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Datacenter challenges: Explosion of data… what solutions?

Gallig Renaud – Distinguished Technologist

Key disruptive technologies 2019

Core to HPE

Adjacent (potential future impact/adjacent current impact)

Advanced Materials/ Nanomaterials:
Transforming many industries

Major Drivers & Enablers

Key Disruptive Technologies
Relevant to HPE

Cognitive Systems:
Digital intelligence gets down to business

New Computing Paradigms: The journey continues

IoT(I²) :
Intelligent, industrial platforms from the Cloud to the Edge

Next-Gen Analytics:
The engine of digital business transformation

Security, Privacy & Ethics:
Can we make our digital world safe *and* good?

Software-Driven Disruption:
Making it all work better, simpler and faster

Extending the Interface: Augmented & Virtual Reality

Biology+Technology:
Where biology, engineering & computer science meet

Materialization on Demand:
3D printing & beyond

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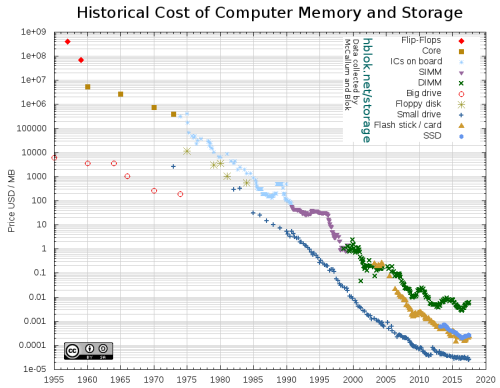
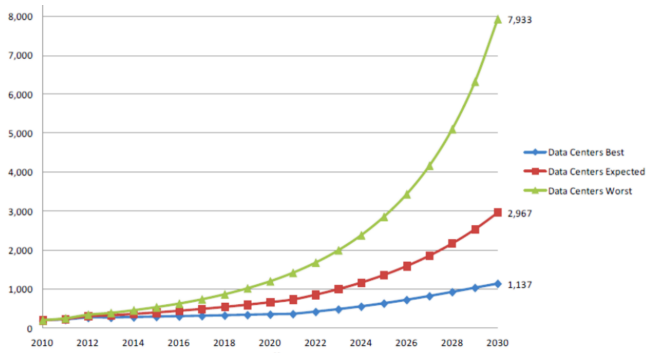
Challenges for exponential IT

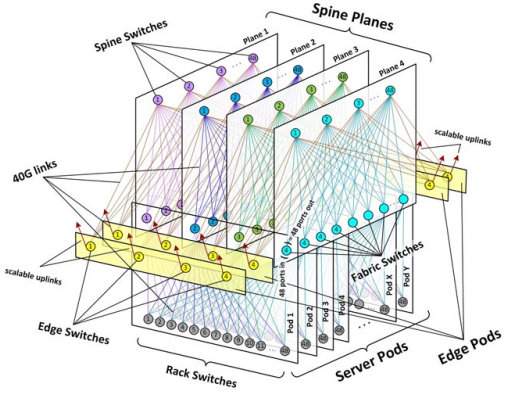
Economy



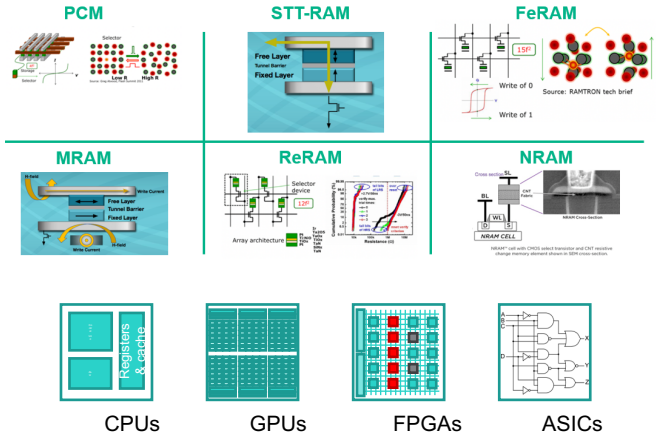
Energy



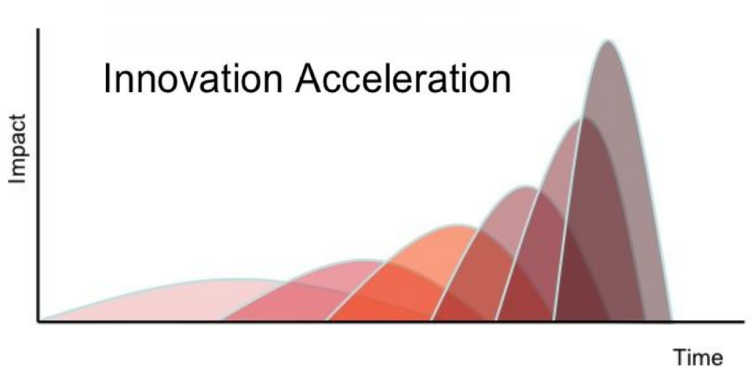
Complexity



Disruptions



Speed



Expertise

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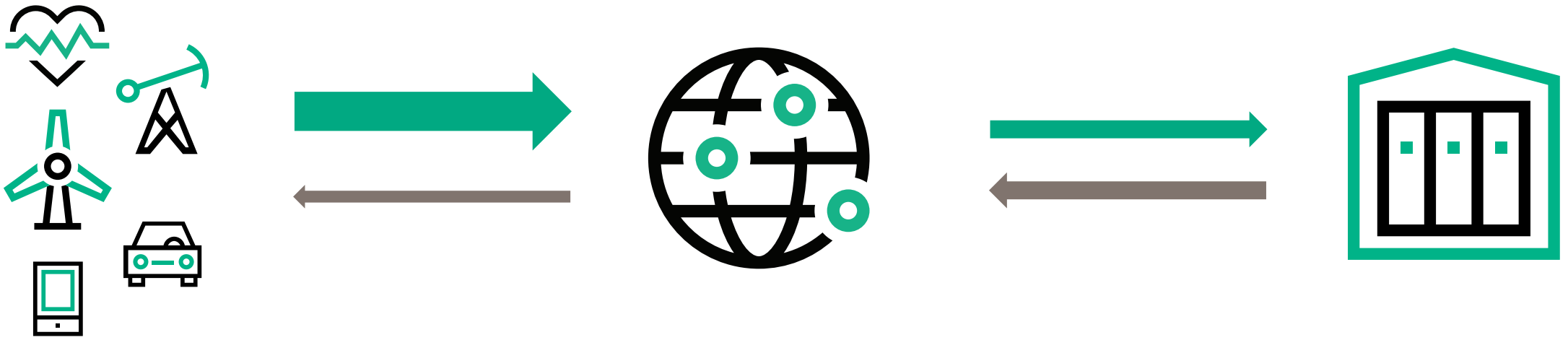
Compute and Storage Continuum

Decentralized architecture

IoT / sensors

Aggregation
Intelligent Gateways

Datacenters
Clouds



- Early analytics
- Minutes to days
- W to 10s W

- Correlation, Deep analytics
- Weeks to years, filtered and replicated
- 100s W to KW

- Global analytics / training
- Life time, multi-tier storage
- 100s KW to MW

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Optimizing data flows

Multi-tier storage

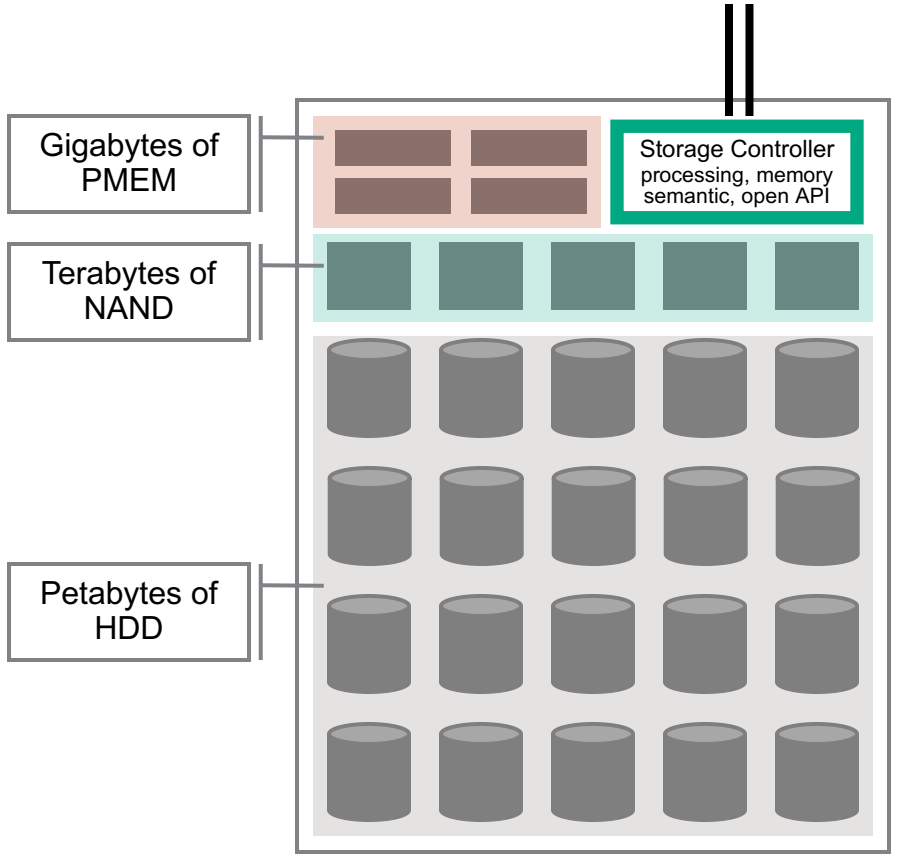
- Data Lake of cheap storage (erasure, replication)
- Flash Tier / Burst Buffer
- Off-line storage / archiving
- Persistent Memory

Data orchestration

- Moving data based on size, performance requirement, location, topology and protocols
- Requires perfect understanding of data, network and processing (code instrumentation)
- Adaptive rules embedded into enterprise scheduler and high-performance schedulers
- APIs and libraries are key to success

In memory processing

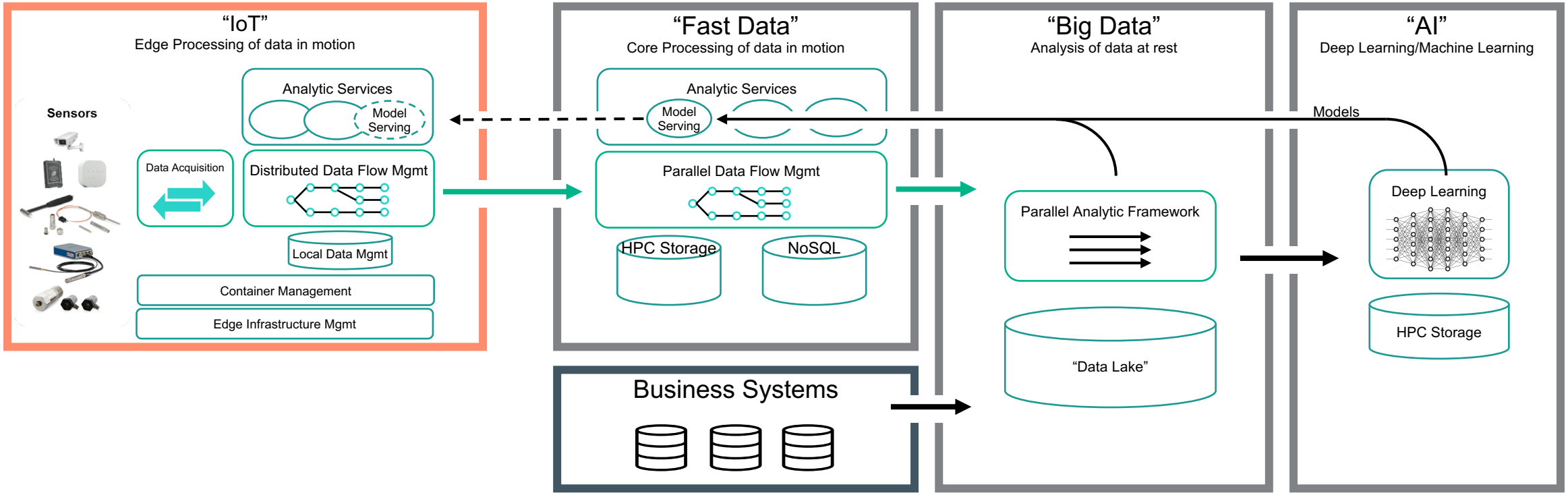
- Ultimate solution to avoid moving data: send operations to the memory



Compute and Storage Continuum applied to IoT and AI

Services and Solutions

Data Science Toolchains
Data Flow Design, Data Science Workbench, Model Management, Application Deployment



Deployed at the Edge — On Prem or in the Cloud

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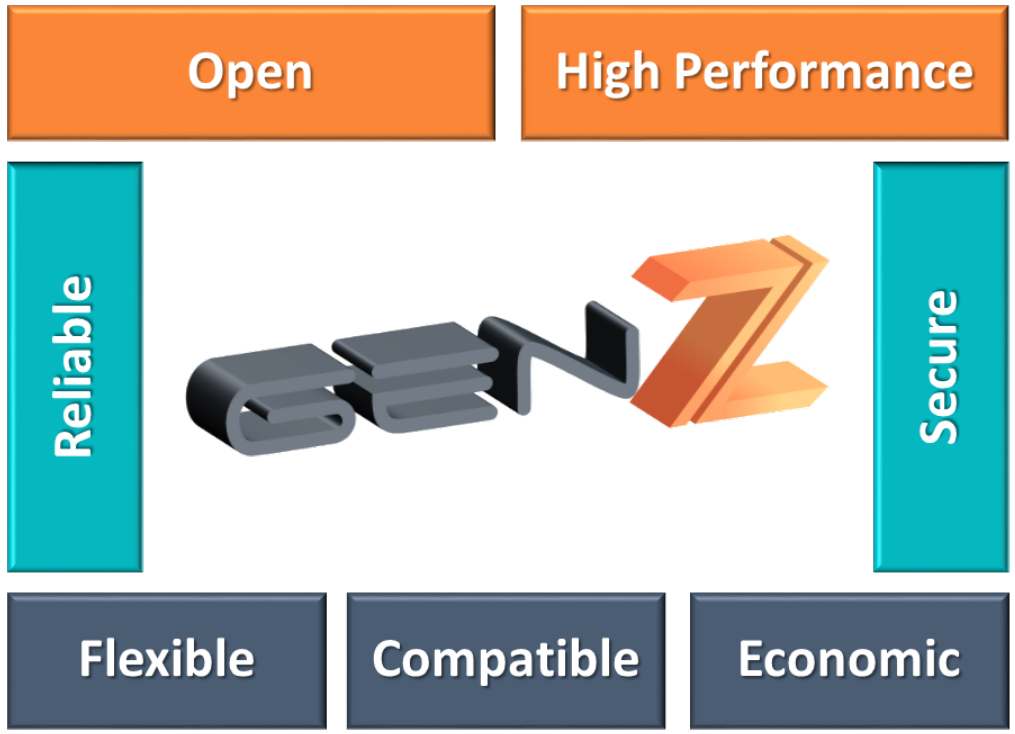
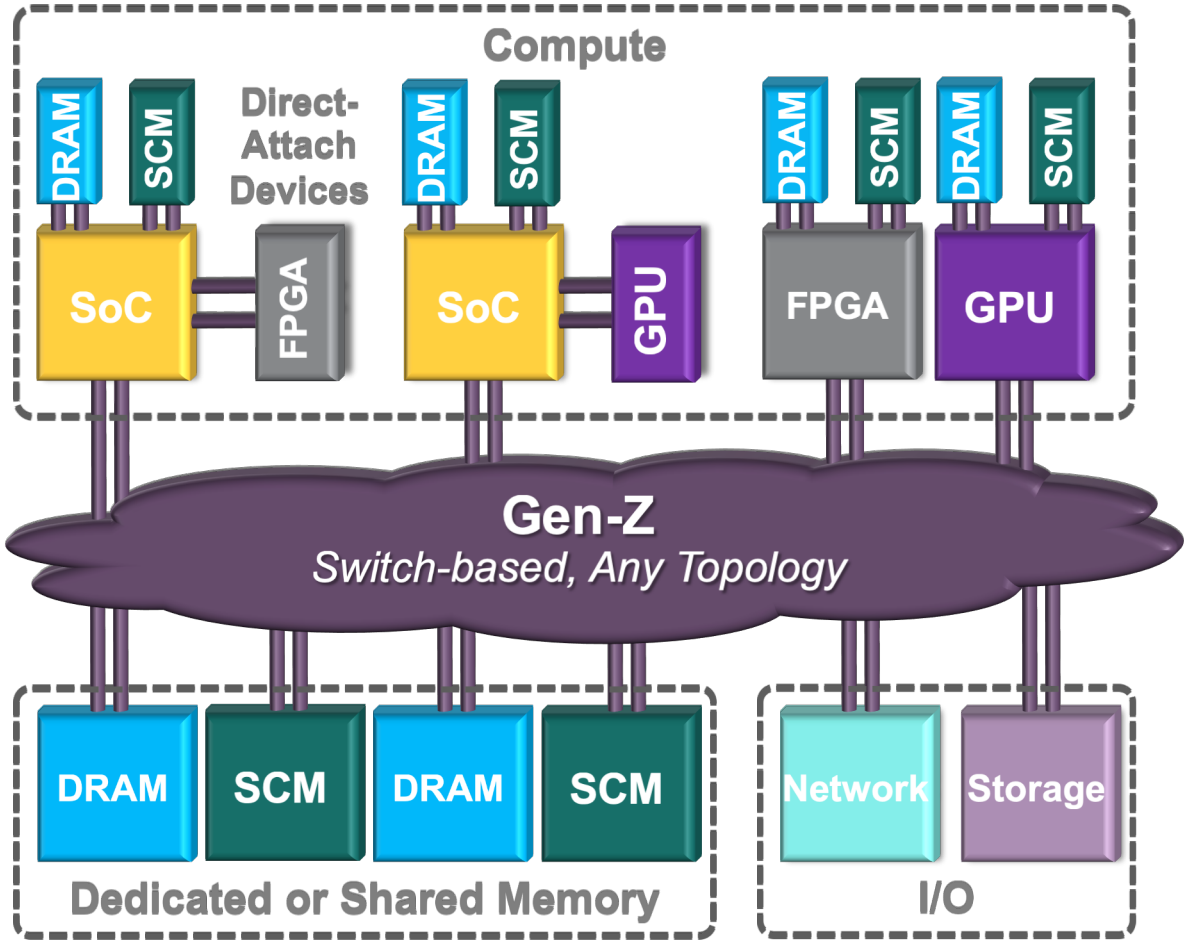
Gen-Z: The new way to architecture solutions



https://genzconsortium.org



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Thank you