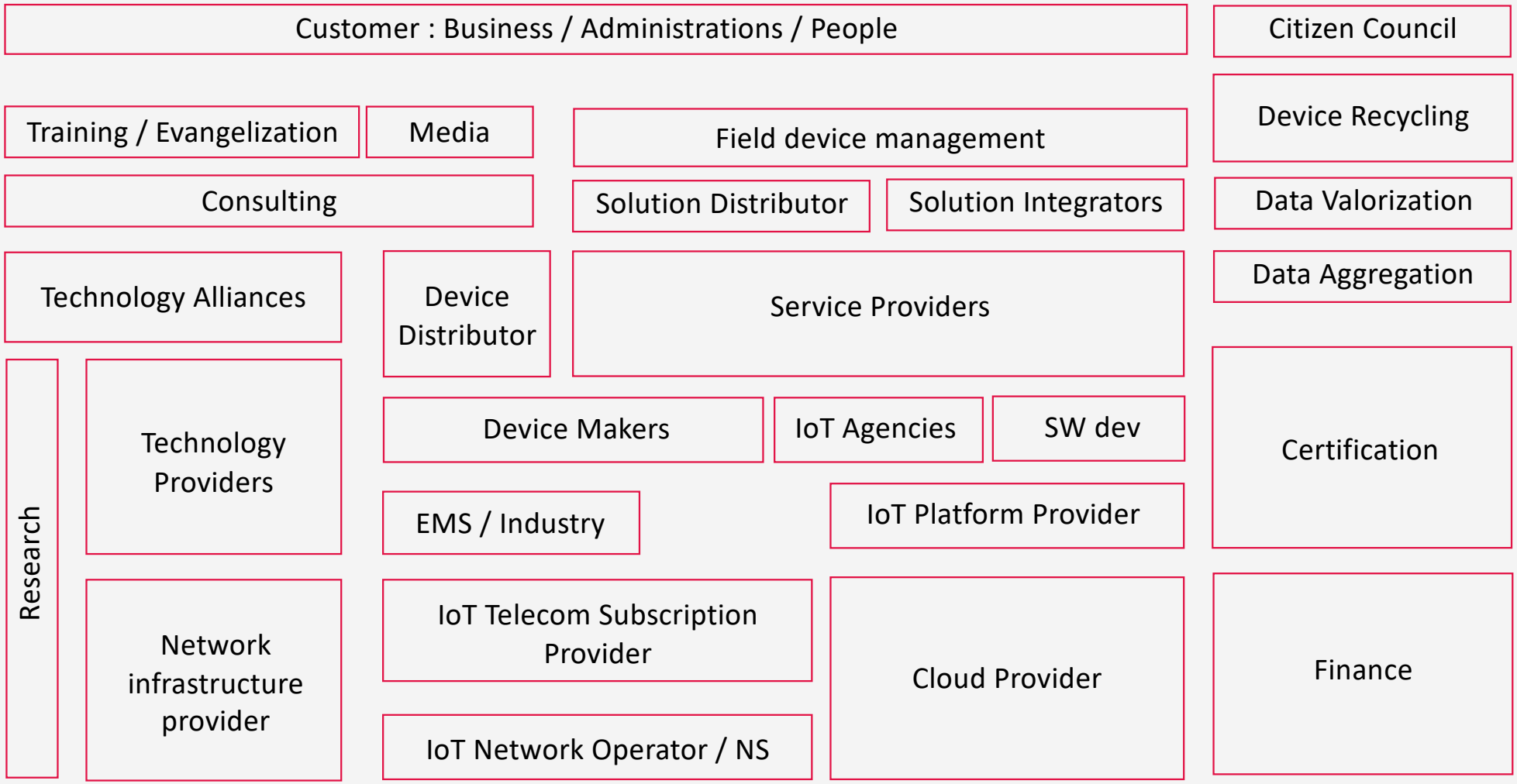
IoT's rich ecosystem overview



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Technology Actors

They are creating the technologies enabling the innovation

Main domains:

- **Telecom**
- **Energy**
- **Harvesting**
- **Silicon**
- **Protocols**
- **Encryption**
- **Sensors**
- **IA**
- **Platforms**

Make the next generation of IoT technologies, low power, harvesting, batteries…
Like Sigfox, Saft , Universities…

Research

Technology Alliances	Define norms. Like LoRaAlliance, Wize Aliance, DeWi
Technology Providers	Provide dedicated solution for IoT like low power MCU, radio chip, batteries, sensors, gateways … Like, ST Micro, Saft, Semtech, Bosh, Sigfox, Kerlink, RAK Wireless …
Network infrastructure provider	Provide network infrastructure to support IoT communications. They are deploying the communication towers, the network radio equipment and maintain it. Like Sigfox, Objenious, TDF, Orange, SFR, Suez, Kineis, Lacuna Space, amazon…
Cloud Providers	Provide Hosting and processing power for IoT data and services. Like Amazon, Azure, Google, Alibaba, OVH, be ys Cloud.
IoT Platform Provider	Provide Software solution to store and process IoT data. Like Aws, Azure, myDevices, Datacake, TheThings.io, Ubidot …

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Device life cycle

They are participating to the creation and production of the IoT devices, then to the maintenance and end-of-life management .

This is including the service ecosystem for developing HW / FW / SW for the IoT solutions.

Device Makers	Make devices for selling them as device, they are not providing service based on data produced by devices. Like Adeunis, Draguino
IoT Agencies	Make device's engineering for customers. Sell services not devices. Make electronic design and firmware design. Like Exotic Systems, Rtone …
SW dev	This category includes specialists of mobile applications and backend / frontend application for IoT. Like Sigfox IoT Agency, Openium, most of the consulting companies like Accenture, CGI …
EMS / Industry	Produce devices, many actors like EMS producing boards, plastic injector producing enclosure, packaging production …
Device Recycling	Manage the end of life for electronic devices.
Certification	Certify electronic systems for CE, FCC… regulation. Certify radio protocols and performance like for LoRaWan and Sigfox. Certify security, quality in the service process and data management.

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Communication providers

They are providing network server and subscriptions for the devices

IoT Telecom Subscription Provider	Provide subscription on owed networks or networks owned by other company. Like Sigfox, Objenious, TheThingsIndustry, Helium, Soracom, Orange, SFR, …
IoT Network Operator / NS	Provide network server, software on the physical telecom infrastructure where devices are registered and relaying device data to customer application. Like Helium, TheThingsNetwokr, TheThingsIndustry, Sigfox, Objenious, Loriot, Actility, Helium-Iot.eu …

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Device and Data commerce

They are selling the IoT solutions and devices. They can also just process data to create added value.

Device Distributor	They sell IoT devices like any other electronic product. Like Darty, Leroy-Merlin, myDevices.
Service Providers	They sell Insights to customers with, usually, a subscription fee. The device is the way to provide the service. Like Flipr, IngeniousThings, Michelin DDI …
Solution Distributor	Distribute existing solutions as B2B2B or B2B2C. Usually manage the customer relationship, sales, deploy, support.
Solution Integrators	Integrate existing IoT solution in company information system.
Field device management	Manage in field IoT device fleets, on large territories. Deployment, maintenance, upgrade, removal …
Data Valorization	Buy existing IoT data to process them and create new added value. Company own IP for data processing algorithm but not capture IoT Data on it own.
Data Aggregation	Aggregate different IoT data in the same domain but from different solutions, including Open Data. Format them and sell access to them for data valorization.

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IoT eco-system transformation

They are accelerating or slowing down the IoT transformation.

Consulting	They are pushing use-cases to industries and administration, expose the value creation for these solution. Support the industry and administration in the IoT transformation. Like KPMG, Accenture, CGI …
Training / Evangelization	They are explaining the IoT transformation, usually to push the technology they develop. It also includes the universities training students on new technologies. Like Sigfox, LoRaAliance, TheThingsConference, disk91.com
Media	They mostly create IoT phantasm in the society mind for the best and the worst. They directly influence the IoT adoption.
Citizen Council	As a response of the media IoT phantasms, council of citizen impacts / influence the deployment and decision takers. They usually works for citizen privacy protection.
Finance	Startup ecosystem, on the early stage of every new technology and transformation need to be financed. On top of this, the transformation from a device-based business model (capex) to service-based business model (opex) needs financing supports for small size business.

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