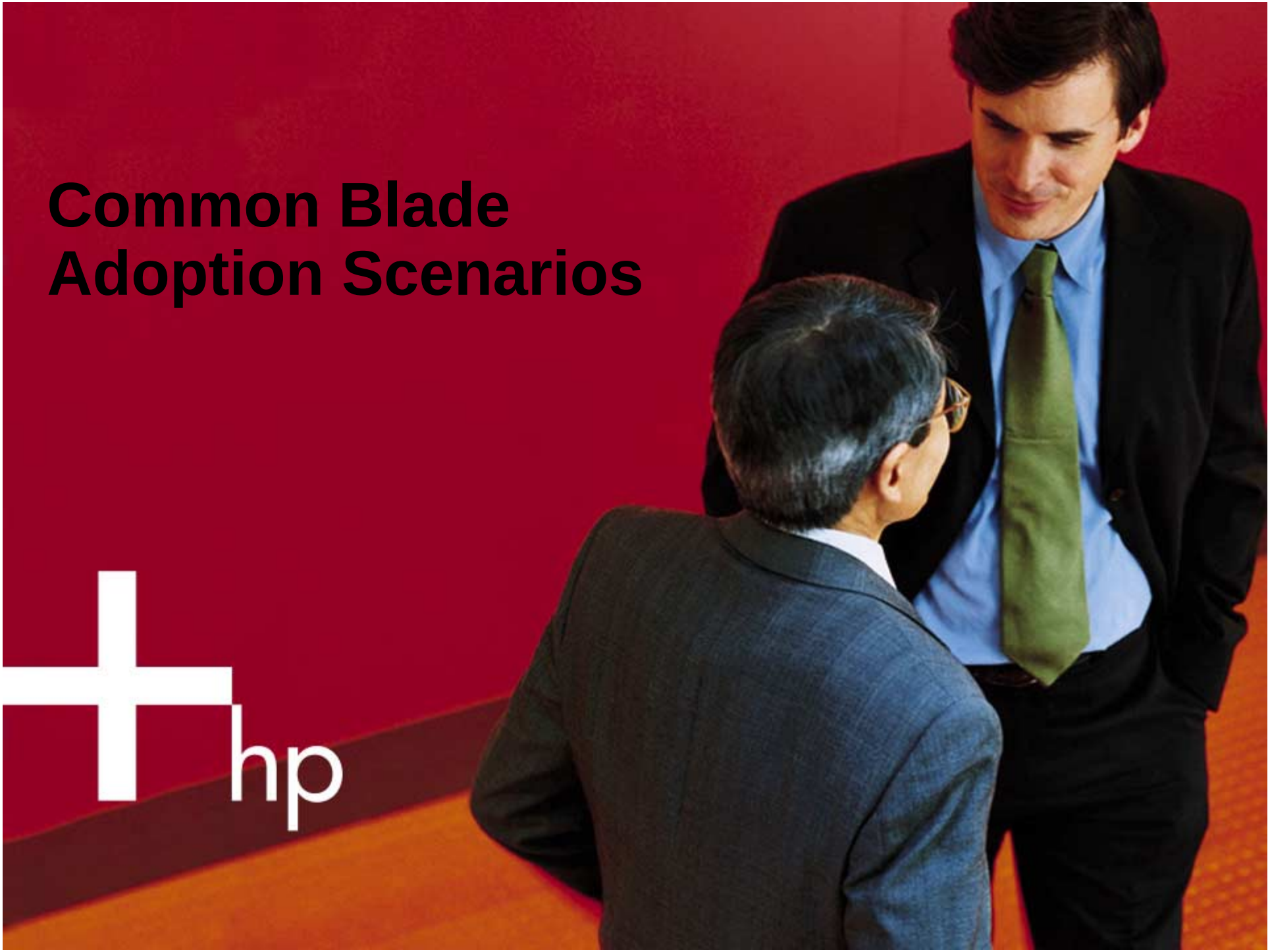
3584 Blade Common Adoption Scenarios

Anthony Dina

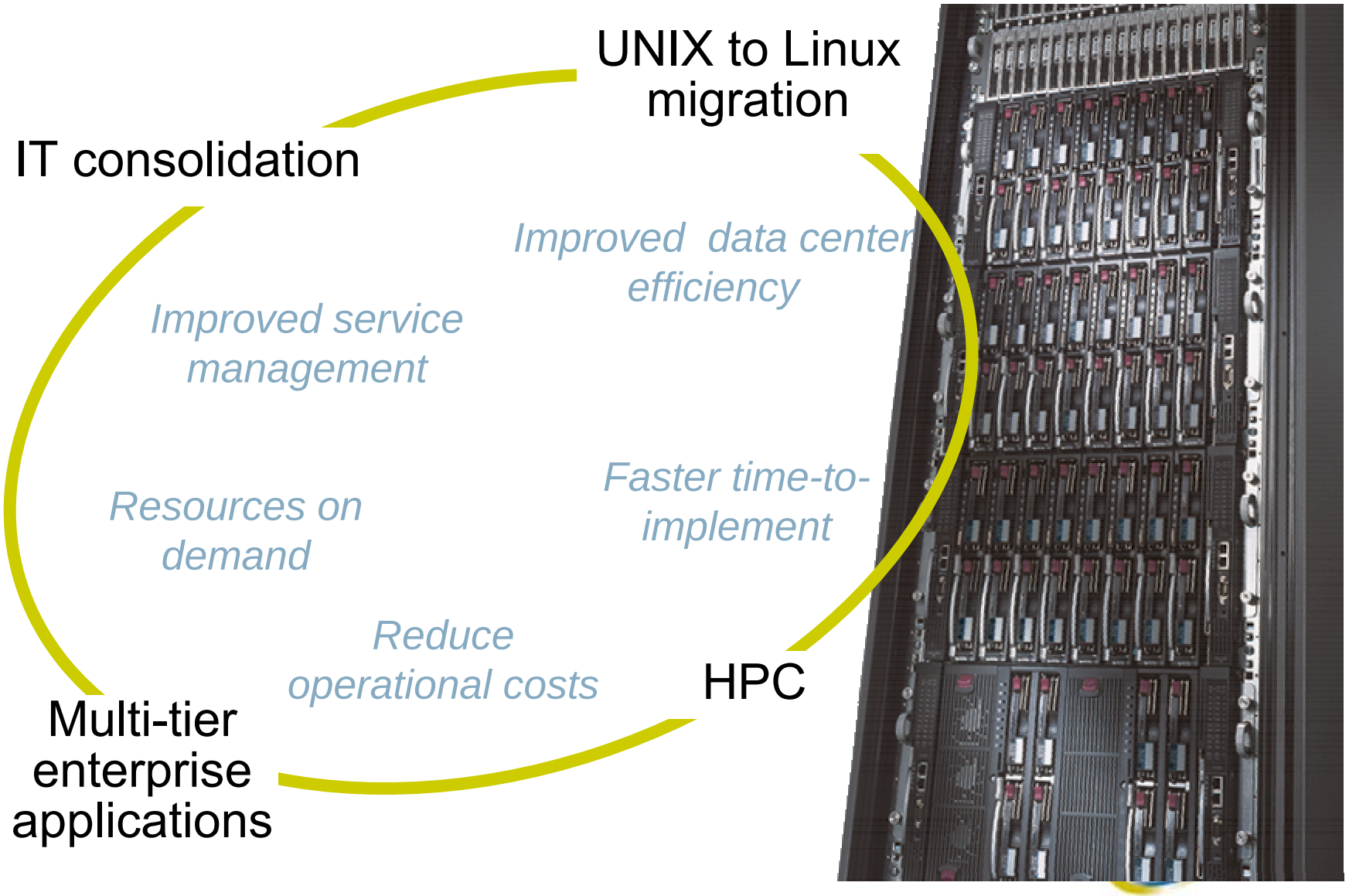
Business Development, ISS Blades
Hewlett-Packard

anthony.dina@hp.com

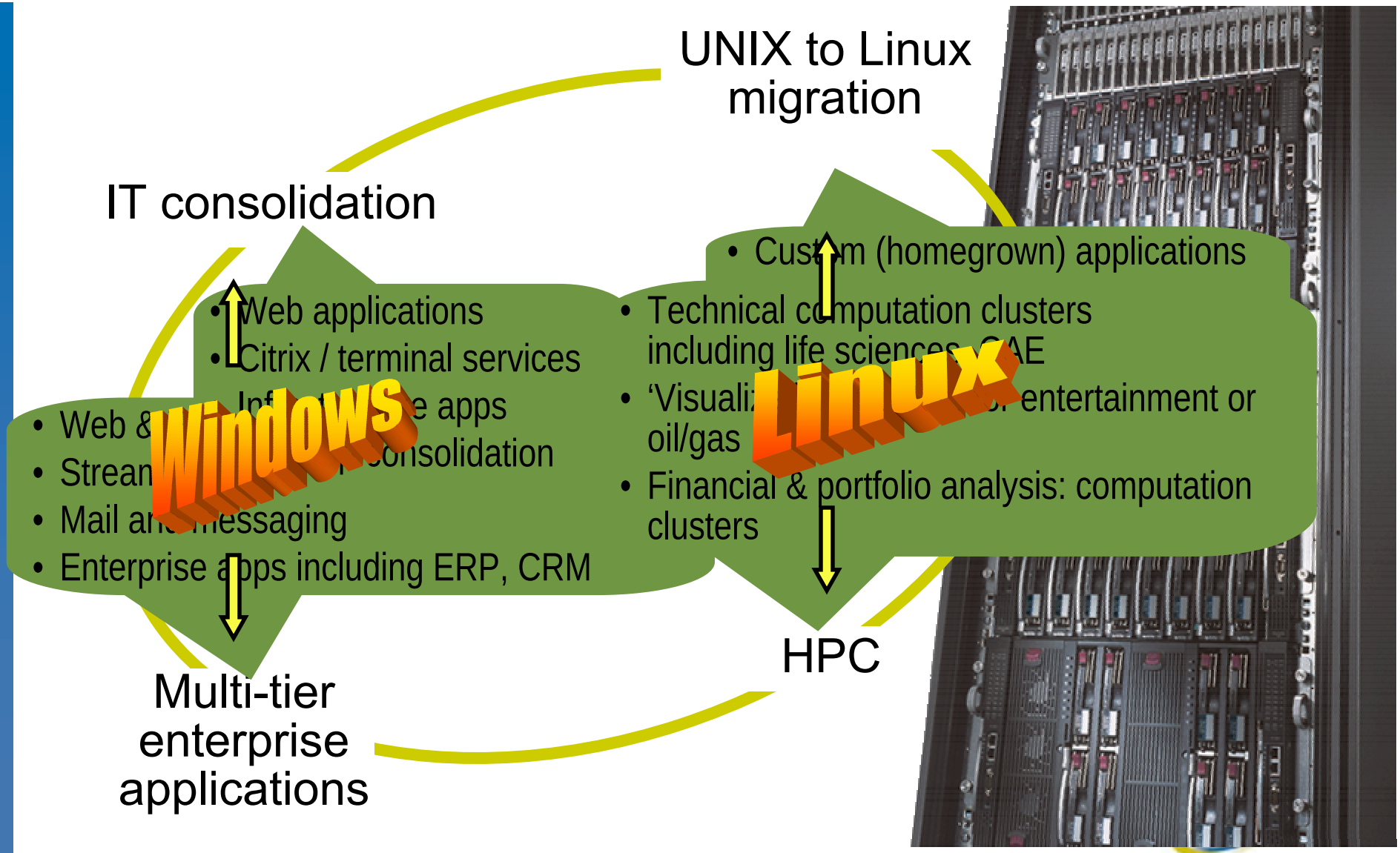
Common Blade Adoption Scenarios



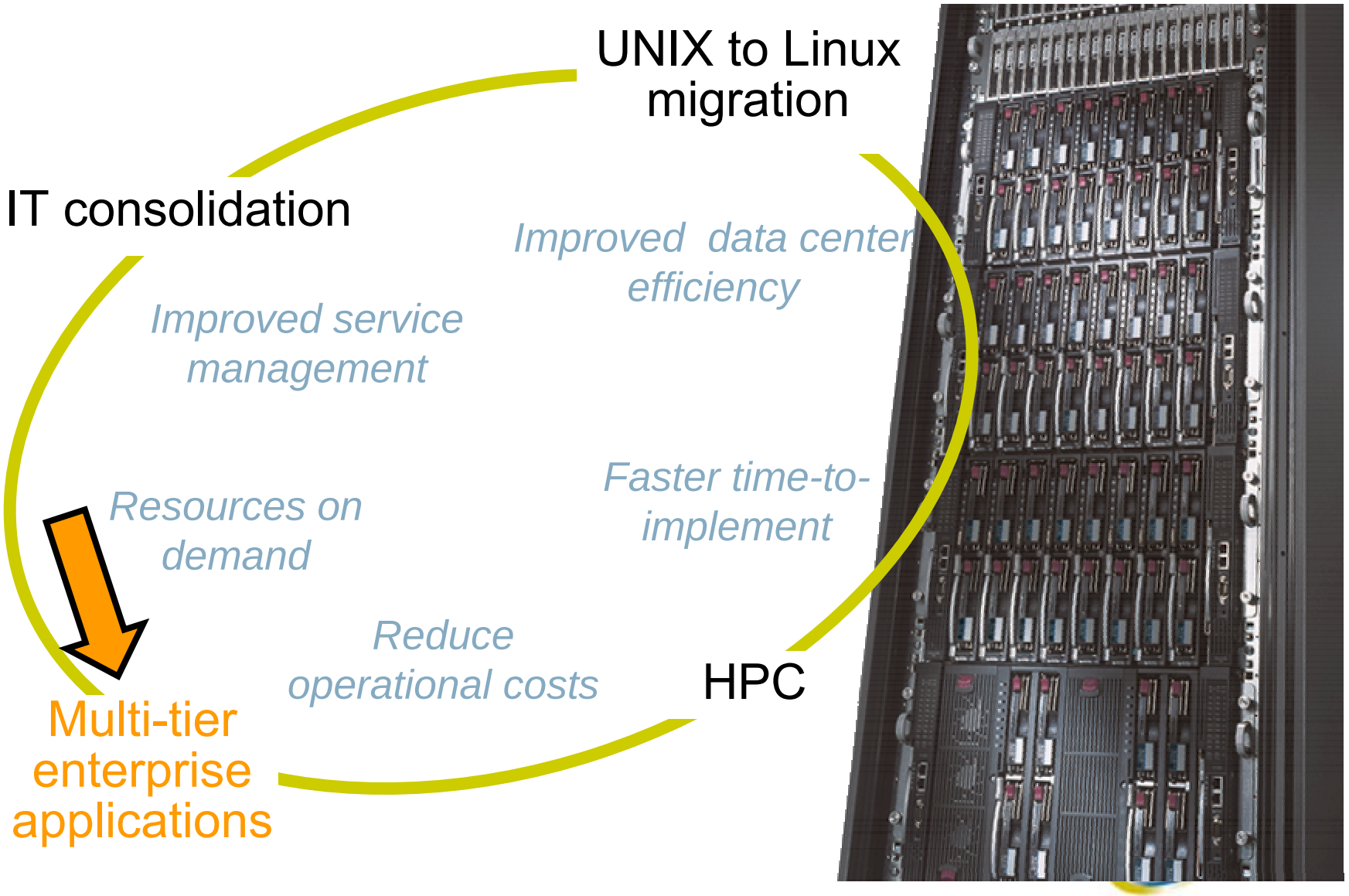
Common Blade Adoption Scenarios



ProLiant BL Blade Systems –
Adoption Scenarios

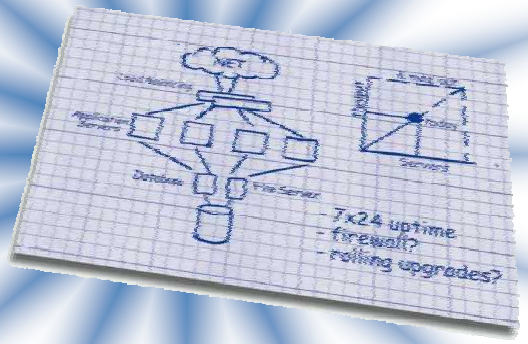


Common Blade Adoption Scenarios



HP Blade Systems:
A multi-tiered Internet architecture

access tier
application tier
data resource tier



firewall/VPN
L2 VLAN switch
load balancer
management & deployment

rack-mounted server architecture

blade system architecture

Internet Applications

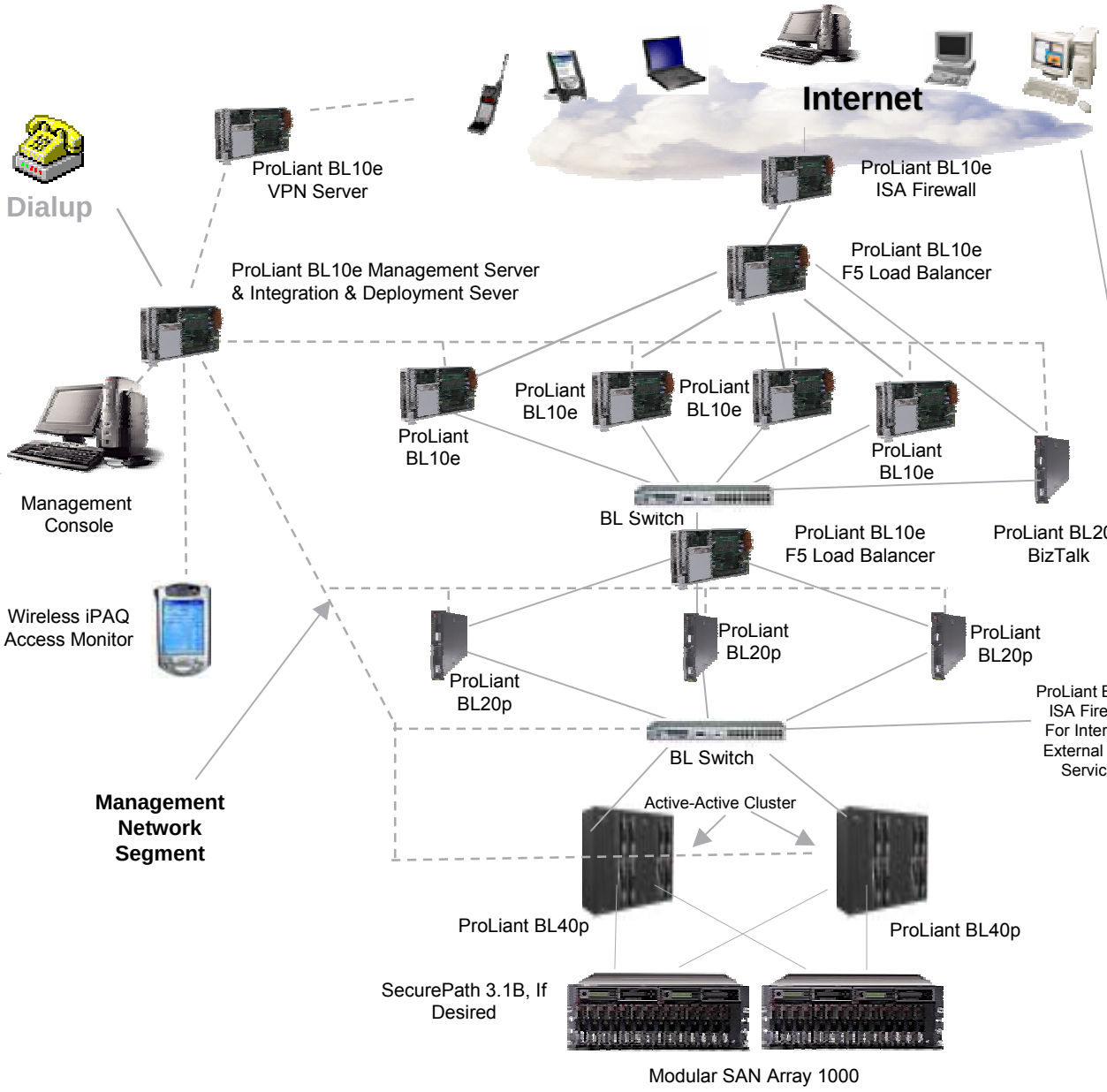
- Windows web hosting
- Linux web hosting
- Trading partner enablement
- Microsoft solution for Internet business
  - Internet Presence
  - Internet Commerce (B2C, B2B and multi-channel e-commerce)
  - Enterprise Content Portals (intranet and extranet portals)
  - Enterprise Content Management
- Streaming Media
- Linux Sendmail
- Portal solutions

Enterprise Applications

- enterprise applications
  - SAP
  - Siebel
  - PeopleSoft
  - JD Edwards
  - Microsoft Exchange
  - Lotus Domino
  - Legacy applications
- Citrix thin client solutions
- BEA WebLogic Application Server
- Other industry specific applications (financial, manufacturing, telecommunications, education, distribution, retail, etc.)

Infrastructure Applications

- load balancing (F5 Networks)
- traffic management (F5 Networks)
- firewalls (Checkpoint, V-One)
- management & monitoring (Systems Insight Manager, OpenView, Microsoft MOM, NetIQ, etc.)
- VPN (Checkpoint, V-One)
- Clustered File Systems (PolyServe, Red Hat Sistina)
- security (any Windows or Linux Intrusion detection, anti-virus, and other security applications)
- software deployment (ProLiant Rapid Deployment Pack)
- wireless mobility (Blackberry, Extended Systems, Microsoft MIS & Windows 2003)
- partitioning (VMware; Microsoft VS)
- DNS, DHCP, etc.



Access Clients

Firewall Microsoft ISA

F5 Load Balancer on a BL10e blade

Web Site and Application Center

BizTalk Server for process integration

Application Servers Running .NET Web Services

ProLiant Servers Windows Clusters w/SQL Server

ProLiant Storage Works, Storage Area Networks and Storage Management Software

Mobinil, Egypt …

Telecommunication … Multi-tiered Enterprise Applications …reduced TCO

Customer challenge

- Mobinil is the first mobile operator in Egypt
- Launched its services in 1998

HP Solution

Servers Virtualisation

- 16*BL20ps
- 4*BL40ps
- 2*DL740s

Applications

- Run the following applications based on Windows 2003:
  - Exchange
  - SQL
  - Share Portal
  - ISA
  - Active Directory

Customer Results

- Cost saving of 100K USD in 1st year
- Faster deployment of new application
- Better Management & control over IT infrastructure
- Lower cooling & power consumption by 75%

Why HP?

- Better offering than competition
- Better understanding of the solution
- Better mapping of the solution to the customer business environment
- Better management solution
- HP alliance with Microsoft

SunTrust … Financial services … USA
Multi-tiered enterprise applications ... Reduced TCO

Customer challenge

- SunTrust – Commercial & retail Banking and Financial services in Southeast USA
- Goals:
  - Bring in-house the **SunTrust.com** Internet web servers/web applications
  - Reduce TCO from externally hosted service provider

HP Solution

Server Virtualization

- 800 ProLiant BL blade server farm: 2p p-class blades servers running Windows 2000
- Connectivity to Hitachi SANs
- HP Blade management tools: RDP, Insight Manger

Applications

- SunTrust web servers for Internet-based applications
- MS Exchange was migrated to ProLiant BL blade system, as well.

Customer Results

- Reduced costs of external hosting facility
- Provides more flexible platform for increased performance and customer satisfaction.

Why HP?

- Good account team relationship
- Demonstrated technical expertise in implementing HP ProLiant blades and SAN connectivity

Common Blade Adoption Scenarios

UNIX SMP to Linux migration

Improved data center efficiency

Faster time-to-implement

HPC

Reduce operational costs

Multi-tier enterprise applications

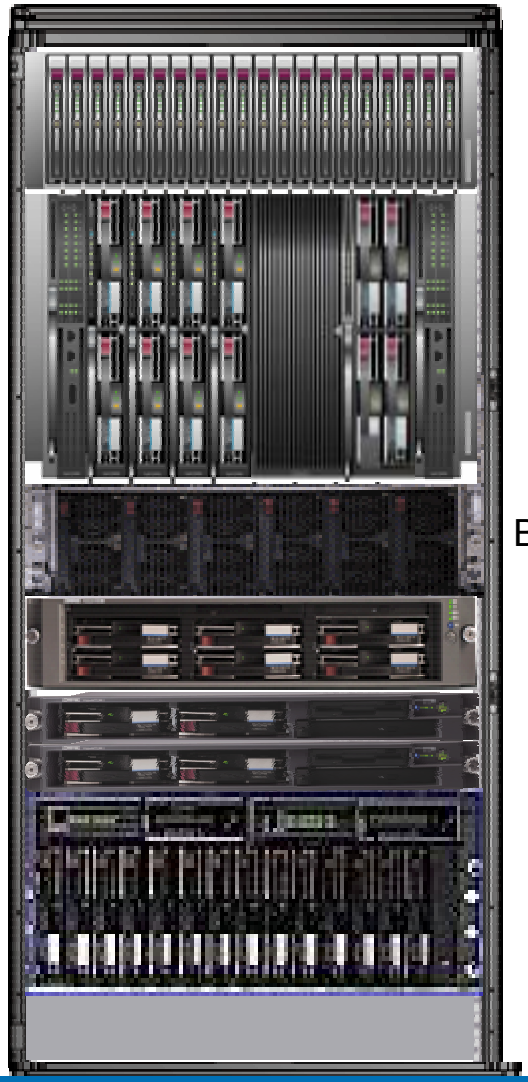
Resources on demand

IT consolidation

Improved service management

Why Migrate from Solaris SMP servers?
Platform cost reduction - 50%-70%

UNIX SMP architecture



ProLiant BL10e

L2 VLAN switch

ProLiant BL20p
ProLiant BL40p

L2 VLAN switch

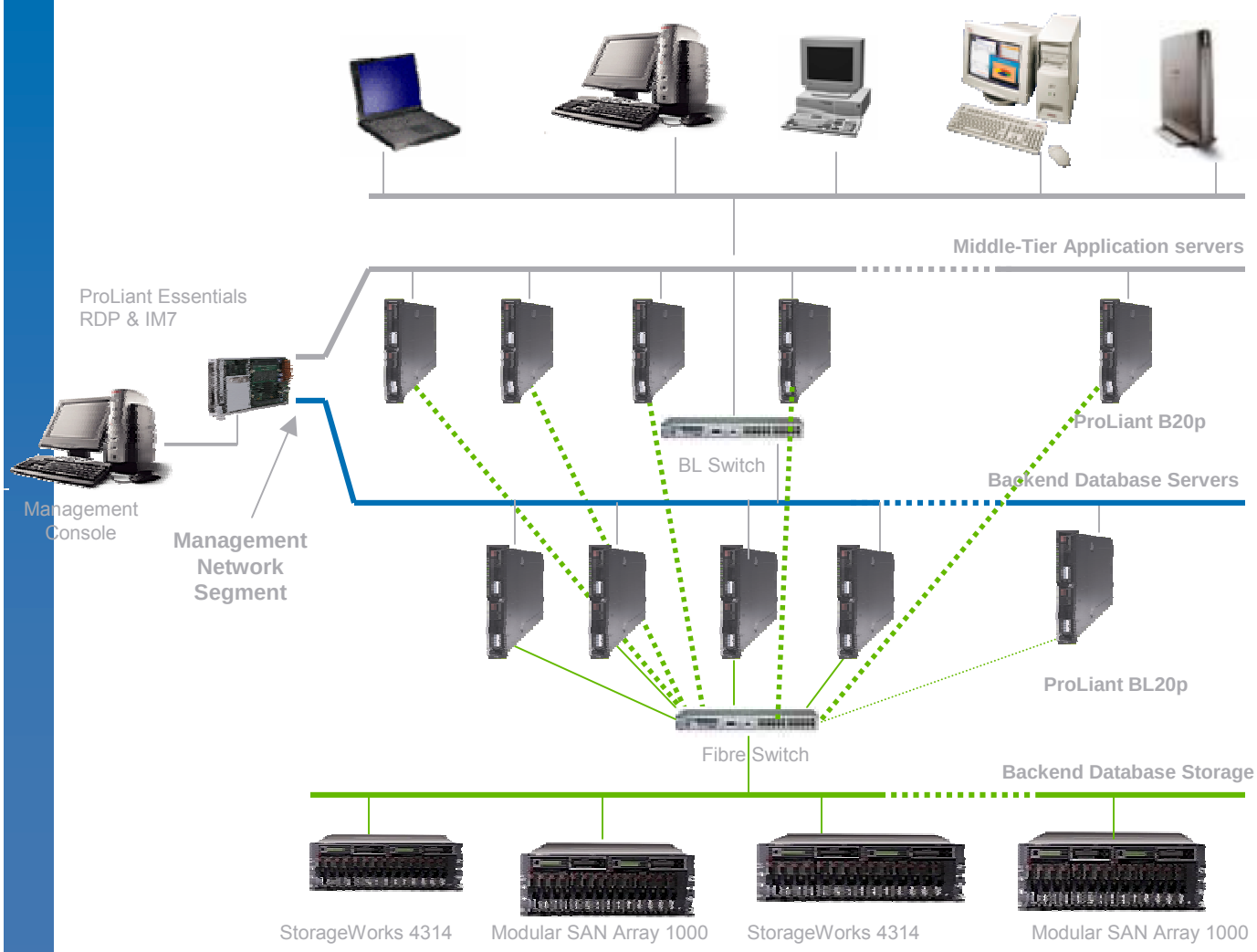
BL p-Class Power

Management Servers

SAN MSA1000

blade system architecture

Sample Architecture: ProLiant 2P Server blades for scale-out SMP applications



Various Clients

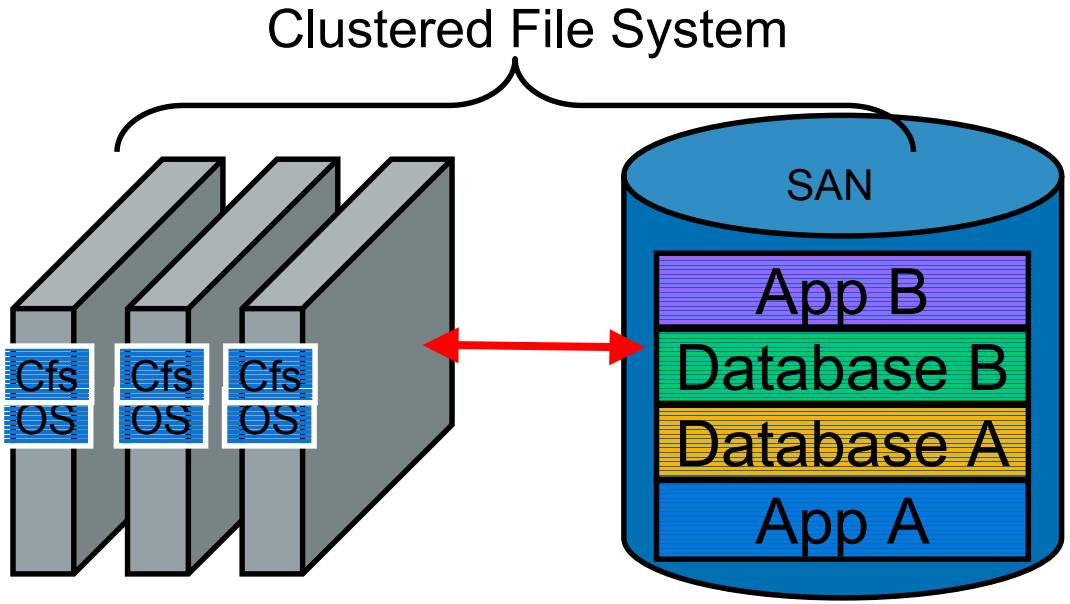
ProLiant B20p Servers Provide a Highly Scalable Middle-Tier for Application Servers

Clustered Database using 2 or more ProLiant BL20p servers

Easily Expandable Database Storage based on ProLiant StorageWorks & other SANs

Virtualized Blades & Storage Pools

Scale-out Architecture for large applications



Leveraging virtual storage & clustered file systems

- Storage efficiencies: better storage utilization, fewer system admins
- Shared files (lock managed across nodes) with “clustered file systems”
  - Leading choices: PolyServe, Red Hat (GFS)
- Parallel database clusters – scale-out databases (Oracle 9i RAC & 10g)
- Scale a large application across blades for higher performance and availability.... at lower cost than large SMP UNIX servers

A large NA Bank... Financial Services... USA

Migration from Solaris SMP to Linux Blade cluster

Customer challenge

- **Large NA Bank** – a transaction reconciliation application
- **Goals:**
  - Dramatically improve the price/performance of server platform
  - Ability to manage the blade cluster as one machine
  - Successfully migrate a Solaris application to Linux

HP Solution

Server Infrastructure

- ProLiant BL blade server farm: 2p p-class blades servers running Linux
- HP Blade management tools: RDP, Insight Manger
- StorageWorks EVA SAN

Applications

- Clustered file system from PolyServe
- F5 Networks Big-IP Blade Controller S/W for virtual IP load balancing of the cluster
- Custom application migrated from Solaris

Customer Results

- Application has improved performance by 25%
- Platform costs reduced by 70%

Why HP?

- Good account team relationship
- Demonstrated technical expertise in implementing HP ProLiant blades and SAN connectivity
- Blade Management tools
- Long term investment protection of blade system infrastructure

KT FreeTel Co. Ltd. (KTF) … Telco/NSP … Korea

Customer challenge

- KTF – large Telco and Network Service Provider
- Goals:
  - Telecom Billing Solution for IP data billing
  - Improve TCO of server infrastructure
  - Reduce cost of SUN infrastructure (installed base)

HP Solution

Server Virtualization

- 140 ProLiant BL blade server farm: 2p p-class blades servers running Linux
- HP StorageWorks EVA SAN (3TB of storage)

Applications

- Applications developed by solution partners for blade server infrastructure
- IP billing and usage collection application.

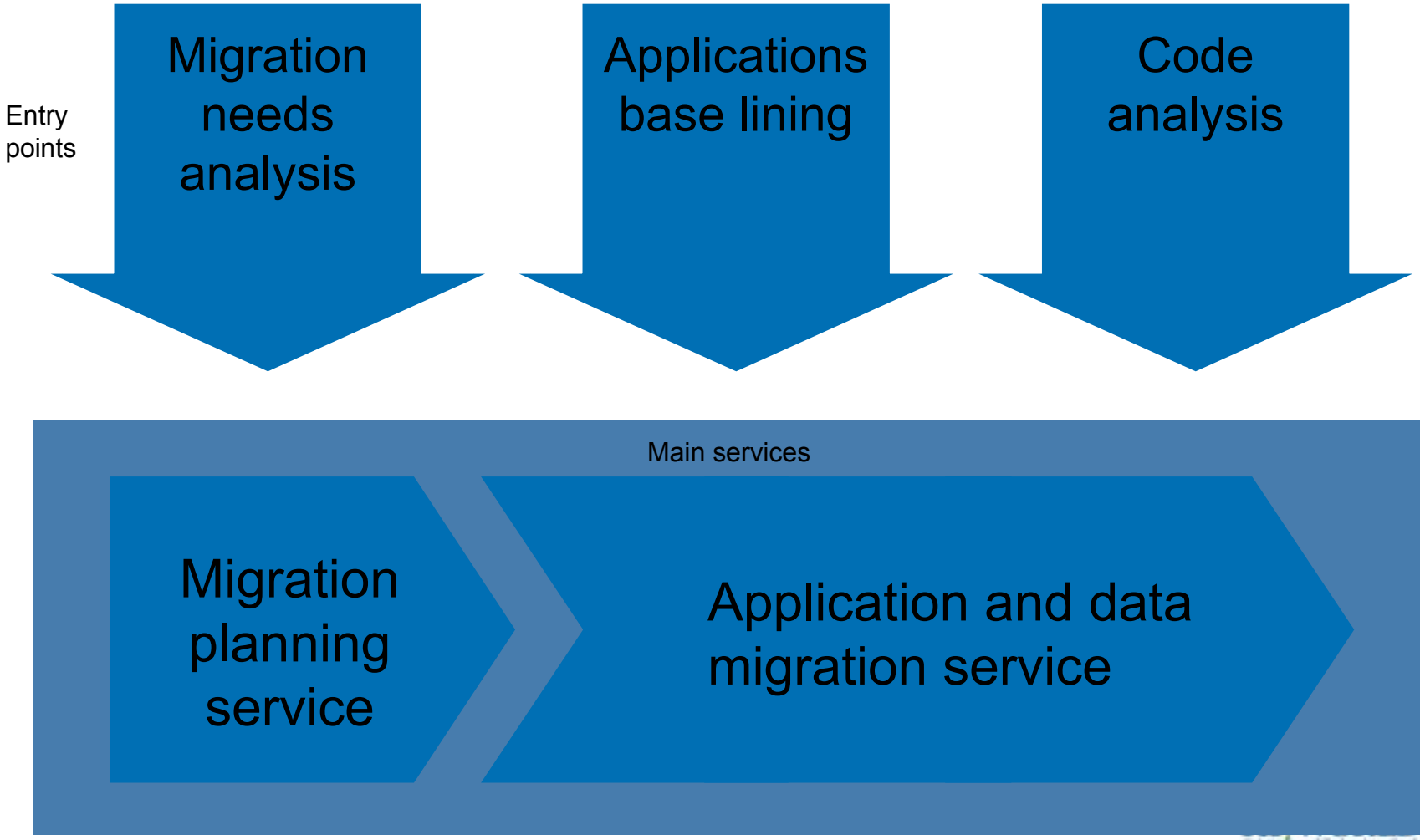
Customer Results

- Lower cost of infrastructure – in comparison to SUN

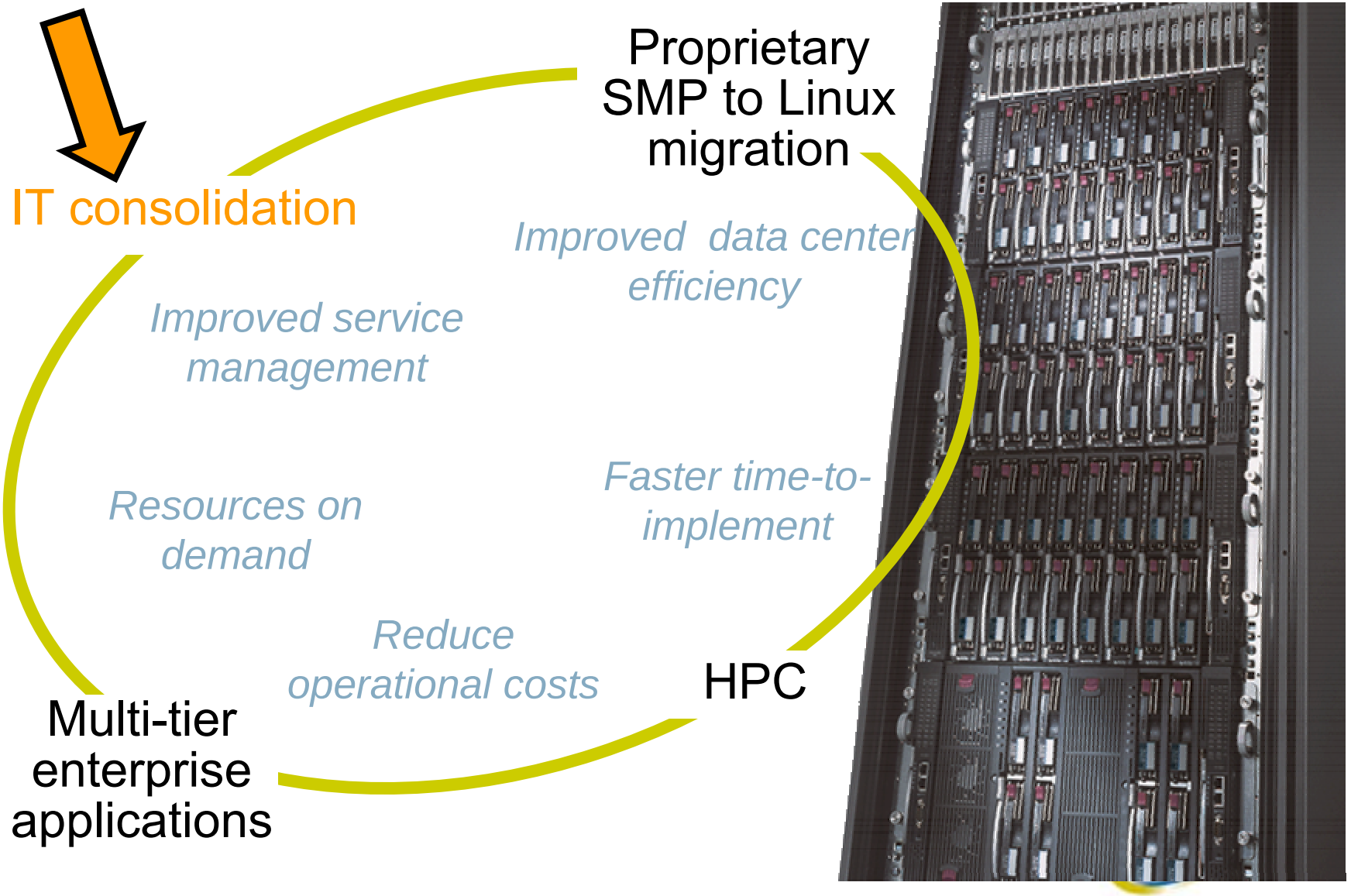
Why HP?

- Excellent account team partnership
- HP products and Services

SUN to Linux Application and data migration



Common Blade Adoption Scenarios

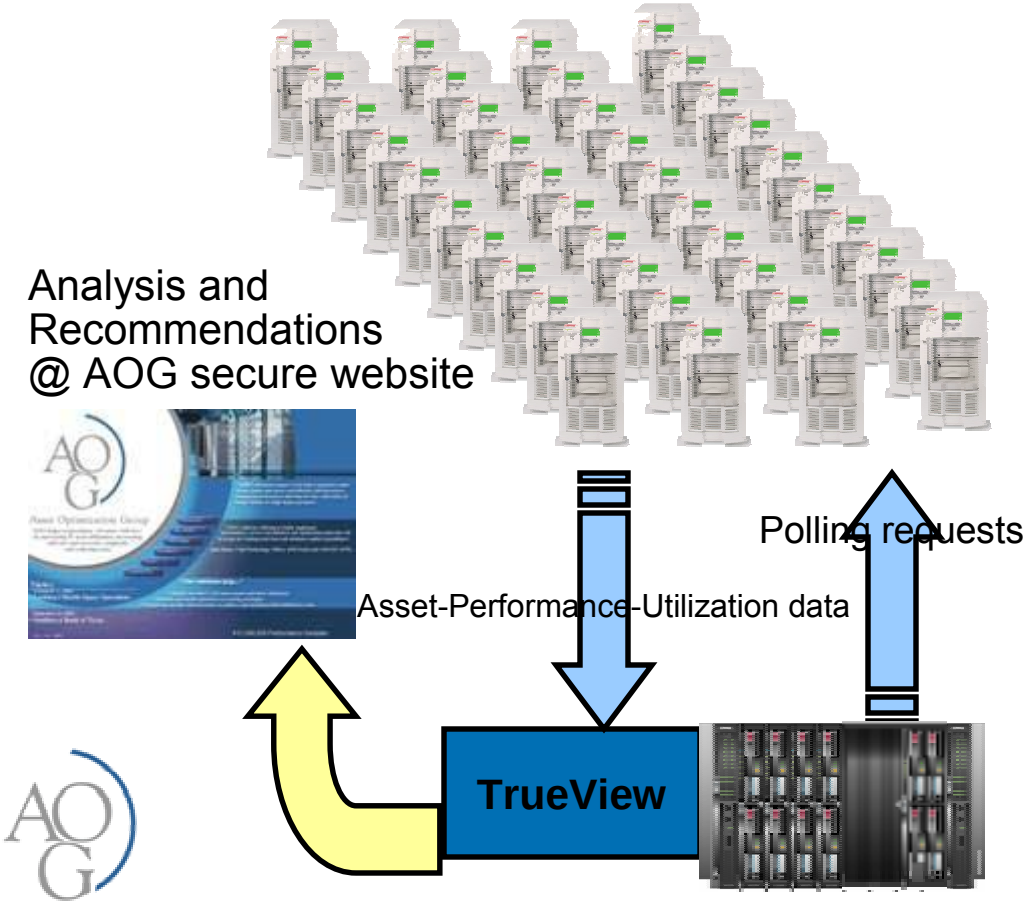


The Scenario: Reducing Server Proliferation

- Too many servers taking up too much space
  - Back in the day: Easy to buy, low-cost solution
  - Single server/single app deployment strategy
- Older, legacy-bound server population
  - 3-5 year old, single-function servers
  - Legacy OS's: NT 3.51 & NT4, Novell Netware 4 & 5
  - 4.7M NT4 servers still running today
    - 30% of servers in an average environment are NT4
- Underutilized servers
  - 7-10% is the AVERAGE server utilization level
  - File/print, infrastructure servers (Domain, AD) the worst

Asset Optimization Group (AOG)

- Audit, measure, & analyze Windows servers
- Agent-less tool, deploy any time
  - Initial inventory
  - Baseline performance & capacity data
  - Identify starting points consolidation actions
- Market comparisons based on 400+ million sample points

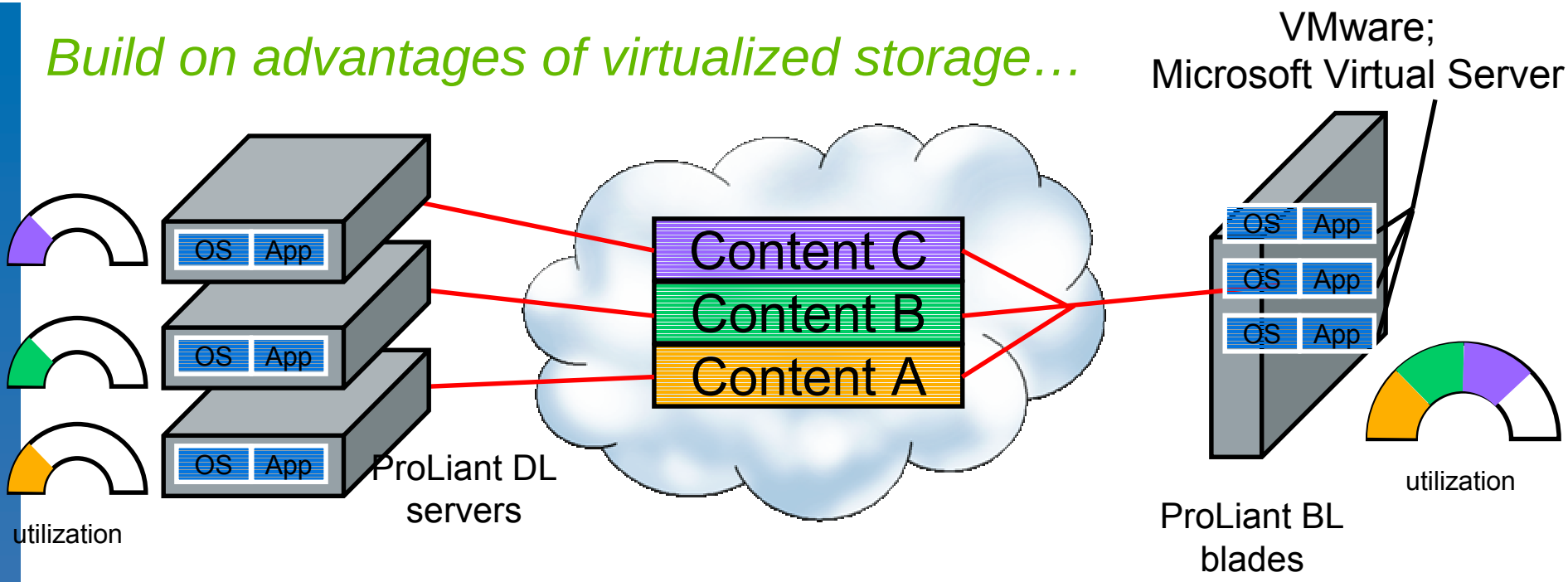


www.aogtech.com

http://h71019.www7.hp.com/ActiveAnswers/Render/1,1027,6466-6-100-225-1,00.htm

A ‘Scale In’ Approach for Blades

Build on advantages of virtualized storage…

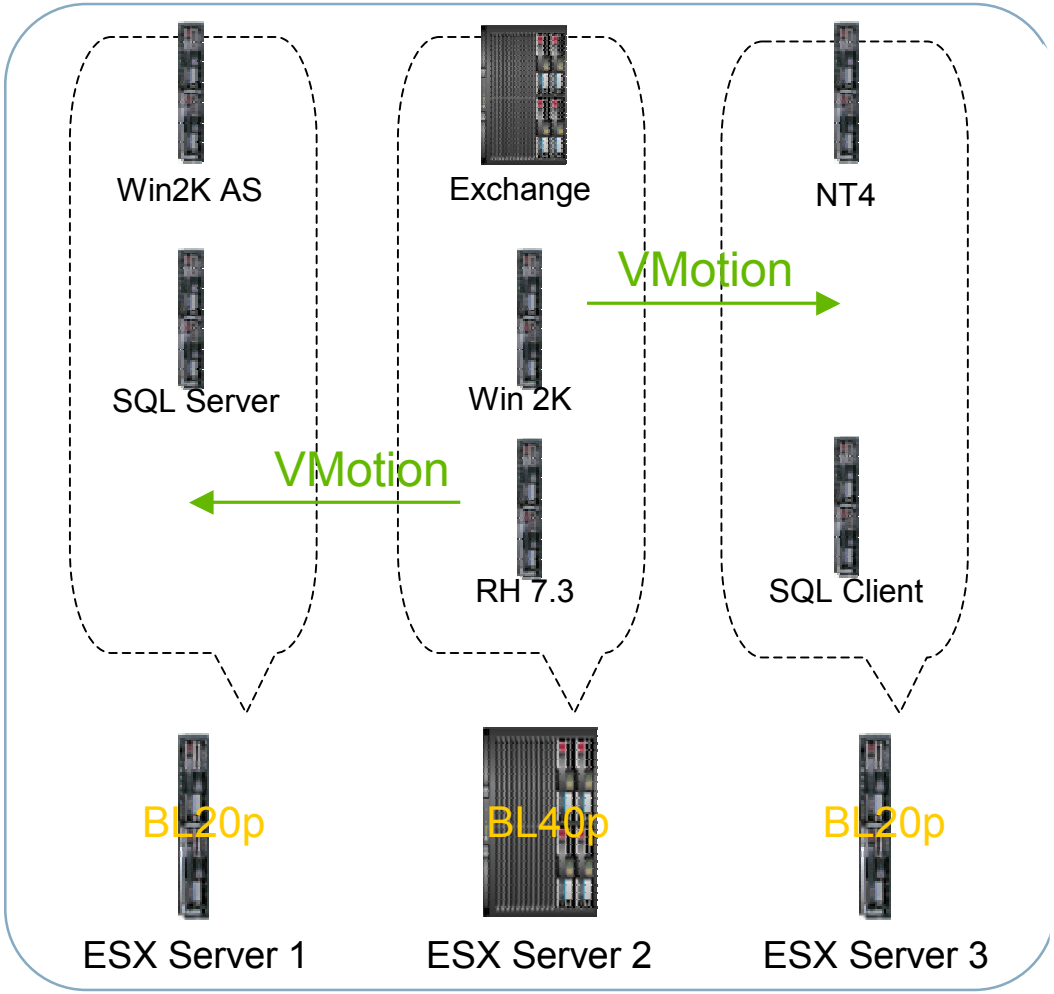


…With virtualized server resources

- Excess capacity on smallest scale out building block
- Server maintenance measured in physical instantiation
- Partition at the OS, reduce application contention
  - Leading choices: VMware, Microsoft Virtual Server
- Partition the Resource
  - Leading choice (Windows): HP ProLiant Essentials Resource Partition Manager
- Net effect: better utilization, efficiency, flexibility

VMware VirtualCenter with VMotion and HP Blades

Centrally manage a heterogeneous environment from a single GUI



- Ideal for blade systems
- Virtualized resource pools across physical hardware boundaries
- VMotion enables movement while maintaining continuous service availability

VMware VirtualCenter

HP WORLD 2004

Server Consolidation – Middleware Partners

- VMware
  - Consolidate under-utilized servers into virtual server partitions (4:1 average consolidation)
- Microsoft VS (Mid 2004)
  - Consolidate Windows NT, 2000, & 2003 applications onto virtual server partitions
- PolyServe for Windows
  - Consolidate active-passive clusters to a N+1 cluster environment
  - Eliminates x number of passive failover cluster servers

Cellcom... Telecommunications... Israel...
IT Consolidation using VMware

Customer challenge

- **Cellcom**... Israeli cellular communications company ($1.25B)
- **Goals:**
  - Efficient & scalable IT infrastructure for high growth business
  - Conserve datacenter space
  - Improve server utilization
  - Reduce burden of managing hundreds of server

HP Solution

Server Infrastructure

- ProLiant BL blade server farm: 2p p-class blades servers running VMware ESX
- HP Blade management tools: RDP, Insight Manger
- HP StorageWorks EVA SAN

Applications

- VMware ESX for virtual server application consolidation

Customer Results

- More efficient server management
- Improved server utilization(35%-50% and server consolidation(13:1 avg. application consolidation)

Why HP?

- Good account team relationship
- Demonstrated technical expertise in implementing HP ProLiant blades and SAN connectivity
- Blade Management tools
- Long term investment protection of blade system infrastructure

Vilnius City Municipality… Lithuania,
Government… Consolidation & TCO reduction

Customer challenge

Vilnius City Municipality is Government Structure of Lithuanian Capital - Vilnius

Goals:

New data center and LAN infrastructure for new building of Vilnius City Municipality

Plan:

- Infrastructure Consolidation
- TCO reducing
- Improve performance, manageability and business continuity

HP Solution

Servers

41x2p BL20p blade servers running Linux & Windows,

blade management tools RDP and IM

Storage

- StorageWorks EVA 5000
- StorageWorks MSL 5030

LAN

- ProCurve Switches for Data Center and new building LAN

Customer Results

- Reduced TCO of servers, SAN and LAN infrastructure
- Improved application performance, manageability and business continuity
- **Why HP?**
- Complete solution from HP
- Technology: blades, blade manageability and flexibility
- Lower TCO than IBM blades, IBM SAN and Cisco LAN (proposed by IBM as well)
- Demonstration of HP ProLiant blades and SAN installation, deployment and performance
- Excellent cooperation of ISS, Storage and ProCurve teams

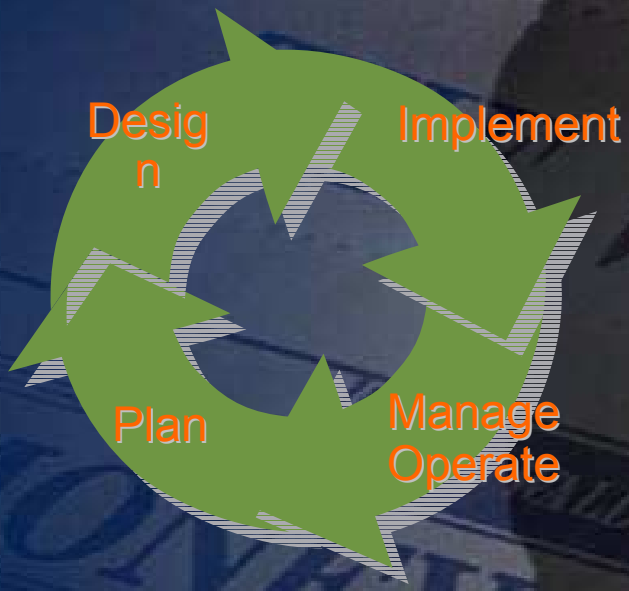
IT Consolidation Services Lifecycle

2. Design

- Consolidation Pilot
- Consolidation Plan & Design
- Consolidation Benchmark

3. Implement

- Consolidation Implementation Services
- Migration Services
- Implementation and start up services
- Project Management



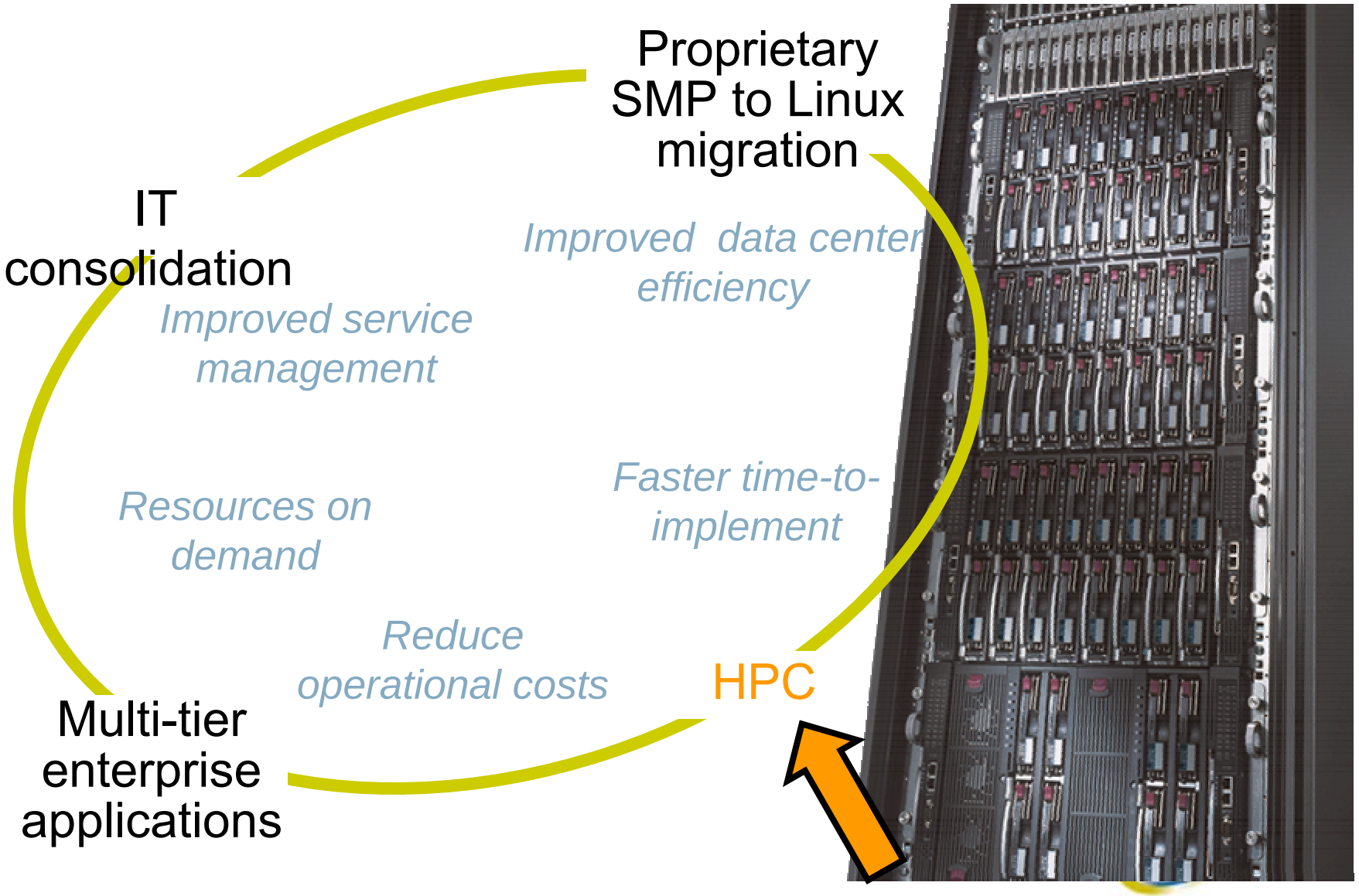
1. Planning

- Consolidation Value Workshop
- IT Consolidation Assessment

4. Manage & Operate

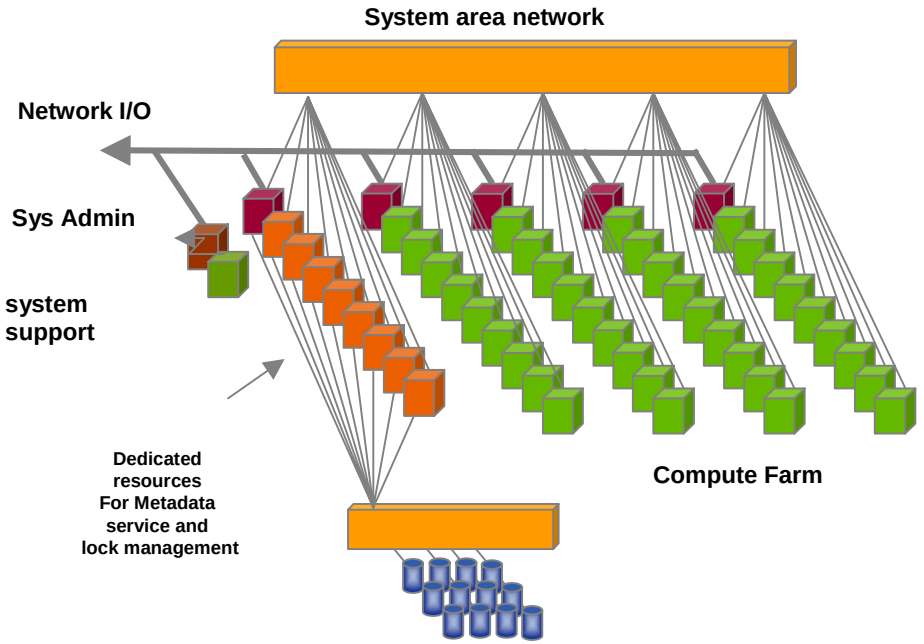
- Availability Assessment
- Support Services (from HW/SW Support to Proactive 7x24 and Mission Critical Partnership)
- Outsourcing & Operation

Common Blade Adoption Scenarios



High Performance Computing

- Target areas
  - Life-sciences
  - CAE
  - Financial services – Risk Analysis, etc.
  - Others
- Capitalize on blade system
  - density
  - power efficiency
  - integrated technologies
- HPTC blade architecture
  - Architecture Guides which define implementing on blades
  - Partner with leading vendors



- Compute Clusters
- Grid Middleware

AgResearch... biotechnology research... NZ, HPTC

Customer challenge

- **AgResearch** – biotechnology company in New Zealand & around the world
- Goals:
  - Efficient, flexible IT environment for the science organization's research and business applications
  - Manage the IT servers more efficiently
  - Flexibly provision & re-provision applications based on demand
  - Handle growth economically

HP Solution

Server Infrastructure

- ProLiant BL blade server farm: 2p p-class blade servers running Linux
- HP blade management tools: RDP, Insight Manager
- 5TB SAN

Applications

- Biotechnology research application in a large 64 node compute cluster... growing to 128 2p nodes
- Run business applications on the same infrastructure: Exchange, Oracle budgeting application, others

Customer Results

- Outperforms previous compute node cluster/grid at lower platform costs
- Adaptable, flexible infrastructure for the research community

Why HP?

- Local HP account team supported AgResearch's learning curve on blades
- Local HP team demonstrated technical expertise in implementing HP ProLiant blades and SAN connectivity
- HP Blade management tools
- Long term investment protection of blade system infrastructure

Bottom Line!

Any application available on Windows or Linux can be implemented on ProLiant BL Blade systems


invent

HP WORLD 2004

Solutions and Technology Conference & Expo

Co-produced by:

interex

shared knowledge • shared power

encompass

AN HP USER GROUP

RECOMMENDED TRAINING VENUE FOR THE

HP Certified Professional