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# Industrial IoT Applications – Where are we today ?
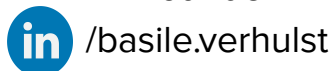
May 4th, 2021 @ Telecom Paris Alumni
Basile Verhulst

# About myself and GSC



**Basile Verhulst**

Founder

/basile.verhulst
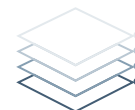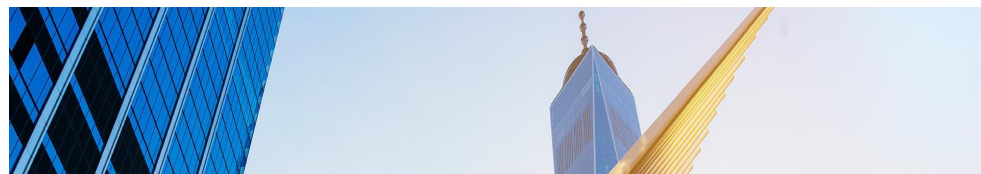
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### What we offer

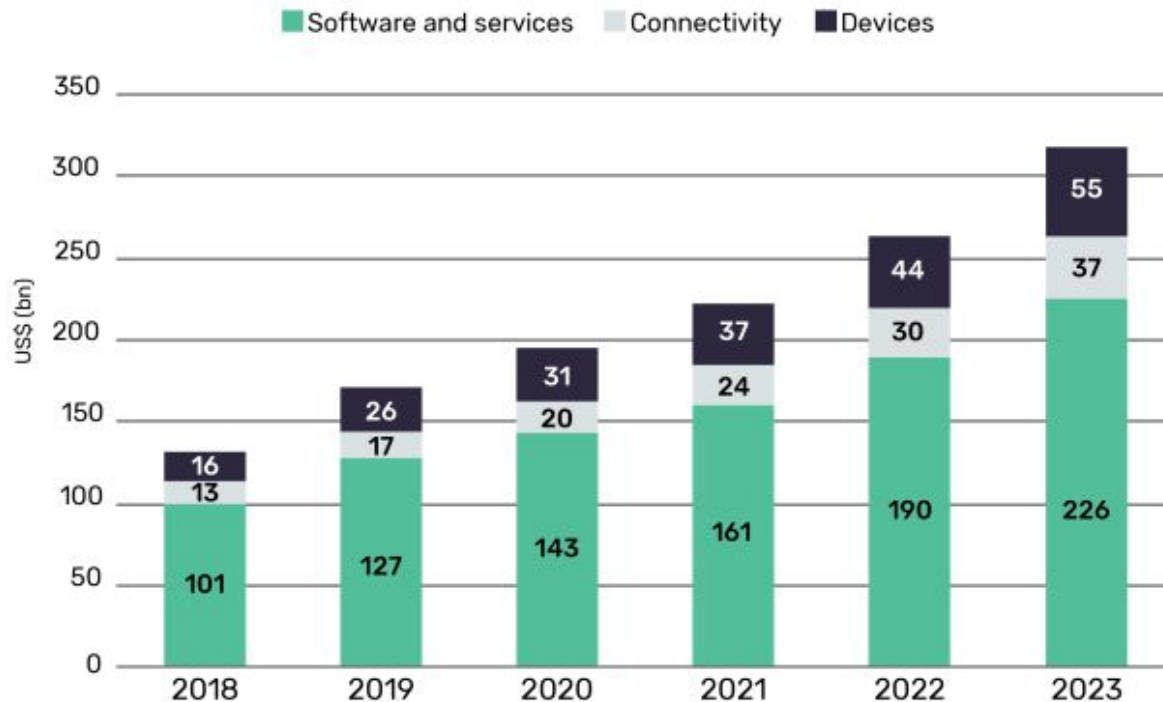| IT Strategy & Design | Data Infrastructure & Analytics | Software Development | Advice for Investors |
| --- | --- | --- | --- |

**Find out more: www.gsci.com**

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# Industrial IoT   vs.   Consumer IoT
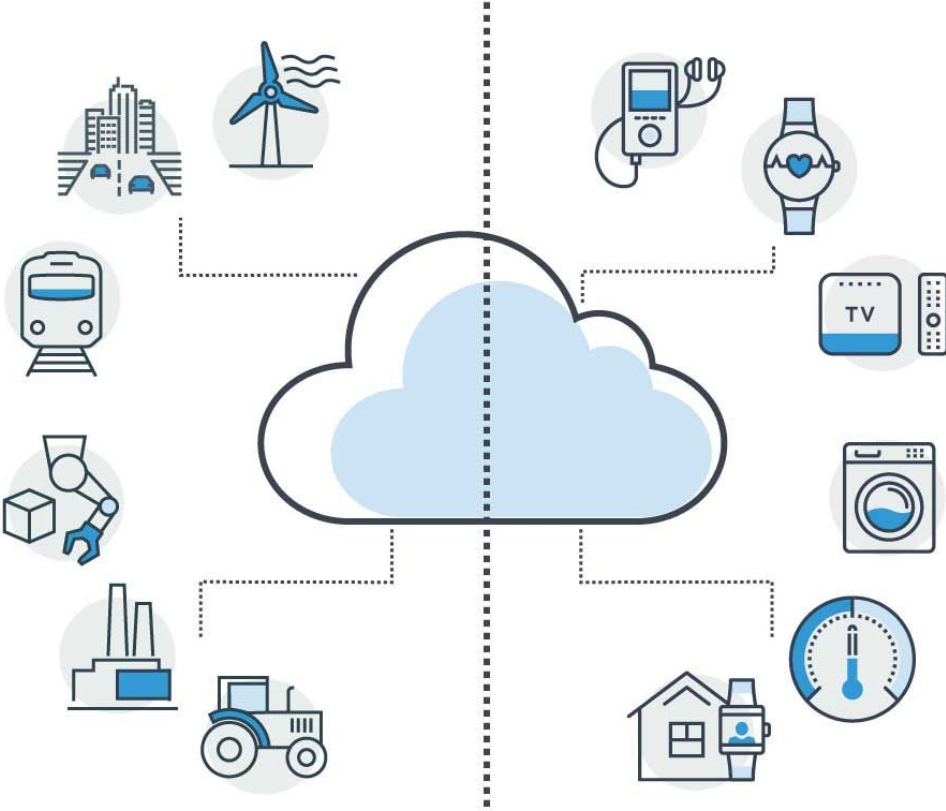
# Software and Services take the lion share of IoT value chain



Global IoT revenue by technology segment ($bn), 2018–2023 — GlobalData.

Software and services ■ Connectivity ■ Devices

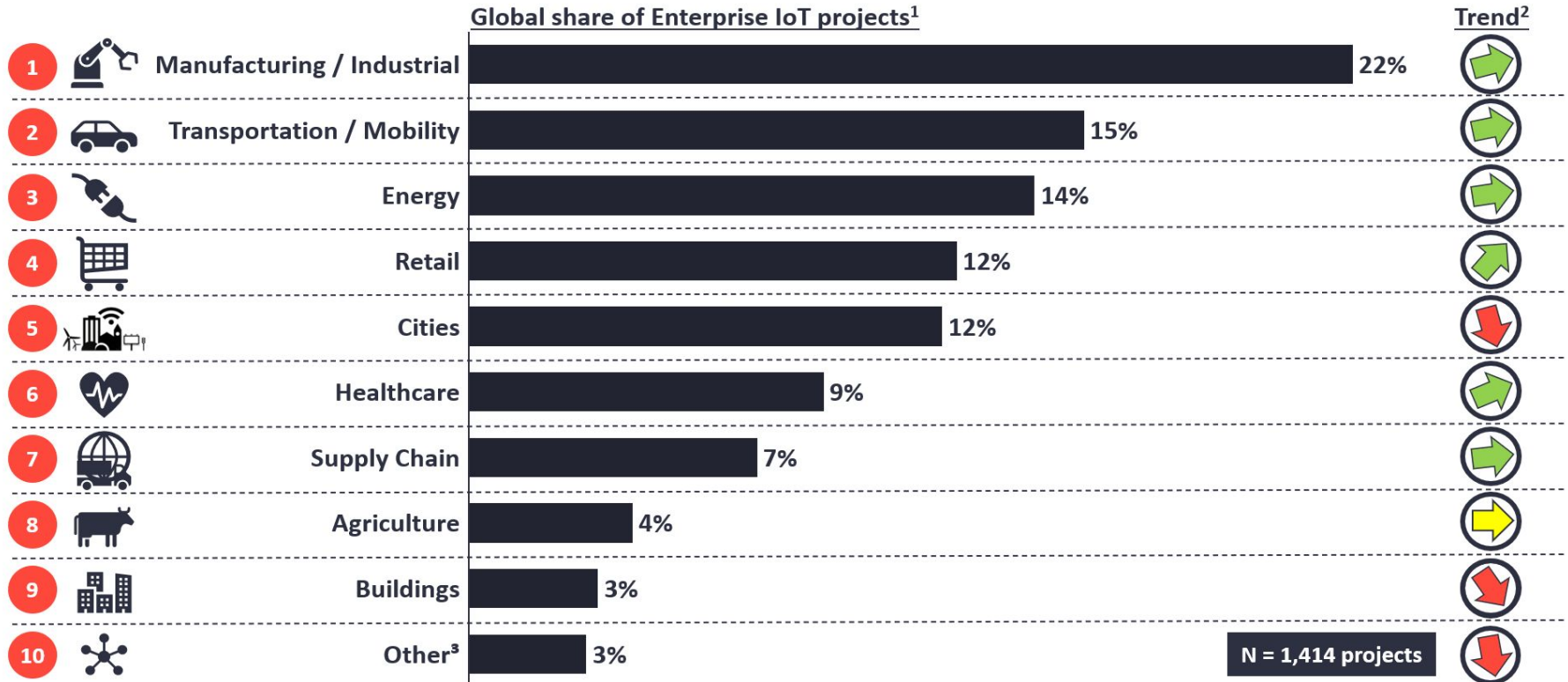| Year | Software and services | Connectivity | Devices |
|------|----------------------|--------------|---------|
| 2018 | 101 | 13 | 16 |
| 2019 | 127 | 17 | 26 |
| 2020 | 143 | 20 | 31 |
| 2021 | 161 | 24 | 37 |
| 2022 | 190 | 30 | 44 |
| 2023 | 226 | 37 | 55 |

Source : GlobalData, Technology Intelligence Centre

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# Overview of IoT Applications

**Top 10 IoT Application areas 2020**

Global share of Enterprise IoT projects[1]

Trend[2]

| # | Application area | Share |
|---|---|---|
| 1 | Manufacturing / Industrial | 22% |
| 2 | Transportation / Mobility | 15% |
| 3 | Energy | 14% |
| 4 | Retail | 12% |
| 5 | Cities | 12% |
| 6 | Healthcare | 9% |
| 7 | Supply Chain | 7% |
| 8 | Agriculture | 4% |
| 9 | Buildings | 3% |
| 10 | Other[3] | 3% |

N = 1,414 projects

**Note**: 1. Based on 1,414 publically known IoT projects (not including consumer IoT projects eg smart home, wearables, etc.) 2. Trend based on relative comparison with % of projects in the 2018 IoT Analytics IoT project list e.g., a downward arrow means the relative share of all projects has declined, not the overall number of projects. 3. Other includes IoT projects from Enterprise & Finance sectors.  **Source**: IoT Analytics Research - July 2020

# Largest IoT Deployments (Units)

| Wireless Industrial Sensors | Telematic Tracker | Asset Trackers | Smart Meters |
|:---:|:---:|:---:|:---:|
|  |  |  |  |
| **550M Units (Worldwide)** forecast 2024 | **339.3M Units (Worldwide)** forecast 2024 | **267M Units (Worldwide)** Forecast 2027 | **86.8M Units (US)** As of 2018 |

Source: Wire https://www.fierceelectronics.com/components/gas-sensor-market-generating-some-steam
Tele https://www.globenewswire.com/news-release/2019/12/19/1962985/0/en/Global-Automotive-OEM-Telematics-Market-Report-2019-2024-with-Detailed-Profiles-of-21-Major-Car-OEMs-and-Their-Telematics-Propositions.html
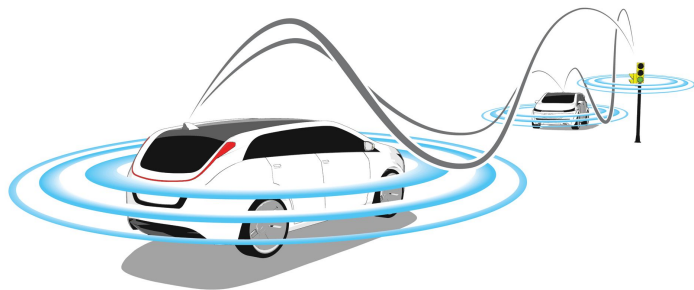Asset T https://www.prnewswire.com/news-releases/industrial-iot-asset-tracking-2019-by-2027-there-will-be-267-million-active-rfidasset-trackers-in-use-worldwide-300851946.html
Smart Meters https://www.statista.com/statistics/246455/leading-us-electric-utilities-based-on-number-of-smart-meters/
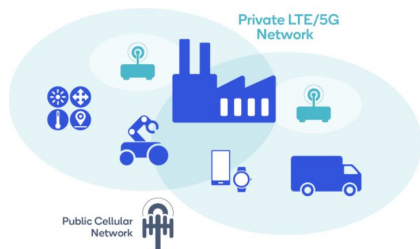
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# 5G IoT: Time-Critical Applications

**Automotive**

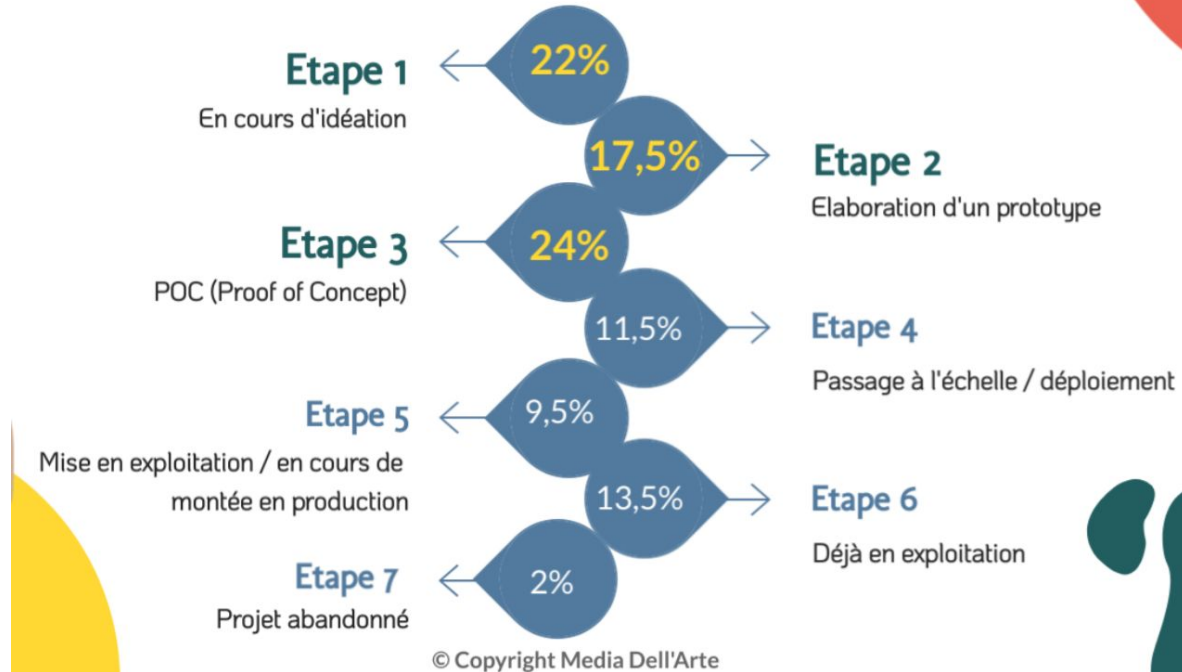**5G**

**Remote Surgery**



**Private 5g Network**

**High bandwidth applications**

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# Étude : Étapes d'implémentations IIoT en France



A quelle étape de la réalisation du projet IoT en êtes-vous ?

**Etape 1** — En cours d'idéation — 22%

**Etape 2** — Elaboration d'un prototype — 17,5%

**Etape 3** — POC (Proof of Concept) — 24%

**Etape 4** — Passage à l'échelle / déploiement — 11,5%

**Etape 5** — Mise en exploitation / en cours de montée en production — 9,5%

**Etape 6** — Déjà en exploitation — 13,5%

**Etape 7** — Projet abandonné — 2%

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# IoT is a long tail market

Challenges:

- **Market Fragmentation:**
    - Technologies (LoRa, NB-IoT, Cat-M, Sigfox, 2G..)
    - Standards (Frequency bands, security, ..)
    - Applications

- **Technical Complexity**
    - Operations Ramp Up
    - Lack of inhouse expertise
    - Hardware Specific issues : battery, connectivity (object interference)

- **Business Challenges**
    - Lack of clearly defined objectives
    - Little forethought on scalability
    - Time to ROI

⇒ Diversity of use cases give little room for to end-to-end solutions to scale.

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# IoT Unicorns

samsara
Funding: $930M

sigfox
Funding: $277M

UPTAKE
Funding: $218M

TERMINUS 特斯联
Funding: $571M

nest
Funding: $230M

LATCH
Funding: $152M
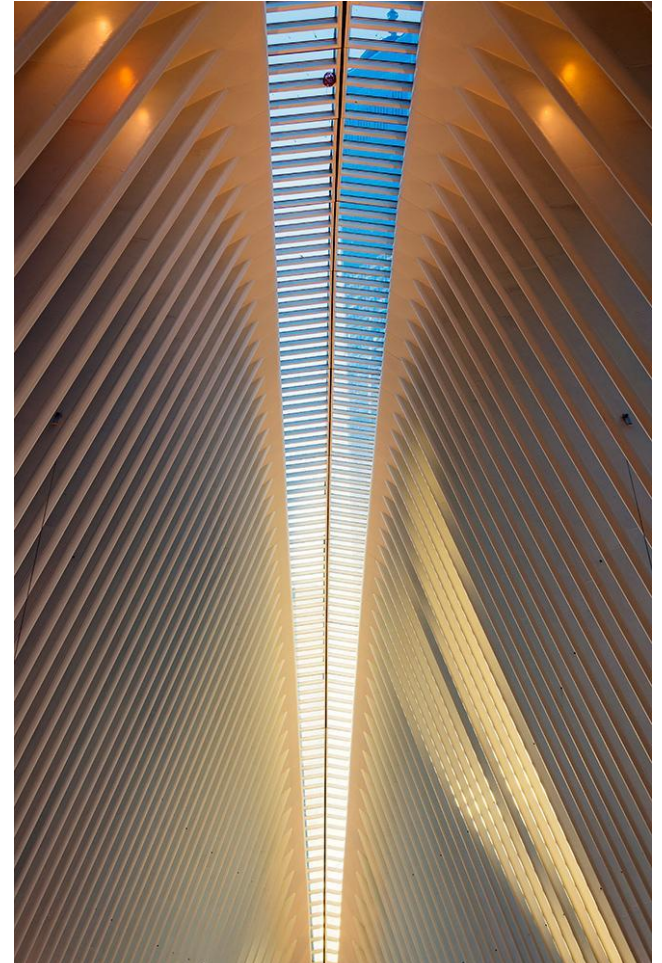
E CARX 亿咖通科技
Funding: $394M

C3.ai
Funding: $228.5M

云丁
Funding: $134M

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# Thank you

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# Growth of cellular IoT connections

**In this chart:**
- **4G, 5G**
- **NB-IoT, Cat-M**
- **2G, 3G**

Source: Ericsson Mobility Report, Nov 2020

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Figure 16: Cellular IoT connections by segment and technology (billion)

- Broadband IoT, Critical IoT (4G/5G)
- Massive IoT (NB-IoT/Cat-M)
- Legacy (2G/3G)

# IoT Communication Standards