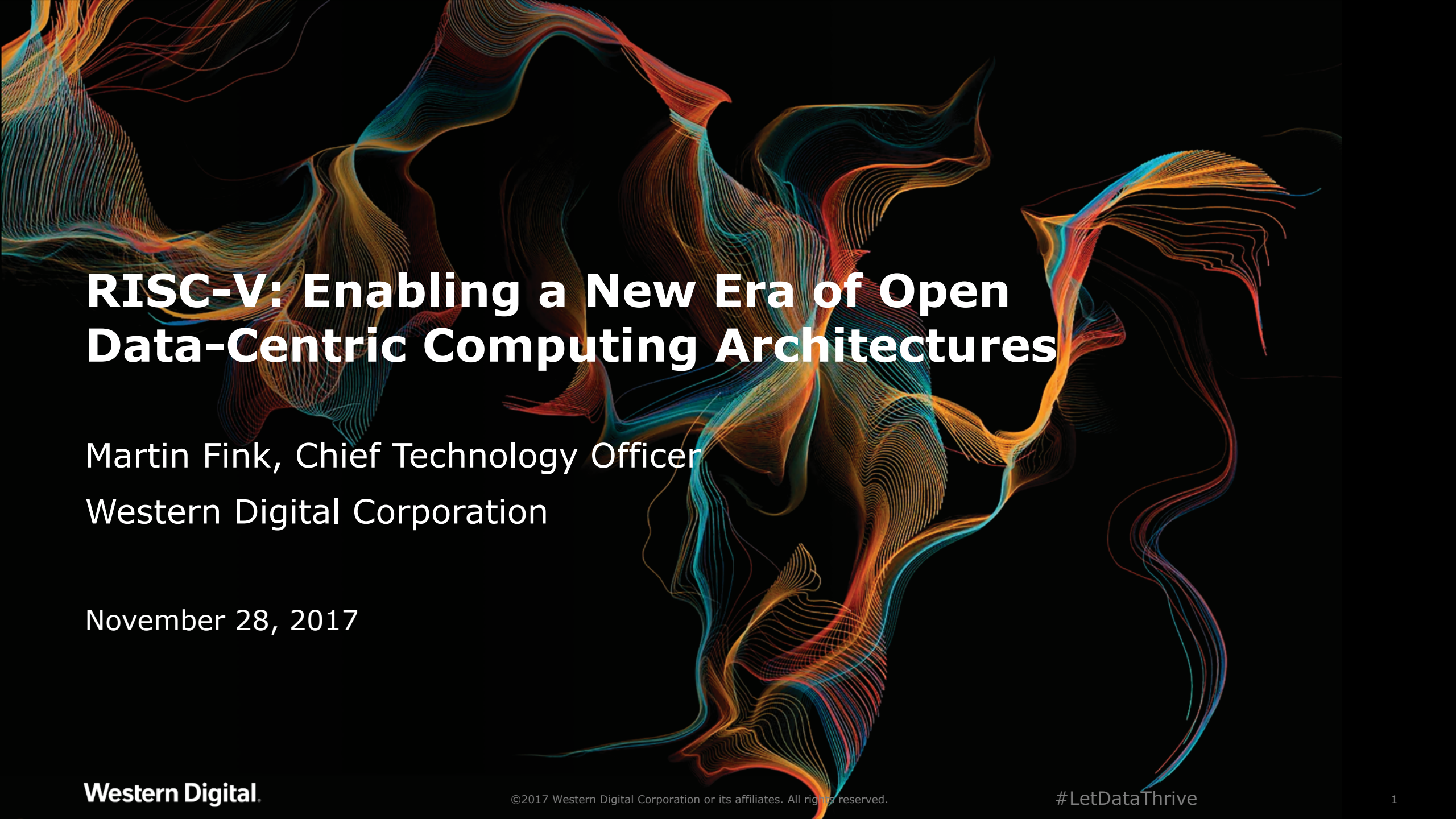

RISC-V: Enabling a New Era of Open Data-Centric Computing Architectures

Martin Fink, Chief Technology Officer

Western Digital Corporation

November 28, 2017

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#LetDataThrive

Forward-Looking Statements

Safe Harbor | Disclaimers

This presentation contains certain forward-looking statements that involve risks and uncertainties, including, but not limited to, statements regarding: the RISC-V Foundation and its initiatives; our contributions to and investments in the RISC-V ecosystem; the transition of our devices, platforms and systems to RISC-V architectures; shipments of RISC-V processor cores; our business strategy, growth opportunities and technology development efforts; market trends and data growth and its drivers. Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times at, or by, which such performance or results will be achieved, if at all. Forward-looking statements are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward-looking statements.

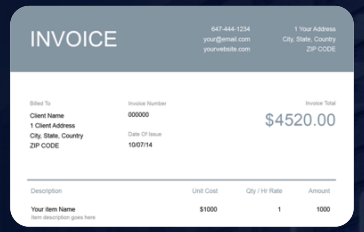
Additional key risks and uncertainties include the impact of continued uncertainty and volatility in global economic conditions; actions by competitors; difficulties associated with the integration of SanDisk and HGST into our company; business conditions; growth in our markets; and pricing trends and fluctuations in average selling prices. More information about the other risks and uncertainties that could affect our business are listed in our filings with the Securities and Exchange Commission (the "SEC") and available on the SEC's website at www.sec.gov, including our most recently filed periodic report, to which your attention is directed. We do not undertake any obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future developments or otherwise, except as otherwise required by law.

The Evolving Role of Data

Creating the data-driven economy

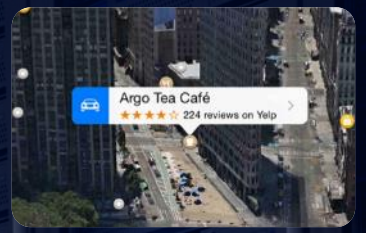
Richness

Data as a record



Data as communication

Data as efficiency



Data as currency

Value

Diverse and Connected Data Types

Tight coupling between Big Data and Fast Data

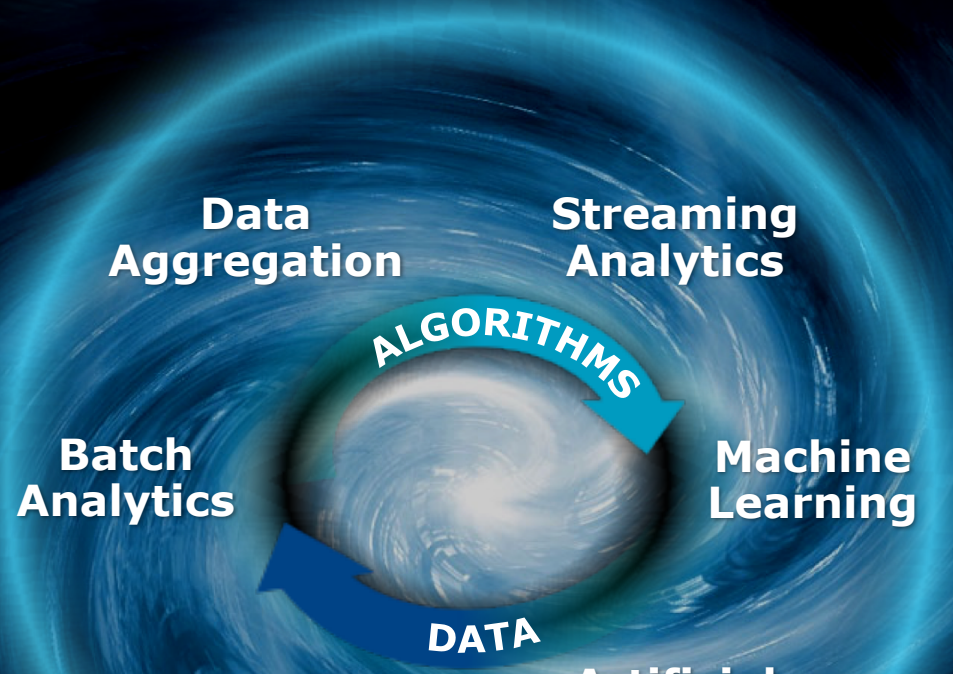
Big Data

Insight

Prediction

Prescription

Scale



Fast Data

Mobility

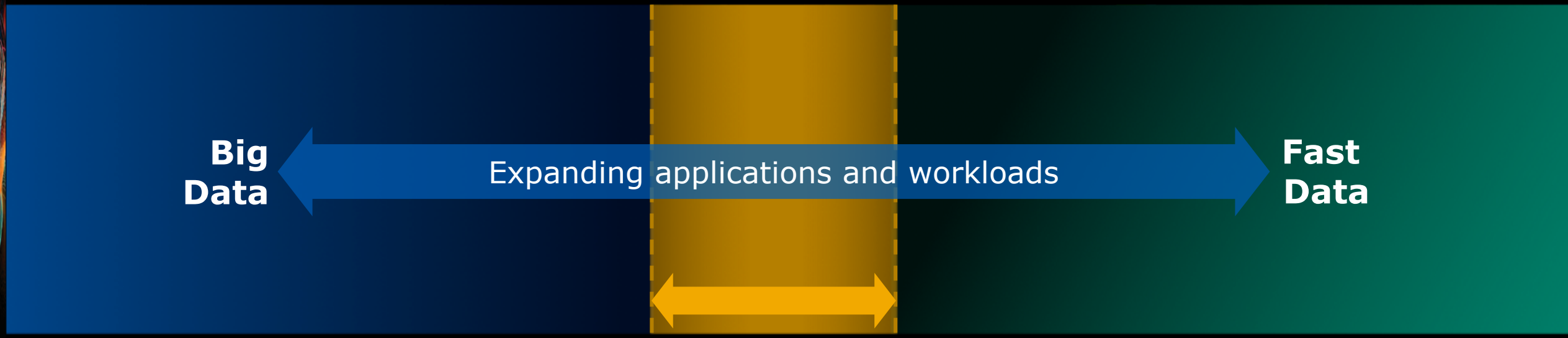
Real-time Results

Smart Machines

Performance

From General Purpose to Purpose Built

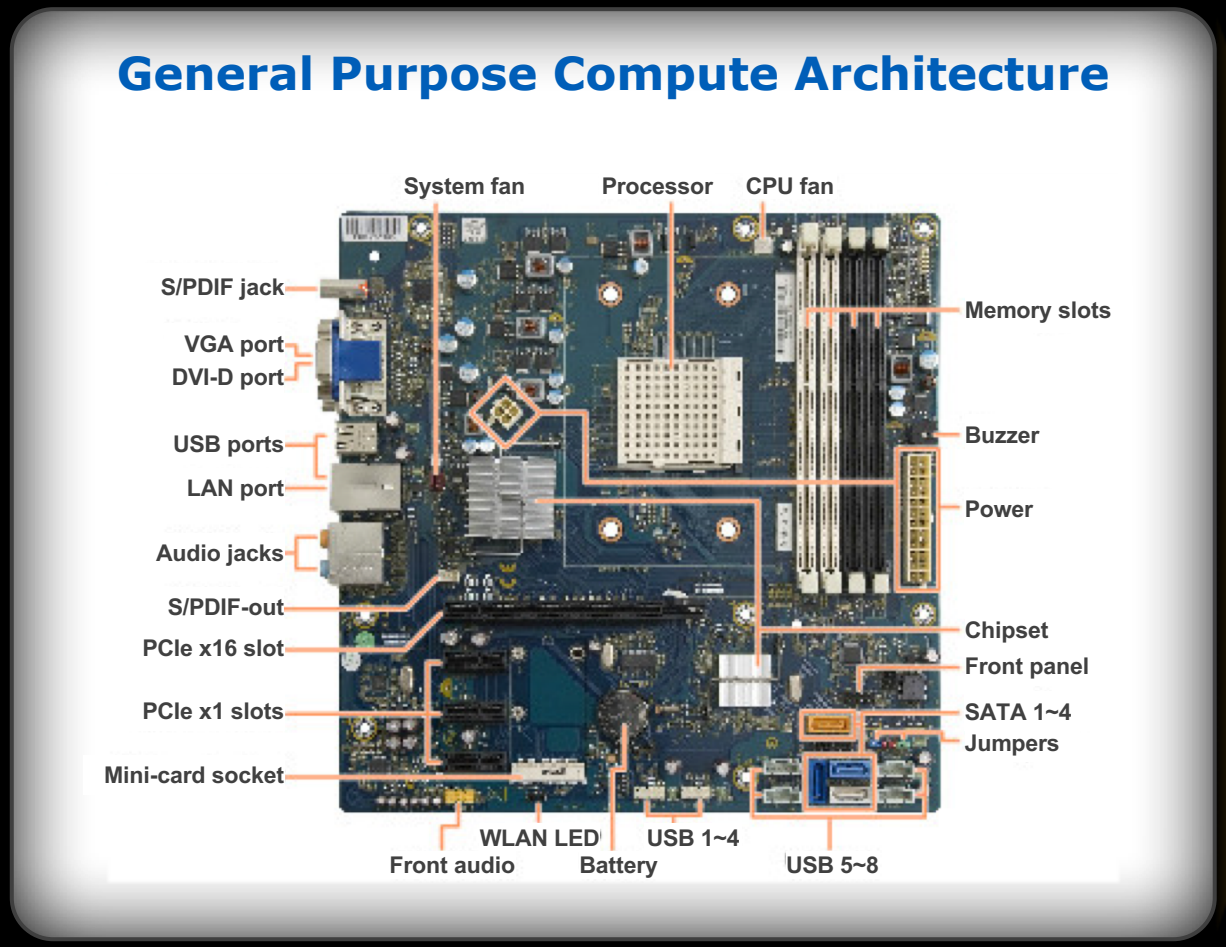
Architectures designed for Big Data, Fast Data applications



- Solutions
- Systems
- Platforms
- Devices

General Purpose Architectures No Longer Sufficient

Big Data and Fast Data workloads exceed capability of uniform resource ratios

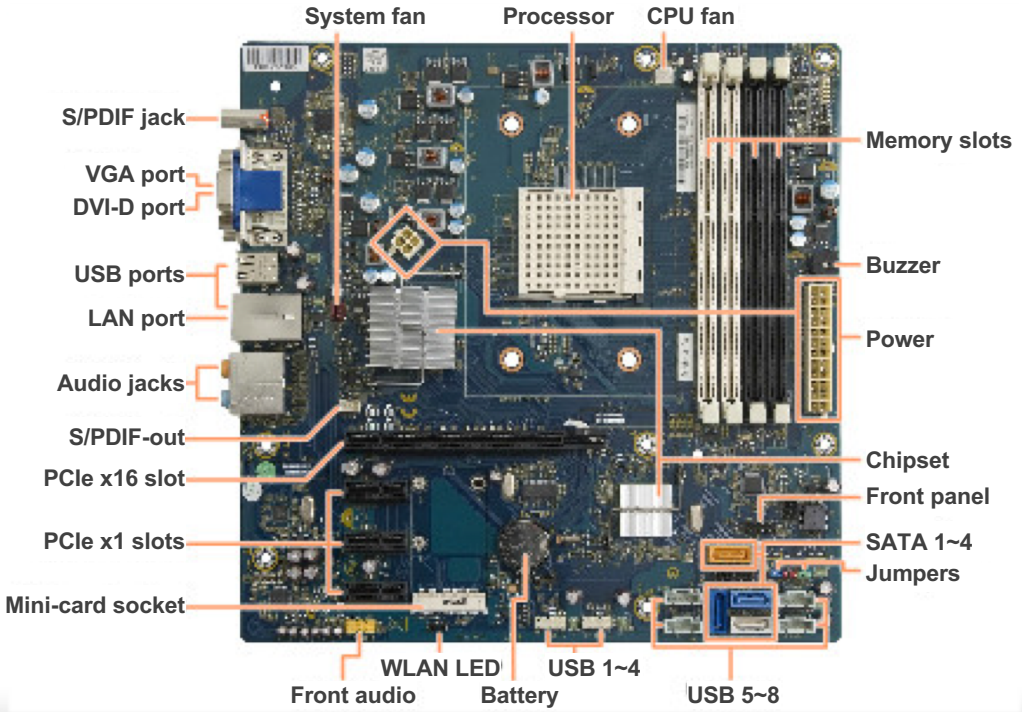


- Predetermined ratios of:
  - OS/App Processor
  - Specialty Processor
  - Memory
  - Storage
  - Interconnect
- Overhead of "PC" logic
- CPU-centric

General Purpose Architectures No Longer Sufficient

Big Data and Fast Data workloads exceed capability of uniform resource ratios

General Purpose Compute Architecture



General Purpose Transportation

General Purpose Architectures No Longer Sufficient

Big Data and Fast Data workloads exceed capability of uniform resource ratios

General Purpose Architectures No Longer Sufficient

Big Data and Fast Data workloads exceed capability of uniform resource ratios

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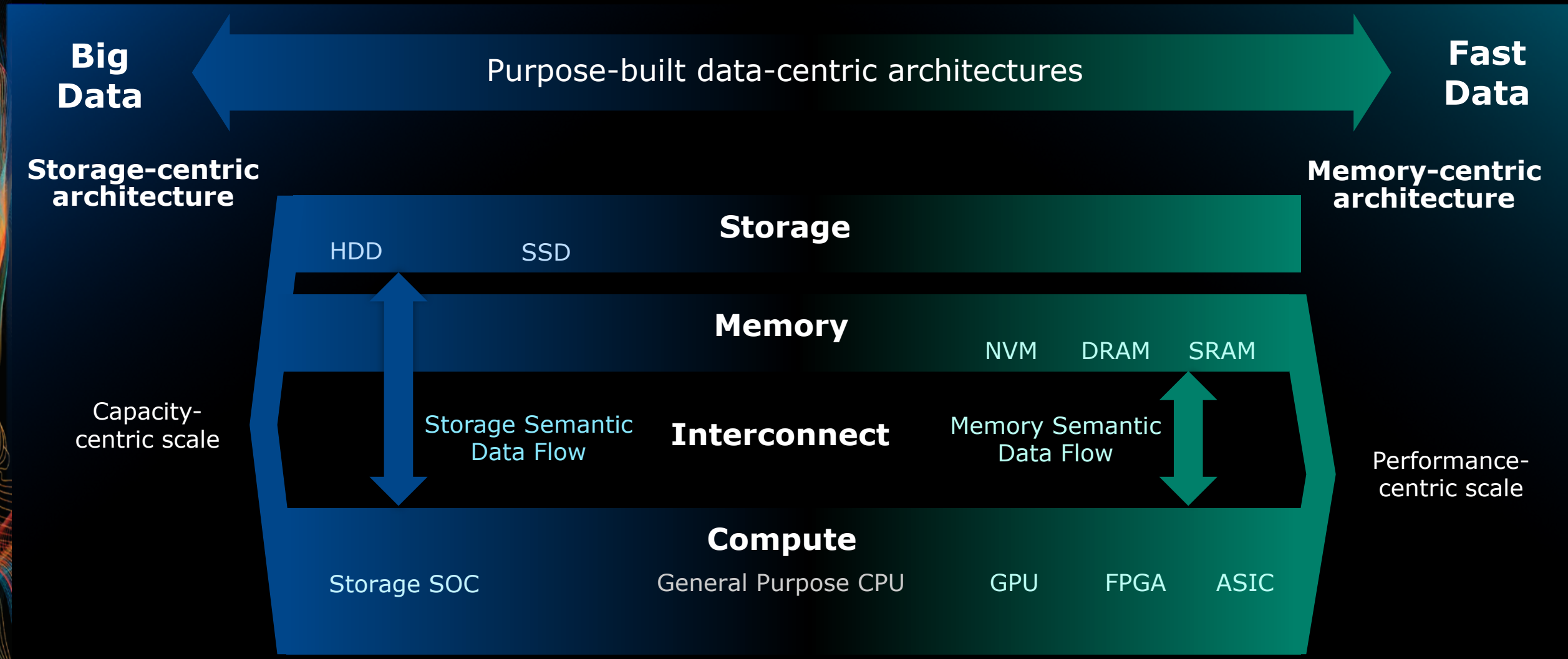
Workload Diversity Demands Diverse Technologies and Architectures



Data-Centric Environments

Big Data and Fast Data workloads need independent scaling of resources

Big Data

- Massive Storage
- Moderate Processing

- Massive Storage
- Massive Specialty Processing

Fast Data

- Large Memory
- Specialty Processing

- High-bandwidth interconnect
- Large Memory and Specialty Processing

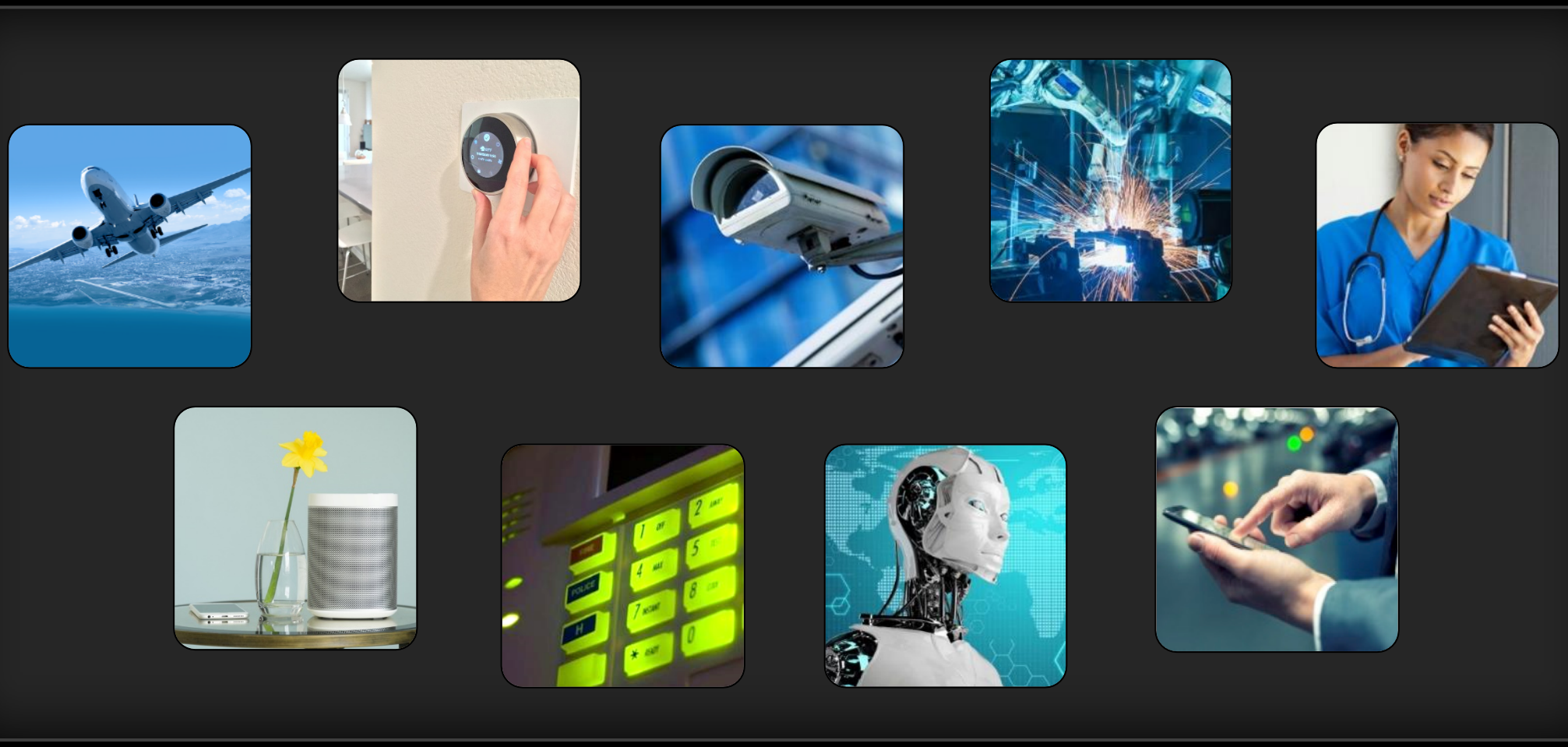
- High-bandwidth interconnect
- Large Specialty Processing

Independent Scaling Demands Openness

Rapid adoption of new open source technologies and standards

Data-Centric Applications at the Edge

Environments require modular technologies and dense integration to optimize space, weight and power consumption



RISC-V Meets the Needs of Big Data and Fast Data

Provides a foundation for purpose-built, data-centric compute environments

Big Data

Move Compute to Data

- CPU for device, platform, system
- Minimize data movement
- Offload workload to "smart" storage
- Localizeed machine learning

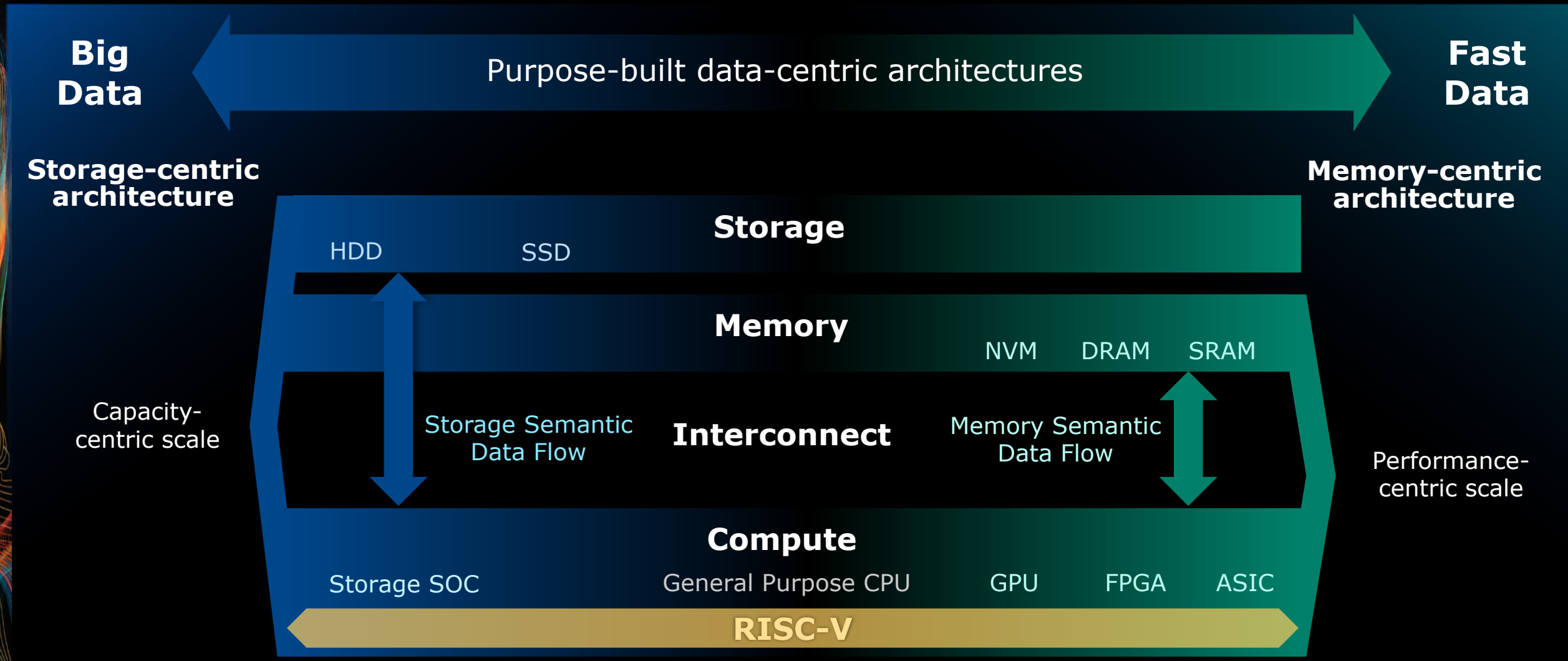
Fast Data

Memory Centric Compute

- Highly scalable main memory
- Minimize data movement
- Heterogeneous processor support
- Scalable accelerators/offload engines

- Open and free
- Enables modular chip designs
- From 16 to 128-bit
- Scales from embedded to enterprise
- Direct integration with specialty accelerators
- Extensible ISA (for special purpose functions)

RISC-V Enables Purpose-Built Environments for Big Data and Fast Data Applications



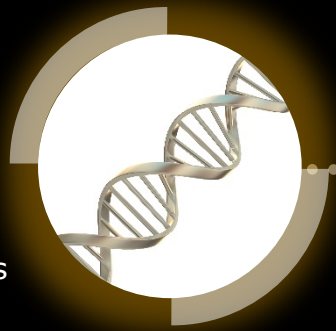
RISC-V Meets the Needs of Big Data and Fast Data

Big Data

Fast Data

Predictive Analytics

Autonomous Machines



Genomics

RISC-V

Safety & Security

Machine Learning

Private Exchange

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Driving Momentum

Western Digital ships in excess of
1 Billion cores per year
…and we expect to **double that.**

Western Digital.

Accelerating the RISC-V Ecosystem

Western Digital to contribute one billion cores annually to fuel RISC-V

1. Support development of open source IP building blocks for the community
2. Actively partner and invest in the ecosystem
3. Accelerate development of purpose-built processors for a broad range of Big Data and Fast Data environments
4. Multi-year transition of Western Digital devices, platforms and systems to RISC-V purpose-built architectures

Innovating for a Data-Centric World

Big Data and Fast Data need purpose-built environments

Openness and ecosystem enable best-in-class innovation

Western Digital brings the momentum of >1B cores per year

Western Digital. RISC-V

Western Digital®

We create environments for data to thrive

#LetDataThrive