

Querying the Past, the Present, and the Future

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Database technology has done an excellent job of managing data. SQL92/99 and XML are generally considered to be powerful building blocks; these building blocks are complemented by support for Text, Images, Audio, Video, Spatial, Expressions, and other complex data structures. Database technology can also transparently manage access to data in other (remote) databases, in file systems, and in applications. Furthermore, database technology has achieved impressive operational characteristics with respect to, e.g., performance, scalability, reliability, component and site tolerance, and security.

Existing database technology is focused on managing the current state of data and on sharing data on request only. This focus fails to reflect current and emerging business needs. Today's businesses need access to the complete history of data ("we need to know what was known and/or what happened when"). Businesses also need the ability to distribute relevant information ASAP to the right group of people, or even to react automatically in real time ("we need to be on top of things"). Frequently cited examples include ePC/RFID (electronic Product Code/Radio Frequency Identifier), RTE (Real Time Enterprise), and BAM (Business Activity Monitoring).

Two fundamental enhancements are needed: The ability to automatically create and provide access to the complete history of data, as well as the ability to inform interested parties of relevant changes as soon as they happen and/or to activate real-time agents.

This panel will focus on necessary enhancements of database technology with respect to data model, query language, and operational characteristics, and explore how a combination of ideas from a variety of existing disciplines can help in meeting these new challenges. The list of relevant technologies includes temporal database technology, streams SQL, event management, publish/subscribe technology, agent management, and information distribution. Some suggestions will be in conflict with current, well-accepted approaches.

Finally, the panel will discuss research problems and challenges that are expected in the development of products

Panel members:

- Adam Bosworth, BEA
- Michael J. Franklin, University of California, Berkeley, USA
- Christian S. Jensen, Aalborg University, Denmark