Planning and Budgeting for Migrations

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Agenda

- Strategic thinking
- Hardware
- Databases
- Tools and Compilers
- Migration Tools
- Application Facelifts
- Timeline
- Resources
- Budget Rollup
- Q&A

Strategic Thinking

Planning and Budgeting Challenges

- The magnitude of the project
  - Planning, Budgeting, Execution
  - Timeline, Resources
- Diverse HP e3000 Environments
  - So many technologies
- Many applications / modules
  - Replace, retire, rewrite, or migrate
- New resource skill sets and retooling

Where to Begin

- Making a plan
  - IT needs analysis
  - Technology assessments
  - Application assessments
  - Migration research
- Making a budget
- Acquiring tools technology
- Getting started

IT Needs Analysis

- Step back and take a strategic look at your IT
  - Do your applications still meet your business needs?
    - Which ones do / don't
    - What percentage of the need is met?
  - Are there applications that are highly specialized to the business?
    - Can they be replaced?
    - What percentage cannot be replaced?
  - How does executive management feel about IT / the core systems?
  - Is there competition to IT direction?

Technology Inventory

- Which technologies are currently being used?
  - 3GL Compilers (Cobol, Fortran, Pascal, RPG, Basic, etc.)
  - 4GL Compilers (Speedware, Transact, Cognos, Protos, etc.)
  - Reporting Tools (EasyReporter, Quiz, Data Express, etc.)
  - Database Enhancement Products (Omnidex, Superdex, Adager, DB General, etc.)
  - Data Extraction Tools (Supertool, etc.)
  - OS Enhancement Tools (Spooler products, Job Management products, Editors, etc.)

Applications Inventory

- Meets the needs of the business (%)
- Size of application (# of)
  - Screens, reports, mass transactions
  - Batch processing
- Dependence on
  - 3rd party technology
  - OS Commands / intrinsics
  - Database-specific functionality
- Strategic direction
  - Replace
  - Migrate
  - Re-write
  - Retire

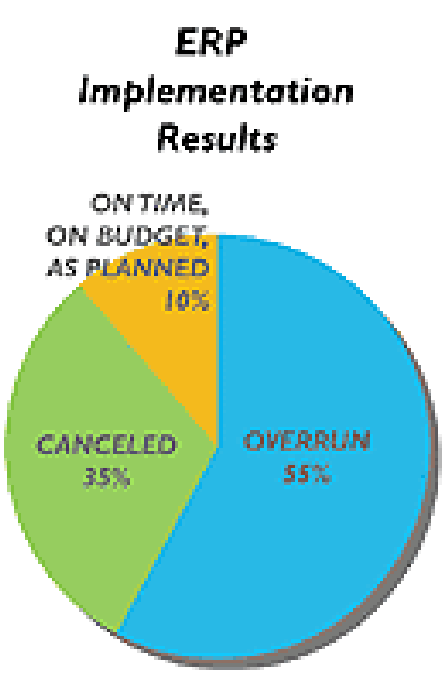
Salvaging vs. Replacing Technology

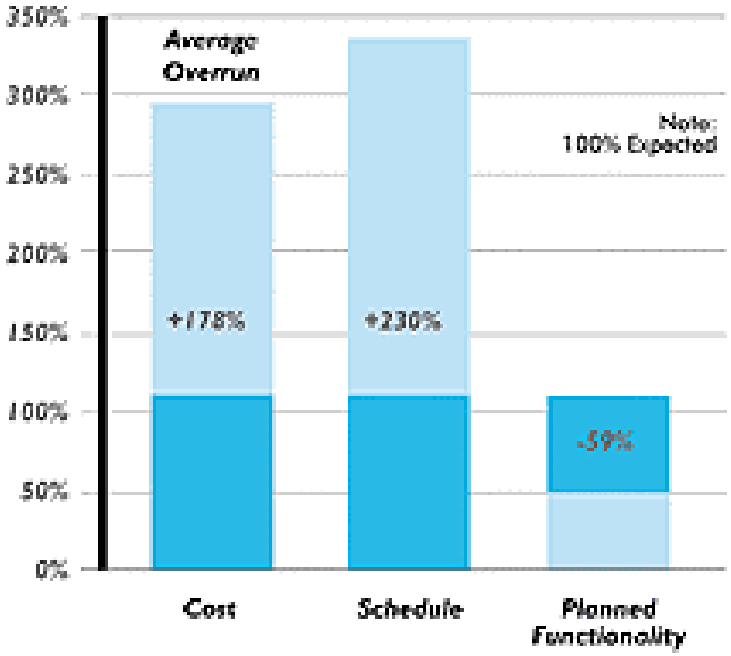
- Which technologies / products will be salvaged / replaced?
- Most likely scenario:
  - Salvage applications
    - 3GL / 4GL Compilers
    - Database enhancement products
  - Replace many of the tools
    - Reporting tools
    - Data Extraction tools
    - OS Enhancement tools

Salvaging vs. Replacing Applications

- What about replacing applications?
  - Moving to packaged applications
  - "If I'm being forced off the HPe3000, why not just evaluate replacing my entire IT environment."
    - It's the applications that run my business, not the hardware.
- Understand the Full Cost!
  - Do not over-estimate what you will get.

The Full Cost of Replacement





Source: Standish Group

The Full Cost of Replacement

- Your current applications have been tuned to how you do business, not others.
- Best-of-breed comes with a price
  - It doesn't reflect the practices that work for you and that differentiate your business
  - customize too much and you can't upgrade
- Packaged applications do not take fewer resources to maintain and will most likely not save you money.

Moving to Packaged Applications…

- Accept Reality
  - You will lose functionality you currently have!
  - New functionality offered in the package requires changes to how you do business day-to-day
- Careful planning
  - Know which modules won't exist
  - Evaluate what still needs to be brought forward and how it can be integrated
  - Migration may still need to be done
  - Plan the evolution of legacy modules

Hardware

Replacing the Hardware

- Unix or Windows?
- HP or Non-HP?
- What is supported best by my other vendors?
- HP-UX is the preferred path by most
  - Most widely supported migration path by vendor community
  - Very strong incentives from HP

Replacing the Hardware

- Conversion Kits
  - A&N Class Conversion Kits (free)
  - Conversion kits for other HP e3000 models available
  - Not always the answer
    - Migration is not done on the flick of a switch
    - HP offering 6-month HP-UX loaner boxes for migrations
      - Probably not enough time for most

Replacing the Hardware

- HP-UX
  - How many servers?
  - Storage solution?
  - High Availability?
  - Cheaper hardware, but watch for 3rd party software licensing costs if thinking big
- Windows
  - Reliability and robustness?
  - How many servers?
  - Cheaper, but how easy is migration path?
- Linux
  - Ready for prime-time? (Confidence?)
  - Support?
  - Not the most popular option today.

Costs of Hardware

- Conversion Kits: 60-70% off HP9000 price
- HP 9000 Servers
  - Low: $15K - $60K
  - Low/Mid: $50K - $100K+
  - Med: $100K - $1M
  - High: $1M+
- Windows Net Servers
  - $2K, $4K, $8.5K per server
  - Windows server licensing can get expensive
  - Total: $10K - $20K
- Linux
  - Same as Net Servers for hardware
  - OS licensing would be less
  - HP offers secure version: $3K

Database

Replacing the Database

- Image was pretty much bundled into the HP e3000 and an obvious choice
- Hardware may be cheaper, but a database purchase is required
- Most are considering Oracle, SQL Server, or HP Eloquence

Replacing the Database

- HP Eloquence: Image clone
  - Low-cost
  - Sold by HP, supported by Marxmeier Software
- PostgreSQL is another low-cost reliable option

Replacing the Database

- What about Omnidex and Superdex?
  - Relational Databases have strong data querying capabilities
    - However, most of the commonly-used Omnidex functionality doesn't exist. (keyword retrieval)
  - Omnidex has a migration path to Omni-Access
    - API compatibility libraries exist, reducing need to re-write queries.
  - Superdex – best option is migration to Omni-Access.

Costs of Databases

- Oracle: ~$20K per processor
  - Could be as high as $40K per processor
  - HP and ISVs can help to get a better price
- SQL Server: $10K - $20K per server
- HP Eloquence: $7K (unlimited users)
  - Easiest port, some risk
- Informix (per server)
  - Tier 1: $3K
  - Tier 2: $6.6K
  - Tier 3: $18K
  - Tier 4: $23K

Tools and Compilers

Replacing Tools and Compilers

- 4GLs
  - Speedware
    - Available on HP-UX, Windows, AIX, Solaris
    - Web or Windows GUI enablement
  - Cognos
    - Powerhouse available on other operating systems. (some code changes required)
    - Web or Windows GUI enablement
  - Transact
    - Speedware is offering migration solutions for Transact customers
      - Conversion tool to Speedware (and then to other platforms)
      - Web or Windows GUI enablement

Replacing Tools and Compilers

- Cobol
  - AcuCobol: platform portable byte code
  - MicroFocus: per platform (dev), many deployment model options, multi-platform support (interpretive), native object code possible.
  - Fujitsu: generates native PA-RISC code, no run-time fees.
  - PerCobol (going to Java)
- Fortran
  - Fortran compilers on HP-UX
  - Fortran to C converter exists
- Pascal
  - Pascal is available on HP-UX and can be ported with relative ease.
  - Unknown future (no native support on IA-64)
  - Converter from Pascal to C exists

Replacing Tools and Compilers

- RPG
  - Converter from RPG to Cobol
  - RPG on HP-UX (exists, but still being enhanced)
- Business Basic
  - Visual Basic may be an option for some.
- SPL
  - Currently being ported to HP-UX

Costs of Tools and Compilers

- 4GLs
  - License transfer fees, CPU-based pricing.
  - Expect between $10K - $200K per server, depending on 4GL and size of server.
  - SPW offering 50% off license transfer fees.
- 3GLs
  - AcuCobol: per developer $2,500, $150 for 1st user and $23 per user on run-time
  - MicroFocus: $3000 per developer. $187 per user (run-time)
  - Fujitsu: $3000 per dev, includes 1st yr support, $500/yr support, no run-time fees.

3rd Party Technology Replacements

- Reporting tools
- Database manipulation tools
  - Adager and DB General
  - No longer needed with relational databases
- Data extraction tools
  - Supertool
  - Replaced with more modern ETL tools

Migration Tools

Migration Tools

- 3GLs – 4 HP-validated migration solutions
  - Neartek
    - Migration tools, packaged and sold as a toolset.
  - Denkart
    - ASP model of migration, charged by number of lines of code, 95% migrated
    - Many 3GL options
  - Transoft
    - Migration toolset, sold as a consultative solution.
  - Sungard Bi-Tech
    - Migration toolset, sold with consulting, residual run-time libraries for Image and OS calls

Migration Tools

- 4GLs
  - Speedware
    - 100% portable to any Speedware supported platform, no code changes
    - Built-in database migration tools
    - No charge for migration features
  - Transact
    - Speedware migration toolset
    - Free with migration services
- Database migration tools
  - Quest – Bridgeware, Netbase, Benchmark Factory, Data Factory
    - Data porting, mirroring, shadowing, load testing, etc.
  - Speedware – Database Migrator

Application Facelifts

Application Facelifts

- Either as part of a migration effort or post-migration, consider enhancing the visual interface of the application.
  - Putting either a Web or Windows interface on top of the application can dramatically improve the life of an application

Application Facelifts

- Cobol
  - EdWin (Web / GUI)
  - AcuCobol (offers GUI)
  - ScreenJet (GUI)
  - Robust (Web and Windows)
  - LegacyJ – PerCobol
  - Others (shop around)
- Speedware / Transact
  - Visual Speedware (VB GUI)
  - Speedware Autobahn (Web)
- Cognos
  - Axiant

Migration Facelift Costs

- Resources or Technology
  - Some solutions require re-engineering, others are more plug-and-play.
  - Cost is either in time and resources or in technology
  - Expect to pay 25% - 50% over the application migration costs

Timeline

Establishing a Timeline

- Fast, cheap, or good – Pick any 2
- Factors that determine timeline
  - Deadline dates
  - Internal resources vs. outsourcing
  - Cost restrictions
  - Technology complexities
  - Diversity of environment
  - Straight migration vs. enhancements
  - Gradual vs. Big Bang
  - Testing
  - Concurrent / on-going projects
- Different migration tools have different approaches and timelines

Estimating Time

- Time components
  - Planning and Analysis
  - Application migration
    - Estimated by migration methods chosen
  - Database migrations
  - Resource training
  - Hardware and technology acquisition
  - Testing

Estimating Time

- Migration time per technology *(estimates are highly dependent on complexity and amount of code)*
  - Cobol / VPlus: 6 - 60 mths
  - Pascal: 6 - 24 mths
  - RPG: 6 - 24 mths
  - Fortran: 6 - 24 mths
  - Speedware: 3-9 mths
  - Transact: 6 - 24 mths
  - Cognos: 3 - 12 mths

Resources

In-house vs. Outsourcing

- Do you have enough / any in-house resources?
- What to outsource:
  - Planning and Analysis (let experienced people help you)
  - Project Management (have experienced resources steer you around obstacles and potential pitfalls)
  - Application and Database Migrations (some or all)

In-house vs. Outsourcing

- What to do in-house:
  - Application enhancements (opportune time to add an enhancement or two)
  - Component re-writes (if replacing older modules / technology)
  - Migration Testing (test as you or someone else migrates)
  - Application and Database Migrations (if you have the staff to do some or lots of the work, especially critical components)

Estimating Resources

- Migration resources
  - How many resources are available to aid in migrations?
  - Determine time split between existing / on-going projects and migrations
  - Work backwards – pre-assign things you want to do in-house
  - Assign responsibilities, roles, and task owners up-front

Estimating Resources

- Determine outsourcing requirements
  - What will be done externally
  - Look at the various migration options and associated costs
- New staffing requirements
  - New tasks/jobs that were not really needed with the HP e3000 platform
    - More maintenance and administration is required with UNIX and relational databases
  - System Administrator(s)
  - Database Administrator(s)
- Packaged applications
  - These take as many people to maintain as home-grown systems.

Budget Rollup

Budgeting Technology

- Hardware
  - Low: $15K - $100K
  - Mid: $100K - $1M
  - High: $1M+
- Databases
  - Market leading: $30K per server
  - Mid-tier: $10K - $20K per server
  - Cheap: $5-10K per server
- Tools and Compilers
  - 4GLs: $10K - $200K per server
  - 3GLs: $???
- Reporting tools
  - $10K - $100K

Budgeting Technology

- Application Facelifts
  - $20K - $100K plus labor (if any)

Budgeting Migration

- Cobol Migration tools
  - $30K for technology alone
  - $10K (1M loc) + time for ASP model
  - $100K - $1M+ for outsourcing
  - Possible residual run-times / annual support fees $5K/yr
- Speedware migrations
  - 3-9 man-months of in-house work
  - $100K - $250K completely outsourced
- Transact migrations
  - $100K to $500K mixed in-house and outsourcing

Budgeting Migration

- Database migrations
  - $50K to $200K for database migration and load testing tools
- Application enhancements
  - Time and resources
  - Consider a phased approach (Phase 1 migration & rollout, Phase 2 enhancements)

Totaling the Costs

- New Hardware
- New Databases
- 3GL/4GL Software Licensing
- Replacement Tools / Technologies
- Migration Tools / Technology
- Migration Resources
  - In-house
  - Outsourcing
- New Hires
- Application Enhancements / Facelifts