

2019 Is the Year of NVMe™

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Vice President, Data Center Systems

August 7, 2019

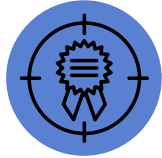
Forward-Looking Statements

Safe Harbor | Disclaimers

This presentation contains certain forward-looking statements that involve risks and uncertainties, including, but not limited to, statements regarding solid-state storage technology, storage interfaces, business strategy, growth opportunities, market adoption, demand for digital storage and market trends. 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.

Key risks and uncertainties include volatility in global economic conditions, actions by competitors, business conditions, growth in our markets, product development, pricing trends and fluctuations in average selling prices, and other risks and uncertainties 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 required by law.

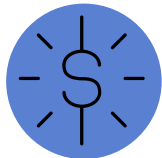
Western Digital – A Leader in High-Performance Storage



A market leader with industry's broadest product portfolio



Portfolio – storage systems, SSDs, HDDs, embedded and removable flash memory



Vertically integrated business model for operational efficiency

High performance storage solutions leader driving long-term profitable growth

Western Digital®

With a portfolio of leading brands

SanDisk



Leading Portfolio Breadth and Depth

Solutions to Capture, Preserve, Access and Transform Data



JBOD & JBOF



Storage Servers



Object Storage Systems



All-Flash & Hybrid Arrays



NVMe-over-Fabric Storage



Memory Extension Drive



Enterprise SSD



Enterprise HDD



Client SSD



Client HDD



Network Attached Storage & Personal Cloud



Direct-Attached Storage



NAND Components



Embedded Flash Devices



Flash Cards



Flash USB

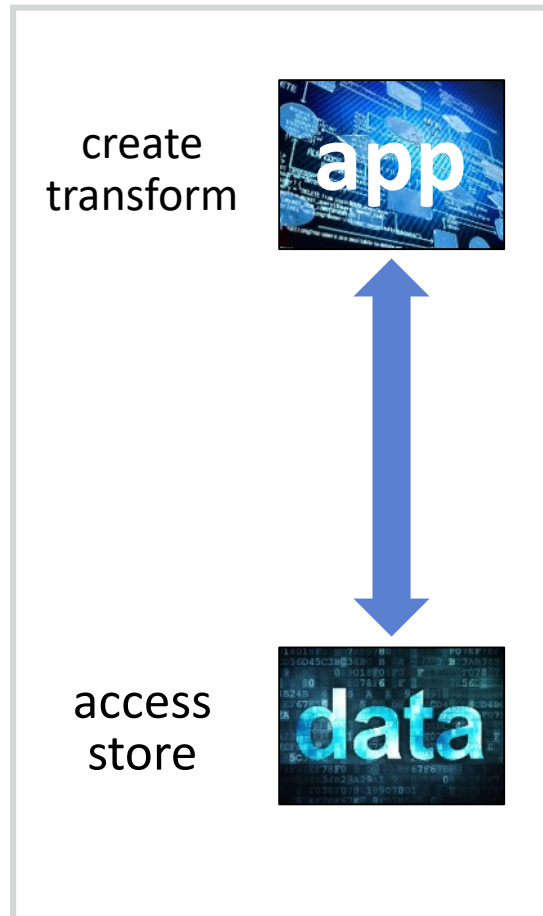


Portable Storage

Data Interaction is Changing

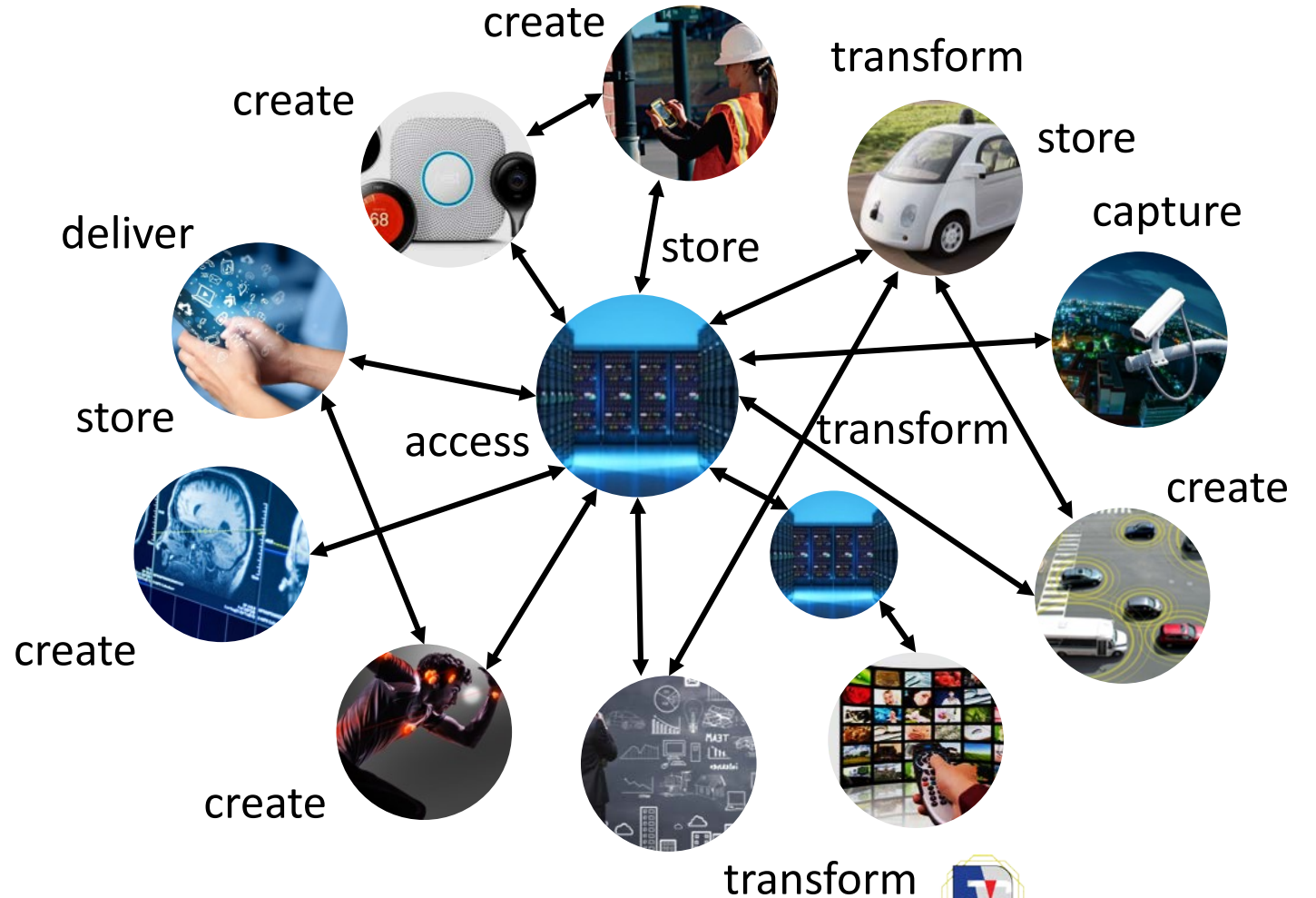
Past

Data Held Captive by Single Application



Current and Future

Data Pooled and Shared by Multiple Applications



2019 Is the Year of NVMe! Or is it?

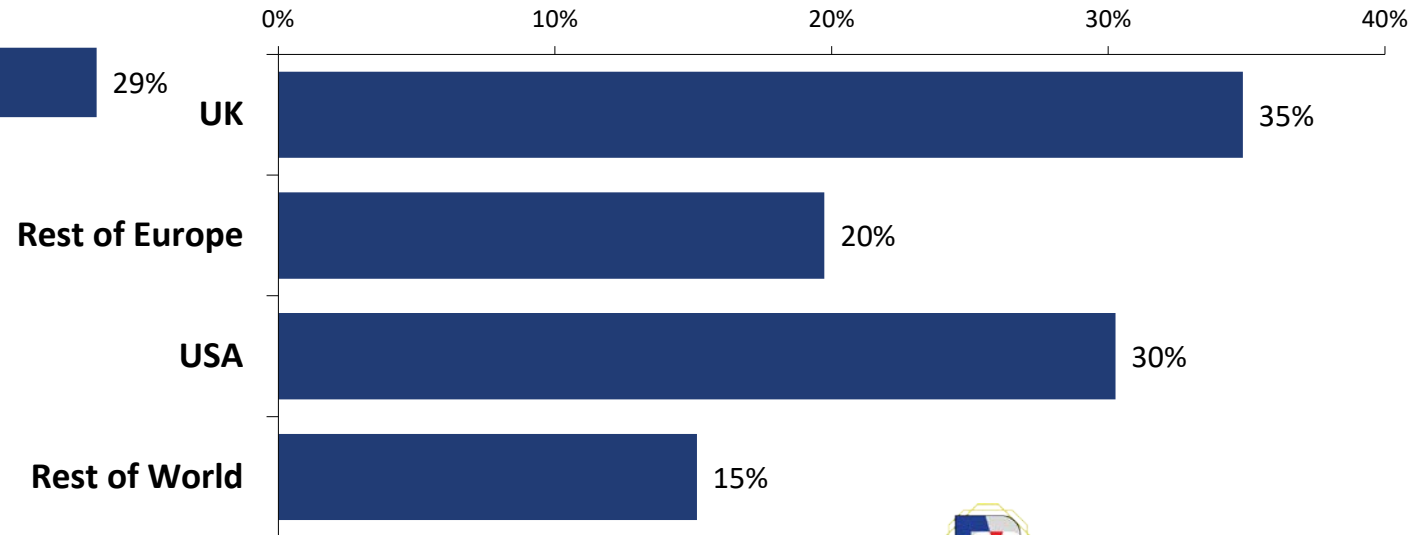
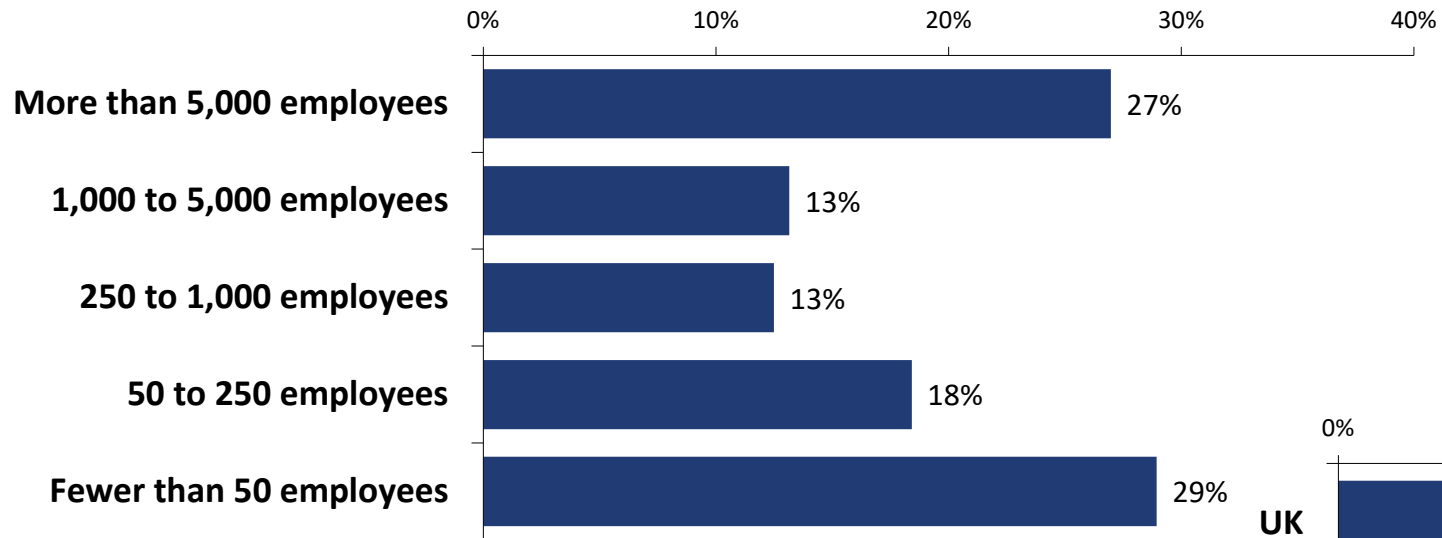
NVMe: Perception and Real World Usage

- NVMe Understanding and Awareness
- Is current storage infrastructure adequate?
- Where is NVMe deployed now?
- Where will NVMe be found in the future?
- What's inhibiting greater NVMe deployment?
- Is the business case clear?
- What can vendors do to help accelerate adoption?

2019 Is the Year of NVMe! Or is it?

NVMe: Perception and Real World Usage

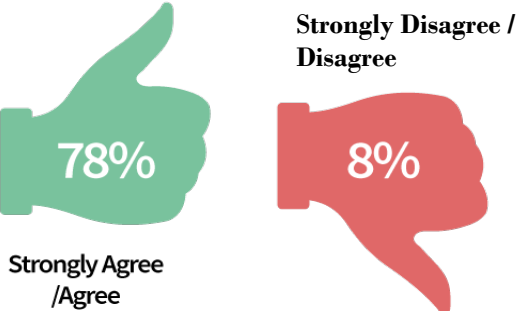
Survey of Practitioners across Organizations & Geographies



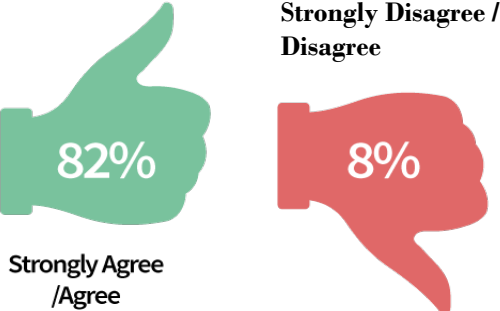
NVMe: Perception and Real World Usage, July 2019 – Freeform Dynamics

NVMe Understanding and Awareness

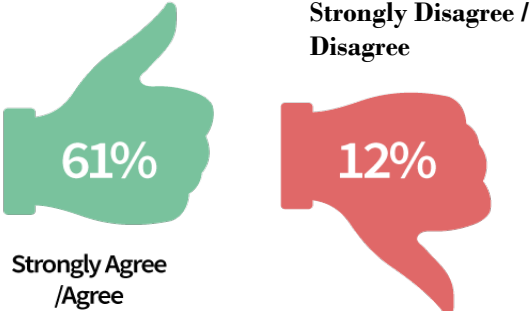
I have good knowledge of NVMe storage



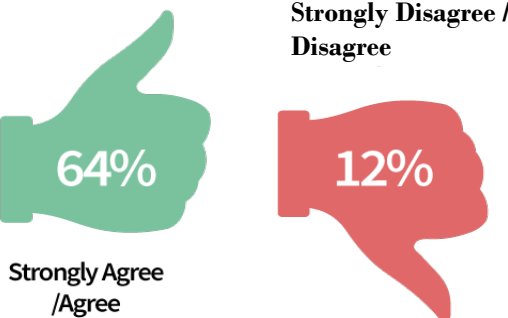
I understand which workloads benefit from using NVMe



I know how to make a good business case for NVMe investment



I have confidence that NVMe storage is mainstream-ready

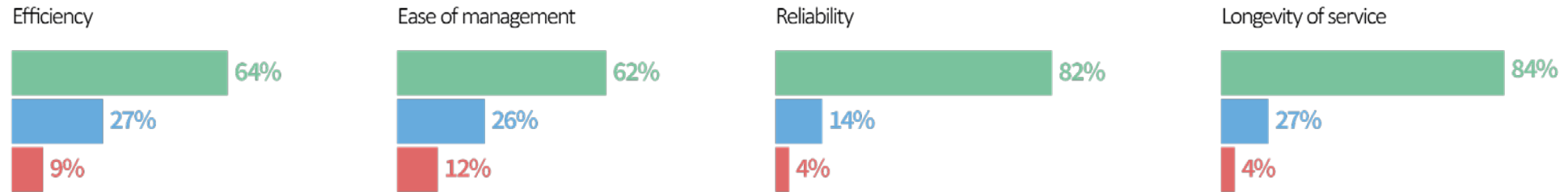


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State of Current Storage Infrastructure

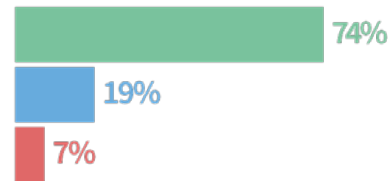
Existing storage might work today, but maybe not in the future

Q: How would you regard your current storage environment in terms of?



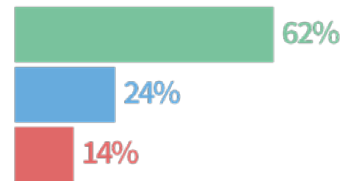
Does it work today?

Ability to support current application requirements

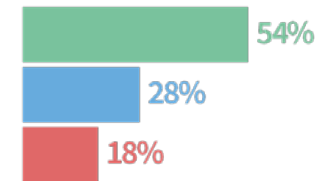


Will it work tomorrow?

Ability to scale as current demands grow



Suitability to meet future application needs



Very Good/Good Adequate Lacking/Not Very Good

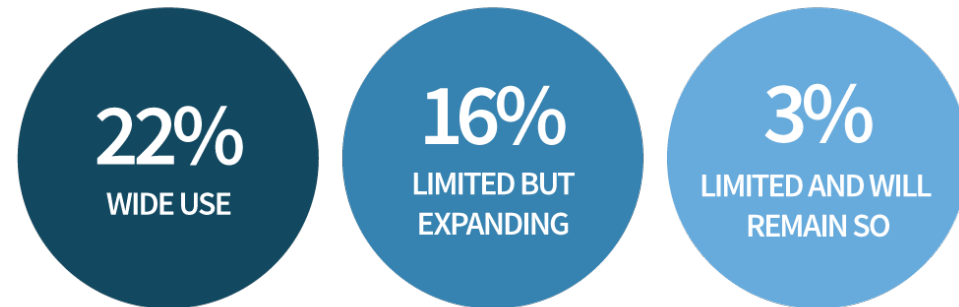
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Where Is NVMe Deployed Today?

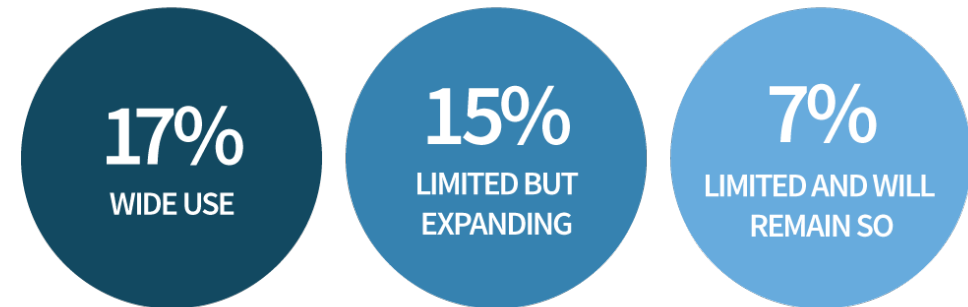
Some of the usual suspects; but how ubiquitous is it given its age?

Q: How far have you deployed NVMe to support workloads in the following areas?

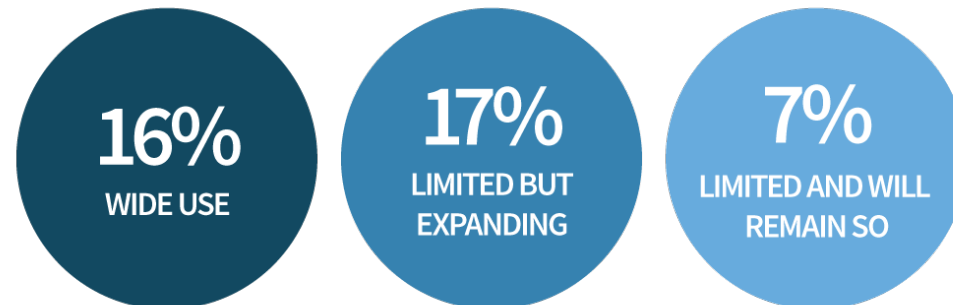
Very low latency sensitive transaction systems



Business critical real-time analytics in particular



Demanding analytics workloads



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Flash Memory Summit

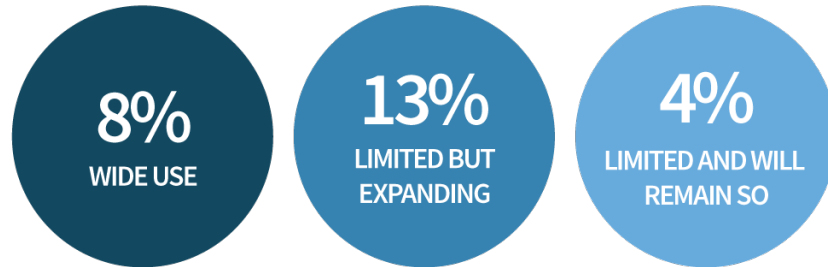
8/14/2019

Where Is NVMe Deployed Today?

Less in where you'd think

Q: How far have you deployed NVMe to support workloads in the following areas?

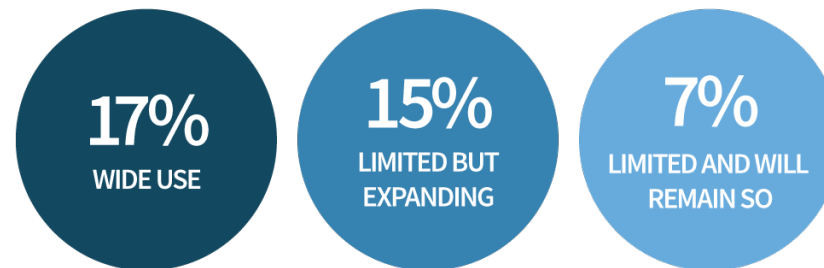
AI and/or ML systems



The widespread deployment of containers



Data intensive modelling | engineering systems

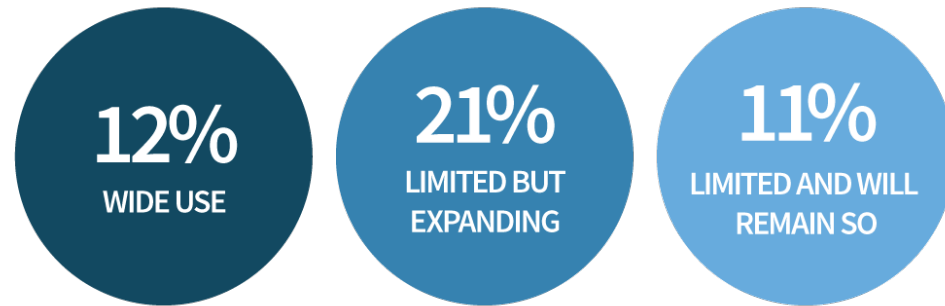


Where Is NVMe Deployed Today?

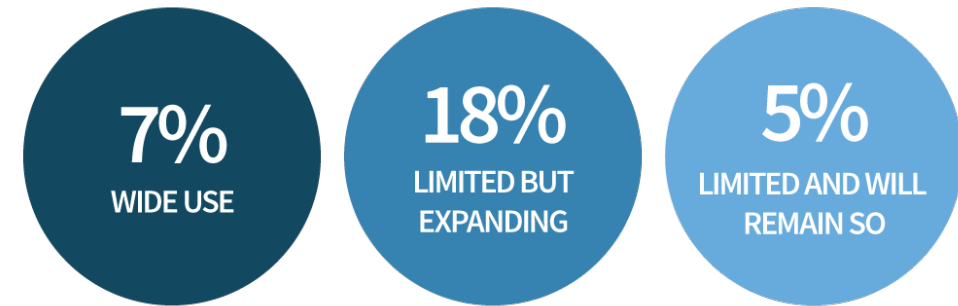
Maybe not where you'd think

Q: How far have you deployed NVMe to support workloads in the following areas?

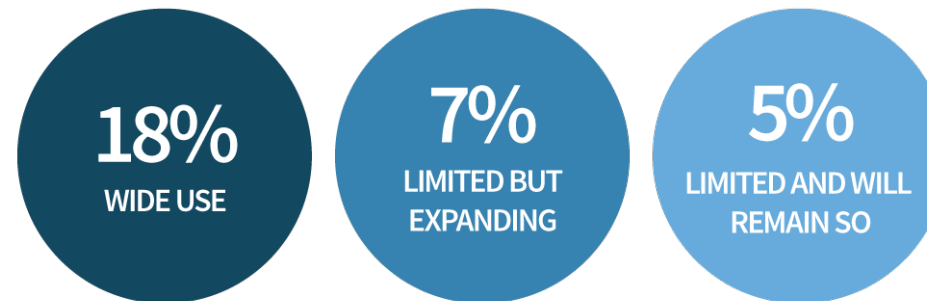
General business applications



Across the board/life, the universe and everything



Other



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Flash Memory Summit

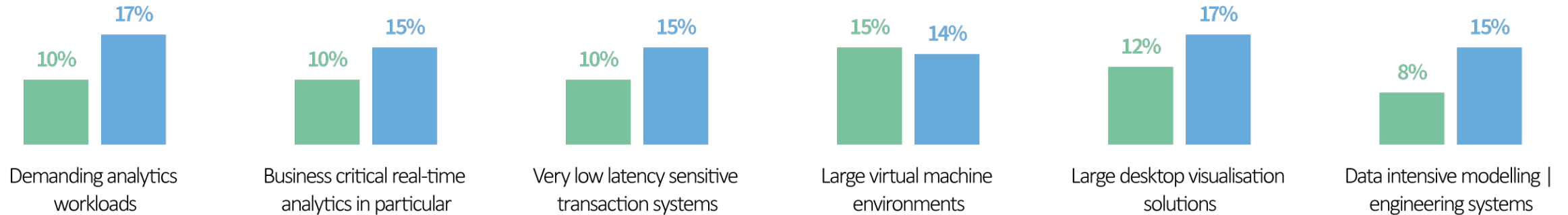
8/14/2019

Where Will NVMe Be Found in the Future?

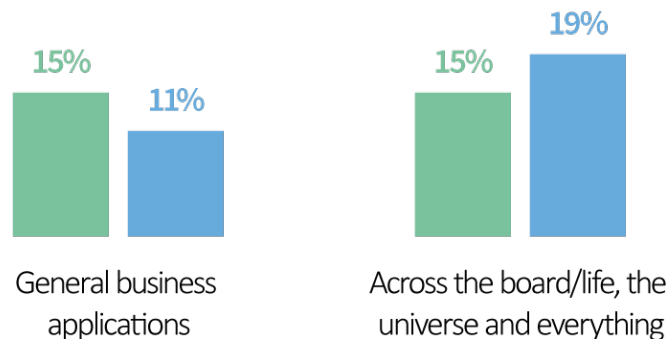
“Past performance is no guarantee of future results...”

Q: How far have you deployed NVMe to support workloads in the following areas?

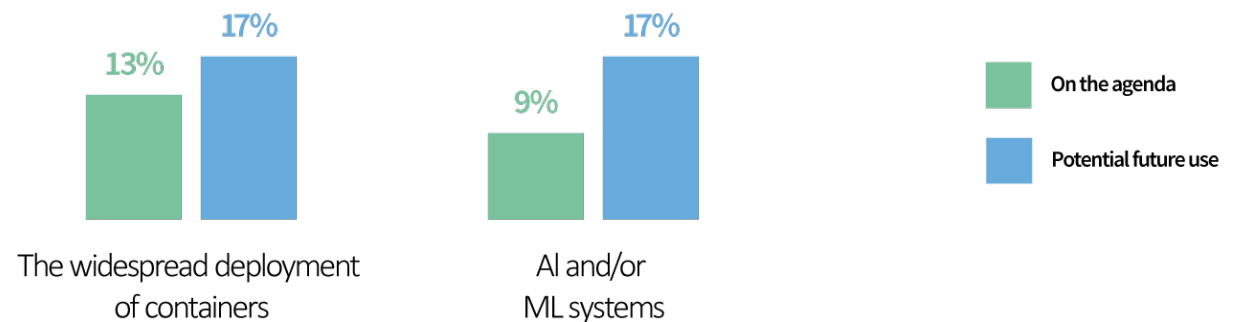
NVMe established workloads



NVMe as standard



NVMe for cutting edge workloads



■ On the agenda
■ Potential future use

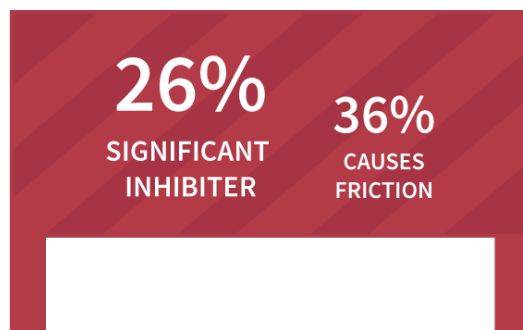
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What's Inhibiting Greater NVMe Deployment?

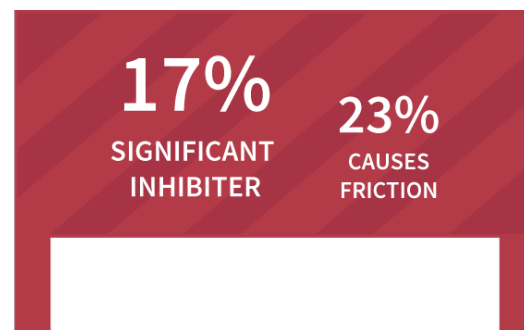
Infrastructure is team sport, technically and financially

Q: How much do the following stand in the way of NVMe?

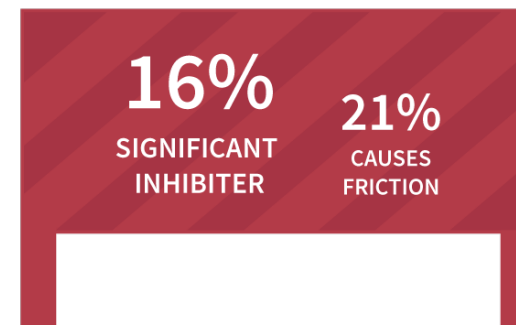
The current state of the server systems already deployed



Current network unable to handle NVMe and NVMe-oF



Pushback from finance/procurement



The technical maturity of NVMe solutions



Recent storage platform investments elsewhere (AFA etc)



Inability to make a convincing business case for investment

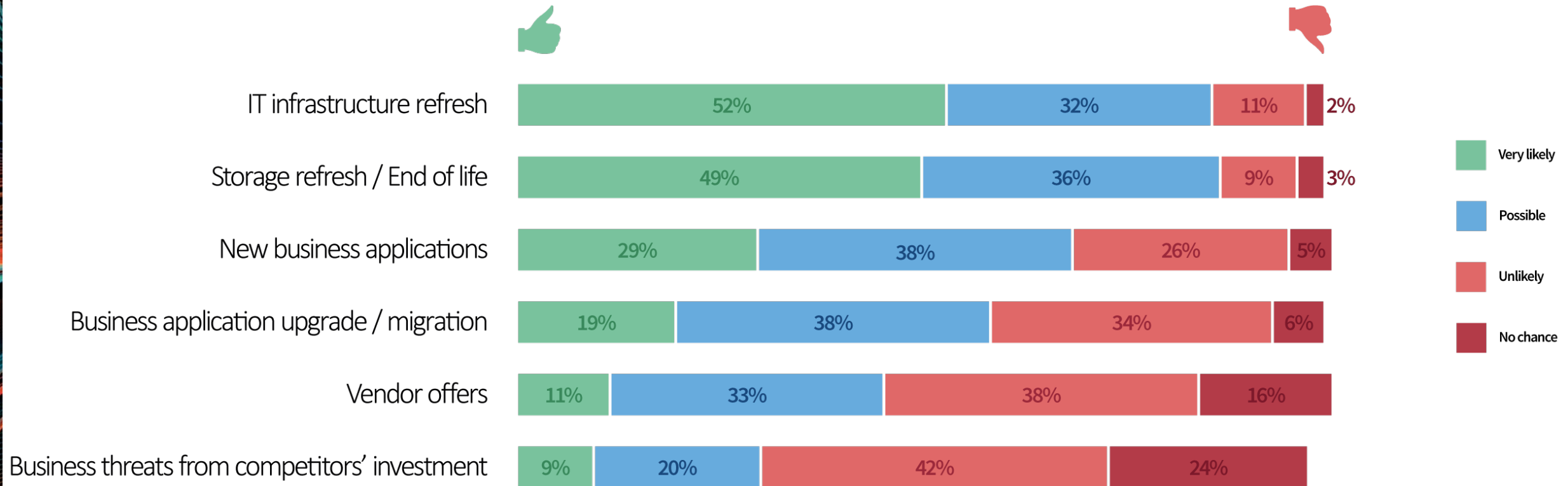


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What's Inhibiting Greater NVMe Deployment?

Financial timelines and/or business needs are clear considerations

Q: How likely are the following Business or IT events to trigger the acquisition of NVMe Solutions?



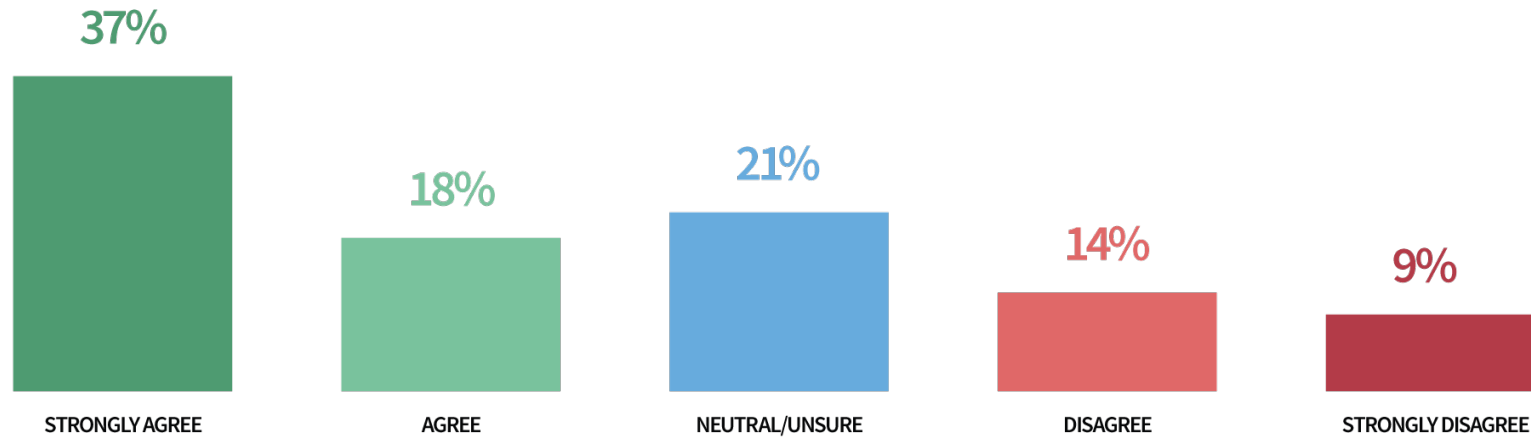
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Too Many People Are Unsure of Too Many Things

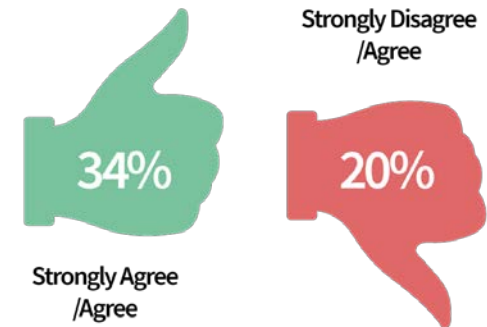
The need for education and thought leadership remains

Q: How much do you agree with the following statements?

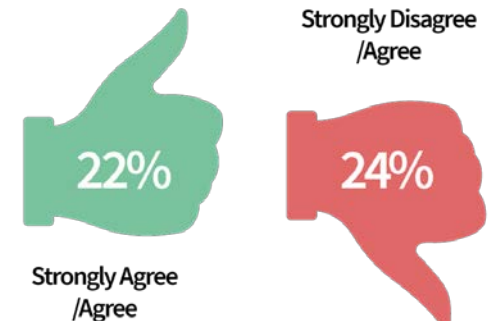
We are committed to deploying NVMe storage



We see a clear role for NVMe-oF (over Fabric)



Our suppliers are offering viable NVMe-oF solutions



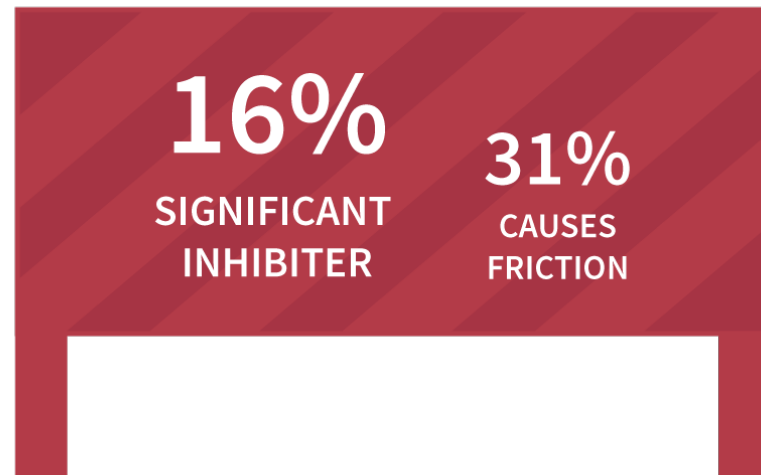
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Too Many People Are Unsure of Too Many Things

Vendors need to do a better job in educating the marketplace

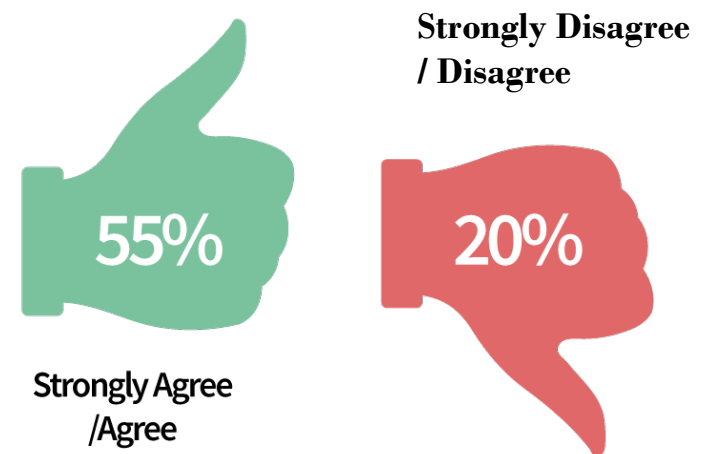
Q: How much do the following stand in the way of NVMe?

The availability of suitable solutions



Q: How much do you agree or disagree with the following statement?

Our suppliers are offering viable NVMe solutions



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Architecting Data Infrastructure for the Zettabyte Age

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