The Benefits of Data Warehousing at Whirlpool

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EXECUTIVE SUMMARY

In today’s competitive, high-velocity business environment, companies are focusing their attention on several key areas, including:

- incremental continuous quality improvement;
- more radical redesign of business processes;
- supply chain management;
- improved customer orientation; and
- globalization of business operations.

At Whirlpool, data warehousing is providing important support in all of these critical areas (see Table 1). To illustrate, Whirlpool’s data warehouse enables quality engineers to easily track the performance of component parts. This allows the engineers to assess new components that are being field tested, to quickly detect problems with particular parts, and to identify the high and low quality suppliers. From a different perspective, suppliers can check on the performance of the parts they supply and, consequently, can manage proactively the quality provided to Whirlpool. Purchasing managers have parts information from around the world so that they can find the lowest-cost, highest quality part available on a global basis.

This case study briefly describes Whirlpool, the business need that suggested a data warehouse, the approval process, and the data warehouse that was built. It describes how the data warehouse is accessed, how users are trained and supported, and the major applications and benefits. The lessons learned also are described to benefit those companies that are implementing or thinking about implementing data warehousing.

Table 1: Key Strategic Areas for Whirlpool

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<td>incremental continuous quality improvement</td>
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Like most companies, Whirlpool is continually changing. This case study describes Whirlpool and its data warehousing initiative through the end of 1997.

THE WHIRLPOOL CORPORATION

Whirlpool Corporation is the world’s leading manufacturer and marketer of home appliances. The Whirlpool family consists of over 45,000 people who manufacture fine appliances in 12 countries and market them under 11 major brand names. The company is based in Benton Harbor, Michigan and reaches out to approximately 140 countries around the world. It is the only major home appliance company with a leadership position in North America, Europe, and Latin America, plus a growing presence in Asia.

Whirlpool began as a small family-owned business in 1911, and it now ranks 159 in the Fortune 500. The corporate vision for the company fosters growth and progress: Whirlpool, in its chosen lines of business, will grow with new opportunities and be the leader in an ever-changing global market. This vision is manifested in Whirlpool’s Worldwide Excellence System (WES), its blueprint for approaching quality, customers, and continuous improvement. Initiated in 1991, WES incorporates the best of all Whirlpool quality programs, worldwide, with Malcolm Baldrige Award and International Standards Organization criteria to establish a common approach to quality, one that dedicates the company to the pursuit of excellence and total customer satisfaction.

Whirlpool is an information-intensive business. In North America, it has three or four thousand products that it sells at any point in time. Every one of the products has hundreds or thousands of components that are assembled every day in 12 major factories. The products are stored in 28 places. Over 16 million appliances are sold a year and they are tracked throughout their lifetime.

THE BUSINESS NEED FOR DATA WAREHOUSING

One of the keys to thriving in this information-intensive environment is the ability to effectively coordinate and control its myriad processes and activities. This can be challenging from an information systems perspective. Business units need a complete understanding of the processes for which they are responsible, and the diversity and heterogeneity among systems make it difficult for them to get the information they need and to manipulate it in a useful, timely manner.

In the early 90’s, several business units identified a variety of specific information needs. For example, Quality wanted to create an application (later called Customer Quality Information System (CQIS)) that would proactively identify quality problems based on customer complaints. Data existed in several places, including Whirlpool’s OneCall System that allowed any customer to take care of any necessary business, be it services, product information, or complaints with one phone call. CQIS was to provide an environment in which the data could be queried and analyzed. These applications had obvious value to the business, and senior management understood that the information systems infrastructure was inadequate to effectively support the various initiatives. In fact, around that timeframe an expensive executive information system initiative had just been discontinued after several years of trying to combine data from multiple data sources and manipulating the data in a meaningful way for its users.

It was apparent that an infrastructure had to be put in place at Whirlpool to support the numerous decision support initiatives that its business units had identified and were expected to demand in the near future. At that time, the marketplace was promoting data warehousing as a viable alternative to organizations that wanted to create a decision support infrastructure. Data warehousing is the process of creating, maintaining, and using quality data for decision support purposes, and its technology had become cost effective and mature enough for organizations to implement. In the spring of 1993, the first efforts to use data warehousing at Whirlpool were approved, and CQIS was the first application to utilize the new infrastructure. It was expected that data warehousing would allow IS to provide business units with their applications quickly, with less cost, and with a greater likelihood of meeting their needs.

Many business initiatives, which rely on data warehousing, have emerged since 1993. Currently, the data warehouse contains 14 specific collections of data (i.e., subject areas) that
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