



NOKIA

Capitalizing on IoT

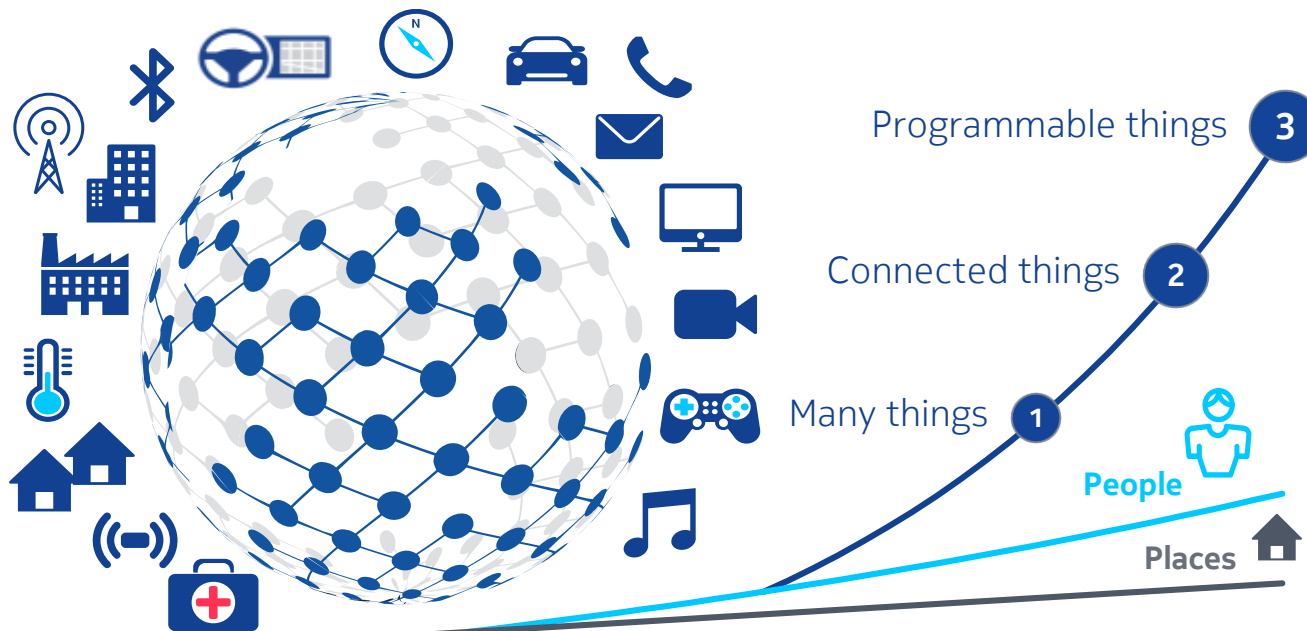
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IoT: are we there yet ?

Past has been about connecting people, the future is about connecting things
Improving personal life, optimizing business processes



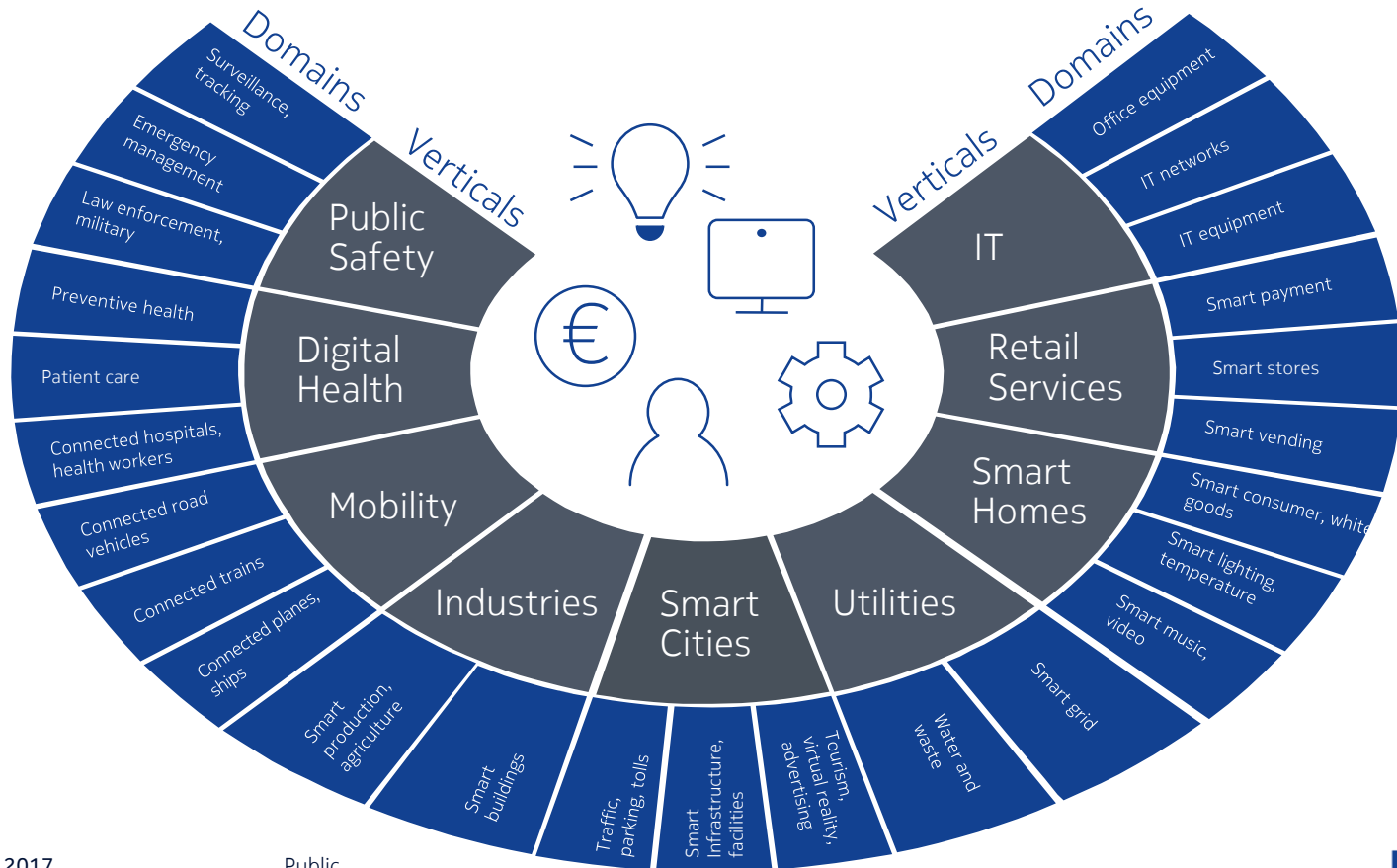
The Internet of things (IoT) is the inter-networking of physical devices, (also referred to as "connected devices" and smart devices), vehicles, buildings, and other items - embedded with electronics, software, sensors, and network connectivity that enable these objects to collect and exchange data

— Programmable World with 50 bn things connected by 2025

— Mobile internet with 5 bn people connected by 2020

— Fixed internet with 1 bn places connected by 2005

The Internet of Things has a transformational impact on all industries, re-shaping business models, value chains, and entire industry configurations



What does it take?

To fully capitalize the Digital Value & Internet of Things opportunity, five main challenges have to be addressed

Robust connectivity: availability, coverage, latency.

1

Standardization: Standard connectivity for billions of things

2

Interoperability and open interfaces: Enabling platforms to talk with each other

3

Privacy and security: Prevent malware injection and data misuse

4

Domain knowledge: Deep, vertical-specific insights

5

A layered and horizontal approach to enable IOT mass adoption



Vertical Point Solutions are expensive

- High Cost for integration
- Duplication of effort
- Underutilized resources
- No Economies of Scale



Applications & ecosystem

Platform

Infrastructure

Horizontal approach drives down cost

- Adopt Best Practices
- Streamline Operations & Reduce Costs
- Mix and Match devices and Applications

The case of smart cities

Urbanization is putting increased pressure on cities

2%
of Earth's land
taken up by
cities

55%
of all people live
in cities

70%
of the global
population will
live in cities by
2050

41
mega-cities of
at least 10
million
inhabitants by
2030

76%
of global energy
use and carbon
emissions are
from cities

\$1 trillion
estimated cost
of air pollution
in OECD
countries due
to road
transport
emissions

+15%
average crime
rate when
population of a
city doubles

65%
of global GDP
growth
generated by
600 largest
cities by 2025

“Managing urban areas has become one of the most important development challenges of the 21st century. Our success or failure in building sustainable cities will be a major factor in the success of the post-2015 UN development agenda.”

John Wilmoth

Director, UN DESA Population Division

Sources: UN DESA, Intergovernmental Panel on Climate Change, IDC, Organisation for Economic Co-operation and Development, McKinsey Global Institute

Connecting Multiple Verticals Together For A Truly Smart City

Tourism growth through immersive mixed reality and 3D mapping



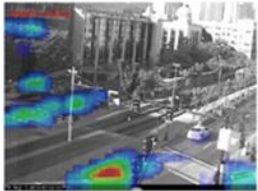
Loss prevention through asset management



Sustainability through energy management



Efficiency through waste asset management



Citizen Safety through video analytics and AR public safety updates.



Education improvements and cost reductions through VR interactive training

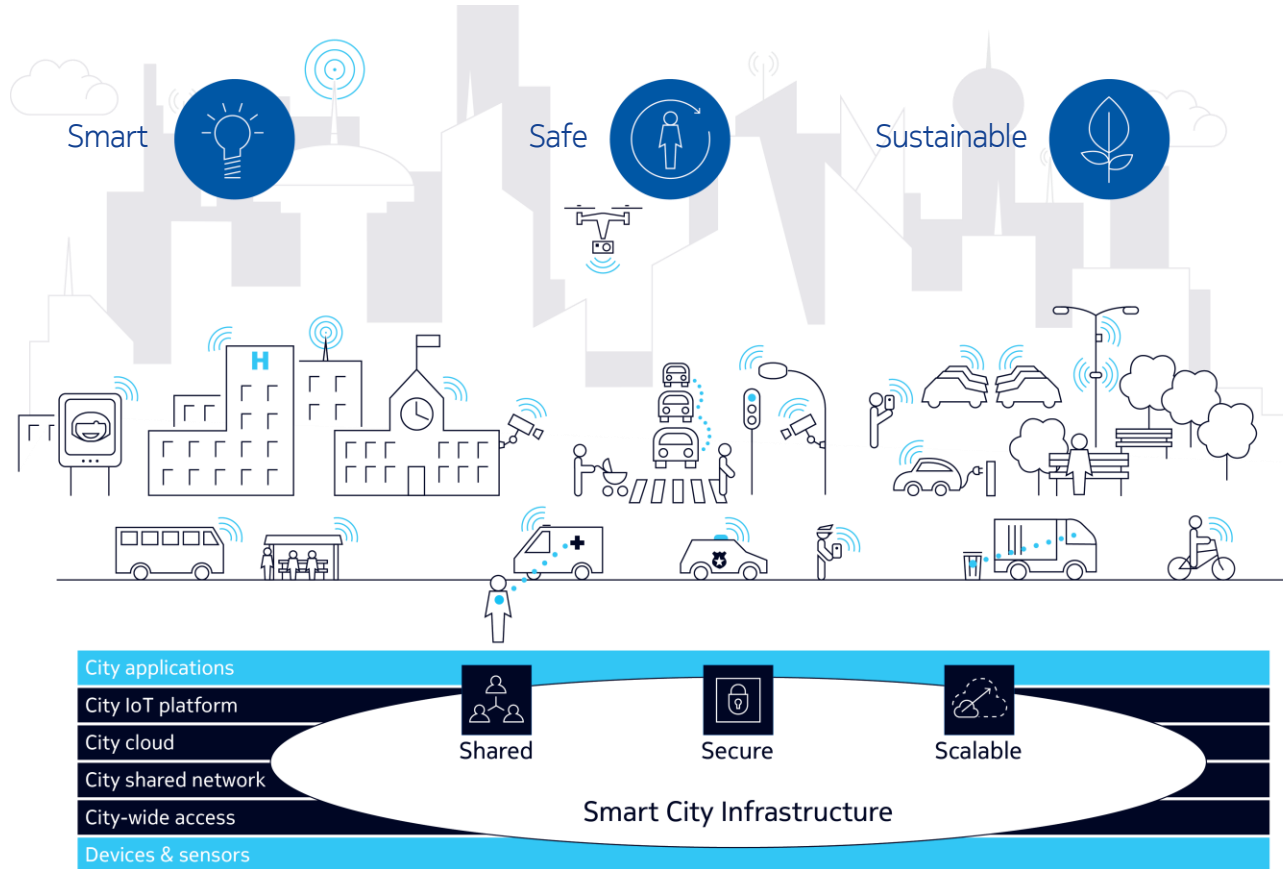


Improved health and cost reductions through real-time remote telemedicine and tele-care robots



Citizen Services & Safety through lamp post asset management

Creating smart, safe and sustainable cities with the Internet of Things



The building blocks of smart, safe and sustainable cities

Shared, secure and scalable technologies



Three routes to becoming a smart city

Key findings from the Smart City Playbook

Anchor

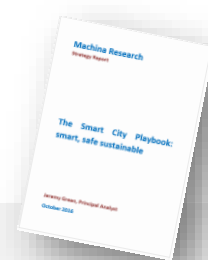
Cities add working applications in series, starting with an “anchor” application that addresses specific needs. Others are then added as priorities dictate.

Platform

Cities focus on deploying the network infrastructure or platform first so that a number of different applications can be delivered later.

Beta city

Cities experiment with multiple applications without a plan for bringing them to full operational deployment, often prioritizing hands-on experience over short- or medium-term benefits.



Download

the Smart City Playbook at
<http://nokia.ly/smartcityplaybook>

IoT is about ecosystems

NOKIA IoT Community



100+ member companies spanning a wide range of industries to collaborate, test, and unleash the business potential of the Internet of Things.

Innovation Ecosystem



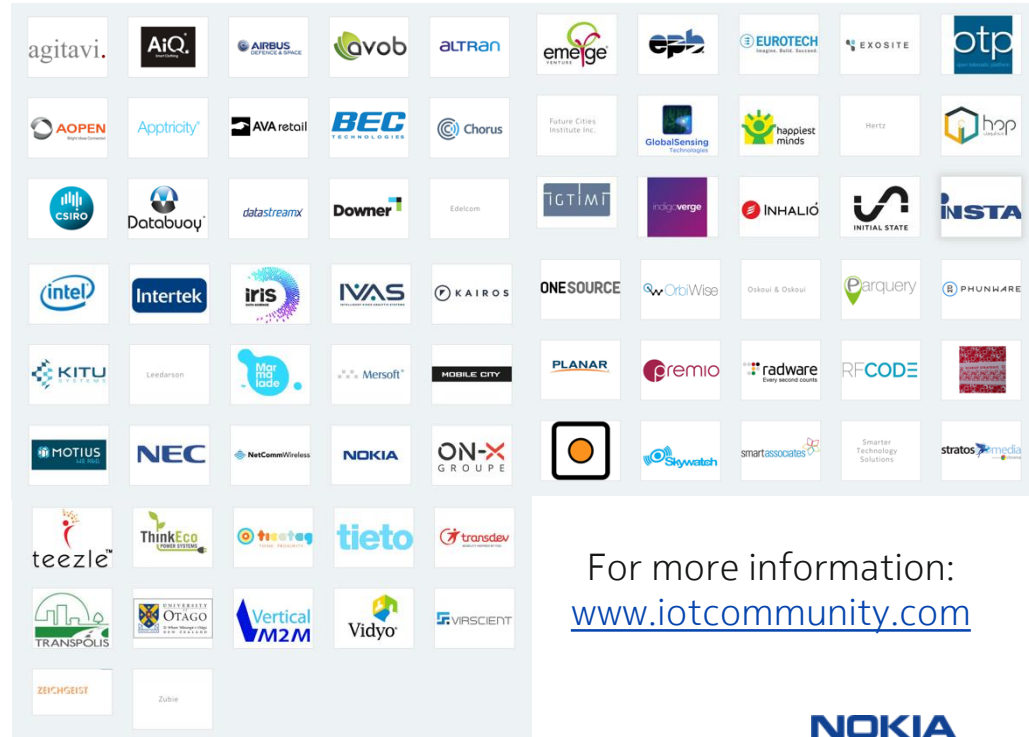
Agile Prototyping



Concept Showcase



Market Trials



For more information:
www.iotcommunity.com

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