Convergent View

SURVIVAL TALK ABOUT NEXTSTEP AND SQL

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In December, I attended DCI's Database & Client/Server World in Chicago, the largest event in our industry and one that offers insights into key trends and issues of client/server computing. The opening keynote by Steve Jobs was packed.

Before telegraphing some new directions for NeXT Computer Inc., his object-oriented (OO) software company, he mentioned that privately held NeXT had a profitable year with about $50 million in sales. That's good news for NeXT's private investors, who experienced the pain of watching the company exit from the hardware business (its famed black cube workstation with the slow Motorola 68K processor).

Jobs said the company is making some serious inroads into the application development toolkit area for three key vertical markets: communications, financial services, and government. As an example, Jobs talked about the MCI Friends and Family (F&F) marketing program.

He said that in the communications service industry, new business comes from three pieces: the idea, a way to distribute it, and the software necessary to support it. F&F was a huge success for MCI, adding several billion dollars to its market share. The software required to make F&F possible was generated in about three months, using NeXT's technology.

It seems to me that there are two fundamental issues for NeXT. The first is whether its technical leadership is enough to cause its technology to become a surviving industry standard. Object standards will be like GUIs. There is only enough room in the marketplace for two or three major survivors.

Microsoft's OLE/COM is one guaranteed survivor. The Component Integration Labs/Apple/IBM OpenDoc and SOM combination will be another. Technologically, both OLE and OpenDoc are two years behind NextStep. OLE and OpenDoc, however, are backed by multibillion-dollar companies.

Can NextStep's superior technology and "We're shipping it now" give NeXT a shot at the competition?

Sun and HP think so, and ports of NextStep onto platforms running Sun's and HP's operating systems will be available this year.

The other key issue is NeXT's choice of underlying technologies: Mach, Display Postscript, and Objective C, in particular. While they may be the best microkernel operating system, output standard, and OO language, those technologies are a long way from being widely used industry standards. There are very few trained people available anywhere to support any of these technologies.

Does all this make NeXT's client-side application development technology superior to Powersoft's? You bet. Yet Powersoft is the hottest application development tool company going, because it runs under Windows 3.1. At the time of this writing, there are strong rumors that NeXT will be available under Windows NT. Jobs, when asked about that, would only comment that "Ships don't leak from the top!" I am telling you, though, that it's a highly likely "next" direction.

It's too early to forecast in exactly what form NeXT will survive.

My guess is that the company at some point will be acquired by somone like Sun.

If Steve Jobs is the industry's consummate showman, one of its leading academics is Chris Date, whose textbooks on DBMS topics are the worldwide university standard. Date's presentation, entitled the 3rd Manifesto, continued his crusade to define the architecture that will govern how relational and object technologies are married.

He commented that both relational and OO approaches have good ideas, and that our industry should not discard the good ideas from either technology. Date went on to point out that the SQL language, however, isn't a good implementation of relational technology and may have to be supplanted by a superior approach. In particular, SQL doesn't support the concept of domains or data types. The key contribution of OO approaches is good support for complex or user-defined data types.

Such support means that many common programming errors could be recognized and handled correctly by the database system.
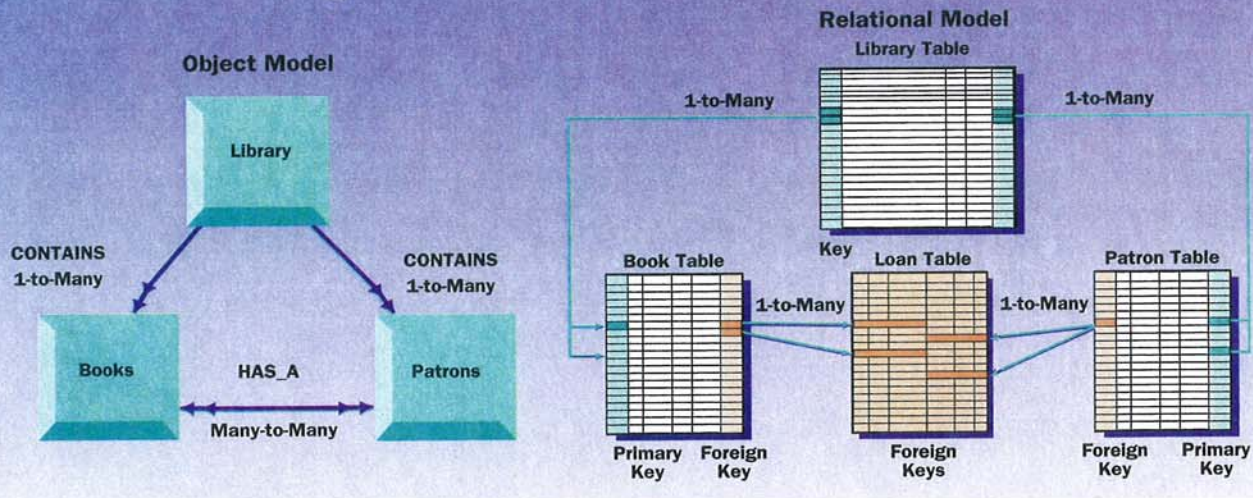
Date went on to give several examples of how a relational system can be used to store and manage complex data types, including audio, video, and maps. The key idea here would be to make sure that the mapping between OO constructs and relational constructs is object class to domain data type. He disagreed with the approach taken by most current OO systems, which maps object classes to relations.

Date and his research partners have come up with some serious issues for the DBMS vendor community to consider. The vendor community has shown, however, that it is far more likely to respond to customer and sales pressure than to good theoretical ideas.

Back in the 1980s, Date was a consultant on retainer for Ingres (now part of Computer Associates). Currently, however, he does almost no work for vendors, and he is not involved in organized industry standards efforts. His influence is limited to the intellectual pressure that can be generated through presentations at Database & Client/Server World and in trade magazine articles and books. Date and E. F. Codd, inventor of the relational model, have long argued that SQL is fatally flawed as a DBMS language and that another data access language with more fidelity to the relational model is needed.

One of the most enjoyable conference sessions for me was the panel discussion among Larry Deboever, Christine Comaford, David McGoveran, Ron Peri, and myself on hot companies. The panel had a very positive view of the technologies and business plans coming from Sybase. Its Open Client/Open Server connectivity strategy was compared favorably with Oracle's alternatives. One comment was "As a matter of fact, Sybase Open Client/Open Server is the best way to connect Oracle sites!"

The Sybase/Microsoft divorce was, of course, a major news story in the past year. There were strong doubts expressed about Microsoft as a competitor at the enterprise level with companies like Sybase or Informix. The thought was that Microsoft's concept of shrink-wrapped software distribution and support through 800 phone numbers and subcontractors is inadequate for the mission-critical applications for which DBMS engines are used.

There were also a number of positive comments on the Sybase merger with Powersoft. It seems to me that this merger restructures the industry, with Sybase and Oracle alone in the top tier of DBMS server vendors.

Another comment about Sybase was that its DBMS engine sales in the United States are larger than Oracle's. So, all in all, Sybase's unbroken sales and profit increase string, running about 60 percent per year, was thought to have quite a run left. I left Database & Client/Server World with the strong impression that our industry is quite vital and growing. Key issues for the new year include enhanced performance and a strong movement toward OO application development.

George Schussel, founder and chairman of Digital Consulting Inc. (DCI), is chairman of the Database & Client/Server World trade show. He can be reached at CompuServe 74407,2472.

Date's no-no: Using relations to model objects

Object Model

Library

CONTAINS 1-to-Many

CONTAINS 1-to-Many

Books

HAS_A

Patrons

Many-to-Many

Relational Model

Library Table

1-to-Many

1-to-Many

Book Table

Key

Loan Table

Patron Table

1-to-Many

1-to-Many

Primary Key Foreign Key

Foreign Keys

Foreign Key Primary Key