Increasing Return on Investment with Data Services

An Oracle White Paper
Updated August 2008

ORACLE

EXECUTIVE OVERVIEW

As the number of applications and platforms generating data increases, so does an organization's need to give users access to that data through a unified, standard system compatible with multiple interfaces. Oracle Data Service Integrator is a powerful solution that allows organizations to build data services that unify business processes and data for easier use and improved customer service.

INTRODUCTION

As the IT world has evolved, the focus has increasingly and almost unavoidably shifted to technology at the expense of information. Although the technological side is unquestionably important, the ultimate purpose of an IT department is to increase a company's ability to collect, preserve, manage, access, analyze, and act on information.

Information is an organization's key asset—without it all that technology is at risk of being expensive unused "plumbing." But as the sheer amount and complexity of the data collected by the typical business increases, it becomes increasingly challenging to access and use that data in a timely and efficient manner.

Information is an organization's key asset—without it all that technology is at risk of being expensive unused "plumbing." But as the sheer amount and complexity of the data collected by the typical company increases, it becomes increasingly challenging to access and use that data in a timely and efficient manner. That data's value is inextricably tied to the overall return on investment (ROI) of IT. Increasing that data's accessibility and agility creates an enormous amount of business value.

Implementing data services using Oracle Data Service Integrator gives a company a single point of access for unifying and normalizing data. The solution allows IT to build data services that are then reusable for additional functions—increasing ROI and the overall value of the data.

This white paper will address data services implementation and the role of Oracle Data Service Integrator in that process. It will describe the technical benefits of a data services implementation within the context of initiatives to promote business process management (BPM), service-oriented architecture (SOA), portal projects, and business intelligence (BI).

DATA AGILITY FOR EXTENDED RETURN ON INVESTMENT

An information architecture that exposes logical data views and promotes the practical use of heterogeneous datasources can generate dramatic ROI. But companies undertaking SOA initiatives often focus solely on application integration—neglecting both the need to integrate data within those applications

and to preserve the data's business context. That neglect undermines data agility and directly affects enterprise agility and ROI.

A data services implementation improves data agility. Data services act as a single point of access for unifying and normalizing information. The resulting increase in data agility allows executives to think beyond immediate data needs and gives them greater flexibility to respond to—and even anticipate—business challenges. Implementing data services also allows IT executives to take advantage of existing IT assets rather than re-engineer the environment, a process that can be mired in operational delays, conflicting agendas, and budget shortfalls. In effect, the ability to reuse existing assets enables the recycling of previous IT investments.

REUSE RESOURCES WITHOUT REINVESTING

Oracle Data Service Integrator is unique in its ability to generate value as a pure data integration solution. For example, IT can create value by employing Oracle Data Service Integrator to build a set of data services using existing data stores and enterprise applications. These services can be made available to development teams that would otherwise waste coding time aggregating and reconciling data manually. The underlying data is intact, securely accessible, and available in real time.

The data services built for the original project can then be reused on subsequent projects, essentially eliminating the need for manual coding. The data's value as a corporate asset increases through

- **Information liberation.** No longer confined to a single application or user group, information is available to many audiences through multiple applications.
- **Consistent presentation.** Information presented through a common data service provides users with a consistent view.
- **Talent reallocation.** Eliminating manual data integration frees developers to focus on revenue-producing and cost-reduction projects.

The value of a data services implementation increases incrementally as new services are created and exposed to additional development teams for unlimited use.

The value of a data services implementation increases incrementally as new services are created and exposed to additional development teams for unlimited use, as shown in Figure 1. The perpetual use nature of Oracle Data Service Integrator actually reduces business costs over the lifetime of the data service and extends the value of existing data stores and enterprise applications.

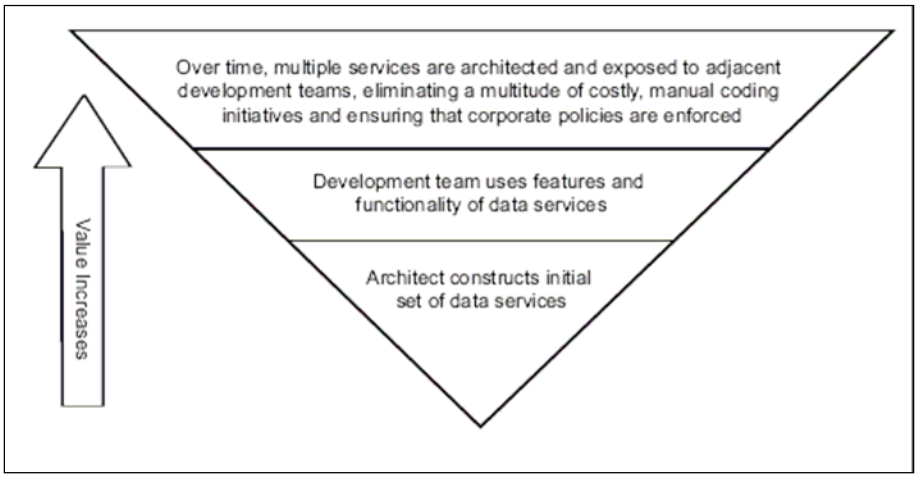

Figure 1: The value of a data services implementation increases over time.

DATA SERVICES AT THE ARCHITECTURAL LEVEL

There are a number of reasons why an organization might undertake a data services implementation:

- Data is everywhere, and the rate at which data grows is increasing.
- Data originates from a variety of structured and unstructured sources.
- Without data services, data access is too complex a task, involving different data models and data formats for each datasource and a proliferation of point-to-point connections between numerous data consumers and providers.
- The lack of a real-time, unified view across multiple sources makes data even more difficult to use and makes consistent data security difficult to enforce.

In most organizations, the architecture team only considers data when there is a mandate to derive specific value from collecting data. The data needed might be related to sales forecasts, campaign results, customer service metrics, regulatory compliance, operational performance results, or customer profiling.

The better strategy is to apply SOA principles to data integration, turning data into a service that is available as logical modules, each with a standards-based interface.

A company initiating a project that requires data must make choices, for example, whether it should continue to connect data in the same customized, rigid, point-to-point way that it uses for applications. Experienced IT professionals know that single-use data integration projects are neither scalable nor reproducible and they offer negligible ROI. The better strategy is to apply SOA principles to data integration, turning data into a service that is available as logical modules, each with a standards-based interface. This allows users to access and use the service more easily, improves data visibility, and promotes greater reuse.

Data Services and Business Process Management

Business processes and data are heavily synergistic: one without the other hampers a company's ability to respond to changing requirements. Investing in BPM as a

discipline equips an organization to better respond to change. Companies can further enhance BPM investments by investing in data services that enable existing business processes to easily gain regulated access to dispersed information. This makes the company more agile so it can meet evolving business challenges.

Data Services and Service-Oriented Architecture

Data services platforms used in conjunction with SOA significantly increase overall value. Although a data service provides the ability to abstract datasources, this functionality is not possible without SOA. With SOA, data consumers don't have to use a specific point-to-point connection to the service.

However, connecting data services to an enterprise service bus (ESB) abstracts the data services layer, creating a data mediation layer that increases data consistency. Any change to a data service is communicated to the ESB, eliminating the need to make changes at multiple service consumption points. The change is abstracted by the ESB—increasing flexibility and streamlining maintenance.

Data Services and Portal Projects

The notion of customer self-service is ubiquitous in the 24/7, Web-driven, on-demand global business environment. Customers use portals to direct personal or business accounts, conduct e-commerce, and manage personal content. In this setting, a 360-degree view of the customer is essential in meeting customer service objectives. But IT professionals rarely have just one source from which to gather customer data. Typically, heterogeneous datasources are tied to each portlet, close to the information consumer, where one failed datasource can disrupt the flow of information to all portlets.

Oracle Data Service Integrator merges data from different sources so it can be used by a portal. It also gives transaction-level access to datasources and updates them. This helps to isolate and protect customers and internal users from data or application outages, and also eliminates superfluous customer records for greater data consistency.

Data Services and Business Intelligence

Oracle Data Service Integrator eliminates the heavy lifting for BI modeling—bypassing the painful extract, transform, and load cycles. It streams reconciled, dynamic data directly to BI applications, Microsoft Excel spreadsheets, and end users.

BI has traditionally acted on historical information and is often excluded at the operational level, where employees must make individual transaction-level decisions. However, BI is evolving toward being applicable to operational decision-making. To be truly actionable and relevant, BI tools must incorporate disparate datasources. But the data integration process is time consuming and leaves the BI analyst vulnerable to stale or conflicting information. Oracle Data Service Integrator eliminates the heavy lifting for BI modeling—bypassing the painful extract, transform, and load cycles. It streams reconciled, dynamic data directly to BI applications, Microsoft Excel spreadsheets, and end users.

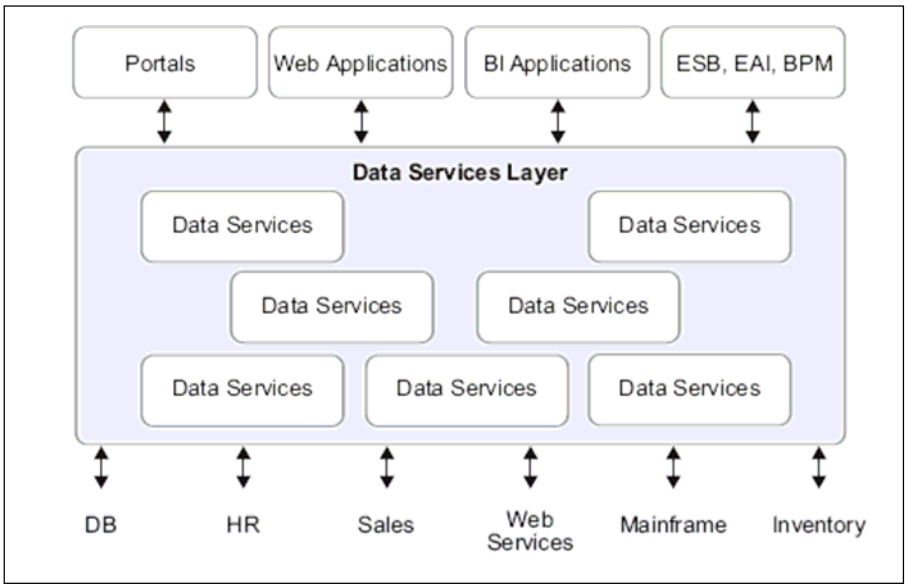

Figure 2: SOA-based data integration gives end users easier access to data, makes it easier to use and view, and promotes greater reuse.

CUSTOMER CASE STUDIES

Case Study: Financial Organization

The challenge was to establish a data services layer to reconcile data, alleviate the demand on DBAs and developers, and reduce time to value.

The financial industry sees a continuous flux of merger and acquisition activity in which data integration is a perpetual challenge. In this case, disparate subsets of information prevented a financial organization from achieving a single, organized customer view. The challenge was to establish a data services layer to reconcile data, alleviate the demand on DBAs and developers, and reduce time to value.

- **The goal.** An organized, single view of the customer, based on a reconciled, common database.
- **Existing integration methodology.** Consolidating data within a Web services layer.
- **The issues:**
  - Web services must go through the SOA. Physical changes to the databases have a dramatic impact on Web services.
  - Web services must scale without performance degradation.
  - Any technical solution must preserve or improve on current service-level agreements (SLAs).
  - Web services have been ineffective because each line of business treats one customer as separate customers with separate interface requirements.
  - Other business units have refused to adopt a new Web services interface.

- The creation of a new Web service has required a 12-week project window, multiple developers, and a DBA.
- Reliance on point-to-point solutions has resulted in an accidental architecture.

The results of the data services implementation are as follows:

Oracle Data Service Integrator reduced overall complexity with greater data consistency and reusable data services. The development time for new Web services was reduced from 12 weeks to 80 hours, and now requires only one developer.

Oracle Data Service Integrator reduced overall complexity with greater data consistency and reusable data services. The development time for new Web services was reduced from 12 weeks to 80 hours, and now requires only one developer. No changes to the database were required, freeing the DBA to address other tasks. User access to data no longer requires communication with back-end systems, preserving performance within SLA restrictions.

The ROI for Oracle Data Service Integrator extends beyond this individual project, freeing this growing financial organization from data integration restraints that might otherwise affect future business.

Case Study: European Provincial Court

There are times when data services must solve numerous IT challenges in the absence of an SOA or Web portal. In this case, a province in a European country had a substantial investment in technology for its individual courts: client/server systems, respective Oracle databases, and a workforce that had grown very comfortable with its time-honored Visual Basic application. Individual employees could intervene manually to consolidate data on a specific client, attorney, or judge who conducted legal business in multiple courts. However, they couldn't share data on any aspect of the judicial process among the civil and criminal courts.

- **The goal.** Consolidate data from more than 40 courts.
- **Existing integration methodology.** A manual "paper chase."
- **The issues:**
  - The client/server paradigm: the distance between client and server directly correlates to application responsiveness. Therefore, centralizing 40-plus courts on a single database is not an option.
  - The autonomy of individual court client/server applications has led to incongruent data.
  - No budget exists for a new application. Any solution has to use the legacy Visual Basic application.
  - Because information is shared among the courts, data security cannot be compromised.

The results of the data services implementation are as follows:

The implementation of Oracle Data Service Integrator allowed management to create a single legal transaction view that represented multiple court systems while

maintaining data security. The province now uses Oracle Data Service Integrator to manage and maintain data, resolving one of its key integration challenges. It also uses Oracle Data Service Integrator to detect and report on the impact of datasource changes and to audit database changes, in compliance with data security requirements. The province's Visual Basic application was preserved in the implementation process, resulting in minimal disruption for employees.

The ROI from this implementation extended previous investments in the court's application architecture and client/server systems, which continue to serve internal customers.

Case Study: Mortgage Institution

Nothing stands still in the mortgage industry, where products have a typical shelf life of just four to five months and are retired as quickly as they emerge. This customer, a lender in the mortgage industry, required a quick connection from its data to the 12 production systems that would serve its multiple user groups. The customer likened the challenge of sorting out this point-to-point juggernaut to untying a dozen different knots.

- **The goal.** Provide a uniform and highly functional interface to data while the architecture is re-engineered in the background.
- **Existing integration methodology.** Unidirectional data feeds from databases to 12 systems.
- **The issues:**
  - Changes made to data in front-end applications are not communicated back to the organization's databases.
  - There is minimal data resynchronization and reconciliation.
  - Consolidation is a key IT objective. The customer wants to minimize how often ongoing back-end work disrupts front-end operations.
  - To justify the implementation, short product lifecycles require new data connections to be established within days.
  - The solution must support XML standards and an SOA-enabled enterprise.

The results of the data services implementation are as follows:

Using Oracle Data Service Integrator, the IT department cut development time for connecting a new application with the required data from five months to six hours or less, plus quality assurance time.

Using Oracle Data Service Integrator, the IT department cut development time for connecting a new application with the required data from five months to six hours or less, plus quality assurance time. This benefit extends beyond the initial project because the data services are available for reuse on subsequent projects. The resulting dramatic reduction in manual coding frees developers and DBAs to address big picture projects.

Even with as many as 1,000 users performing read operations at any given time, performance and data accuracy improved sharply. The customer's data consolidation and newly established data integrity have allowed them to plan the early retirement of one application, representing a projected savings of US$300,000 in maintenance fees.

CONCLUSION

Most applications have traditionally been deployed in departmental silos. They are procured to accomplish a finite set of functions and to integrate with a defined subsection of the IT enterprise. Oracle Data Service Integrator transcends typical IT boundaries and joins critical elements of the enterprise together: people to processes, data to applications.

The customer case studies presented in this white paper reveal just some of the possibilities for increasing ROI using Oracle Data Service Integrator:

- Reuse your data services rather than code manually.
- Achieve auditable security.
- Extend the value of your investment in applications and data.
- Consolidate and normalize disparate data to replace limited value departmental applications.

Any organization can benefit from highly automated and easy-to-manage data services that are secure, scalable, and standards-based. Such services are critical to supporting your BPM, SOA, portal project, and BI initiatives.

Any organization can benefit from highly automated and easy-to-manage data services that are secure, scalable, and standards based. Such services are critical to supporting your BPM, SOA, portal project, and BI initiatives. As a result of data services implementation, data is liberated from its original application and presented in a consistent view. In addition, it frees developers and DBAs from data-related tasks. Over time, an implementation with Oracle Data Service Integrator reduces business costs, because existing data services can be used in new contexts and it extends the lifetime of your IT investments.

Increasing Return on Investment with Data Services
Updated August 2008

Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
Phone: +1.650.506.7000
Fax: +1.650.506.7200
oracle.com