

Digital Economy Opportunities & Challenges

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IoT Market Opportunities

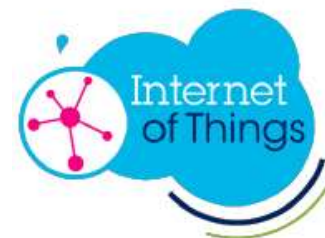
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Fastest Growth in Home & Industry:

2013 – 2025 CAGR

- Home Automation 43.4%
- Home Appliance 98.2%
- Industrial Automation 35.3%
- Building Automation 20.3%



Source IHS IoT Devices and Connectivity Intelligence Service - Q2 2016

Digital Economy

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The digital economy of Internet of Things starts from the primary devices to sense, broadcast to data center for analytics and to decide real-time feedback control under secured manner.

The whole digital economy is built on “smart things” to *do more tasks with less effort*



The Challenges

- Urbanization & the ageing population
- Deteriorating living conditions
- Energy and waste management
- Traffic



7.7 Billion

people on the planet
in 2020



60%

of the world population
living in cities in 2020



The Opportunities



69%

of consumers
will own a home
IoT device by
2019



Electric lighting
uses

20%

of global
electricity



Office/Commercial
Lighting
semiconductors

17%

CAGR 2015 - 2018



IoT Market Challenges

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ST is making
Homes & Cities
smarter

EFFICIENT
INTELLIGENT
AWARE
CONNECTED



Smart Home & City

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ST Solutions



The Challenges

Energy & Power Management

Production flexibility

Waste reduction

Safer working environments



>300 million

work accidents
per year




>50%

of the energy in the world
consumed by industry




The Opportunities



Electric motors use

60%


of industry electricity



Increase machine life by up to

20%

with condition-based maintenance



Automation semiconductors

9%

CAGR 2017-2020



ST is making
factories and
workplaces
SMARTER

MORE EFFICIENT
FLEXIBLE
SAFER



ST Solutions

Industrial IoT Industry 4.0



The Challenges

- Richer interaction
- Safer life
- Data protection & privacy
- Improved healthcare
- More entertaining



>50

Organizations and alliances working on standards relevant for IoT



<1 out of 1000

things that could be connected to the Internet currently are



The Opportunities



45 billion

Connected devices
in 2020

Device needs



Ultra low
power devices



Security at
every level



Compact
electronics



Cost-effective
platform



Highly-integrated
solutions



ST Solutions

ST offer

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ST Solutions

Smart Power



Power Discrete Intelligent
Power Modules



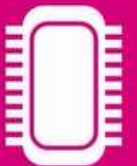
Connectivity &
Protection



Sensors &
Actuators
Signal
Conditioning

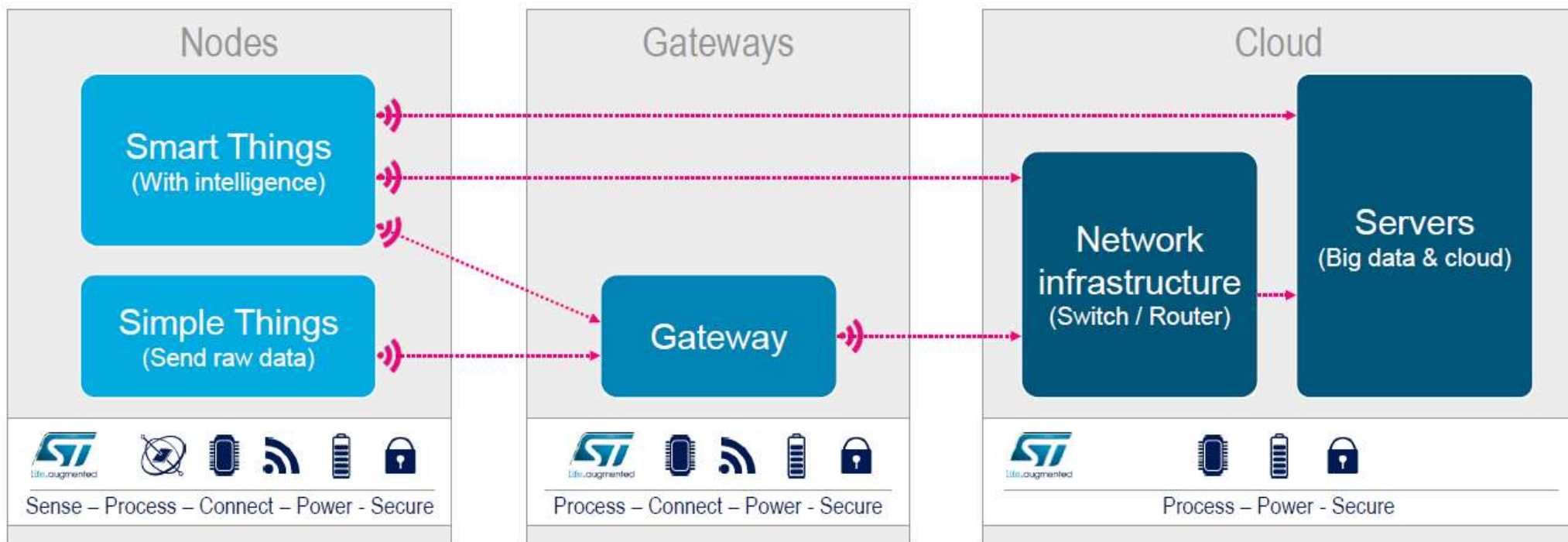


Microcontrollers,
EEPROM
& Secure solutions

























IoT Infrastructure



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Long Range Connectivity in IoT (1/2)

Jobs To Be Managed By Developer	Node	Gateway	Cloud Sever	Apps	Development Cost /Time to Market
		X	X		In terms of \$ /Fastest
					In terms of xxk\$ / Very Slow
 NB-IoT	 	Long Distance Long Distance	 	 	In terms of xk\$ / Slow
			Short Distance Direct to Phone		In terms of xk\$ / Slow
		Short Distance Direct to Phone			In terms of xk\$ / Slow

Long Range Connectivity in IoT (2/2)

	Data Rate	Packet Size	Limitation	Coverage	Power Consumption
	600bps	12 byte	140 uplink/day 4 downlink/day	>65 countries	Very Low
	50kbps	64byte	Free	private	Very Low
NB-IoT	20K/20K/1M	1600 bytes	200byte/day	~ 5 countries	Low

Releasing your creativity with the STM32

