Real-World Strategies for Migrating and Decommissioning Legacy Applications

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Introduction

Historically, companies have invested millions of dollars in application portfolios needed to run the business. But as investments in the latest and greatest applications continue to grow, managing legacy systems is becoming increasingly complicated and costly for IT and risky from an e-discovery and compliance perspective.

Developing a strategy for migrating only the content that is needed and retiring legacy applications will help reduce operational costs, enable critical decision-making, and make your business more agile and efficient going forward.

Costs and complexity are rising, risks are increasing and you need to be more agile

As legacy systems continue to age and get more out of date, risks are increasing and businesses need to be more agile. There are many drivers for looking at legacy application migration projects.

**Increasing Costs:** Faced with maintaining legacy systems, IT must fund ongoing licensing fees, rising maintenance costs and provide dedicated staff resources and skill sets for outdated and often obsolete systems. In addition, support costs often increase due to mergers or acquisitions when redundant systems are added to the IT portfolio. As a result, support and maintenance of legacy applications are consuming an increasingly large portion of IT department budgets.

**Large Application Portfolios:** New applications are continually being added to the IT roadmap but legacy applications are rarely retired. Most organizations do not have a clear strategy for how and when to retire legacy systems. The impact of unmanaged portfolio growth results in increased infrastructure complexity which consume IT budgets and staff time to manage and support it. In addition, infrastructure complexity also impacts related IT operations such as increased back up windows and replication costs.

**Low Business Value:** While older, legacy applications may have been essential 10 years ago, they now may house obsolete information and provide low value to the business. In some cases, system access has been completely disabled to end-users. In other instances, data may still be accessible but remains in information silos limiting the use and value of the data.

“The percentage our IT budget dedicated to the ongoing support and maintenance of legacy systems is astronomical and keeps growing. We have systems back to the ‘90s but we don’t know what we can migrate or retire.”

CIO, Large Pharma
Compliance Risk: Governance around legacy systems is often not managed for legal and regulatory compliance. What information is in the applications? How long do the records need to be retained? Determining what needs to be preserved and what can be deleted can be very challenging. As a result, legacy systems are retained indefinitely.

eDiscovery Risk: Having significant stores of data in difficult to access applications leads to increased risk in the event of litigation and discovery. When a business gets involved in litigation, all that old, rarely accessed data is suddenly potentially discoverable. The more you have to search, review and produce, the more it costs. Being proactive about the management of legacy data will help mitigate future legal costs and risks.

Data Privacy: Increasingly stringent privacy requirements also place a burden on managing legacy data from a compliance perspective. Does the application contain privacy information? When migrating data from legacy systems, additional data privacy requirements need to be taken into consideration to protect against the risk of data breaches and the related fines, litigation fees and the loss of customers.

Reduced Agility: Supporting a complex infrastructure can impede business agility. Redundant systems, silos of information and low-value content make it very difficult to provide accurate and timely information to meet business needs.

What’s Your Desired End State?

- How will we find information?
- Employee access to information?
- Partner, Supplier, customer access?
- What is the default repository?
- Centralized or Distributed?
Targeting Legacy Applications for Migration

The first step in getting started with any decommission project is to compile an accurate application inventory of the systems in your portfolio. As part of the inventory process, develop an initial profile and collect metrics for each application describing what the application does, the types of content it contains, any known risks, dependencies with other applications or work flows, and the volume and age of the data. Additional analysis on the cost of maintaining the application and business value should then be added.

Data gathered from the inventory and analysis process will form the baseline for prioritizing applications that fit the criteria for decommissioning and migration and will be used in the detailed go-forward planning process.

Solution Options: Migrating Legacy Structured Data into Managed Content

There are several different approaches for migrating data into managed content. The approaches below highlight the pros and cons of each solution.

Approach #1: Migrate Content to a Data Warehouse

Legacy content can be migrated to an existing data warehouse. Data can be accessed by running queries from data warehouse reporting tools. While this approach is a reasonable option for providing summary information, it is not appropriate for storing individual transactions. Users are constrained in the information they can see by the number of pre-canned reports or their ability to use the custom reporting tools. This option does not allow for end users to access individual transactions in the same manner that the original application allowed.

Approach #2: Archive Content Using Customized Archiving Solutions

Database archiving solutions migrate content from the primary database of the application to a secondary database after some period of time. These solutions are primarily designed to reduce the amount of information contained in the primary database in order to improve performance and to reduce costs by offloading legacy information to cheaper storage. Typically, archiving solutions require the maintenance of the original application as well as the supporting infrastructure. Unless the original application vendor specifically designed the

Case Study
Large Global Manufacturing Company

Challenge:
With operations in 40 countries and 80 sites, numerous silos of legacy data made fast access to the most current information and complying with complex quality assurance and record-keeping requirements difficult. In addition, IT costs for maintaining multiple systems was large and growing.

Approach:
As part of a global data placement strategy, the company chose to implement an enterprise content management (ECM) solution to deliver a single source of accurate information. User acceptance was also addressed through employee education programs and top-down management support for the program.

Results:
Migration of historic transaction data into the ECM solution resulted in significant cost savings from the consolidation of three mainframe systems and associated maintenance and support costs. Having current and legacy data together now allow for searches spanning the lifecycle of transactions and products. Compliance with numerous country-specific legal, regulatory, record-keeping and data protection requirements is now simpler by using metadata to enable tracking and enforcement.
application to work with a secondary database, or an off-the-shelf database archiving tool, these solutions require a considerable amount of custom coding for each application and on-going maintenance when the application code is upgraded to new versions or required patches. Archiving content using customized solutions will need to be implemented on a project by project basis. Each application will require its own unique coding and integration with the database archiving tool.

**Approach #3: Transform Structured Data into Business Objects**

For many enterprises, it is necessary to retain transactions long past the usefulness of the original application for legal, regulatory or business need to capture historical business information. Application vendors may have gone out of business, been replaced by newer technology or may not be cost effective. Therefore, it becomes necessary to harvest the transactions from the application in a format that will be accessible for a long time in the future - sometimes for 25 years or more. The ideal solution centralizes legacy data into a cost-effective infrastructure that can be easily searched and accessed.

To do this migration properly, application content must first be transformed into business objects. A common long-term format such as .xml should be used so information can be accessed for years to come without having to maintain separate application infrastructure for each system that is retired. Each project will require some custom coding to extract the transactions from the original application. However, unlike the database archiving approach, once the transactions have been extracted into a common format, they can be accessed by wide variety of off the shelf tools. This extraction will create a large volume of transactions particularly if you retire multiple applications. Using a document management or ECM solution provides the necessary functionality for managing retention, access control, print and export capabilities, search, extended metadata and disposition.

**Engineering a Migration Strategy**

- Access and Collaboration
- Record Retention and Disposition
- Automated Disposition
- Legal Hold
- Data Security Classification
- Repository Cost and Capability

Enterprise Management System
Business Unit Change Management

How do you ensure support from key business stakeholders that may not want to retire their older applications let go of their data? Any migration strategy should start with collaborative discussions with IT staff, business analysts and end users to understand their requirements around access, retention and legal requirements as well as the content that needs to be migrated. By including the business early in the migration process, a foundation for awareness and consensus will be started for change management and ensure that only relevant content is preserved and migrated.

As the migration process and timelines become known, integrate tasks for end user communication and solution training (if content will need to be accessed on an on-going basis) into your overall migration plan. Top-down management buy-in and communication will be a key success factor in driving overall adoption. Be sure to use communication messages that call out project benefits or “wins” for users in terms of centralized access, improved search and compliance. Approach #3 drives adoption since it has the potential of enhancing user’s access to the information through more sophisticated search tools.

Key User Messages for Migrating Legacy Data:
- Increased productivity in searching and finding information
- Fast access to information anywhere
- Ability to rely on the right source of information
- Improved collaboration
Data Transformation: Technology Process Overview

### Identify Transactions and Content for Archiving
In this step, select the key transactions that are required for longer term retention based on business requirements.
- Regulatory requirements
- Business productivity
- Legal requirements

### Develop the Schema for Extracting Transactions from Application Database
In this step, queries for extracting transaction elements from multiple database tables are created to build each of the desired transactions.
- Existing schema documentation from application vendor
- SQL analysis tools from third-party vendors

### Extract the transactions
In this step, individual documents are created for all of the key transaction types and stored in a staging area prior to ingestion into the ECM solution.
- Run queries and extract data elements
- Build transactions from extracted data elements into formatted documents (.xml) and store by transaction type onto staging database area

### Transform and Migrate
In this step, the extracted data is transformed as needed to drive access control, search, and document retention and disposition. Documents are then migrated into the ECM system.
- Analyze system metadata
- Transform data to align with the target repository
- Create filing structures for migrated content in ECM system
- Migrate content from staging database to ECM system, validate and document

### Apply Governance
In this step, the documents are managed using ECM functionality by the system metadata.
- Use system metadata to implement record retention rules
- Dispose of transactions meeting retention criteria

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**Case Study**
**Large Global Agriculture Merger**

**Challenge:**
With the merger of two large companies came the duplication of ERP, ECM, CRM systems as well as many other applications. Identification of ongoing production systems, legacy systems that could be decommissioned, and how to identify records that needed to be retained or archived was a significant challenge.

**Approach:**
The company needed a centralized platform that enabled integration and migration of data and content from ERP, ECM, and CRM repositories. The complex and time-consuming process utilized middleware platform to enable data flow and manipulation of content across systems and environments. In addition, a global model of metadata and record retention was developed.

**Results:**
Centralization of duplicate applications into a single ECM solution resulted in increased efficiency and better decision making. Applying automated retention rules to content improved compliance and reduced risk. Significant costs saving were also realized through decommissioning of duplicate and legacy systems.
Tips for Getting Started

In looking for a good place to start, consider selecting those applications that would be easiest to implement such as those that have relatively few transaction types, simple schemas and are no longer accessed frequently. While other systems may be higher priority targets in terms of overall support costs or business value, the increased level of complexity and higher degree of difficulty to execute may derail your project. Start with some easy wins and then grow with your experience.

Also look at leveraging existing investments in your current ECM solutions to see if these solutions can be expanded to become your archiving platform. These strategies will ultimately grow the success of your program and lead to a reduction in costs and the size of your application portfolio over time.

Conclusion

Successful decommissioning and legacy data migration requires taking the right approach to transform content for long-term management. By identifying your application portfolio and starting with easier targets, IT can begin to create an on-going end of life process for reducing and/or retiring many legacy or redundant systems. The retirement of legacy systems will reduce IT costs for supporting and maintaining systems, lower discovery costs and risks, while preserving the value of legacy data for end users and compliance. Finally, centralization of content helps increase user productivity and operational agility by allowing users to quickly search for information in a single repository for business-critical decisions based on historical data.
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We provide a real-world, measurable metrics-based approach that reduces risk, lowers costs, ensures compliance and enables higher employee productivity and collaboration. The company’s services encompass all electronically stored information (ESI), including e-mail, as well as paper documents.

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- Enterprise Behavior Change Management
- Legacy Paper and Data Disposition
- RIM Organizational Development and Governance

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