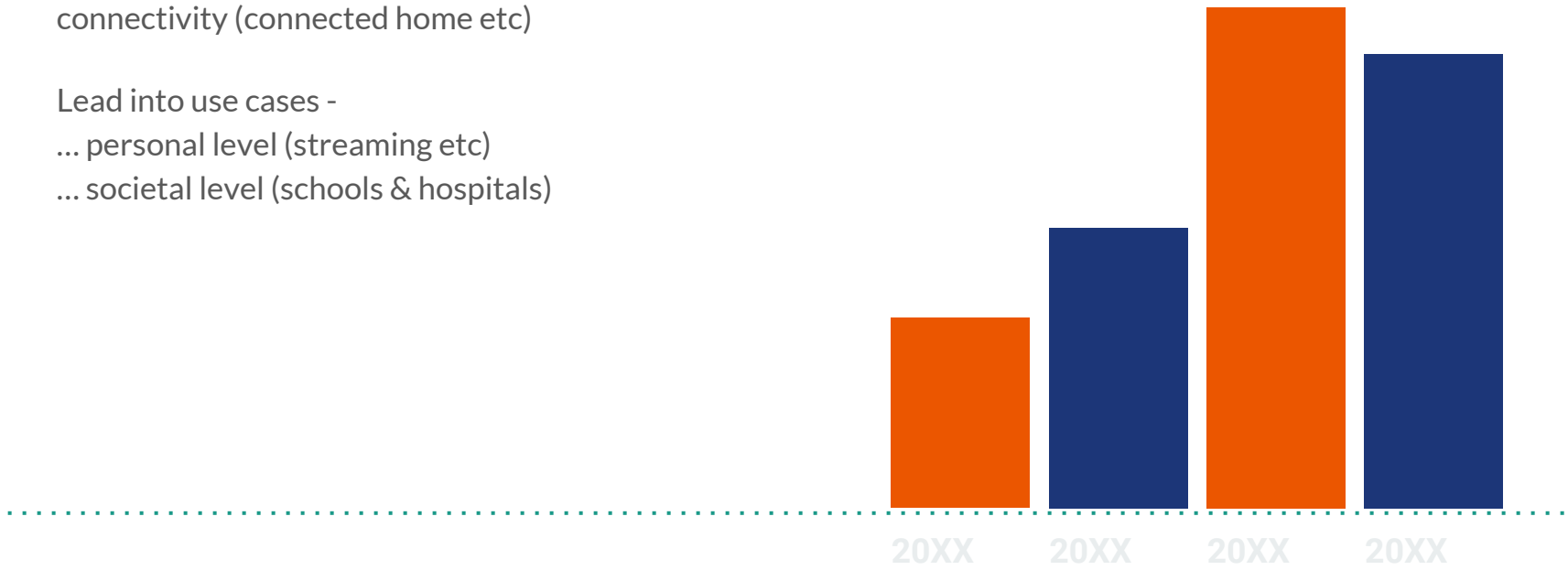
Full Duplex

4G stations operate on a stop go system (or on different frequencies if user wishes to transmit and receive data at the same time) - 5G transceivers will be able to transmit and receive data at the same time, on the same frequency. Two trains one track analogy.

The Need for 5G - Why?

Obvious reason of more devices / more connectivity (connected home etc)

Lead into use cases -
… personal level (streaming etc)
… societal level (schools & hospitals)




[Conclusion Slide]

Proposed Technology

mmWave

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Ronny Reader

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Abby Author

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The technology: GPS + RFID

Why now?

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