



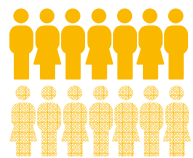
Harnessing new technologies for Smart Society

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August 22nd, 2015

URBANIZATION, RESOURCES CONSUMPTION, GDP GROWTH THINKING CITIES SMARTLY IN APAC

CITIES ACCOUNT FOR



53%

OF THE GLOBAL POPULATION
(7.0 BILLION) BY 2010



70%

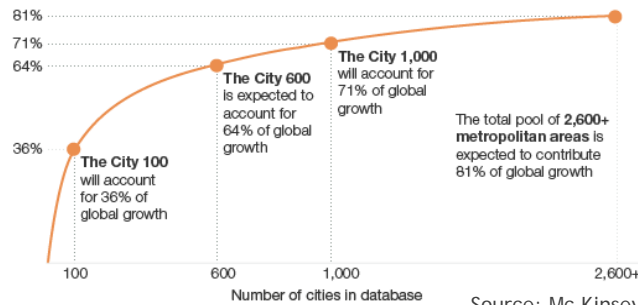
WILL BE URBANITES
(OUT OF 9.3 BILLION) IN 2050

Source: United Nations



CITIES CONTRIBUTE THE MOST TO GDP

Projected cumulative contribution to global GDP growth, 2010-25, %



CITIES CONSUME THE MOST RESOURCES



70%

OF ENERGY CONSUMPTION AND CARBON EMISSIONS



2%

OF THE EARTH'S LAND

A SOCIO-ECONOMIC SHIFT DOUBLED BY A GEOGRAPHIC SHIFT



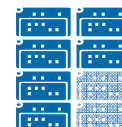
8,000

LARGE COMPANIES EXCEEDING \$1B IN REVENUE IN 2010



+ 7,000

NEW LARGE COMPANIES EXCEEDING \$1B IN REVENUE IN 2025



73%

OF 8,000 LARGEST COMPANIES' HEADQUARTERS IN DEVELOPPED COUNTRIES



70%

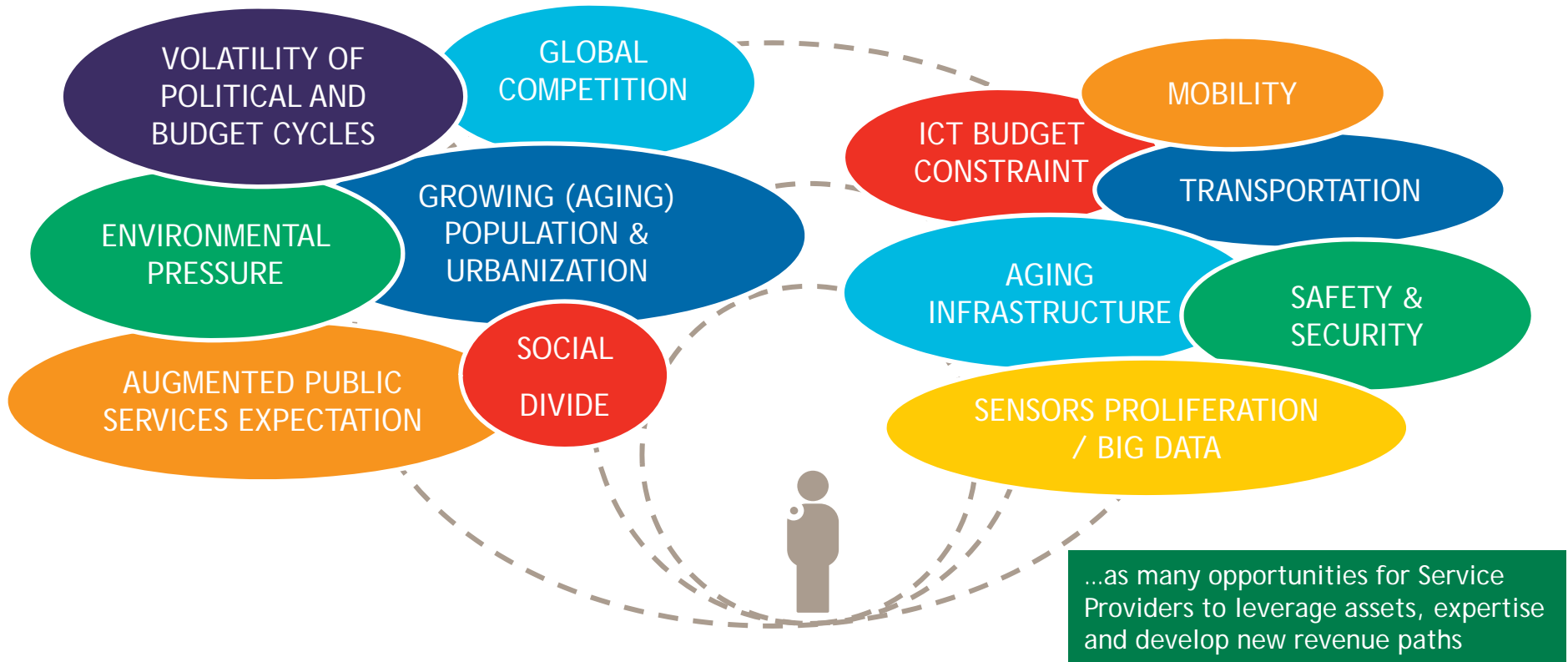
NEW ENTRANTS LIKELY TO BE BASED IN DEVELOPING COUNTRIES



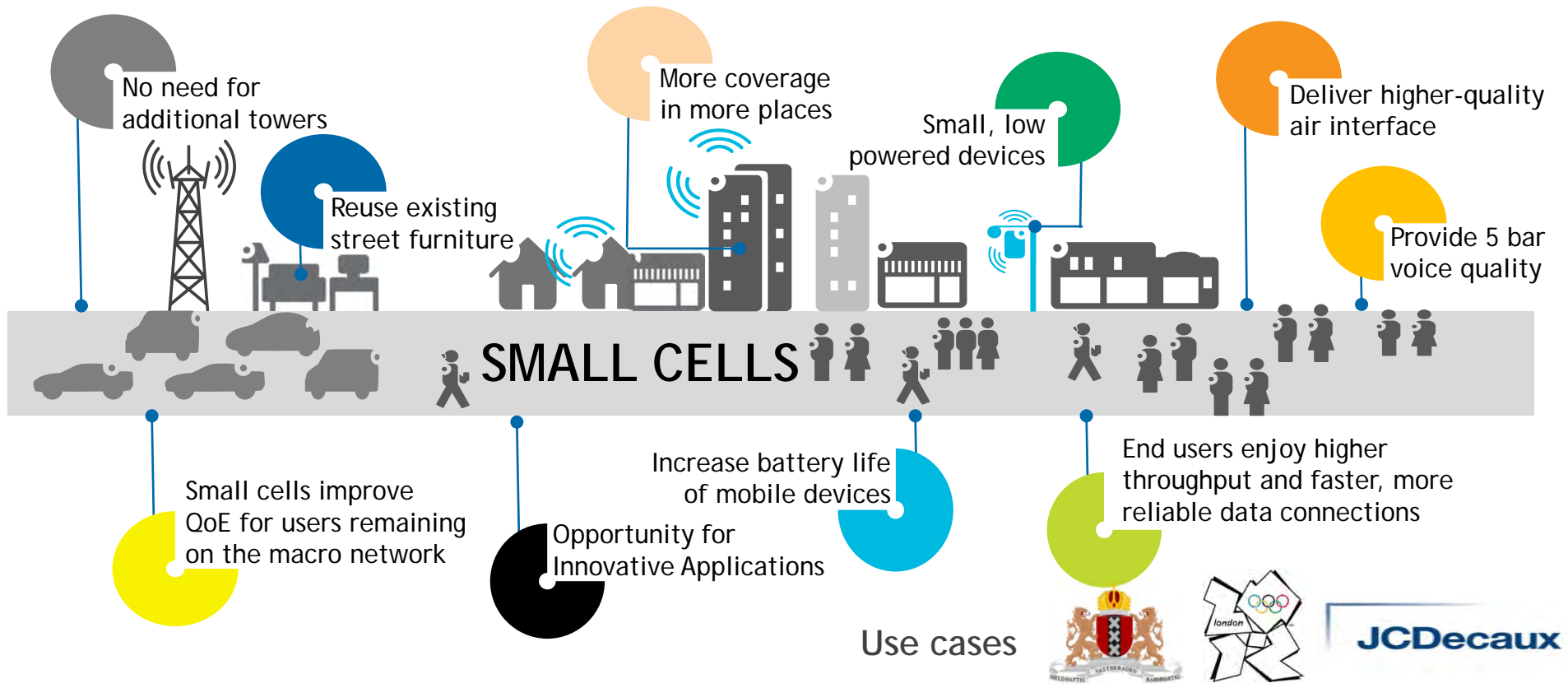
76%

OF CONSOLIDATED REVENUE OF ALL LARGE COMPANIES

CHALLENGES FOR STATE, REGIONS AND LOCAL GOVERNMENT



SEAMLESS WIFI, 4G CITY COVERAGE AND CAPACITY CHALLENGE



THOUGHT LEADERS CONSIDERATIONS FOR SUCCESS

Innovation

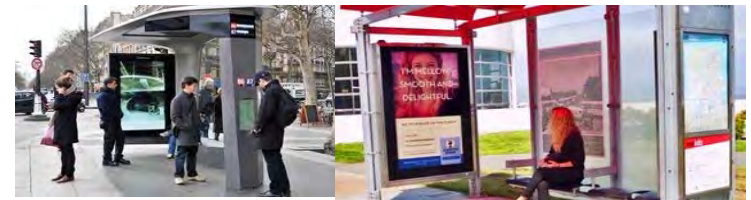
- **Boost Innovation:** Living labs embracing technology R&D (sensor, communication, IoT platforms & applications - hackathons), business ecosystems (Public Private Partnerships & SMEs) and citizens.

Policy

- **Policy -** Out of the box thinking for current regulations and ecosystem peers (e.g. Alcatel-Lucent / JCDecaux partnership)

Community

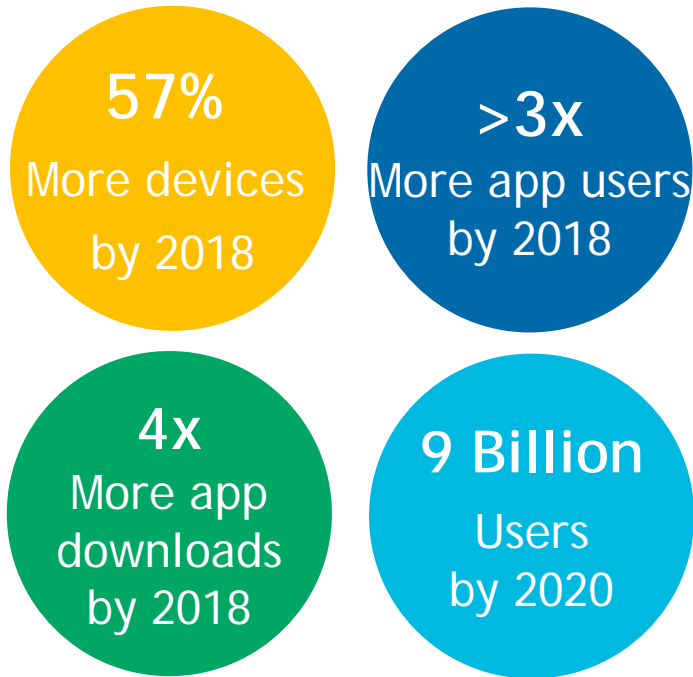
- **Community engagement** is key for success; e.g.: citizen surveys & feedback loop; community trials ; crowd sourcing, funding & adaption, success celebration.



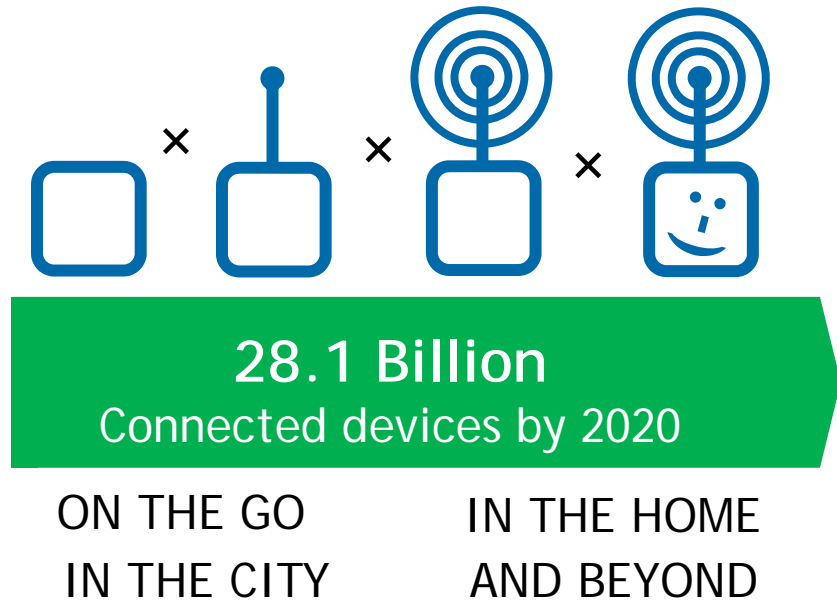
<p>Nice City Pass With the aim of helping the citizens and users in their movements around the city, City Pass provide</p> <p>Tippy Tippy is an application that allows to signal and rate best commercial offers of your city. It uses</p> <p>Sight on Me "Sight on Me", is a GPS tracking service through the use of the latest generation smartphone devices.</p> <p>Red Panic Button Get out of harm's way with just one touch! Red Panic Button - The one call that can make a difference.</p> <p>OperatorApp Using open data of CMT in Spain, this app shows you what mobile operator you are for help you to sav</p> <p>I AM IN I AM IN is a revolutionary app for promoting services and products specially for restaurants, bars.</p> <p>ComunicaPA ComunicaPA is a open and smart application that allows citizens and enterprises to easily comunicat</p> <p>FGC FGC is the official App of the FGC (Catalan railway network) inside you will find features like:</p> <p>Ozon Ozon liefert den stundengenauen Ozonwert in ihrer Nähe und samst sie bei Überschreitung der Schwelle.</p> <p>Comunito Recently, and with the ever-increasing interest in Smart City paradigm, urban mobility optimization</p>	<p>Notdor App If you have to take the train and you want to rest in the earlier hours of the day, or have a nap w...</p> <p>DocCheck multieBook - Herold Innere Medizin The DocCheck multieBook "Herold Innere Medizin" is called a multieBook, because it's more than just a...</p> <p>fesedit Fesedit is a car share platform aimed to help people to move around their city in an easy way. Fes...</p> <p>QuestTnSitu QuestTnSitu is a web and mobile application designed and built to support learning in situ activitie...</p> <p>Learn ABC Magic Learn ABC Magic is a comprehensive package for reading and writing alphabets with easy interface and...</p> <p>Tapple Colorit The brain of the child up to 3 years old is especially acquisitive to the outside information and ca...</p> <p>Tapple Puzzles Children aged 4 and over years old are happy to be included in the gameplay easily some complex pro...</p> <p>Compartaxi This service optimises the use that citizens make of the taxi service in the city. • If redu...</p> <p>Repara Ciudad Participatory service of street improvements.</p> <p>Spotter Spotter is a engine for tourism apps. For now, it is used in 4 apps (Spot in Lisbon/Helsinki/Lamaia...</p>	<p>Clean City Let no antisocial attitude unnoticed! With Clean City you can locate damage and dirt in the street.</p> <p>GoHelsinki GoHelsinki is a lightweight application which shows you the location of many places of the city of H...</p> <p>Open Pins Open Pins gathers location based information from any publicly available Open Data Libraries added b...</p> <p>PayPark PayPark is a smartphone app that allows the user, previous registration in the online platform, to p...</p> <p>Bike sharing Italy Bike sharing Italia allows you to real time check the bike availability in bike sharing points of mo...</p> <p>MapsMarker.com The WordPress plugin "Leaflet Maps Marker" allows you to pin, organize & show your favorite places t...</p> <p>iBeach iBeach provides real time information of the state of the beaches' color of the flag, presence of p...</p> <p>TAXI RATE BARCELONA TaxiRate es la calculadora de la ruta en taxi por Barcelona, en destinos urbanos o interurbanos.</p> <p>OnTheBus OnTheBus is an accessible application for mobile devices with Android operating system that guides t...</p> <p>Smart Recycling / MI ReciclaJe Smart Recycling is an iPhone application that helps citizens to recycle, using geo-localization it...</p>
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Source: Applications submitted for the Open Cities App Challenge 2013

Mobile usage continues to increase



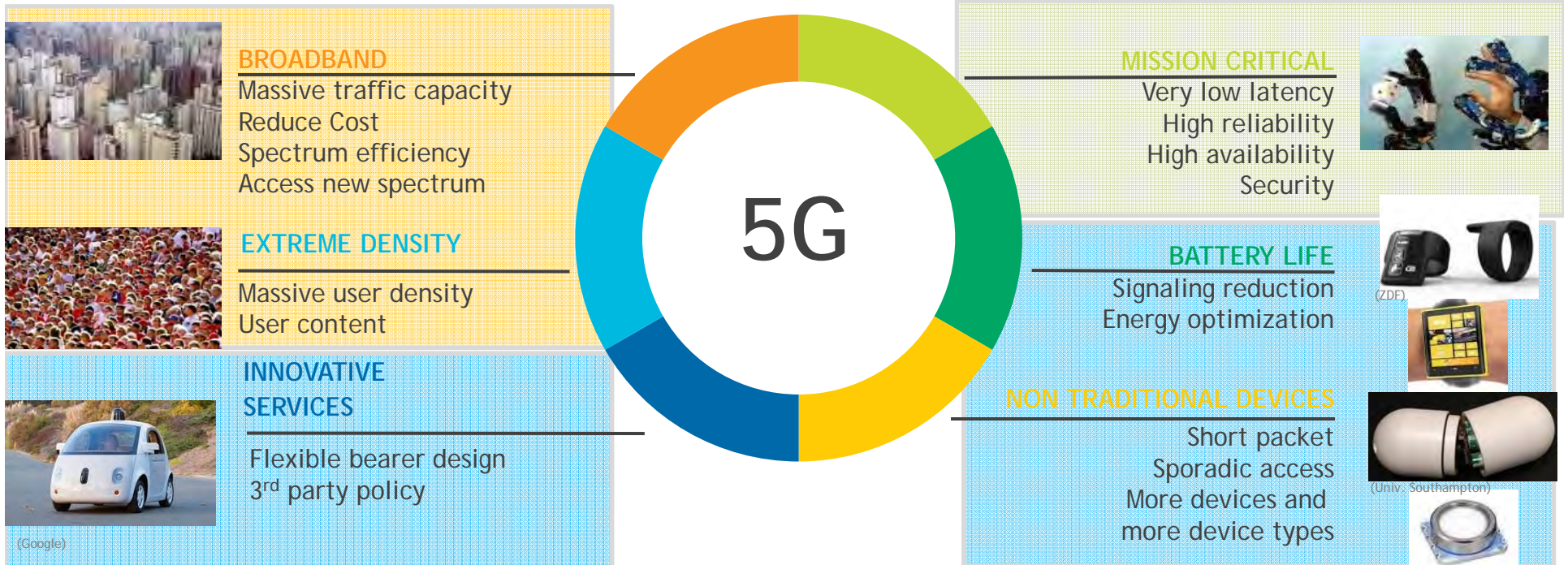
IoT is ready to explode



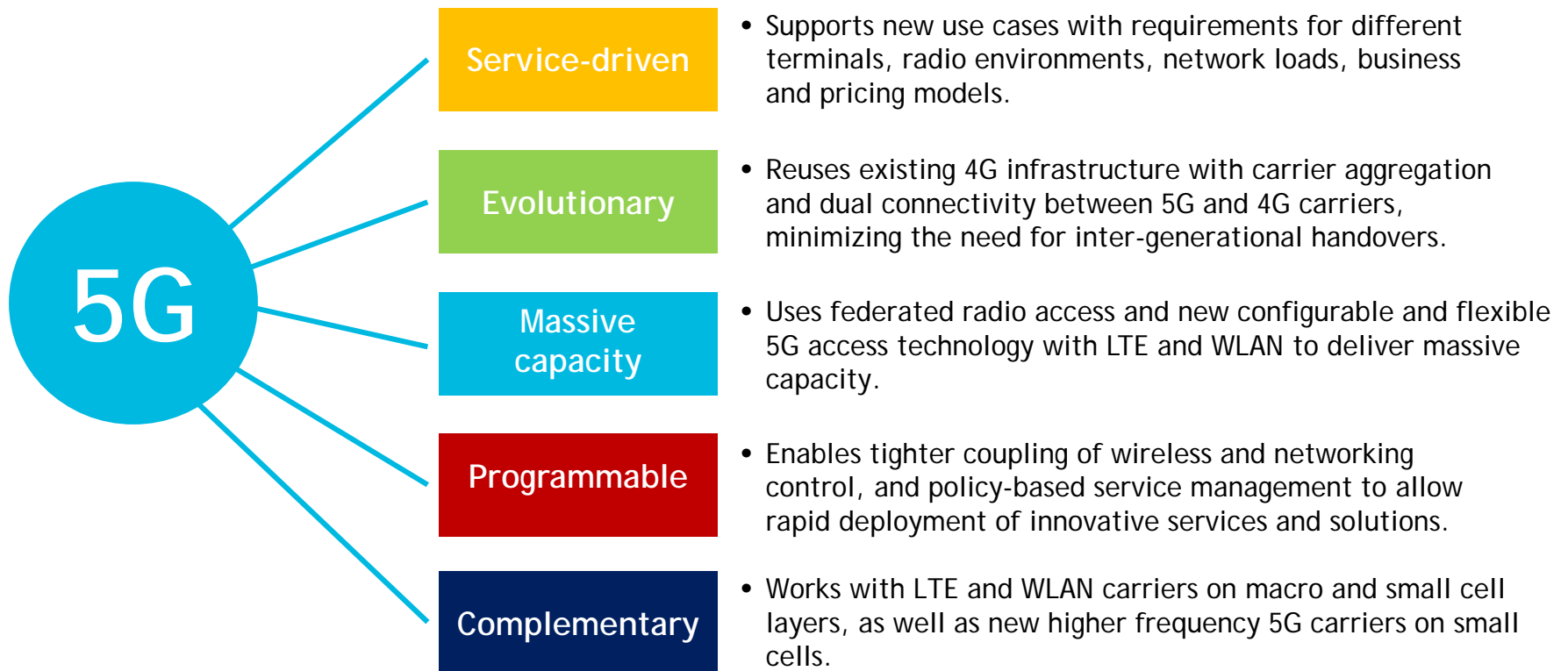
By 2020 mobile networks will need to support
200,000 connections per square kilometer

Sources: Statista, The Radicati Group, Portio Research, IDC

SIX REQUIREMENT DRIVERS FOR 5G



WHAT WILL A 5G NETWORK LOOK LIKE?



A SMART ASIA-PACIFIC BECOMING THE LEADING REGION OF THE 21ST CENTURY

A VIBRANT MARKETPLACE WITH STRONG POLITICAL WILLINGNESS

- 2018-2020: a race to stay at the technological and competitive edge with future networks (5G and Virtualisation in Japan, Korea)
- ASEAN 2016-2020: achieving the full connectivity/capacity at the lowest price in ASEAN. Mobile BB has the crucial technology and fixed/fiber in dense urban areas
- successful implementation of government led BB infrastructure (Australia, NZ and Singapore) but what are the next services innovation to stimulate competition and the economy (big data, M2M)?
- Some countries (India, Singapore) have launched ambitious initiative to create smart cities/nation
- Operators business services: potential growth for enterprise solution and innovation (virtualization and cloud service). Strong footprint of big operators and expansion for local operators.

DEVELOPING A MODERN REGULATORY APPROACH

- Promoting and facilitating networks investment(access to all kind of passive infrastructure, simplification of rights of way granting, mandatory fibre pre-cabling for new buildings, spectrum allocation and sharing)
- Adapting regulatory framework a horizontal layer approach: ensuring healthy and sustainable competition at each layer and avoiding gridlocks between any layers that become inter-dependant
- Operators should be allowed to monetize the data flow through service differentiation which is key to foster innovation, new services and meet demand for different levels of quality. (e.g: providing End to End QoS service delivery, in becoming Cloud and CDN providers)
- Spectrum allocation should be strongly harmonized at regional level to favor timely allocation of frequencies for LTE and prevent market fragmentation.

Every success
has its network