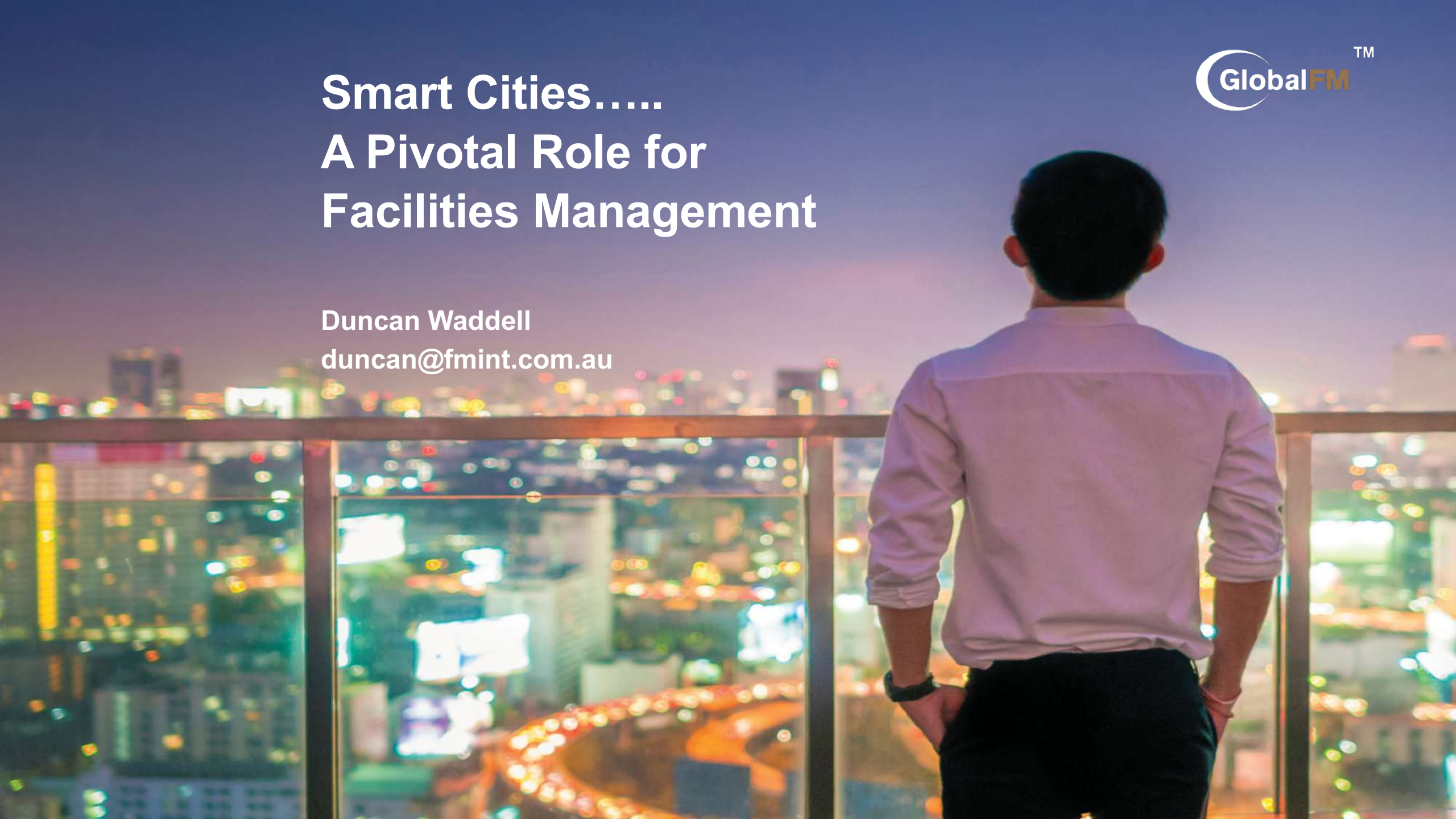




CONGRESSO
& EXPO **ABRAFAC**
2018

Smart Cities..... A Pivotal Role for Facilities Management

Duncan Waddell
duncan@fmint.com.au



Smart Cities....A Pivotal Role for FM

- Mega Trends in and for Facilities Management
- Smart Cities Misinformation, Misunderstandings and Pitfalls
- What is a Smart City?
- What does a Smart City do?
- Smart Cities Growth
- Infrastructure Preparedness
- 3 Takeaways for Smart Cities
- Critical Factors for FM engagement

Mega Trends in FM

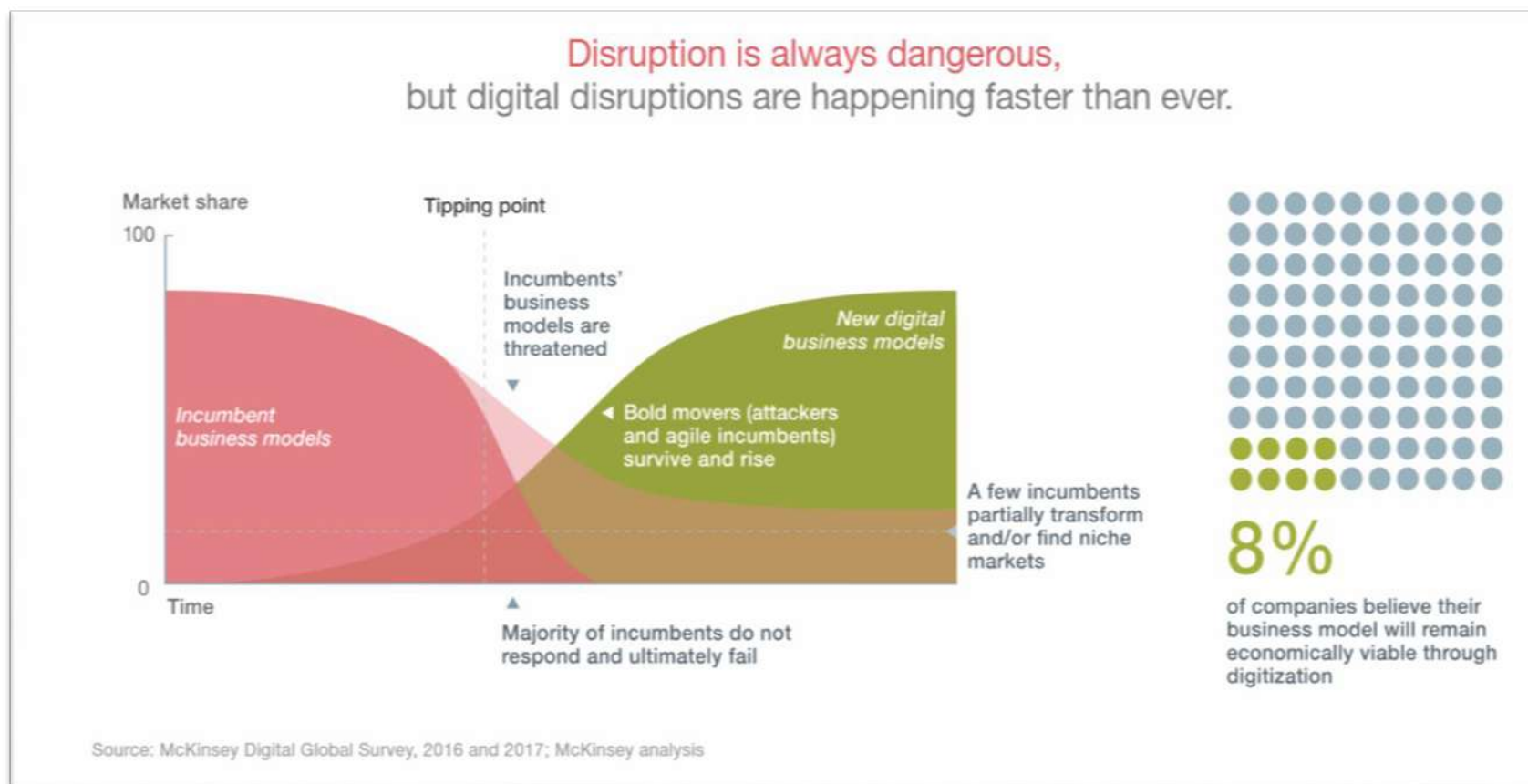
- **Urbanisation – The City as a Customer**
- Smart is the new 'green'
- Innovating to 'Zero'
- Standardisation
- Digitisation

However that's for this afternoons panel session!!

Misinformation, Misunderstandings and Pitfalls

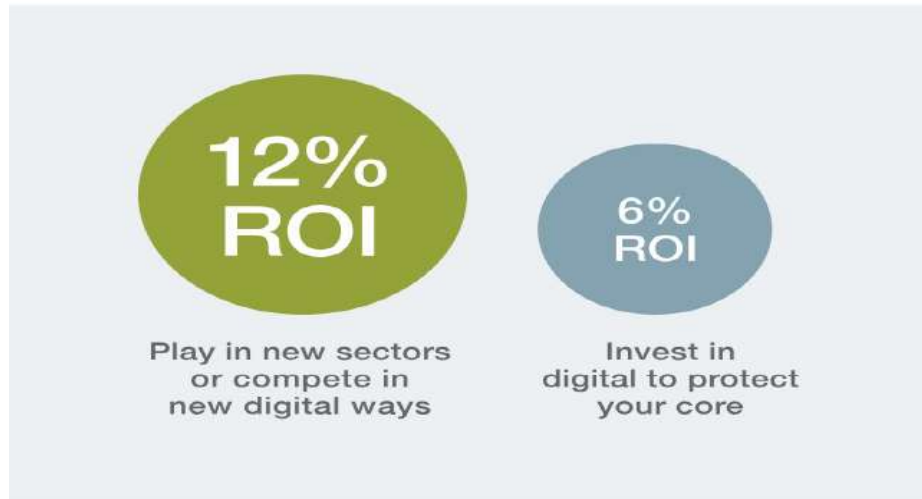
Fuzzy definitions –Digital Revolutions, Smart Cities, Smart Buildings, Transformation vs Transition.....

The Fundamental Economics of Digitisation

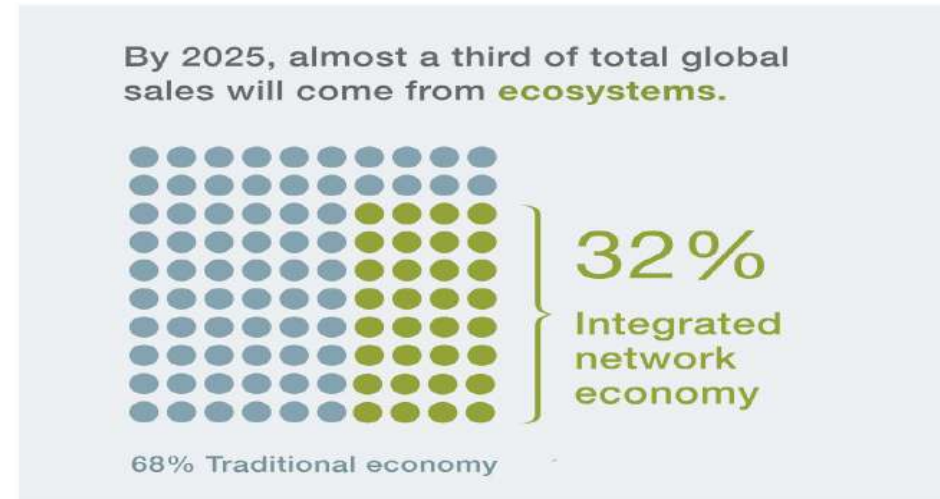


How Digital Disruption effects BAU

The payoff will go to those
who move **boldly**.

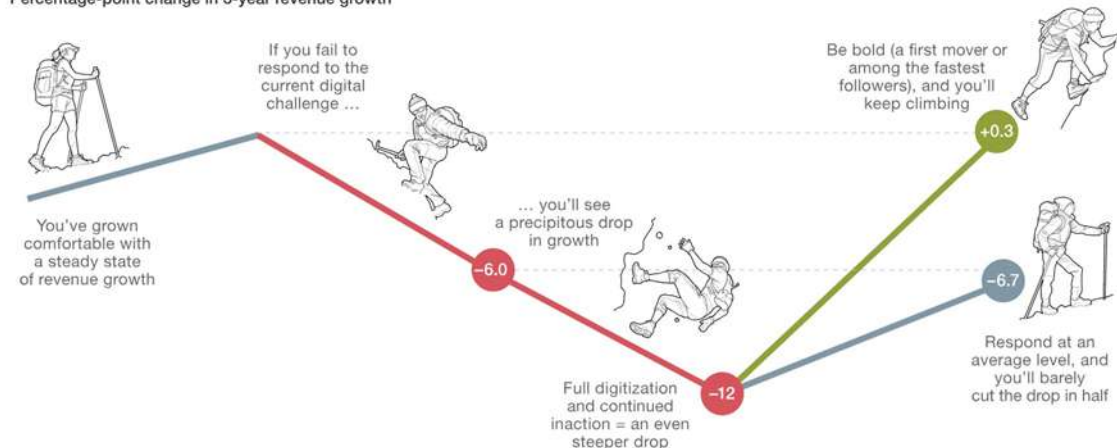


Winners will think in terms
of **ecosystems**.



Growth rates will plummet.
To survive, companies must be first movers.

Percentage-point change in 3-year revenue growth



Source: McKinsey Digital Global Survey, 2016 and 2017; McKinsey analysis

Smart Cities....What are they?



Smart Cities...what are they?

SMART CITIES

**“THERE IS NO
ABSOLUTE DEFINITION
OF A SMART CITY, NO
END POINT BUT
RATHER A PROCESS
OR SERIES OF STEPS
BY WHICH CITIES
BECOME MORE
“LIVEABLE” AND
RESILIENT AND,
HENCE, ABLE TO
RESPOND TO NEW
CHALLENGES”**

Smart Cities...what are they?

SMART BUILDINGS

CONNECTED

VISIBILITY

RESPONSIVE

ACCURACY

INTERACTION

REAL-TIME

INTEGRATION

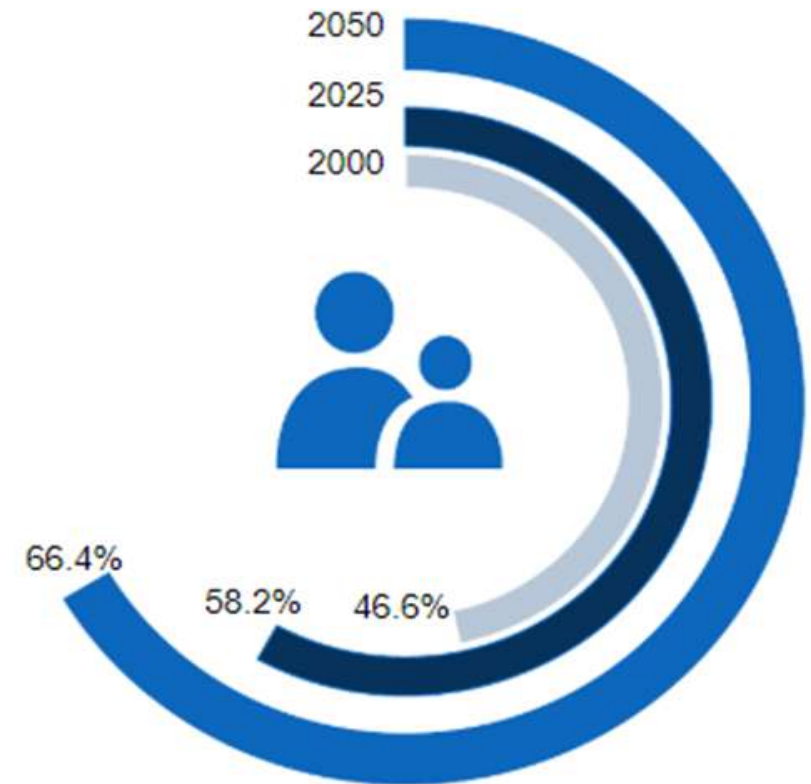
DATA

Smart Cities Growth

In 2000, globally, the population predominantly resided in rural settings. By 2050 66.4% of the world's population will live in urban settings (and it will go on).

This will place massive stress on the delivery of urban services such as water, waste and energy management. It will also place civil pressure on government for safe, clean, mobile and resilient environments as well as economically sound prospects for citizens

Smart City Adoption Timeline: Percentage of Urban Population, Global, 2000, 2050, and 2025



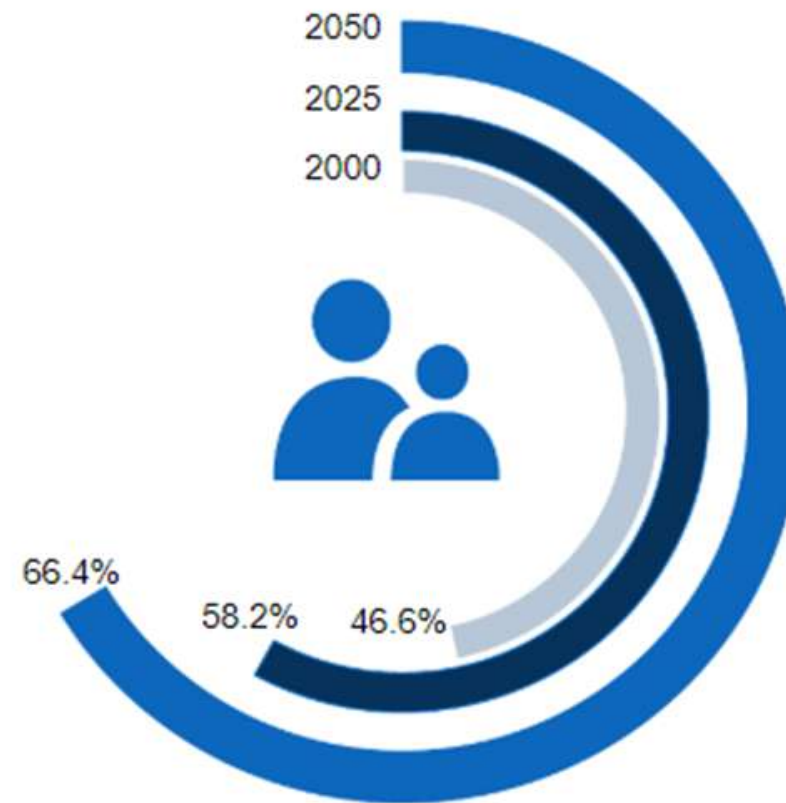
Source: UN Department of Economic and Social Affairs; Frost & Sullivan

Smart Cities Growth

Smart city solutions and an embrace of the digital economy are helping assist in these challenges.

Cities with large growth populations or with a rapid rate of growth are more likely to suffer. Thus they are more likely to adopt a smart city concept to increase efficiencies of existing assets or they have the need for new infrastructure which is primed for integrating smart technology.

Smart City Adoption Timeline: Percentage of Urban Population, Global, 2000, 2025, and 2050



Smart Cities Growth

Cities are the economic hubs for nations and the world. By 2030 the wealthiest 123 cities will contribute approximately USD\$78 trillion (by purchasing power parity) to the global economy, making a strong case for cities as powerful connected customers.

Smart City Adoption Timeline: Contribution of Top 123 Cities to Global GDP, Global, 2000, 2015, and 2030



Author calculations are based on data from the Brookings Institution and World Bank; wealthiest cities are determined as of 2015 rankings and according to cities for which data is available. Source: Brookings Institution; World Bank; UN; Frost & Sullivan

Smart Cities Growth

While most smart city innovators have greater wealth than the host nation (measured on a per capita basis), other early adopting cities with a low GDP's per capita, see adoption of a smart city concept as an avenue towards a more prosperous future.

Cities with access to more financial resources – particularly a stronger tax and consumer base – will adopt smart city solutions faster than those without.

Smart City Adoption Timeline: Contribution of Top 123 Cities to Global GDP, Global, 2000, 2015, and 2030



Author calculations are based on data from the Brookings Institution and World Bank; smartest cities are determined as of 2015 rankings and according to cities for which data is available. Source: Brookings Institution; World Bank; UN; Frost & Sullivan

Smart Cities Growth

More than 26 cities will be smart cities in 2025; more than 50% of which will be from Europe & North America



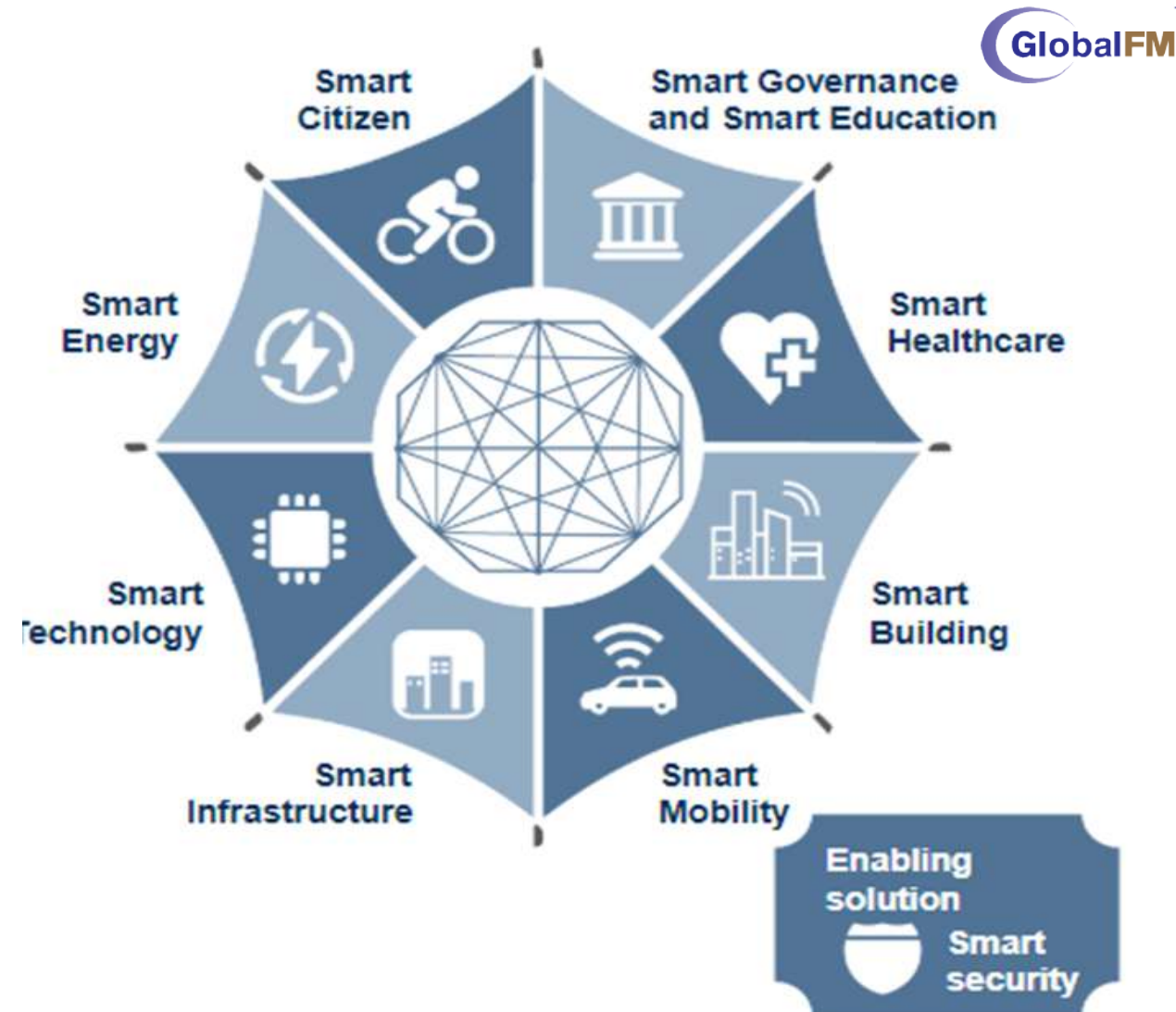
Source: Forbes Smart City List 2010; Innovation Cities Global Index 2012-2013; specific Smart Project Websites for each city: Frost & Sullivan

Image Source: Dreamstime

Smart Cities Integrate ICT into Urban Life

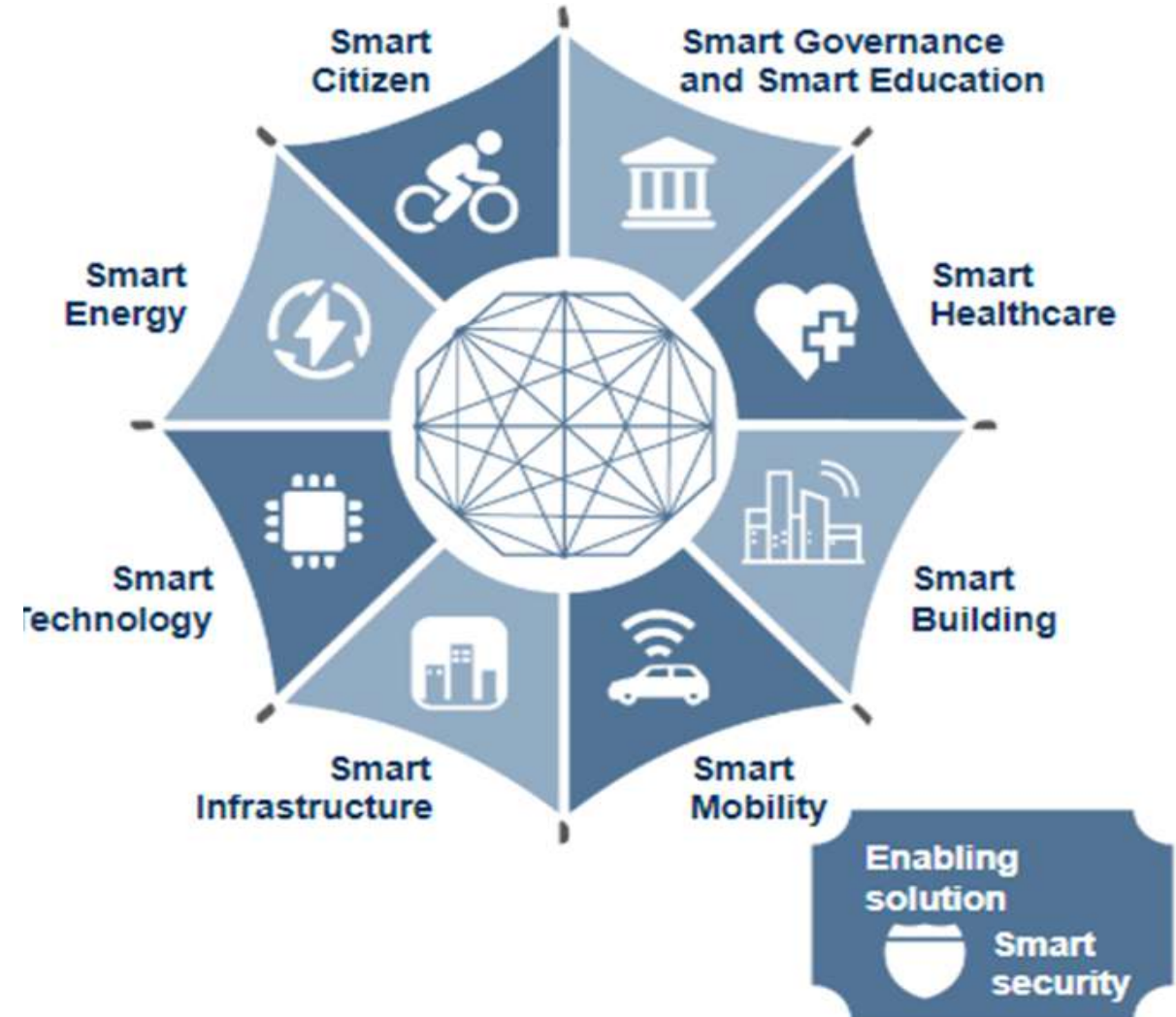
Smart Cities are built on smart technologies and solutions with an emphasis on information and communications and technology (ICT).

Their goal is to improve city services and citizens' quality of life through increased efficiency, multi-stakeholder partnerships, citizen co-creation and a greater transparency.



Smart Cities Integrate ICT into Urban Life

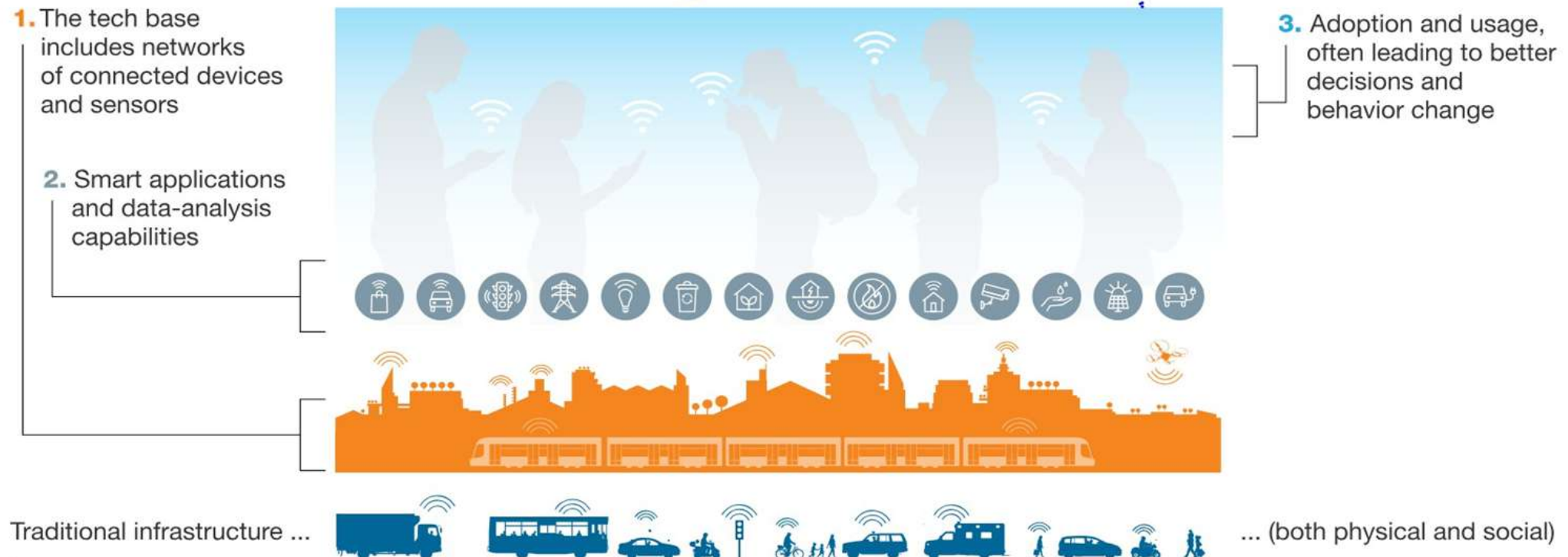
Visionary Innovation (F&S) considers a city 'Smart' when it has active and verifiable pursuits in at least 5 of the 8 smart parameters as shown.



Smart Cities Drive Intelligent Outcomes

Smart cities add digital intelligence to the urban world and use it to solve public problems and achieve a higher quality of life.

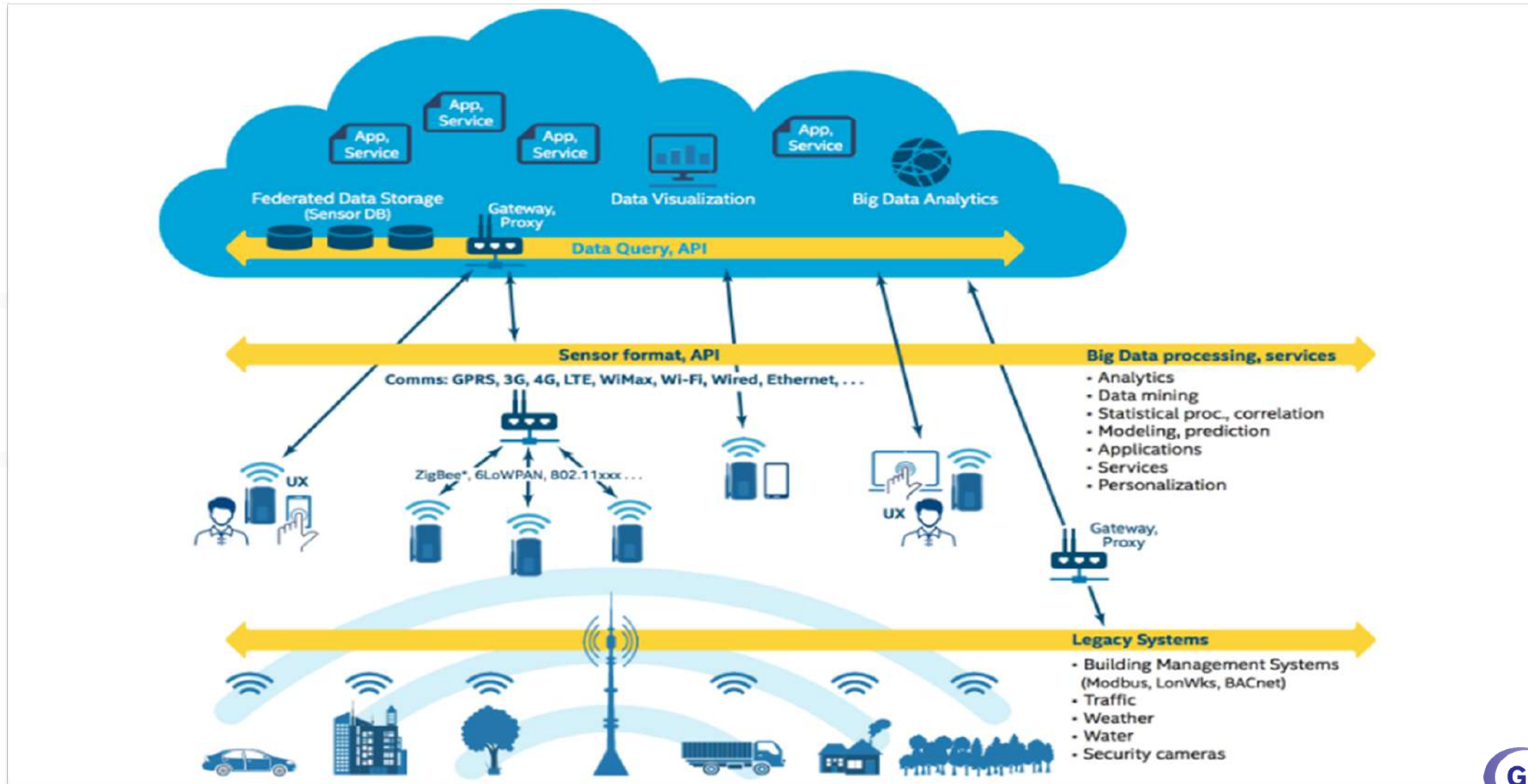
3 layers of “smartness” will elevate life in cities of the future



Smart Cities Drive Intelligent Outcomes

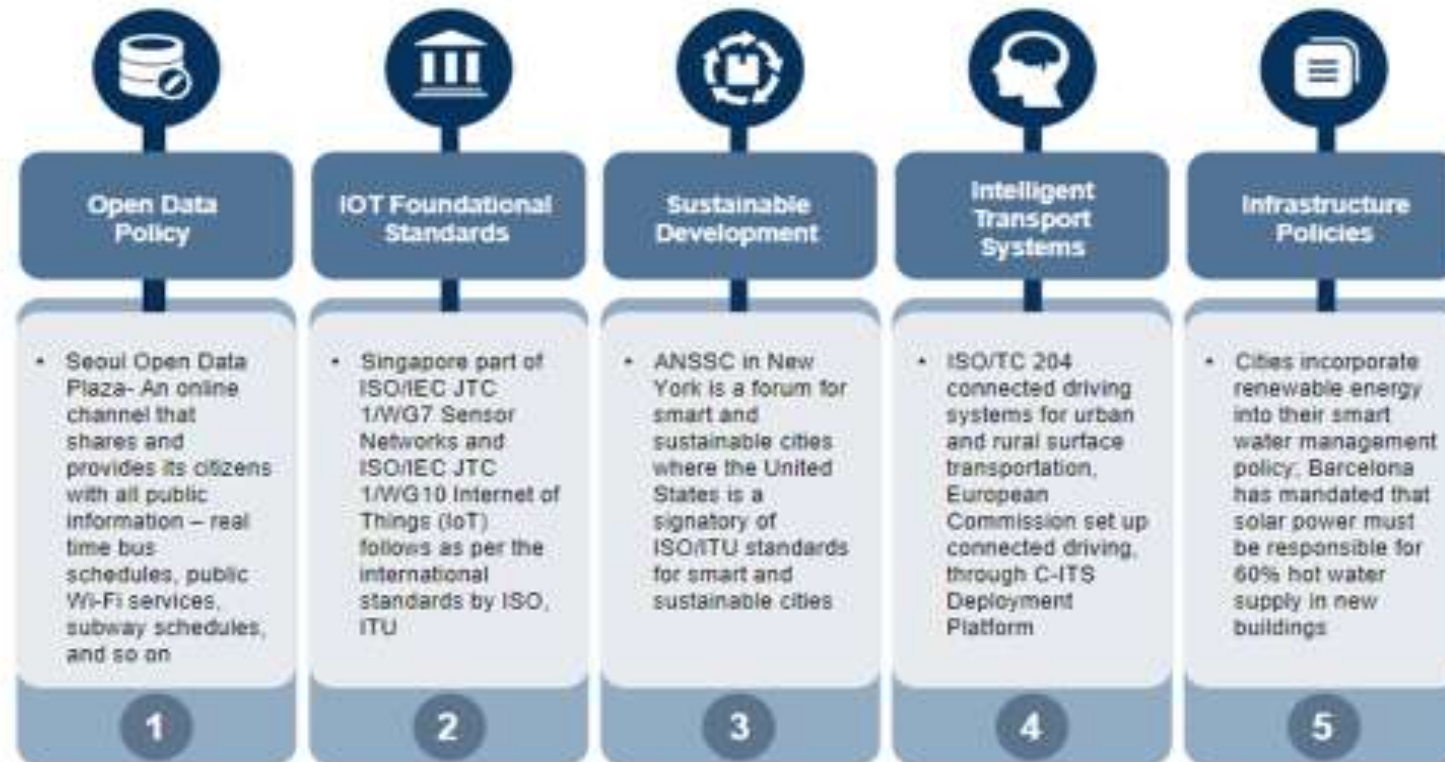
- A Smart City utilises ICT to:
 - *Collect Data*
 - *Crunch Data*
 - *Communicate*

Smart Cities Drive Intelligent Outcomes



Smart City Policy and Standards

Smart City Policy and Standards



Source: Frost & Sullivan

Develop your own Smart City Concept

Smart City Concept



Smart Cities Infrastructure Preparedness

Smart City Adoption Timeline: Infrastructure Need Versus Spending, Global, 2017–2040



Globally, there is an increasing gap between infrastructure spend and need. Smart city solutions can mitigate deleterious impact of inadequate infrastructure investment.

For example smart mobility solutions can reduce traffic congestion and even deferring the need for additional roads and highways. However smart solutions cannot replace foundational need for infrastructure readiness.

3 'Takeaways' for the Smart City Roadmap

1

The initial hype surrounding smart cities is transitioning into wider adoption of strategic and integrated smart city planning. As this transition occurs, three factors will be beneficial in considering a city's need and readiness for smart city implementation: population strain, wealth or access to funding sources, and infrastructure and technological readiness.

2

Smart city initiatives have tended to be concentrated in global and mega cities. However, the greatest opportunities for solution providers are in smaller Tier II cities, which face growing urbanization challenges but have only recently begun to embrace smart city solutions.

3

Smart cities are a "when" not "if" opportunity. As legacy infrastructure is upgraded and replaced, smart solutions will become the technological norm. To optimize this tremendous opportunity, vendors must be strategic in anticipating when a given city will be most open to the smart city concept.

3 'Takeaways' for the Smart City Roadmap

1

The initial hype surrounding smart cities is transitioning into wider adoption of strategic and integrated smart city planning. As this transition occurs, three factors will be beneficial in considering a city's need and readiness for smart city implementation: population strain, wealth or access to funding sources, and infrastructure and technological readiness.

3 'Takeaways' for a Smart City Roadmap

2

Smart city initiatives have tended to be concentrated in global and mega cities. However, the greatest opportunities for solution providers are in smaller Tier II cities, which face growing urbanization challenges but have only recently begun to embrace smart city solutions.

3 'Takeaways' for the Smart City Roadmap

3

Smart cities are a “when” not “if” opportunity. As legacy infrastructure is upgraded and replaced, smart solutions will become the technological norm. To optimize this tremendous opportunity, vendors must be strategic in anticipating when a given city will be most open to the smart city concept.

3 'Takeaways' for the Smart City Roadmap

1

The initial hype surrounding smart cities is transitioning into wider adoption of strategic and integrated smart city planning. As this transition occurs, three factors will be beneficial in considering a city's need and readiness for smart city implementation: population strain, wealth or access to funding sources, and infrastructure and technological readiness.

2

Smart city initiatives have tended to be concentrated in global and mega cities. However, the greatest opportunities for solution providers are in smaller Tier II cities, which face growing urbanization challenges but have only recently begun to embrace smart city solutions.

3

Smart cities are a "when" not "if" opportunity. As legacy infrastructure is upgraded and replaced, smart solutions will become the technological norm. To optimize this tremendous opportunity, vendors must be strategic in anticipating when a given city will be most open to the smart city concept.

Critical Factors for the FMer

**FM
WORLD!
SMART
Buildings**

**New ages
BMS's**

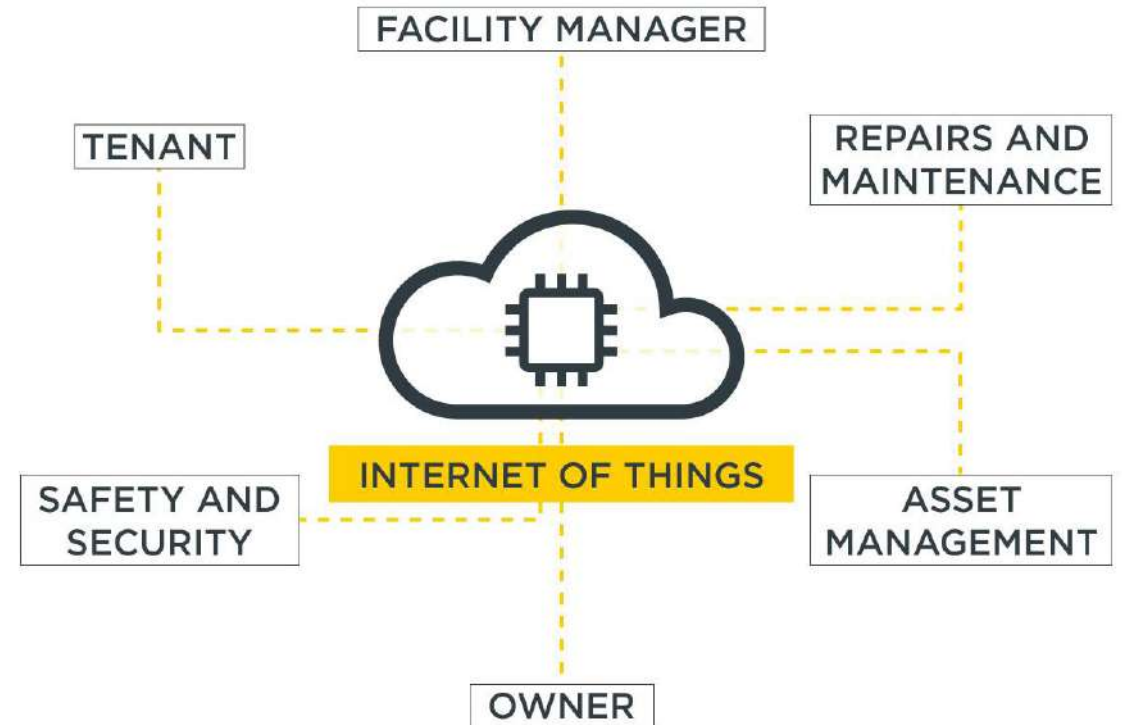
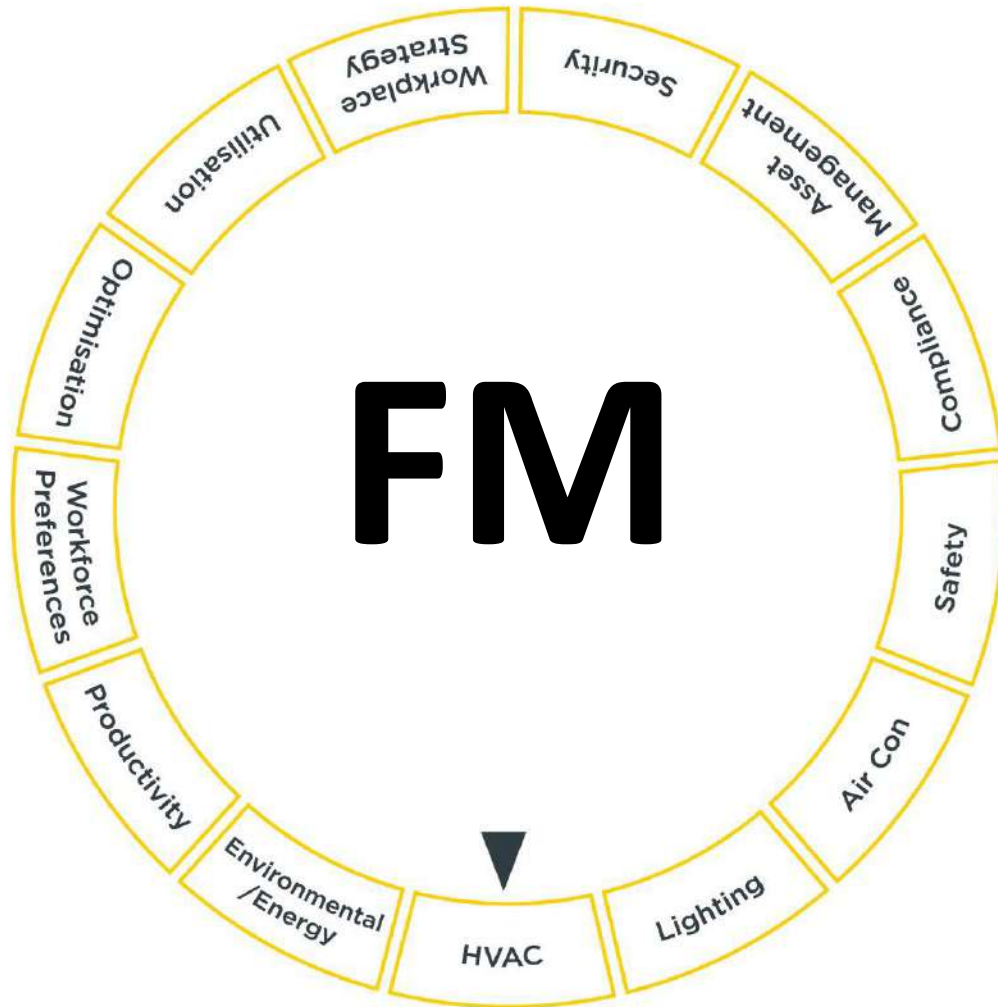
**IoT
Adoption**

API's

**Mega-Data
Technology**

**Analytics
Platforms...**

Critical Factors for the FMer



Critical Factors for the FMer

1. Conversion and Integration
2. Digital Transformation
3. Culture
4. Resources

Questions for the FMer

How can my facility become:

- An inclusive facility
- A connected and investor friendly facility
- A sustainable facility
- A future proofed facility

Where do I start?

1. Get a business case in place
2. Then get buy-in from tenants, government, industry and academia
3. Start with fund raising – crowdfunding, user fees, special development funds, taxes or revolving funds
4. Develop internal understanding and capacity
5. Policy and regulatory changes
6. Then experiment!

Critical Factors for the FMer



**Think big,
start small,
move fast!**