



Alliance for IoT  
and Edge Computing  
Innovation

24-25 Sep  
BRUSSELS

**AIOTI**  
DAYS 2024

Continuum, digital twins  
and virtual worlds

# Session Edge driven AI and infrastructures

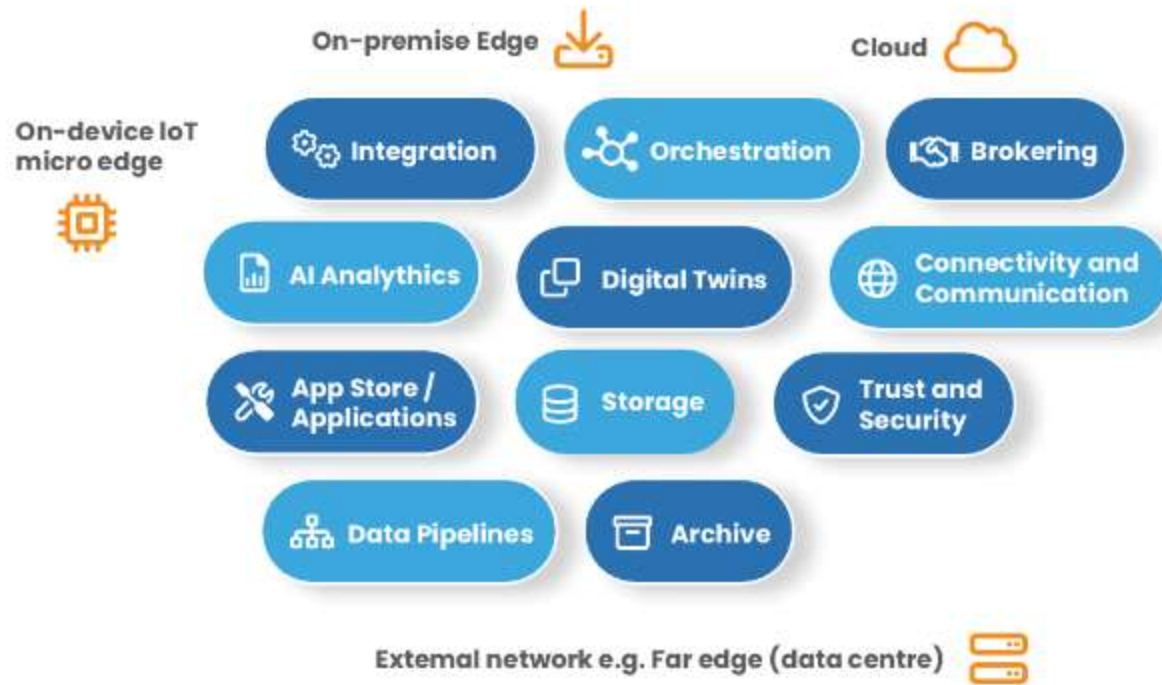
## Edge AI In the computing continuum

Dr. Inessa Seifert (VDI/VDE-IT)

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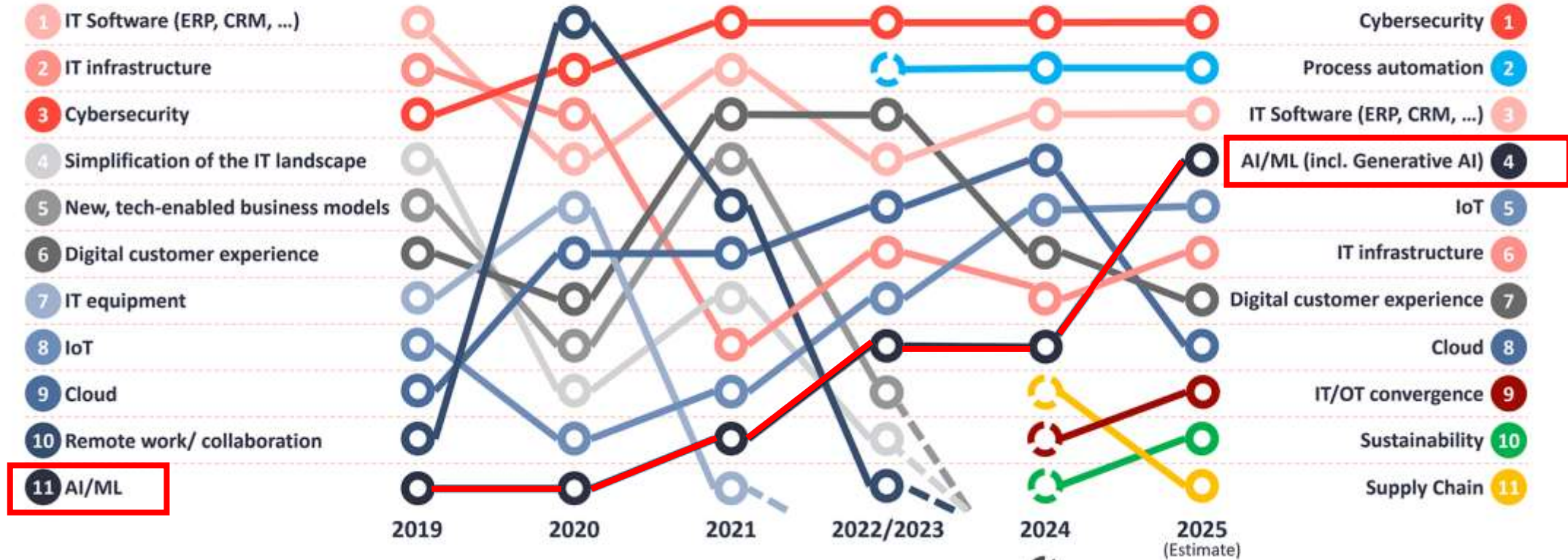
# Building blocks: CEI Continuum



Source: UnlockCEI

- 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

# Shifting enterprise technology priorities 2019–2025



Note: Based on individual surveys between 2019 and 2024, each with n>100, targeting senior IT and digital decision makers in enterprises (with a focus on manufacturers and energy companies). Question asked: Please rank your organization's top 5 IT/Digital topics by priority in [respective year]  
 Source: IoT Analytics Research. We welcome republishing of images but ask for source citation with a link to the original post and company website.



# Generative AI is a new battleground for big tech, with overlapping alliances and commitments into the billions

Generative AI companies with two or more big tech investors (as of 9/30/2023)

Big tech investors

Indicates where big tech invested

Company	amazon	Google	Microsoft	NVIDIA	Meta
Hugging Face	✓	✓		✓	
Adept			✓	✓	
AI21 Labs		✓		✓	
Anthropic	✓	✓			
Inflection AI			✓	✓	
Inworld AI			✓		✓
OpenAI	✓ **		✓		
Runway		✓		✓	
Synthesia		✓		✓	
Typeface		✓	✓		

Source: CB Insights \*Includes investments from M12 and Google Ventures  
\*\*AWS

51 / CBINSIGHTS

# NVIDIA's Strategy Map

We mined NVIDIA's acquisitions, investments, and partnerships since Q1'21 to discern its strategic priorities.

Categories listed are not mutually exclusive or exhaustive of all of NVIDIA's activity in this period.



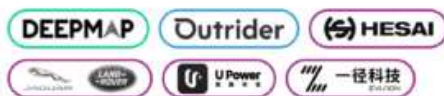
- Acquisition
- Investment
- Partnership



## AI & machine learning



## Autonomous driving



## Cloud & data infrastructure



## Digital twins



## Healthcare



## Quantum & high-performance computing



## Enterprises are spending millions with LLM developers...



Source: CB Insights - Software buyer interview transcripts and Analyst Briefing data



# Assessment of experts: EPoSS and INSIDE Edge AI Working Group



- Market for cloud-based is consolidated among two big tech cloud providers: AWS Microsoft.
- Also proprietary Real-Time Operating Systems for resource-constrained devices are important gateways into AWS and Microsoft eco systems.
- Edge computing services are not in the spotlight of the business strategies of hyperscalars 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 (hyperscalars 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 barriers: European companies have great concerns regarding data privacy and confidentiality: the majority of companies is not ready to share their data!
- Market opportunity is the data intelligence at the Edge: trustworthy federated, peer-to-peer or distributed processing and learning
- **AI at the Edge** requires **use case specific training of ML models** which follow a different development and maintenance life cycle from the classical security-by-design software

# Open questions

- How to get hardware and software vendors to collaborate in the Cloud Edge IoT Continuum?
- How to make it easier to deploy Edge AI?
- How to foster innovation and support its transfer to the market?