

# Tightening the Sales Cycle

How Data Warehousing Can Effectively Leverage  
a Company's Transactional Data to Get a Better  
Return on Investment from its Sales Force

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## **The Need**

There is a commonly held belief that 80 percent of a company's business comes from 20 percent of its customers. Are you willing to give your competitors a chance at one of these customers, especially when what causes customers to look elsewhere is directly under your control?

There is a trend toward companies trimming overhead by reducing inventory levels. This presents a significant business problem for their suppliers. Inventory management practices for today's companies do not allow for a large amount of excess reserves. Companies must be able to obtain raw materials quickly in order to continue the manufacturing process. Therefore, if their suppliers cannot supply the needed raw materials, companies are more likely to move on to the next supplier. Companies cannot sacrifice production by waiting for supplies.

A supplier that looks to partner and integrate with its customers will constantly want to improve customer service. Suppliers can take a proactive approach to customer service by analyzing trends in its data, which will allow a sales force to review, analyze and make recommendations for the betterment of customer service.

A few key questions can help suppliers evaluate their standing with their core customers.

### **Key Questions**

- Which customers have significantly decreased order volume this quarter?
- How many shipments were not completely filled due to products on backorder?
- Which products are currently on backorder?
- Which customers have the highest order-to-cancellation ratio?
- How long do customers' orders remain on backorder before they are cancelled?

To keep pace with today's business trends, the sales force needs the ability to access the answers to these questions quickly. This information will enable them to handle current customer concerns before they become major problems, or even cause the loss of a customer. This type of forward thinking allows companies to stay ahead of the game.

Key questions like these can be answered quickly through the use of Data Warehousing. Data Warehousing can provide a supplier's sales force with the information they need in a fast, reliable manner, allowing them to manage their customers better. With this tool, the sales force is able to address the questions at the heart of managing customer relationships.

## **The Tools**

Information Technology (IT) has enabled companies to store information on a wide variety of subjects. With regard to sales, Information Technology allows for storage of information on orders, shipments and billing. As companies engage in these transactions with customers, suppliers or even internally, a wealth of information is captured. With all this information, the question then becomes how to harness it. The answer: Data Warehousing.

The term “Data Warehouse” has often been used to describe the consolidation of operational data into a common repository and represents the means to extract and analyze that data. Data Warehouses have often been developed as a means to achieve the goals of information access systems.

With the advent of Data Warehousing and online analytical processing, companies can query their data stores and return information on such topics as revenue and units and any calculations derived from these figures in a timely, easy-to-use manner that makes sense to business users. For example, users can query orders received by customer, product, geographic location or any combination of these or other characteristics.

The development of a Data Warehouse is a complex undertaking, involving one or more years of design and development and several million dollars. Few companies can afford to wait years or spend millions of dollars before realizing the benefits of a Data Warehouse. For this reason, many companies use data marts, which typically require smaller amounts of source data, fewer data elements to define, fewer business rules to develop and simpler data models – making data marts a quick, iterative solution to accessing and analyzing corporate information. The overall framework, strategy and technology for an enterprise Data Warehouse can be implemented with incremental, subject-oriented data marts.

In order to successfully implement a Data Warehouse and achieve its stated goals, an incremental data mart approach is followed in this document. The data mart approach is:

- **Responsive**  
The data mart is targeted directly to clearly defined business needs. It has a focused audience and a tightly defined scope.
- **Scalable**  
Because the data mart is built within an information architecture, it is scalable to any size, up to and including evolving into the Data Warehouse itself.
- **Flexible**  
Because the data mart is built using proven architectures and design techniques, it can be quickly modified to reflect rapidly changing environments and requirements.

- Quick impact  
Data marts can be constructed and implemented quickly, providing immediate impact on business challenges.
- Low cost  
Data marts can be constructed incrementally, at a fraction of the cost of a Data Warehouse.

All these characteristics add up to a fundamental building block of decision support in the modern business enterprise. The data mart is now the key component in meeting the needs for information access and delivery.

### **Aspects of Implementation**

#### **System Integration**

One of the biggest challenges in getting the correct data into a Data Warehouse is extracting information from many different source systems. Companies can have orders, billing and inventory on different systems. Some have many packages that are customized to meet the needs of the different functional areas of the business. While others have packages integrated with custom developed systems. Some IT departments have all systems custom developed, but these systems were developed using different databases or on different operating systems. The integration of these environments takes time and money.

A growing trend in the IT industry has been the use of Enterprise Resource Planning (ERP) systems to eliminate the heterogeneity and create one large platform for all company systems. System integration through ERP can save companies the time of integrating data from disparate systems.

#### **SAP™ Environment**

The historical leader in the ERP industry is SAP™. With modules that allow customization to many companies' needs, SAP has created one system on which an entire company can operate. After a large boom of ERP implementations in the 90s, companies are now stabilizing and realizing they need to extend their systems through their supply chain. Many companies are integrating their ERP systems with back-end supply chains, CRM and Data Warehousing systems. SAP is developing their own line of software that extends through the supply chain for companies that have implemented R/3. The foundation for SAP's new software is called Business Information Warehouse (BW).

## BW Standard Delivered Content

Whether or not you use R/3 as a source system, BW provides many benefits, including the reduction of development time as a result of its standard business content. Business Application Programming Interface (BAPI) source systems and custom flat file developed interfaces provide limited flexibility to BW, and allow it to interface with systems other than R/3.

## InfoSources and InfoObjects

While BW provides benefits in many environments, its biggest return, based upon the current release, is that it interfaces with R/3. BW provides pre-developed extractors that allow it to interface natively with R/3, enabling it to extract data from logistics, sales and distribution, controlling and other modules that a company has implemented in R/3. BW makes use of the existing business models operating in R/3 and builds upon each of the application-specific models. The amount of time that is saved with these pre-developed InfoSources is a major benefit and they can be used in their delivered form or can be modified to add additional data into the pipeline flowing into the BW system. After some minimal work has been done to set up the environment for data extraction in R/3, InfoObjects, which are the equivalent to fields in a database, can be aligned with the fields in R/3 to map data from one system to another. Based upon field name, domain or data element, one of approximately 1,400 InfoObjects can be selected to map to fields in R/3. Each of these objects is re-usable over any amount of InfoSources, which means additional time is saved during development.

BW provides additional business content through the release of delivered InfoCubes. InfoCubes are the multi-dimensional data stores that BW uses to query for reporting. InfoCubes can be filled with data that is specific to a functional area or they can contain data from many functional areas. InfoCubes can be custom built, or existing InfoCubes operating in business content can be modified to add InfoObjects and dimensions.

## Updating InfoCubes

Sitting between the InfoCube and the source of the data are structures that define the data flow through the BW system. Update rules are created when the data is ready to be written into an InfoCube from a specific InfoSource. Therefore data from the same source system can be stored in many different InfoCubes, based upon requirements and aggregation needs. These update rules can be created to add data into as many InfoCubes as exist in the BW system.

Within the update rules, data can be modified through the use of ABAP code to add values, restrict the amount of data being populated in the InfoCube, or carry out currency conversions. The update rules can also be used for time conversions to aggregate data being written to the InfoCube, especially if the transactional data is stored at a daily level, but the needs of the users require data at a monthly level. For access to a daily level of

data coming from R/3, an operational data store (ODS) is available to store detailed data that can be accessed through drill-through functionality (with release 2.0). Therefore the smaller percentage of users that have the need to see daily level data can access it through the same reporting tool without sacrificing the performance of the reports being run for the larger group of users.

While the ODS will be updated and more functional in release 2.0, BW's current problem is that if the data you want to analyze does not fit into a multi-dimensional data store, the reporting and system integration issues are multiplied. A Data Warehouse should be able to report on relational tables as well as multi-dimensional tables. In the future, BW will provide drill through functionality to the ODS as well as all the way back to specific R/3 transactions.

### Addressing Sales Cycle Problems with Sales and Distribution InfoSources

By combining and querying multiple sources, Data Warehousing can give you answers to the key questions mentioned earlier, and thus lead the way to solving your business problems. For heterogeneous systems, loading data from disparate sources can be time consuming. BW provides the developed interface and the business content to make combining this data a quicker, more manageable process.

A fair amount of work must be done before this type of solution can be effective. BW has a building block approach. First, business users must be competent in building queries with BW's querying tool in order to get the right level of data from the InfoCube. Users must be able to use the OLAP functionality BW provides to get the necessary calculations to answer questions. To get data in the InfoCube quickly, a system design needs to be put in place.

Systems that allow information to be accessed quickly must be put in place. Companies are finding that the best way for the sales force to access data is through a thin-client, Web-enabled solution. This allows the sales force to access reports remotely without having to pass the records of the query over a long distance. Instead, all that moves over the line is HTML code. All record processing is centrally performed on the server before the HTML code is sent.

Currently BW does not have its own thin client solution on general production release, but it does support the use of OLE DB for OLAP so that queries can be accessed through other Web servers. BW will be packaged with thin client functionality starting with release 2.0. This functionality will provide a great help to BW's ability to extend information to the sales force, as well as other entities of the supply chain.

### Answering the Key Questions

Having explored the more technical aspects of how Data Warehousing and SAP can help answer tactical business questions, it should be mentioned that Data Warehousing

addresses more over-arching business issues as well, because it has the ability to report on data and aggregated levels of business.

For example:

- Which product line sales have been below budget this year?
- What is my projected revenue for the year?
- Which customers order various product lines, driving general marketing versus customers that order specific product lines?
- What percentage of sales revenue is attributable to vendors?

Once these questions have been answered, Data Warehousing can also be used to generate reports on more specific issues, including:

- What have been the buying trends of my top five customers over the year?
- Which customers have seasonal versus non-seasonal demand?
- Which invoicing periods generated the revenue that increased my margin over plan?
- What orders does this customer currently have open?

Specific BW InfoSources can be used to address the key questions. Within the sales and distribution area, InfoSources exist to extract transactional data from the R/3 core tables of orders, shipping and invoicing.

InfoSource Description	Technical Name
SD – Sales Order	2LIS_01_S260
SD – Delivery	2LIS_01_S261
SD – Billing Document	2LIS_01_S262

These InfoSources pull data from R/3's sales information system. Within these InfoSources, data is captured in relation to the customer, materials purchased and other dimensions that characterize the units and dollars associated with each document. Within the records of the documents, orders, shipments and invoices are captured along with the returns and cancellations. Therefore, users can query the InfoCube to determine which customers have had cancellations in the past month. With this information sales representatives can address the account and its issues.

The ability to answer questions in real time, as well as over specific time periods, like quarters or months, can be valuable for both the sales representative and the customer. The company's performance regarding specific customers can be used not only as a sales tool for add-on sales, but also as a marketing tool when looking to attract customers that have similar buying patterns.

As a company learns the advantages of BW and its reporting capabilities, the company's focus can start to move from that of a reactive position, to a proactive position. As recognition of patterns set in, the company can change to meet the needs of its customers to increase the level of service. This higher level of customer service can go a long way toward keeping competitors away from your clients.