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Editors

ICT for a Better Life and a Better World

The Impact of Information
and Communication Technologies
on Organizations and Society

 Springer

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Preface

The third ICTO conference (ICTO2017) took place in Paris on March 16th and 17th, 2017. Like the previous editions (ICTO2016 and ICTO2015), this edition focused on the impact of Information and Communication Technologies (ICTs) on organizations and society, specifically how can such technologies improve our life and our world to make them better.

This conference was concerned with these technologies, shedding light on how they were, how they are, and how they will be understood, adopted, adapted, and used within organizations and more generally, within the society as a whole.

The main concerns were how actors understand the potential of ICTs to support organizational activities and hence how they adopt and adapt these technologies to achieve their goals.

The conference called for papers in different areas of the organization's strategy through new business models, competitive strategies, knowledge management, etc. Specific areas dealt with are newer technologies for a better life, innovation for e-government, and technologies enhancing enterprise modeling. These issues can be addressed both in private and public sector either at national or international level, mainly through technology innovations. The conference was also centered on how an organization impacts society through sustainable development and social responsibility, and how ICTs use social media networks in the process of value co-creation.

The conference invited submissions in all areas of ICTs and organizations especially innovative, interesting and rigorously developed conceptual and empirical contributions, and also encouraged multi- or interdisciplinary research.

The conference received 86 submissions in all areas of ICTs and information systems and accepted 60 papers from 20 countries: France, Italy, UK, Canada, USA, Austria, Japan, Greece, Slovakia, Singapore, Malaysia, Algeria, Morocco, Tunisia, Lebanon, Oman, United Arab Emirates, Saudi Arabia, Cameroon, and Nigeria.

Several innovative and rigorously developed contributions raised interesting debates at the conference.

This book includes 26 chapters that have been selected through a double-blind review process, as the best and most interesting ICTO2017 submissions.

The 26 chapters have been clustered around three parts: (1) Newer Technologies for Better Life and World, (2) Innovation for e-Government, and (3) Technologies Influencing Enterprise Modeling.

Newer Technologies for Better Life and World: In this part, nine chapters show how newer technologies improve the life of the individuals, organizations, and societies.

1. Chapter “[The Power of Web 2.0 Storytelling to Overcome Knowledge Sharing Barriers](#)” by C. Meret, M. Iannotta, and M. Gatti seeks to explore the importance of Web 2.0 storytelling for overcoming barriers to knowledge sharing.
2. Chapter “[A Pervasive IoT Scheme to Vehicle Overspeed Detection and Reporting Using MQTT Protocol](#)” by E. Nasr, E. Kfoury, and D. Khoury conveys an innovative, pervasive, effective, and adaptable IoT system to detect and report vehicle overspeed as well as issuing tickets and fines.
3. Chapter “[Building Inclusive Digital Societies Through the Use of Open Source Technologies](#)” by P. Turkama contributes to the adaptation of open-source technologies through a study that shows the needs of industry to evolve toward increased customer orientation.
4. Chapter “[ICT in a Collaborative Network to Improve Quality of Life: A Case of Fruit and Vegetables Re-use](#)” by S. Bonomi, F. Ricciardi, and C. Rossignoli highlights how ICT plays a pivotal role in enabling the growth of new organizational forms, which creates value at the territorial level, triggers positive changes in social and economic environment, and improves the quality of life of people involved.
5. Chapter “[Identifying Disguised Objectives of IT Deployment Through Action Research](#)” by P. B. Saba, M. Saba, and A. Harfouche delivers the results of a 4-year action research project conducted at a leading French federation of agriculture cooperatives. The study reveals that identifying contagion mechanisms at the very preliminary phases of implementation may be strategic for a successful IT deployment, despite the tool’s imperfections.
6. Chapter “[Using QFD Method for Assessing Higher Education Programs: An Examination of Key Stakeholders’ Visions](#)” by N. Raissi identifies which indicators are more suitable to measure professional skills and ensure training conform to employer’s requirements. The performed study in this chapter relied on the reflective evaluation of education quality in universities by employers, students, and graduates with professional experience by applying the technique of quality function deployment (QFD).
7. Chapter “[The Effect of ICT Usage on Employees’ Satisfaction: A Job Characteristics Perspective](#)” by T. Torre and D. Sarti investigates employees’ job satisfaction, examining the relationship with 33 job-related variables and considering the impact of the use of Information and Communication

Technologies (ICTs) at work. The study performed in this chapter finds that ICT usage plays a controversial role.

8. Chapter “[Artificial Intelligence a Disruptive Innovation in Higher Education Accreditation Programs: Expert Systems and AACSB](#)” by C. Chedrawi and P. Howayeck proposes a model for the implementation of AI through expert systems (ES) within the AACSB accreditation programs. The chapter tried to answer two main questions: whether AI can be implemented through ES and how such systems can reshape the AACSB accreditation process. It concludes that in fact, ES will reshape such process while ensuring more reliable and efficient results and reducing time, cost, and errors.
9. Chapter “[Interactive Scheduling Decision Support System a Case Study for Fertilizer Production on Supply Chain](#)” by A. Azzamouri, I. Essaadi, S. Elfirdoussi, and V. Giard presents an architecture of an interactive scheduling decision support system (ISDSS), allowing users to find the optimal solution for fertilizer production on parallel heterogeneous processors. The approach proposed in this chapter takes into account different production process constraints such as launch time, delivery date, preventive maintenance, and the impact of scheduling on supply chain management.

Innovation for e-Government: In this part, nine chapters address some key challenges in e-government, specifically in developing countries.

10. Chapter “[The E-Banking and the Adoption of Innovations from the Perspective of the Transactions Cost Theory: Case of the Largest Commercial Banks in Lebanon](#)” by C. Chedrawi, B. Harb, and M. Saleh studies the effects of the adoption of innovations on transactions costs and shows the key role played by ICT in organizations, especially at the cost level. Using a qualitative approach, the study reveals the complexity of this concept, particularly regarding the integration strategies of the latest technological innovations within the banking sector, which appear to be essential for the development and the continuity of the sector at the national and regional levels.
11. Chapter “[Economic Effect by Open Data in Local Government of Japan](#)” by T. Noda, A. Yoshida, and M. Honda aims at establishing a point of view and methods for the estimation of the economic effect through the utilization of open data. The authors conducted a questionnaire survey on local governments in Japan. The result of the survey shows that open data in local governments in Japan is still in an earlier stage and it should be difficult to produce the economic effect within the area. But, it also shows the possibility of estimating the economic effect of the utilization of open data quantitatively.
12. Chapter “[Innovation, New Public Management and Digital Era Government, Towards a Better Public Sector Performance Through ICT: The Case of the Lebanese Ministry of Environment](#)” by N. M. Boustani and C. Chedrawi examines the existing literature and theory regarding innovation while focusing on the new public management, the new era government, ICT, and innovation theories. Using a qualitative approach, this chapter reveals the actions currently

undertaken by the Lebanese government to innovate in public services using ICT that can set the scene for a better public sector performance.

13. Chapter “[Choosing Valuation Models in the UAE](#)” by K. Aljifri and H. I. Ahmad aims to empirically examine the valuation models used by UAE investment analysts. A questionnaire and interviews were used to answer the research questions. Thirty-five investment analysts answered the questionnaire. The results reveal that discounted cash flow and P/E ratios are the most preferred valuation methods used by these analysts.
14. Chapter “[Empowering Farmers in India Through E-Government Services](#)” by J. Nair and B. N. Balaji Singh adopts a case-study research methodology to analyze consumer considerations through a process workflow model in an e-government program, initiated for farmers through an agricultural extension center. The study is conducted in Karnataka, a southern state in India. The study proposes an enhanced ICT-based process workflow model at Raitha Samparka Kendras (RSK).
15. Chapter “[E-Society Realities in Sub-Saharan Africa: The Case of Cote d’Ivoire](#)” by Z. R. Ahouman and Z. Rongting studies the formation of the e-society in sub-Saharan Africa by querying some scientific publications or other qualitative data to see, as most of the illiterate and poor citizens are concentrated in this area. The study revealed two modes under which the e-society operates, namely: government-type organizations (e-government, e-commerce, e-education, e-health, and e-agriculture) and private-type organizations (private communities or platforms, working groups and academics exchanges, and social networks).
16. Chapter “[Disclosure and Communication of the Corporate Social Responsibility \(CSR\) in Morocco: The Case of a Bank](#)” by W. Tahri and A. El Khamlichy aims at clarifying the CSR concept, its practices along with their evolution in time in the Moroccan context. The objective of this study is the evaluation of the bank’s engagement in the sustainable development in reference to the seven principles of ISO 26000. The methodology consists of a thematic analysis using Nvivo and annual reports of a Moroccan bank during the period of 2007–2015.
17. Chapter “[Does Persuasive E-commerce Website Influence Users’ Acceptance and Online Buying Behaviour? The Findings of the Largest E-commerce Website in Malaysia](#)” by N. A. Abdul Hamid, C. H. Cheun, N. H. Abdullah, M. F. Ahmad and Y. Ngadiman discusses the assessment of persuasive design to one of the famous e-commerce Web site in Malaysia. The assessment is adapted from original persuasive system design (PSD) model in combination with the technology acceptance model for the user acceptance and Web site usage level.
18. Chapter “[Exploring Factors Affecting the Adoption of HRIS in SMEs in a Developing Country: Evidence from Cameroon](#)” by A. Noutsu Fobang, S. Fosso Wamba and J. R. Kala Kamdjoug integrates the unified theory of acceptance and use of technology (UTAUT) model. The authors have collected the primary data through a survey by administering structured questionnaire to the employees (HR department) of a number of organizations. They found that

performance expectancy and internal social influence have a significant effect on the intention to adopt HRIS.

Technologies Influencing Enterprise Modeling: In this part, eight chapters address issues such as how newer technologies affect enterprise modeling.

19. Chapter “[Big Data at the Service of Universities: Towards a Change in the Organizational Structure and the Decision-Making Processes](#)” by D. Sidani and M. Sayegh shows, through a qualitative study conducted in six universities, how the adoption of big data will transform the organizational structure and the decision-making processes within the universities of Lebanon.
20. Chapter “[Online Consumer Reviews in the Hotel Sector: Why and How to Answer?](#)” by T. Pekarskaia Dauxert aims to analyze the practices of the online review management by hotels. The results show differences existing in the online review responding practices: from a simple monitoring without response to a regular policy of response to all reviews.
21. Chapter “[Evaluating the Performance of IT Governance in Service-Oriented Enterprises](#)” by M. Alaeddini and S. A. Hashemi focuses on the necessary reforms in the traditional IT governance methods in a service-oriented enterprise to propose an evaluation framework for assessing IT governance in such service-oriented enterprises.
22. Chapter “[New Market Creation for Technological Breakthroughs: Commercial Drones and the Disruption of the Emergency Market](#)” by F. Carli, M. E. Manzotti, and H. Savoini provides an in-depth picture of commercial drones as a breakthrough innovation and to gather whether they are to disrupt the emergency market among the several new applications currently being incepted for their technology.
23. Chapter “[Enterprise Architecture: A Pillar in an Integrated Framework to Measure the Internal Control Effectiveness in the Oil & Gas Sector](#)” by M. Akoum and V. Blum proposes to use the methods put forward by this practice to gain operational insight into the oil and gas industry. The authors used the Zachman Framework as one of the four pillars of an integrated framework to measure the internal control effectiveness of petroleum companies. Following the evidence-based management (EBM) methodology, they created a new tool by applying the methodical thinking of EA on COSO’s internal control framework. The outcome is an integrated framework named Internal Control Effectiveness Measurement Framework (ICEMF).
24. Chapter “[Ontology for Enterprise Interactions: Extended and Virtual Enterprises](#)” by F. Al Hadidi and Y. Baghdadi proposes an ontology to share a common understanding of two types of enterprise collaborations. The proposed ontology is meant to share the semantics of the two types of collaborations, in order to rationally decide their implementing technologies.
25. Chapter “[Technological Innovation: The Pathway to Entrepreneurs’ Economic Advancement](#)” by W. Palmer explores the meaning of human experiences relating to entrepreneurs in New York City who have not adopted the adequate

innovative technology. The research was based on Kaplan and Warren's entrepreneurship management theory.

26. Chapter "[How Communities Affect the Technology Acceptance Model in the Retail Sector](#)" by D. Pederzoli analyzes how groups of consumers create value during the shopping process and help one other to manage relations with technologies and overcome the perceived threats of the shopping and user experience.

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