Accelerate Your Growth

building the datacenter of tomorrow today

Johannes Horneck

Productmanager

Enterprise Server, Storage and Networking

HP

Agenda

How the market evolves
HP Converged Infrastructure
HP Architectur for Parallels
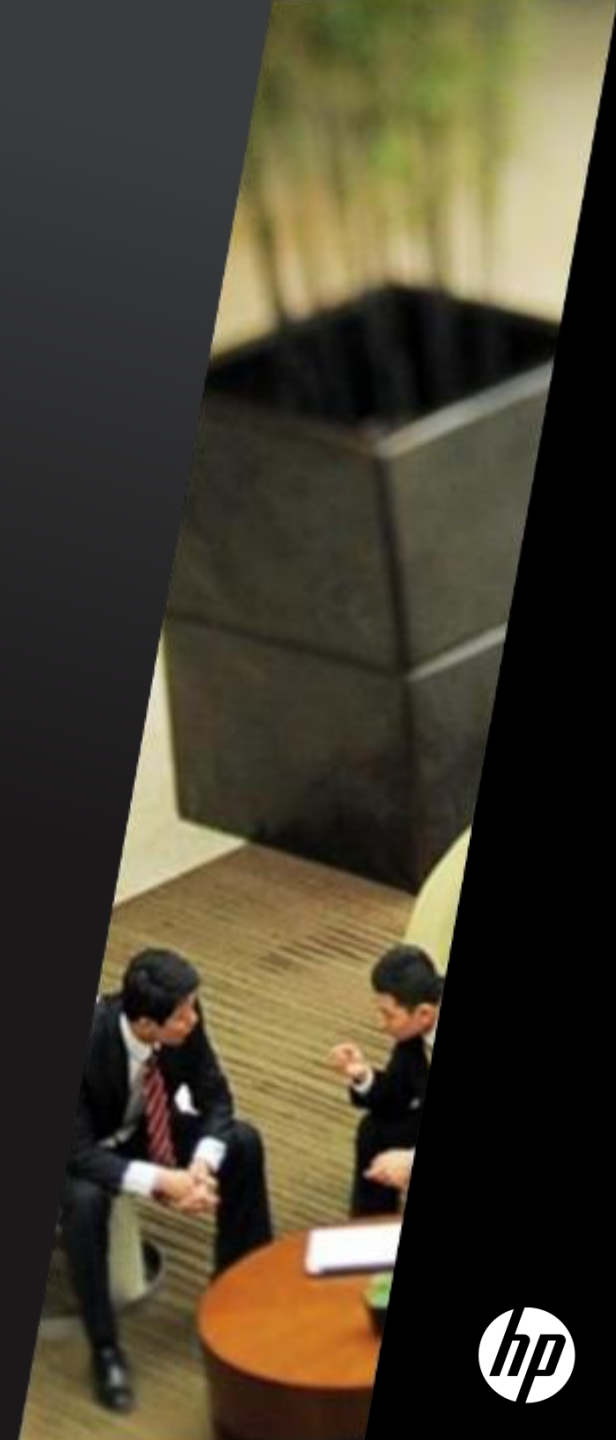Flexibility as Service

Technology-check
Packing-Density
Energy-efficiency

HP – Your Partner
News
powered by HP
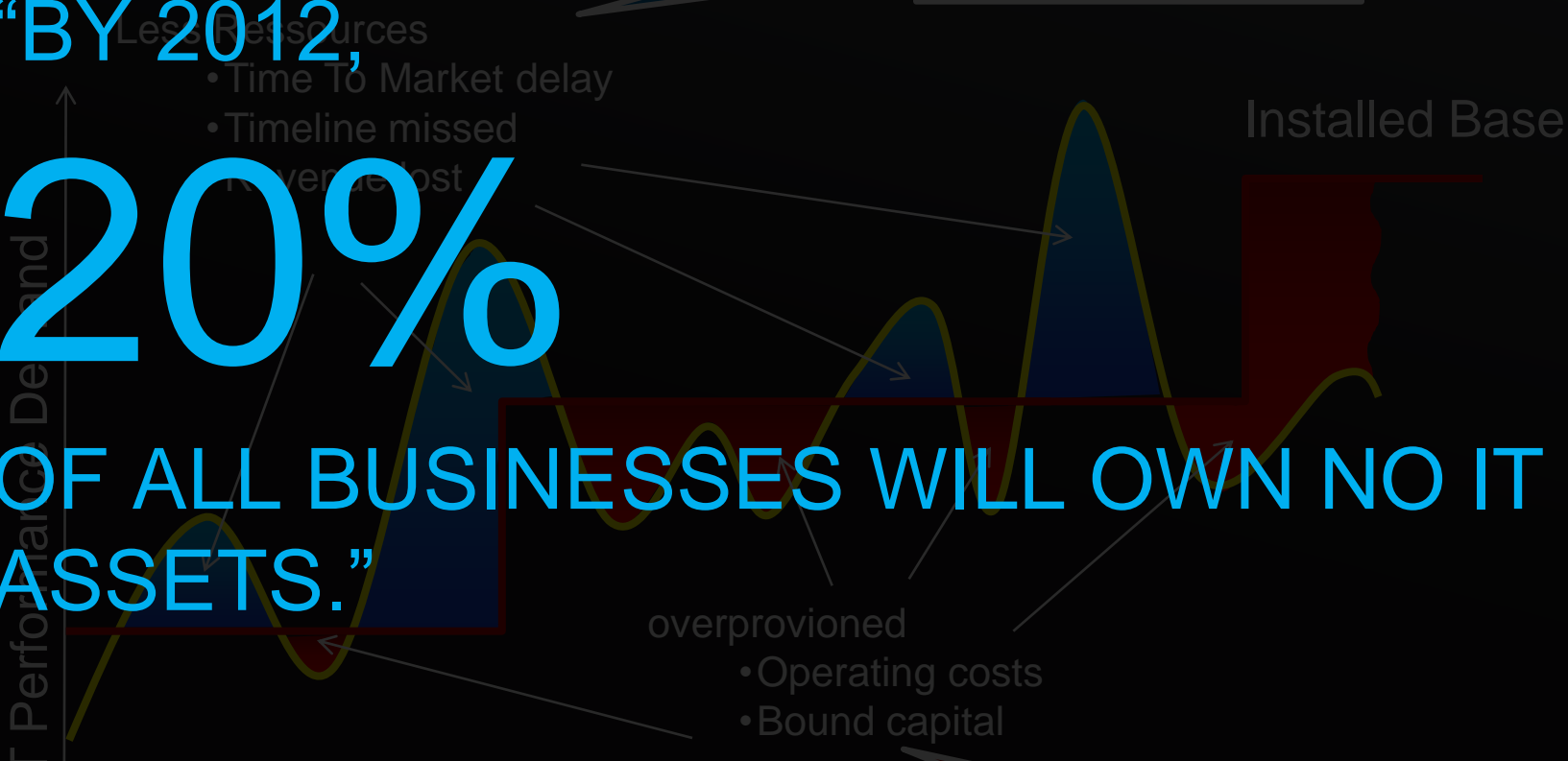Directorder

What do You expect?

and higher flexibility

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Internal flux

In sync with demand?

departments

"BY 2012,

20%

OF ALL BUSINESSES WILL OWN NO IT ASSETS."

- Less Resources
  - Time To Market delay
  - Timeline missed
  - Revenue lost

Installed Base

overprovioned
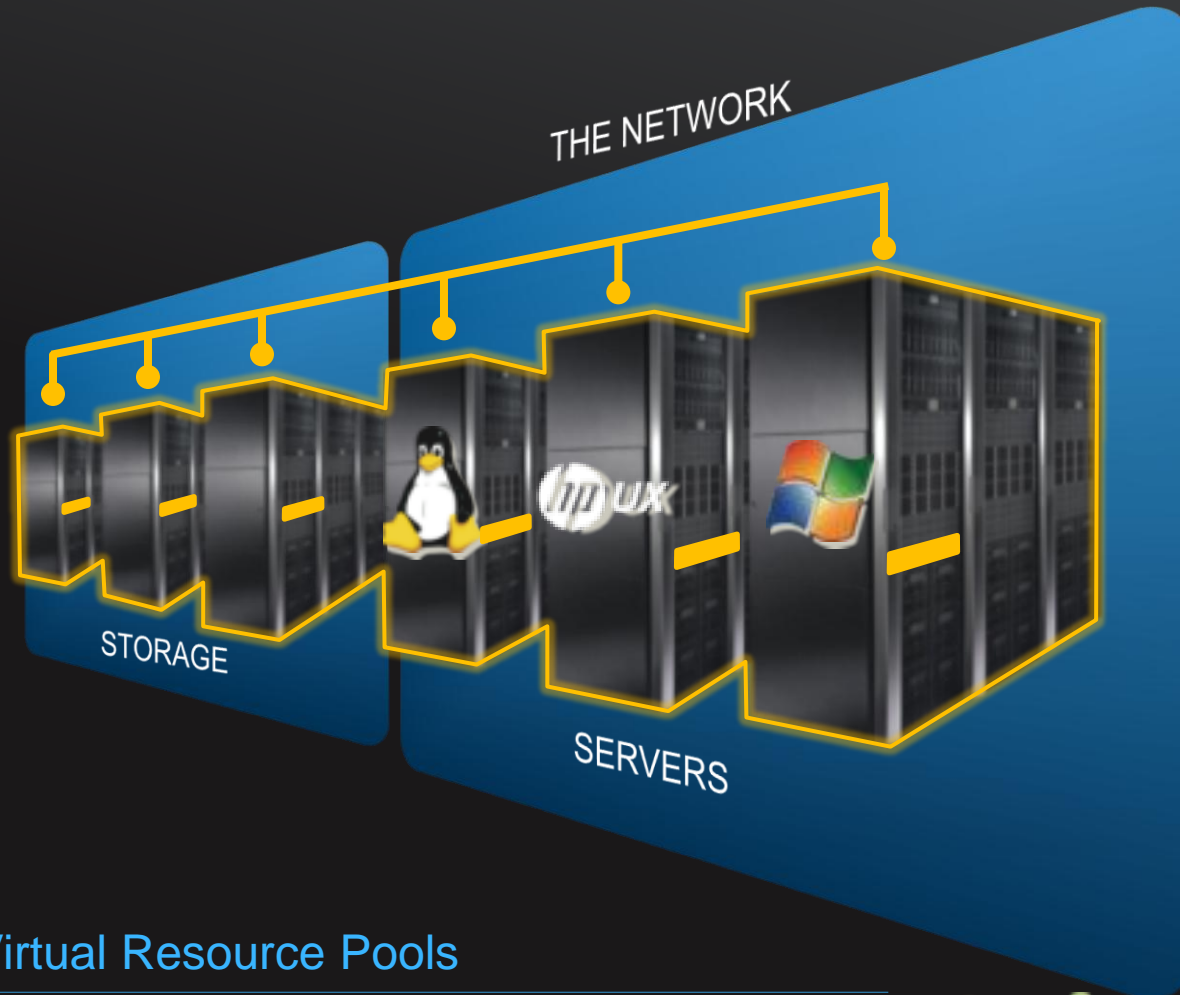 - Operating costs
  - Bound capital

IT Performance Demand

Top Predictions for IT Organizations and Users, 2010 and Beyond: A New Balance

Gartner, Jan. 2010

time

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Flexibility and Interoperability will be Your Key

Cloud services

Hosted, managed services

Internal services

IT organization
internal service provider

Service Sourced

Service portfolio

Service Delivered

Business outcomes

Accelerate growth

Lower costs

Mitigate risk

E-mail
SFA
ERP
App Hosting
Storage
PC back up
VM Provisioning.

PBX
Mobile
IM
IVR
UC
IP CC

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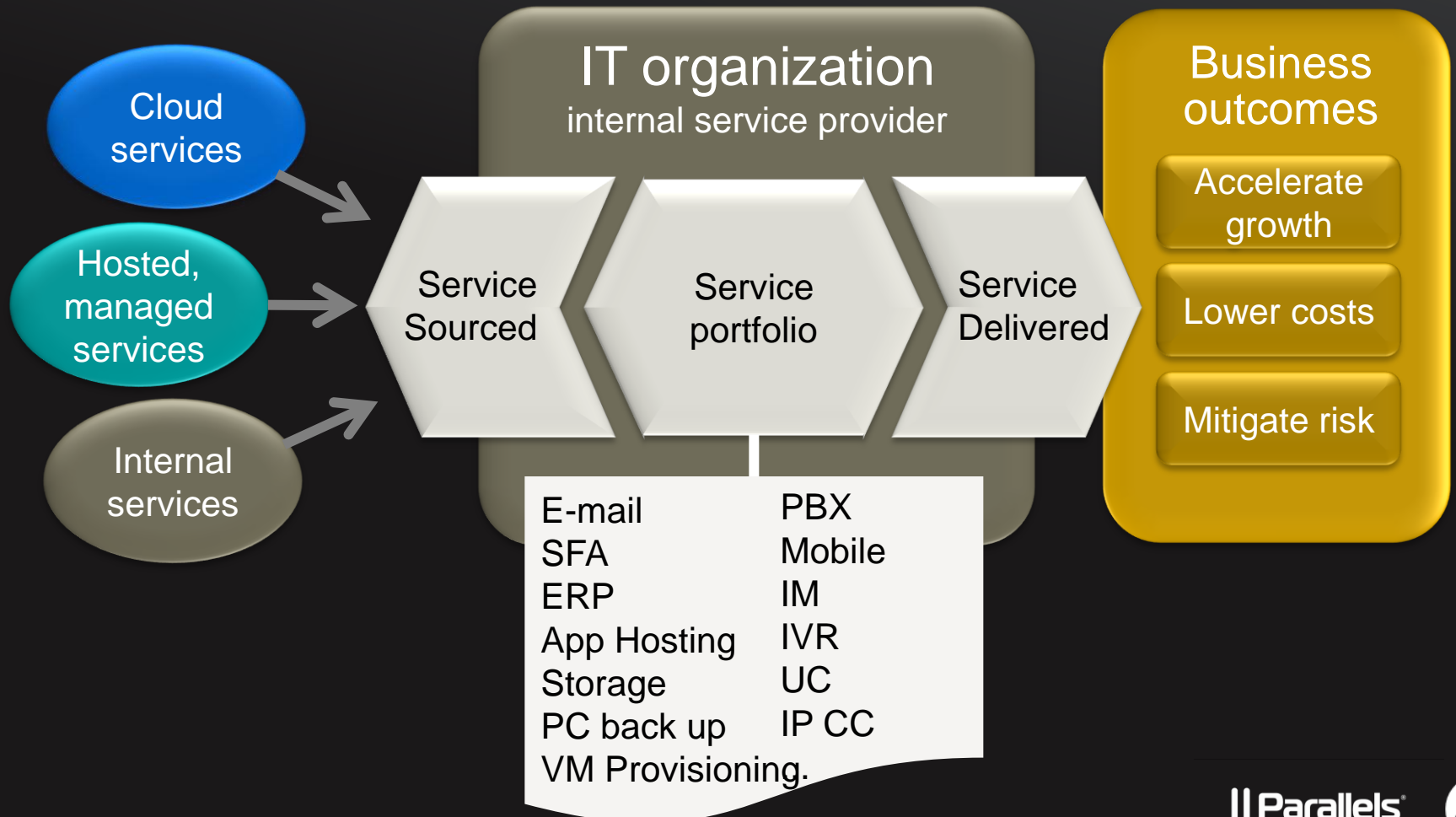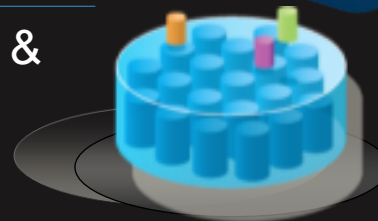
New Architecture – one Pool

HP Virtual Resource Pools

adaptive, virtualised Computing-, Storage- &
Network-components

Converged Architecture

HP Infrastructure Operating Environment

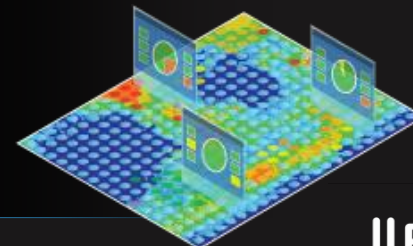One tool for adminstration of shared Services
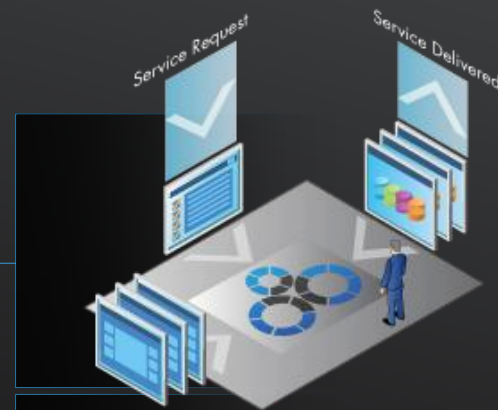
HP FlexFabric

„Wire-Once" & dynamic connections

HP Virtual Resource Pools

adaptive, virtualised Computing-,
Storage- & Network-components
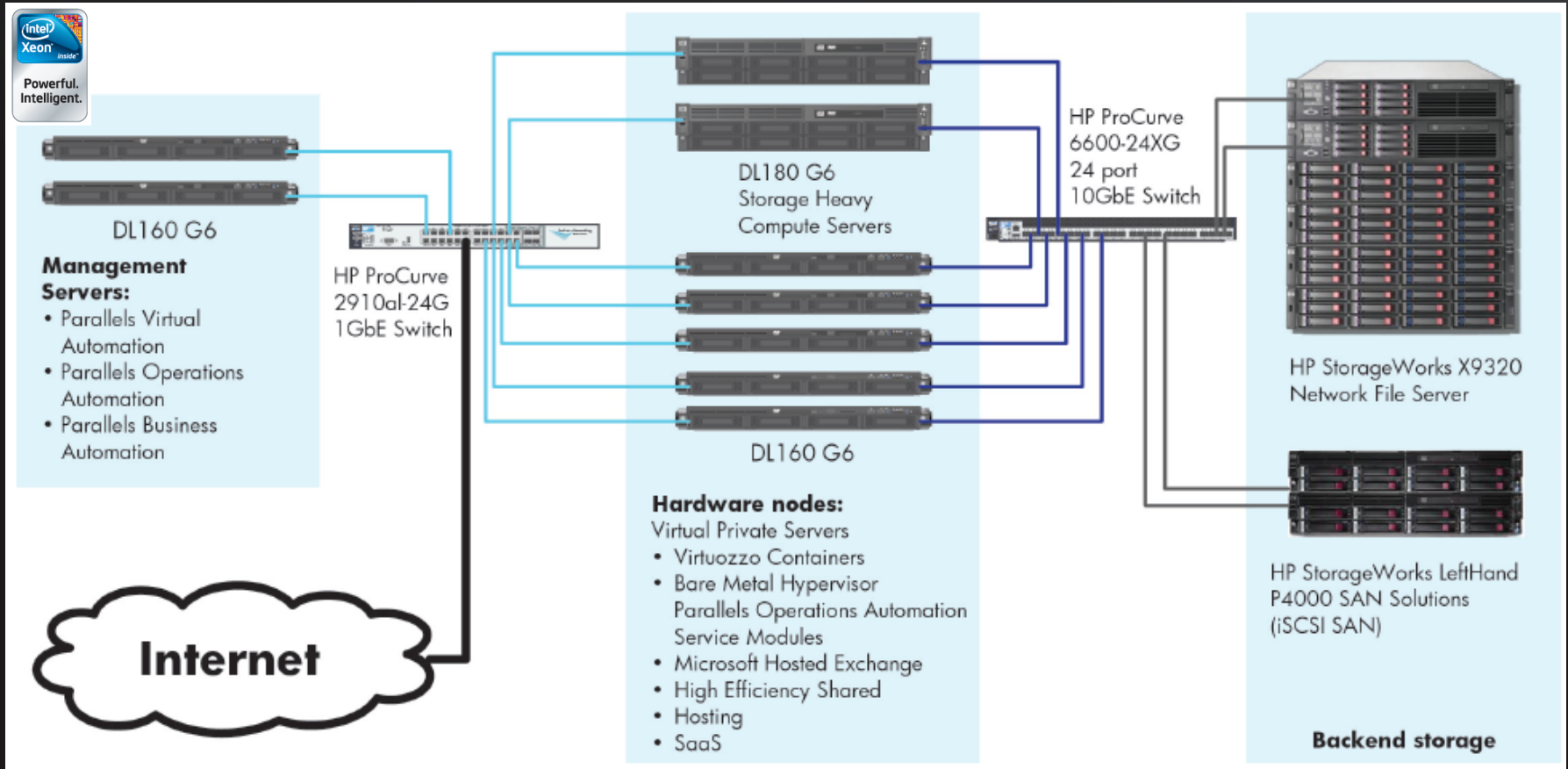
HP Data Center Smart Grid

Smart Energymanagement
for IT-systems and facilities

HP & Parallels Architecture

Profit by HP's Global Expertise in Hosting

Americas	Europe	Asia Pacific

Lower TCO with HP IAAS

- The improved TCO is due to higher efficiency in IT infrastructure utilization

- The net result is less money spent on IT infrastructure

This area represents positive ROI – it is money that wasn't spent because you used IaaS

This area also represents capacity that wasn't deployed too early. No electricity bills or cooling bills for this. Which helps you to get a sustainable IT.
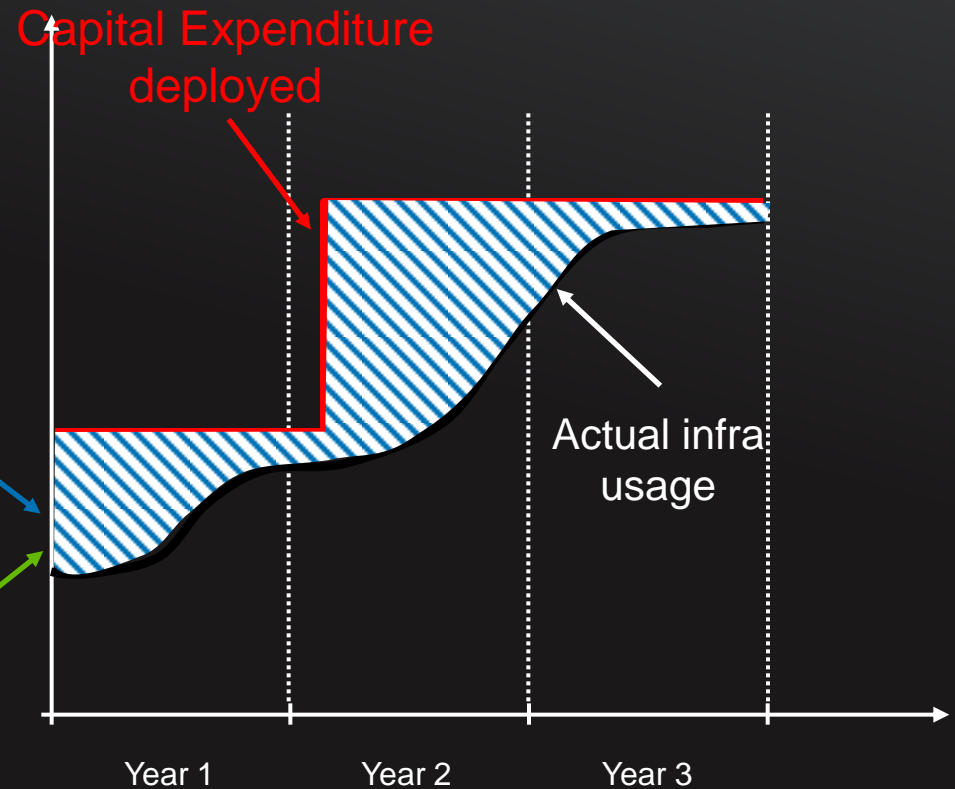
Capital Expenditure deployed

Actual infra usage

Year 1   Year 2   Year 3

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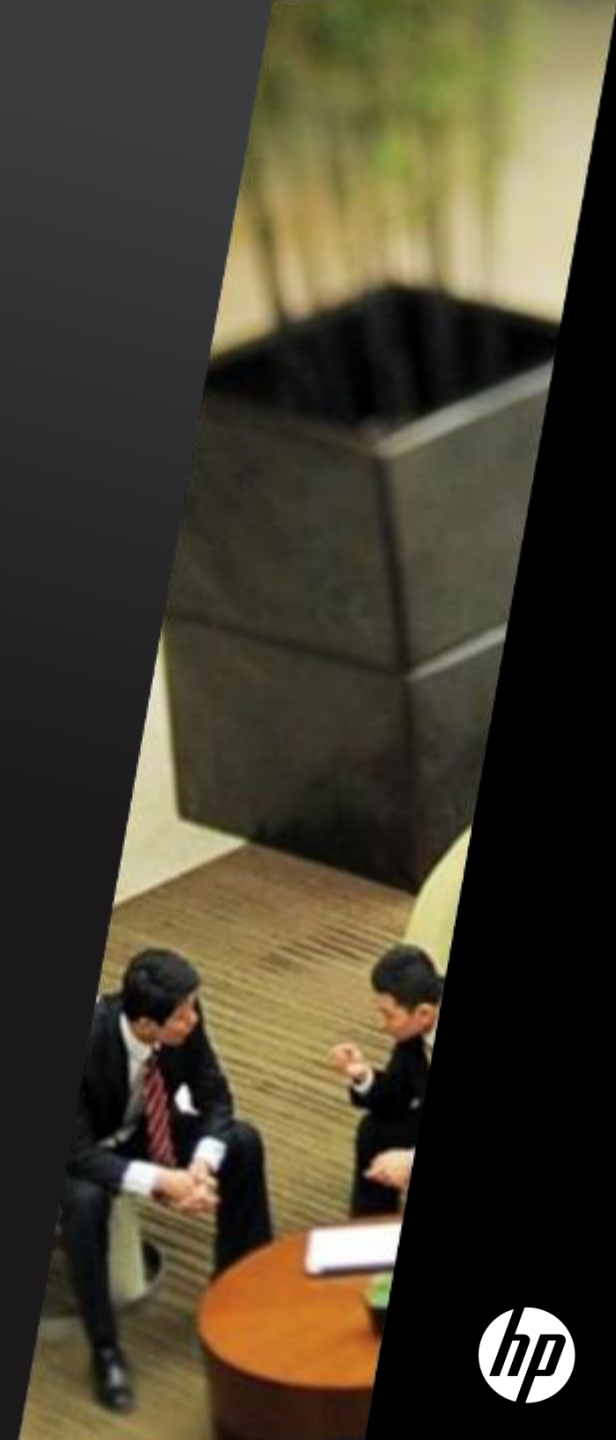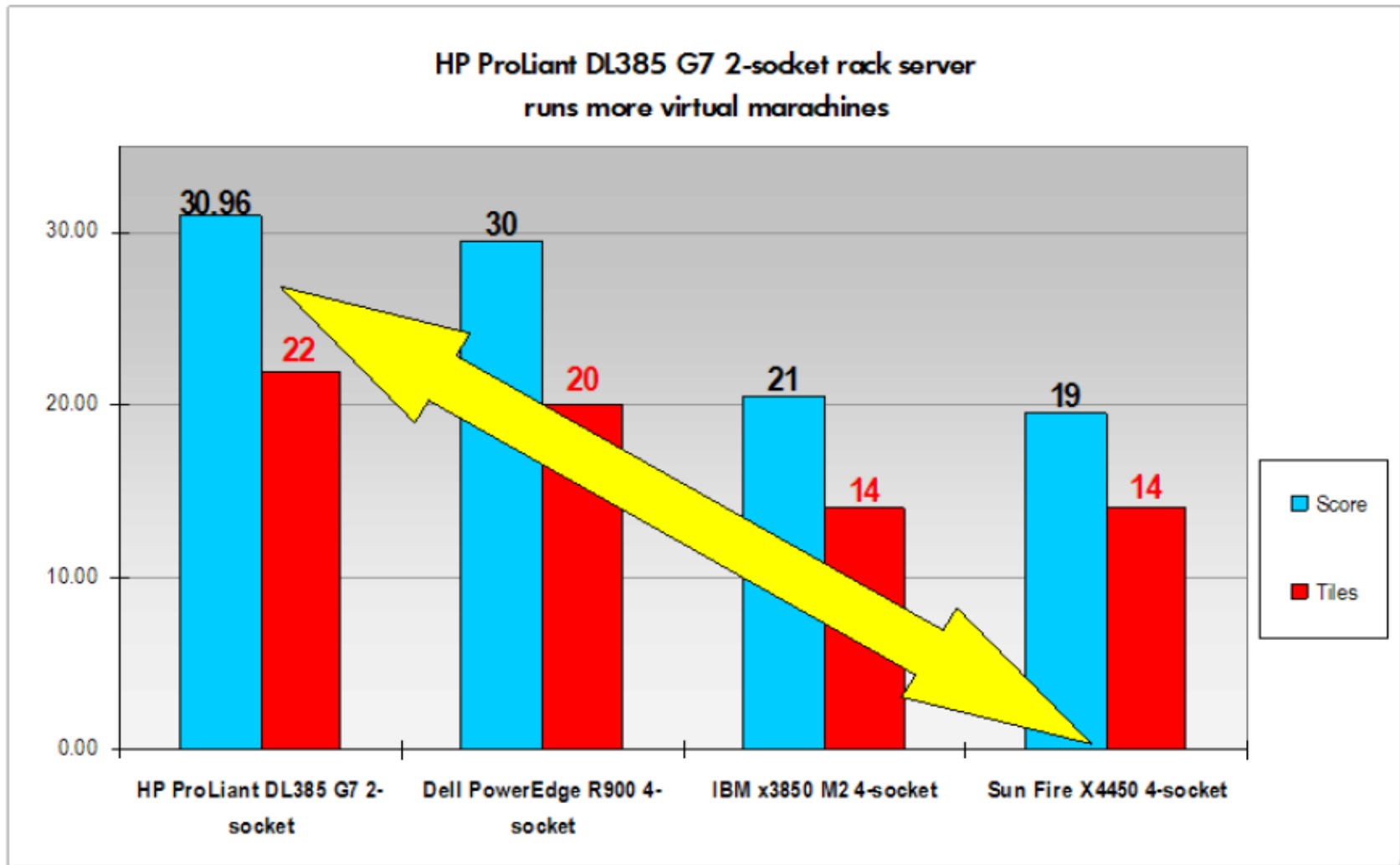Energy-efficiency

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Figure 1. The ProLiant DL385 G7 2 socket server outperforms 4-socket competitors.

HP ProLiant DL385 G7 2-socket rack server runs more virtual marachines

	Score	Tiles
HP ProLiant DL385 G7 2-socket	30.96	22
Dell PowerEdge R900 4-socket	30	20
IBM x3850 M2 4-socket	21	14
Sun Fire X4450 4-socket	19	14

Outstanding Performance-Record

1x DL385 G7 with 2 Socket-CPUs runs up to **132** virtual Machines

Highly Flexible s6500 Chassis

Multi-node, Shared Power & Cooling Architecture

Low cost, high efficiency chassis

Shared Power & Fans
Optional Hot-Plug Redundant PSU
Energy efficient Hot Plug fans
Single or 3 Phase Load Balancing
94% Platinum Common Slot Power Supplies
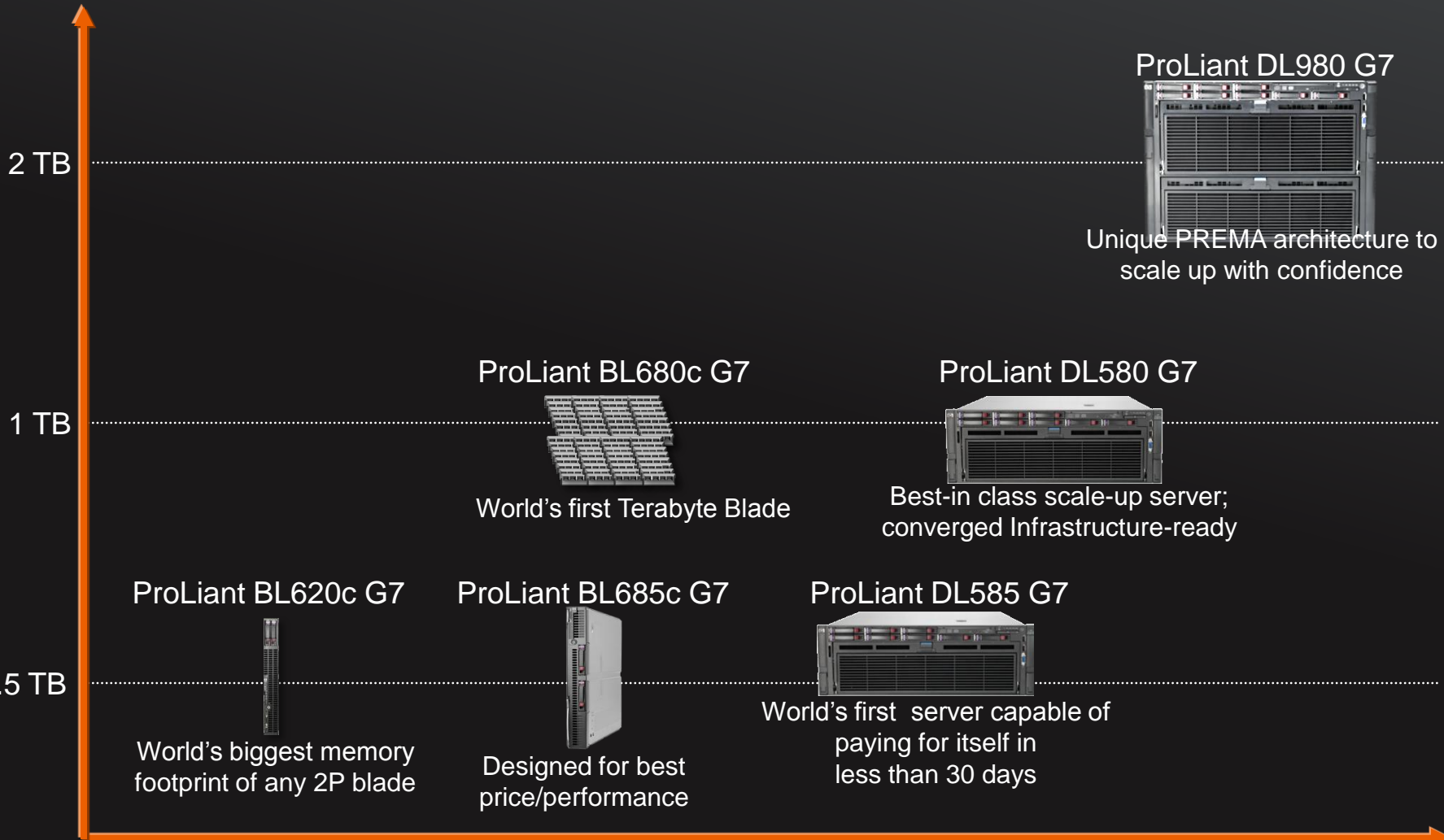N +1 Capable Power Supplies (up to 4)

– 4U Chassis for deployment flexibility
– Standard 19" racks, with front I/O cabling
– Unrestricted airflow (no mid-plane or I/O connectors)
– Reduced weight
– Individually Serviceable Nodes
– Variety of optimized Node Modules
– 1200mm rack to close doors

  – SL Advanced Power Manager Support
    • Power Monitoring
    • Node Level Power On/Off

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New Class of G7 ProLiant Scale-up Innovations
Optimized for the most demanding, data intensive x86 workloads

Reliability and Scalable Memory Footprint

ProLiant DL980 G7

Unique PREMA architecture to scale up with confidence

ProLiant BL680c G7

World's first Terabyte Blade

ProLiant DL580 G7

Best-in class scale-up server; converged Infrastructure-ready

ProLiant BL620c G7

World's biggest memory footprint of any 2P blade

ProLiant BL685c G7

Designed for best price/performance

ProLiant DL585 G7

World's first server capable of paying for itself in less than 30 days

2 TB

1 TB

.5 TB

Breakthrough Efficiencies
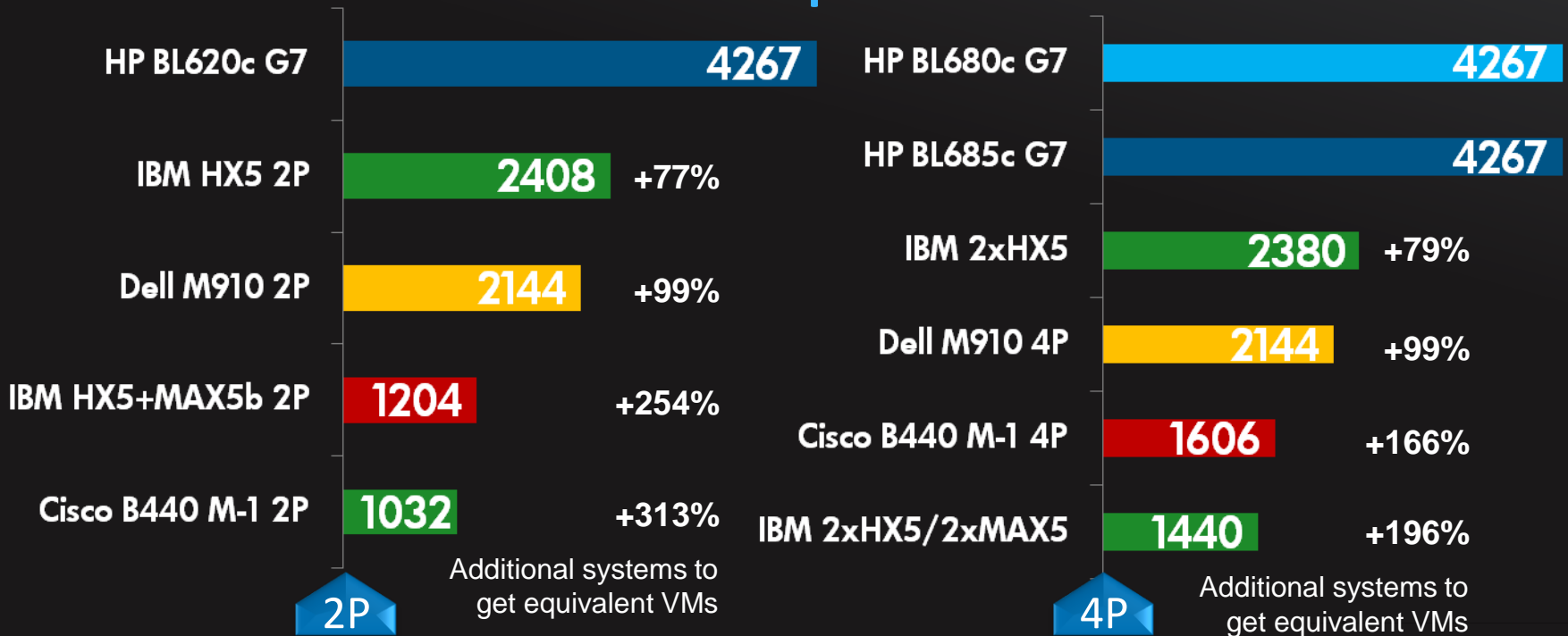(number of VMs, workloads, etc)

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Highest Density with HP BLades
per VM: 300 Mb/s I/O, 3GB memory

Up to 3X lower Licenc costs
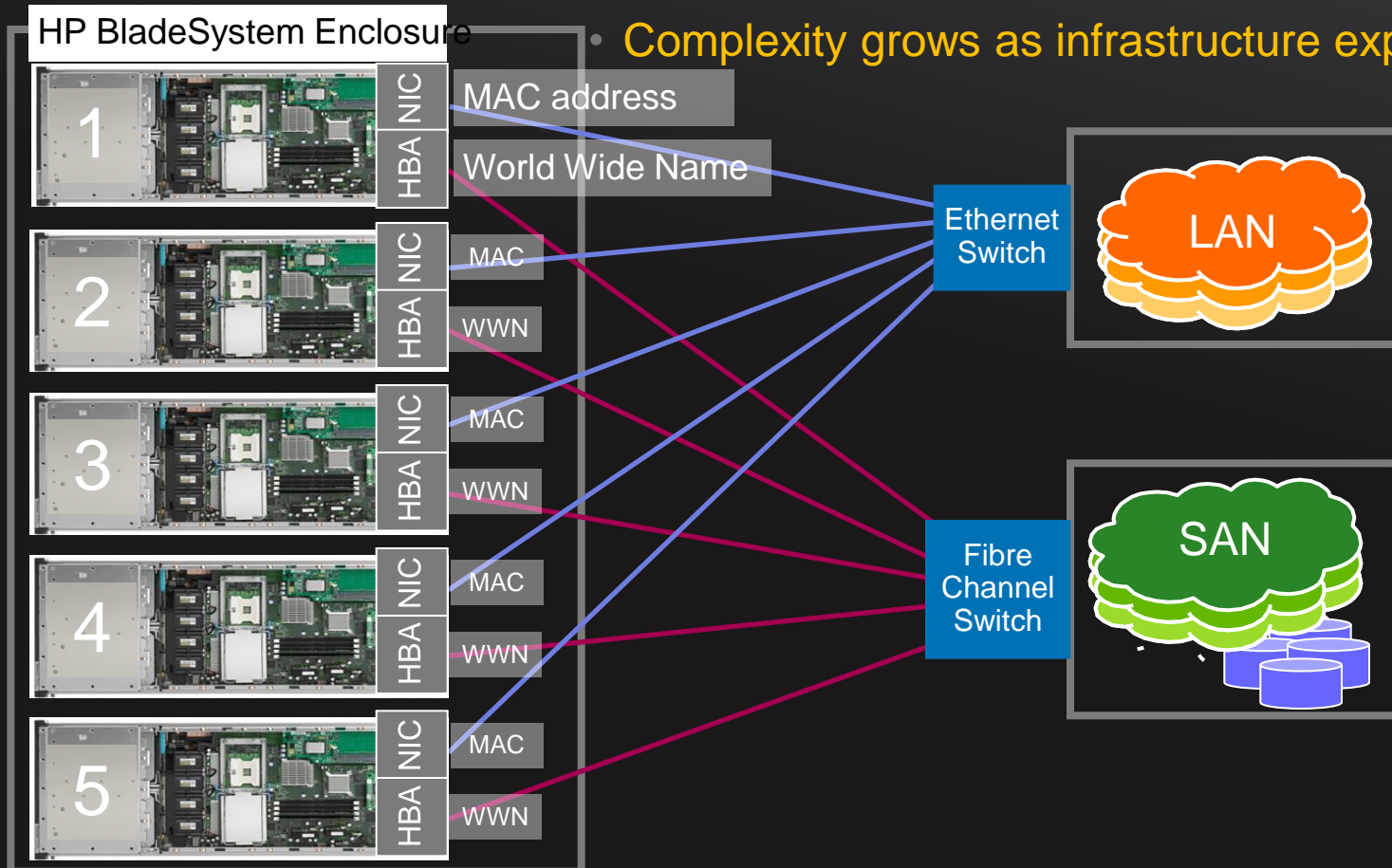**56-73%** less Hardware
per 1000 VMs

Bis zu 4X lower Licenc costs
47-67% less Hardware
per 1000 VMs

VMs per rack

2P		
HP BL620c G7	4267	
IBM HX5 2P	2408	+77%
Dell M910 2P	2144	+99%
IBM HX5+MAX5b 2P	1204	+254%
Cisco B440 M-1 2P	1032	+313%

Additional systems to get equivalent VMs

4P		
HP BL680c G7	4267	
HP BL685c G7	4267	
IBM 2xHX5	2380	+79%
Dell M910 4P	2144	+99%
Cisco B440 M-1 4P	1606	+166%
IBM 2xHX5/2xMAX5	1440	+196%

Additional systems to get equivalent VMs

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Traditional server-network connectivity

- Server changes impact network configuration
- Multiple admin teams involved in server-centric tasks
- Complexity grows as infrastructure expands

HP BladeSystem Enclosure

MAC address

World Wide Name

LAN

SAN

Ethernet Switch

Fibre Channel Switch

HP BladeSystem and Virtual Connect

- Reduces physical cabling
- Separates server and network mgmt
- Server changes do not impact networks

HP BladeSystem Enclosure

1
2
3
4
5

HBA NIC (×5)

Virtual Connect

MAC address pools

Ethernet bridge & port aggregate

FC port aggregate

WWN address pools

LAN Uplinks

SAN Uplinks

Ethernet Switch

Fibre Channel Switch

LAN

SAN

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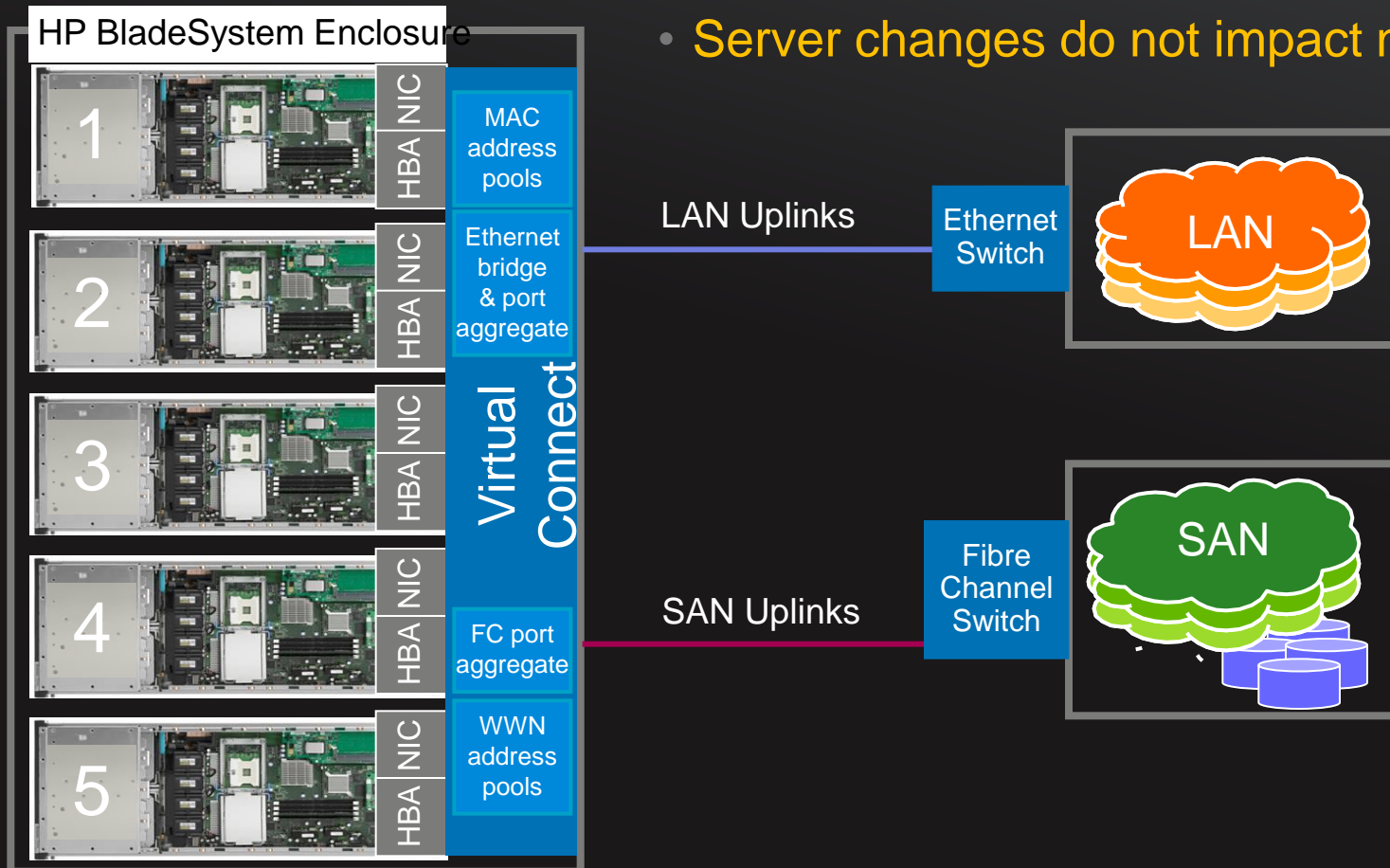
Flex-10 delivers the most flexibility to configure VM channel performance

	Production NIC #1	Vmotion NIC #2	Console NIC #3	Backup NIC #4
Traditional 1Gb technology	1Gb	1Gb	1Gb	1Gb
Virtual Connect Flex-10	5Gb	2.9Gb	100Mb	2Gb

Optimize & prioritize performance per channel based on your business priorities

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99% less "Sprawl" at Server Edge

Save up to $185K per Rack

Network components to connect Server to network

Traditional Rack Infrastructure	CISCO Unified Computing System	IBM Virtual Fabric for BladeCenter H	HP Virtual Connect für HP FlexFabric
217	**38**	**32**	**2**
73 parts	**22 parts**	**18 parts**	**2 parts**
144 cables	**16 cables**	**0 cables**	**No cables**
No FCoE licenses	**No FCoE licenses**	**14 FCoE licenses**	**No FCoE licenses**
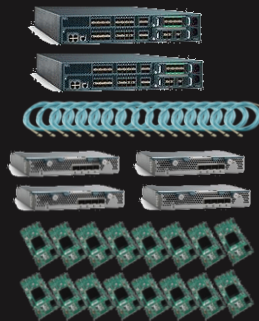
*Based on Virtualization best practice configuration
Traditional rack, VC FlexFabric and UCS – components for 16 server blades
IBM Virtual Fabric – components for 14 server blades

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Next generation HP ProLiant Servers

Dramatic efficiencies in compute power

Best-engineered x86 servers for 20:1 consolidation
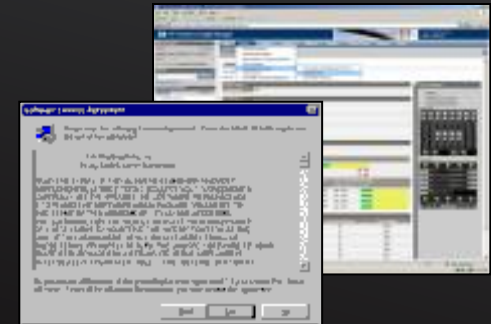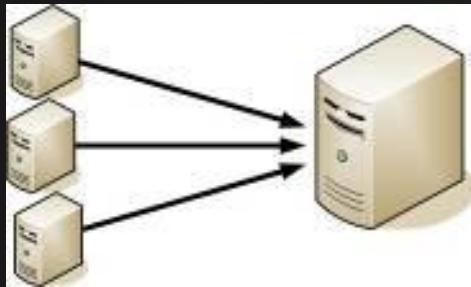
Consolidate

20:1 or more from G4 to G7; buy/manage >95% fewer physical servers

Deliver

same compute with 95% less power

Reduce

energy costs & software license costs by 95%

Pack 27x more compute capability in the same power envelope

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#'s based on preliminary G7 information

Only HP: Continuously Optimize Efficiency
with Sea of Sensors

32 smart sensors manage temperature across the server

Automated fan regulation

Automated adjustment of I/O and memory slots

Prevents over-cooling and minimizes power usage

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Triple data center capacity
with Dynamic Power Capping & Insight Control

Reduce energy, Reclaim capacity and Extend the life of your datacenter

Accurately measure power usage

Safely cap power & keep critical systems up

Lower energy bill

Accurate	Error-Free	Automated
Real time data & analysis	Built into the hardware independent of OS	Pre-defined actions & rules

Avoid building out a new data center

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HP partnership: your advantage

www.hp.com/go/hostingproviders

Uptodate News

Co-Martketing

Configure & Order direct from HP

Thank You

Visit our booth and
win a HP Smartphone
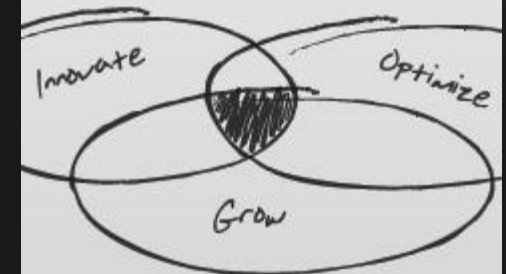
Outcomes that matter.

How Can We Help?

1. Infrastructure portfolio
- broadest in industry
  - #1 or #2 in every market

Storage

Servers

Power & cooling

Network

Management software
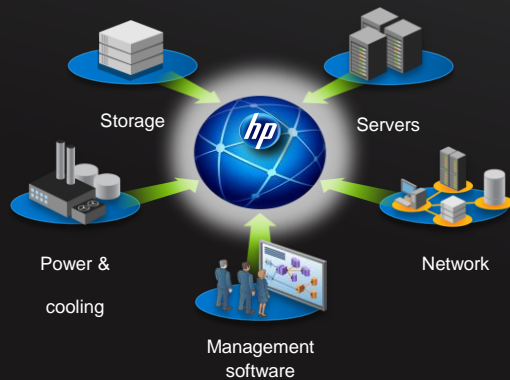
2. Flexible Sourcing Models

- Pay-as-you-grow
- Infrastructure-as-a-Service

3. HP Service Provider Program

4. Access to new customers

50%+
… x86 market share in EMEA*

350,000
… Sales & Service partners WW

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* Source: IDC, 3Q10 Market Share Tracker

Financial models comparison

Trait	IaaS Premium	IaaS Basic	Lease	Purchase
Expense Type	Operating expense (Service contract)	Operating expense (Service contract)	Operating lease	Capital Expense (depreciation)
Price	Declines over deal term	Declines over deal term	Fixed	Fixed
Monthly cost	Varies with Actual utilization	Fixed + increase for use of Buffer	Fixed + increase for updates	Fixed + increase for updates
Utilization Risk	Shared	Shared	Customer	Customer
Procurement	Single	Single	Multiple	Multiple
Tech Refresh	Easy - Part of the service	Easy – everything is coterminous	Lease overhang: multiple lease terms within array	Financial impact of NBV write down or re-deploy of assets
Asset control	Customer	Customer	Customer	Customer

Outcomes that matter.

HP