

Guest Editorial: Special Issue on eGovernment Development and Applications (SIEGDA)

ANDREAS MEIER AND LUIS TERÁN ^{ID}, (Senior Member, IEEE)

An information and knowledge society creates its value by gathering, processing, evaluating, and sharing digital products and services. However, no citizens can be left behind in introducing Web-based technologies to the administration, as this creates a digital divide. Representatives of the governments, international organizations, and universities should develop a vision for eDemocracy and eGovernment.

eDemocracy defines the support and enhancement of civil rights and duties in the information and knowledge society. Options for participation allow citizens to strengthen an open society. One option involves the inclusion of the citizens even in the early stages of the planning; improved information and discussion forums; barrier-free Web access in electronic votes and elections; and communities' formation in different public sectors.

The term eGovernment covers information and communication processes between governmental institutions, private companies, and citizens. Besides, its focus should be on developing electronic services for taxation, social security, health care, enrollment in education, and job search, among others. Governmental institutions offer their electronic services not only to citizens but also to companies and organizations. Also, the government uses Internet technologies to unify and improve the processes within its respective organizations.

The Special Issue on eGovernment Development and Applications (SIEGDA) is a peer-reviewed special issue of *IEEE Transactions on Emerging Topics in Computing*. It covers technical aspects of eSociety, eGovernance, eParticipation, eDemocracy, eGovernment, and eHealth. The main objectives of SIEDEG are as follows: first, to generate and disseminate knowledge in the areas of eDemocracy and eGovernment, applied in the academic sector, government, and industry worldwide; and second, to discuss the regions' transition to an information and knowledge society that will accelerate and enhance regional economic, social, cultural, and technological development and exchange.

SIEGDA addresses the main issues of public administration and electronic democracy with an academic and practical perspective. In this Special Issue, six papers were published and are briefly described below.

The first paper, entitled "Framework for Prioritization of Open Data Publication: An Application to Smart Cities" by

Mazón and Lozano-Tello presents a framework for prioritizing open data publication and its application on smart cities. The framework proposed relies on open-source software indicators to support decision-making for developers and businesses involved in smart city projects.

The second paper, entitled "Documenting Context-based Quality Assessment of Controlled Vocabularies," by Albertoni *et al.* The paper also targets open data applications and discusses the evaluation and documentation of controlled vocabularies quality based on contextual information. This work defines multi-step guidelines to promote and complement the adoption of W3C recommendations towards the inclusion of machine-readable quality metadata. The paper also illustrates the application of the guidelines presented with a focus on provenance and quality documentation.

The third paper, entitled "E-voting system evaluation based on the Council of Europe recommendations: Helios Voting" by Alonso *et al.*, aims to further discuss and understand a practical evaluation framework on Helios voting highly used e-voting tool. The framework focuses on technical and security requirements issued by the European Council in 2017. This work's primary goal is to conceptually and practically support e-voting as a mechanism towards the improvement of democratic processes.

The fourth paper, entitled "An eParticipation acceptance model" by Panopoulou *et al.* This work investigates user acceptance of eParticipation systems and introduces a so-called model ePAM based on the evaluation of a literature review. The model is validated through statistical analysis and hypothesis testing based on multi-national user survey findings. The ePAM model is proposed, including the concepts of perceived usefulness, perceived ease of use, behavioral intention to use, and the four additional concepts of technological confidence, integration to governmental processes, perceived facilitating conditions, and social influences.

The fifth paper, entitled "Comparative analysis of metadata models on e-government open data platforms" by Milic *et al.*, presents four metadata models for e-government open data platforms. The authors illustrate the strengths and limitations of these models by proposing a metadata quality assessment model. Moreover, this work also examines the metadata structure to provide valuable information assets for open

government data. Additionally, this work presents an overview of available APIs to support each selected open data platform.

Finally, the sixth paper entitled “Combining Technocrats’ Expertise with Public Opinion through an Innovative e-Participation platform” by Androutsopoulou *et al.* This paper contributes to filling the gap in the use of technology and information towards the development of effective and socially acceptable public policies. This work describes an e-participation platform’s development supporting structured consultation and argumentation between experts/technocrats concerning critical social problems and public policies for addressing them. The platform also provides a collection and interrelation of relevant citizens-generated policy-related textual content from numerous external social media. The evaluation shows that users highlighted the potential of exploiting the machine’s synergy and human reasoning enabled by the proposed platform through a combination of data mining and collaborative decision-making services.

The accepted articles published within *IEEE Transactions on Emerging Topics in Computing* in this special issue strive to stimulate administrations and politicians by applying information and communication technologies for the public sector.

We want to thank the authors and the reviewers for their outstanding contributions to this special issue. Special thanks go to the editor-in-chief, Cecilia Metra, for letting us serve as guest editors. Additionally, we would like to thank the administrative team of *IEEE Transactions on Emerging Topics in Computing* for their guidance and support offered throughout the editorial process.

ANDREAS MEIER
University of Fribourg, Switzerland

LUIS TERÁN
University of Fribourg
and Lucerne University of Applied Sciences



ANDREAS MEIER received the graduate degree in mathematics from the Federal Institute of Technology (ETH), Zurich, where he received his doctorate and habilitation degree from the Institute for Computer Science. He is an emeritus professor of the Faculty of Economics and Social Sciences, University of Fribourg, Switzerland. His research interests include eBusiness, eGovernment, and information management. He was a system engineer at the IBM Research Lab in San José, California, a director of an international Swiss bank, and a member of the executive board of an insurance company before he joined academia.



LUIS TERÁN (Senior Member, IEEE) is currently working as a senior researcher in cognitive computing at the Human-IST Institute, University of Fribourg (UniFR), Switzerland, and an external lecturer with the Lucerne University of Applied Sciences and Arts, Switzerland. Former visiting scholar at the University of Bern, Switzerland, an academic guest at the University of Zurich, Switzerland, and professor at Universidad de Las Fuerzas Armadas (ESPE), Ecuador, until October 2020. His research interests are related to recommender systems, human-centered computing, explainable artificial intelligence, e-democracy, e-government, e-participation, and decision-making. He is the global chair for IEEE e-Government Special Technical Community, founder and program chair for the International Conference on eDemocracy and eGovernment (ICEDEG), former guest editor at *IEEE Transactions on Emerging Topics in Computing*, editorial board member at the *Cooperative Perspective Journal*, guest editor at the *Axioms Open Access Journal*, member of the IEEE Task Force on Explainable Fuzzy Systems (TF-EXFS) at Computational Intelligence Society (CIS), a distinguished exhibitor at IEEE Ecuador Section.