

Business Intelligence Solutions: Data Warehouse versus Live Data Reporting

If you have tried to improve reporting for your organization against your ERP data, you have probably realized the system is configured for data entry rather than data retrieval. In this document, we use the JD Edwards ERP as the example, but this document applies to all ERP's. The complexity of the data model and the format of data stored in JD Edwards leads some vendors to claim that the only successful way to report out of JD Edwards is with a Data Warehouse strategy, and that Live Data reporting is not a viable option. If you have the desire to improve reporting and provide transparency and accountability regarding operational performance through out your organization, then understanding the difference between a Data Warehouse and Live Data reporting approach is a key next step in your Business Intelligence evaluation.

The objective of this whitepaper is to examine the issues (and myths) that exist between Live Data and Data Warehouse business intelligence solutions. As you consider implementing new reporting and business intelligence software that will empower your people it is only reasonable that you choose both an approach and a software vendor based on factual information. The first step in your evaluation process is to understand and define your business profile (business needs, existing technical resources, objectives and budget). Next, identify and understand the available approaches to reporting and business intelligence in the context of your business profile. In this paper, we will describe the Data Warehouse and Live Data approaches to business intelligence and provide the pros and cons for each. The information shared in this paper is a result of working with over one hundred JD Edwards customers, as well as drawing on information provided by sources such as The Data Warehouse Institute, Gartner, Forrester, etc.

The Issue...

When your organization chose JD Edwards as your ERP software you may have been led to believe that quality reporting was included with the software, and reporting would not be an issue. Now, months or years later, you realize that the out of box reporting offerings from JD Edwards have serious limitations for meeting your information requirements. As a result, your ERP investment has failed to achieve its full potential of unlocking the power of knowledge throughout your organization.

Often, one of the following three reporting scenarios emerges:

- 1) You spend hundreds of hours every month preparing reports in Microsoft Excel and delivering spreadsheets to management for month, quarter, and year-end analysis.
- 2) As a World customer, you struggle with maintaining and managing hundreds or thousands of FASTR and WorldWriter reports or, as an EnterpriseOne customer, you are frustrated with the complexity of the Enterprise Report Writer waiting weeks or months for people in IT to create and deliver your reports. Even when reports are delivered, they take ten times longer to run than you hoped.
- 3) Your organization attempts to implement third party reporting or business intelligence software but it has not achieved the success promised or anticipated.

If one or more of these scenarios describes how you currently report from JD Edwards and you have come to the conclusion that your current reporting environment is limiting you to reach your long-term reporting objectives then it is time to explore alternate reporting and business intelligence solutions that will meet your corporate objectives regarding the sharing of information throughout your organization.

Alternative Reporting and Business Intelligence Solutions...

The two approaches to consider for reporting and business intelligence that will provide the best long-term results are;

- 1) Reporting from a Data Warehouse built on JD Edwards data
- 2) Live Data Reporting against your production JD Edwards data

Why not Microsoft Excel? The most common ad-hoc reporting software used by companies who engage us is Microsoft Excel. Due to the ease of use and familiarity, many people are comfortable with Excel, however, many companies come to the conclusion that Excel creates more problems than advantages, and it precludes them from achieving long-term reporting objectives. Many customers share the frustration of spending hundreds of hours every month in Excel performing continuous manual processes. Due to the inherent manual process of Excel, managers lack confidence in the information presented to them in executive meetings as numbers on multiple spreadsheets fail to reconcile. If you envision Excel as the report writer of choice for your organization, there are several software packages you can use to enhance your Excel experience; in fact we can help you integrate information from JD Edwards into Microsoft Excel. As none of our customers consider Microsoft Excel to be a sustainable long-term strategy, this document will focus on best practice approaches for reporting and business intelligence which employ either a Data Warehouse or Live Data strategy.

What is MetaData and why is it important?

Metadata is a technical term you will encounter as you start evaluating reporting and business intelligence. Metadata may be defined as “structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource”. Metadata is often called data about data or information about information. Metadata makes your data useful by turning it into information. For the sake of this document, we will classify Metadata as “Static” or “Dynamic” as each type of Metadata may be addressed differently with a Data Warehouse versus Live Data strategy. Static Metadata addresses database structure (tables, fields, data types, etc) making them more meaningful to users. Dynamic Metadata addresses logic based on user prompts and data stored in the tables (calculations based on time period prompts, ledger types, etc).

Examples of Static Metadata for JD Edwards are:

- Table Names: i.e. “F0101” with metadata “Address Book”
- Field Names: i.e. MCMCU with metadata “Business Unit”
- Date Fields stored in Julian vs. Gregorian: i.e. 107181 with metadata 6/30/07
- Amounts and Units stored without decimals: i.e. 15025 with metadata 150.25

Examples of Dynamic Metadata for JD Edwards are:

- Calculated Fields based on field value such as Ledger Type i.e. Actual Amounts, Actual Units, Budget Amounts, Budget Units, etc.
- Calculated Fields based on criteria above including a user prompt for time period i.e. Year to Date Actual Amount, Quarter to Date Budget Amount, etc.
- Calculated Fields based on criteria above including a user prompt for year i.e. Current Year – YTD Actual Amount, Prior Year
- Manipulated field based on blanks or null values in fields i.e. Object.Subsidiary & Description which returns the Object Account & Description or Object.Subsidiary & Description depending on whether or not the Subsidiary Account is blank

REPORTING FROM A DATA WAREHOUSE BUILT ON JD EDWARDS DATA

The five main elements of a Data Warehouse strategy are:

- 1) Your production JD Edwards database
- 2) A second database used as your target Data Warehouse
- 3) ETL software used to Extract Transform and Load data from your production JD Edwards database into your target Data Warehouse
- 4) Reporting and business intelligence software used to deliver information from your Data Warehouse to managers throughout your organization
- 5) Report Templates used to address Dynamic Metadata, calculations and functions not integrated in a Data Warehouse

With a Data Warehouse strategy, data is extracted, transformed, and loaded into a reporting database configured as a Data Warehouse including the Static Metadata. Once the Data Warehouse is constructed, Reporting and Business Intelligence software must also be implemented in order to report from the Data Warehouse. Report Templates including functions and calculations are used to address the Dynamic Metadata like Year-to-Date Actual and Budget Amounts. The Dynamic Metadata included in report templates ease the report development experience for users so they do not have to develop the same calculations in each report they create. Once a Data Warehouse is implemented, it often becomes the source for reporting and business intelligence rather than your production database.

A key component in most Data Warehouse projects is the ETL toolset needed to import, cleanse and validate data prior to making the data available in the target Data Warehouse. **In fact, 75% of the initial Data Warehouse project commonly consists of ETL process design, execution, and debugging.** (Source: Foundations of SQL Server 2005 Business Intelligence, Lynn Langit)

The argument in favor of a Data Warehouse approach:

Implementing a Data Warehouse for reporting and business intelligence is a best practice approach according to The Data Warehouse Institute. Some people claim that the only way to address the complexities of JD Edwards is through a Data Warehouse, and the only successful approach to business intelligence is then to use this Data Warehouse as the source for all company reporting.

Pros:

- Reports run against the Data Warehouse rather than your production database so your production database can be dedicated to transactional processing rather than reporting

- If you have multiple instances of JD Edwards or multiple ERP's you can easily merge data from these multiple data sources into one target data store for consolidated reporting
- Reporting can be faster than Live Data systems
- Static Metadata is provided in the Data Warehouse

Cons:

- Building or buying pre-built Data Warehouses is more expensive than a Live Data strategy
- "IT intensive" with heavy reliance on IT support
- Resource intensive to manage, maintain, and provide additional content on an ongoing basis
- Dynamic Metadata is not addressed in the Data Warehouse so it will need to be addressed in another format like a report template or created in reports you develop
- Populating the Data Warehouse with the data necessary to address all possible questions requires that you identify up front every possible scenario that needs to be addressed so you are sure the information is stored in the Data Warehouse
- The frequency of data being refreshed in the Data Warehouse may impact reporting. For instance, while in your month-end close process you post a journal entry and want to run a financial statement immediately thereafter, you need to ensure that the entry was refreshed in the Data Warehouse
- Requires additional database software to store data and ETL software to populate your Data Warehouse
- Reporting and business intelligence software needs to be implemented on top of the Data Warehouse
- When data is extracted from your production database it competes with transactional processing
- Because of this complexity the failure rate for Data Warehouse implementations is over 50%. (Source: Gartner)

LIVE DATA REPORTING AGAINST YOUR PRODUCTION JD EDWARDS DATA

The three main elements of a Live Data strategy are:

- 1) Your production JD Edwards database
- 2) Reporting and business intelligence software used to deliver information from your Data Warehouse to managers throughout your organization
- 3) Report Templates used to address Static and Dynamic Metadata

With a Live Data strategy, your production JD Edwards data is reported on directly rather than reporting from a target Data Warehouse. Reporting and Business Intelligence software is used with Report Templates similar to those described in the Data Warehouse Strategy to deliver information to management when reporting using a Live Data strategy.

The argument in favor of a Live Data approach:

Implementing a Live Data strategy for reporting and business intelligence is the best approach for companies who want to empower people outside IT to develop and distribute reports to management without the technical skills, resources and budget required to implement and maintain a Data Warehouse. Some people claim that a Live Data strategy provides immediate

return to the business in a matter of days rather than months, years or possibly never with a Data Warehouse Strategy.

Pros:

- Less costly than a Data Warehouse strategy
- Less complicated than a Data Warehouse strategy
- “IT Lite” with much less reliance on IT resources than a Data Warehouse strategy
- Reports run against live production data rather than a Data Warehouse so you know all data returned in reports is guaranteed to be the most recent data in your JD Edwards environment
- Corporate production data sources in all formats (DB2, SQL Server, Oracle, Access, Excel, etc.) can be reported against directly rather than transmitted to a Data Warehouse a required first step of configuring all the transformations to get the data into a Data Warehouse
- When requirements change you can immediately develop reports without having to make sure the Data Warehouse is populated with the data necessary for the new report
- Reports may run up to 10 to 30 times faster with Live Data reporting than with existing JD Edwards internal report writing tools like ERW, or FRW
- Report development can be performed by people outside IT
- Reports, dashboards, and queries can contain drilldowns and hyperlinks to information in any JD Edwards module or data sources outside JD Edwards
- Both Static & Dynamic Metadata is included in report templates

Cons:

- If you purge your JD Edwards production tables often you will have to copy them first if you want to report historical information with a Live Data strategy
- Report processing is shared with transactional processing on your production JD Edwards database

Next Steps...

Once you understand the details of a Data Warehouse and Live Data reporting strategy, you can proceed with evaluating vendors and solutions that best fit your business profile and reporting and business intelligence objectives.

In helping you determine which is the best BI approach do the following:

- 1) Identify all mission critical capabilities required to meet your reporting objectives
- 2) Assess your organization’s business profile by considering your technical abilities, size, and budget constraints to confirm that you will be able to successfully implement the approach you select and that the capabilities provided will meet your corporate objectives.
- 3) Request vendors to demonstrate and prove their solution fits your business profile and provides the capabilities necessary to meet your objectives.

When evaluating vendors, beware of vendors who make claims about reporting and business intelligence approaches that don’t fit their specific offerings. If a vendor is pushing one approach without considering your business profile and the abilities of your organization, you should be cautious. For instance, if you are a \$100 Million dollar company with an IT staff of less than five people and you are being told that your only chance for a successful business intelligence

implementation is with a Data Warehouse, understand that there are many customers who have successfully implemented Business Intelligence without a Data Warehouse.

Preferred Strategies is a business integration solution provider that helps customers extract information from Enterprise Resource Planning (ERP) and other corporate systems and deliver this information to management and other end users in formats that facilitate better decision making. Preferred Strategies has created integrated software to jumpstart customers' abilities to get information from ERP systems like JD Edwards and empower managers and other users to quickly analyze corporate performance without reliance on IT resources.

When you engage Preferred Strategies in your reporting and business intelligence evaluation, we will work with your team to understand your business profile and the reporting objectives of your organization. We will help expose the depth of your problem so that you can assess whether or not implementing new reporting and business intelligence software makes sense for your organization. And finally, if you have the will and are committed to making a change, we will design and implement the most cost-effective solution given your resources, capabilities and budget.

Preferred Strategies supports both Data Warehouse and Live Data reporting strategies and if you would like to learn more about Preferred Strategies solutions for JD Edwards using Business Objects software, please contact us.

Learn More

To learn more about Preferred Strategies or Business Objects, please contact us at (888) 232-7337, send an email to info@preferredstrategies.com, or visit our web site at www.preferredstrategies.com.