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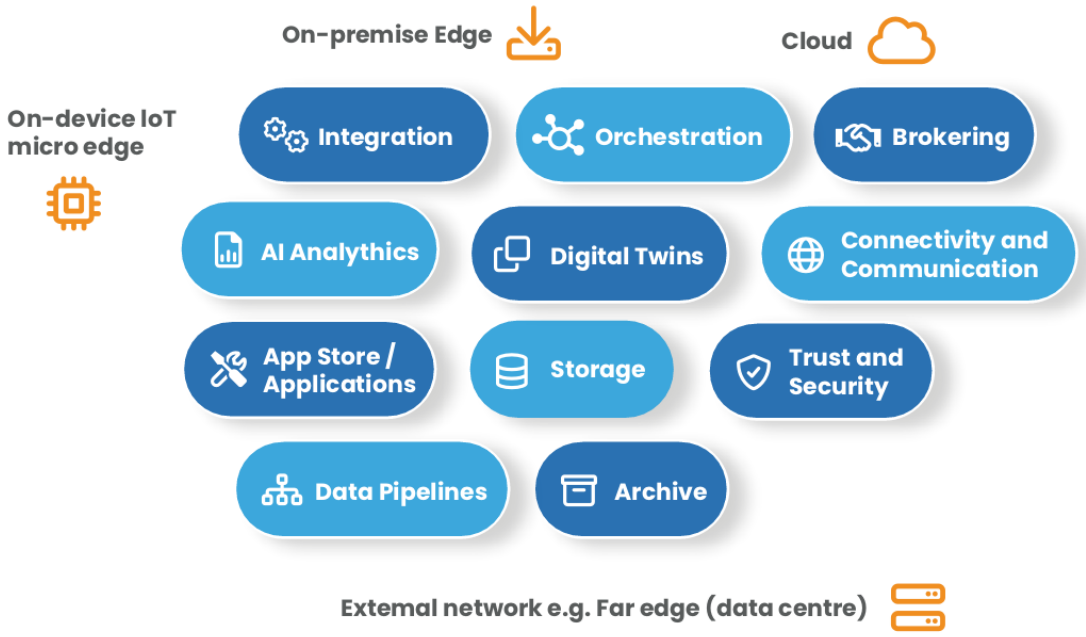
Market dynamics in EU Cloud Edge IoT Continuum

CEI market dynamics: areas of innovation

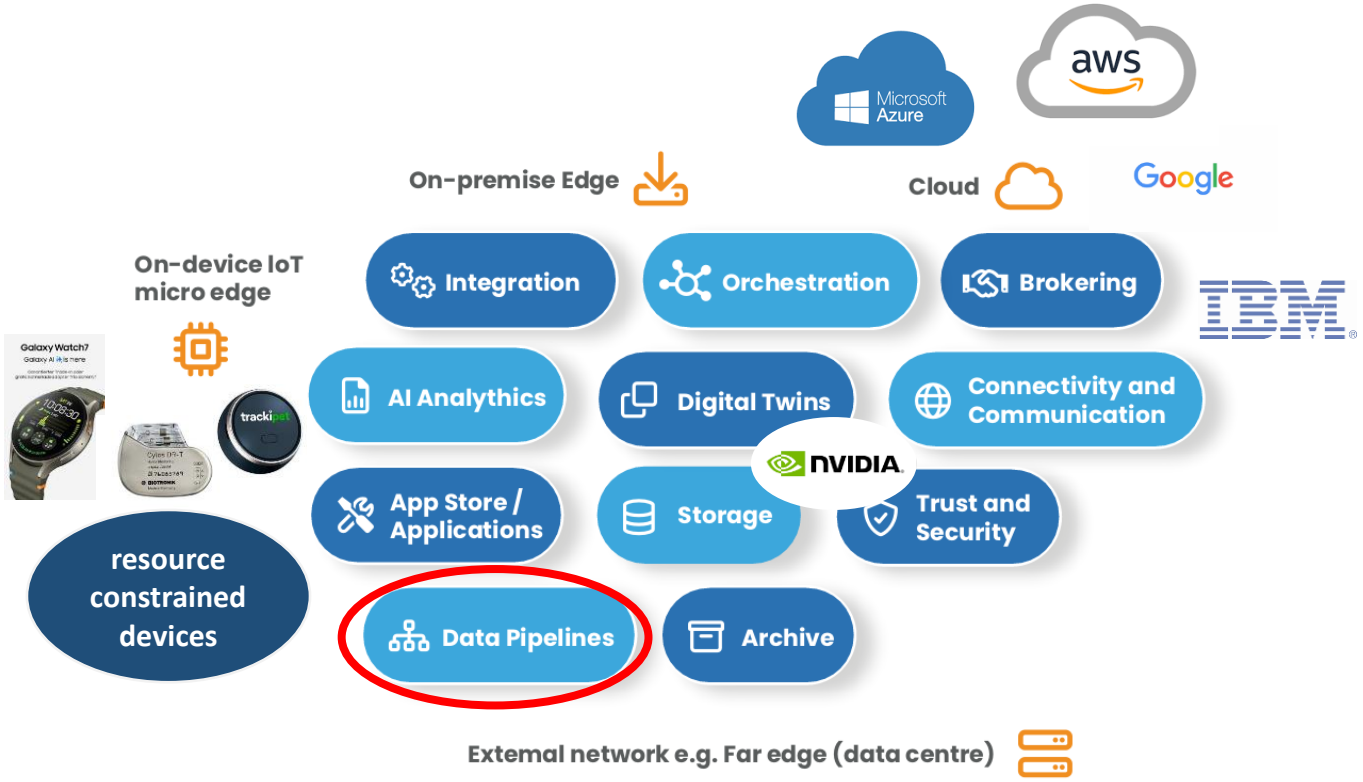


- **Appstore/applications** - also called app marketplace or app catalogue, is a type of digital distribution platform for computer software called applications, often in a mobile context
- **AI analytics:** AI analytics refers to a subset of business intelligence that uses machine learning techniques to discover insights, find new patterns and discover relationships in the data
- **Archive:** long term storage that does not need a fast access to data
- **Storage:** allows for storage of data and provides fast access to it
- **Digital twin:** is a virtual model of a physical object. It spans the object's lifecycle and uses real-time data sent from sensors on the object to simulate the behaviour and monitor operations.
- **Connectivity and communication:** connectivity is the ability to connect systems or application programs in order to establish communication between them.
- **Brokering:** sourcing, comparing and managing the integrated use of multiple assets and services
- **Integration:** onboarding of new assets, systems and components
- **Orchestration:** automated configuration, management and coordination of computer systems, applications, services and devices
- **Trust and security:** software components and micro services that enable security, privacy, provide reliability, dependability and safety, and boost performance of the system

Understanding market dynamics

- Who are the big tech players in the CEI market and which services do they offer?
- How the big tech CEI players cooperate with big players from the Agricultural, Transportation, Energy and Manufacturing Sector?
- Which players provide new innovative solutions? And how these solutions contribute to the digital transformation?
- Where are the major dependencies from the big tech players and the resulting risks?
- What are market pathways and opportunities for CEI companies?

Hyper-scalers' cloud-centric approach:



Data intelligence at the edge:

- Edge computing services are not in the spotlight of the business strategies of hyperscalors due to the lack of sector specific know-how, skills, flexibility and innovation pace.
- Nvidia is an important player on the edge computing market with a strong and growing eco system.
- Big tech players (hyperscalors and Nvidia) focus on B2C market and generative AI.
- Market opportunities for the European companies are specialized sector-specific niche products and service offerings.
- Market opportunity is the data intelligence at the Edge: trustworthy federated, peer-to-peer or distributed processing and learning

Innovative solutions and market pathways

Agriculture

- Data Spaces/Sharing Initiatives enable new services for data-driven business models and AI solution providers
- Data intelligence allows to save costs for diagnostics and predictive maintenance
- Potable 5G networks provide connectivity in rural areas
- Decisions support for farmers based on sensor data and data analytics
- Market pathways:
- shared public-private infrastructure (data spaces, connectivity …)
- Open source (software/hardware) for better total cost of ownership for infrastructure components

Energy

- Optimizing customers energy use & cost, shifting consumption to periods of low energy prices, thereby supporting grid stability
- Enhancing operational efficiency, stability and flexibility options for energy systems through edge hardware & processing of large volumes of sensitive data
- Reducing latency and costs associated with unnecessary data transmission

Innovative solutions and market pathways

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Manufacturing

- Flexible process integration and intuitive customization (e.g. functionality, architecture, access) by end users avoiding vendor lock-in
- Data-driven business models for “smart factories” and “smart products” with data exchange across companies: e.g. between machine and component manufacturers and machine operators
- Industrial Edge platform: orchestration of manufacturing process with full data sovereignty

Mobility

- Cost reductions based on the multiple use of data on the edge
- Carbon footprint of can be reduced on the basis of optimised operations at the edge
- Functions which touch the functional safety of a fully automated vehicle need safe and secure processing on the edge
- Combination of sector-specific software/ hardware know-how in combination with control over (open) data flows is an opportunity for the European companies

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