WELCOME TO DATA FABRIC

NetApp

IT 2020

Роман Козлов

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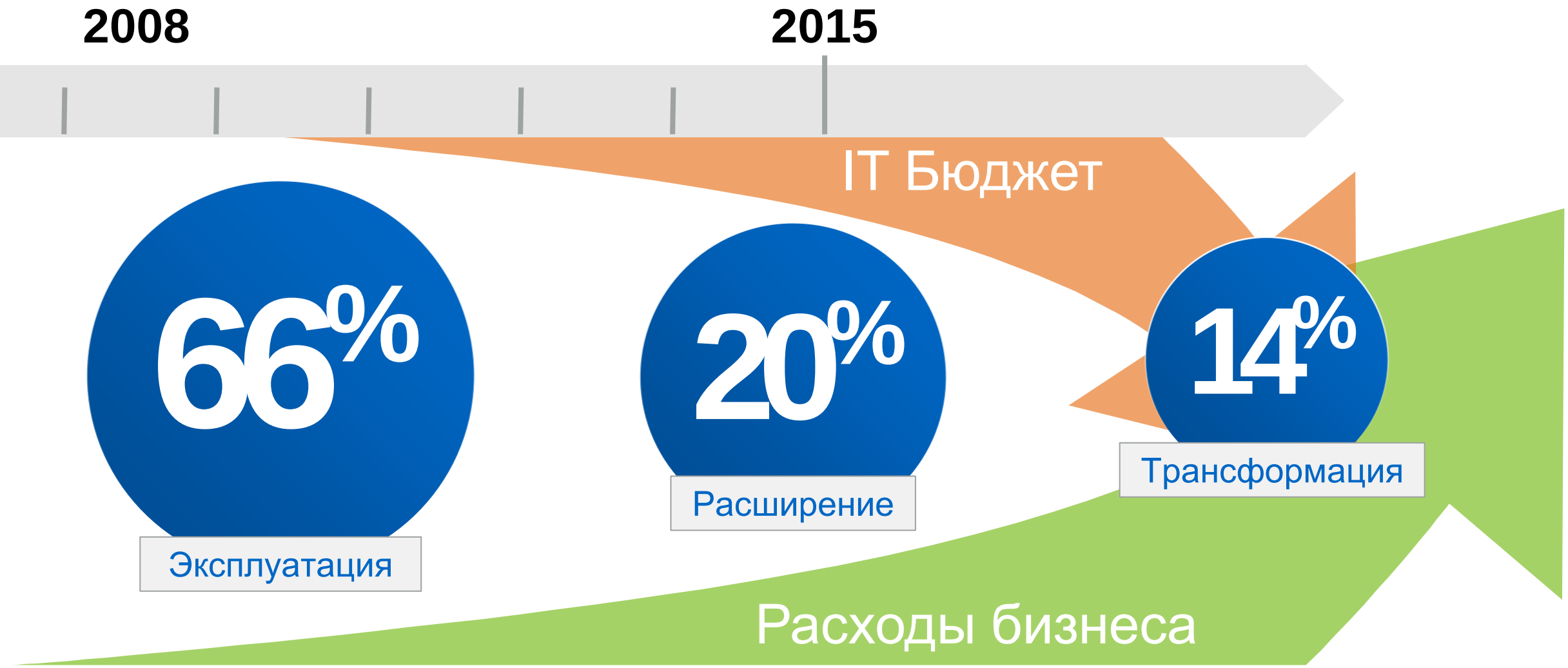
Gartner: Структура расходов предприятий



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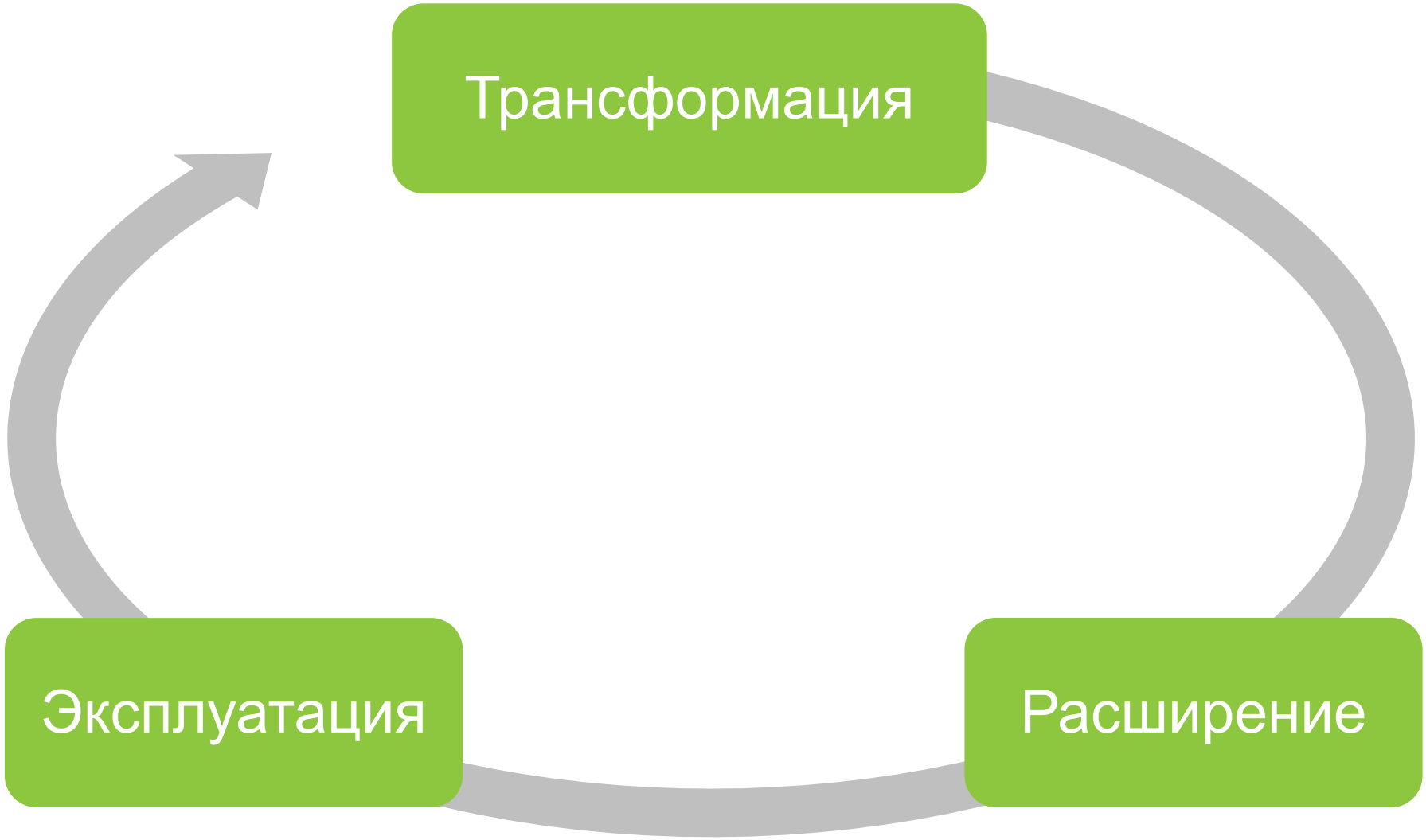
Затраты: в виде жизненного цикла проектов



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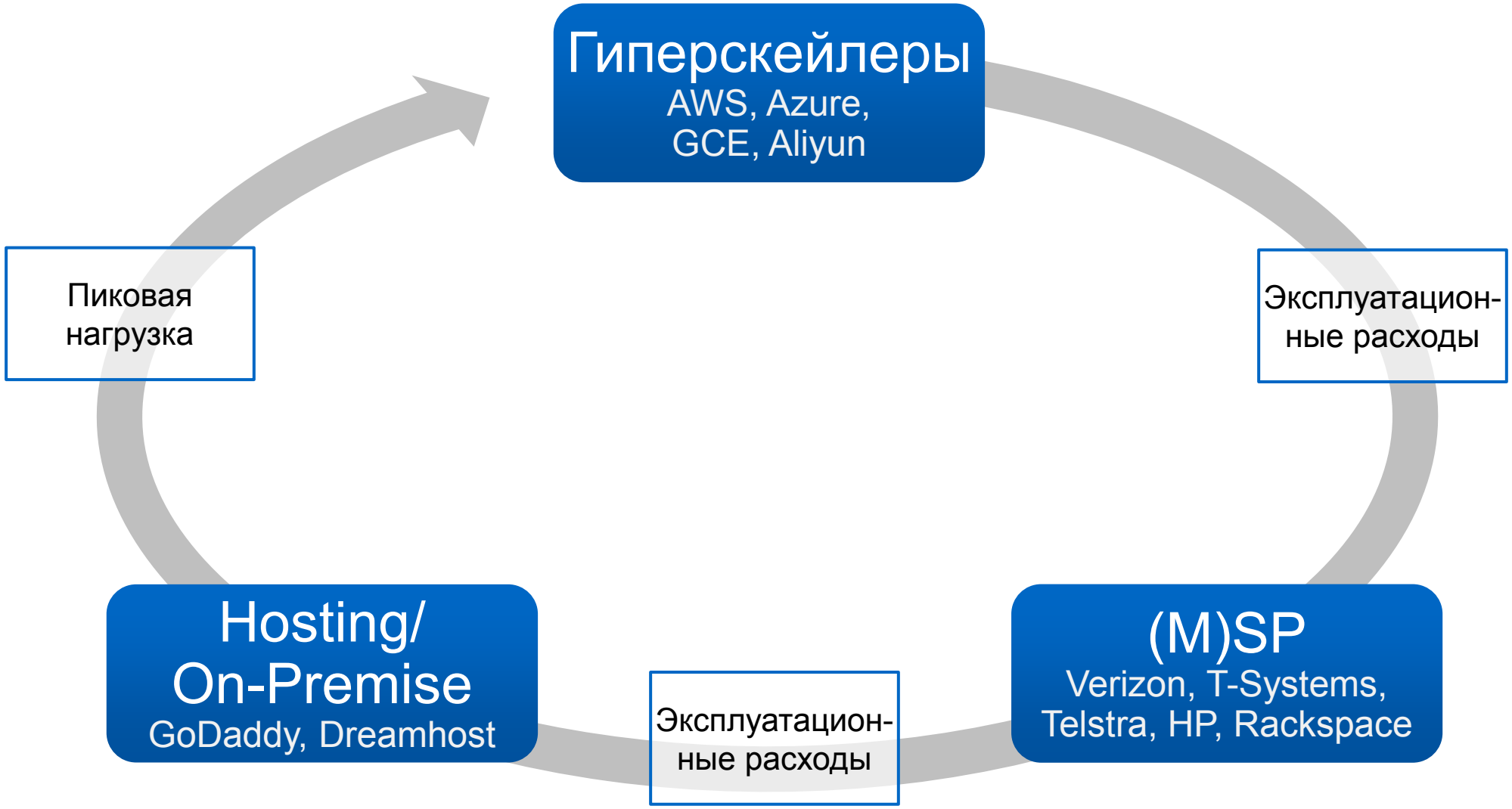
Экономика гибридных облаков



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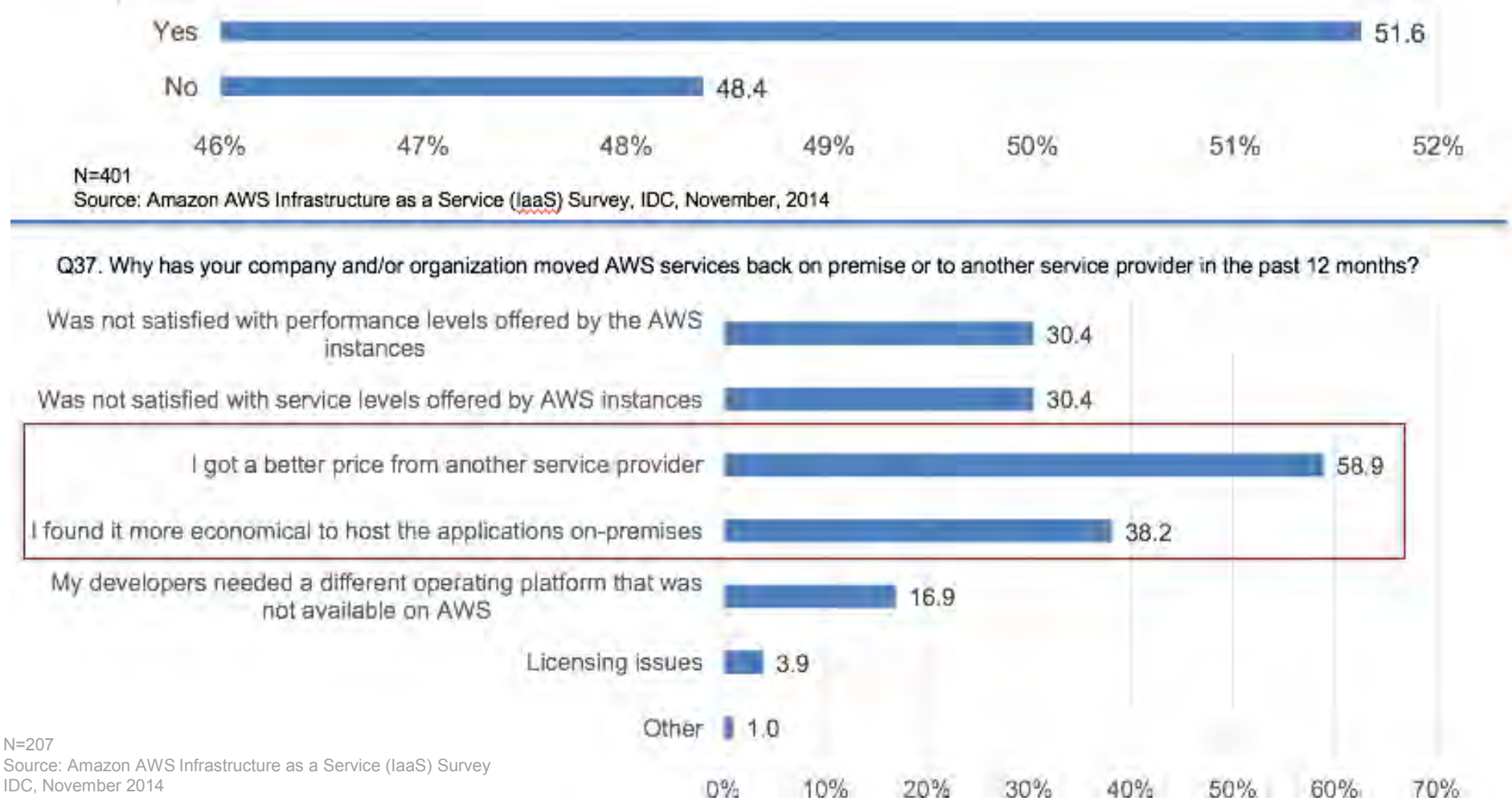
«Репатриация» из облака AWS

Q: Has your company and/or organization moved Amazon AWS computer and/or storage services back on premise or to another service provider in the past 12 months?



N=207
Source: Amazon AWS Infrastructure as a Service (IaaS) Survey
IDC, November 2014

IDC Analyze the Future

Amazon Web Services IaaS (Storage) Deployments: Analysis and Insight
IDC #255387
April 2015

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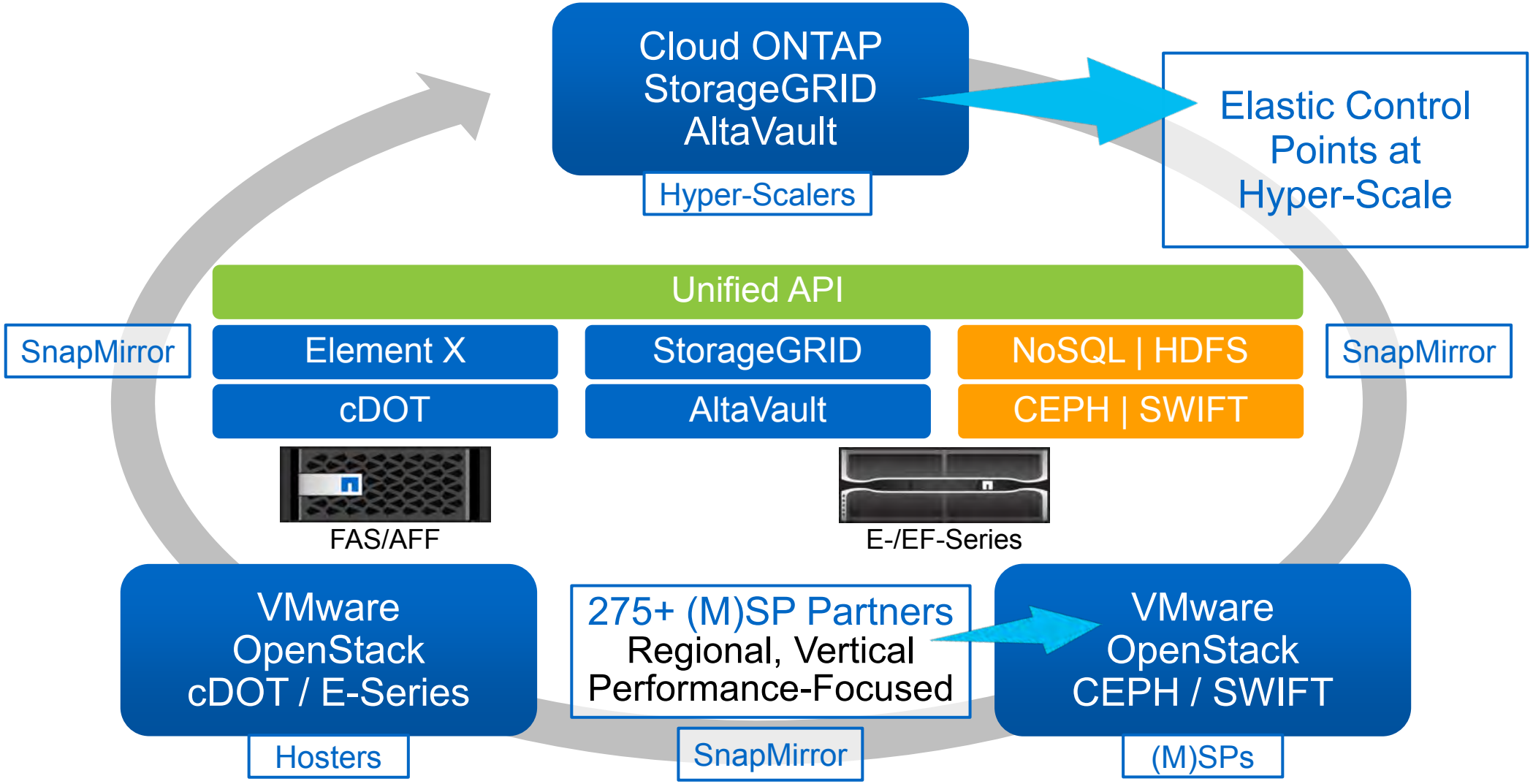
NetApp Data Fabric



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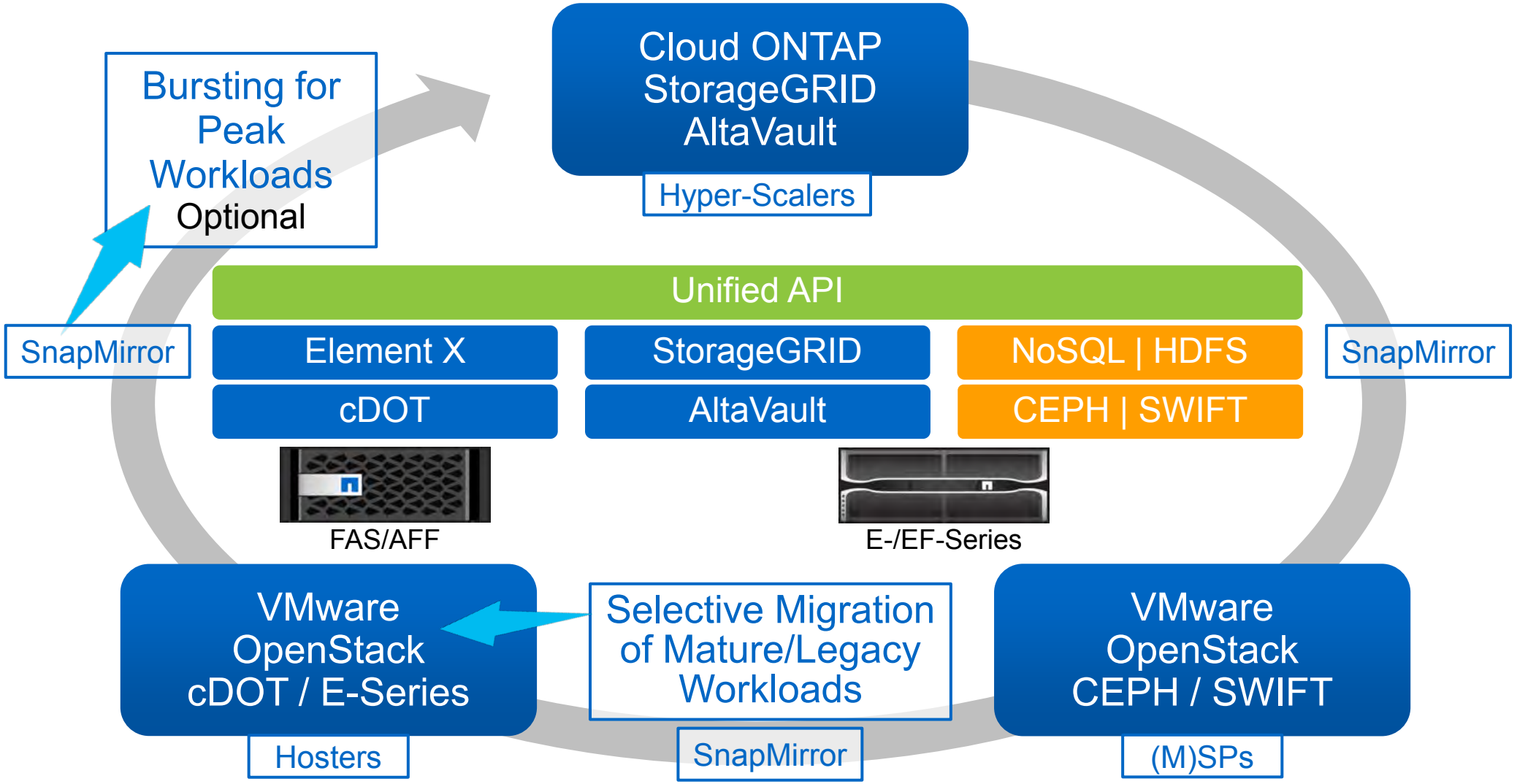
NetApp Data Fabric



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Social

25%

productivity increase

Mobile

75%

of the world's population have a mobile device

Analytics

63%

Competitive advantage

Cloud

60%

of CIOs indicate that cloud is one of their Top 5 priorities

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Эволюция ландшафта

OLTP	АСУП	Гиперскейлеры	Новые
ORACLE Microsoft SQL Server	SAP HANA ORACLE TIMESTEN	cassandra mongoDB	Flink docker
	NewSQL	NoSQL	

Приложения

Модель данных

Блочный и файловый доступ	Индексируемые объекты	Columnar, Document, Graph	Streaming, Mesos, Kubernetes

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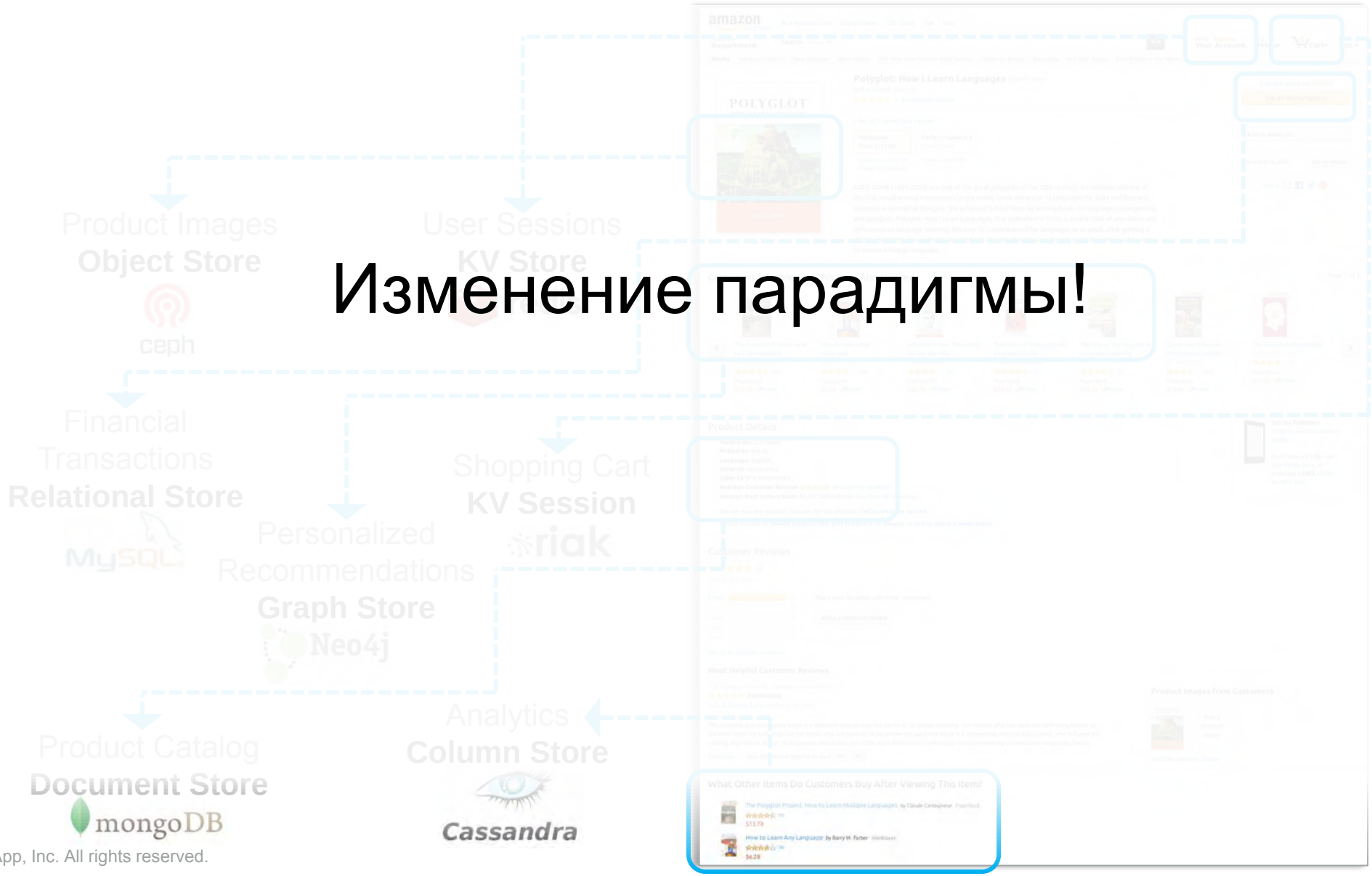
Разработчики диктуют



Изменение парадигмы!

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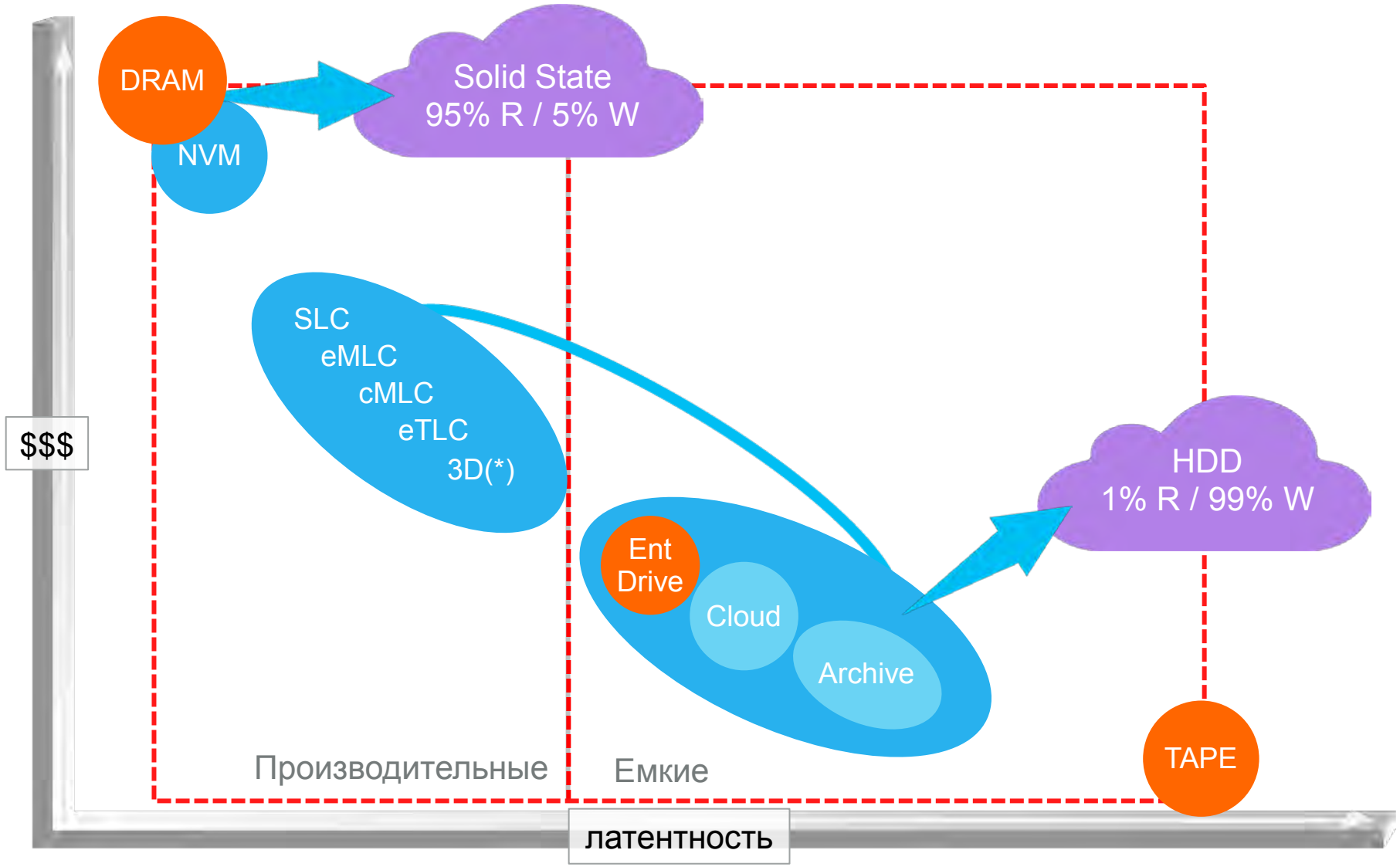
Экономика поляризации доступа и хранения данных



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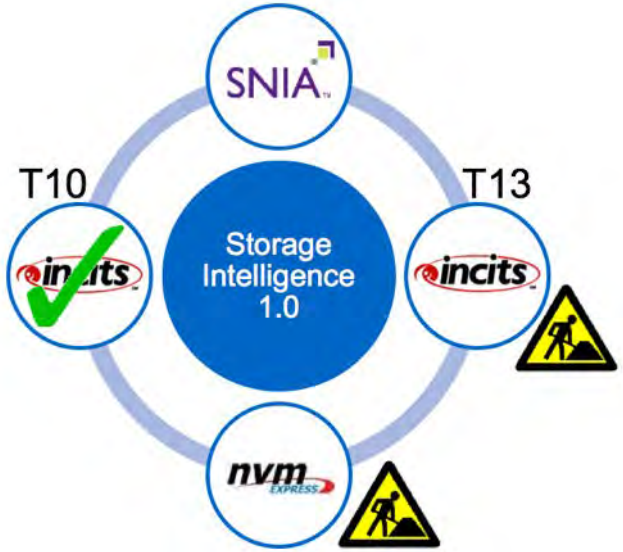
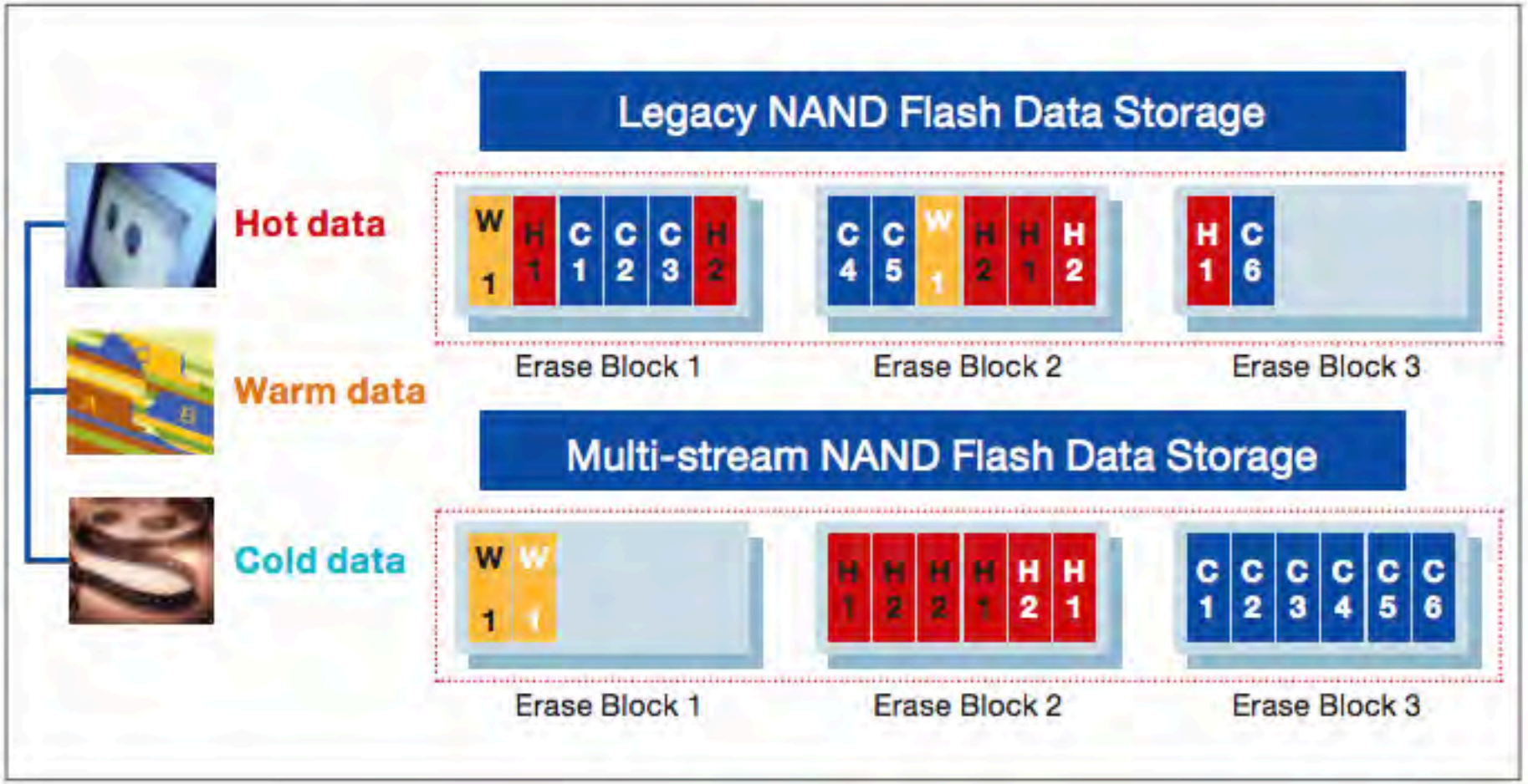
Оптимизация работы с флэш-памятью



SAMSUNG NetApp



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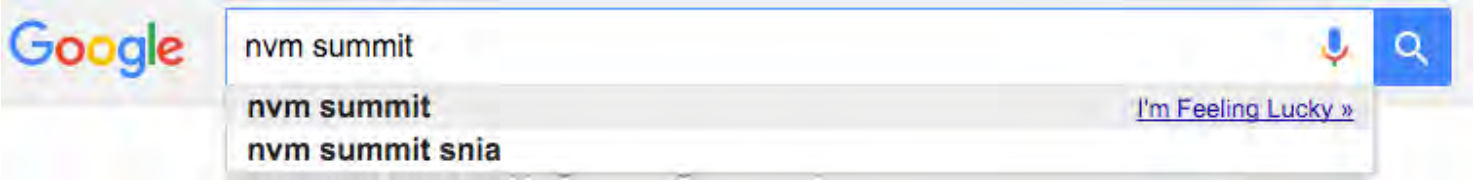
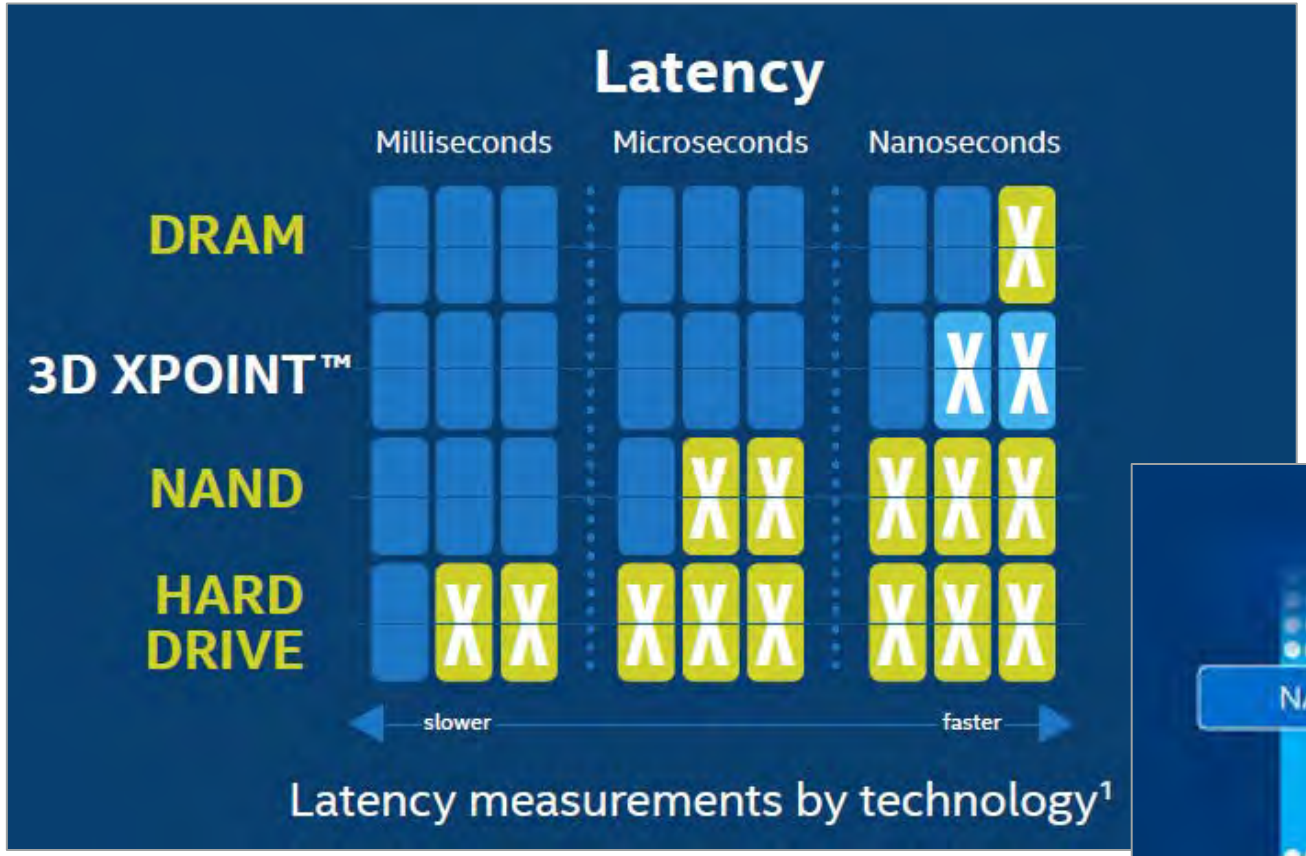
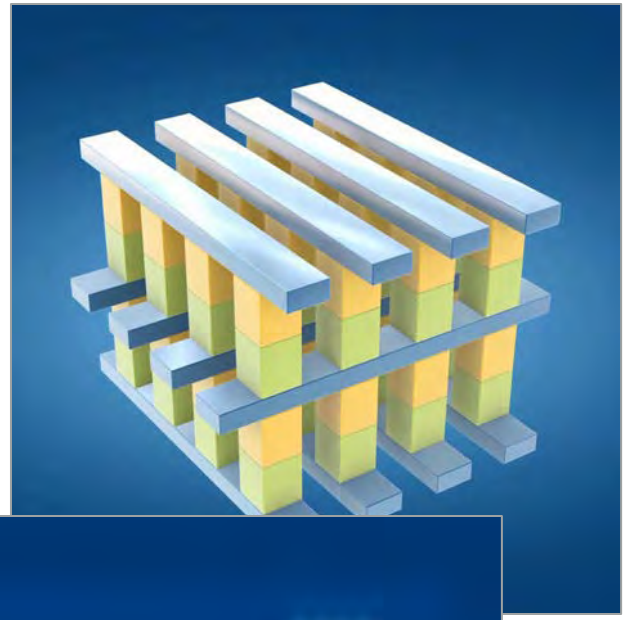
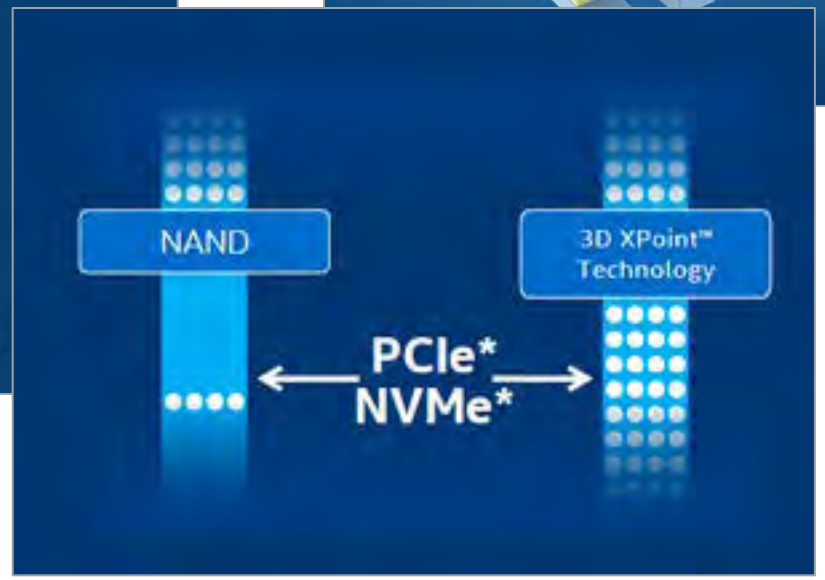
Новые технологии

Intel и Micron меняют мир









Follow: #3DXpoint and #Optane

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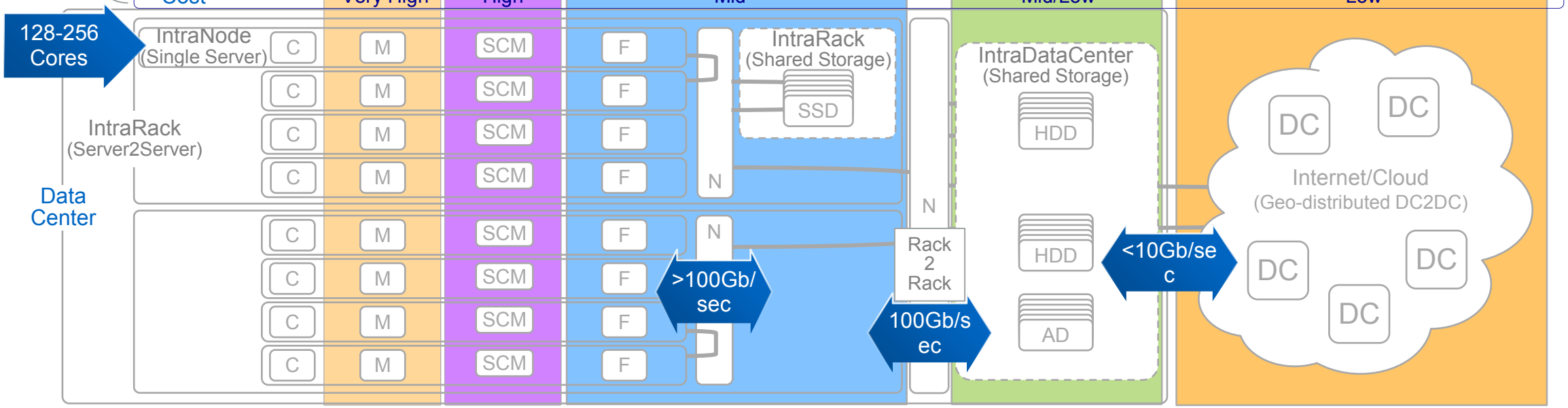
Иерархия данных

Классы данных и уровни обслуживания

SLO	Layer 0	Layer 1	Layer 2	Layer 3	Layer 4
Latency	<200ns	<20us	10µs - 200µs	300µs - 10ms	100ms – 100sec+
IOPs	00's Millions	0's Millions	0's Millions	00,000's	000's
Bandwidth	00's GB/sec	0's GB/sec	100's GB/sec	100's GB/sec	1s MB/sec
Capacity	1s TB	10s TB	100s TB	10s PB	100s PB
Durability	N/A	Low	Mid	High	Selectable up to Very High
Availability	Low	Low	High	Very high	Low-medium
RPO/RTO	N/A	N/A	Synch-secs	Synch-minutes	Hours
Cost	Very High	High	Mid	Mid/Low	Low



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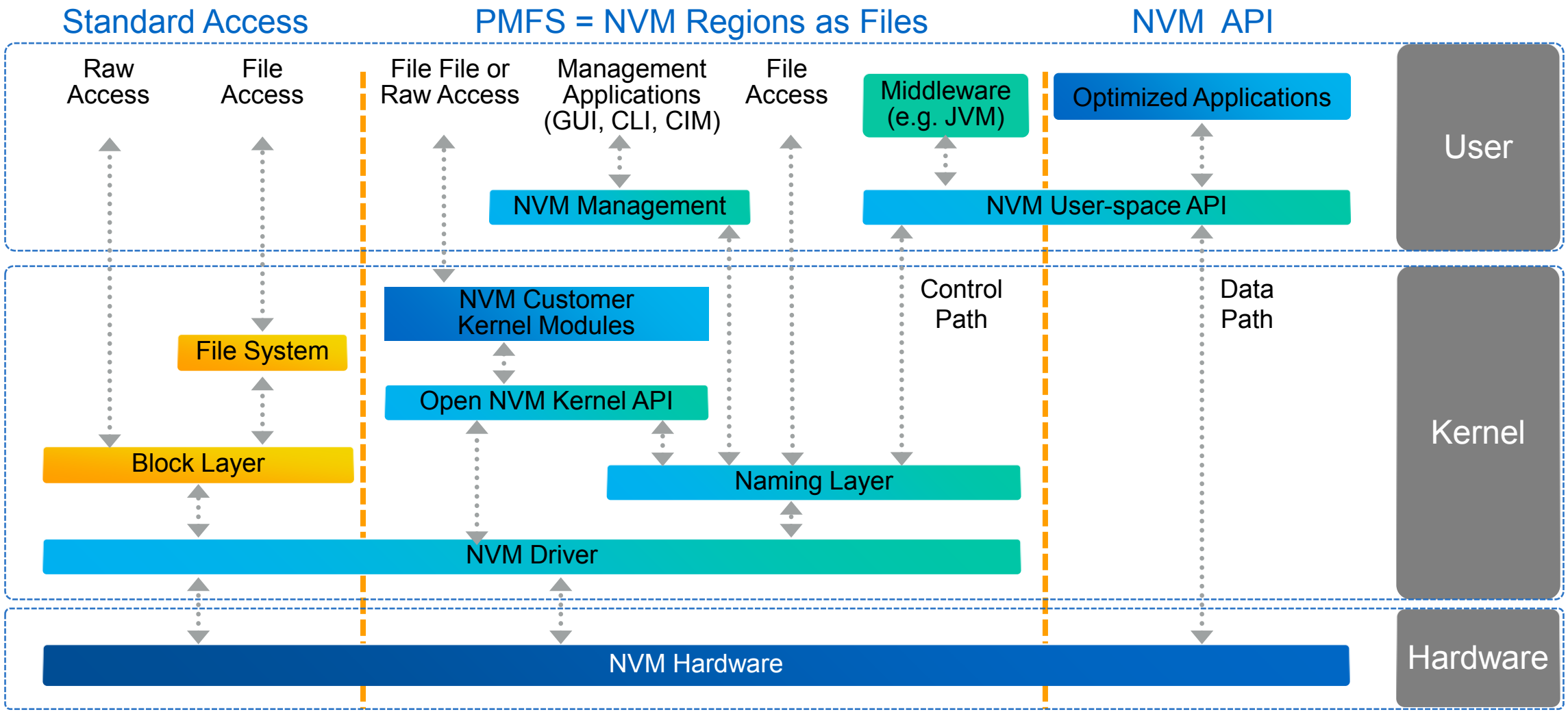
NVM/Persistent Memory Programming Model – pmem.io



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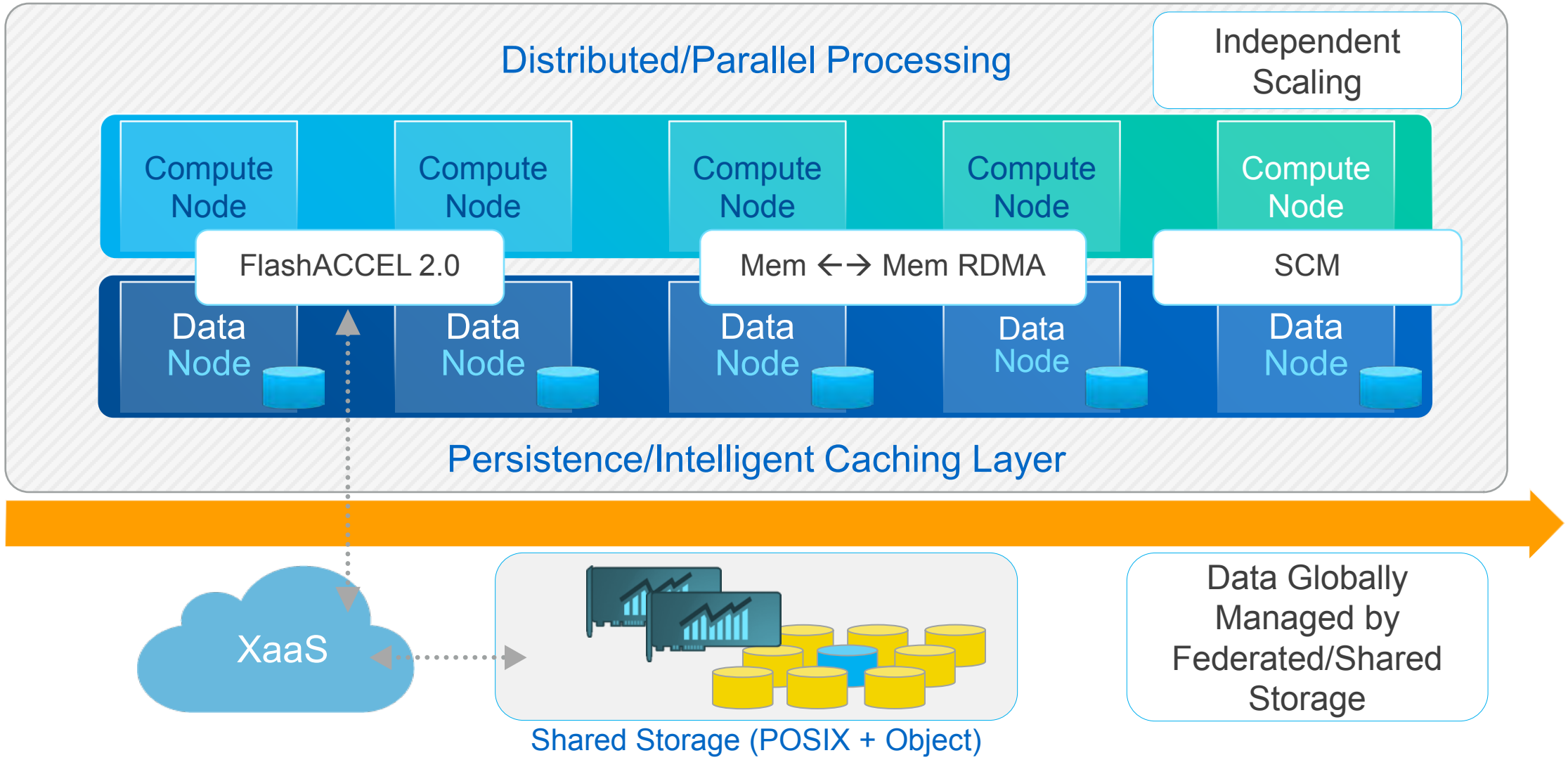
Архитектура ЦОД 2020



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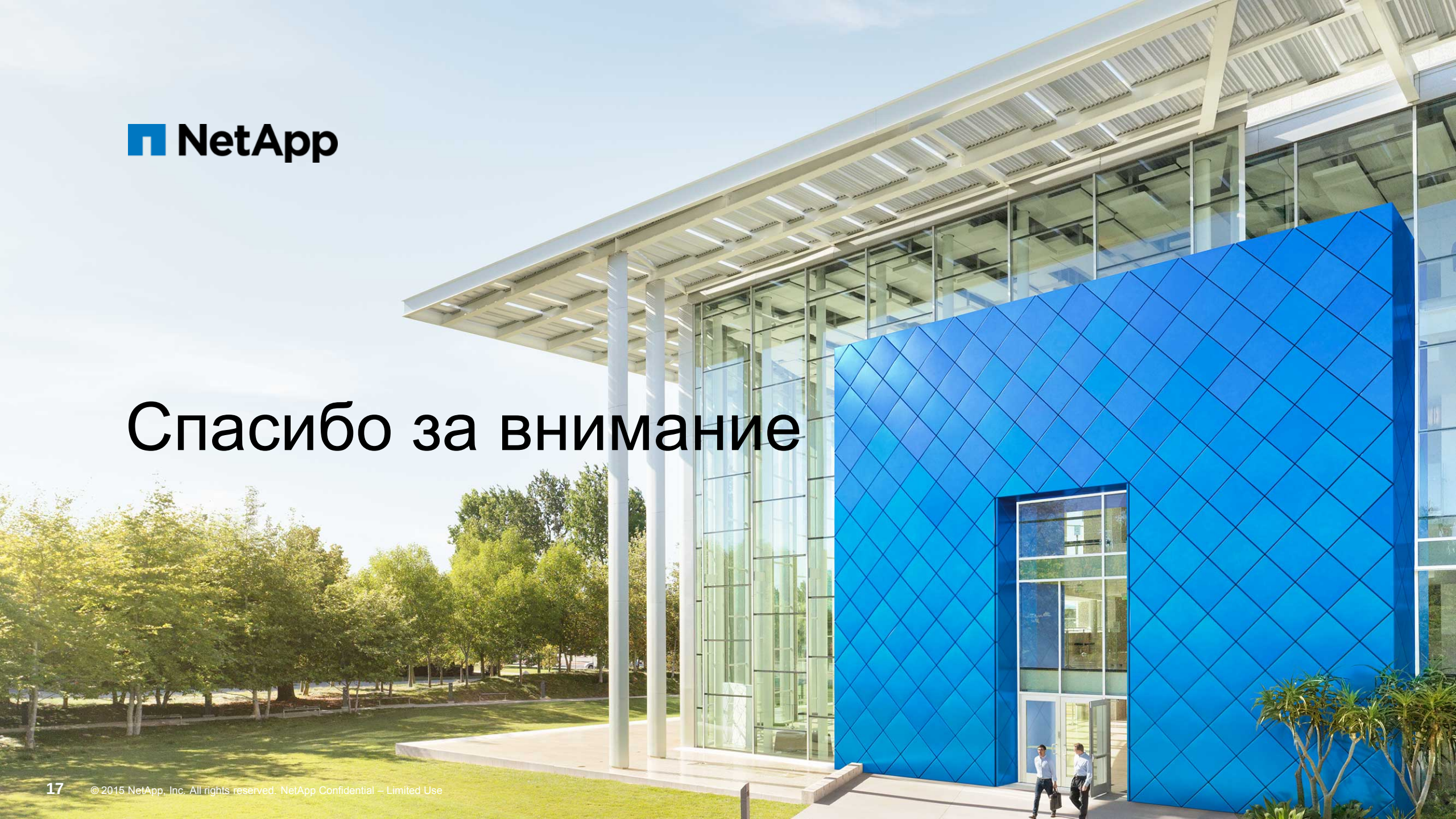

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Спасибо за внимание

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