

# White Paper

Data Modernization as the Gateway to Legacy Modernization





## Introduction

Successful organizations are distinguished by their exceptional planning, decision-making, customer service and operational efficiency. Companies that have timely access to reliable operational data to assist in those efforts gain agility and strategic advantage.

Yet productivity and effectiveness in many large organizations is impaired by dependency on legacy applications, databases and technologies which limit the ability to make the right decisions based on the right data: typically, information needed by business units is not readily accessible, or its availability does not meet time requirements, or data is questionable or lacking quality.

Because information is named, encoded, formatted and organized according to the needs of legacy applications rather than end users, access can be problematic, especially if any application has been sunsetted or retired. What is handed off as data may be information that is inconsistent across applications and databases, with no "single view" or "system of record" being used. What's more, data "heritage" may be unknown or derived from various sources – including downloads to personal databases and spreadsheets, transformed and consolidated using unknown, undocumented or non-standardized rules.

#### The IT Issue – Constrained and Stressed

Aside from questionable integrity and/or accessibility of the data, there is also the issue of the IT department and its ability to deliver. Within many organizations, the IT function is often incapable of responding (or is not permitted to respond) in an agile and effective way owing to a variety of reasons, resulting in a backlog of requests for data extracts, applications and enhancements. It's not unusual for IT to struggle with new demands for 24x7 operations, integration of "foreign" applications and technologies resulting from corporate or departmental mergers and ever-increasing data volumes. In addition to legacy systems often exhibiting a relatively high total cost of ownership (TCO), particularly for mainframe applications, key technology skills are declining in availability and are difficult and expensive to obtain and retain—especially for public agencies with limited budgets.

# Business Units – Starving for Information, Striving for Change

Consequently, business units are faced with an apparentlyintractable situation with any or all of these outcomes:

- little ability to exert control over technology costs;
- a perception that change and improvement are too difficult and costly;
- new business requirements cannot be readily addressed due to inflexibility of the technology architecture;
- difficulty collaborating and sharing information between business units;
- organizational paralysis that can only sustain disjointed, "bandaid" approaches.

### **Typical Solutions – Dicey and Pricey**

Even organizations that are ready to embrace a comprehensive legacy modernization approach recognize that it entails multiple strategies:

- replace with commercial off-the-shelf (COTS) packages;
- replace with newly-designed and -written applications;
- extract business rules from existing applications and rearchitect these into a more modern framework;
- renovate the existing applications (e.g., rehosting or transforming to a more modern framework).

With the possible exception of renovation, these strategies all involve long timelines and an extended period to achieve ROI.

### **The Modernization Solution**



"Data modernization"—improving access to information, often for business intelligence (BI) and analytics applications—can be the most important first step in an overall technology modernization roadmap. It offers a means to demonstrate success rapidly and deliver short-term ROI. Using such an approach, organizations can quickly deliver vastly-improved access to information without overtaxing the IT organization and departmental budgets. Visible, tangible results and ROI give stakeholders confidence and "breathing space" to plan for and implement additional steps and strategies in legacy modernization.

# Best Practices for Implementing a Data Modernization Initiative

Strategies for approaching a data modernization effort vary, but regardless of approach, there are myriad benefits for the organization. One effective strategy is to deploy replication technology to disseminate information "locked up" in disparate legacy applications to low-cost, readily-accessible local databases, with low cost and minimal impact on IT and legacy applications.

To achieve this, best practices include:

 tailoring of replication options (from extract-transform-load [ETL] to batch-style change data capture [CDC] to real-time CDC) to meet business requirements, balanced against increasing cost and complexity;

- supplementing replication with direct, standards-based (e.g., SQL and SOA) access to legacy applications and databases as required, for integration with real-time portals and newlydeployed applications;
- selection and deployment of end-user tools and reporting facilities that have a low cost of acquisition and operation and that can be learned and extended readily by end-user subjectmatter specialists;
- automation of collection and transformation of information into a common, accessible, scalable repository;
- utilization of enhanced capabilities of mainstream databases (e.g., the on-line analytical processing [OLAP] capabilities of Microsoft SQL Server's Analytical Services);
- promotion of end-user self-service and self-sufficiency for information needs, and sharing of information within and across business units.

Another strategy that may also provide access to information without overtaxing the IT organization is SQL/SOA enablement, achieved by inserting one or more technology layers (servers, often characterized as gateways) between the legacy data source and the consuming application. Solutions that enable IBM mainframe data and applications to integrate with client/server, Web and SOA technologies - without the need for mainframe know-how or programming effort are commercially available and mature. While there is zero latency in data availability, and the legacy data is directly integrated into applications, there are drawbacks: the data may be available as read-only or with only limited update capability; it is difficult to control the volume of data transmitted and resources used; query isolation may be assumed but not delivered; and the consuming applications need to be provided with metadata in order to formulate gueries and correctly interpret results

Finally, there is also a migration strategy to consider, where the legacy data and database are extracted, transformed and populated into a permanent, modern home that completely replaces the legacy "ancestor". In theory, this enables applications to work with native, modern data sources—without compromise, and ultimately, there is reduction in cost and complexity of technology architecture. Still, such a migration can be a complex and daunting exercise. Generally, the "data access layer"—the protocols by which applications communicate with the database must be re-engineered, and this requires extensive testing. In addition, data volumes, time windows and processing capacities obviate the feasibility of migration "big bangs", so coexistence/ phased implementation support is needed.



### **Data Modernization Benefits**



As mentioned, benefits of this approach are many, from better decision-making and customer service through timely availability of reliable and consistent information, to empowerment of business units and individuals. With improved ability to respond to new information requirements quickly, IT can also shift more direct control of information management costs to business units, freeing budgets to focus on other projects and initiatives.

The benefits are also measured in cost savings from reduction of acquiring and distributing information and reports (e.g., reduction in mainframe extracts and reports) and through automatic distribution of reports and information to those that need or request it. Enhanced ability to view key performance indicators (KPIs) within and across business units also leads to better management of budgets and resources and a focus on continual organizational improvement.

Additional benefits may be realized through:

- the ability to start shifting the "system of record" to the new platform as new applications are based upon it;
- integration of information assets into a common reporting and analytical environment;
- common tools and understanding across the enterprise, enhancing portability of individuals and teamwork;
- increased visibility of cross-enterprise activities;
- early detection of significant business events, and response to them.

# Summary

Data Modernization enables organizations to access legacy data and extend the business value of core data that the enterprise has collected over many years. Having the ability to quickly and effectively leverage that information—without overtaxing the IT organization and departmental budgets—and use it to gain first-to-market or other business expansion is what distinguishes the agile enterprise and places it in a position to wield long-term competitive advantage.

#### About Treehouse Software, Inc.

Since 1982, Treehouse Software has been serving enterprises worldwide with industry-leading software products and outstanding technical support. Today, Treehouse is a global leader in providing data migration, replication and integration solutions for the most complex and demanding heterogeneous environments, as well as feature-rich, accelerated-ROI offerings for information delivery, business intelligence and analytics and application modernization. Treehouse Software customers are able to:

- REPLICATE Data Anywhere
- INTEGRATE Data Everywhere
- MODERNIZE Data from Legacy Applications
- ANALYZE Data for Business Advantage

With unmatched comprehensiveness of tools and depth of experience, Treehouse Software applies proven approaches to help customers and partners mitigate risk and profit sooner from modernization benefits.

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