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Overview of the Technology Briefing

This technology briefing will describe the key capabilities and techniques of knowledge discovery systems -- also known as database mining. These capabilities and techniques will be briefly contrasted with those of related technologies, including traditional database query languages, statistical and experimental methods, machine learning, neural networks, case-based reasoning, and expert systems (Piatetsky-Shapiro and Frawley 1991).

Importance of the Topic for Information Systems Academics and Practitioners

While the techniques of knowledge discovery in databases have been developed largely by the computer science field, information systems researchers and practitioners will need to play a leading role in the future in designing systems for organizational data interpretation, learning, and discovery (Daft and Weick 1984). The historical emphasis in information systems curriculums has, however, been on programming and application development for the purpose of automation and worker replacement as opposed to systems analysis methods for "informating" workers and organizations (Zuboff 1988).

This session is designed to provide an overview of some of the state-of-the-art techniques that can be used toward the informing goals of information systems.

Topics Addressed in the Session

The following topics will be included in the briefing session:

- What is Knowledge Discovery and Database Mining?
- The Spectrum of Knowledge Discovery Applications
- Technical Challenges in Knowledge Discovery
- An Example of a Knowledge Discovery System
- Types of Domain Knowledge Used in Discovery
- Contrasts with Related Technologies

Teaching Materials for Attendees

Teaching materials will be provided to attendees in hard copy and (where requested) in electronic version following the conference. The materials will summarize key points
from the presentation, including information on capabilities of knowledge discovery systems and contrasts with related technologies.

Types of Information Systems Courses Targeted

The teaching materials are designed to be usable for a fifty minute class session in any of the following types of courses: 1) an expert systems or intelligent systems course, 2) an MBA level course on information systems, 3) an overview course on information systems at the undergraduate or graduate level, and 4) a course on database systems.

The material is kept at a minimally technical level, focusing on capabilities and differences in non-technical terminology where possible.

References

