

# Internet of Things Striving for new Partnerships

## IoT Large-Scale Pilots

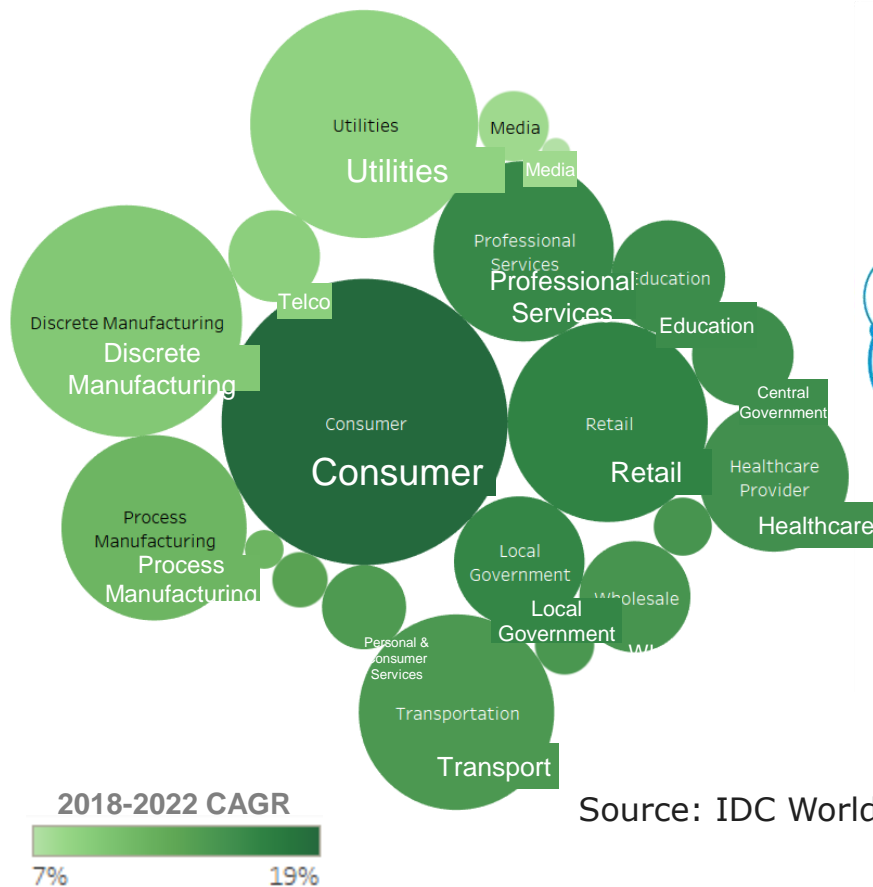


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**European Commission - DG  
CONNECT**

# IoT Adoption is maturing

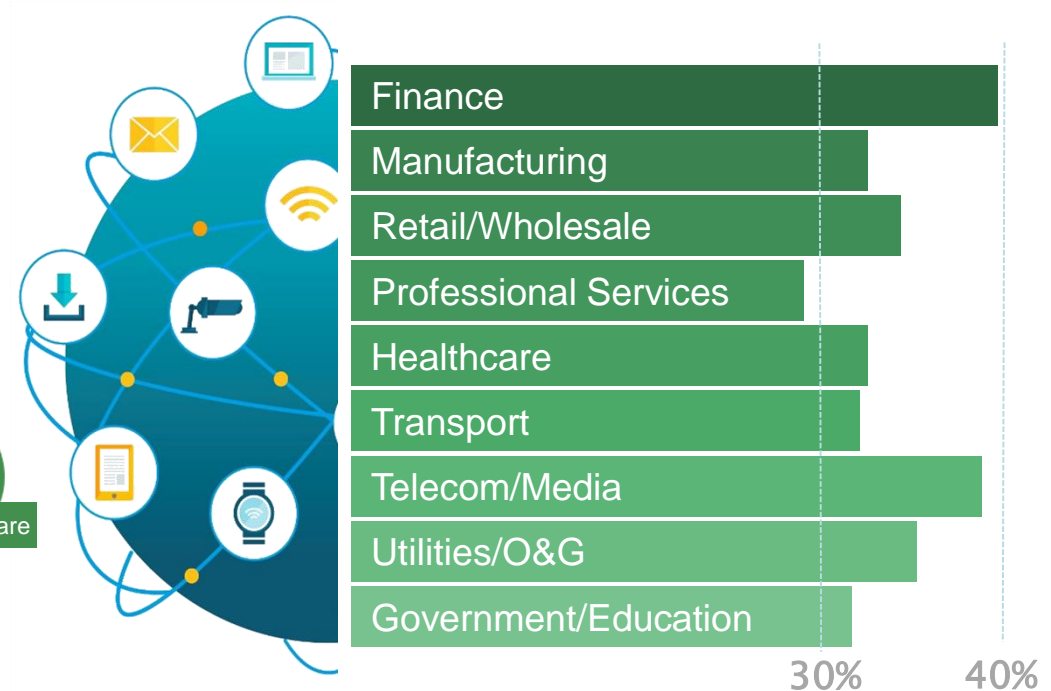
## EUROPEAN IOT SPENDING BY INDUSTRY

(2018 Size and 2018-2022 CAGR)



## IoT ADOPTION ACROSS EUROPEAN VERTICALS

(% of companies with more than 10 employees adopting at least one IoT solution in 2018)



Source: IDC Worldwide Semiannual Internet of Things Spending Guide 2019

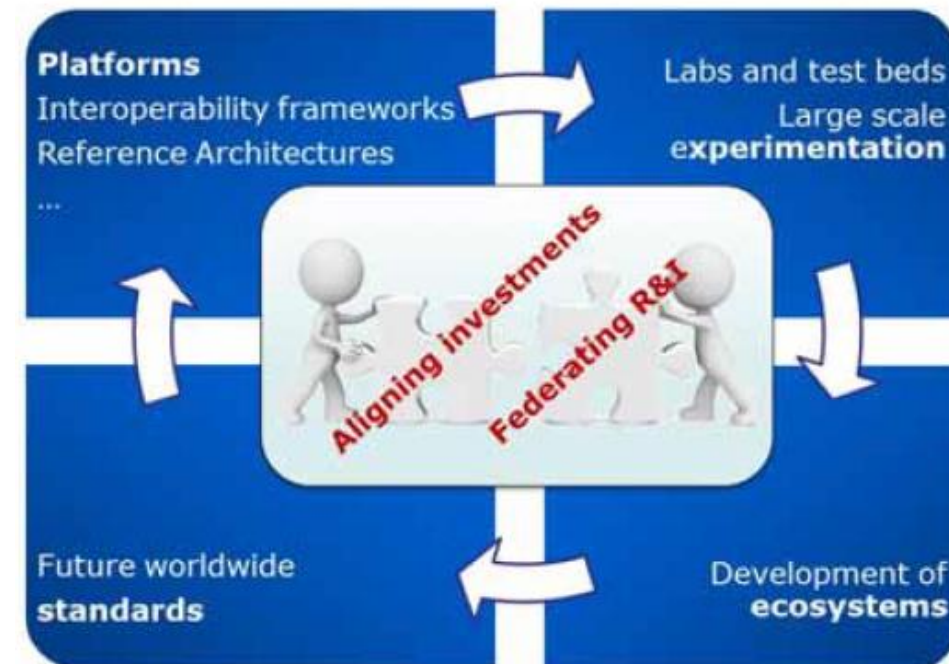
- European  
Commission



European  
Commission



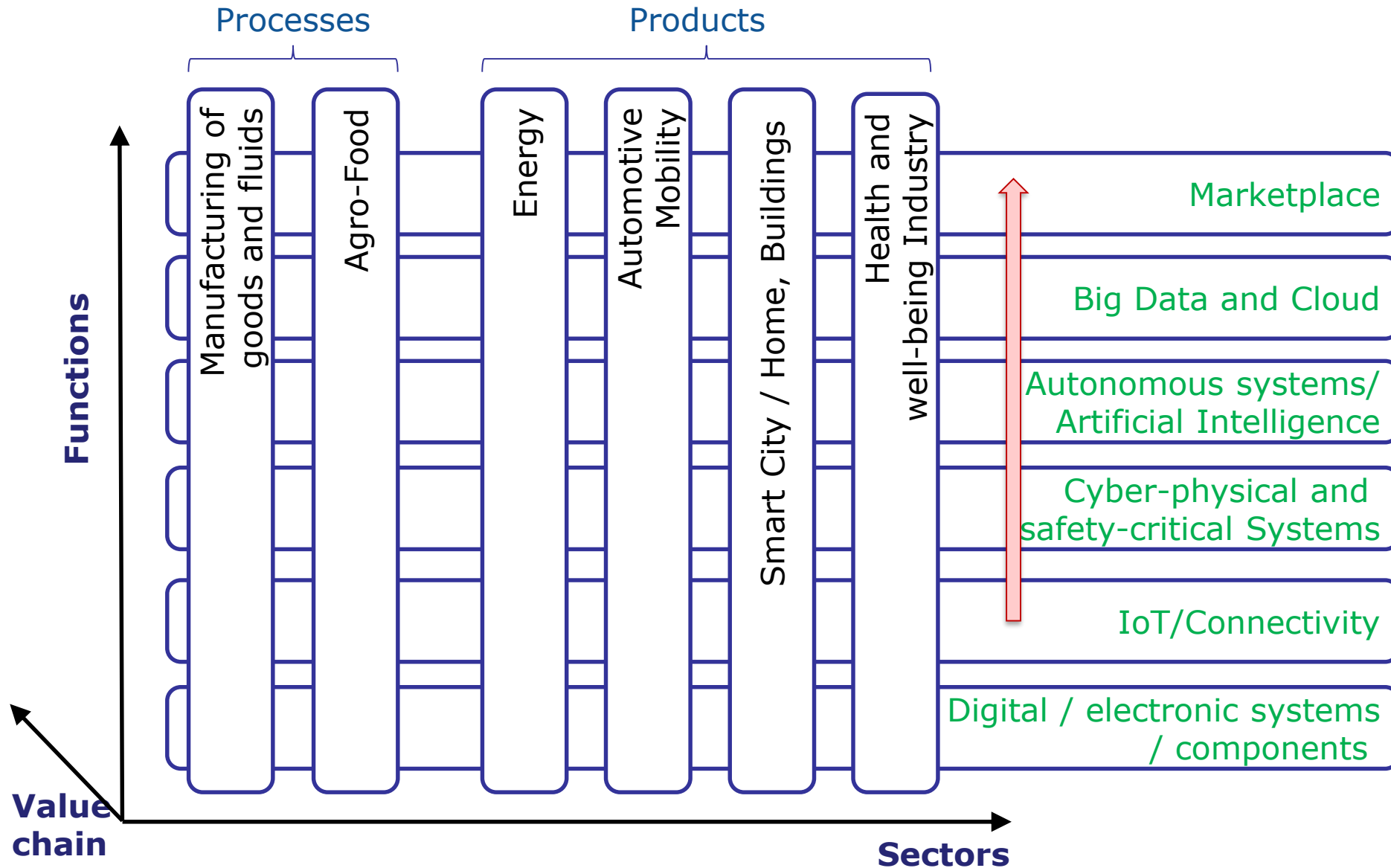
- Focus Area on Digitisation & Transformation



### Horizon 2020 (300 M€ for 2018-20)

- Next generation platform building and piloting through large scale federating projects
- Common EU-wide strategies pooling resources

# Approach for Digital Industrial Platforms



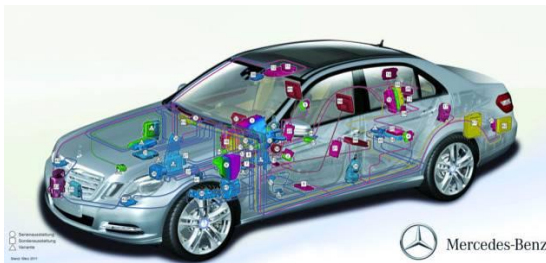
# IOT Focus Area

## IoT Large-Scale Pilots



### FA IOT Pilot areas:

- Pilot 1: Smart living environments for ageing well (EU contr. 20 MEUR)
- Pilot 2: Smart Farming and Food Security (EU contr. 30 MEUR)
- Pilot 3: Wearables for smart ecosystems (EU contr. 15MEUR)
- Pilot 4: Reference zones in EU cities (EU contr. 15MEUR)
- Pilot 5: Autonomous vehicles in a connected environment (EU contr. 20 MEUR)



### Total budget:

- 100 MEUR (funding rate: 70%)

<https://european-iot-pilots.eu/>

# Working in partnership with alliance AIOTI



Alliance for  
Internet of Things  
Innovation



Analyze landscape

Engage,  
disseminate and  
influence

**AIOTI  
WG03**

Identify gaps,  
divergences,  
common concerns

Publish guidance  
and  
recommendations

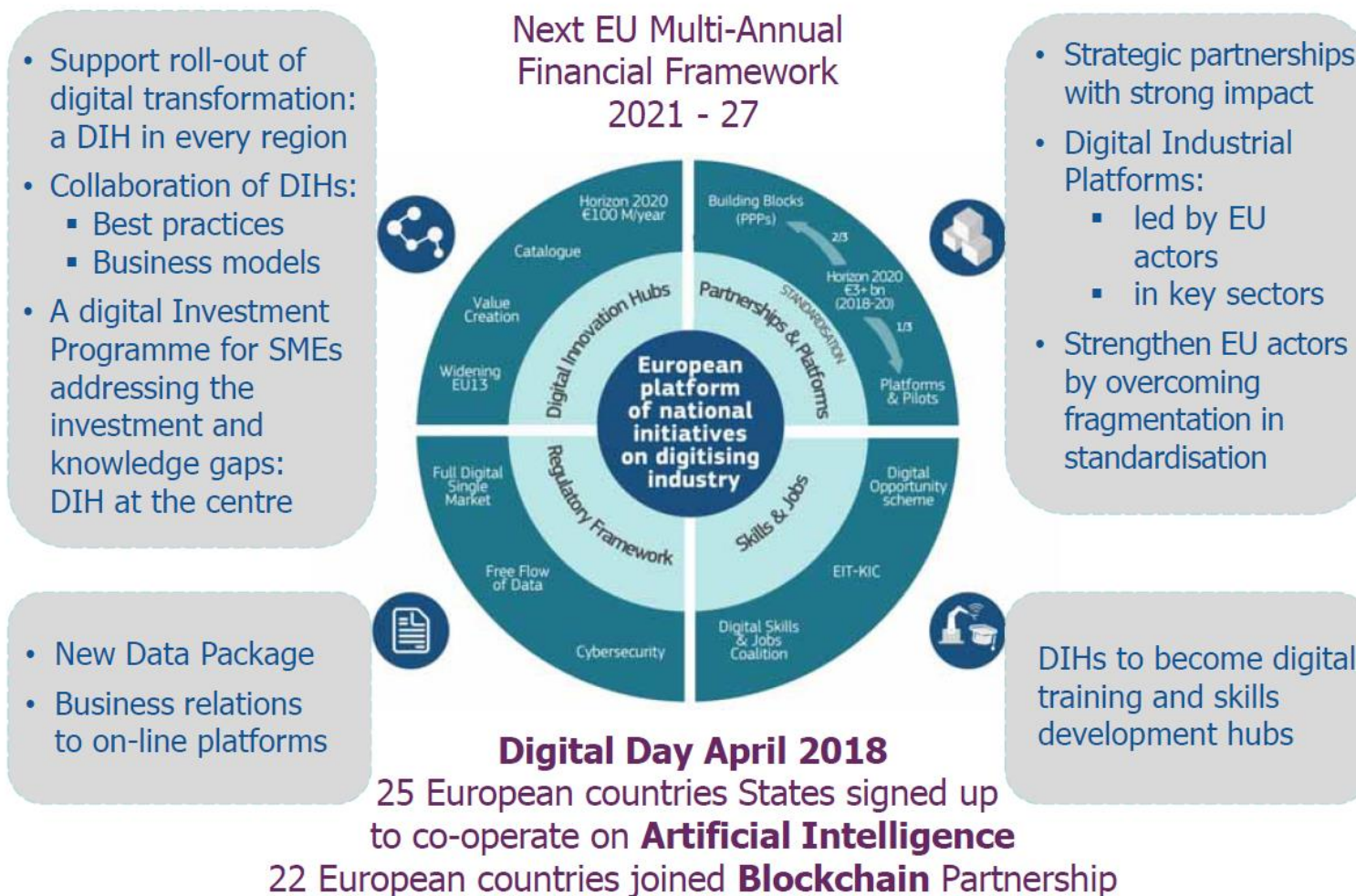
Task sub-teams to  
address themes



	WG 05	WG 06	WG 08	WG 09	WG 10	WG 11	WG 12	WG 13
WG 01 IoT Research	Smart Living Environment for Ageing Well	Smart Farming and Food Security	Smart Cities	Smart Mobility	Smart Water Management	Smart Manufacturing	Smart Energy	Smart Buildings and Architecture
WG 02 Innovation Ecosystems								
WG 03 IoT Standardisation								
WG 04 IoT Policy								
SME Interests								
Distributed Ledger Technologies								



- Strategy 2020 and beyond...





# Strategy 2020 and beyond ..



- **Strategic partnerships** with strong impact
- **Digital Industrial Platforms:**
  - Led by EU actors
  - In Key Sectors
- Strengthening EU actors by overcoming fragmentation in standardisation

• ###

# HORIZON EUROPE

## Investment Priorities 2021–2024

European  
Commission



### Pillar 2

Global Challenges and  
Industrial Competitiveness

### Clusters

Health 


€ 7.7

Inclusive and Secure Societies 

€ 2.8

Digital, Industry and Space 

€ 15

Climate, Energy and Mobility 

€ 15

Food and Natural Resources 

€ 10

**Manufacturing Technologies**

**Key Digital Technologies**

Advanced materials

Artificial Intelligence & Robotics

**Next generation Internet**

Advanced computing and Big Data

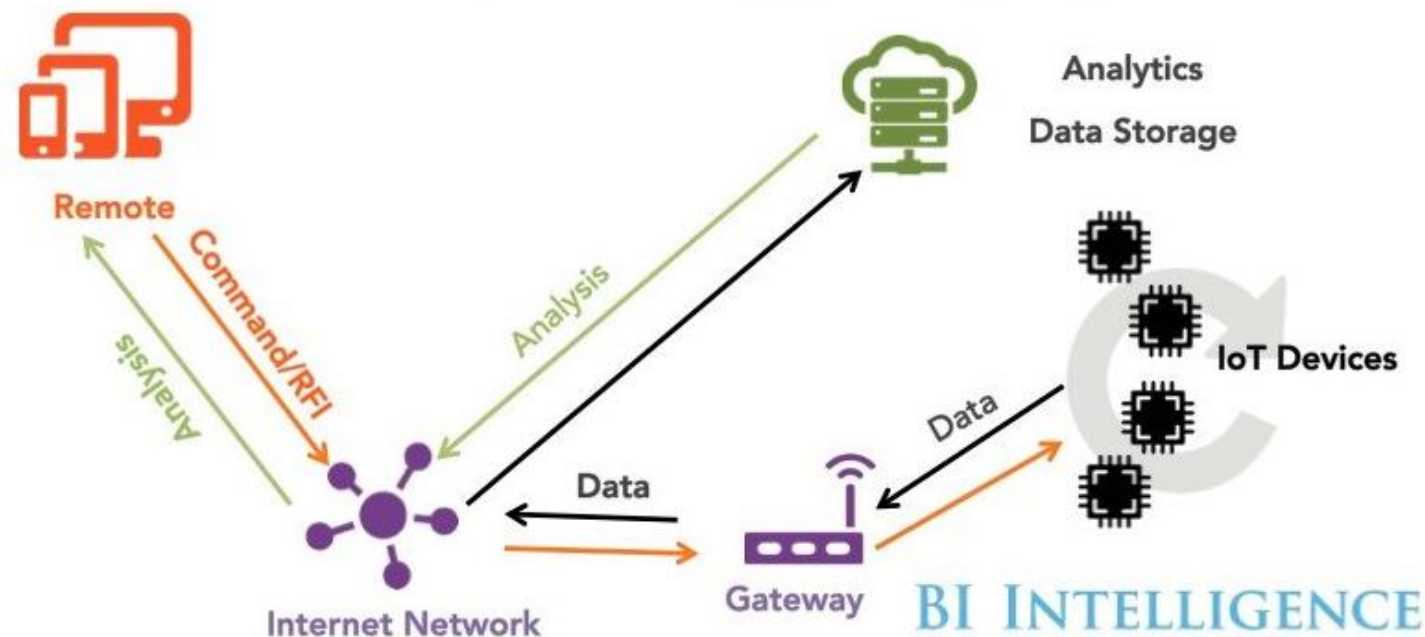
Circular industries

Space technologies



# Evolution of the IOT Ecosystem

## The Internet of Things Ecosystem



- The **complex infrastructure** of thousands of connected objects distilled into a single ecosystem
- **Diverse Topology of Network connectivity and Protocols**
- The important role **analytics systems**, including AI/ edge/cloud analytics,
- The sizable **security challenges** and increasing attack surface

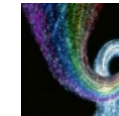


# 2021–2027

## Key Digital Technologies

European  
Commission

### Trends



#### KDTs



#### + Disruptive technologies (More Ts)

Artificial Intelligence / Machine Learning  
Edge-Computing (low-power processing)  
Cryptography  
DLT - Blockchains

#### Emerging Technologies

Neuromorphic / Quantum

AI on chip level

More than Moore:

*“true” heterogeneous Integration*

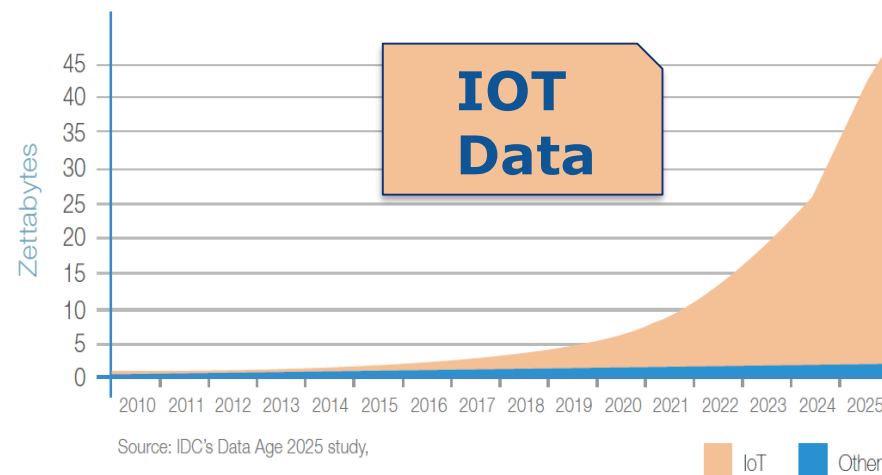
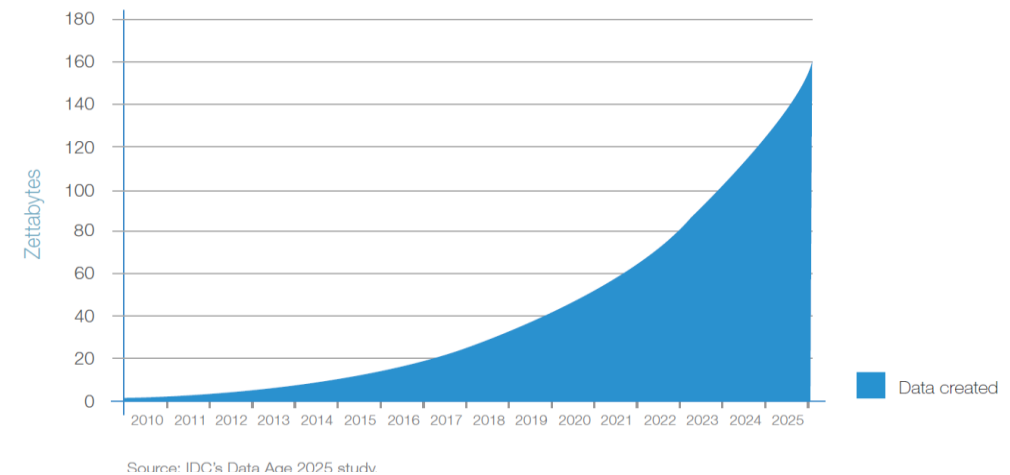
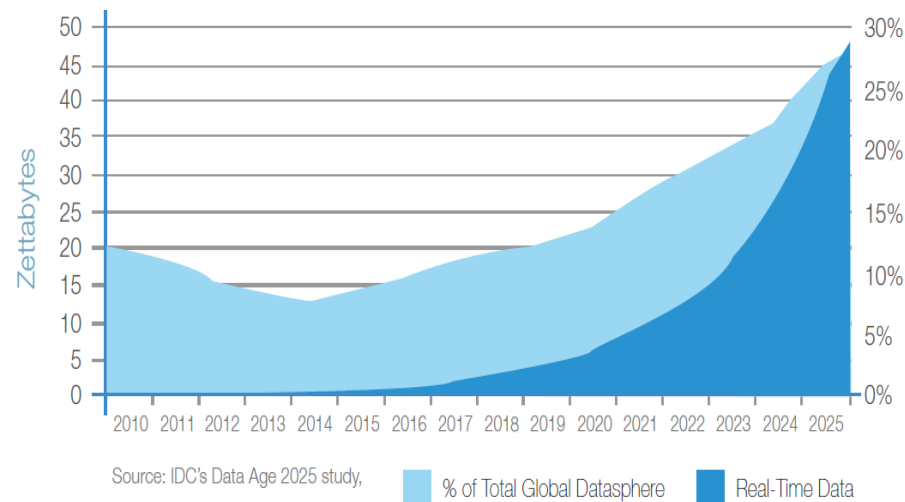
*Si, SiGe, III/Vs (GaAs, GaN)*

*MEMS, NEMs, Photonics...*

CMOS + non-CMOS Chiplets

# Next Generation Internet: → Data, Analytics, Transactions

- Exploding no. of transactions / volume
- Need ultra-fast communication, distributed processing and analytics
- Increasing real-time requirements
  - e..g. Autonomous Driving, Industry, Health, FinTech

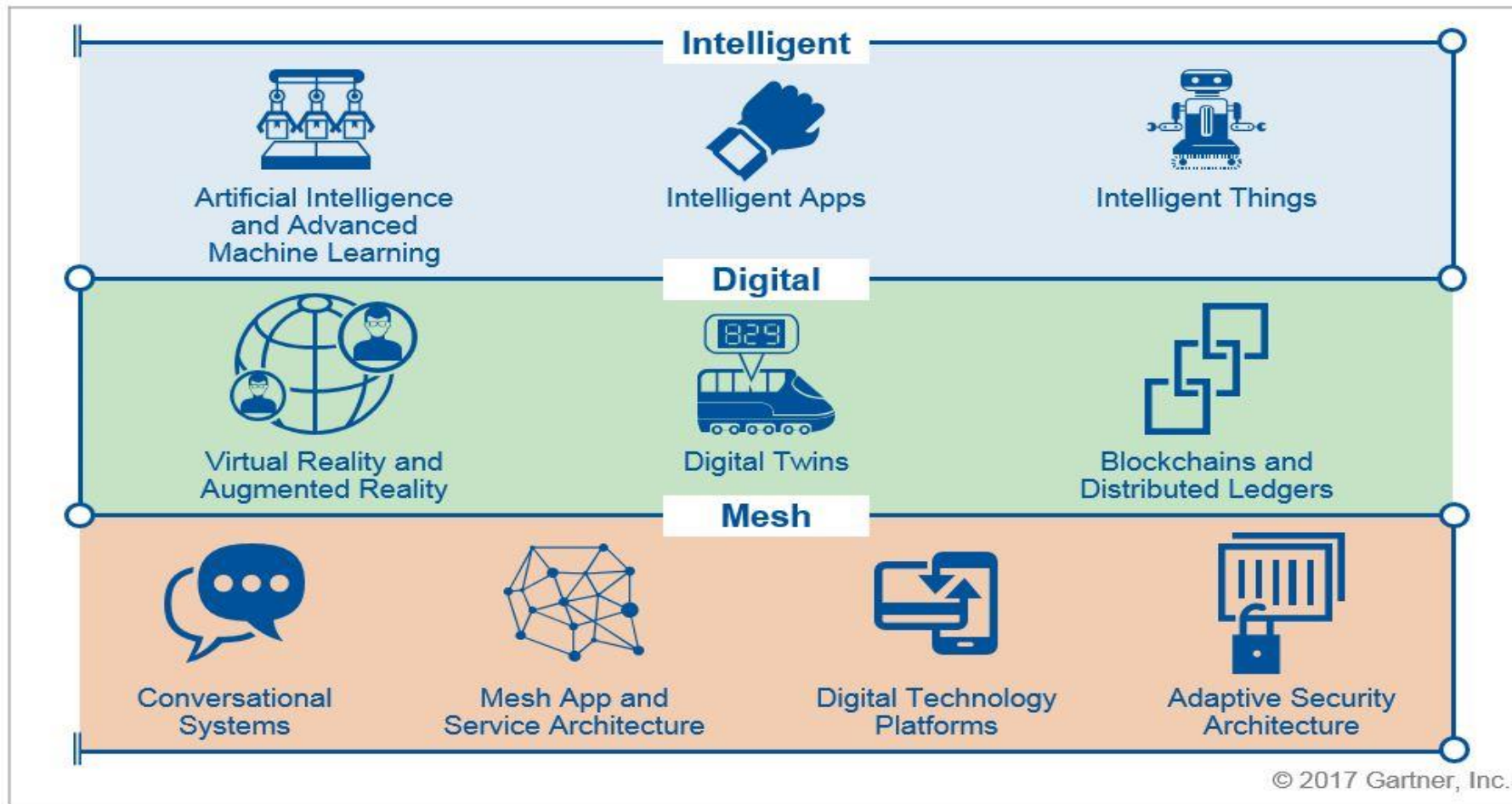


# R&D Drivers for Next Generation IoT





# NGI – Technological (r)evolution



Source: NLnet & Gartner; Next Generation Internet study

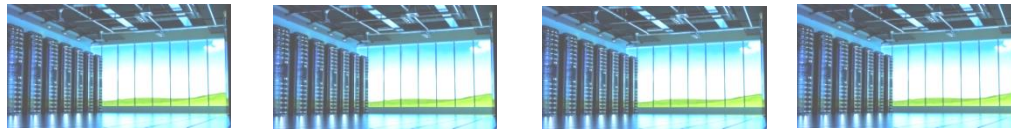
→ **A number of technological trends will thoroughly reshape the internet over the next 10-15 years**

# Value Chain Approach: Smart Networks & Services

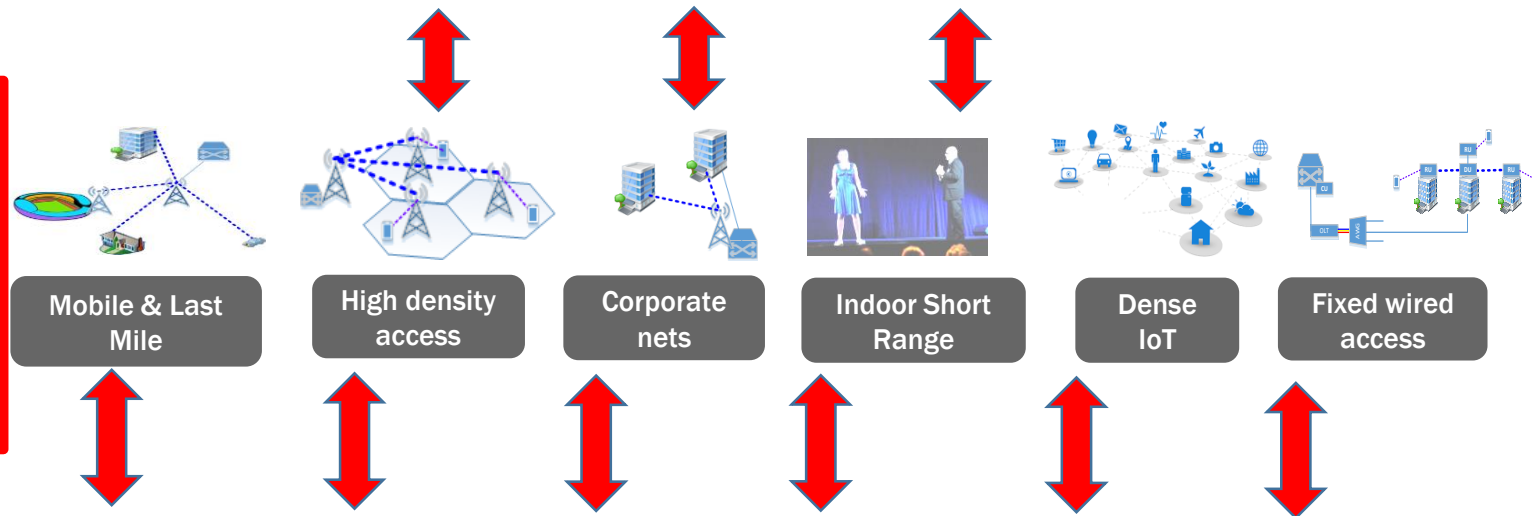
**Target:** Use strongholds in connectivity to secure EU industry positions across full value chain

**Business layer, business service/application requirements**

**Services:** computing and storage, data analytics



**Networks:** numerous implementation scenarios, one versatile infrastructure



**Devices:** types of connected devices potentially unlimited



end to end resource management and energy efficiency

end to end Security and trust

- **Cluster 3:**
  - **Partnership Area 2 (out of 8)**
    - Advancing key digital and enabling technologies and their use
  - **Digital-Centric Partnerships proposed:**
    - Smart Network & Services
    - EuroHPC
    - Key Digital Technologies
- **Launch of Impact Assessment & Strategic Plan**
  - Open online consultation June – August
- **Envisage Presentation of Partnership Portfolio & Policy**
  - At R&I Days Event 24-26 September 2019



## NEXT STEPS



Council in June 2019  
Negotiation Box

# Background & Useful links:

- **Digitising European Industry Strategy (DEI):**  
<https://ec.europa.eu/digital-single-market/en/digitising-european-industry> →FUTURIUM
- **Supporting and Building Platforms under DEI**  
- <https://ec.europa.eu/digital-single-market/en/industrial-platforms-and-large-scale-pilots>
- Workshop [Open MARKETPLACES to spur innovative energy services](#)
  - EC (ENER + E4) Workshop co-organised with AIOTI on 22 Oct. 2018 in Brussels
- AIOTI White Paper on [IoT Data Market Places – Drivers and Architectures](#)
  - Authors: O. Elloumi, T. de Block, N. Samovich - See alliance AIOTI.eu
- AIOTI White Paper on [IoT Relation and Impact on 5G](#)
  - Authors: G. Karagiannis, Th. Klein - See alliance AIOTI.eu
- “Artificial Intelligence and Digital Innovation Hubs for the European industry beyond 2020”
  - EC 13-15 November 2019 in Madrid (Spain)
- [IoT Week 2019](#)
  - 18-20 June 2019 in Aarhus (Denmark)