



## THE *DATA MART*: YOUR ONE-STOP-SHOP FOR DATA CONSOLIDATION AND MANAGEMENT REPORTING

You know the drill. First you run a report on one of your transaction systems: Sales, Cost Accounting, Open Orders, etc. Then you export it to *Excel* – or, Heaven forbid, you *key* it into *Excel*.

Then you perform the same exercise three, four, or maybe ten more times in order to get your critical data into Excel spreadsheets. You also key additional information into these spreadsheets in order to “tweak” the data. You then link those spreadsheets, identify and correct all the errors, and you have the report you need.

If you’re lucky, only three or four days have passed before you have a look at the consolidated information.

Unfortunately, this is a scenario that is all too common in many organizations, both large and small. It is also unnecessary.

The need to produce timely, accurate consolidated information is universal. Meeting that need also faces several challenges:

1. Despite its popularity, Microsoft *Excel* is not the best solution for this problem. It lacks many features that a database-driven solution provides.
2. A sometimes bewildering array of options is available. These range from reports provided by the transaction processing systems, to enterprise data warehouses using proprietary databases and reporting tools.
3. The architecture of mainline transaction systems is not suited to the type of processing required to meet many reporting needs. Ad-hoc queries, modeling, and other decision support tools can bog down the main system’s performance.
4. Modifying the internal code of the transaction processing system is often unfeasible, from either a technical or economic point of view.

A very cost-effective approach to this challenge is the construction and deployment of a *data mart*. This approach allows the organization to acquire a level of functionality that is tailored to its specific needs, while positioning the system to grow as the organization’s needs evolve.

Wikipedia defines a data mart as follows:

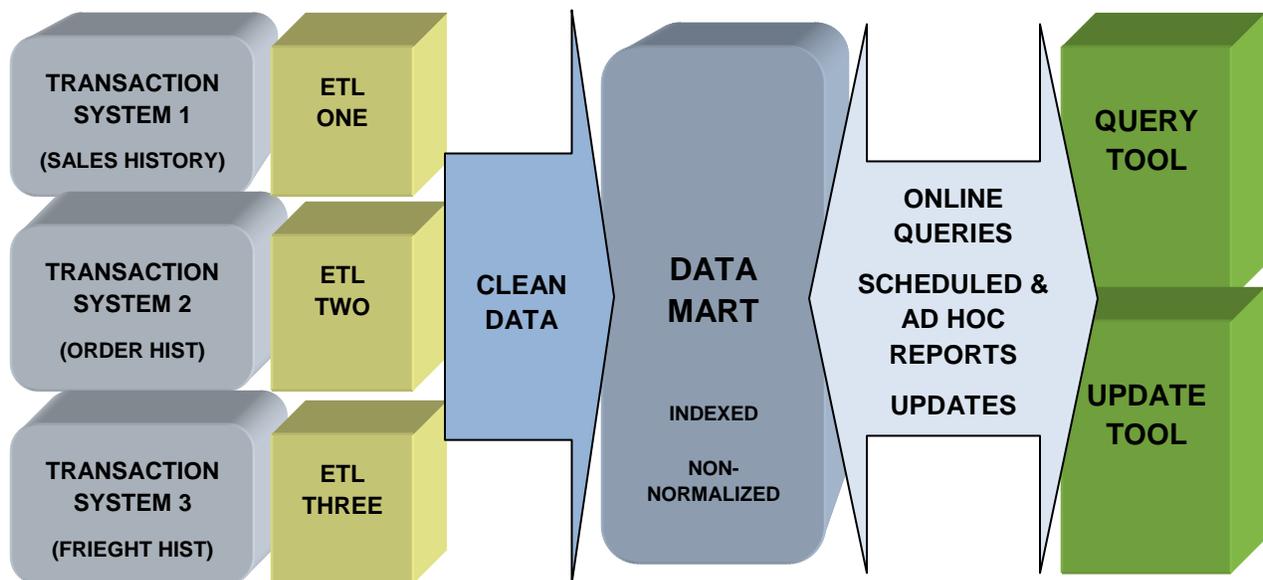
*A data mart is a subset of an organizational data store, usually oriented to a specific purpose or major data subject that may be distributed to support business needs. Data marts are analytical*

*data stores designed to focus on specific business functions for a specific community within an organization.*

The characteristics of an effective data mart include the following.

- **A single, centralized database** containing “scrubbed” data. The data will use multiple indexes and be non-normalized in order to facilitate rapid and flexible information retrieval.
- **Extract/Translate/Load (ETL) routines** that **Extract** data from the transaction systems, **Translate** all data to a common dictionary, and **Load** the scrubbed data into the central database. These routines are specific to each transaction system from which data is pulled.
- **Database maintenance routines** that allow authorized users to make manual adjustments to the contents of the database.
- **Data query tools**, enabling the user to create reports and online inquiries for both scheduled and ad-hoc reporting needs.

A graphic representation of these components follows.



Data marts differ from data warehouses in both in scope and complexity. Data warehouses typically include a wider array of data - often at the enterprise level. While both data marts and data warehouses require careful data analysis in order to design the database, warehouses often require more analysis in order to consider and resolve the information needs of the entire



organization. Because data marts have a narrower scope, the analysis process has less “ground to cover” and can be accomplished in a shorter duration. This results in a quicker implementation, allowing the organization to reap benefits (and ROI!) earlier.

Benefits of a data mart include:

1. Accuracy and timeliness of the information delivered to the management team are vastly improved over the *Excel*-based solution.
2. Data marts can provide a very solid ROI over a short period of time.
3. Because the data marts are typically located on a separate server than the one hosting the transaction processing system, reports and data queries can be produced without the fear of bogging down the main system.
4. Reporting and access to data are moved closer to the managers who need the data and reliance on individuals to enter, review, and manipulate source data is reduced.
5. When designed properly, a data mart is inherently more flexible than either *Excel* or the transaction system.
6. When successfully implemented, the data mart approach can be repeated for other data sets and incorporated into a comprehensive data deployment strategy.

The data mart approach provides the ability to improve both data accuracy and timeliness, without requiring the replacement of numerous, mission-critical systems. When compared to the replacement of mainline operational systems, risks are minimized and payback periods are shortened. Organizations striving to improve data accessibility and accuracy, and find themselves dealing with disparate systems and databases, should give the implementation of a data mart strong consideration.