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COMING OF AGE: SPECIAL INTEREST GROUPS IN AIS

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PROFESSIONAL

COMING OF AGE: SPECIAL INTEREST GROUPS IN AIS

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ABSTRACT

Special interest groups (SIGs) provide substantial benefits to other academic and professional organizations, helping their members exchange ideas and keep up to date. To foster the development of SIGs with the unique perspective only available from our discipline, AIS funded the first group of six SIG proposals. The funding is designed to provide seed money for the development of electronic resources such as web sites, listserves, and on-line discussion groups. In the long run, SIGs are expected to enhance their offerings with conference mini-tracks, newsletters, and directories. Some SIGs will offer workshops, calls for papers in special issues of journals, working papers, electronic bibliographies, tutorials, conferences, refereed journals, and pointers to research tools and industry contacts.

The six proposals described in detail in this article include Agent-Based Information Systems (Riyaz Sikora, University of Illinois at Urbana-Champaign; Christoph Schlueter-Langdon, University of Southern California; and Dan O'Leary, University of Southern California); Cognitive Research (Michael J. Davern, New York University; Dov Te'eni, Bar-Ilan University; and Teresa Shaft, University of Oklahoma); E-Business (Judith Gebauer and Michael J. Shaw, University of Illinois at Urbana-Champaign); Human-Computer Interaction (Ping Zhang, Syracuse University; Fiona Fui-Hoon Nah, University of Nebraska-

Lincoln; and Sid Davis, University of Nebraska-Omaha); Internet and Network Security (Al Bento, University of Baltimore and Mark Weiser, Oklahoma State University); and Process Automation and Management (Edward A. Stohr, Stevens Institute of Technology and J. Leon Zhao, University of Arizona).

Keywords: special interest groups, agent-based information systems, cognitive research, e-business, human-computer interaction; internet and network security; process automation and management

I. INTRODUCTION

Special interest groups (SIGs) are pervasive in both academic and professional organizations worldwide, and it is not difficult to understand why they flourish to such an extent. SIGs provide their members organized access to highly specialized content, to new developments, and also to like-minded individuals for possible collaboration. Resources are often collected into a centralized repository, and organized and formalized to a great extent. It would not stretch the imagination to claim that SIGs possess the potential to aid progress in both research and teaching.

The Information Systems field has enjoyed access to a limited number of such specialized resources for some time, provided by organizations such as IFIP, ACM, Academy of Management, INFORMS, and ISWORLD. Some of these offerings are of high value, but problems of selection, access, range, and specificity remain. Some areas of research are not offered. Some resources require a significant investigation to uncover them. Others do not quite fit the organizational paradigm that our field maintains.

To solve these problems, and also as part of a campaign to increase the scope and range of services to its members, AIS is now undertaking an ambitious program to fund development of a well-rounded slate of SIGs. Proposals will be solicited annually as long as funds are available. The proposers are required to

specify the resources to be developed, the background of the content area, positioning in the context of the field, and background of the proposing members.

This year many strides were made toward the development of SIGs. The results of the January 26, 2001 call for SIG proposals sent on IS World were encouraging: Twelve proposals were received from members representing all three world regions. At a meeting in Barcelona on June 2, AIS Council accepted six of the proposals, and \$19,000 of seed money was allocated to help get the projects under way. An organizing reception was held at AMCIS in Boston in August, 2001, and initial guidelines and principles were developed.

II. SIG OFFERINGS

Most SIGs will provide a standard set of resources as they “open their doors,” and the list of offerings will evolve over time. It is expected that AIS SIGs would provide resources electronically whenever possible because costs of printing and distribution can mount quickly and threaten the SIG’s existence.

In the first year, SIGs are expected to offer a web site that integrates the resources and provides announcements for SIG activities, a listserve, an issue or two of an electronic newsletter, and a threaded discussion group. In the second year, SIGs are expected to create and disseminate regular newsletters, offer conference mini-tracks, and provide a directory of members and their research projects. After the third year, less uniformity is expected. Examples of directions that SIGs might choose are calls for papers in special issues of journals, a two-tiered system of resources (members and non-members), working papers, electronic bibliographies, tutorials on line or at conferences, electronic and/or physical conferences, refereed print and/or electronic journals, and pointers to research tools and industry contacts.

Descriptions of the six approved SIGs follow, in alphabetical order of title. These descriptions were adapted from the proposals.

AGENT-BASED INFORMATION SYSTEMS

Riyaz Sikora, University of Illinois at Urbana-Champaign
Christoph Schlueter-Langdon, University of Southern California
Dan O'Leary, University of Southern California

The agent metaphor, long studied in artificial intelligence, recently became popular in mainstream computing and even in business schools, largely due to its suitability for open environments such as the Internet. Open environments are increasingly becoming commonplace in applications such as manufacturing, virtual enterprises, and ubiquitous information access. Moreover, we can expect the emergence of new kinds of distribution channels, supply chains, and dynamic markets that use new kinds of intelligent distributed computational processes in the form of agents.

One of the side effects of the increase in connectivity and collaboration is the increase in the magnitude and volatility of data available to users. Intelligent agents are emerging as a way to deal with this staggering variety and volume of data in distributed and heterogeneous environments.

Despite the promise and attraction of agent-based information systems, wide-ranging issues and open questions need to be addressed before their use can become widespread. One of the aims of this SIG, apart from providing a forum for discussions, is to identify and define important but unresolved research problems and provide general research guidelines and strategies.

In addition to the standard set of resources provided by all SIGs, the SIG on Agent-Based Information Systems plans to offer links to commercial products and vendors and to offer an annual workshop in a manner similar to WITS and WISE (offered either before or after ICIS, either at the same site or nearby).

Although expected to evolve over time, a tentative list of topics includes:

- Theoretical foundations for agent-based systems
- Design and implementation of multi-agent systems
- Toolkits for agent modeling, construction, and communication

- Support for decision making in groups
- Support for social networks
- Effects of agent-based systems on the structure of organizations and markets
- Design for maximizing agent learning and intelligence
- Interaction strategies for coordination, cooperation, and competition
- Design and implementation of mobile agents for m-commerce
- Applications for agent-based systems

COGNITIVE RESEARCH (IS-CORE)

Michael J. Davern, New York University

Dov Te'eni, Bar-Ilan University

Teresa Shaft, University of Oklahoma

The IS-CORE SIG supports researchers who draw on theory and methods from the cognitive and psychological sciences to address research questions in Information Systems. The definition of the content area in terms of a reference discipline provides a concrete focus for the SIG, and provides a broad scope in terms of the IS research topic areas described below.

The fundamental unifying concept for members of the IS -CORE SIG is a belief that understanding human cognition is a critical component to the successful design and implementation of information systems. Furthermore, grounding the SIG in a reference discipline increases the likelihood that the SIG will remain an active part of the field in the longer term.

The focus on the cognitive sciences rather than the broader behavioral sciences is an important strategic issue for the SIG. First, the breadth of theories and methods that encompass the behavioral sciences is too large to constitute a “special interest” group. Furthermore, the establishment of a cognitive-focused SIG serves to highlight to the non-behavioral researchers in the IS community the substantial breadth of theories and methods that are often collectively labeled “behavioral research” (which can encompass research varying even in level of analysis – individual, group, or organization). IS-CORE took the lead and

arranged an annual workshop just before ICIS in New Orleans in December 2001.

The following IS research topics illustrate the scope of IS -CORE:

- Cognitive fit research
- Cognitive processes of programmers
- Cognitive aspects of decision support systems
- Design of user learning and training interventions
- Human-computer interaction/human factors
- Collaborative work and knowledge management (e.g., from a distributed cognition perspective)

E-BUSINESS

Judith Gebauer, University of Illinois at Urbana-Champaign
Michael J. Shaw, University of Illinois at Urbana-Champaign

Perhaps no application of technology in recent years is more visible than E-business. Areas such as customer relationship management, supply chain management, electronic procurement, internet marketing, electronic marketplaces, and cooperation across corporate boundaries saw significant developments in recent years, in business practice and in the academic community. Emerging technology and systems, innovative process models, algorithms and methodologies, as well as creative implementations of early adopters created a rich field for research and practical applications.

While the technologies available to connect users to businesses (and businesses to other businesses) today are novel to some extent, some of the issues were discussed for many years in research areas such as channel management, inter-organizational systems, EDI, and supply chain management. However, they need to be reconsidered in light of the enhanced coordination capabilities of the Web. In addition, new issues arise, such as technical details and management implications of interconnecting businesses, integration of the traditional and Web channels, the impacts of inter-organizational links on business processes and

organizational structures, more accurate evaluation of e-business projects, new needs for the fulfillment process, e-business adoption, success factors of emerging electronic marketplaces, and innovative business models.

The E-Business SIG plans sponsor-focused tracks at AMCIS meetings and to organize special issues in a new journal, *Journal of Information Systems and e-Business Management*, to be published by Springer Verlag. It will also offer a workshop similar to WITS and WISE.

A tentative list of topics includes:

- Current developments, emerging topics, and best practices in e-Business
- Economic issues related to e-Business practices
- E-Business and Channel Management
- Electronic markets, inter-organizational information systems
- IT and supply chain management and coordination—impact of new technologies on architectures, business network design, and strategic alliances
- Consumer oriented e-Commerce models and Internet Marketing
- Internet-based procurement and sales
- Coping with uncertainty—Internet-based optimization methods and tools
- Economic, procedural, and organizational impacts of e-Commerce strategies and emerging technologies and standards
- Technologies to facilitate negotiations and auctions
- Customer relationship management technology and issues
- B2B market-making mechanisms and auction methods
- Integration of e-Business and ERP systems
- Business system design and analysis
- Internet-based payment models
- Economic, privacy, and legal issues
- E-commerce architectures
- Evaluation and adoption of e-Business projects

HUMAN-COMPUTER INTERACTION (HCI)

Ping Zhang, Syracuse University;
Fiona Fui-Hoon Nah, University of Nebraska-Lincoln;
Sid Davis, University of Nebraska-Omaha

SIGHCI provides a forum for AIS members to discuss, develop, and promote issues, ideas and research studies involving the ways humans interact with information, computers, and information technologies, especially in the business, managerial, and organizational contexts. The discipline emphasizes how systems can be designed to account for the interactions between people and technology, with an eye toward maximizing system usability.

Because of the recent fast pace of technology development, and painful visibility of ubiquitous design errors, HCI is beginning to gain a great deal of attention. To make best use of new innovations, we need to understand humans or users, their tasks within different contexts, and the interplay among users, tasks, and contexts/environments. The IS field provides a unique perspective for exploring these issues by taking managerial and/or organizational issues into consideration. Specifically, AIS SIGHCI is concerned with the organizational context of the history, theory, practice, methodologies, development, and applications of the interaction between humans, information, and information technology. This agenda includes, but is not limited to:

- The behavioral, cognitive, and motivational aspects of humans
- User task analysis and modeling
- The analysis, design, construction, evaluation, and use of information systems
- Information system usability engineering
- The impact of interfaces/information technology on individuals' attitudes, behavior, performance, perception, and productivity
- Implications and consequences of technological change on individuals, groups, society, and socio-technical units
- Guidelines and standards for interface design
- User interface design for the Web and E-Commerce

- Interface issues in the development of new interaction technologies
- The elderly, the young, and special needs populations for new applications, modalities, and multimedia interaction

Beyond the standard set of resources described above, the HCI SIG plans to offer an annual workshop in a manner similar to WITS and WISE.

INTERNET AND NETWORK SECURITY

Al Bento, University of Baltimore;
Mark Weiser, Oklahoma State University

The last ten years saw the rise of networking, the Internet coming of age, the growth of electronic commerce, and more recently the birth of home networking and broadband access. A key foundation of all these activities is security in all its aspects related to the Internet and networks.

Traditionally the study of security was limited to Computer Science and Auditing. But managerial, professional, and teaching aspects of Internet and network security need the information system field's attention. Teaching Internet security both to information systems professionals and end-users is a major challenge. Integrating Internet security in the information systems literacy course is much needed, as evidenced, for example, by the report of a recent security breach into Microsoft networks, achieved through access to the home broadband connection of a Microsoft employee.

Internet security needs to be integrated into traditional information systems courses like database management, systems analysis, and networking, as well as more recent courses, such as electronic commerce. Courses dedicated to general aspects of Internet and network security are also much needed.

The development of new frameworks, paradigms and models of Internet and network security in business and at home is of paramount importance. The relationships among electronic commerce, the digital economy, and Internet and network security also need to be studied.

Security SIG plans to offer a refereed, electronic journal on Network and Internet Security (JNIS).

PROCESS AUTOMATION AND MANAGEMENT

- Edward A. Stohr, Stevens Institute of Technology
- J. Leon Zhao, University of Arizona

The increasing speed and complexity of business requires that management pay more attention to both inter- and intra-organizational processes. This need is most acute in electronic commerce, where the integration of services and fast response times are crucial to attracting and maintaining customers. In the last few years, process automation and management became a central theme in many businesses. Research areas addressing problems in this domain include: electronic commerce, business process reengineering, enterprise application integration, knowledge process management, groupware, workflow automation, electronic markets, and computer supported collaborative work (CSCW). Although each of these areas involves unique research approaches, they have a common interest in using process automation to support inter- and intra-organizational systems.

The name “process automation and management” was chosen to emphasize that the SIG has a broad scope that includes process-related topics:

- Theories of conceptual, logical, and physical process modeling.
- Methodologies and tools of process automation and management
- Integration of inter- and intra-business processes
- Workflow automation and management for virtual enterprises
- Managing business processes on the Web
- Business process facilitation in synchronous and asynchronous environments
- Process modeling and management in electronic markets
- Workflow-centric component-based software engineering
- Change management in highly automated business processes
- Process flexibility, interoperability, and scalability
- Process optimization theory and applications

- Process-driven knowledge delivery

Beyond the standard set of resources described above, the SIG on Process Automation and Management plans to offer an annual workshop in a manner similar to WITS and WISE, in conjunction with AMCIS.

CONCLUSION

Perusing the list of SIG topics and offerings provides a vivid image of many future benefits of AIS and SIG membership. As VP Member Activities of AIS, I congratulate the Charter SIG Chairs for their initiative and for their generous offers to help the AIS community. There will be more to come this year, as AIS Council evaluates revisions of six more proposals, and next year, when a new set of proposals will be solicited.

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ABOUT THE AUTHOR

Dennis F. Galletta is associate professor of business administration at the Katz Graduate School of Business, University of Pittsburgh. He obtained his PhD in MIS in 1985 at the University of Minnesota. His research interests lie in the areas of electronic commerce and end-user attitudes, behavior, and performance. His papers appear in journals such as *Information Systems Research*; *Communications of the ACM*; *Decision Sciences*; *Journal of MIS*; *Decision Sciences*; *Accounting, Management, and Information Technologies*; and *Data Base*. He is also author of a textbook. He is on the editorial boards of three journals. He served as the ICIS Treasurer, chaired the Inaugural AIS Americas Conference on Information Systems, and was a member of AIS Council representing the Americas in past years. He currently serves as the VP of Member Services for AIS and will be a co-program chair of AMCIS in 2003.

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