

Migration Techniques & Strategies

Dilemma of Change

- Hardware Cost
- Software Cost
- Re-training of:
 - Systems people
 - Users
- Business Impact Cost
- Cycle time to system implementation

Options for Platform Change

- Stay put ...Do nothing
- Purchase new software ...Packages
- Write new software ...Development
- Migrate existing software

Stay Put

- Upside
 - Requires nothing to be done
 - Definitely ON Budget and On Time
- Downside
 - Maintenance becomes more expensive
 - Hardware & Operating system support
 - no longer available
 - No further OS enhancements
 - Inability to interface effectively to new technology
 - Putting off the inevitable

Purchase new software Packages

- Requires extensive research in determining if package satisfies business requirements
- How much (\$\$\$ and TIME) needed for any customization
- Licensing cost
- IS and User Training
- New packages for all current systems
 - High Risk of being over budget and late

Write new software Development

- Need to develop detail functional and programming specifications
- Need to find qualified technical people
- Size of project team may be unmanageable
- Probably most expensive and time consuming
- High Risk of being over budget and late

Migration of existing Software

- Locate and use automated tools
- least difficult
 - No new functions
 - No changes on logic
 - No enhancements
 - No changes to user procedures
 - No changes to other application interfaces
 - Business applications are positioned to interface with new technology

Migration of existing Software (continued)

- Best choice for on budget and on time
 - Usually lower Hardware costs
 - Usually lower software costs
 - Positioned for emerging technology
 - Minimal retraining of Users

The Conversion Process

- The Analysis phase
- The Pilot phase
- The Conversion phase
- The Implementation phase

Analysis Phase

- Develop a complete Inventory, by type of the items to be converted
- Match source to object
 - Identify when programs run
 - Daily; Weekly; Monthly; Quarterly; Yearly; Upon Request
 - Determine which programs you can discard and remove from the inventory list

Analysis Phase (continued)

- **Project Inventory Report**

<u>Program#</u>	<u>Language</u>	<u>#lines</u>	<u>Freq</u>	<u>Type</u>	<u>comments</u>
SAL10	Cobol	1000	Daily	Online	testing
SAL15	Cobol	2000	Mth	Batch	completed
SAL30	Cobol	2350	Mth	Batch	completed
SAL35	Cobol	800	Req	Batch	converted
S1000	JCL	350	Daily	Batch	converted
S1010	JCL	500	Mth	Batch	converted
datcon	Assembler	45	Daily	Daily	completed

Analysis Phase (continued)

- Investigate and select conversion tools
 - COBOL to: Accord COBOL, Micro Focus COBOL, OS400 COBOL, etc
 - Forms conversion
 - Job Control Language conversion
 - File overrides
 - Control cards
 - Sorts

Analysis Phase (continued)

- Investigate and, if necessary, select testing tool
- Establish training requirements
 - hardware and software
- Establish conversion standards
 - Naming conventions
 - programs
 - files
 - Parameter usage

Analysis Phase (continued)

- Determine handling of data migration
 - How are we going to move the data?
 - FTP - Do we have large enough bandwidth?
 - Tape - Do we have compatibility?
 - On unloads, develop record counts and if necessary, depending on data sensitivity, hash totals
 - Record pre and post file counts and hash totals
 - Create programs to be able to repeat unload and load processes

Analysis Phase (continued)

- Character set concerns
 - ASCII to ASCII
 - Straight over. No translation of characters necessary, sequencing remains the same
 - ASCII to EBCDIC
 - Requires translation of character set
 - Packed fields requires special translation table
 - Sequencing different between ASCII and EBCDIC

Analysis Phase (continued)

- Establish procedure for tracking and reporting of program change control
- Identify programs to be converted for pilot phase

Pilot Phase

- Convert forms, programs, & JCL that make up the pilot
- Test converted programs
 - Verify screens look the same
 - Verify program functionality is the same
 - Verify output data and reports are correct
- Develop conversion guide document
 - Includes step by step process of getting the programs converted and tested

Pilot Phase

(continued)

- Develop detailed project work plan
 - Include estimates & schedules of each task
- Determine how the inventory is to be packaged
 - If possible, group the programs for conversion
 - By sub-system
 - By definable groups within sub-system

Conversion phase

- Organize project team
 - Must have someone on team with knowledge of current applications
 - Staff must be very knowledgeable of source platform
 - Staff must have some working knowledge of target platform
 - Project team must be kept manageable in size (Swat team)
 - Team works together (everybody wins)

Conversion phase (continued)

- Project team (continued)
 - Must believe project due date is achievable
 - Project team must include member of user and management community
 - Management team member must have decision authorization
 - Must have regular scheduled status meetings
- Training for the team

Conversion phase (continued)

- Provide all necessary collateral of group to be converted to team members
 - Current source modules
 - programs, Forms, JCL
 - System and/or program flowcharts
 - Run documentation
 - Scripts for testing
 - Test data
 - Test results

Conversion phase (continued)

- Freeze programs in group
- Process
 - Convert the forms, programs, & JCL
 - Incorporate any manual changes that are required to get to clean compile
 - Changes should be made to pre converted code thus allowing re-conversion of module if any tool enhancements or tool fixes are needed.

Conversion phase (continued)

- Test converted programs
- Correct any system differences, preferably to pre-converted code.
- Update 'Issues log' with any new issues that come up.
- Repeat conversion process until all are complete
- Write weekly or bi-monthly 'Status Report'

Conversion phase (continued)

- **Migration Issue Log**

Log#	Date	Issue Description	Raised	Need	Assgr	Sta
	Raised		By	By		
xxx	xx/xx/x	xxxxxxxxxxxxxx	xxx	xx/xx/x	xxx	xx

Conversion phase (continued)

- **Project Status Report**

Migration Status Report
As of XX/XX/XX

Tasks accomplished this period

Tasks currently in process

Additional notes

Implementation phase

- Make sure there are no open items in the 'issue log'
- Process 'change control' items
 - Re-convert and test programs that have changed. *(May need to schedule this step more than once through life of project)*
 - Freeze entire inventory
 - Changes that are made from here on out need to be made to both sets of code

Implementation phase (continued)

- Determine implementation strategy
 - Phase in the applications gradually
 - Additional temporary interfaces may need to be written and moved into production
 - Some data files on the AS400 may have to be moved back to the mainframe
 - Big bang approach
 - Keep all programs on the shelf until system testing and parallel are completed, Cut over all at once

Implementation phase (continued)

- Create the production environment
- Update User Profiles
- Develop time table for unloading and loading of data
- Establish the data on new platform
- Assign Users to do some inquiries after data migrated to insure things look OK
- Pre implementation review
- Project sign-off