Imagery and Full Text on Demand Technologies and Demonstrations

SUMMARY

We apply leading information processing technologies to image and full text applications in education. Key commercially developed technologies include Oracle's SQL*TextRetrieval Tool and Multimedia Toolkit, and Kodak's Global Imagery on Demand (GIODE) technologies. Related technologies include real−time compression, multimedia transport, and network management

PARTICIPANTS

Syracuse University (NPAC, Computer Engineering, Computer Science, School of Information Studies, Maxwell School of Citizenship and Public Affairs), Kodak, NYNEX, Digital, Maspar, IBM, nCUBE, Oracle

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IMPACT

Image and full text on demand comprise an important component of a national, network−based information infrastructure required to support education, health care, industrial competitiveness, and corresponding dual−use applications in defense. In this project, we develop and evaluate image and full text on−demand, making hundreds of thousands of documents and images available for a combination of education, commercial and government, and political science policy analysis applications.

DESCRIPTION

Image On−Demand

Kodak has teamed with NPAC to port Kodak's Picture Exchange Technology (KPX) into an HPCC environment with primary emphasis on government and commercial applications. The current KPX system is based on a workstation cluster, image database server that delivers digital images over a narrow band telecommunications network. NPAC's InfoVision project supports this development by teaming Kodak with NPAC to develop and evaluate KPX on the nCUBE and SP1 systems at NPAC with image delivery over NYNET. This project will be based on Oracle's parallel database software and Multimedia Toolkit. In our demonstration, we will evaluate to the ability of KPX to provide color images on−demand in real time with digital image delivery at multiple levels of resolution − 0.6Mb, 2.5Mb, 10Mb, 38Mb, 150Mb, and 600Mb − with varying network bandwidth capacities − ISDN (112Kbps), T−3 (45Mbps) and Sonet/ATM (155Mbps).

Full Text On−Demand

The Educational Resources Information Center (ERIC) Clearinghouse on Information & Technology at Syracuse University is one of sixteen national clearinghouses providing teachers, parents, librarians, and administrators on−line access to full text ERIC Digests and Help Sheets, training and reference materials for Internet use, and links to other ERIC subject−specialized clearinghouses and educational resources such as classroom teaching modules. On−line resources include full text records of the AskERIC electronic library, a 750,000 record bibliographic library which grows at the rate of 20,000 entries per year, and an 11,000 full text educational digest. The current collection of text based information is approximately 15 gigabytes. This demonstration will enable, for the first time, full text search of national educational databases. Teachers will have Internet access, and in a regional educational trial, access over the NYNET gigabit testbed network.

Public Policy Analysis

The Global Affairs Institute of the Maxwell School is currently working with the United Nations Office of

the Secretary General to develop an information and decision support system to enhance the Secretary's ability to provide early warning of refugee and displaced person flows. An immediate goal is to define a minimum set of documents needed to support various analysis tasks used to validate, track flows, predict resettlement requirements, and link records of interest with related databases. Document databases on the order of hundreds of terabytes are potentially relevant to this analysis.

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