Legacy Transformation: Leveraging Information Assets to Deliver Business Value

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CIO Legacy Survey*

How useful are your company’s legacy systems in helping you reach your strategic goals?

- Very useful / somewhat useful 63.7%
- Somewhat limiting / very limiting 36.3%

Legacy systems are still important

* CIO Insight – December 2002
## CIO Legacy Survey*

What are the major reasons for keeping the legacy systems your company is currently planning to retain?

- Still able to support business processes: 54.4%
- Still reliable: 49.7%
- Staff available to support them: 44.3%
- Still more cost effective than alternatives: 41.6%
- We do not have the budget to make any changes: 36.9%
- Still able to support strategic goals: 36.9%

Still relevant and reliable

* CIO Insight – December 2002
If you are currently migrating or planning to migrate off any of your current legacy systems in the next year, what are the main reasons?

- Meet new strategic goals 65.2%
- Legacy systems can’t support business processes 59.9
- Legacy systems can’t support current strategic goals 56.1
- New systems would be more cost effective 48.5
- Legacy systems provide poor interoperability 41.7

* CIO Insight – December 2002
Legacy Applications vs. Emerging Technologies

- Legacy architectures run in sharp contrast to modern IT disciplines.
- The challenge is how to migrate to emerging architectures while meeting critical business requirements.
Transformation: Bridges Gap Between Legacy & Emerging Architectures

Business-Driven Requirements

Legacy Architecture Transformation

Legacy Architectures  Strategic Architectures
Legacy Applications & Architectures

- Numerous languages and platforms
- 200 billion lines of Cobol (60% of total)
- Haphazard design and stovepipe architectures
- Segregated functionality and data structures
- Layers of middleware and data warehouses
- Web-based interfaces
Poorly Integrated Information Architectures

Business processes, applications and data mirror stovepipe information governance structures.
Legacy Architectures Impede Ability to Deliver Business Value

- 85% of IT projects: late or never delivered*
- Only 9% of IS projects come in on time or within budget*
- ERP projects: years to implement, canceled 35% of the time & rarely fully deployed*
- $16.5 billion is spent annually on systems that users never see (Information Week)
- Management has been duped into believing “quick & easy” solutions can solve complex IT challenges

* Standish Group International
Non-Invasive Integration vs. Legacy Transformation

- Integration: Non-invasion approach that connects processes, data and applications
- Transformation: Invasive solutions to address legacy architecture challenges
- These disciplines are interdependent and interrelated
- Transformation is an augmentation strategy
Legacy Transformation is an Augmentation Strategy that includes:

- Understanding application and data architecture and functionality
- Making legacy systems more reliable and adaptable
- Extracting and rationalizing data definitions, data and business rules
- Redesigning and reusing legacy rules and data within the context of a strategic architecture
Transformation Infrastructure

Requirements

- Recognition of legacy value
- Process for assessing legacy architectures and capturing, reusing and migrating legacy components
- Process for analyzing, designing, building and deploying target architectures
- Software that facilitates and integrates transformation and development processes
Shift from “From Scratch” Development Philosophy to Phased Reuse

- Replace “throwaway” philosophy with “reuse” philosophy
- Shift from an “all or nothing / go for broke” approach to a phased deployment approach
- Seek lower risks, higher returns and faster delivery through phased delivery strategy
Enterprise information architecture can be captured in transformation repository to support various projects.
Project-level repository facilitates tracking of business data and rules back to physical system components and target requirements.
Sample Projects’ Use of Application Warehouse

Legacy Architecture

- Payroll
  - 1
  - 3
  - 2
  - 4

- Pension
  - 2
  - 1
  - 3
  - 1

- Insurance
  - 2
  - 3
  - 2
  - 1

Target Application & Data Architecture

- Integrated database environment

Repository

- Modeling
- Mapping
- Impact analysis

Web-based Environment
Application Transformation Planning

Integration Technology

- New Data / Functions
- Legacy Systems
- Package Software

Strategic Application Architecture

- What mix of legacy, new and package components will define an organization's application systems under the target architecture?
- How will organizations partition and transition legacy systems to achieve strategic targets?
## Software Option Strategy Matrix

<table>
<thead>
<tr>
<th>Functional Condition</th>
<th>Organizational Impact</th>
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</thead>
<tbody>
<tr>
<td>Good</td>
<td>Low</td>
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<tr>
<td></td>
<td>MAINTAIN / MIGRATE / INTEGRATE</td>
</tr>
<tr>
<td></td>
<td>UPGRADE / CONSOLIDATE</td>
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<td>MAINTAIN</td>
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<td>PHASE OUT</td>
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<td>REPLACE</td>
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<td></td>
<td>INTEGRATE OR ENHANCE</td>
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<td>ENHANCE / CONSOLIDATE</td>
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<tr>
<td>Poor</td>
<td>High</td>
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<td></td>
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<tr>
<td>Good</td>
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</tbody>
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**Technical Quality**

High impact software components should be enhanced, consolidated or maintained based on business requirements.
Generalized Architecture Transformation Model

Transformation options include data and business rule capture, consolidation, redesign, validation and redeployment.
Legacy Transformation in an Application Consolidation Project

Baseline Applications

<table>
<thead>
<tr>
<th>Business Unit 1</th>
<th>Business Unit 2</th>
<th>Business Unit 3</th>
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<tbody>
<tr>
<td>OE</td>
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<td>Pro</td>
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</tbody>
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Integration & Transformation Tasks

- Integrate & automate common processes across business units
- Consolidate & redesign cross-functional data
- Migrate baseline systems to new architecture
- Migrate & consolidate subsequent business unit applications under new architecture
- Web-enable selected user interfaces as required

Target Architecture

Integrated Relational Database

OE Inv Dist Pro-
Legacy Analysis Role in ERP Selection

Functionality of Proposed Packages

Strategic Requirements

Package Assessment

Legacy Application Functionality

Package Selection Results & Plan

Multi-package assessment defines how packages map to requirements (REQ) and to legacy (LEG) functions.
Legacy Transformations’ Role in ERP Deployment

- Retain / Integrate with package
- Discard / Deactivate
- Current System Functionality
- Verify integrity of strategic requirements
- Strategic Requirements
- Add new functions To package
- Implement / Integrate
- Package Solution Functionality
- Do not implement
Legacy Transformations’ Role in a Componentization Extraction Strategy

Legacy Applications → Data / Rule Extraction Process → Data / Rule Repository → Cobol-based Rules → Cobol-to-Java Migration Process

Cobol-to-Java Migration Process → J2EE or .NET Environment

COBOL .NET

Development Projects & Web Services
In Summary

Legacy Transformation:

- Retains and reuses valuable business knowledge from legacy applications
- Augments an enterprise’s ability to deliver strategic, time-critical projects
- Reduces risks and increases odds of success for new application initiatives
- Achieves strategic goals more quickly, more reliability and at a reduced cost