Special Issue on Research Challenges
in Digitalization
and Societal Transformation

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PAPERS

PREFACE

It is our great pleasure to publish this special issue on Research Challenges in Digitalization and Societal Transformation in the *International Journal of Information Science and Technology*. Its objective is to share with readers important discoveries regarding digitalization as a major aspect of transforming societies and resulting innovations that ensue.

In '*Structuring Arabic Lexical and Morphological Resources Using TEI: Theory and Practice*', Ouafae Nahli and Angelo Del Grosso introduce innovations in autonomous and self-contained morphological resource for linguistic tasks by building a digital Arabic resource and demonstrating both lexical data and morphological description of word patterns. The aim of their research is to outline both the theory and the practice adopted to formalize lexical information of Arabic lemmas and to encode a thorough description of 'linguistic metalanguage'. The authors offer a construction of the morphological resource as contribution to filling a gap in the field of linguistic resources and digital modeling for morphological systems with systematic and exhaustive description of patterns.

In the second paper entitled '*Challenges and Opportunities for the Analysis of Digital News Media Language*', Maha El Biadi offers digital news media analysis and how the use of Information Technology and Natural Language Processing (NLP) tools offer an opportunity for researchers to explore the tacit meanings of news media texts. The author explores the motivation behind the use of new technologies and discusses the way these can improve linguistic research in the area of news media text analysis, by enabling researchers to carry out detailed analyses of news media texts.

In '*Building Information Modeling (BIM) Framework, Potential and Challenges*', Bouhmoud and Loudyi discuss the vital role of Building Information Modeling in facilitating multi-dimensional collaborative model projects delivery in the AEC industry and highlight the challenges of its implementation. The authors draw attention to the lack of awareness of BIM tools and their advantages, particularly in emerging countries, and highlight the barriers which hinder its application and standardization. The authors provide a schematic framework of BIM concept that combines both technical and non-technical aspects of BIM. They also present the operational, economic, social, and ecological innovation potential of BIM. This study should help private and government decision makers to have a better knowledge of various aspects of BIM.

The last paper in our special issue entitled, '*Commerce Numérique: Traffic Signals for Crossroads between Cultures*', Nahli, Sanna, Bandini, and Boschetti introduce the digitization of the *Commerce* journal—an important literary document enriched in historical, literary, and cultural foundations with 'fundamental importance to reconstruct the cultural landscape of the early 20th century made up of exchanges, contaminations, contacts, circulation of text, translations, and self-translations'. The authors describe the ways in which the journal was encoded and introduce the adoption of the TEI framework. They also tackled the French translation of a Moroccan Arabic poem from the 13th century, since the study and encoding of Arabic poetry together with its translation emphasize significant structural variances between Arabic poetry and Western poetry.

In summary, these papers highlight tremendous opportunity for innovations that can result from the adoption of Information and Communication Technologies (ICT) at the intersection of operational processes, organizational, and societal levels of change. As aforementioned, social changes have been attributed and interrelated with technological progress, as perceived in the previous revelations that these papers offer.

Consequently, it is apparent that country-level success will be contingent on how well both governments and societies cope with digital development. As such, this special issue offers various digitalization aspects and their related challenges, benefits, and potential.

GUEST EDITORS' BIOGRAPHIES

Houda Chakiri - is Assistant Professor of Computer Science in the School of Science and Engineering at Al Akhawayn University. She is the founder of Enhanced Technologies, a Moroccan IT company specialized in developing, integrating, and deploying e-Government web solutions. She is an Afchix board of directors member representing North Africa, Chair of IEEE Women in Engineering Affinity group in Morocco, and Vice-Chair of Arab Women in Computing Morocco's chapter. Dr Houda Chakiri has been working for more than 16 years overseeing digital transformation projects and the change that the introduction of ICT brings at the organizational, political, and social levels in local public administrations in Morocco. Her current research interests include, change management, digital transformation, process management and automation, and DevOps.

Lani Fraizer - is Director of IT and Business Information Security at California State University with current practitioner research in operational excellence, process improvement, and lean six sigma. Her 15+ years of service contributions in private-public principal consultancy specializes in interdisciplinary fields at the intersection of workforce development, humanitarian futures and digital transformation. She served as Visiting Expert at Yunus Center, Visiting Associate Professor of Social Entrepreneurship at University of the Pacific, and Associate Professor and Chair at Pepperdine University at the cross-section of leadership, social innovation, technology, with doctoral delegations in APAC, Cuba, and United Arab Emirates. Dr. Fraizer served as Global Ambassador to Carnegie Mellon University's Heinz College and Chair for Grace Hopper Women in Computing at AnitaB.

Laila Benhlima - is full professor at the Mohammadia School of Engineers (EMI) in Mohammed V University in Rabat, Morocco. She is an Engineer and holds a PhD in Computer Sciences. Before joining EMI, she worked as a consultant engineer where she contributed in various projects related to early public administration digitalization in Morocco. Her research interests include Knowledge Management and Discovery, Data Governance and Data Quality, Web Services and Cloud. She serves as program committee member of several conferences and journals. She is co-author of the book « L'essentiel du Génie logiciel », Pearson Education, 2010 and has published book chapters and papers in various conferences and journals.