

DATABASE

TRENDS AND APPLICATIONS

Solutions for the Information Project Team • www.dbta.com

Volume 21, Number 1 • November 2007

Database Career Market Heats Up

By Joe McKendrick

Are we coming up against a shortage of data management talent? Initiatives such as data center automation and outsourcing have long threatened to reduce demand for data professional jobs. However, signs abound that exactly the opposite has been happening. Companies are hungrier than ever for data management talent, particularly for hybrid positions that can connect database functionality to urgent business requirements.

"Today, data management and IT professionals are in a demanding field where there are not enough people to fill the job openings," Henry Denis, director of IT for Epiq Systems, told DBTA. "This makes it very difficult to fill positions."

This is a change from a few years ago, when many companies thought they could get by either by outsourcing or automating selected tasks - or simply piled on the work to their lean staffs. "Companies didn't want to spend money and sat on old technology," said Denis. "Now companies are spending more and getting up to date, but they don't have the appropriate support personnel. Due to the lack of jobs from 2001 to 2006, many IT professionals did not go to engineering school and consequentially there aren't enough people now - as you can see it is a Catch 22 and is very cyclic."

The changing nature of data management priorities is also fueling this critical shortage. Data is no longer simply bits of information stored within siloed business applications, to be accessed for reports when executives need information on how their companies did during the most recent quarter. Now,

executives recognize that data is their most important strategic asset, and expect it to be available on demand, 24 hours a day and seven days a week. Database downtime - even just for a few minutes - could mean significant revenue losses for the business. "Business people view their data not as a static set of information that is reported upon, but rather as an asset of the company that is constantly queried, integrated, updated and interrogated to help make better decisions," Andy Palmer, CEO and co-founder of Vertica, told DBTA. "This is a much more flexible, dynamic mode of operation compared to the traditional reporting or OLTP style of operating."

Many companies are scrambling to find and staff their data centers with enough data professionals who not only can stay on top of such round-the-clock critical functionality, but also be able to work closely with the business to help design new applications, identify data sources, and leverage information in new ways. "The DBA role is changing and beginning to be more about helping managers answer key questions quickly and effectively - less about just keeping a database up and maintained," Palmer said.

Denis also sees a surge in new demand arising from the shift in computing from 32-bit architecture to 64-bit. "This is a lot of advanced computer power," Denis said. "This shift will revolutionize everything - a rebirth of IT as we know it today - and all the applications will have to be rewritten as a lot of software engineering will be needed to be 64-bit compliant."

Many data professionals no longer focus on a particular brand of database

- organizations adopt various commercial and open source brands to suit specific business needs. Data professionals need to understand the business purpose and definition of the data they manage, as well as the technological underpinnings of the DBMSs they manage. This puts data professionals - from DBAs to architects to developers - into more proactive roles.

"Today, data professionals are in equal demand that they were previously, but are expected to have much more than just a database administration skill set," Tracy Cashman, partner with Winter, Wyman's Information Technology group, told DBTA. "They may be involved in supporting multiple databases such as Oracle, Sybase, SQL-Server and MySQL and must be nimble enough to go between multiple operating systems. Often they are supporting applications such as ERP systems like Oracle Financials or SAP. However, I would say the biggest trend is in data warehousing and business intelligence. DBAs are expected to take on an expanded architecture role and be more strategically involved in how to manage data and how to use it most effectively for the good of the organization."

In terms of skill specialization, "broader is better," Palmer agreed. "The amount of effort required to tune/tweak OLTP databases is not something that is sustainable and many vendors are already investing heavily to enable systems to self-tune," he told DBTA. "For example, SQL Server has made great strides in this area. Others are using alternative engines that are more 'built for purpose' so they don't require as much tuning - just work bet-

ter for a specific application/workload right out of the box. Skills that matter in the long term are going to be things that help business managers answer key questions quickly and easily by leveraging all the information available in the enterprise.”

Data provided to DBTA by online job search service Dice, Inc. confirms that demand for various levels of data center professionals has been growing significantly. For example, the number of online job postings for SQL Server professionals grew by 29 percent between the fall of 2006 and 2007. There was also a 25 percent rise in online postings for Oracle data professionals. Web services and SOA-related skills also are hot - there was a 75 percent increase in online postings for professionals experienced with Microsoft's .NET Framework, and demand for Java Enterprise Edition skills grew by 16 percent.

Companies need professionals to help manage and sift through a virtual tsunami of data that is sweeping through their systems. A study, funded by EMC Corp., estimated that in 2006, 161 exabytes of digital information was created and copied. To put it in visual terms, this is approximately three million times the information in all the books ever written - or the equivalent of 12 stacks of books, each extending more than 93 million miles from the earth to the sun. The study also projected that the amount of information created and copied in 2010 will surge more than six-fold to 988 exabytes, a compound annual growth rate of 57 percent. Analysts calculate that data storage needs are growing on average at 50 to 100 percent.

“There will be a lot of data centers built in the next few years,” said Denis. “The average life of a data center used to be 10-plus years, and is now only four-to-seven years, due to servers becoming more powerful and smaller in size while storage growth is going through the roof. That’s the challenge - extending the life of your data center and planning the key times to overhaul

in order to remain competitive.”

In addition, new compliance mandates and security concerns are requiring that companies exercise greater control and accountability over all this data that is being managed.

A landmark survey of more than 1,400 data professionals confirmed that the profession is undergoing a dramatic reshifting in scope, away from low-level tasks that can be automated, and towards tasks that require people management skills, and the ability to communicate better with the businesses. The study, conducted by Unisphere Research, involved five of the leading database users groups (Independent Oracle Users Group, Professional Association for SQL Server, International DB2 Users Group, International Sybase User Group, and International Informix Users Group). The Unisphere study found that today’s data professionals frequently need higher level social, and problem-solving skills, versus narrowly focused technical skills. Data professionals increasingly serve as the intermediaries and activists between the business side, the data management side and IT sides of the organization.

Data professionals, from DBAs to architects to developers, now have more proactive roles.

“You have to be business-savvy in order to understand the environment, cause and effect, or why and when changes are needed,” Denis explained. Denis, a veteran of the legal and the financial services industry, observed that there’s no such thing as one-size-fits-all technology. “The technology that works in legal does not necessarily work on Wall Street,” he said. “Legal requires attributes such as speed and security, while on Wall Street the primary focus

of technology is latency. It is always very important for IT professionals to stay connected to business trends.”

For example, more than half of the respondents to the Unisphere survey, 55 percent, said they were directly involved with application development. Many observed that this is key for earlier intervention in the development process, thus saving time and money at runtime. In fact, the survey found, few database professionals have jobs in which their specialization is limited to one or two areas of data management. Only a statistical handful, six percent, said their jobs are limited to one area of specialization, while a majority, 54 percent, said they are directly involved in at least five of the seven areas of responsibility presented in the survey - from application development to data modeling. SQL Server data professionals were most likely to report this diversity of duties. Interestingly, this diversity is now found in all size organizations - even in larger organizations that tend to emphasize greater specialization of duties.

Data professionals in all types of organizations are being impacted by this growing demand for well-rounded and business-savvy skills. “You have to be aware of all the new technologies - operating systems, virtualization technology, network technology monitoring technology - that are coming out without necessarily embracing them,” said Denis. “You need to be able to understand the impact of these technologies for the business.”

Key roles by 2010 will include “identifying key business questions and defining urgency and importance of these questions,” according to Palmer. “Constantly interrogating existing data assets to help people make better decisions, constantly integrating new data assets in the search between internal and external datasets. This is a strategic weapon to compete more effectively in the marketplace by identifying opportunities and making decisions that competitors don’t see or can’t make as quickly.”