

Challenges for Global Information Systems

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Currently, the Internet provides access to a very large number and wide variety of information sources (e.g., textual databases, sites containing technical reports, directory listings), and systems to access these sources (e.g., World Wide Web, Gopher, WAIS). The challenge is to provide easy, efficient, robust and secure access to this information and other kinds (e.g., relational and object oriented databases).

This aim of this panel is to explore whether there are any new technical problems, relevant to the Database field, that need to be solved in order to realize such global information systems. In particular, we debate whether existing techniques from database systems (e.g., multidatabases and distributed databases) can be applied or straightforwardly extended to global information systems. Furthermore, we attempt to establish *realistic* goals for database technologies in global information systems.

Some of the specific issues discussed are the following:

- How do we integrate a vast number of disparate autonomous and dynamically changing information sources? How is this information presented to a user of the system?

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- What are the possible interactions of a user with such a system? How can high level querying be combined with browsing through information available? How do we efficiently answer the user's queries?
- How do we provide reliable and efficient access to information that is required by a large number of users? Can replication and caching techniques be extended to address this challenge?
- What are the issues that arise in order to provide an infrastructure for an information-market? When information is a commodity, how do we model costs of information and how do we handle reliable and secure billing?
- What issues in global information systems are common to the Database and Information Retrieval communities? Many of the information sources on the Internet are of the types traditionally handled by Information Retrieval methods. How can we integrate Databases and Information Retrieval methods to present the best of both to a user?

The panelists include experts from various sub-fields of database systems, as well as panelists who are knowledgeable about related fields such as Information Retrieval and Artificial Intelligence.