

Drowning in Data

MARKETERS ARE THIRSTING FOR KNOWLEDGE ABOUT THEIR CUSTOMERS. AND IN MOST CASES THEY HAVE IT. . . *SOMEWHERE* IN THEIR DATABASE

AS THE GLOBAL economy transforms, new markets will emerge and traditional markets will close. Customer retention, once taken for granted, has become a top priority. Companies harnessing the power of data warehousing and data mining will learn how to maximize their current customer bases and forge relationships with new customers in this dynamic market economy. Businesses not equipped with the tools necessary to adapt to current market trends will not be able to compete in the 21st century. Corporate survival hinges not only on spotting opportunities and hidden relationships but on the ability to capitalize on them.

For decades, computers have been used to capture virtually every detail of business transactions. Companies relying on high-tech databases to compile vital information about clients and prospects have pushed for better technology to store larger amounts of data. Despite this overwhelming accumulation of data, many companies have lacked the technology to transform it into meaningful information that could be used to support strategic decision making. Data warehousing and decision support tools are overcoming this problem and equipping businesses with the marketing intelligence they desperately need.

NEW BUZZWORDS, NOT NEW CONCEPTS

Given the recent hype surrounding data warehouses, one might think that they are a brand new idea. On the contrary, data warehouses were conceptually conceived in the 1970s amidst the development of the fourth-generation programming languages. Data warehouses have been referred to as databanks, repositories, knowledge bases, as well as countless other terms. For the purpose of consistency, this article will use the latest catch phrase: data warehouse. During the 1980s, computer companies fought for market dominance causing a delay in the standardization of hardware, software, operating systems and other peripheral devices. Data warehouses that relied on

products from a single company were crippled once other computer brands were introduced into the company's computer system.

Data warehouses are fundamentally different than conventional databases. Unlike these databases that focus on transactions, constant updates and daily operations, data warehouses contain relational data used to forecast trends and discover patterns. The centralization of the data warehouse makes it more effective than its predecessor.

DATA MINING:
Isolating patterns and inferring trends for guiding decisions and predicting the effects of those decisions.

Retrieving information from a traditional database is processed through queries that provide simple answers or through multidimensional analysis that processes complex queries. Companies are turning to data warehouses to maximize their data without detracting from routine operations. Data mining surpasses both of these techniques by isolating patterns and inferring trends for guiding decisions and predicting the effects of those decisions.

Most companies' computer systems are fractured by department with few consistent standards. The standardization provided by a data warehouse facilitates analysis that transcends departmental barriers and can even uncover hidden relationships.

Given the marketing potential of data warehouses, they have been slow to catch on in mainstream Corporate America. The recent drop in market prices of storage and processing power has provided the impetus behind their resurgence. As open systems continue to gain prominence and the cost of disk storage continues to decline, companies that seek a strategic advantage over their competition will embrace the concept of data warehousing.

DATA MINING TOOLS

The proliferation of data warehouses has created demand for new tools to retrieve stored information. In the simplest of terms, decision support tools give users the power to readily access and analyze data. Data mining tools can yield five common types of information: associations, sequences, classifications, clusters and forecasting.

Associations are events linked in a single occurrence. For example, a study could reveal that when a plane ticket is reserved, 57 percent of the time a rental car is also reserved.

Sequences are associations linked over a period of time. Real estate professionals could take advantage of knowing the percent of marriages result in the purchase of a new home within nine months.

Classification tools examine existing data and groups according to their related characteristics and patterns. Classifications are commonly used to provide a model to predict customer attrition. Another useful application would determine which marketing promotions would be the most successful in customer retention.

Clustering, a method closely related to classification, provides superior analysis because it allows the data to define its own groups instead of forcing arbitrary classifications onto the data. Millions of detailed comparisons provide summary groups of those records that have the most similar characteristics. The resulting intelligence allows fast, efficient comparisons and profiles of the data records.

Statistical tools, like regression, assist in determining top correlations and predicting the likelihood of future behavior. Algorithms, resulting from **forecasting**, can then project the future value of the dependent variable in question.

THE EXECUTIVE'S RIGHT HAND

Top marketing executives are discovering the great application power of the data warehouse to create models

useful for forecasting business and consumer behavior. Executive summaries can put reports, graphs, maps and other forms of summarized information at your fingertips with a click of the mouse. Before this advance in accessibility, executives had to wade through the massive volume of data or delegate the responsibility to a systems analyst. Computer professionals could provide the results, although their time would be better spent maintaining and improving critical informational systems. Neither method proved to be especially productive.

The statistical comparison of information through a data warehouse can isolate individuals with the highest correlations across the most similar data elements. Data warehouses coupled with data mining tools can identify your most profitable customers and your hottest prospects-those with the highest propensity to purchase your products and services. By “pulling” out your most valuable customers, you can avoid expensive “push” marketing techniques best exemplified by traditional blanket advertising campaigns.

Giving customers their identities back allows companies to tailor their marketing to individuals. Savvy marketers know that understanding their customers’ needs, wants, motivations, and even disappointments are key to enhancing customer relations. Knowing these variables can even document what types of promotions have previously influenced the behavior of your customers. Promotional analysis will provide the insight necessary to develop programs that build loyalty. Prospecting is greatly enhanced by locating those consumers who have virtually the same traits as your most profitable customers.

Many executives currently measure profitability without looking at the core residual value of their customers. Tapping into the power of the data warehouse can allow you to perform lifetime value analysis that shows which customers will be most loyal to your products and services. This understanding can optimize your frequency marketing programs to foster loyalty and improve your bottom line.

GARBAGE IN, GARBAGE OUT

Once you have decided that the value of the data warehouse justifies proceeding, you must establish a design. After the design has been established, data flows into the new structure. This step is critical to the integrity of your results.

Operational data must be standardized, cleaned and important relationships established. If the data is not properly flowed into the warehouse, the results may be contaminated- if they are possible to derive at all. The old saying Garbage In – Garbage Out is the functional motto of data warehousing. If you put garbage into the warehouse, you will only get garbage back out.

After the data has been consolidated, it should be made more useful by going through the summarizing, packaging, and distributing processes. The summarizing step selects relational data and summarizes statistical analyses such as clustering. Once the data has been summarized, it is packaged into more user-friendly templates for text documents, spreadsheets, charts, or other graphical formats. The summaries can be packaged for online use. These packages can then be distributed to appropriate groups to increase access to end users.

The health of the data warehouse depends upon the maintenance and removal of old data. Data should be moved out of the warehouse into archival storage when it can no longer be effectively maintained. Moving this information should keep the warehouse processing speeds at an optimal level.

All of these components should not mislead you into thinking that once the data warehouse is up and functioning the structure is static. In fact, the best data warehouses are marked by their flexibility and ability to respond to ever-changing environments. The management of the data warehouse has just begun; it will need constant refinement and tracking of data inflow and business relationships.

INSOURCE OR OUTSOURCE?

Before you decide to jump on the data warehouse bandwagon, make sure you understand that the returns are not carved in stone. To successfully operate your

own data warehouse you must understand both market forces and technology needed to deal with them. Many companies are weighing the options of in-house development, hiring consulting firms, or outsourcing the entire project to an end-to-end service provider. Before you make up your mind, you should consider the benefits and disadvantages to all the methods. Despite recent hype, off-the-shelf software have yet to yield meaningful results without having the technical expertise to support customization.

Constructing a data warehouse from scratch requires foresight, extremely meticulous planning, on average \$2 million to \$3 million, and one to two years of development time. If all of that is not enough to scare you off, keep in mind that even the best planned data warehouses cannot guarantee results. The true value of a data warehouse can only be measured in terms of its ability to manage the flow of data which is wholly dependent on the design.

10 Questions to Ask When Selecting a Partner

1. **What approach do the decision support tools utilize?**
2. **What size of data samples will get statistical confidence?**
3. **Which interfaces are available?**
4. **What kind of database structure is used?**
5. **Are there data limits?**
6. **How long does it take to get results?**
7. **How clear are the results?**
8. **What type of customer support is available after the sale?**
9. **How much experience does the company have? Be sure to check references.**
10. **Is the company's experience related to my specific needs?**

With all the risks of creating a data warehouse in-house, many companies are turning toward strategic outsource companies. Outsourcing your data warehouse activities provides the lowest risk and more importantly, the most economically viable route to access and harness the power of the data warehouse. Relying on the experienced and expertise of companies that specialize in these

techniques could literally save you hundreds of thousands of dollars, in addition to creating new revenue hand over fist. A word of caution, with the increased demand in the business arena for this type of service, there are hundreds of companies springing up. Look for a company with relative experience and a reputation for delivering quick and accurate results. Remember, you are outsourcing to take advantage of another company's experience.

Regardless of whether your company partners with an outsource firm or chooses to go it alone, one thing is certain – you had better get moving. With the convergence of industries and technology, the corporate landscape is crowding with new competitors who will not hesitate to capitalize on the tools necessary to gain an edge. The real question is are you going to let them sneak past you, or are you going to embrace the technology that will help you expand your market share?

KURTIS M. RUF *is a direct marketing consultant, strategist and public speaker. Ruf Corporation provides predictive modeling and data warehousing services for business and consumer marketers. You can reach Ruf at (913) 782-8544 or by E-mail at kurt@ruf.com.*

RUF CORPORATIONS' DATA WAREHOUSE APPLICATIONS

Package Description:

Ruf Corporation uses client/server technology to provide custom data warehousing applications. Ruf extracts and standardizes enterprise-wide customer information and imports it into a relational database. From a graphical workstation, users can access this data and uncover relationships to assist them in making intelligent decisions. By integrating your company's data with Ruf's massive repository of demographic and psychographic information, you can increase your customer retention and accurately target prospects with a high probability of becoming your customers.

System Specifications:

Client/server technology delivers cross-platform, online capability between graphical workstations and leading-edge decision support tools.

Training and Support:

As a service-based organization, Ruf designs long-term database solutions to meet their partner's objectives. Ongoing training and service are an integral part of a custom application.

Ruf Corporation Experience:

Ruf pioneered the use of statistical tools in market segmentation, analysis, and modeling more than 30 years ago. Today, the company develops and markets sophisticated modeling programs to produce highly accurate, cost-effective intelligence that can predict the future buying behavior of both business and individual customers.