Maria A. Wimmer Hans J. Scholl Åke Grönlund Kim Viborg Andersen (Eds.)

Electronic Government

5th International Conference, EGOV 2006 Kraków, Poland, September 2006 Proceedings



Maria A. Wimmer Hans J. Scholl Åke Grönlund Kim Viborg Andersen (Eds.)

Electronic Government

5th International Conference, EGOV 2006 Kraków, Poland, September 4-8, 2006 Proceedings







Volume Editors

Maria A. Wimmer University of Koblenz-Landau Universitätsstrasse 1, 56070 Koblenz, Germany E-mail: wimmer@uni-koblenz.de

Hans J. Scholl University of Washington Mary Gates Hall, Suite 370C, Box 352840, 98195-2840 Seattle, USA E-mail: jscholl@u.washington.edu

Åke Grönlund Örebro University ESI/Informatics 70182 Örebro, Sweden E-mail: ake.gronlund@esi.oru.se

Kim Viborg Andersen Copenhagen Business School Department of Informatics Howitzvej 60, 2000 Frederiksberg, Denmark E-mail: andersen@cbs.dk

Library of Congress Control Number: 2006931355

CR Subject Classification (1998): K.4, K.6.5, K.5, K.3, C.2, H.5, H.4

LNCS Sublibrary: SL 3 – Information Systems and Application, incl. Internet/Web and HCI

ISSN 0302-9743

ISBN-10 3-540-37686-0 Springer Berlin Heidelberg New York

ISBN-13 978-3-540-37686-6 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

springer.com

© Springer-Verlag Berlin Heidelberg 2006 Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India Printed on acid-free paper SPIN: 11823100 06/3142 5 4 3 2 1 0

Lecture Notes in Computer Science

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

University of Dortmund, Germany

Madhu Sudan

Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Moshe Y. Vardi

Rice University, Houston, TX, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Preface

Over the years the international EGOV conferences have gained the reputation of presenting and representing the current status of e-Government research. In a sense, the EGOV conference series provides a log for the unfolding of this particular domain of study and practice. This fifth EGOV conference promises to be as special and as unique a milestone as its four predecessors. Every past conference marked a specific major accomplishment: The first conference at Aixen-Provence, France, established the conference and its format within the DEXA cluster of conferences. The second conference in Prague, the Czech Republic, saw a drastically increased number of submissions, and many more scholars became involved in a decentralized paper review process. The third conference in Zaragoza, Spain, witnessed another increase in submissions from around the world (among which were also a higher number of contributions from North America) leading to an increased attention to the many different flavors of governance and e-Government around the world. The 2005 conference in Copenhagen, Denmark, with an increased volume (again) established a rigorous double-blind review process and also introduced the distinction between full (and finished) research papers (published in Springer's Lecture Notes in Computer Science), on the one hand, and posters, work in progress, as well as workshops (published by Trauner Druck, Linz, Austria), on the other hand. Also, a pre-conference PhD colloquium was added to the schedule.

The Copenhagen conference was instrumental in greatly furthering the research collaboration between Europe-based researchers and scholars from other parts of the world. Along with the International Conference on Digital Government Research (dg.o) and the e-Government Track at the Hawaii International Conference on System Sciences (HICSS), the EGOV series of conferences has firmly established itself as one of three leading annual conferences on e-Governance and e-Government with a global reach. Unlike in other fields, the organizers of these three annual conferences collaborate rather than compete against each other. This has had many positive impacts on the study domain of e-Governance and e-Government, which none of the three conferences could have ever achieved alone. Some of these impacts are:

- 1. The community of professionals and scholars meets on a regular four-month basis (January: HICCS; May: dg.o; and September: EGOV) with ample opportunity for face-to-face exchanges.
- 2. The four-month interval provides sufficient time for progressing in research endeavors.
- 3. As a consequence, work initiatives. and collaborative projects are carried forward in a timely fashion providing participating professionals and scholars with a predictable short-term schedule for reunion.

- 4. Professionals and scholars develop an intimate knowledge of each others' projects fostering tremendous cross-pollination and collaboration.
- 5. Both a global and a multi-local perspective of, and in, the study domain are unfolding (for example, scholars from around the world collaborate on the European Union's Roadmap 2020 project eGovRTD2020, www.egovrtd2020. org).
- 6. The three conferences provide a research and publishing rhythm that reinforces the intensity and diversity of research.
- 7. A shared research culture and a sense of a global scholarly and practice community is developing.

As a result of this collaboration, in the summer and fall of 2005 the global e-Gov community of practitioners and researchers discussed and voted on the mission statement of a future professional Digital Government Society. Late in the fall of 2005 and in early winter 2005/2006, the global community also voted on both the North American and Global Digital / E-Government Society constitutions. In May 2006 at dgo2006 the Digital Government Society of North America was formed, and its elected officers met for the first time in their new capacity.

The 2006 EGOV conference, EGOV – The Digital Government Society of Europe was formed, and its elected board was presented to the public. Soon, an Asian Digital Government Society will appear. In other words, the global community of e-Government practitioners and researchers will have professional societies, which equip "its members with a professional support network focused on both scholarship and effective practices that nurture technical, social, and organizational transformation in the public sector" (cf. Mission Statement of the Digital Government Society, www.dgrs.org).

So far, e-Government research appears to be multi- and interdisciplinary in nature. The 2006 EGOV conference underlined and exposed this nature of the study domain. However, there is a lively debate on whether or not e-Government research should develop into a discipline or rather stay away from disciplinary organization. The future will tell whether or not we remain a study domain or develop into the disciplinary direction.

In the Call for Papers of EGOV 2006, seven topical threads were highlighted, which attracted a large number of paper submissions:

- The e-Government environment
- E-Government implementation
- Conceptual design and frame for e-Government
- Assessment of e-Government
- Emerging technologies in e-Government
- E-Government and development
- E-Government research and learning

Thirty-one full research papers (empirical and conceptual) were accepted for the conference and cover those topical threads. According to the reviewers' assessments, the overall quality of papers has risen again. For better readability, the papers have been clustered under the following headings:

- Research Review and Outlook
- Participation and Democracy
- Designing Government Services
- Legal Dimensions in E-Government
- Procurement and Governance Issues in Networked Governments
- Evaluation and Assessment

As in the previous years, many people made this conference happen by reviewing and by preparing both the program and the proceedings. Gabriela Wagner for the DEXA organization as well as the members of the Program Committee deserve special thanks. Gerti Orthofer of the University of Linz, Austria, was a cornerstone of support and organization in preparing the review process, the program and proceedings.

Finally, this year's conference provided a great opportunity for honoring our great mentor, inspirer, communicator, founder of the EGOV conferences and wonderful colleague, Roland Traunmüller, who has been leading the community with advice, vision, and practical initiatives for many years. Without him, the community would not have developed the same spirit, productivity, and sense of shared meaning that it has developed on a global scale. Roland Traunmüller has truly carried the Prometheus torch enlightening the e-Government community for longer than anybody else. We are greatly indebted to him and hope that he may continue leading us for many years to come!

Koblenz, Seattle, Ørebrø, Copenhagen September 2006 Maria A. Wimmer Hans J. (Jochen) Scholl Åke Grönlund Kim Viborg Andersen

Organization

Program Committee

General Chair: Roland Traunmüller, University of Linz (Austria)

Program Chairs: Åke Grönlund, Ørebrø University (Sweden)

Maria A. Wimmer, University of Koblenz-Landau (Germany) Kim V. Andersen, Copenhagen Business School (Denmark)

Jochen Scholl, University of Washington (USA)

Program Committee Members

Georg Aichholzer, Austrian Academy of Science, Austria

Vincenzo Ambriola, University of Pisa, Italy

Kim Viborg Andersen, Copenhagen Business School, Denmark

Ari-Veikko Anttiroiko, University of Tampere, Finland

Yigal Arens, Digital Government Research Center USC/Information Sciences Institute, USA

Mahwood A. Awan, Dubai University College, Dubai

Frank Bannister, Trinity College Dublin, Ireland

Lasse Berntzen, Vestfold University College, Norway

Jean-Loup Chappelet, Swiss Graduate School of Public Administration Lausanne, Switzerland

Wichian Chutimaskul, King Mongkut's University of Technology Thonburi, Thailand

Laurens Cloete, CSIR, South Africa

Tony Cresswell, CTG, USA

Ahmed M. Darwish, Arab Republic of Egypt E-Government Program Director, Egypt

Sharon Dawes, CTG, University at Albany, USA

Lois Delcambre, Portland State University, USA

Rahul De, Indian Institute of Management Bangalore, India

Sara Eriksén, Blekinge Institute of Technology, Sweden

Patrizia Fariselli, Nomisma, Italy

Jose Fortes, University of Florida, USA

Fernando Galindo, University of Zaragoza, Spain

Thomas F. Gordon, Fraunhofer Institute for Open Communications Systems (FOKUS), Germany

Dimitris Gouscos, University of Athens, Greece

Åke Grönlund, Ørebrø University, Sweden

Luis Guijarro-Coloma, University of Valencia, Spain

Richard Heeks, University of Manchester, UK

Helle Zinner Henriksen, Copenhagen Business School, Denmark

Hermann Hill, German University of Administrative Sciences, Germany

Ian Holliday, City University of Hong Kong, Hong Kong

Eduard Hovy, USC/Information Sciences Institute, USA

Luiz Antonio Joia, Public and Business Administration – Getulio Vargas Foundation, Brazil

Peter Kawalek, Manchester Business School, UK

Ralf Klischewski, German University in Cairo, Egypt

Robert Krimmer, Austria

Mário Jorge Leitão, INESC Porto, Portugal

Christine Leitner, Danube University, Krems, Austria

Klaus Lenk, Danube University, Krems, Austria

Claire Lobet-Maris, FUNDP Namur, Belgium

Euripides Loukis, University of the Aegean, Greece

Ann Macintosh, Napier University, UK

Josef Makolm, Federal Ministry of Finance, Austria

Peter Mambrey, Fraunhofer Institute for Applied Information Technology (FIT), Germany

Manuel de Jesus Mendes, University of Campinas, Brazil

Gregoris Mentzas, National Technical University of Athens, Greece

Jeremy Millard, Danish Technological Institute, Denmark

Carl Erik Moe, Adger University College, Norway

Enrico Nardelli, NESTOR - University of Rome "Tor Vergata," Italy

Monica Palmirani, University of Bologna, Italy

Rimantas Petrauskas, Law University of Lithuania, Lithuania

Reinhard Posch, Federal Chancellery of Austria, Austria

Alexander Prosser, Vienna University of Economics, Austria

Gerald Quirchmayr, University of Vienna, Austria

Peter Reichstädter, Federal Chancellery of Austria, Austria

Reinhard Riedl, University of Zurich, Switzerland

Tomas Sabol, TU Kosice, Slovakia

Airi Salminen, University of Jyväskylä, Finland

Hans Jochen Scholl, University of Washington, USA

Erich Schweighofer, University of Vienna, Austria

Maddalena Sorrentino, University of Milan, Italy

Dieter Spahni, University of Applied Sciences Bern, Switzerland

Witold Staniszkis, Rodan Systems S.A., Poland

Efthimios Tambouris, University of Macedonia, Greece

Roland Traunmüller, University of Linz, Austria

Tom M. van Engers, University of Amsterdam, The Netherlands

Mirko Vintar, University of Ljubljana, Slovenia

Francesco Virili, University of Cassino, Italy

Rene Wagenaar, Technical University Delft, The Netherlands

Sue Williams, The University of Sydney, Australia

Maria A. Wimmer, University of Koblenz-Landau, Germany

Additional Reviewers

Niklas Auerbach Molnár Bálint Victor Bekkers Francesco Bolici Lemuria Carter Giovanni A. Cignoni

Tony Elliman Fabio Fioravanti

Leif Flak Simon French Andreás Gábor Javier Garca Marco

Helene Gieber Olivier Glassey Meliha Handzic Catherine Hardy

Charles Christopher Hinnant

Chris Holland
Vincent Homburg
Marcel Hoogwout
Marijn Janssen
Bernhard Karning
Auli Keskinen
Trond Knudsen
Herbert Kubicek
Jukka Kultalahti

Pilar Lasala Virpi Lyytikäinen Guirong Mao Oliver Märker

Robert Müller-Török

Thomas Mundt

Anna Ni Gerti Orthofer Theresa Pardo Peter Parycek Vassilios Peristeras Wolfgang Polasek Siegmund Prieglinger

Stefanie Röder Øystein Sæbø Andreas Schaad Ella Smith Ignace Snellen Joergen Svensson Jukka Tuomela

Réka Vas Costas Vassilakis Morten Wellendorf

Rolf Wigand Peter Wolcott

Lecture Notes in Computer Science

For information about Vols. 1-4049

please contact your bookseller or Springer

- Vol. 4180: M. Kohlhase, OMDoc An Open Markup Format for Mathematical Documents [version 1.2]. XIX, 428 pages. 2006. (Sublibrary LNAI).
- Vol. 4163: H. Bersini, J. Carneiro (Eds.), Artificial Immune Systems. XII, 460 pages. 2006.
- Vol. 4162: R. Královič, P. Urzyczyn (Eds.), Mathematical Foundations of Computer Science 2006. XV, 814 pages. 2006.
- Vol. 4159: J. Ma, H. Jin, L.T. Yang, J.J.-P. Tsai (Eds.), Ubiquitous Intelligence and Computing. XXII, 1190 pages. 2006.
- Vol. 4155: O. Stock, M. Schaerf (Eds.), Reasoning, Action and Interaction in AI Theories and Systems. XVIII, 343 pages. 2006. (Sublibrary LNAI).
- Vol. 4153: N. Zheng, X. Jiang, X. Lan (Eds.), Advances in Machine Vision, Image Processing, and Pattern Analysis. XIII, 506 pages. 2006.
- Vol. 4152: Y. Manolopoulos, J. Pokorný, T. Sellis (Eds.), Advances in Databases and Information Systems. XV, 448 pages. 2006.
- Vol. 4151: A. Iglesias, N. Takayama (Eds.), Mathematical Software ICMS 2006. XVII, 452 pages. 2006.
- Vol. 4146: J.C. Rajapakse, L. Wong, R. Acharya (Eds.), Pattern Recognition in Bioinformatics. XIV, 186 pages. 2006. (Sublibrary LNBI).
- Vol. 4144: T. Ball, R.B. Jones (Eds.), Computer Aided Verification. XV, 564 pages. 2006.
- Vol. 4139: T. Salakoski, F. Ginter, S. Pyysalo, T. Pahikkala, Advances in Natural Language Processing. XVI, 771 pages. 2006. (Sublibrary LNAI).
- Vol. 4138: X. Cheng, W. Li, T. Znati (Eds.), Wireless Algorithms, Systems, and Applications. XVI, 709 pages. 2006.
- Vol. 4137: C. Baier, H. Hermanns (Eds.), CONCUR 2006 Concurrency Theory. XIII, 525 pages. 2006.
- Vol. 4134: K. Yi (Ed.), Static Analysis. XIII, 443 pages. 2006.
- Vol. 4133: J. Gratch, M. Young, R. Aylett, D. Ballin, P. Olivier (Eds.), Intelligent Virtual Agents. XIV, 472 pages. 2006. (Sublibrary LNAI).
- Vol. 4130: U. Furbach, N. Shankar (Eds.), Automated Reasoning. XV, 680 pages. 2006. (Sublibrary LNAI).
- Vol. 4129: D. McGookin, S. Brewster (Eds.), Haptic and Audio Interaction Design. XII, 167 pages. 2006.
- Vol. 4128: W.E. Nagel, W.V. Walter, W. Lehner (Eds.), Euro-Par 2006 Parallel Processing. XXXIII, 1221 pages. 2006.
- Vol. 4127: E. Damiani, P. Liu (Eds.), Data and Applications Security XX. X, 319 pages. 2006.

- Vol. 4124: H. de Meer, J.P. G. Sterbenz (Eds.), Self-Organising Systems. XIV, 261 pages. 2006.
- Vol. 4121: A. Biere, C.P. Gomes (Eds.), Theory and Applications of Satisfiability Testing SAT 2006. XII, 438 pages. 2006.
- Vol. 4119: C. Dony, J.L. Knudsen, A. Romanovsky, A. Tripathi (Eds.), Advanced Topics in Exception Handling Components. X, 302 pages. 2006.
- Vol. 4117: C. Dwork (Ed.), Advances in Cryptology Crypto 2006. XIII, 621 pages. 2006.
- Vol. 4116: R. De Prisco, M. Yung (Eds.), Security and Cryptography for Networks. XI, 366 pages. 2006.
- Vol. 4115: D.-S. Huang, K. Li, G.W. Irwin (Eds.), Computational Intelligence and Bioinformatics, Part III. XXI, 803 pages. 2006. (Sublibrary LNBI).
- Vol. 4114: D.-S. Huang, K. Li, G.W. Irwin (Eds.), Computational Intelligence, Part II. XXVII, 1337 pages. 2006. (Sublibrary LNAI).
- Vol. 4113: D.-S. Huang, K. Li, G.W. Irwin (Eds.), Intelligent Computing, Part I. XXVII, 1331 pages. 2006.
- Vol. 4112: D.Z. Chen, D. T. Lee (Eds.), Computing and Combinatorics. XIV, 528 pages. 2006.
- Vol. 4111: F.S. de Boer, M.M. Bonsangue, S. Graf, W.-P. de Roever (Eds.), Formal Methods for Components and Objects. VIII, 447 pages. 2006.
- Vol. 4110: J. Díaz, K. Jansen, J.D.P. Rolim, U. Zwick (Eds.), Approximation, Randomization, and Combinatorial Optimization. XII, 522 pages. 2006.
- Vol. 4109: D.-Y. Yeung, J.T. Kwok, A. Fred, F. Roli, D. de Ridder (Eds.), Structural, Syntactic, and Statistical Pattern Recognition. XXI, 939 pages. 2006.
- Vol. 4108: J.M. Borwein, W.M. Farmer (Eds.), Mathematical Knowledge Management. VIII, 295 pages. 2006. (Sublibrary LNAI).
- Vol. 4106: T.R. Roth-Berghofer, M.H. Göker, H. A. Güvenir (Eds.), Advances in Case-Based Reasoning. XIV, 566 pages. 2006. (Sublibrary LNAI).
- Vol. 4104: T. Kunz, S.S. Ravi (Eds.), Ad-Hoc, Mobile, and Wireless Networks. XII, 474 pages. 2006.
- Vol. 4099: Q. Yang, G. Webb (Eds.), PRICAI 2006: Trends in Artificial Intelligence. XXVIII, 1263 pages. 2006. (Sublibrary LNAI).
- Vol. 4098: F. Pfenning (Ed.), Term Rewriting and Applications. XIII, 415 pages. 2006.
- Vol. 4097: X. Zhou, O. Sokolsky, L. Yan, E.-S. Jung, Z. Shao, Y. Mu, D.C. Lee, D. Kim, Y.-S. Jeong, C.-Z. Xu (Eds.), Emerging Directions in Embedded and Ubiquitous Computing. XXVII, 1034 pages. 2006.

4

- Vol. 4096: E. Sha, S.-K. Han, C.-Z. Xu, M.H. Kim, L.T. Yang, B. Xiao (Eds.), Embedded and Ubiquitous Computing. XXIV, 1170 pages. 2006.
- Vol. 4094: O. H. Ibarra, H.-C. Yen (Eds.), Implementation and Application of Automata. XIII, 291 pages. 2006.
- Vol. 4093: X. Li, O.R. Zaïane, Z. Li (Eds.), Advanced Data Mining and Applications. XXI, 1110 pages. 2006. (Sublibrary LNAI).
- Vol. 4092: J. Lang, F. Lin, J. Wang (Eds.), Knowledge Science, Engineering and Management. XV, 664 pages. 2006. (Sublibrary LNAI).
- Vol. 4091: G.-Z. Yang, T. Jiang, D. Shen, L. Gu, J. Yang (Eds.), Medical Imaging and Augmented Reality. XIII, 399 pages. 2006.
- Vol. 4090: S. Spaccapietra, K. Aberer, P. Cudré-Mauroux (Eds.), Journal on Data Semantics VI. XI, 211 pages. 2006
- Vol. 4089: W. Löwe, M. Südholt (Eds.), Software Composition. X, 339 pages. 2006.
- Vol. 4088: Z.-Z. Shi, R. Sadananda (Eds.), Agent Computing and Multi-Agent Systems. XVII, 827 pages. 2006. (Sublibrary LNAI).
- Vol. 4087: F. Schwenker, S. Marinai (Eds.), Artificial Neural Networks in Pattern Recognition. IX, 299 pages. 2006. (Sublibrary LNAI).
- Vol. 4085: J. Misra, T. Nipkow, E. Sekerinski (Eds.), FM 2006: Formal Methods. XV, 620 pages. 2006.
- Vol. 4084: M.A. Wimmer, H.J. Scholl, Å. Grönlund, K.V. Andersen (Eds.), Electronic Government. XVI, 353 pages. 2006.
- Vol. 4083: S. Fischer-Hübner, S. Furnell, C. Lambrinoudakis (Eds.), Trust and Privacy in Digital Business. XIII, 243 pages. 2006.
- Vol. 4082: K. Bauknecht, B. Pröll, H. Werthner (Eds.), E-Commerce and Web Technologies. XIII, 243 pages. 2006.
- Vol. 4081: A. M. Tjoa, J. Trujillo (Eds.), Data Warehousing and Knowledge Discovery. XVII, 578 pages. 2006.
- Vol. 4080: S. Bressan, J. Küng, R. Wagner (Eds.), Database and Expert Systems Applications. XXI, 959 pages. 2006.
- Vol. 4079: S. Etalle, M. Truszczyński (Eds.), Logic Programming. XIV, 474 pages. 2006.
- Vol. 4077: M.-S. Kim, K. Shimada (Eds.), Geometric Modeling and Processing GMP 2006. XVI, 696 pages. 2006.
- Vol. 4076: F. Hess, S. Pauli, M. Pohst (Eds.), Algorithmic Number Theory. X, 599 pages. 2006.
- Vol. 4075: U. Leser, F. Naumann, B. Eckman (Eds.), Data Integration in the Life Sciences. XI, 298 pages. 2006. (Sublibrary LNBI).
- Vol. 4074: M. Burmester, A. Yasinsac (Eds.), Secure Mobile Ad-hoc Networks and Sensors. X, 193 pages. 2006.
- Vol. 4073: A. Butz, B. Fisher, A. Krüger, P. Olivier (Eds.), Smart Graphics. XI, 263 pages. 2006.
- Vol. 4072: M. Harders, G. Székely (Eds.), Biomedical Simulation. XI, 216 pages. 2006.

- Vol. 4071: H. Sundaram, M. Naphade, J.R. Smith, Y. Rui (Eds.), Image and Video Retrieval. XII, 547 pages. 2006.
- Vol. 4070: C. Priami, X. Hu, Y. Pan, T.Y. Lin (Eds.), Transactions on Computational Systems Biology V. IX, 129 pages. 2006. (Sublibrary LNBI).
- Vol. 4069: F.J. Perales, R.B. Fisher (Eds.), Articulated Motion and Deformable Objects. XV, 526 pages. 2006.
- Vol. 4068: H. Schärfe, P. Hitzler, P. Øhrstrøm (Eds.), Conceptual Structures: Inspiration and Application. XI, 455 pages. 2006. (Sublibrary LNAI).
- Vol. 4067: D. Thomas (Ed.), ECOOP 2006 Object-Oriented Programming. XIV, 527 pages. 2006.
- Vol. 4066: A. Rensink, J. Warmer (Eds.), Model Driven Architecture Foundations and Applications. XII, 392 pages. 2006.
- Vol. 4065: P. Perner (Ed.), Advances in Data Mining. XI, 592 pages. 2006. (Sublibrary LNAI).
- Vol. 4064: R. Büschkes, P. Laskov (Eds.), Detection of Intrusions and Malware & Vulnerability Assessment. X, 195 pages. 2006.
- Vol. 4063: I. Gorton, G.T. Heineman, I. Crnkovic, H.W. Schmidt, J.A. Stafford, C.A. Szyperski, K. Wallnau (Eds.), Component-Based Software Engineering. XI, 394 pages. 2006.
- Vol. 4062: G. Wang, J.F. Peters, A. Skowron, Y. Yao (Eds.), Rough Sets and Knowledge Technology. XX, 810 pages. 2006. (Sublibrary LNAI).
- Vol. 4061: K. Miesenberger, J. Klaus, W. Zagler, A.I. Karshmer (Eds.), Computers Helping People with Special Needs. XXIX, 1356 pages. 2006.
- Vol. 4060: K. Futatsugi, J.-P. Jouannaud, J. Meseguer (Eds.), Algebra, Meaning, and Computation. XXXVIII, 643 pages. 2006.
- Vol. 4059: L. Arge, R. Freivalds (Eds.), Algorithm Theory SWAT 2006. XII, 436 pages. 2006.
- Vol. 4058: L.M. Batten, R. Safavi-Naini (Eds.), Information Security and Privacy. XII, 446 pages. 2006.
- Vol. 4057: J.P.W. Pluim, B. Likar, F.A. Gerritsen (Eds.), Biomedical Image Registration. XII, 324 pages. 2006.
- Vol. 4056: P. Flocchini, L. Gasieniec (Eds.), Structural Information and Communication Complexity. X, 357 pages. 2006.
- Vol. 4055: J. Lee, J. Shim, S.-g. Lee, C. Bussler, S. Shim (Eds.), Data Engineering Issues in E-Commerce and Services. IX, 290 pages. 2006.
- Vol. 4054: A. Horváth, M. Telek (Eds.), Formal Methods and Stochastic Models for Performance Evaluation. VIII, 239 pages. 2006.
- Vol. 4053: M. Ikeda, K.D. Ashley, T.-W. Chan (Eds.), Intelligent Tutoring Systems. XXVI, 821 pages. 2006.
- Vol. 4052: M. Bugliesi, B. Preneel, V. Sassone, I. Wegener (Eds.), Automata, Languages and Programming, Part II. XXIV, 603 pages. 2006.
- Vol. 4051: M. Bugliesi, B. Preneel, V. Sassone, I. Wegener (Eds.), Automata, Languages and Programming, Part I. XXIII, 729 pages. 2006.

7440.027

Table of Contents

Research Review and Outlook

e-Gov Research Quality Improvements Since 2003: More Rigor, but Research (Perhaps) Redefined	1
Is E-Government Research a Flash in the Pan or Here for the Long Shot?	13
The E-Government Melting Pot: Lacking New Public Management and Innovation Flavor?	25
The Organisation and Coordination of European e-Government Research for the EU in 2010	37
What Role Has Scandinavian IS Tradition in eGovernment Implementations	47
Maximizing Knowledge for Program Evaluation: Critical Issues and Practical Challenges of ICT Strategies	58
Participation and Democracy	

'Mind the Gap': e-Government and e-Democracy.....

To Be or Not to Be Active: Exploring Practices of e-Participation

Henning Sten Hansen, Kristian Hegner Reinau

Ailsa Kolsaker, Liz Lee-Kelley

Annelie Ekelin

From Market Squares to Homepages: A Survey of Swiss MPs'

Jean-Loup Chappelet, Kristian Pierre Kilchenmann

70

83

96

e-Participation Behind Closed Doors: Online Evaluation of Teaching Performance Kim Viborg Andersen	119
Designing Government Services	
A Review of Quality Dimensions in e-Government Services	128
Is It Only About Internet Access? An Empirical Test of a Multi-dimensional Digital Divide	139
Hidden Negative Social Effects of Poor e-Government Services Design	150
Designing Government Portal Navigation Around Citizens' Needs Rob Klaassen, Joyce Karreman, Thea van der Geest	162
Municipalities on the Web: User-Friendliness of Government Information on the Internet	174
"Open Choice": Improving Public Sector Performance with Process Reorganization Methodology	186
Organising Municipal e-Government Systems: A Multi-facet Taxonomy of e-Services for Citizens and Businesses	195
Legal Dimensions in E-Government	
Time Model for Managing the Dynamic of Normative System	207
Semantic Portal for Legislative Information	219
The x-Leges System: Peer-to-Peer for Legislative Document Exchange Luca De Santis, Caterina Lupo, Carlo Marchetti, Massimo Mecella	231

Procurement and Governance Issues in Networked	
Governments	
Flexibility of Information Architecture in e-Government Chains Victor Bekkers	243
Local Networking for e-Services: A UK Case Study	256
Why E-government Usage Lags Behind: Explaining the Gap Between Potential and Actual Usage of Electronic Public Services in the Netherlands	269
Limits of Public Procurement: Information Systems Acquisition Carl Erik Moe, Anne Cathrine Risvand, Maung K. Sein	281
Evaluation and Assessment	
Digital Capability Assessment for eGovernment: A Multi-dimensional Approach	293
Assessing the Intangible Value of G2G Endeavours	305
Evaluation of E-Government Systems: Project Assessment vs Development Assessment	317
ROI Analysis in e-Government Assessment Trials: The Case of Sistema Piemonte	329
IT Auditing in E-Government	341
Author Index	353

e-Gov Research Quality Improvements Since 2003: More Rigor, but Research (Perhaps) Redefined

Åke Grönlund and Annika Andersson

Örebro University, Informatics/ESI {ake.gronlund, annika.andersson}@esi.oru.se

Abstract. This paper follows up on an earlier study [1] by assessing the nature of 80 papers from EGOV 05 in terms of rigor and relevance criteria. Both studies use the same method and makes comparison between the results. We find that however still focusing overwhelmingly on descriptions and little on theory testing and creation, paper quality appears much better in that references to literature have increased grossly, there are very few dubious claims, philosophical research and theoretical arguments are virtually extinct, and the number of case stories is vastly reduced. However, the number of product descriptions is more than doubled to just over 30 %. The reasons for this are discussed, and as most of these papers are based on EU research funding we propose that an important reason may be the funding mechanism where researchers are employed as helpers in product development rather than critical scrutiny and analysis.

1 Introduction

Grönlund [1] made a survey of 170 papers at three main (2003) Electronic Government (eGov) conferences for the purpose of measuring the maturity of the field as a research area., and at the same time at a general level, the quality of papers. Maturity, we proposed, could be assessed by charting the nature of the research done. A scientific field is usually characterized by not just a common object of study, but also a set of theories which can be used to understand the general conditions of the field. More of theory generating and testing would indicate a more mature field, more of pure description and case story telling would be signs of a less mature field. Paper quality was measured at a cursory level by some rigor and relevance-oriented criteria. In the 2004 study we found that as concerns rigor, theory generation and theory testing were not frequent, whereas case stories (no theory, no data) and product descriptions (no analysis or test) were very frequent. Dubious claims (beyond what is reasonable given the method used) were also frequent, appeared in 29 % of the papers As concerns relevance, we found that only a few of the cases where theories were either tested or generated concerned the role and nature of government, most concerned general

organizational issues which could well find a place within traditional IS conferences. Further, only 11 papers (of 170) involved shared authorship involving government practitioners.

On the positive side we found contributions from a number of disciplines, both social science ones and technically oriented, and international outreach beyond the North Atlantic shores was good with contributions from some 30 countries.

In this paper we repeat the 2004 study, however so far only with paper from the (DEXA) EGOV 05 conference, a total of 80 papers, which were classified by the organizers in two categories published in two different proceedings 30 papers were research papers" and 50 "workshop papers".

2 Research Questions

Just like in the 2004 study, the basic question asked in this paper is, what is the eGov field like in terms of what constitutes a scientific fields? This is operationalized by questions concerning rigor and relevance, with an emphasis on the former.

Relevance: To what extent is the eGov field distinct from other fields? This could be assessed by investigating what are the questions asked what (kind of) theories are used, or sought in an inductive manner? If eGov is indeed a specific field, at least some of these issues and theories would be different.

Rigor: Depending on the maturity of the field, the balance among methods used would likely change over time from case stories to more of methodologically sound examination of relevant issues, be they related to technological quality, user understanding, extent and qualities of use, or other. A mature eGov field would also involve many disciplines, certainly public administration and other fields specializing in government, not only IT-related disciplines by example from e g the HCI field. This time we compare the results with the 2004 study to find out whether there have been changes of any kind. We measure maturity according to the following rather intuitive model, which is based on the assumption that research fields mature over time passing through (but never completely leaving!) roughly the following phases:

Philosophical ("What will the world be like when everyone has a computer?"). As there are no or few theories in the field and empirical data is uncertain as the object of study is changing rapidly, studies will at this stage be mainly speculation based on philosophy, properties of technology, world view, etc.

Anecdotal case stories ("Ma, look what I found"). At this stage there is an increasing amount of data, but there are still no clear focus in the field so studies focus on "emerging" features, which may be anything but are usually grounded in factors like the researchers field of origin, personal interest, and commercial focus of the IT development. Focus is still on exploration, finding new exciting traits of the development. The researcher is an Amerigo Vespucci finding new land. Clustering (grouping according to similarities among cases). At this stage cases

Clustering (grouping according to similarities among cases). At this stage cases abound and people start looking for similarities. The new continent is found physically, now we try to understand life on it.