

MANAGEMENT TECHNOLOGY

MANTECH INTERNATIONAL CORPORATION

managing technology

for a changing world



SECURE SYSTEMS
& INFRASTRUCTURE



INFORMATION
TECHNOLOGY



SYSTEMS
ENGINEERING

ADSO/IDMS to DB2 Conversion Solutions

prepared for:

Lightyear Consulting

ManTech's Mission Statement

To provide clients with the skills and tools that facilitate the renovation of their application portfolios, allowing them to retain existing investments while redeploying to more modern hardware and software platforms.

ManTech Summary

GDF ↓ .15 HJK 1.25 ↑ RTY 1.23 IDP .05 ↑ BNM 12.0 ↑ XCV .20 ↑ QEW ↓ .65

Established in 1968

**4,000 Employees
Worldwide**

**120 U.S. Locations
30 International
Locations**

**Over \$600 Million
in Annual Revenues**

- **Publicly Traded Professional and Technical Services Firm**
- **Provides Technical, Engineering, Scientific, Analytical, Logistics, Software Development, Program Management, Publications, and Support Services**
- **Worldwide Professional and Technical Resources**
- **Corporate Headquarters in Fairfax, VA**
- **Current project backlog of over \$1 Billion**

ManTech Partnerships



IBM Premier Business Partner for Conversions

- Called upon by IBM to complete database/application conversions for their clients
- Direct connection to the IBM database labs

Oracle Business Alliance Partner



- Recognized by ORACLE for conversion/development expertise

Sun Business Alliance Partner



- Sun goes to partner for Legacy to Distributed platform migrations

Microsoft Certified Solution Provider

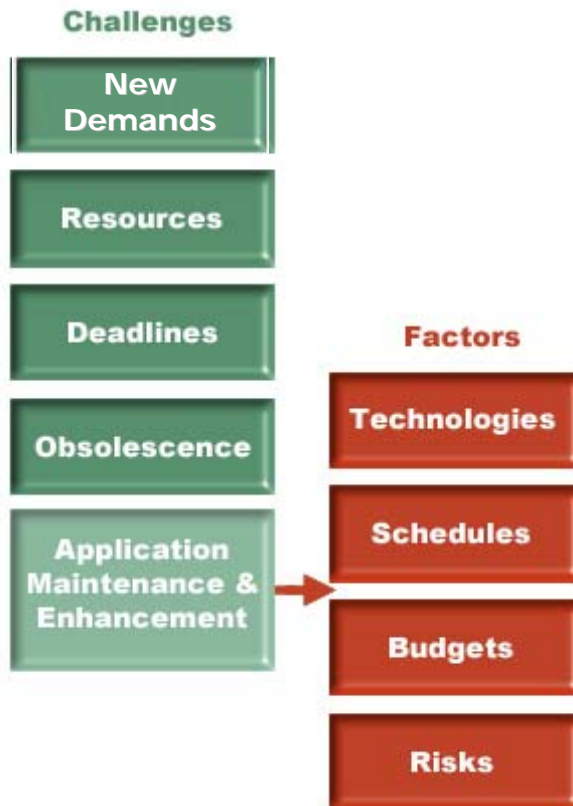


- Identified by Microsoft as a “go-to” business partner for conversions

Partial Customer List

- H&R Block
- Fidelity Investments
- **Univ. California, Berkeley**
- Merrill Lynch
- BC/BS of North Carolina
- Northwestern Mutual
- **City of Leiden**
- Publishers Clearing House
- **Johns Hopkins University**
- Aurora Health Care
- Congress Financial
- Southwestern Bell Corp
- **Mercedes Benz**
- JC Penney
- AT&T Canada
- Ohio School Employee Retirement Services
- DaimlerChrysler
- **Kredietbank**
- Allied Van Lines
- Brown Shoe
- United Health Care
- **Citibank**
- Department of Defense
- Paine Webber
- JP Morgan
- **Prudential**
- American Express
- State Street Bank

Application Maintenance & Enhancement



Legacy Application costs are rising **25% / year**

- ✓ Increase in maintenance and licensing fees
- ✓ Increase in application maintenance costs (added complexity)
- ✓ Increase resource support costs (lack of resources)
- ✓ Increase purchase of required add-on products

Partner with ManTech to:

Develop and Implement a Solutions Roadmap that accommodates Technical, Schedule and Budget concerns

- Enable a strategy that preserves legacy code investment, existing business logic/processes and accommodates new business needs
- Leverage proven processes and tools
 - Risk Avoidance
 - Proven expertise
 - Measurable ROI
 - Guaranteed Performance

"We were more than happy with ManTech involvement in the project (largest IT project deployed). We knew very early on in the process that their integrity was unquestionable and that feeling has only strengthened during the partnership."

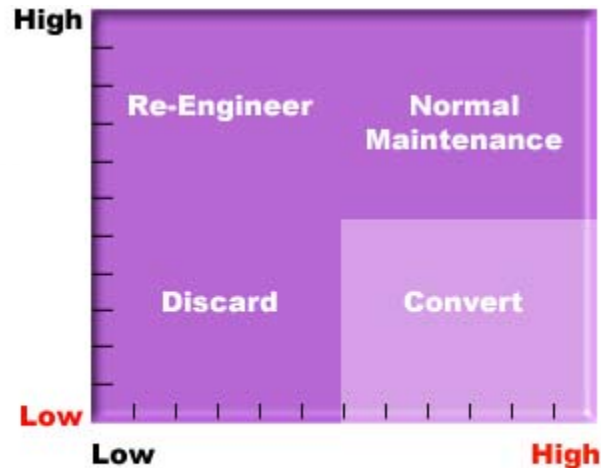
--Philippe Paquay, CIO
Kredietbank Luxembourg

"No one knows what the system requirements will be in five or ten years time. But, whatever they may be, we now have a flexible and scalable system delivered by MSSC that will grow, and allow us to meet any new challenges!"

--Paul Dubb, Head of IT, Leiden Local Authorities

The ratio of technical to business process soundness for an application determines the method of change.

Technology Utility –
Technology Capabilities or
scalabilities within
applications



Business Process Utility –
Business Process soundness or
validity

Conversion

- Best blend of cost, risk, time, and impact on business processes
- Provides 80% of the benefits of re-engineering at 20% of the cost

A proven roadmap for project success

← **Quality Assurance** →



- Budget and Acquisition Planning
- Quantify ROI / TCO
- Validate Technical Strategy
- Define Solutions Roadmap

- Define new relational model
- Incorporate Organization's standards
- Incorporate organization's prioritize
- Define and establish required modernized environment
- Select testing tools

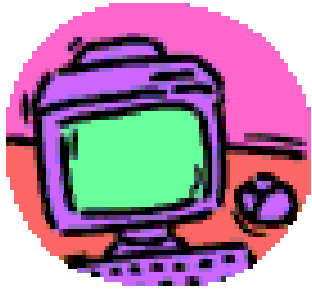
- Convert to new DB structure
- Make modifications based on input from team and results
- Reconvert until satisfied with results

- Convert code
- Compile code
- Convert and verify data
- Transfer code and data to test environment

- Implement converted code and test data
- Parallel Test
- Reconvert and retest as necessary

- Implement converted code and test data
- Acceptance Test
- Reconvert and retest as necessary

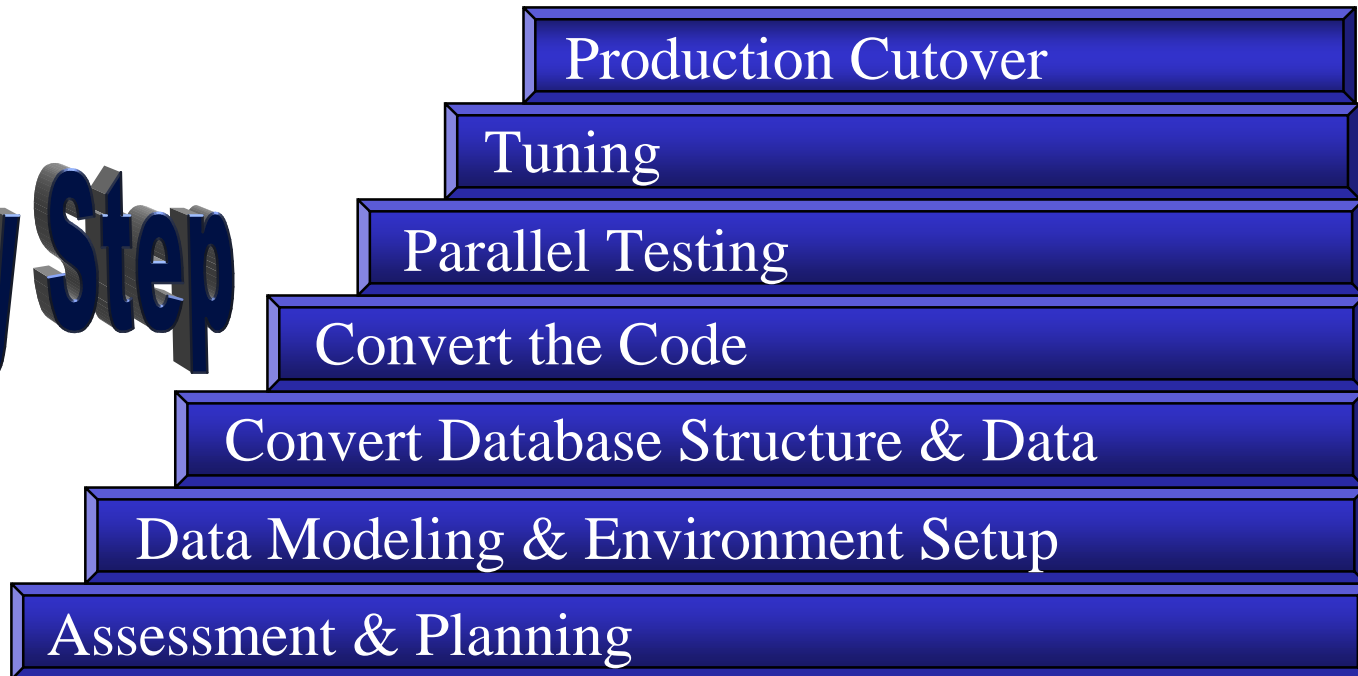
← **Project Management** →



- Identify Business Value;
- Show Cost Savings;
- Quantify new or additional Revenue Gains;
- Show multi-year Cash Flow;
- Generate Net Present Value (NPP);
- Generate Internal Rate of Return (IRR);
and
- Demonstrate Sensitivity and Scenario
Analysis

Conversion Methodology is Key

Step by Step



Assessment & Planning

- **Conversion Assessment**

- Feasibility study
- ROI
- Project Plan & Scope
- Co-existence Plan
- Business Requirements
- Fixed Priced Bid

Assessment & Planning

Data Modeling

▪ Data Modeling/Design

Determines Quality of Resulting System

- ❑ Normalization -vs- De-normalization
- ❑ Data Typing
- ❑ Identification of Keys
- ❑ Data Transformation
- ❑ Physical Database Design

▪ Environmental Setup

- ❑ Create staging libraries
- ❑ Create Test, User, Production environment

Data Modeling & Environment Setup

Assessment & Planning

Data Conversion

- Convert Database Structure

- Create SQL DDL
- Deploy physical objects

- Convert Data

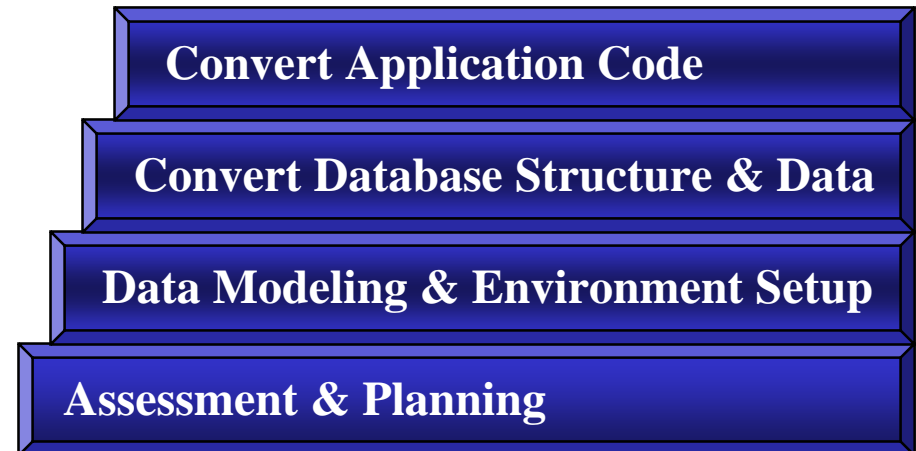
- Execute data extraction
- Complete data transformation
- Execute load utilities
- Data Cleansing



Application Conversion

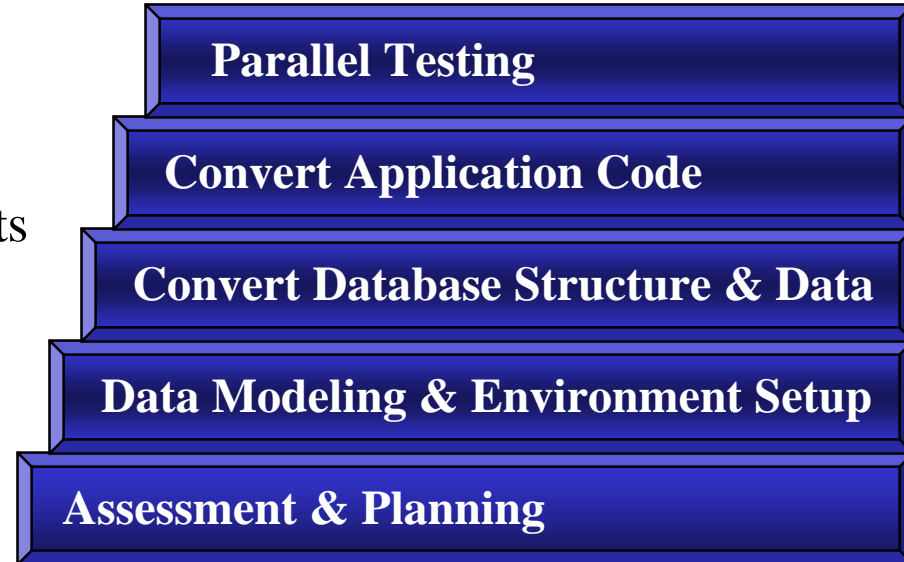
■ Convert Applications

- Application Conversion
- Application Language Translation
- Application Reengineering



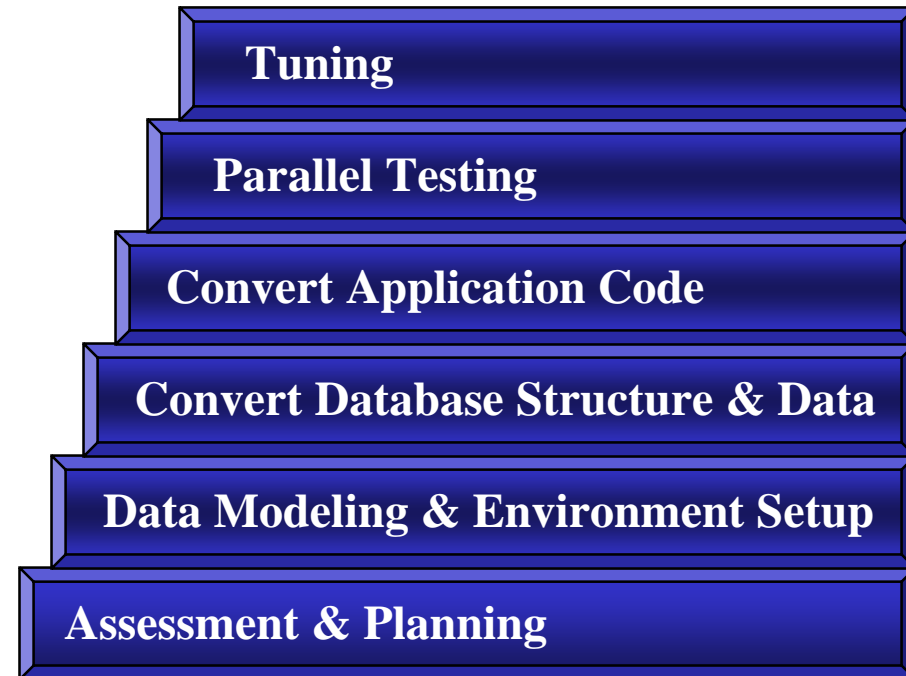
Testing

- Unit Testing
 - Ensures functional integrity of unit
 - Ensures operational efficiency
- Integration Testing
 - Tests operation of converted objects with other objects
 - Ensures operational efficiency
- Parallel Testing
 - Ensures implementation readiness
 - Ensures operational efficiency



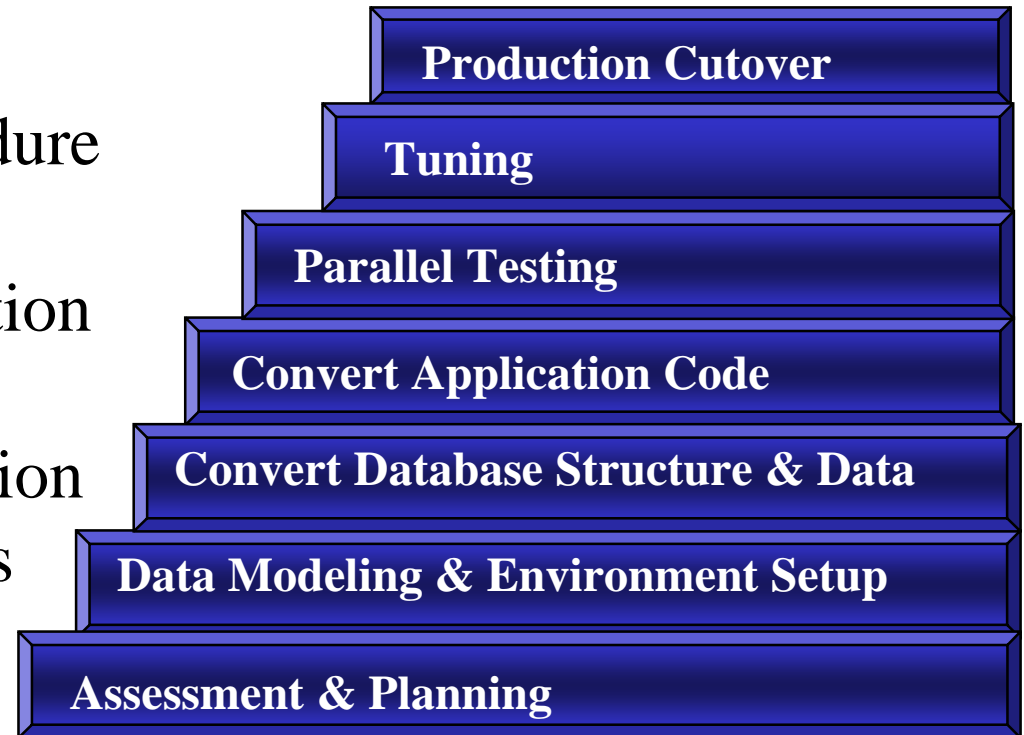
Tuning

- System Performance Tuning
 - Systems and Application
 - DBAs tune the new DBMS
 - Tune SQL / CICS connections

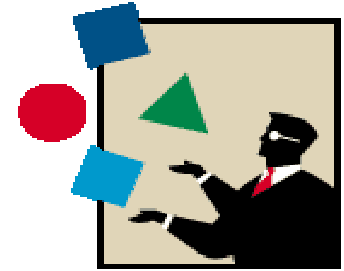


Production Cutover

- Requires careful planning
 - Prepare detailed procedure
 - Conduct dry run
- Non-invasive Implementation
 - Downtime
 - Off-hours implementation
 - Verification procedures

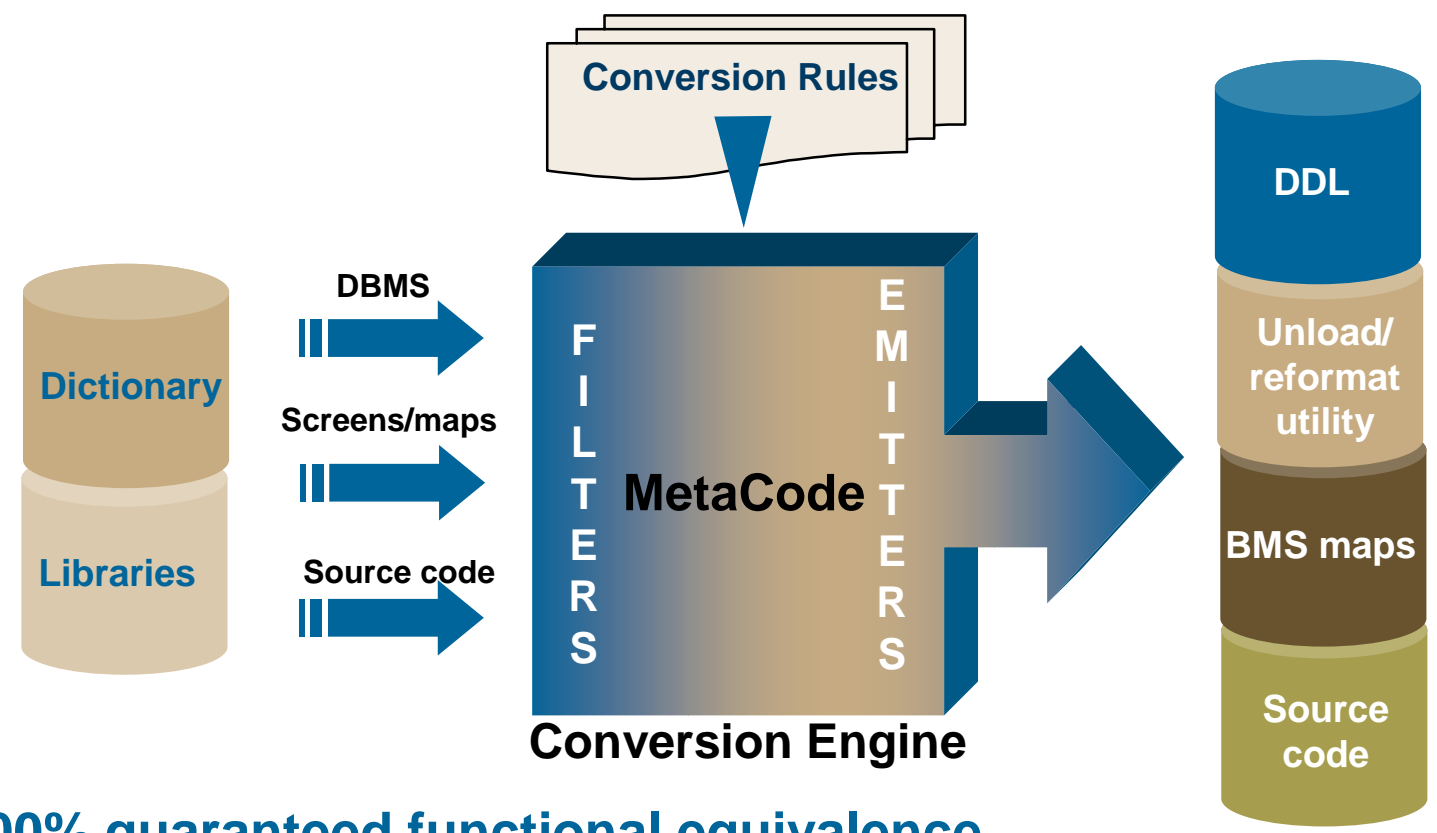


Project Management



- ManTech's Conversion Methodology incorporates standardized Project Management
- Standardized Project Plan
- Implementation of a Standard QA Procedure
 - Peer Reviews
 - Senior Technical Resource assigned as QA Manager
 - Formal Management Reviews with Client Project Management

How it...WORx



100% guaranteed functional equivalence in source code conversion, plus DDL and unload/reformat utilities

Addressing Technical Issues – WORx Tool Objectives

- **WORx** Automatically Converts your Code
 - The the resulting code is easily Maintained and Understood!
 - Accurate conversion algorithms
 - Maintainable conversion algorithms

Addressing Technical Issues – Performance

- Great Performance is No Accident
- Addressed at each stage
 - Optimized database design and mapping
 - Quality SQL usage
 - Attention during testing
 - Tuned SQL and CICS-SQL connections

Addressing Technical Issues – Database Mapping - Flexibility

- IDMS Records to SQL Tables
 - Very Flexible
 - Generally one to one
 - Ability to split occurs groups
 - OOAK records - may be dropped
 - Merge records - collapse sets
 - Separate records



Addressing Technical Issues – Database Mapping - Flexibility

- Sets - Foreign keys and Indexes
 - Each set unique for positioning purposes
 - Foreign keys not necessarily new columns
 - Referential Integrity
 - Options for mapping non-MA sets

Addressing Technical Issues – Database Mapping - Flexibility

- Decisions made carry through to other tasks
 - DDL
 - Data Mapping
 - Data migration programs
 - SQL replacement
 - Program conversion

Addressing Technical Issues – DBKEY

- **No DBKEYS** go to your new SQL world

Ask us Why



- Equate to SQL table name + primary key
- Provide unique identifiers and quick SQL access
- Resulting programs are more SQL-like than keeping the IDMS dbkey.

Addressing Technical Issues – Data Mapping FAQ's

- Integrity software for data migration
- Customization of DDL
- Occurs mapping solution
- Mapping NEXT sets
- IDMS access by dbkey
- Conversion of database procedures

Addressing Technical Issues – Automated Code Conversion FAQ's

- Long IDMS names
- IDMS RETURN verb
- IDMS area sweep
- IDMS ACCEPT from NEXT, PRIOR or OWNER currency
- IDMS ACCEPT from SET or AREA currency
- Extended Run Units
- LINK NOSAVE
- IDMS conditional expressions
- IDMS ERASE SELECTIVE
- Call using Subschema-Ctrl
- Procedure Division using Subschema-Ctrl
- EXIT verb
- DISPLAY with CODE
- DELETE QUEUE/SCRATCH
- PUT SCRATCH with RECORD-ID without REPLACE
- KEEP LONGTERM
- Built-in functions

Addressing Technical Issues – Rollback and Recovery

- Perform re-engineering analysis
- Configure WORx to handle R&R

Addressing Technical Issues – Application Look and Feel

- Externally everything is the same
- Screen presentation - no change
 - Screen layouts
 - Position of elements
 - Use of function keys
- Application navigation - no change
 - Information from ADSA automated
 - Part of program structure or separate program

Addressing Technical Issues – Batch Programs Job Control

- JCL conversion automated
 - Removes or leaves IDMS references
 - Substitutes or adds SQL references

Addressing Technical Issues – We deliver solutions

- Highly automated and accurate
- Transparent to application users
- Flexible to deliver a tailored solution
- Proven methodology backed by experience
- Maintainable code for the future

