
CHALLENGES OF EXPANDING INTERNET: E-COMMERCE, E-BUSINESS, AND E-GOVERNMENT

IFIP – The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is less rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is in information may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

CHALLENGES OF EXPANDING INTERNET: E-COMMERCE, E-BUSINESS, AND E-GOVERNMENT

*5th IFIP Conference e-Commerce, e-Business, and
e-Government (I3E'2005), October 28-30, 2005,
Poznan, Poland*

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Springer

Library of Congress Cataloging-in-Publication Data

A C.I.P. Catalogue record for this book is available from the Library of Congress.

Challenges of Expanding Internet: E-Commerce, E-Business, and E-Government

Edited by Matohisa Funabashi and Adam Grzech

p. cm. (IFIP International Federation for Information Processing, a Springer Series in Computer Science)

ISSN: 1571-5736 / 1861-2288 (Internet)

ISBN-10: 0-387-28753-1

ISBN-13: 9780-387-28753-9

Printed on acid-free paper

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Printed in the United States of America.

9 8 7 6 5 4 3 2 1

SPIN 11547983

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GENERAL CHAIR'S MESSAGE

Welcome to the 5th IFIP Conference on e-Commerce, e-Business and e-Government, I3E'2005, sponsored by three IFIP Technical Committees: TC6, TC8, and TC11. I3E'2005 continues the tradition that evolved out of the inaugural conference held in 2001 in Zurich (Switzerland) and since made its journey through the world: 2002 Lisbon (Portugal), 2003 Sao Paulo (Brazil), 2004 Toulouse (France).

This year we are happy to hold the event in Poznan, a city of 600,000 inhabitants in western Poland. Poznan is the capital of the most affluent province of the country – Wielkopolska – which means the “Greater Poland”. For more than one thousand years, Poznan’s geographical location has predestined the city to be a significant scientific, cultural and economic center with more than just regional influence. The city is situated on the strategic cross-roads from Paris and Berlin in the west, to Warsaw and Moscow in the east, and from Scandinavia through the Baltic Sea in the north to the Balkans in the south. Poznan is a great research and university center with a dynamic potential. 120 000 students are enrolled in 19 state run and private institutions of higher education here, among which the Poznan University of Economics with its 18,000 students is one of the biggest.

The I3E'2005 Conference provides a forum for users, engineers, and scientists in academia, industry, and government to present their latest findings in e-commerce, e-business, or e-government applications and the underlying technology to support those applications. The submitted contributions address challenging issues of innovative business models, digital goods, products and services, user behavior, pervasive technologies, portals, trust and security, and public e-services for citizens and enterprises.

This conference has been made possible through the efforts of many people. I wish to thank everyone involved, including those who worked diligently behind the scenes and without formal recognition. First, I would like to thank the Program Chairs: Motohisa Funabashi from Hitachi Ltd., Japan, and Adam Grzech from the Technical University of Wroclaw, Poland, together with the Liaison Chairs representing different continents: Europe: R. Suomi, TuKKK, Finland; North America: J. Urban, Arizona State University, USA; South America: M. J. Mendes, Unisantos, Brazil; and

Asia-Pacific: Y. Zhang, Victoria University, Australia, for putting together an excellent technical program.

I would like to thank the Program Committee members and reviewers for a very rigorous and outstanding reviewing process. Almost all papers were reviewed by three members of the Program Committee or by external reviewers. I believe that such reviewing process guaranteed and assured high quality papers that are interesting and of timely importance for the attendees.

We are honored that the I3E Steering Committee, chaired by Dr. Volker Tschammer from the Fraunhofer Institute for Open Communication Systems FOKUS, Berlin, Germany, had confidence in us to manage the conference in Poznan. I take an opportunity of the jubilee fifth I3E conference to acknowledge Dr. Volker Tschammer for his initiative and engagement in running the whole series of I3E conferences.

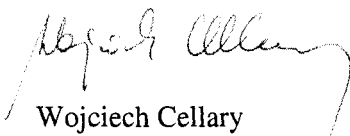
I wish to thank Dr. Liba Svobodova from IBM Zurich Research Laboratory, and Dr. Kurt Weiss from Betreuer Hochschulen, SAP-Switzerland, for accepting our invitations to serve as keynote speakers.

Many thanks to my co-workers from the Poznan University of Economics – Dr. Jarogniew Rykowski and Jacek Chmielewski – who solved many technical problems, maintained online submission systems and supported editing of the Conference Proceedings.

I wish to thank organizers of special tracks: Dr. Anna Grabowska from the Technical University of Gdansk, Poland, who organized a special track of e-learning, Prof. Irene Krebs from the Brandenburg University of Technology, Cottbus, Germany, who organized a special track “Innovative Education Technologies using SAP”, and Dr. Wacław Iszkowski from the Polish Chamber of Information Technology and Telecommunications who contributed to the organization of the industrial track.

Special thanks to local governments: Marshal's Office of the Wielkopolska Region, and City Hall of Poznan, co-organizers of the Conference, for financial and logistic support. Thanks also to the Ministry of Science and Information Society Technologies and companies presenting their achievements at the industrial track for their financial support making this Conference more available to the audience.

Thank you – attendees – for your participation in I3E'2005, and welcome to Poznan, Poland. I hope you enjoy the Conference and grow professionally and personally.



Wojciech Cellary

I3E'2005 General Chair

The Poznan University of Economics, Poland

Program Co-Chairs' Message

Within the last decade several new developments have contributed to many new opportunities, as well as to a need for intensive research and development. New applications are driven by the desire for ubiquitous high-quality access to offered and available services at reasonable cost.

A considerable amount of research and development activities are currently going on world wide in order to adopt Internet services to the particular needs of users working in various environments and having an access to a great amount of information provided by commerce, business and public institutions. Expanding understanding and usage of Internet rise different technological problems and societal impacts. The emergence of the new societal environment created by Internet is a historical necessity; digitization becomes a correlate of most human activities nowadays including e-economy, e-medicine, e-government, etc.

As a medium of communication the Internet reached a relative maturity, whilst as a new societal environment it is still in the making. The Internet produces an enormous and huge e-environment society requiring intermediaries who guide, search, integrate and authenticate knowledge and information. There are many open questions such as Internet usage and services models, information and knowledge distribution, access to services, contents design and maintenance, security, etc.

These questions were intensively discussed at the past four editions of IFIP Conference on e-Commerce, e-Business and e-Government, and are going to be discussed at the 5th edition of the event. Organizers of the I3E'2005 Conference in Poznan have obtained 130 submissions for possible consideration for publication. The submitted papers originated from 34 countries from all over the world; in the decreasing order of submissions: Brazil, Germany, Japan, United Kingdom, Greece, China, Italy, Poland,

Australia, South Africa, India, Netherlands, Spain, South Korea, Taiwan, The Netherlands, Bulgaria, Canada, Lithuania, Luxembourg, Switzerland, USA, Finland, China, Singapore, Austria, Bangladesh, Belgium, Denmark, France, Jordan, Pakistan, Portugal, and Sweden. After thorough reviewing process, 40 research papers has been selected for presentation at the I3E'2005 and publication by Springer Science & Business Media within the IFIP series. The acceptance rate was 30%.

The 5th IFIP I3E'2005 proceedings contains a selection of 40 research contributions, which were extended to incorporate the numerous suggestions made by the international reviewers. All accepted papers addressed problems located into three main categories: e-commerce, e-business and e-government. Some of them are interdisciplinary and addressed to problems common for the three mentioned areas.

The editors are convinced that this book provides the most relevant and highly up-to-date summary of problems, and of suitable solutions in area of applications supporting commerce, business and government activities. We believe that the papers will be found as high quality, interesting and of timely importance.

The quality and success of IFIP I3E'2005 are due to all participants, but we have no doubts the success relies on the hard work of organizing committee members and volunteers from the Poznan University of Economics.

We would like to thank all members of the Program Committee and reviewers for their hard work in reviewing the manuscripts.

Thanks to all the Local Arrangements and Liaison Chairs as well as Steering Committee members for their excellent cooperation.

Many thanks to Dr Jarogniew Rykowski and Mr Jacek Chmielewski who provided and maintained online submission system for their helpful support.

Special thanks to Prof. Wojciech Cellary who took care of all activities necessary to prepare and provide the event.

Motohisa Funabashi
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Adam Grzech
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INNOVATIONS TRANSFORMING E-BUSINESS

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Driven by business innovation, competitive pressures and technical feasibility, e-business has evolved from its early manifestations embracing the Internet to advanced models emphasizing flexibility and adaptability and enabling complex and dynamic value networks. New business services and service delivery models are emerging.

Software development supports these trends by shifting towards a flexible, standards-based, service-oriented solution assembly approach. Scientific and technological advancements in various disciplines such as speech technology, sensor networks, and exploitation of unstructured information are enabling new applications and services and increased productivity. Breakthroughs in algorithms combined with the availability of extensive data and computational power are dramatically increasing the capabilities of analytics and optimization tools to address complex business problems and interactions in the on demand world.

Where is further innovation needed? What kind of research is needed to establish the foundation for the future? What professional skills will be needed in the increasingly dynamic on demand business world?

While the paths of technological innovations resulting in hardware and software products and solutions are well established, more scientific rigor and interdisciplinary approach is needed to foster the transition of services into an innovative discipline, encompassing and combining business, technology, and organizational aspects (www.research.ibm.com/ssme).

Liba Svobodova was born in Prague, Czech Republic, where she studied electrical engineering at the Czech Technical University (CVUT). She received the MS (1970) and PhD (1974) degrees in EE/CS from Stanford University in California. She held faculty positions at the Columbia University in New York and the Massachusetts Institute of Technology / Laboratory for Computer Science, where she did pioneering work in the area of resilient distributed systems. In 1982, she joined the IBM Zurich Research Laboratory in Rüschlikon, Switzerland. Over many years she managed research projects in the areas of computer networks and distributed systems, security, and network services and applications. Her current responsibilities focus on technical strategy and development of research directions, in particular in the Services area. She engages in the IBM Industry Solutions Lab (ISL) in Zurich, where customers and researchers come together to discuss emerging technologies and solutions and their potential impact on business. She is also responsible for University Relations programs at the IBM Zurich Research Lab.

SAP AND THE AGE OF LOGISTICS

How to Meet Tomorrows Business Challenges

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We all have heard about the industrial revolution. Starting in 1750 with the invention of the steam engine, manual work was gradually replaced by machines. The consequences for industry and business were dramatic and partly painful. However, when it ended about 150 years later almost everybody in the industrial world was far better off.

Today things are happening again. This time mental work is replaced by machines. Not gradually but rapidly. The consequences for business are even more dramatic than they were 250 years ago. And they will continue to be dramatic, at an accelerated pace, during the next few years.

How to cope with the situation? One of the main challenges for most companies (and of course also for the public sector) will be to improve the efficiency and structure of their business processes. Streamlining logistics is the call of the day. Only if this is thoroughly pursued there will be room for profit with innovations. We are in the age of logistics.

SAP is fully prepared to meet this challenge. And, sure enough, everybody in a few years will be better off once more.

Kurt Weiss is a physicist (University of Zurich). He started his career as a scientist in basic research with Philips Research in Eindhoven (Netherlands) and as a guest professor at UC Los Angeles and the Johann-Wolfgang-Goethe-Universität Frankfurt (Germany). He then focused his interests on applied work. First as head of research at HILTI AG (Liechtenstein) and later as director at the ETH Lausanne for a Swiss-wide coordinated research effort in applied optics (IOT). Realizing an old dream he then served for five years as director of the Theater am Kirchplatz in Schaan before accepting from SAP (Switzerland) AG the responsibility to conceive and run SAPCollege (a new training program for SAP consultants). To day he runs for SAP a program to establish the art of mapping business processes onto software as a new academic discipline at the Swiss Higher Learning institutions. In addition he presents seminars about the ever more important necessity to think and act in processes and teaches MBA courses on Business, Vision, and Strategy.