18th Infocom Mobile World 2016

NGN will serve the broadband challenge…

Manos Papadakakis

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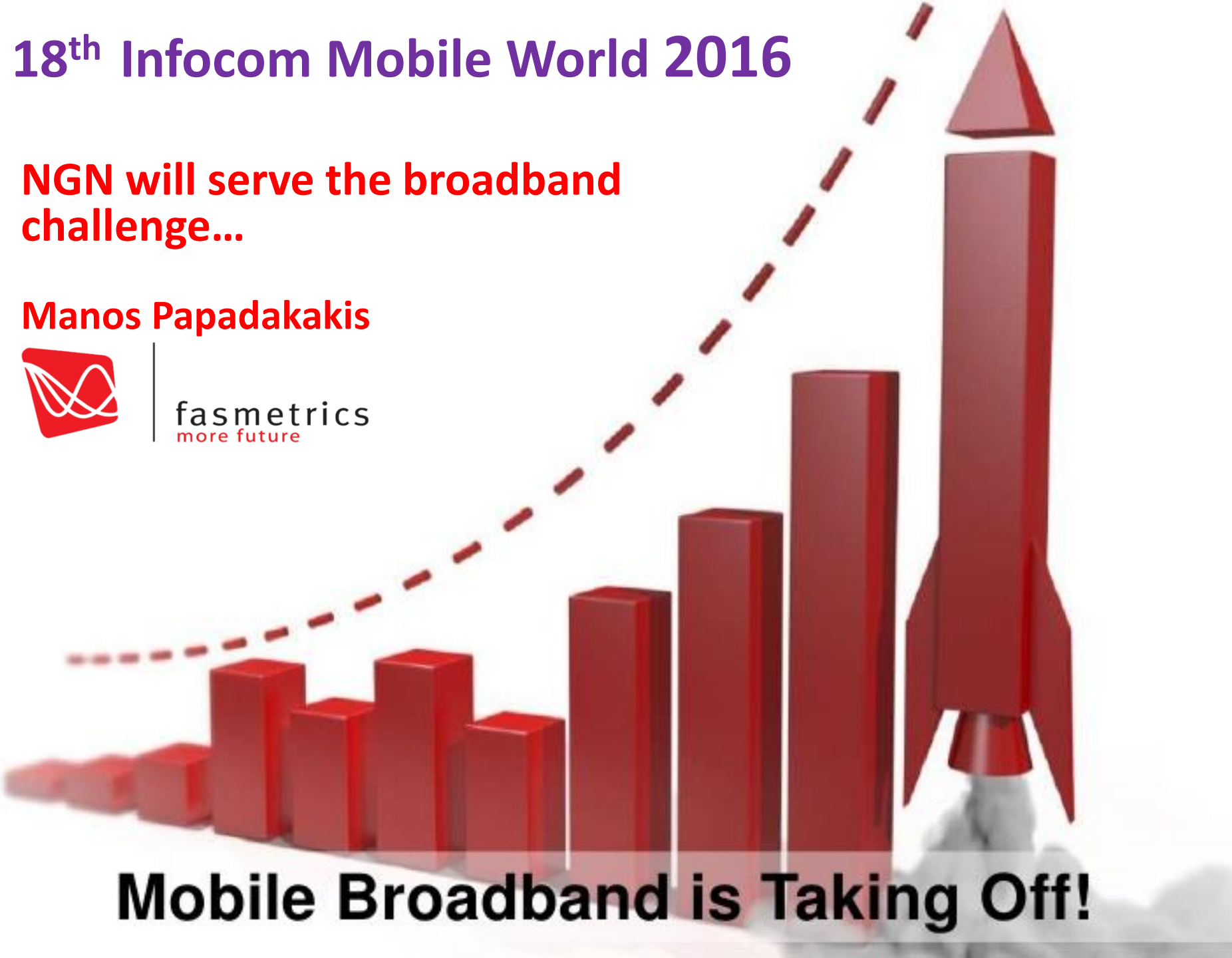
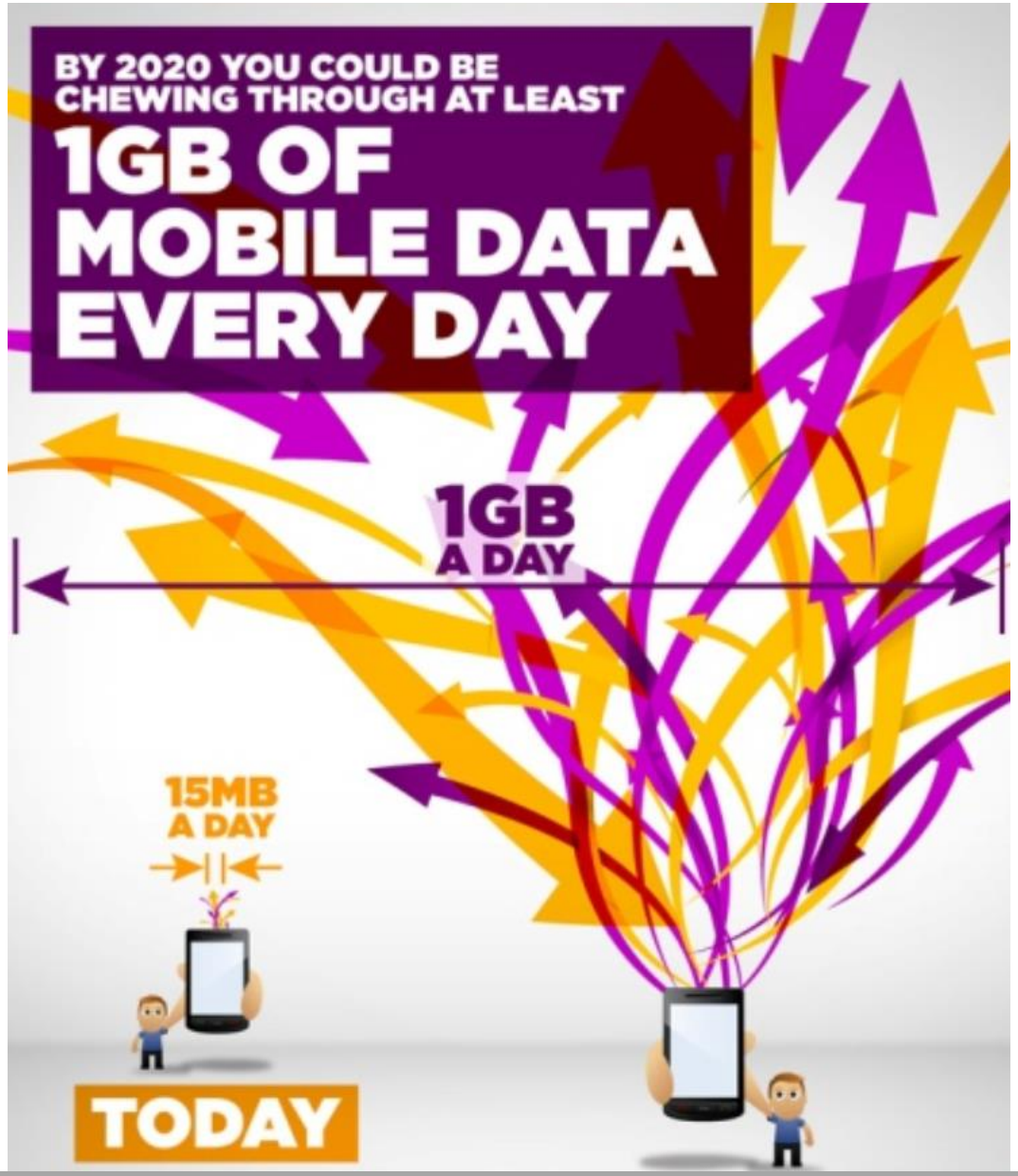
more future



Nokia Siemens Networks



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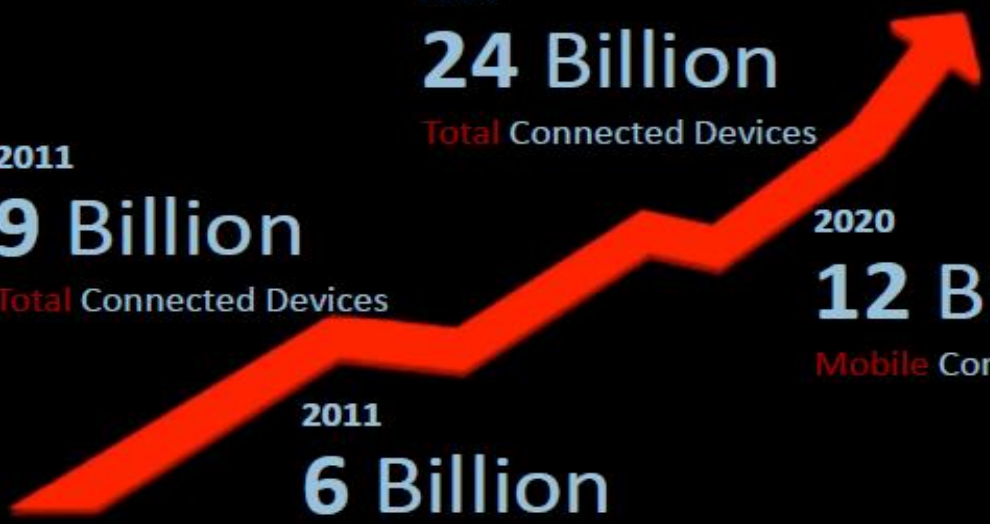
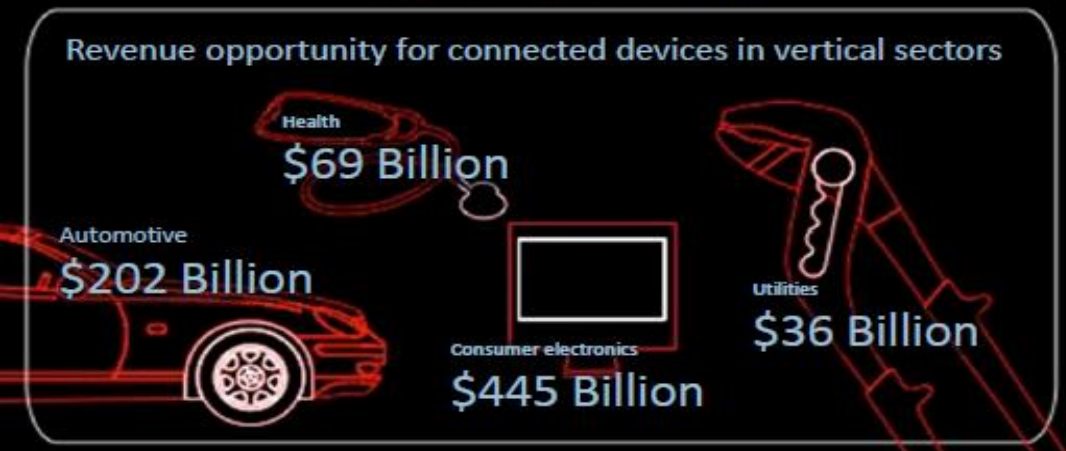
The Connected Life by 2020



Revenue Opportunity For Mobile Network Operators in 2020

$1.2 Trillion

7x increase on 2011 expected revenues



CREATING OPPORTUNITIES THROUGH CROSS-INDUSTRY COLLABORATION

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The IoT

The Internet of Everything

Internet of Things
(assets, devices, mobile and static sensors)

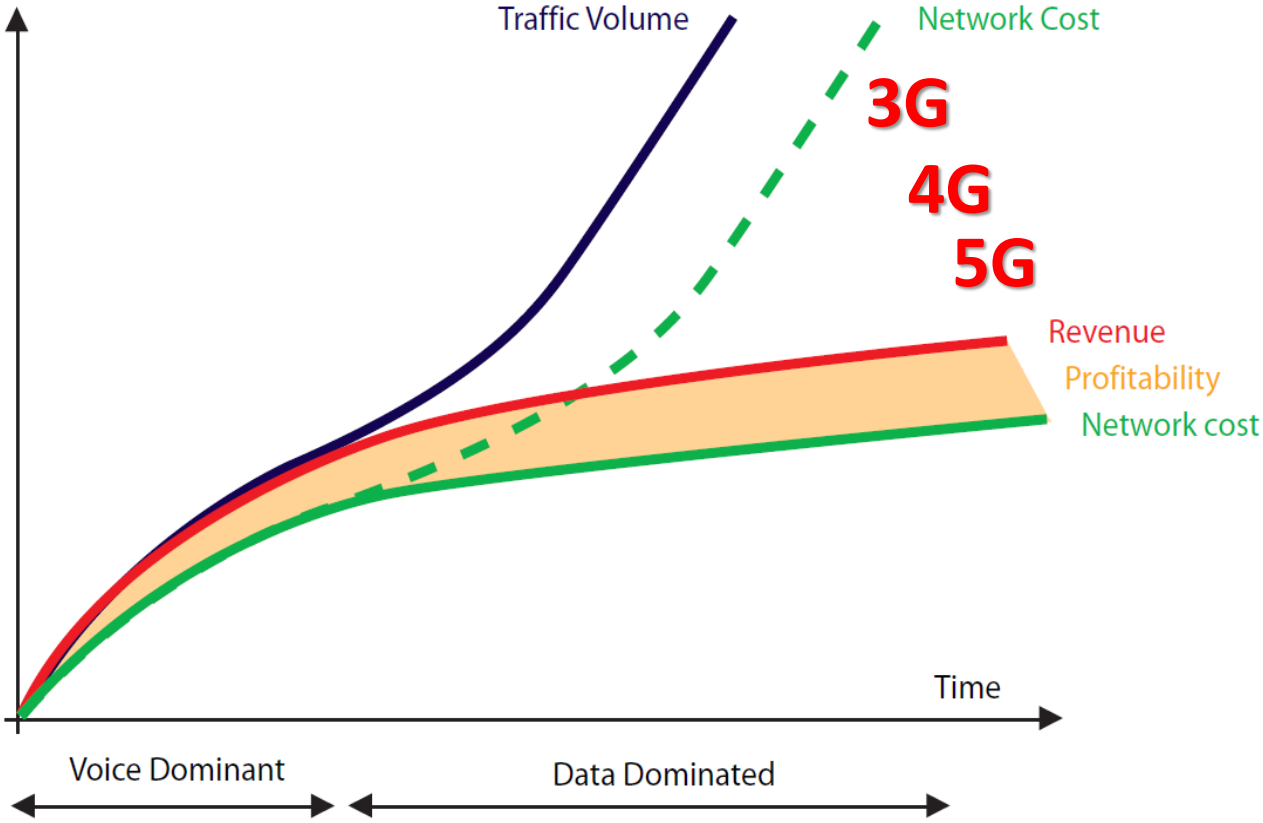
Internet of People
(social networking, crowd-sourcing, workflow)

Internet of Services
(cloud-based solutions, processes, tools and operations)

Internet of Data
(Linking of Open Data)

The Growth

The Challenge



The cost per bit must be reduced for operators to remain profitable
Source: Nokia Siemens Networks

SK telecom

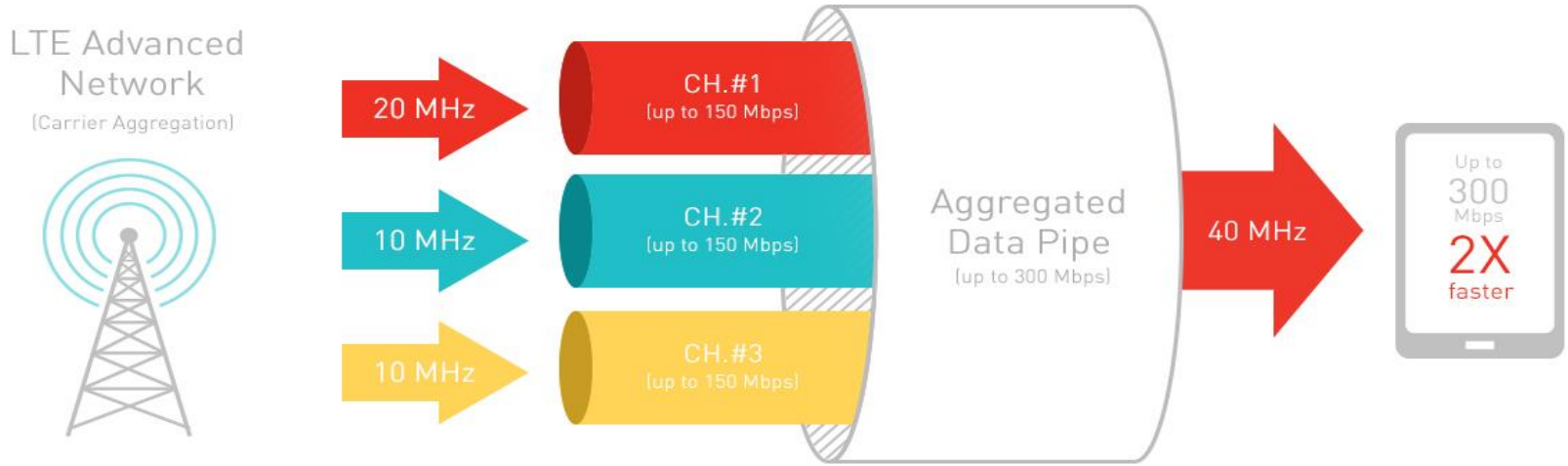
Fact

$$C_{Supply} = B_{MHz} \times E_{\frac{Mb}{s}/MHz} \times N_{Cells}$$

$$C_{2020}/C_{Today} = 1000 \approx 3 \times 6 \times 56$$

SK Telekom's presentation at the 3GPP workshop on "Future Radio in 3GPP"

Bandwidth Boost: Carrier Aggregation (CA)



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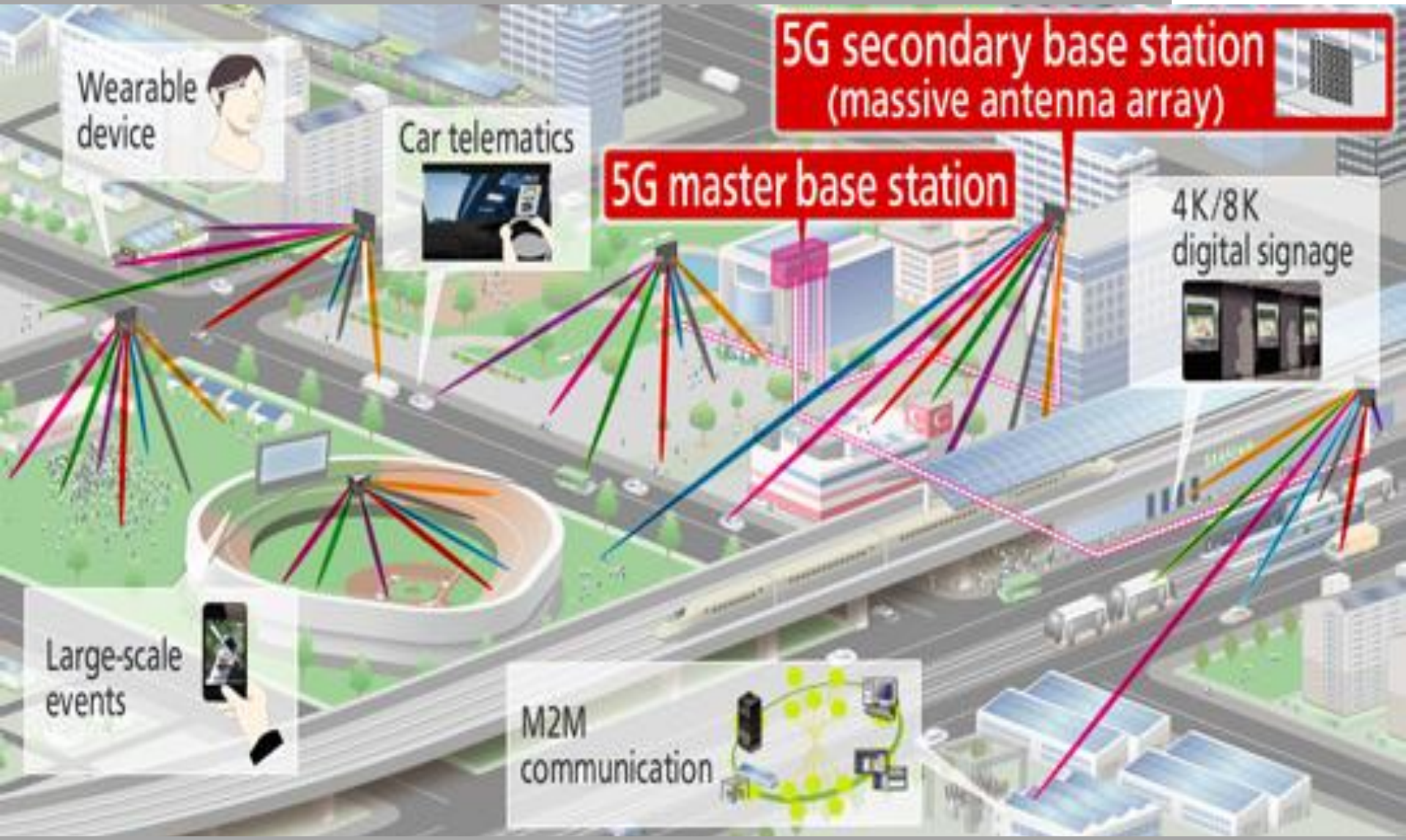
CA aims to boost B_{MHz}

Efficiency Boost: Massive MIMO & CoMIMO



Efficiency Boost: MIMO & CoMIMO

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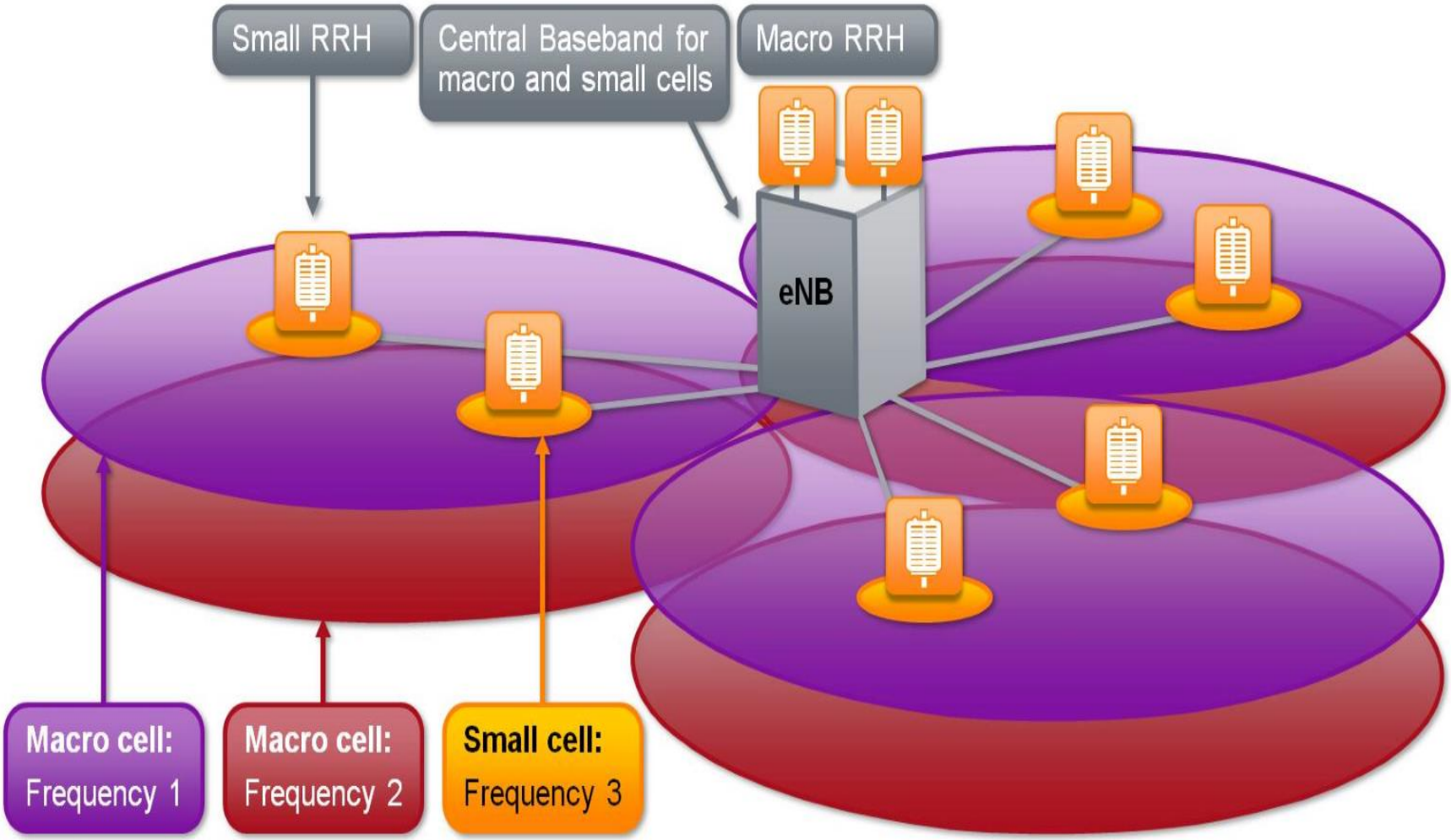
MIMO aims to boost

$$E_{\frac{Mb}{s}/MHz}$$

N_{Cells} Boost: Heterogeneous Networks (HetNet)



N_{Cells} Boost: Heterogeneous Networks (HetNet)

$$C_{Supply} = B_{MHz} \times E_{\frac{Mb}{s}/MHz} \times N_{Cells}$$

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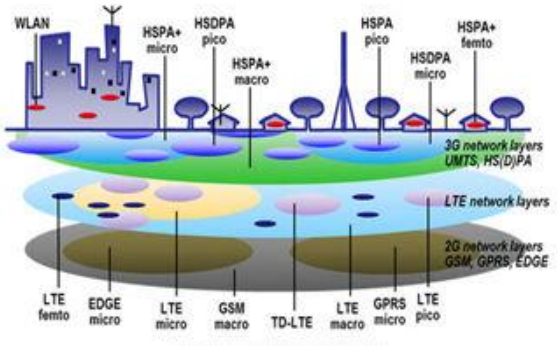
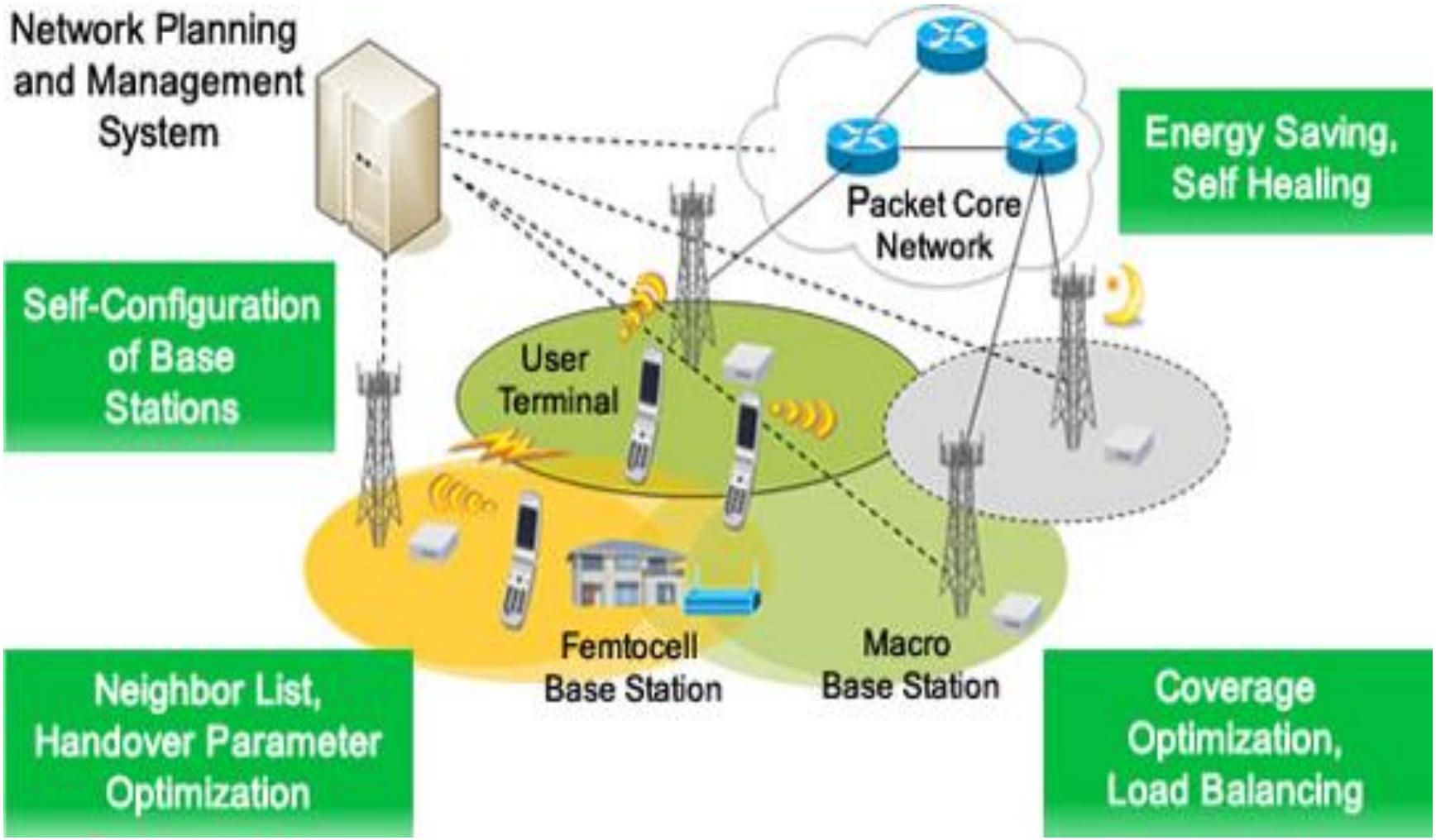
HetNet's aim to boost N_{Cells}

Massive Capacities need AUTO-TUNING

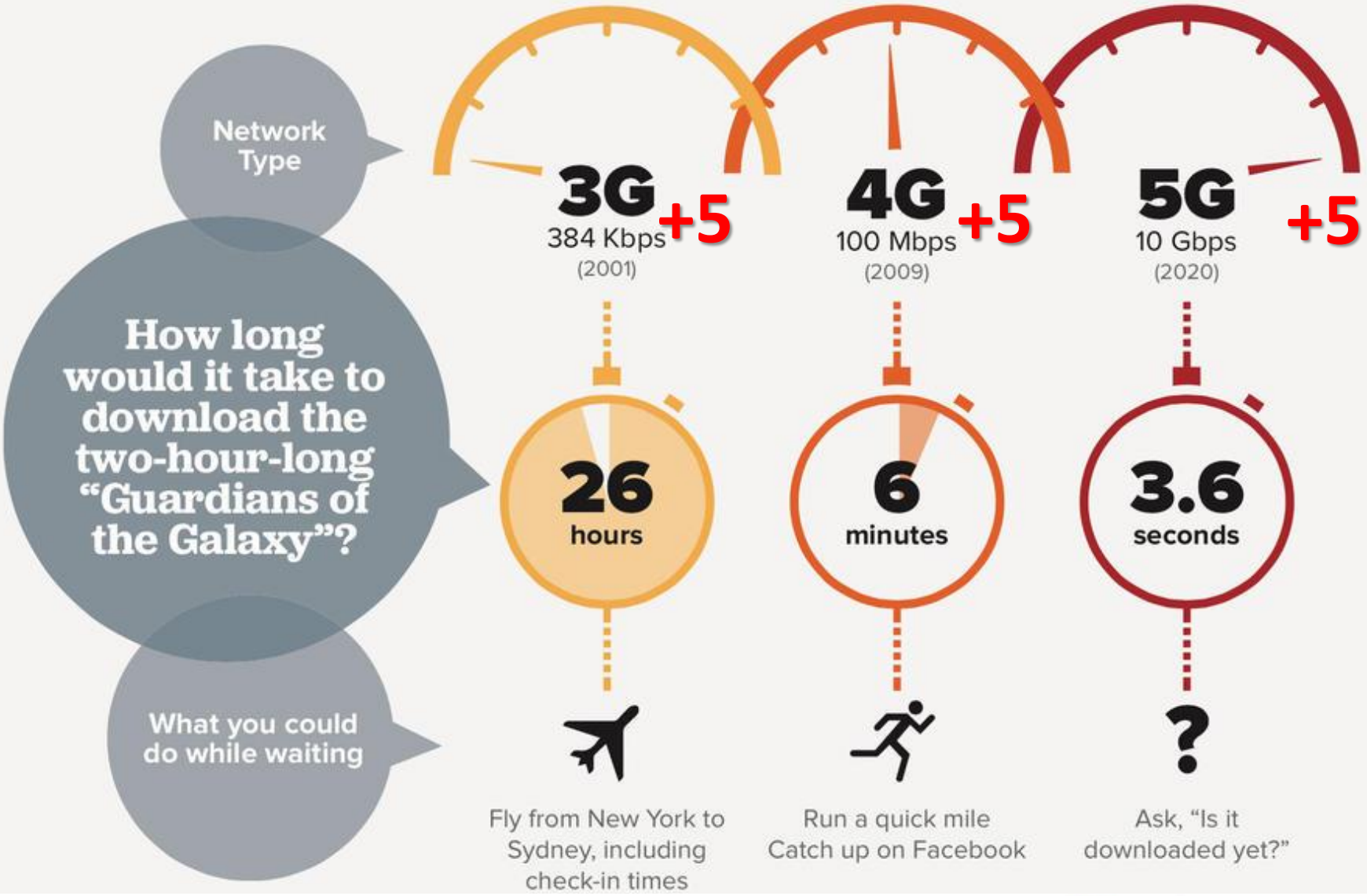
Self Organizing Networks (SON)



Self Organizing Networks (SON)



Real Life Deployment



In the meantime

The Economist | World politics | Business & finance | Economics | Science & technology | Cultu

Mobile telecoms

Wireless: the next generation

A new wave of mobile technology is on its way, and will bring drastic change

Feb 20th 2016 | NEW YORK | From the print edition

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Corbis

THE future is already arriving, it is just a question of knowing where to look. On Changshou Road in Shanghai, eagle eyes may spot an odd rectangular object on top of an office block: it is a collection of 128 miniature antennae. Pedestrians in Manhattan can catch a glimpse of apparatus that looks like a video camera on a stand, but jerks around and has a strange, hornlike protrusion where the lens should be. It blasts a narrow beam of radio waves at buildings so they can bounce their way to the receiver. The campus of the University of Surrey in Guildford, England, is dotted with 44 antennae, which form virtual wireless cells that follow a device around.

"The other camp, explains Mr Téral, favours a revolutionary approach: to jump straight to cutting-edge technology. This could mean, for instance, **leaving behind the conventional cellular structure of mobile networks**, in which a single antenna communicates with all the devices within its cell. Instead, one set of small antennae would send out concentrated radio beams to **scan for devices**, then a second set would take over as each device comes within reach. It could also mean **analysing usage data to predict what kind of connectivity a wireless subscriber will need next and adapt the network accordingly**—a technique that the 5G Innovation Centre at the University of Surrey wants to develop."

FASMETRICS S.A. Self Organizing Network Platform

…our SON platform optimizes the antenna azimuths…

- ✓ **We use the conventional cellular structure**
- ✓ **We use the legacy antennas**
- ✓ **We scan for devices in azimuth plane**
- ✓ **We analyze usage data**
- ✓ **We predict optimum directionality**
- ✓ **We adapt the network accordingly**


Thank you