Setting great store

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Data warehousing is a concept that’s highly relevant to both intermediate level Project Management and final level Information Strategy. But what is it, exactly?

Although information has always been important to business, it’s become even more significant today because of globalisation, changing business structures and the increasing sophistication of consumers. The past decade has also seen the emergence of affordable, powerful IT. As a result, the management of information has become a key strategic issue for many organisations, and data warehousing is seen as one way to enable it.

A data warehouse can be simply defined as a database that holds data obtained from internal and external systems for future query and analysis. This sounds straightforward enough, yet why is a separate database required, what are the issues surrounding its use and what benefits can warehousing provide?

Data warehousing is based on the premise that data stored for analysis can be accessed more effectively when it’s separated from operational systems. This is because it allows data to be interrogated in a single database and enables users to make complex, bespoke requests. It also prevents the deterioration of response times in operational systems that result from such demands.

Although these warehouses can hold vast quantities of data, they can’t contain all of the information all of the time, owing to the costs of building and maintaining large databases. Consequently, decisions must be made about which information should be held and for how long. For example, what kind of data should be held in relation to stock? The complete history of every item – receipt, transfer to work in progress, conversion to product, despatch to customer – or simply a snapshot of what’s held at a certain time of day or week? Should the warehouse hold data from external sources? Some contain figures that have been obtained from trade bodies, market surveys etc to give users a fuller picture. Should records be maintained for three, five or 10 years or should this decision be based on product life?

Organisations must determine which information is strategically valuable and how long it should be held to prevent the growth of a resource-hungry department that fails to meet the business’s needs. Such decisions aren’t easy – data can’t easily be recovered once lost – but they must be made.

Data should also be transferred to the warehouse only after it becomes non-volatile – ie, when it requires no further modification – because it’s extremely hard to maintain active links between the warehouse and operational systems. And another key issue is “data scrubbing”, since it’s not always possible to transfer data directly into the warehouse without ensuring that it’s compatible with similar data obtained from different parts of the organisation. For example, separate subsidiaries may use different coding structures for customers, suppliers and products; sell the same product in different currencies. While it may be possible to solve such coding problems over time to eliminate this problem, data scrubbing must be done until that day comes, if it ever does.

The issues of currency and language are particularly difficult. Which exchange rate should apply: a daily rate, a year-end rate or an average rate? Should the organisation have a standard language or should it translate detail as and when required? A failure to address such issues will seriously undermine the effectiveness of the warehouse.

It’s vital that users take a strategic view of data warehouse usage to maximise its potential. Although every firm is different, key strategic perspectives will include customers, products, distribution channels, selling channels etc. Some companies that sell different products to the same customers, from separate divisions in the same country or from subsidiaries around the world, have used data warehouses to gain an overall view of their customers. Banks, for example, have found this extremely useful, because different divisions provide different products – loans, deposit accounts, insurance etc – to the same customers. As a result of the information provided by their data warehouses, some banks have even changed their practices and developed new products.

Data warehouses can provide valuable information for strategic management accounting – eg, customer profitability, channel profitability, product life cycle etc. As these systems become more robust, management accountants will become more involved in activities that add value to the organisation. Consequently, they must be aware of the benefits of data warehousing and how it can be used to drive a business forward. In his 2001 book Data Warehousing and the Management Accountant, Ian Cobb argues that some data warehouses have been installed merely to compensate for the deficiencies of existing systems, rather than to realise a strategic vision.

Data warehouses are hard to create and manage, but they will prove valuable if there is a clear strategic vision of how they should be used and a willingness to address the issues associated with them. They are not the preserve of the multinational company; smaller firms also use them and many suppliers of proprietary software are adding this facility to their business applications. Data warehouses are here to stay, and management accountants who ignore them or fail to understand their potential may become an endangered species. It’s worth remembering that the limiting factor for data warehousing should be the imagination of the user.

Further reading

V Gupta, An Introduction to Data Warehousing (http://system-services.com/dwintro.asp).

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