

WHITE PAPER

A Case for Assessing Your Enterprise Data Warehousing (EDW) Readiness

Driving Competitive Advantage through Increased EDW Maturity

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About the Author



Rick Sherman, the founder of Athena IT Solutions, has over twenty years of data warehousing and decision support systems experience. Rick is an expert instructor and speaker at industry conferences and seminars, and also teaches at Northeastern University's graduate school of engineering. He has a monthly column in [DM Review](#) and has been quoted in *Business Week*, *CFO Magazine*, [hp.com](#), and *Microsoft Momentum*. Rick writes for two blogs: [The Data Doghouse](#) and Informatica's [Enterprise Data Management blog](#).

About Athena IT Solutions



[Athena IT Solutions](#) offers data warehousing and business intelligence consulting services. Services include assessments of current data warehousing needs, evaluations and architectural reviews, project jumpstarts, full life-cycle development, and data warehousing and business intelligence training. Athena IT Solutions is located outside of Boston, Massachusetts.

About the Sponsor

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Informatica Corporation delivers data-integration software and services to solve the problem of data fragmentation across disparate systems, helping organizations gain greater business value from all their information assets. Informatica's open, platform-neutral software reduces costs, speeds time to results, and scales to handle data-integration projects of any size or complexity.

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Executive Summary

Data is an enterprise's most strategic asset. Everything about running a successful business depends on getting comprehensive, consistent, correct and timely data. If the data isn't right, nothing is going to be right – not in your day-to-day operations, not with what you provide to stakeholders, and especially not in your long-range plans.

Enterprise Data Warehousing (EDW) has never been more important for creating a competitive advantage in business. This common foundation provides all the data the enterprise needs, across applications and divisions, with accuracy, clarity, and trust. EDW helps get the right data to the right people at the right time so they can analyze corporate performance and act on it. It powers operational business processes that rely on timely, accurate data.

This paper discusses why businesses are turning to enterprise data warehousing, the issues it helps mitigate, the business solutions it provides, and the technology enablers that you should seek in EDW or moving to an EDW approach. It also provides a framework for assessing your EDW readiness, and highlights survey results from real-life customers to shed light on the state of your peer organizations. It will provide a frame of reference for where your organization is with enterprise data warehousing – and where you want to go in the future.

Business Drivers for Enterprise Data Warehousing

Business use cases for EDW are relevant for all departments in an organization. Table 1 shows how it helps in various scenarios.

Table 1: Examples of Business Solutions with EDW

Function	EDW Solution Benefits
Finance	<ul style="list-style-type: none"> • <i>Complete the monthly planning and forecasting cycle</i> in days instead of weeks. • <i>Ensure availability of raw data</i> to analyze “budget versus actual” and “sales to forecast.” • <i>Ensure accessibility, accuracy and traceability</i>, especially crucial for Sarbanes-Oxley compliance.
Marketing and Sales	<ul style="list-style-type: none"> • <i>Increase customer lifetime value</i> by examining data to identify up-sell and cross-sell opportunities to customers with the most potential.
Long-range Strategy	<ul style="list-style-type: none"> • <i>Provide a foundation for future growth</i>, including mergers and acquisitions. • <i>Enable a holistic view of the business</i> – understanding what drives the business beyond basic financial operations. • <i>Examine pros and cons</i> of a merger such as which products, customers or geographies are driving sales growth and profitability.
Product Development	<ul style="list-style-type: none"> • <i>Facilitate the flow of accurate customer requirements and product reliability</i> data for product development. (A medical equipment company might feed clinical data to R&D to accelerate time-to-market.)
Manufacturing	<ul style="list-style-type: none"> • <i>Manage supply chains and partner relationships</i> for a manufacturing firm requires the granular details of inventory by product, time and vendor.

Organizations often build on their initial success with specific applications, such as financial reporting, for broadening their EDW implementations. Using EDW as a data backbone, business users can tap into data for decision support and analytics.

Create Competitive Advantage

Your competition never sleeps. Fortunately, neither does EDW. It's at the heart of every successful enterprise. Throughout an enterprise, EDW helps employees and partners analyze operations and make the right decisions to drive revenue growth, increase profits, and improve productivity and efficiency. In short, EDW serves as the foundation of all informed, profitable decisions. For example, EDW provides the data that helps businesses in the following ways:

- Spot emerging marketplace trends.
- Design, test, and produce new products and services that take advantage of these new trends.
- Deliver products and services to a ready audience – *before the competition*.
- Increase up-sell and cross-sell by identifying customers who are the most likely buyers of additional products or incremental services.

Improve the Consistency of Business Operations

A business needs consistent and accurate data to operate efficiently. And it's not just important to utilize accurate data—you have to do so in a cost- and resource-effective manner. If your business groups are constantly gathering data and then reconciling it with other groups because the numbers do not match, then your current environment is costing you too much in labor-intensive tasks and in lost opportunity.

Using consistent business rules and analytics, some business decisions can be automated, so questions are answered more quickly and staff members can devote their time to other tasks. Supply chain operations and customer-facing activities have all benefited from enhanced accuracy and automation. This has improved back-end operations such as inventory control and asset management.

Ensure Regulatory Compliance

If CFOs and CEOs weren't in the hot seat before, they certainly are now with Sarbanes-Oxley. Since "Sarbox" became law five years ago, the pressure for financial transparency has intensified. Company leaders take very seriously Sarbox's requirements for auditor independence, corporate governance, internal control assessment, and enhanced financial disclosure.

Sarbox isn't the only regulation companies are concerned with. Compliance including HIPAA, GLBA, Basel II, SEPA, and US Patriot Act is also driving the need for IT systems that can track, retrieve, and verify data. Compliance has intensified the need for EDW, making it a business and financial *necessity*.

Why an EDW Readiness Assessment?

EDW is a process. Organizations undertake the process in phases, using checks and balances to ensure that each step meets their goals. Your enterprise must understand

and commit the people, processes and technologies necessary to achieving an EDW solution that manages data as your corporate asset. Organizations that are successful with EDW have a clear understanding of their requirements from the beginning with strong executive sponsorship. The EDW assessment helps you evaluate where you are and helps you start creating the blueprint to get you to EDW.

Evaluation of data-integration capabilities is also critical to the construction and ongoing integrity of effective EDW. Data-integration solutions power the ongoing lifecycle of data access, discovery, quality, integration, and delivery. For this reason, assessing your current readiness will serve as a baseline to design your strategy and prioritize your areas of data-integration investment for your EDW initiative.

Assessing Readiness against Technology Enablers

What are the areas that you need to consider in assessing your organization's EDW readiness?

Increase Business Relevance across the Enterprise

Access *All* Your Enterprise Data

The need for immediate access to accurate data for quick decision making and speedy operations has never been more pressing. Several factors have contributed to this:

- Data delivery to and from a variety of transactional applications and systems must be integrated to give businesses easy access and "right time" delivery.
- Unstructured data access—email, Word files, spreadsheets, PDF, and presentations—must be factored in to your EDW because as much as 80 percent of data is in this format.
- Government and industry regulations require strict adherence to complex new standardized data formats.

To cope with these demands organizations need a unified, consistent approach for accessing all their data assets, regardless of the data formats, structures, or systems.

Make Data Available to Applications and Systems

EDW is not just about analytics and reports, but is also about data processes. SOA is a way to "process-enable" an EDW. SOA is a standard-based design approach that creates a layer of abstraction between applications and data sources. This abstraction layer lets you decouple your data sources and your EDW system from your business intelligence (BI) applications, freeing your EDW to serve multiple downstream applications—both internal to your enterprise and external with customers, suppliers, partners and other stakeholders. This approach also gives you the flexibility to accommodate new applications and unforeseen requirements.

Capture Business Context

An enterprise needs to manage its data assets in the context of how they are used by business processes and users. To accomplish this, they need end-to-end metadata management. It lets them measure how change impacts the organization. It also enables

easier answers to common questions like where data comes from. Metadata also helps to provide the business context around data for decision-making, and ensures semantic consistency between the enterprise data warehouse and consuming applications.

Provide Trusted, Certifiably Accurate Data

Monitor and Measure Data Quality

Businesses depend on quality data. It can be difficult to manage data when it comes from so many systems and in disparate structures. Data-quality problems can manifest themselves in a variety of ways as shown in Table 2.

Table 2: Examples of the Ramifications of Data Quality Problems

Function	Data Quality Error	Implications
Customer Operations	Customer data mix-up causes 500 credit-worthy customers to receive bounced-check notices	<ul style="list-style-type: none"> • Time and effort to apologize to customers. • Damaged customer goodwill and trust. • Lost opportunities to up-sell and cross-sell, due to lack of relevant data.
Finance	Financial data differs from one system to the next	<ul style="list-style-type: none"> • Non-compliance with Sarbanes-Oxley. • Embarrassing press. • Legal action.
Product Development	Product guidelines aren't followed by suppliers because key data was incorrect	<ul style="list-style-type: none"> • Deficient products are recalled. • High cost to remanufacture. • Loss of customer trust in product.

In order to trust and act on data, enterprises need data-quality solutions that monitor and manage multi-dimensional metrics such as data completeness, conformity, consistency, accuracy, duplication, and integrity on an ongoing, proactive basis. In addition, the tools must be designed to promote joint ownership and participation by business and IT.

Manage Users and Security

For a large-scale data-integration project, it is essential to implement a team-based approach including software development, quality assurance, release management, version control and overall administration to ensure success of these complex projects. The user and security risks in such complex environments are illustrated in Table 3.

Table 3: Risks of Mismanaging Users and Security

Business Risk	Impact
Miscommunication between workers trying to collaborate between different time zones and geographies.	<i>Delays, missed deadlines, increased costs and rework.</i> In addition, team morale is compromised and sponsors' confidence erodes.
Inadvertent change and lack of control while moving from one application to another — versions of code assets aren't identified and an older version gets used.	<i>Wrong or un-optimized decisions</i> made based on incorrect data prior to the errors being discovered. <i>Costs of fixing the problems and reputational risks</i> for your projects after problems are discovered.
Poorly documented or undocumented implementations.	<i>Lost critical knowledge of the code</i> when IT developers leave. (This is a very costly situation that is too common in IT application development today.)
Security violations such as unauthorized access to private data and weak password management.	<i>Security audit failure</i> resulting in time-consuming control testing and reexamination of current practices, forcing revamp of IT systems and process.

For this reason, a team-based development approach must be implemented through a robust and unified user management and security framework.

Establish Audit Trails

If your CFO asks you to substantiate a certain number, you need to trace its lineage to know exactly where it came from—its source systems, what systems processed it, how it was manipulated, and how it was changed. This includes what happens to data as it progresses through several potential stops in data marts, cubes and other custom applications. To increase data-management competency, an enterprise must have the means to document and report what happened to that data, and who made them.

Increase Enterprise Deployment Readiness

Enable Real-time, Operational Access

To satisfy today's complex business demands, organizations need real-time integration to power critical business processes and information flows. They often need to integrate operational data with historical information stored in enterprise data warehouses to power their day-to-day business processes and accelerate decision-making. With EDW, IT organizations can deploy real-time data-integration solutions, leveraging a common set of tools. For this reason, organizations are adding real-time capabilities to process and deliver enterprise data to end-users as part of their enterprise data foundation.

Ensure High Availability

To ensure the reliability for mission-critical EDW operations, a data-integration platform must be expressly engineered for high availability. Data resilience, failover, and recovery are vital if organizations are to avoid data downtime that can interrupt business continuity, alienate customers and partners, and result in major financial losses. For those reasons, leading organizations are implementing a grid approach to achieve fault tolerance and resilience for data-integration services at lower risk and cost.

Take Advantage of Deployment Flexibility

An effective data-integration strategy has to manage dozens or even hundreds of terabytes of data with sufficient flexibility and adaptability to cope with future growth. One way to accommodate these pressures is to push selected processing down to a source or target database instead of keeping it all within the data-integration server. This approach, Extract Load Transform (ELT), makes sense when data is "co-located" within a common database, or where database hardware and software have additional processing power. As part of EDW deployment planning, organizations are looking to add the option to choose ELT or ETL in a flexible, unified environment.

Make Sure Your Organization is Ready, Willing and Able

Every data-integration project is, ultimately, driven by people, policies, and procedures. By establishing an Integration Competency Center (ICC), an enterprise can formalize best practices and leverage a common technology foundation around these drivers to reduce costs and redundancy enterprise-wide, as shown in Table 4.

Table 4: How an ICC Can Help

Problem	Resolution with an ICC
IT systems are built project-by-project, no re-use of existing knowledge or resources.	<ul style="list-style-type: none"> • <i>Bypass piece-meal, inefficient efforts</i> through a common set of shared services, methodologies, and policies.
The historical divide between DW/BI versus operational systems and enterprise applications, such as ERP, CRM and SCM.	<ul style="list-style-type: none"> • <i>Break the siloed paradigm</i> of assigning separate budgets, people and support resources. Encourage reuse, sharing and leveraging resources across these projects.
Integration technologies, such as ETL, EAI and EII are viewed as separate and competing.	<ul style="list-style-type: none"> • <i>Establish a common foundation of data-integration services</i> leveraging ETL, EAI and EII. Use these complementary and overlapping technologies as building blocks.
Business groups fund and implement applications for their own needs, creating silos.	<ul style="list-style-type: none"> • <i>Help decrease the cost and risk</i> normally associated with siloed projects and data warehouses by developing specialized skills and processes.

ICC embodies the proverbial wisdom of combining and extending resources. ICC applies the unique talents, resources, and knowledge across multiple integration initiatives. That, in turn, increases development productivity and consistency, and shortens time to value.

Conducting an EDW Assessment

What is an EDW Assessment?

An enterprise data warehousing assessment assists you in examining where you are and where you should be, and recommends how to initiate the process of designing an EDW solution. The assessment steps will:

- Ascertain your current environment and existing business needs.
- Compare above with industry best practices and benchmark your firm against other firms along the EDW maturity curve.
- Perform a gap analysis between where you are and where you should be.
- Recommend what steps would help move you towards an EDW solution.

The EDW assessment helps you regardless of where you are along the DW maturity stages. If you are new to EDW, it helps you determine your enterprise's readiness for EDW and provides recommendations for how you can get started. If you have reached the initial stages of EDW, it should assist you to determine specific steps you need to take to increase the business value of your data.

Assessment Background

This assessment is appropriate for anyone who is interested in understanding their technology readiness to formulate and strategize a plan for achieving EDW objectives. Typical participants include developers, data architects, enterprise architects, project managers, modelers, system analysts, and DBAs. The participants can be at varying stages of the EDW program development including requirement gathering, design and implementation, maintenance and expansion.

Assessment Questions

The assessment questionnaire was designed to give insights into your current readiness against EDW requirements in the following categories:

- **All Enterprise Data** - How do you ensure a consistent means of accessing all enterprise data?
- **Data Services and SOA Readiness** - How do you make data available to multiple consuming applications and systems?
- **Business Consistency** - How do you define, measure and monitor the quality of your data?
- **Data Quality** - How do you capture the business context for data and share that information across the enterprise?
- **Security and Integrity** - How do you manage users and security across global teams?
- **Auditability and Traceability** - How do you establish an audit trail on data, or track down where it came from and where it's going?
- **Real-Time** - How do you enable end-users to achieve real-time access to data with minimum latency?
- **High Availability** - How do you support high availability requirements for your data-integration environment?
- **Deployment Flexibility** - How do you ensure deployment flexibility in integrating data, for example, having the ability to choose between Extract, Transform, and Load (ETL) and Extract, Load, Transform (ELT)?
- **Organizational Readiness** - How do you address the sharing of data-integration resources, best practices, and processes across your enterprise?

Three levels of ranking (low, medium and high) in each category are provided based on the selected response to each question. In addition, participants will receive their overall ranking (low, medium and high) for EDW readiness based on the aggregate scores. The complete EDW questions and scorecards are available at www.informatica.com/info/edwonlineq307. Supplemental questions for the EDW assessment are provided in the appendix to help you understand your detailed environment after receiving the results from this on-line assessment tool.

EDW Assessment Survey Results

Survey Methodology

Informatica completed an on-line survey of 64 respondents to an online EDW assessment. This sample included a broad mix of data warehousing practitioners, primarily from large enterprise and institutions. Informatica solicited survey participation from its customer base on a voluntary basis by email. They are a self-selected group of individuals who are likely at more advanced levels of EDW maturity than the industry norm. For this reason, these results are not meant to accurately represent the market average. Instead, this analysis is our attempt to gain insights directly from EDW practitioners.

Survey Highlights

In this paper, we review key findings from a broader set of survey results. Overall survey results prove that more organizations than ever before are taking a best practice-driven, tool-based methodology for EDW. If you have more questions about the survey itself or survey results, please visit www.informatica.com/info/edwonlineq307.

38 % of participants have a consistent method for accessing all data

A significant majority, 62% of the participants, have either loosely integrated systems or an inconsistent approach to access data. Yet it is encouraging to know that 38% of the respondents established a method to access all types of data across an enterprise. The capability to directly source and target business-critical data to and from a broadest array of systems and applications is essential to enhance enterprise accessibility.

Question. How do you ensure a consistent means of accessing all enterprise data?

Response	Participant%
Each group or department has its own means for accessing data. (Low)	20%
We have multiple enterprise application systems and data warehouses/data marts that are loosely integrated. (Medium)	42%
We have a consistent method for accessing all types of data, regardless of the system or format, across the enterprise. (High)	38%

57% of participants infer data lineage from multiple tools

In the data auditability category, more than half (57%) of the respondents are inferring data lineage by examining tool-specific repositories and documentation for custom applications. It is also important to note here that 26% still rely on manual interview and document review methods to cobble together audit trails. Broadening metadata sources and making greater use of visual lineage and "where used" tools can increase readiness in this area.

Question. How do you establish an audit trail on data, or track down where it came from and where it is going?

Response	Participant%
We interview the different system owners and review documentation. (Low)	26%
We attempt to infer data lineage by examining multiple tool-specific repositories as well as documentation for any custom-coded applications. (Medium)	57%
We have a metadata management tool that can automatically generate a visual representation of data lineage across multiple systems, with drill-down and search capabilities that track data from its original source to its final end use by the business. (High)	17%

58% of participants do *not* deploy grid computing for high availability

Regarding high availability requirements, 58% of the respondents are not configured for grid-based high availability. On the other hand, it is positive news that 25% of respondents are achieving grid-based resiliency and fault-tolerance. Implementation of dynamic grid environments can eliminate the need to manage nodes and thus deliver adaptive load balancing to achieve high availability with lower cost and risk.

Question. How do you support high availability requirements for your data-integration environment?

Response	Participant%
We do our best to ensure our hardware and software stay up and running. We aren't configured for true high availability across multiple nodes on a grid. (Low)	58%
Our tool supports high availability using multiple nodes, but it's time-consuming and difficult to configure and manage. (Medium)	17%
Our tool enables us to easily configure high availability including built-in resiliency, failover, and recovery, and multi-node/grid deployment to leverage existing hardware investments. (High)	25%

17% of participants lead ICC implementations

For organizational alignment, 17% of the respondents have implemented an enterprise-wide ICC program. This sounds like a minority but given the complexities of setting ICC, we are pleased to know that these leading organizations are truly building integration expertise to promote reuse and minimize cost. Examining and selecting a model that suits your organization may be your next logical step for ICC success.

Question. How do you address the sharing of data-integration resources, best practices, and processes across your enterprise?

Response	Participant%
Each project or application is responsible for staffing and implementing any data-integration work required, and making their own technology and architecture decisions. (Low)	26%
We have some common integration standards, processes, and tools; however, it is the responsibility of each project to implement and staff the necessary resources. (Medium)	57%
We have implemented an enterprise-wide integration competency center (ICC) that each project or application leverages for their integration work. (High)	17%

C Conclusion

Data treated as a corporate asset – we are in an exciting time when data can be used both strategically and tactically for enterprises of all sizes. An enterprise can now get the comprehensive, consistent and current data it needs to make decisions that impact both daily operations and long-term performance. Enterprise Data Warehousing (EDW) is what makes all this possible.

The old proverb says any journey of one thousand miles begins with a single footstep. Your journey to manage enterprise data via EDW begins with an assessment. The selected EDW assessment survey results reveal that organizations are at varying stages of EDW maturity and actively working to enhance their readiness. An EDW assessment can bring clarity to the issues and opportunities behind your program success.

Your enterprise is already spending a lot of time and resources to get the data it needs to operate. The enterprise not only incurs these direct costs, it also incurs the lost opportunity cost of not getting the data for making informed business decisions. Knowing your EDW readiness helps you fine-tune your investments in your data and ultimately your business.

Appendix: Supplemental Questions for EDW Assessment

This appendix contains the supplemental questions and answers to the EDW assessment questions, results and recommendations provided in Informatica’s online assessment at www.informatica.com/info/edwonlineq307. It will help you understand your detailed environment after you receive the results from this on-line assessment tool. For guidance related to these supplemental questions, please contact Rick Sherman at rsherman@athena-solutions.com or visit www.athena-solutions.com/edwassessment.shtml.

1. How do you integrate data other than relational databases? The formats include: <ul style="list-style-type: none"> - mainframe data - unstructured data (e.g. Microsoft Word documents and Excel spreadsheets) - XML and EDI data, relational data, application data, and message queue data - semi-structured data (legacy data formats such as COBOL, standards such as HIPAA, EDI, HL7, SWIFT) - and complex structured data (ACORD, MISMO or data in XML documents with hierarchical and recursive structures) 		
Our data-integration tool is primarily for integrating relational data. For other data types, like mainframe, we use scripts and hand-code to integrate data. We don't integrate unstructured, semi-structured or complex structured data.	The platform supports access for both structured and semi-structured format. We have some manual or hand-coded mechanisms to account for unstructured data.	We have one common tool that supports all these data types in an automated fashion, with common metadata.
2. How do you describe your SOA readiness?		
We are considering SOA and its implications in our enterprise.	We have started to or have implemented specific SOA related projects using messaging connectivity or web services.	We have or are rolling our SOA including messaging connectivity, web services and data services across business applications.
3. How do you establish connectivity across multiple applications such as ERP (enterprise resource planning), CRM (customer relationship management), and SCM (supply chain management) systems?		
We generally write custom code to establish connectivity to these applications.	Our integration tools have pre-built connectivity for common systems such as relational databases, enterprise applications and business intelligence environments.	Our data-integration platform has pre-built connectivity to a wide variety of systems, including mainframe, enterprise applications and messaging systems.
4. How do you cleanse your data and remediate data quality issues, such as accuracy, completeness, conformity, integrity, consistency, and duplication?		
Each time a data quality issue is encountered, we address it on a one-off basis, usually via hand coding or manual scrubbing of data.	We have a data quality tool where we can define business rules to address quality issues. The tool enables data quality monitoring that then alerts us that we need to address potential DQ issues.	Our data quality services have the capability to remediate quality problems. In addition, we keep historical statistics to enable root cause analysis and help us proactively handle these issues.
5. How is data classified according to its sensitivity, priority, and usage patterns?		
Each group makes its own decisions about if and how to classify their data. There is no enterprise-wide framework.	The tool provides a mechanism to classify information by data type, priority, usage, locations, user access, in specific business areas.	The tool supports an enterprise-wide strategy on information classification, enabling data to be easily grouped and classified.
6. How do you establish specific areas of responsibility and authority for different users and roles throughout the enterprise?		
We assign different areas of responsibility to different users, but it's pretty high level and there's no built-in way to enforce it.	The tool has a well-defined workflow manager to separate tasks for different users.	The tool enables granular segregation of duties, as well as reporting on interdependencies of different tasks.

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7. How do you establish and enforce security and privacy controls across the enterprise?		
We assign different privileges to different users, but it's not very granular and there's no built-in way to enforce it	The tool supports user- and role-based privilege management to manage access to data and key features	The tool has robust privilege management capabilities for managing and reporting on granular privileges such as copy object, maintain labels, and change object status.
8. How do you show the lineage of data across multiple systems and applications, including both backward and forward tracking?		
We review documentation and interview the different system owners to try to figure out the data lineage.	We have a metadata repository that helps infer data relationships across systems and applications.	We have a metadata management tool that graphically displays data lineage, with drill-down capabilities.
9. How do you design and manage workflows for your data-integration processes?		
We rely on email and existing corporate Wiki/file folders to manage our workflows.	Our tool has basic data-integration workflow design and management capabilities.	Our tool has robust workflow orchestration capabilities including support for grid deployments and global, cross-team collaboration.
10. How do you control and manage different versions of your rules and workflows?		
We check dates and timestamps on our data-integration code and workflows to track versions.	We rely on a software change management tool like Rational to manage different versions generated by our data-integration tool.	Our data-integration tool has robust, granular version management and deployment capabilities built in.
11. How do you maximize the rate at which your system can process data?		
We manually tune our processing and workflows to try to increase throughput; we can't easily support partitioning.	Our tool supports partitioning and parallelism, but it requires a lot of manual coding and the configuration is very cumbersome.	Our tool makes it easy to configure multiple performance enhancement options including pipelining, dynamic partitioning and smart parallelism.
12. How do you scale your system to meet growing demands?		
We add more hardware to support growing data volumes, but we're getting diminishing returns.	Our tool takes advantage of 64-bit processing to improve scalability.	Our tool takes advantage of 64-bit, thread-based parallel processing and grid deployment for near-linear scalability.
13. How do you configure your system to address data with different volume and timing requirements-- from event-driven, message-based delivery to net changed to scheduled, large volume batch delivery?		
We do most of our processing on a scheduled, batch basis.	We have different tools that support batch vs. message-based delivery. Our processes have to be recoded and/or recompiled to work in different latency modes.	We have one common tool which allows data volumes and latencies to be configured to meet business needs, without any recoding.
14. What is your program and project approach to data and application integration?		
Our integration efforts are independent of each other with regards to people, budget, technologies and projects.	Our integration projects are oriented along different technologies, i.e. ETL, EAI, EII, messaging, XML, etc.	We share people, process and products across a common integration platform and architecture.
15. What is your IT organizational approach to data and application integration skills & workload?		
Our IT organization is organized along business groups, functions and process. They operate independently with regards to people, process and products.	We have an organizational mix with some IT resources assigned to business functional areas with others oriented towards product specific skills.	We have established expertise centers around business and technology areas to enable sharing of people, processes and products.

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