Database technology

How databases can anchor any successful IT project **Interviewed by Jason Lloyd**

Often when people are asked to name a component of a successful IT project, such as a sales system, they will mention aspects that are in direct interaction with the user (Web pages, client applications, etc.). What is often forgotten is that the vast majority of projects are now datacentric. Data needs somewhere to reside where it can be successfully stored, queried and retrieved. As a result, choosing the right database platform to handle the data becomes critically important.

"Databases are often an afterthought when it comes to planning a business project," says Arie Jones, a senior consultant for Perpetual Technologies Inc. "Today's data-centric world demands that the handling of data be given as much forethought as any other area of a project. A properly chosen database should be the anchor of any successful IT project."

Smart Business spoke with Jones about the importance of choosing the right database.

Arie Jones
Senior consultant
Perpetual Technologies Inc.

How should a business decide on which database is right?

Choosing a database for a particular IT task or project is a lesson in risk management and is one that does not necessarily follow the adage of 'higher risk leads to higher reward.' Many times, the amount of risk that your company is willing to assume is inversely related to the cost of the associated database application that will work for your project. So the more risk you are willing to assume, the lower the cost of the associated system.

More mature and proven relational database systems such as Oracle and Microsoft SQL Server will generally be more expensive than newer XML-based systems such as eXist, which are not as proven in their design.

What are the common types of databases on the market today?

Generally speaking, today's market contains two major competing types of database platforms: Open Source and Proprietary. Open Source products are those that are based upon an Open Source Agreement in which the source code is distributed with the application and the user is generally able to alter and re-distribute it. Platforms such as MySQL, PostgreSQL and Firebird use this type of licensing which allows them to be cost-efficient and allows a business to spend less time worrying over licensing.

On the other hand, proprietary database platforms such as Microsoft's SQL Server, Oracle's 10g or IBM's DB2 suite will be more expensive but will contain the most cutting-edge features that IT-centric businesses desire. These systems generally are tightly integrated with a full suite of tools and applications that increase productivity and give a better return on investment by lowering subsidiary operating expenses.

What factors should a company consider when choosing database technology?

Security: Security should be one of the foremost considerations in selecting a database suitable for your IT environment. Specifically, you need a database that conforms to the security protocols that your business has established to maintain data. Do you need your database security model to be integrated into a network security model or will it need to have the ability to accept client security certificates? Will the database need to enforce business security practices such as password complexity and expiration? All of these are valid questions that a business needs to ask and address before committing to a particular database platform.

Data format: Data is generally stored in either relational or XML based format. Relational databases have been around for years and their methodology and reliability are mature and dependable. XML databases offer greater flexibility for your data but are a less mature platform.

Maintenance: Databases often incur operational costs in terms of man hours and resources to maintain their environment. Some database platforms come with a number of integrated tools to provide the functionality to monitor and, in some cases, correct problem issues without the need for human intervention. These types of costs should be considered just as closely as the upfront costs of the system.

Scalability: Data generally grows with the maturity of any system. Calculations are needed to estimate not only your initial number of users and the size of your data, but also estimates of your data two, five or 10 years down the road. Selecting a database platform that can scale out in terms of users and data to fit your future needs can save your business from performance problems.

Cost: Consider how much the database platform will cost in terms of licensing and setup costs in order to get the system going. Often licensing issues and their associated fees are one of the most complex areas when deciding on a particular platform as the licensing options often are as numerous as the types of platforms themselves.

ARIE JONES is a senior consultant for Perpetual Technologies Inc. Reach him at arie.jones@perptech.com.

Insights Technology is brought to you by Perpetual Technologies Inc.