

# Contents

## Environment and Sustainable Development

The Role of ICT to Achieve the UN Sustainable Development Goals (SDG) . . . .	3
<i>A. Min Tjoa and Simon Tjoa</i>	
Principles for Re-Designing Information Systems for Environmental Sustainability . . . . .	14
<i>Richard Baskerville, Jan Pries-Heje, and Jan Recker</i>	
Automated Plant Species Identification: Challenges and Opportunities . . . . .	26
<i>Erick Mata-Montero and Jose Carranza-Rojas</i>	
Environment Monitoring Using Commercial Off-the-Shelf (COTS) Technologies: A Case Study of the Odd-Even Rule for Pollution Control in Delhi . . . . .	37
<i>Vikas Nath and Artash Nath</i>	

## Education

Challenge to Promote Deep Understanding in ICT . . . . .	47
<i>Valentina Dagiene</i>	
Computer Animation as a Vehicle for Teaching Computational Thinking . . . .	53
<i>Leonel Morales Díaz and Laura S. Gaytán-Lugo</i>	
Transforming Low Socioeconomic Status Schools to Learning for Well-Being Schools . . . . .	60
<i>Heilyn Camacho</i>	
Transformative Applications of ICT in Education: The Case of Botswana Expansive School Transformation (Best) Project . . . . .	68
<i>Paul Thabano Tapela Nleya</i>	

## Health

Identification of Design Patterns for Serious Games in an Educational Videogame Designed to Create Awareness on Dengue and Malaria Fever . . .	85
<i>Eduardo Ramírez Elizondo</i>	
A Community Assets Infrastructure for the Secure Use of Mobile Computing Devices in the Rural Health Landscape . . . . .	96
<i>Kevin Kativu and Dalenca Pottas</i>	

**Digital Equity**

Progressing Toward Digital Equity . . . . . 109  
*Ramon Puigjaner*

Telecenters for the Future in Tea Estates of Sri Lanka . . . . . 121  
*Sirkku Männikkö-Barbutiu, Thomas Westin, Ranil Peiris,  
and Peter Mozelius*

Mobile Internet Tariff Models: Technical or Political Decisions?  
A Costa Rican Case Study . . . . . 132  
*Alexander Castro-Reyes and Gabriela Marín-Raventós*

guifi.net: A Bottom-up Initiative for Building Free  
Telecommunication Infrastructure . . . . . 144  
*Miguel Pérez, Pablo Boronat, José A. Gil, and Ana Pont*

**Gender**

Typifying Mechanisms for Gender Digital Equity in Latin America. . . . . 159  
*Gabriela Marín-Raventós and Marta Calderón-Campos*

Women in ICT: Opportunities for Their Inclusion in an International  
Labor Market . . . . . 171  
*Ana M. González, Beatriz Revelles, Elisabet Almeda,  
Núria Vergés Bosch, and José S. García*

**Economic Development and Infrastructure**

Can E-Commerce Provide a Solution to the Coffee Paradox? The Case  
of Costa Rica . . . . . 181  
*Francisco J. Mata, Ariella Quesada, and Gabriela Mata-Marín*

Innovation and Governance: The Role of Sharing Economy . . . . . 195  
*Elia Brugnoli, Alberto Polzonetti, and Matteo Sagratella*

e-Bridge 3.0: A Strategic Approach to Structural Health Monitoring  
of Bridges in Costa Rica . . . . . 205  
*Cesar Garita and Giannina Ortiz*

**E-Government and Smart Cities**

ICT and Citizen Efficacy: The Role of Civic Technology in Facilitating  
Government Accountability and Citizen Confidence . . . . . 213  
*Rebecca Rumbul*

Promoting Quality e-Government Solutions by Applying a Comprehensive Information Assurance Model: Use Cases for Digital Signature. . . . . 223  
*Ricardo Villalón-Fonseca, Alejandro Mora-Castro, Rodrigo Bartels-González, Miguel Carballo-Chavarría, and Gabriela Marín-Raventós*

Emergence and Ubiquity in the Smart Cities. . . . . 235  
*Jose Aguilar*

**Author Index** . . . . . 245



<http://www.springer.com/978-3-319-44446-8>

ICT for Promoting Human Development and Protecting  
the Environment

6th IFIP World Information Technology Forum, WITFOR  
2016, San José, Costa Rica, September 12-14, 2016,  
Proceedings

Mata, F.; Pont, A. (Eds.)

2016, XIII, 245 p. 42 illus., Hardcover

ISBN: 978-3-319-44446-8