Introduction to the Data Warehousing Minitrack

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Abstract

The field of data warehousing has become increasingly important to organizations that work to stay competitive in today's volatile business environment. This paper describes the recent growth of data warehousing along with future trends.

Introduction

During the mid-to-late 1990s, data warehousing became one of the most important developments in the information systems field. It is estimated that 95 percent of the Fortune 1000 companies either have a data warehouse in place or are planning to develop one (Meta Group, 1996). The Palo Alto Management Group predicts that the data warehousing market will grow to a $113.5 billion market in 2002, including the sales of systems, software, services, and in-house expenditures (Eckerson, 1998). This is not surprising considering that for the past few years, surveys of CIOs have found data warehousing, Year 2000, and electronic commerce to be at the top of their strategic initiatives (Eckerson, 1999).

The Current State of Data Warehousing

A data warehouse (or smaller-scale data mart) is a specially prepared repository of data created to support decision making (Inmon, 1992). Data are extracted from source systems, cleaned/scrubbed, transformed, and placed in data stores (Gray and Watson, 1998). A data warehouse supports a variety of end-user applications, such as SQL queries or custom-built decision-support applications (e.g., DSS and EIS).

Even though there are many success stories (Beitler and Leary, 1997; Grim and Thorton, 1997), a data warehousing project is an expensive, risky undertaking. The typical warehouse costs in excess of $1,000,000 (Haley and Watson, 1997), and warehousing projects include myriad technical and organizational issues that must be addressed. The initial failure rate is estimated to be as high as 50 percent although many organizations are successful with later efforts (Kelly, 1997). The most common reasons for failure include weak sponsorship and management support, insufficient funding, inadequate user involvement, and organizational politics (Watson et al., 1999).

Surprisingly, a large number of technical and managerial considerations that arise from data warehousing projects have received little academic attention. This minitrack was created to promote research in a wide range of data warehousing areas and to showcase efforts that can help companies improve the effectiveness of their warehouse initiatives. It also intends to describe how data warehousing will continue to adjust to today's changing, volatile business environment in support of decision-making needs.

Future Trends

The trends in data warehousing are dynamic, and new areas of interest emerge regularly, creating new avenues that require academic attention. Gray (1999) describes a number of important topics that surfaced during 1999. These topics included Web-based warehousing, customer relationship management initiatives, the creation of enterprise-wide portals, and the integration of data warehouses with ERP implementations. More recently, Steven Crofts (2000), President of The Data Warehousing Institute, presented his vision for the future directions of data warehousing. This vision included "the Data Webhouse", leveraging ERP implementations using data warehouses, and the advancement of data storage solutions and techniques. Crofts also stated that unstructured data will become an important component of warehouses, and he believes that data quality will have growing importance as companies rely more heavily on warehousing processes for critical strategic initiatives.

A number of data warehousing-related entities like The Data Warehousing Institute (TDWI) and The Data Management Association (DAMA) remain focused on leading edge warehouse issues and endeavors. The TDWI journal, The Journal of Data Warehousing, and trade magazine DM Review are two of several publications that serve as dedicated outlets for data warehousing research and commentary. Academic conferences like the Hawaiian Conference for System Sciences and the Americas Conference for Information Systems have hosted minitracks for data warehousing research for several years. These various professional activities create a diverse portfolio of outlets for both academic and practitioners in data warehousing.

An increasing number of graduate and undergraduate programs are incorporating data warehousing into their curricula either as specialty classes, majors, or degree
programs (Pierce, 1999). Pedagogical issues are becoming quite important as schools attempt to keep up with the demand for warehouse skills.

Conclusion

Unquestionably, data warehousing will remain a significant phenomenon in IS for years to come. Likewise warehousing research will continue to increase and address the diverse pedagogical and research questions that continue to surface.

References


Pierce, E.M. "Developing and Delivering a Data Warehousing and Mining Course," *Communications of the Association for Information Systems* (2:16), 1999.