

Evolving your HP-UX environment To Itanium®:

A total solutions perspective

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Agenda

Why evolve?

What are your options?

Making it easy

Next steps

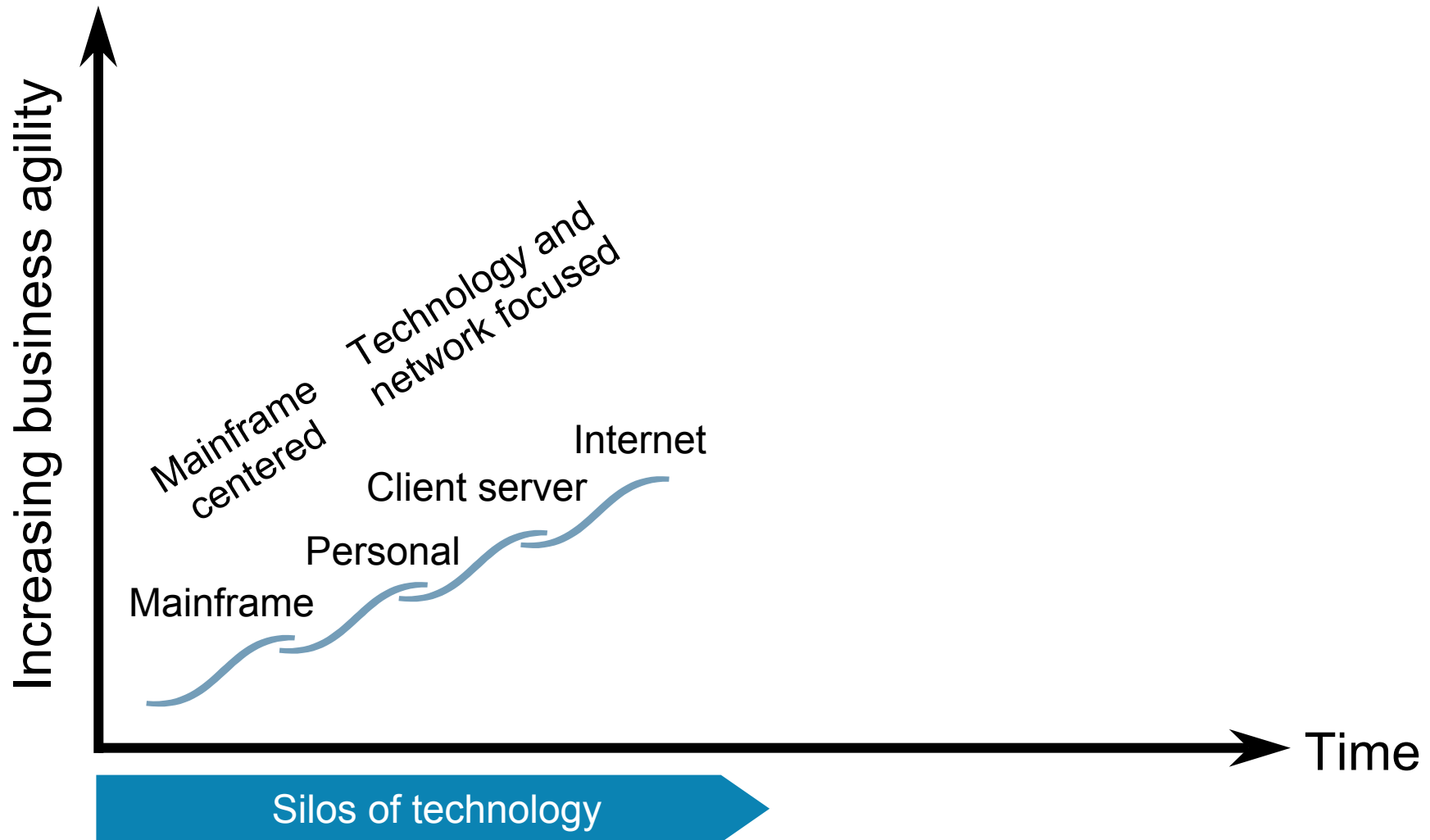




“ It’s not the strongest of the species
that survives, nor the most intelligent;
but the one most responsive to change.”

—Charles Darwin

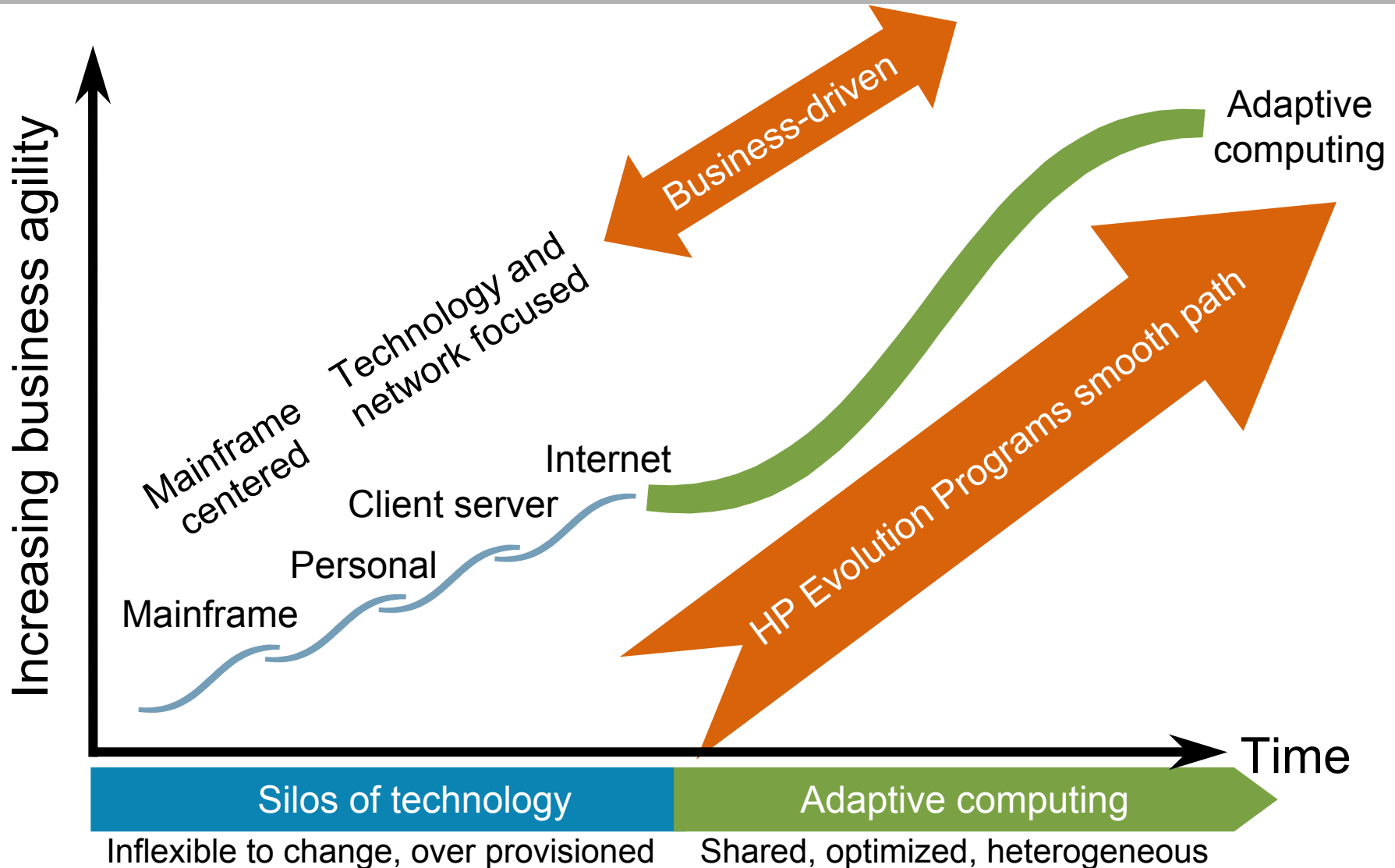
Historically, technology had defined the computing models



Focus on IT economics



Customers' business needs now demand a new model of computing



It's your roadmap

External drivers

- Business changes
- Technology changes



Internal drivers

- User requirements:
 - Business and IT
- Operational needs:
 - TCO savings
- Financial considerations

What you have been saying to us about evolving your environments

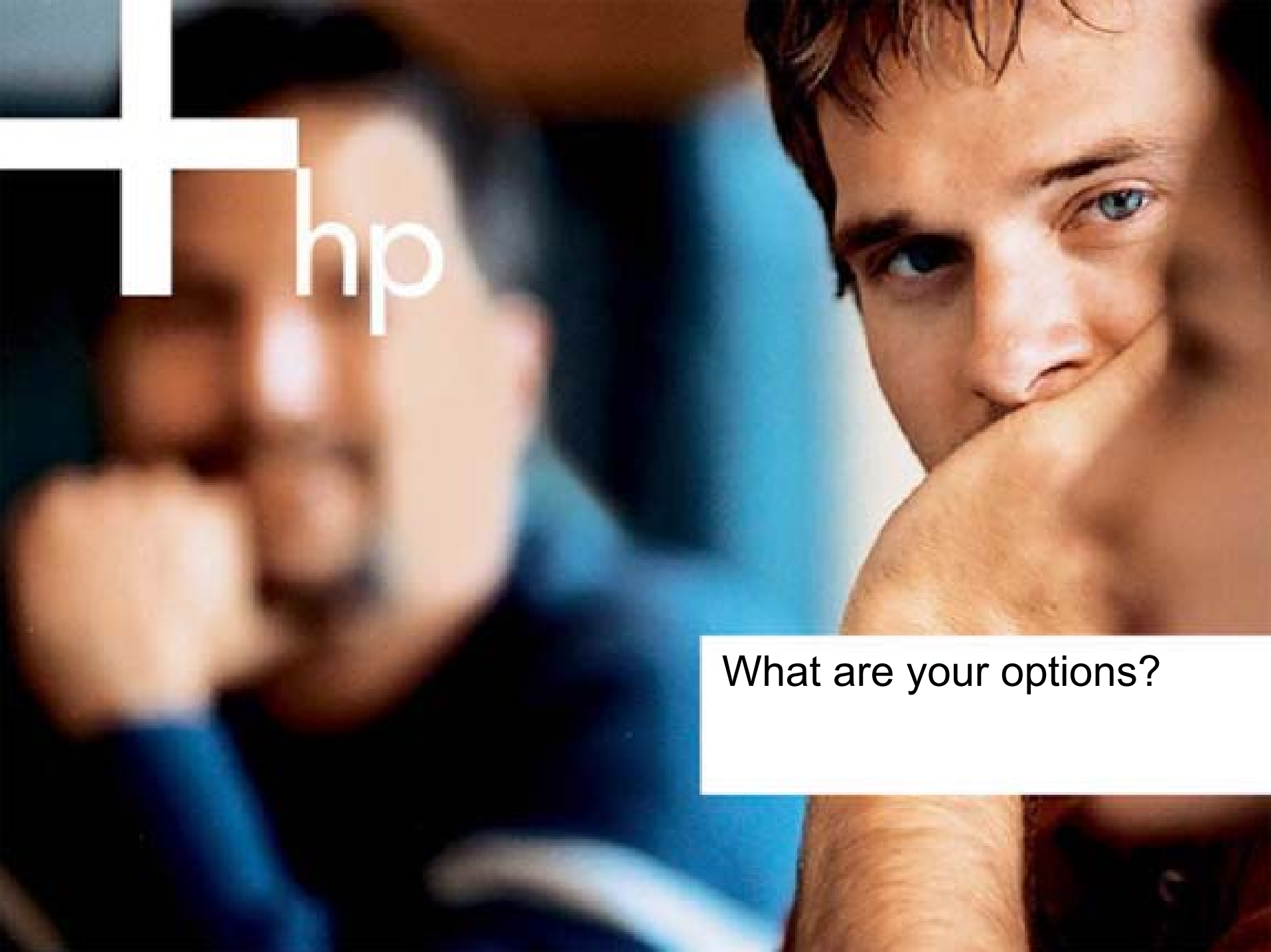


Show us the business value

- Need compelling business reason (e.g. cost savings, improved ROI) beyond the migration that results in competitive edge in the marketplace
- No transition for the sake of technology alone
- Minimize cost of transition for entire IT environment while increasing total TCO savings
- Demonstrate why the next generation IT move with HP is better for my business than a move to Sun or IBM

Take away the risk

- Ensure application availability
- Absolutely no unplanned downtime during introduction of new environment
- Minimize impact to IT support staff through training and “how to” transition guides
- New environment becomes a superset of the existing environment to solve next generation business problems
- Prove HP’s commitment by delivering on roadmaps; no forced transition; gradual transition with minimum risk



hp

What are your options?

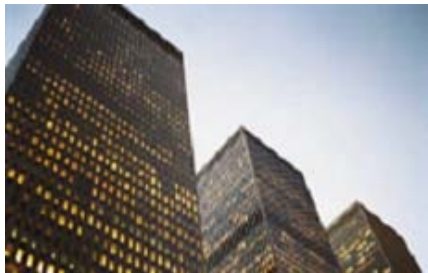
Implementation scenarios



Plan

- Develop strategy, understand roadmaps, plan timeline and resource requirements
- Begin preliminary evaluation and design prototype environments

Integrate



Integrate into existing architecture

- Add to a 3 tier architecture (database- application- client)
- Add new systems alongside existing systems as future infrastructure evolves

Consolidate



Consolidate multiple systems

- Consolidate databases
- Consolidate applications
- Balance workloads

Transition



Replace existing server

- Upgrade HW and/or operating environment
- Replace with off-the-shelf application
- Move application to new operating environment

Re-architect



Re-architect your environment

- Driven by business changes such as merger, acquisition, or differing needs etc.
- Re-engineer business systems
- Integrate SANs

Dollar Rent A Car systems Integration



Challenge

- Cost effectively extend functionality of existing stable OpenVMS-based infrastructure to open up new business opportunities
- Lower customer acquisition costs – currently paying fee for each transaction through Global Distribution Systems (GDS) such as Sabre or Apollo
- Preserve current investment
- Minimize business disruption

Solution

- Integrated HP system running Windows 2000 with legacy reservation system to allow partners direct access to reservation system
- Created a re-usable interface using .NET connected software and XML Web servers



Results

- Cost effectively opened up another sales channel resulting in millions of additional rate requests and new reservations
- Quickly and easily re-used the XML interface four additional times, including adding capability for Palm users to place reservations over the internet
- Millions of dollars of incremental revenue, and significant savings in annual GDS fees

Canada Bell Consolidation



Challenge

- Consolidate existing infrastructure of five operating companies into one
- Improve reliability
- Accommodate future growth

Solution

- Consolidate five SAP instances into one
- Establish 22-terabyte Storage Area Network
- Provide automatic failover with HP software
- Provide HP Critical Systems Support (24x7)

Results

- 100 percent availability since consolidation
- Response time cut in half to 0.6 seconds
- Annual savings approaching \$10 million, including \$5-6 million in systems management cost reduction by CGI and \$4 million in labor savings for Bell Canada

Virginia International Terminals Transition



Challenge

- Migrating one million lines of corporate mission-critical application code from HP e3000 to a new operating system and platform
- Maintaining 24x7 application availability

Solution

- Utilization of the HP-UX server loaner program
- Leveraged discounted HP education courses
- Selected Oracle for application database
- Partnership with Speedware

Results

- New infrastructure with its underlying software components successfully implemented
- Staff fully trained on HP-UX, Oracle databases and Speedware conversion tools
- Development of web-enabled applications poised to begin
- Transition costs minimized by use of the HP-UX server loaner program and education discounts

Best Western International Re-architect



Challenge

- Surging transaction volumes from Best Western's expanding electronic channels were straining the company's existing IT platform
- Need to update environment which consisted of mix of older HP AlphaServer systems running early versions of the HP Tru64 UNIX® operating system

Solution

- Total Solution integrated clustering, SAN, and server technologies into a highly scalable and available environment
- HP ServiceGuard cluster with Superdome servers on HP-UX with HP StorageWorks xp512 disk arrays and tape libraries
- HP Services helped to design, implement and train

Results

- IT platform switched three months ahead of schedule with 5 times capacity gain
- Turnaround time for reservation queries now averaging .28 seconds compared with the industry average of .6 seconds
- Enhanced service with better tracking of customer usage patterns and preferences
- Reduced annual expenses by more than \$1 million

Introducing HP Integrity servers:

A new era in enterprise computing

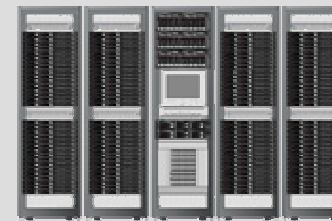
High end

Launch: June 30 2003



Superdome
16,32,64-way

Launch: Fall 2003



HPTC
cluster

Midrange

Launch: Fall 2003



8-way



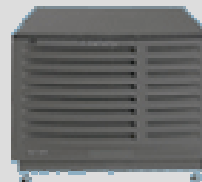
16-way

Entry

Launch: June 30 2003



rx2600
(2-way)



rx5670
(4-way)

Launch: Fall 2003



Carrier
grade
(2-way)

HP-

11i
Version 2

Microsoft
Windows Server 2003



OpenVMS

HP Integrity servers—unprecedented choice and breakthrough flexibility

Unprecedented choice

- Operating environments
- Type of systems
- When to adopt new technology
- Applications
- Scale up and scale out

Benefit:

- Standardization
- Streamline operations
- Future proof
- Increased asset utilization
- Consistent support levels

HP-UX 11i

Proven solution with added performance and RoIT



Unparalleled scalability, performance and RoIT



Industry standard for 64-bit and RoIT

OpenVMS

Investment protection

Breakthrough flexibility

- Superior solution for single operating systems
- Industry leading multi-operating system support:
 - Repurpose
 - Consolidation
- Lasting value
 - 15-20 year architecture
 - In-box upgrades and binary compatible

Superior choice and flexibility delivers better RoIT

HP-UX momentum continues

- The HP-UX ecosystem
 - A \$20B business
 - Over 2 million units active
 - #1 UNIX® market share by revenue last two quarters
- More than 10 years proven expertise in mission-critical and workload management
 - More than 70,000 Serviceguard licenses
 - Over 65,000 resource and workload management licenses
- Aggressive investment in HP-UX
 - Major component of HP's overall R&D budget
 - Over 2000 software engineers focused on the HP-UX ecosystem



HP StorageWorks product portfolio

Software

Storage area management

- Device management
- Provisioning



Data management

- Data protection
- Data recovery



Availability management

- Data replication and migration
- Multi-pathing/failover



Storage Virtualization

- Heterogeneous storage services
- Enterprise scale

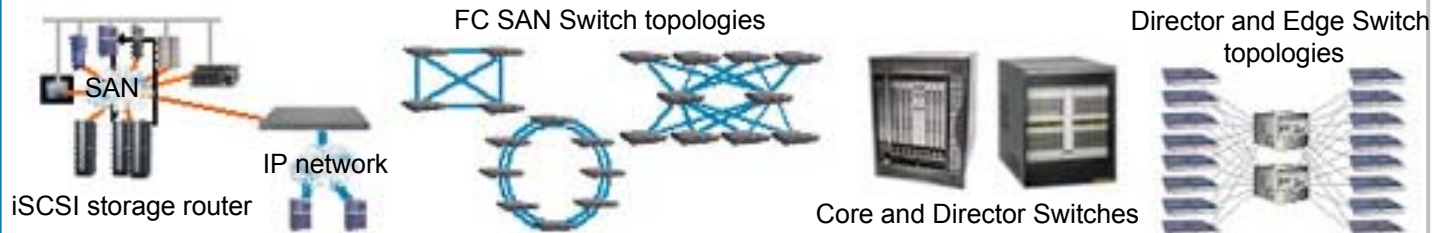
Continuous Access Storage Appliance (CASA)



Storage arrays and NAS



Infrastructure



Tape and optical storage



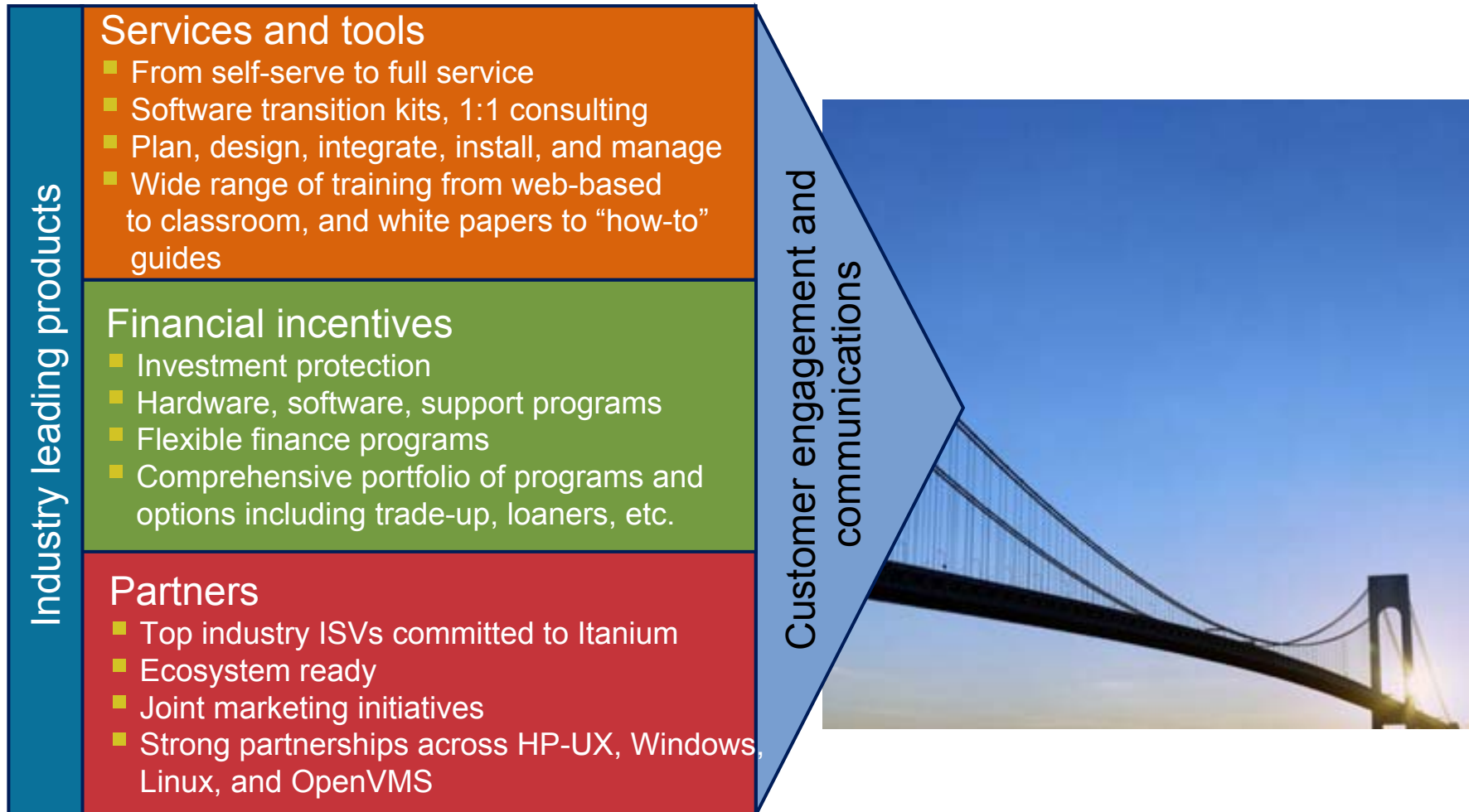
Services and solutions

A man with dark hair, wearing a black and white striped long-sleeved shirt, is looking up with a slight smile. A hand in a blue long-sleeved shirt is reaching down towards him from the left. The background is blurred, suggesting an outdoor setting.

Making it easy

HP Evolution Solution packages:

Providing you the framework to get to Itanium® based systems



Availability of applications on Itanium® systems is racing ahead!

HP-UX:

- Technical computing ISVs adopting HP Integrity servers for high performance
- Leading commercial ISVs leveraging scalability, price/performance
- Broader ISV community taking advantage of special HP programs

- 80+ high performance technical computing ISVs committed
- 90%+ of top commercial ISVs committed
- Leading databases by Q3 or earlier
- Strong BI, ERP, NSP, infrastructure portfolios
- Itanium Power partner program
- Customer focus program

Windows:

- Leading commercial ISVs taking advantage of the power of Itanium to extend further into the data center
- Wider ISV community leveraging HP programs

- SQL and SAP seed programs with Intel
- Top partners on board
- DSPP leveraged for broad adoption

Linux:

- ISVs in key markets taking advantage of Itanium's power

- Key market segments include high performance technical computing, databases, application development

OpenVMS:

- Focus on key vertical industries
- Recompile, relink, qualify and go
- New applications coming on board

- Over 400 applications committed for Itanium
- More committing by the week
- Selected partners now porting in HP's labs

ISVs are finding transition effort moves quickly

"After *initial ports* proved the feasibility of *rapid product availability*, we decided to accelerate our support of the i2 SCM suite on the Itanium® 2-based platform. We are committed to offering customers the best possible value when it comes to deploying our solutions and the price/performance of Itanium 2-based HP systems can help meet that criterion. HP Integrity Superdome servers running Windows and HP-UX 11i v2 can provide our customers with increased flexibility, reduced cost of ownership, and a straightforward path to the future."



Pallab Chatterjee

President, Solutions Operations
i2 Technologies

"HP-UX 11i and the Itanium Processor Family architecture are important to HP and TIBCO customers requiring messaging software that delivers true real-time publish/subscribe and request/reply messaging. We *ported* our TIBCO Rendezvous messaging software from HP-UX on PA-RISC to HP-UX 11i v2 on the Itanium architecture *quickly*."



Gautham Viswanatha

VP Product Marketing
TIBCO Software, Inc.

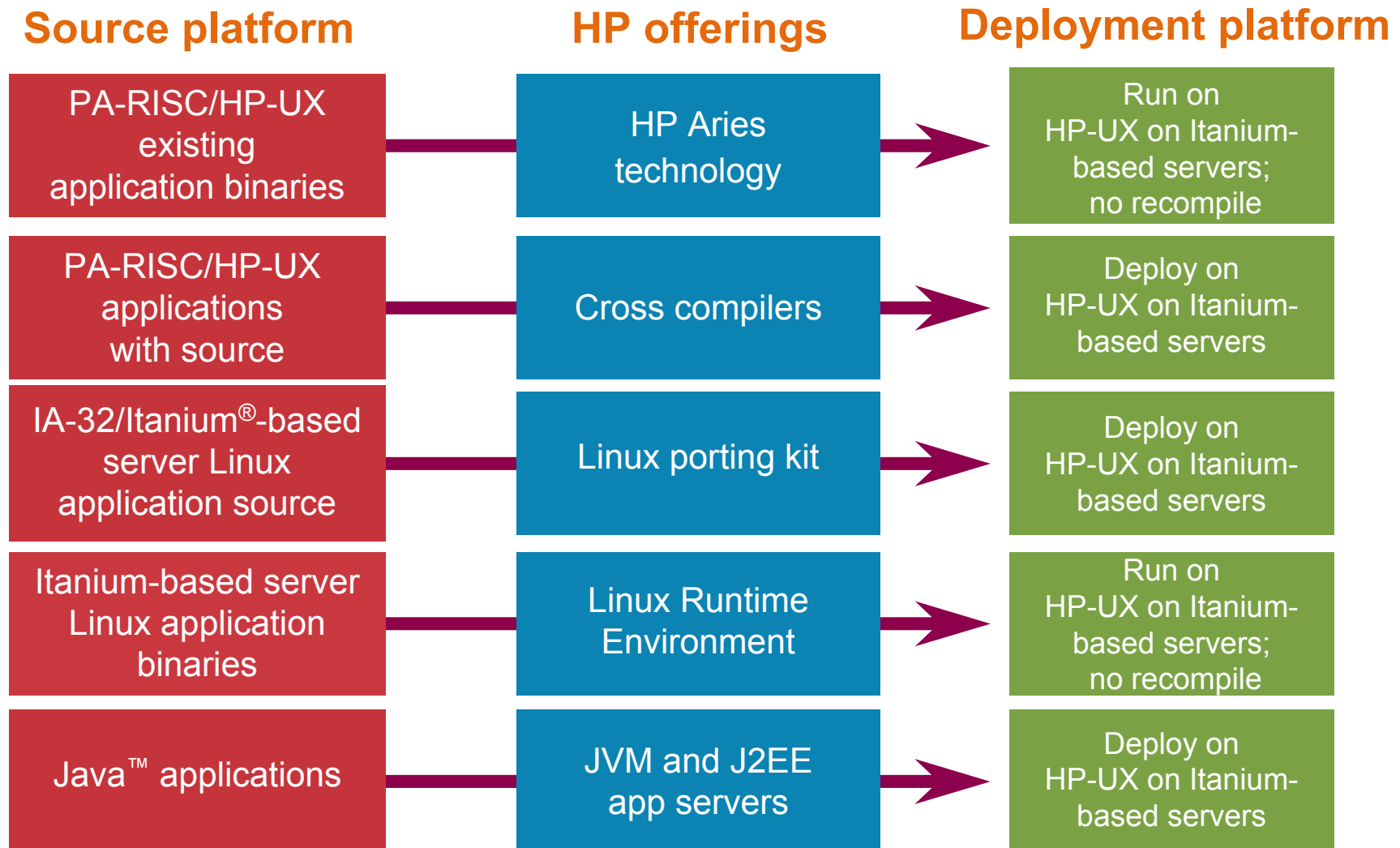
"724 Solutions is able to *easily transition* our X-treme Mobility Gateway (XMG) software to HP Itanium 2-based systems running HP-UX 11i v2. With the EPIC architecture and exceptional power of the Itanium 2 processor, our XMG software will be able to take advantage of wider system bandwidth design and better parallel processing capability."



Marc Printz

XMG Product Manager

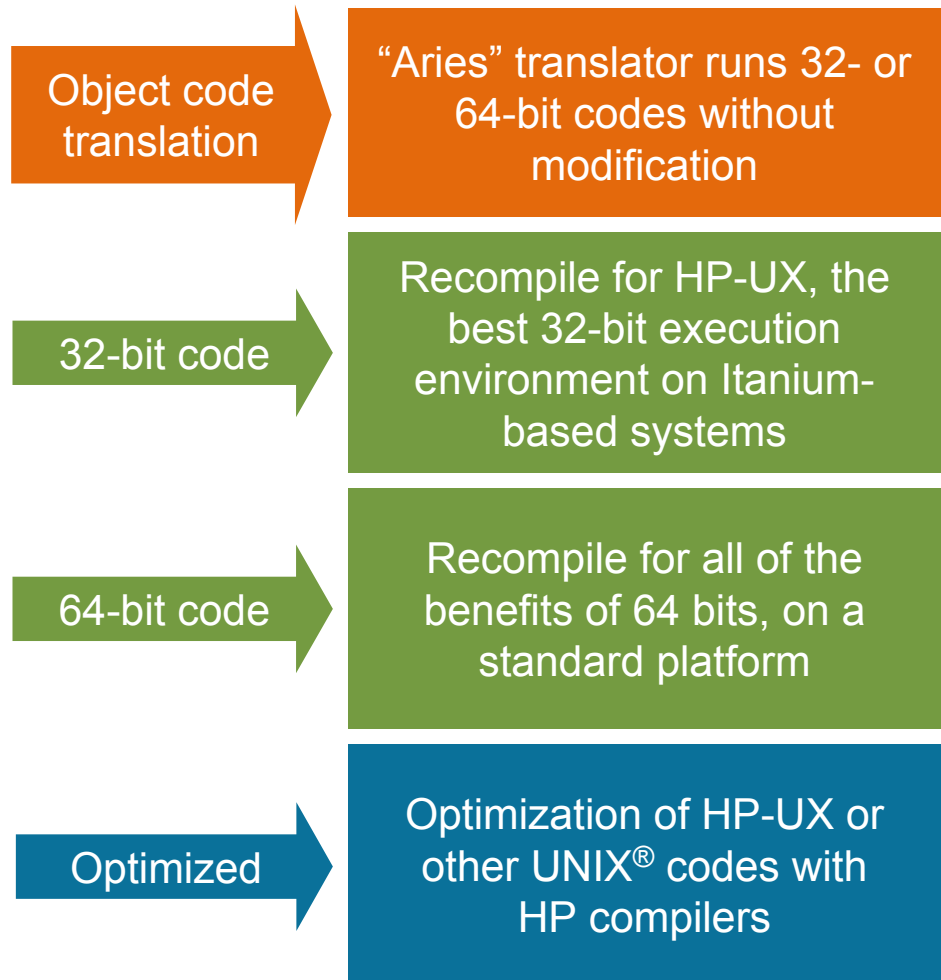
Seamless path to Itanium®-based servers



HP-UX 11i compatibility

Key benefits

- Binary compatibility through Aries dynamic code translation technology—no recompilation
- Source code compatibility from PA-RISC to Intel® Itanium® Processor Family—single source code stream
- Data compatibility between PA-RISC and Itanium Processor Family—no data conversions



HP-UX application transition options

- **Qualification:** Running same executable on two different platforms; Itanium[®] requires Aries translator
 - Single executable – less support
 - New features are not needed
 - Fastest path for transition
- **Porting:** Creating new executable targeted for the new platform
 - Need the best performance
 - Need new 64-bit features
 - Application compiles/links during runtime
 - It is a library

Software transition and programmers kits

Collection of web based **tools** and **documentation** that help developers to port/transition their software (C/C++, Fortran, Cobol, Scripts, and Makefiles)

<http://devresource.hp.com/STK>

Software transition kits

- HP-UX to another
- Linux to HP-UX
- Tru64 UNIX® to HP-UX (coming in Q303)

Programmers kits

- Linux programmers tool kit
- Reference platform for Windows application development with choice of tools, libraries, compilers from Microsoft and Intel

STK flavors and supported platforms

Supported platform	Impact database		
	HP-UX to HP-UX	Linux to HP-UX	Tru64 UNIX® to HP-UX
	Any 11.23		
HP-UX – PA (HP-UX 10.20)			
HP-UX – PA (HP-UX 11.x)	STK 1.9	STKL 1.2	STKT
HP-UX – (PA & IA) 11.22		STKL 1.2	
HP-UX – (PA & IA) 11.23	STK 1.9		STKT
Debian Linux (PA)		STKL 1.2	
Red Hat Linux (IPF)		STKL 1.2	
Tru64 UNIX®			STKT

Impact database means transition is supported between these platforms and **Supported platform** means that STK can be installed on these platforms.

Aries dynamic code translation

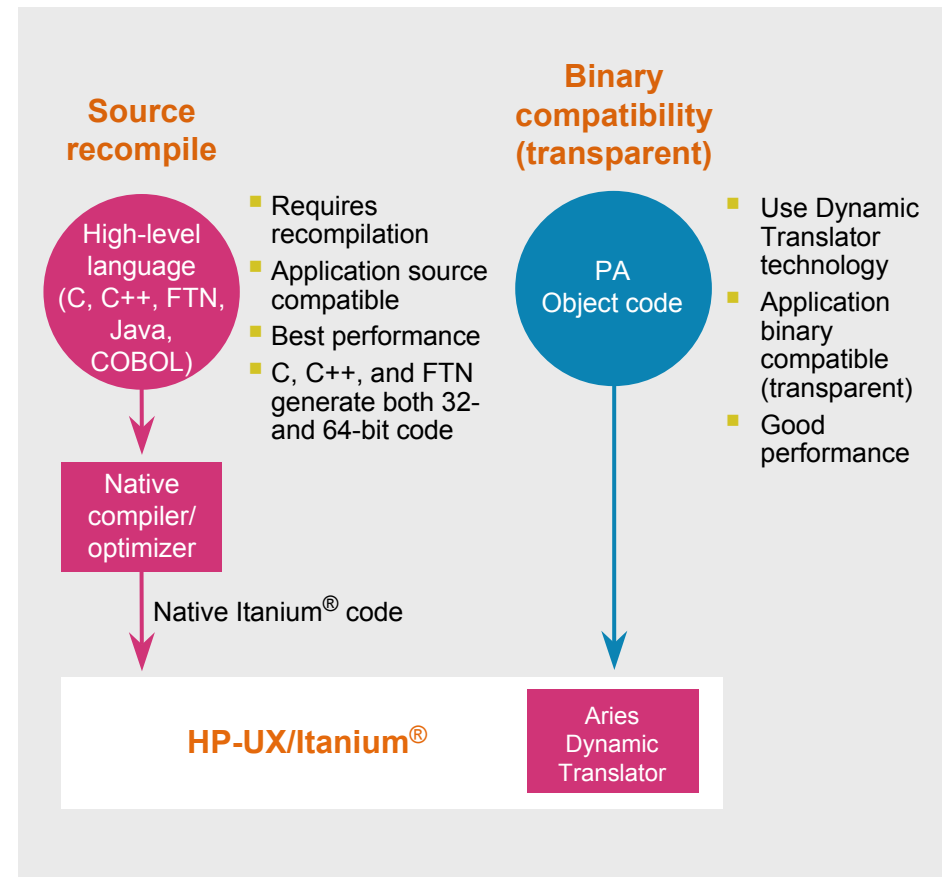
Allows existing PA-RISC HP-UX binaries to transparently run on Itanium® without recompilation

Features

- Supports applications from 11.0, 11i
- Supports most 10.20 applications
- Supports 32-bit and 64-bit applications
- Programs run on Aries produce the same result as programs run on PA hardware
- Aries designed as a transition aid or for situations where it is not possible to create a native Itanium® binary
- Performance under Aries depends on application characteristics

Benefits

- Good performance with commercial applications (near native in some cases)
- Investment protection
- Enables customers to deploy on Itanium® quickly by reducing risk and spreading out transition costs over time



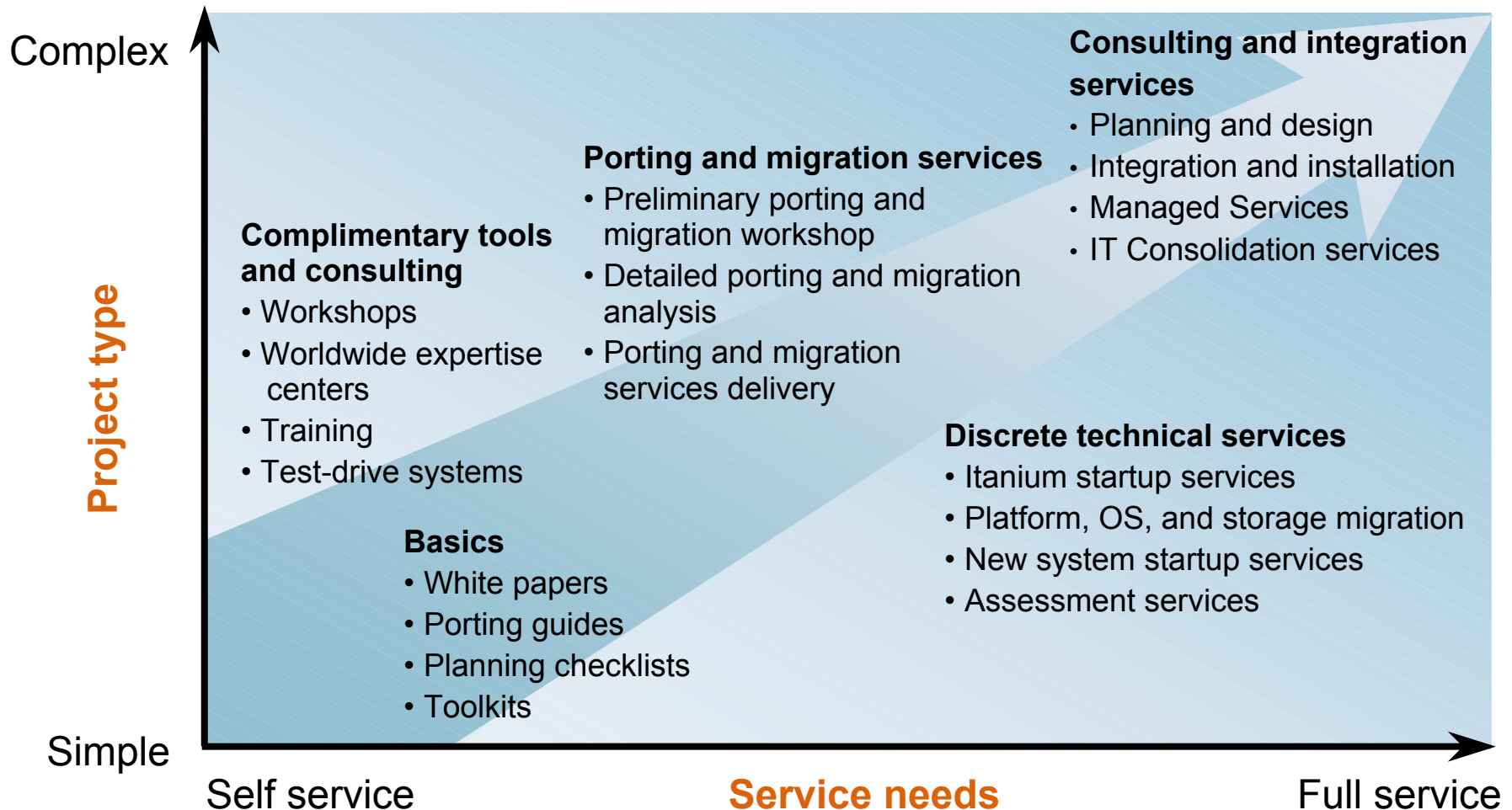
PA-RISC application performance with Aries

- PA-RISC applications which can expect **good** performance:
 - Applications which make extensive use of OS services
 - Applications with intensive disk I/O
 - Interactive applications
- Applications which can expect **acceptable** performance:
 - Compute intensive applications
 - Floating point applications
 - Applications with poor code locality
 - Aries executes code sequentially
 - Many code blocks will need to be translated/executed

Recompilation recommended

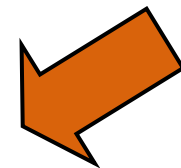
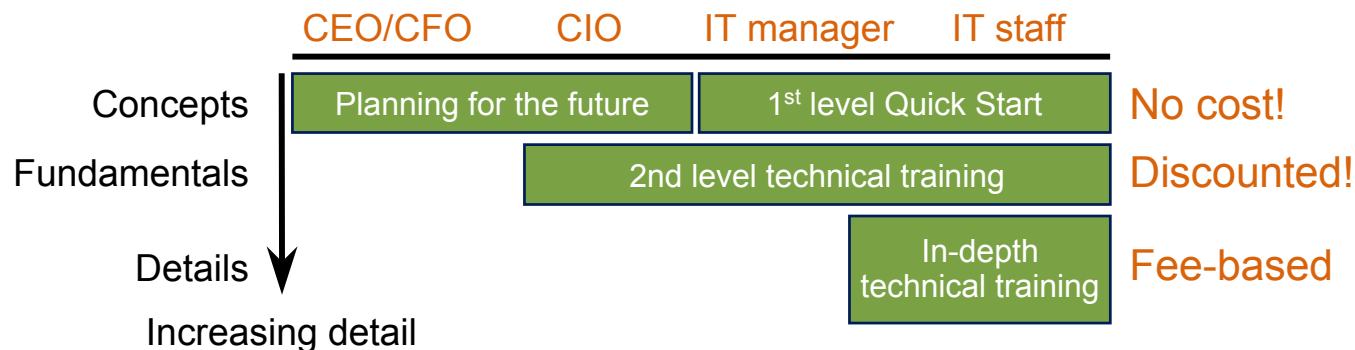
Services and tools

Providing service and support as you define it



Comprehensive training available

- Evolution planning and execution training
 - “OS agnostic” evolution planning frameworks (supported by white papers, best practices, etc)
 - Detailed planning and “how-to” guides
 - 1:1 consulting sessions between customers and HP specialists
- Acclimation training
 - Customized HP-UX Quick Start web on-demand classes for MPE and Tru64 UNIX® customers
 - “Side-by-side” reference guides
- Flexible format – web on-demand, classroom, white papers

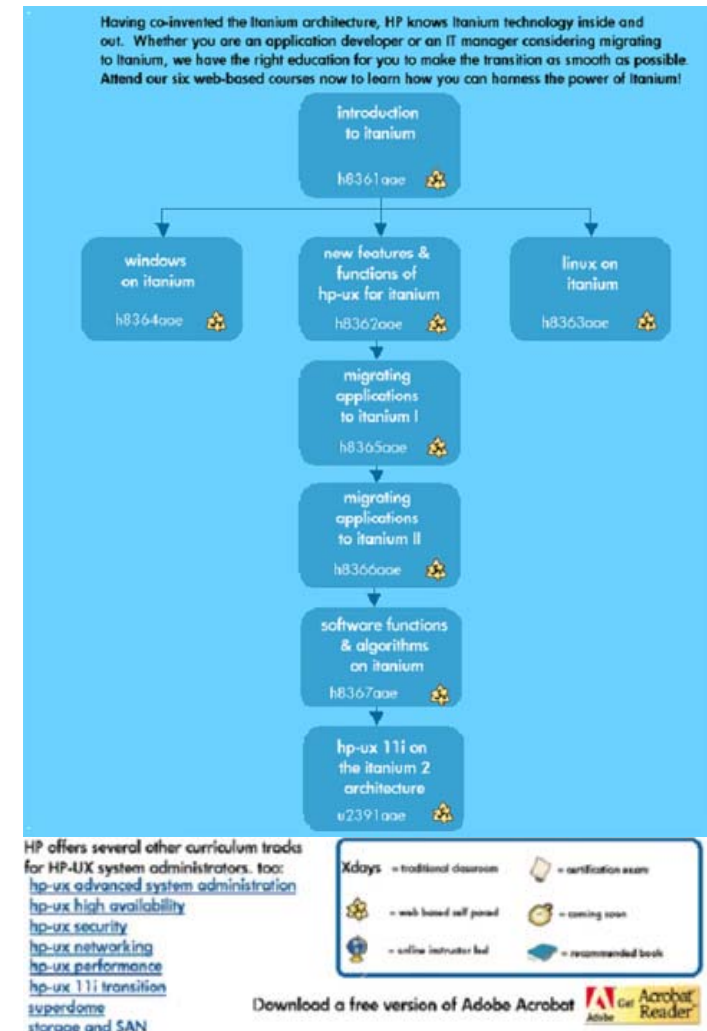


E-coupons
for certain
“getting
started”
classes

Keeping you informed and educated

- Having co-invented Itanium® technology, HP knows Itanium inside and out
- Comprehensive Intel® Itanium training curriculum
 - Introduction to Itanium
 - New features and functions of HP-UX on Itanium
 - Windows® on Itanium
 - Linux on Itanium
 - Migrating applications to Itanium 2
 - Software functions and algorithms on Itanium
 - HP-UX 11i on the Itanium 2 architecture
- Training:
www.education.hp.com/itanium.htm

Itanium administrators



HP/Intel Itanium® solution centers

A fast track to production

- Solution centers located in North America, Europe and Asia
- Demonstrate viability of Itanium-based multi-OS solutions
- 'Proof of concepts' for customer, ISV software validation and SI support
- Dedicated HP and Intel expertise and resources
- Delivers customer benefits
 - Lower transition cost
 - Faster time to implement



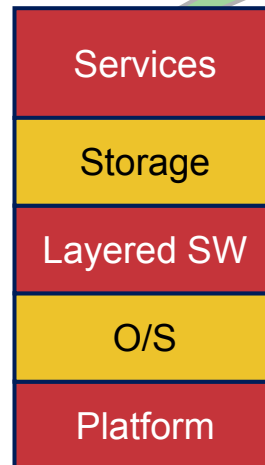
Financial incentives— Greater overall value

Programs and Incentives

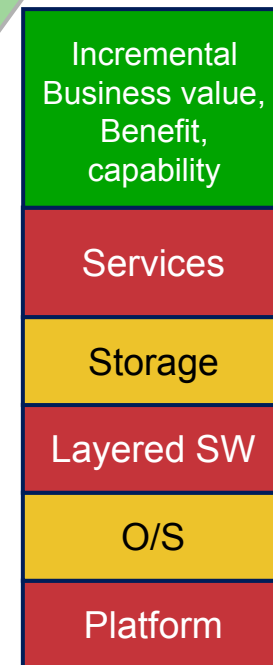
- Servers
- Software
- Storage
- Financing
- Support

Providing investment protection
and helping to financially ease
the transition

Reinvest
value



Current environment



Itanium® Processor Family environment

PRESENT → FUTURE



SOLUTIONS THAT INVOLVE AN ADAPTIVE INFRASTRUCTURE



ADAPTIVE INFRASTRUCTURE



RESOURCES / APPROACH

WHO

HOW

WHAT

WHEN

Next steps

Where to go for more information

- Visit the website: <http://www.hp.com/go/evolve>
 - Centralized resource for programs, white papers, tools, web-based training, etc.
 - Select your present platform (AlphaServer, HP 9000, HP e3000)
- Sign up for “Customer Times” newsletter for quarterly updates
- Contact your sales rep or channel partner



Proven experience – proven results



“In addition to the performance benefits of moving to 64-bit we can also save money. This is the least costly migration we have ever done and our maintenance and training costs will be reduced in the longer term because we’ve chosen an industry standard platform”

Noel Joinson – Information Engineer – 123 Multimedia

“Ceridian’s migration from the HP e3000 to the HP 9000 was a success!... the HP people were great and they built a solid team that stuck it out until the project was completed.”

David Goodman - Senior Vice President of Product Development - Ceridian

“From start to finish, HP was responsive and in tune with our needs making our migration to SAP smooth and expeditious.”

Tony Yee – Systems Superintendent - Pacifica Papers, Inc.

“It was a fairly easy decision to transition to HP-UX ...HP has always provided us with excellent service and in many cases has gone ‘above and beyond’ to see us be successful.”

Larry Bolinger – Project Leader - Fleet Services Division - northAmerican Logistics

“The HP migration group – with its programs and presentations, has also been a tremendous resource. HP is clearly committed to ensuring the success of its customers as they make the transition.”

Clark Farabaugh, Jr. - Assistant Director of IT - Virginia International Terminals

CERIDIAN

Virginia
International
Terminals, Inc.



Great reasons to work with HP for business systems evolution

Economic value



- Focused programs to ease transitions
- TCO = take cost out!
- Select what's best for you: open architecture approach across multiple operating systems
- Point products, integrated solutions and services

Experience



- Frequent and open customer communications
- Clear roadmaps and commitments
- Over 30 years' experience in successful transitions
- Safest and cleanest path forwards
- Complete transition ecosystems

Evolution options



- Move at your own pace – start by *planning*
- Product portfolio breadth (UNIX®, Linux, Windows, OpenVMS)
- Superior total solution for *integration, consolidation, transition, re-architect* scenarios (systems, software, services, support)
- Gain better performance and more reliability
- HP understands Itanium better than anyone



Interex, Encompass and HP bring you a powerful new HP World.

