

28th Annual Conference of the International Association for Management of Technology (IAMOT 2019)

Mumbai, India
7 – 11 April 2019

Volume 1 of 2

Editors:

**Karuna Jain
Shirish Sangle
Ruchita Gupta**

**Jinil Persis
Mukundan R**

ISBN: 978-1-7138-0604-2

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2019) by International Association for Management of Technology (IAMOT)
All rights reserved.

Printed with permission by Curran Associates, Inc. (2020)

For permission requests, please International Association for Management of Technology (IAMOT)
at the address below.

International Association for Management of Technology (IAMOT)
c/o University of Miami
College of Engineering
248294 Coral Gables
Florida 33124-0623
USA

Phone: (305) 284-2344
Fax: (305) 284-4040

iamot@miami.edu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

C O N T E N T S

❖ Acknowledgment	v
❖ Our Reviewers	vi
❖ Preface	viii

PART I: INNOVATION

1. A Research Approach for the Development of a Framework for Innovation Management in the Mineral Resources Industry <i>Marthinus J. Du Plessis and Marthinus J. Pretorius</i>	3
2. Management of Technological Innovation in Emerging Economies: A Conceptual Framework <i>Rendani Mamphiswana and Saurabh Sinha</i>	20
3. The Conceptual Structure for Developing Reverse Innovation with Virtual R & D and IOT—Case Study in Iranian Company <i>Asgar Jabalbarezisarbijan, Hossein Khalatbary and Mojgan Talebi</i>	32
4. Problems and Barriers to Innovation in SMEs in the Manufacturing Industry in Brazil <i>Liliana Dennis Mejia Sanchez, Maria Fatima Ludovico De Almeida and José Eduardo De Oliveira Trindade</i>	46
5. Innovation and Digitalization in SME's: A Research Agenda <i>Hanen Kooli-Chaabane, Mauricio Camargo and Vincent Boly</i>	63
6. Financing Innovation: Benefit of the Innovation Vouchers to Foster the Link between SME's Needs and University Capabilities <i>Laure Morel, Mauricio Camargo and Pascal Lhoste</i>	75
7. Smart and Interactive Packaging—On Long Term Studies and Technological Enablers in Retailing of Consumer Packaged Goods (CPG) <i>Torben Tambo and Justina Lydekaityte</i>	82
8. Open Innovation Learning: from Concepts to Targeted Competences <i>Marche Brunelle, Enjolras Manon and Boly Vincent</i>	95
9. Treatment of Open-Angle Glaucoma with Nano-medicine: A Review <i>Vineeta Khanapuri</i>	106
10. Additive Manufacturing in the Spinal Orthopedic Industry: An Exploratory Review <i>Lloyd Boustead and Marthinus W. Pretorius</i>	114
11. Technological Innovation in Ergonomics & Safety in Automotive Industries in Egypt <i>Irene Samy Fahim, Mayada Effat El Sherbiny and Asmahan Mohamed Farid</i>	123

12. Artificial Intelligence in Tourism Software Solutions: Opportunities and Challenges until 2024	
<i>Tobias Helgemeir and Carlos Hernández Cenzano</i>	134
13. Technology Selection for Industry 4.0 Digital Transformation: A Decision-Making Model Combining AHP, QFD and MIP	
<i>Hasan Erbay and Nihan Yildirim</i>	143
14. Digital Transformation: News ICTs and Business Model	
<i>Marcelo T. Okano, Patricia K. Inoue, Giovana Oliveira Fadini Eliane Simões and Samira Antunes</i>	158
15. Applications of Blockchain Technology in the Brazilian Government	
<i>Alana Bauer Lacerda and Fernando Dias Lopes</i>	170
16. Incremental Risk Chain Mapping Manager and Linker (iRCM²L) Blockchain Driven Dynamic Risk Chain Framework	
<i>Vikas S. Shah</i>	184
17. Blockchain–Industrial Applications and Potentials	
<i>Marie-Christin Schmidt, Oscar Pakos, Julius Andreae, Daniel Kiel and Kai-Ingo Voigt</i>	195
18. Innovation in Pharmaceutical Drugs, Patents and Public Health in Brazil	
<i>Quésia Postigo Kamimura, Sóstenes Postigo, Edson Aparecida Araujo Querido Oliveira, Adriana Leonidas De Oliveira, Rita De Cassia Rigoti Monteiro and Vitória Kedy Cornetta</i>	215
19. Merging Supply Chain and Blockchain Technologies	
<i>Amr M.A., Eljazzar M.M., Kassem, S.S. and Ezzat M.</i>	224

PART II: INTELLECTUAL PROPERTY

20. Conceptualization of Technology Transfer and Its Impact Evaluation: Case Cotecmar	
<i>Salgado Martínez Adriana Lucia and Saravia Arenas Jimmy</i>	231
21. Research to Technology Transfer: Developing a Roadmap	
<i>Sanjay Bhardwaj, S. Subbarao, T.V. Vijaya Kumar, Gadhe Padmanabham and Karuna Jain</i>	251
22. Measurement of Intellectual Capital using Information and Communications Technology	
<i>Gumercendo Bartra Gardini, Nérida Del Carmen Pastrana Diaz, Marta Lucía Tostes Vieira and Claudia Patricia Motta Villa García</i>	260
23. Factors that Influence Technology and Knowledge Transfer Success	
<i>Paul Kwangwari and Anthon P. Botha</i>	273
24. Development of Intellectual Property Evaluation System to Aid Intellectual Property Valuation in an Academic Institution	
<i>Priyadarshini Singh, Atul Singhal and Gouri Gargate</i>	286

25. Firm Size, Technological Intensity and Informal Appropriation Mechanisms in Innovative Manufacturing Firms	
<i>Marcelo Oliveira Gaspar De Carvalho, Maria Fatima Ludovico De Almeida and José Eduardo De Oliveira Trindade</i>	301
26. Flow of Spin-off Technologies from Bhabha Atomic Research Centre: A Technology Management Perspective	
<i>Thyagaraju P.H. and Kirankumar S. Momaya</i>	317
27. The Effect of Managerial Characteristics on the Performance of Technology-Based Start-UPS in Korea	
<i>Seungku Ahn and Juil Kim</i>	327
28. A Policy Design Framework for Digital Transformation: University-based Innovation and Entrepreneurship Ecosystems Revisited	
<i>Nihan Yildirim and Deniz Tunçalp</i>	341
29. Knowledge Spillovers from Foreign Firms in India: Evidence based on Patent Citation Data	
<i>Ruchi Sharma and M.D. Danish</i>	359
PART III: MANAGEMENT OF TECHNOLOGY	
30. Reference Architecture and Classification of Technology Induced Scenarios of Digitized Work	
<i>Michael Bansmann, Marc Foullois, Daniel Röltgen Lars Wöste and Roman Dumitrescu</i>	369
31. Application of MCDM in Evaluating Emerging Technology for Artisanal Mining	
<i>John Agwa-Ejon, Antoine Floribert Mulaba-Bafubiandi and Jan-Harm Pretorius</i>	385
32. Technological Catch-Up Challenges on Complex Product Systems in Developing Economies: A Case Study of Measurement Systems for Oil & Gas Wells in Iran	
<i>Ali Daghaieghi, Naser Bagheri Moghadam, Ahmad Jafarnejhad Chaghoshi and Reza Kabiri</i>	397
33. Identifying, Analyzing, Ranking Barriers and Challenges of Technological Collaboration Forming in Electronic and Hardware Sector	
<i>Mohammad Torabi Khargh, Hadi Nilforoushan, Hashem Moazzez and Seyed Mohammad Sahebkar Khorasani</i>	414
34. Technology Disruptions by PAYTM in Fintech Industry	
<i>Pushkar S. Narsikar, Vivekanand B. Khanapuri and Shivesh Doharey</i>	428
35. Risk Management of Emerging Biotechnologies	
<i>Sung-Goo Han</i>	433
36. Understanding the Adoption of Healthcare Wearables among Health-Conscious Youth	
<i>Shivesh Doharey, Vivekanand B. Khanapuri and Pushkar S. Narsikar</i>	443

37. Safety Risk Minimization Through Increased Productivity <i>Manoj Jha</i>	451
38. Optimization of Time and Resources in a Multi Project Environment: A Case Study <i>B. Koteswara Rao Naik, Nikhilesh Kasare and Vilas Kharat</i>	459
39. Deriving Value for and from Adoption of Cloud CRM <i>Preeti Sharma and Purnima Sangle</i>	475
40. Enhanced Customer Satisfaction through Retail Service Quality (RSQ): A Study of In-Store and Online Shoppers in the Retail Clothing Industry <i>Nita Sukdeo and Andre Vermeulen</i>	481
41. Predicting Ease of Implementation of GSCM <i>Sagar S Jalui, Suraaj Gardi, Dhanashree Chityala and Jinu Kurian</i>	495
42. The Effect of Project Portfolio Selection on Business Success: An Empirical Study in the Indian Auto Component Industry <i>Vilas Kharat and B. Koteswara Rao Naik</i>	515
43. Hazardous Industrial Waste Transport Partner Selection using Dynamic Weight SIR under Uncertainty <i>Huiyun Sang, Yan Bai, Yuchen Zhang, Lixue Fan and Bo Wang</i>	531
44. Evolutionary Algorithm for Cognitive Coefficient Optimization in Human Reliability Model <i>M. Karthick, T. Paul Robert and C. Senthil Kumar</i>	544
45. Ergonomic Intervention in the Postal Addressing Workstations Centre in Santo Cristo: Rio De Janeiro <i>Norma De Melo Pinto and Kazuo Hatakeyama</i>	553
46. Design and Energy Conservation for Reverberatory Aluminium Melting Furnace for Wire Rod Manufacturing <i>Mahesh Kisan Borate and Rajesh R. Jaware</i>	563
47. Aluminium Powder Sieving Unit for Processing of Composite Propellant <i>Ziyaur Rahman, Ashutosh Sharma, S. Das and T.V. Jagadeeswar Rao</i>	575
48. Aspects of Design for Chain Convenience Stores and Logistics System Integration with Focus on Appropriate Technology <i>Huaqiong Liu, Leon Pretorius and Dongdong Jiang</i>	583
49. Industry 4.0 Architecture and Outbound Logistics Operations in Petroleum Companies: A Systematic Literature Review <i>Pavitra Dhamija and Arnesh Telukdarie</i>	590

PART IV: STRATEGY

50. Identifying and Prioritizing Affecting Factors on Satisfaction of NTBF's in Collaborating with National Financial Funds from Perspective of Policy Makers and Executives in Iran <i>Reza Naghizadeh, Mahdi Hajari and Sajedeh Basavand</i>	599
--	-----

51. Strategies to Conduct a Student-Centered Evaluation System to Enhance the Quality of International Students' Education in China <i>Cheng Yin</i>	606
52. Techno-managerial Considerations for 5G Deployment in India <i>Ashutosh Jha, Prakrit Silal and Debashis Saha</i>	609
53. Destruction as Strategy? Business Ethical Ruminations <i>Jürgen Poesche and Ilkka Kauranen</i>	624
54. Designing Business Models for Augmented Reality <i>Daniel Röltgen, Fabio Wortmann, Eva-Maria Grote and Roman Dumitrescu</i>	630
55. Developing and Evaluating Concepts for a Digital Platform <i>Fabio Wortmann, Robert Joppen, Marvin Drewel Arno Kühn and Roman Dumitrescu</i>	647
56. Co-aligning Strategy, Structure, Process and Culture <i>Sonal Daulatkar, Purnima S. Sangle and Shirish Sangle</i>	661
57. Effect of Absorptive Capabilities on Acquisition and Exploitation Open Innovation Capabilities <i>Geovanny Perdomo-Charry, Nelson Lozada Barahona and Jose Enrique Arias-Pérez</i>	675
58. Towards Designing the Standard Technology Intelligence System <i>Hadi Nilforoushan and Soma Rahmani</i>	690
59. The Relationship between Competitive Intelligence and Innovation Performance of SMEs: A Case Study <i>Abdeslam Hassani and Elaine Mosconi</i>	704
60. Base of Pyramid Driven Innovation: 20 Years of Retrospective Study <i>Panda Swapna Sonali and Sangle Shirish</i>	715
61. Modelling of the Digital Inequality in Russia <i>Arkipova Marina and Khodzhaeva Anastasiia</i>	723
62. Success Factor of Multinational Business Transformation Change Management <i>Eyad Buhulaiga, Arnesh Telukdarie and Adeeb Albukhari</i>	732
63. Modelling the Impact of Transport Mode on Small Enterprises and Employment Growth <i>George Maluleke and Leon Pretorius</i>	742
64. Elderly Consumers' Behavior in Business-to-Consumer E-Commerce in Japan <i>Yoko Ishino, Hideyuki Aoki and Ken Kaminishi</i>	756
65. Catching up Process in Iran's Oil Industry and Evaluating Related Policies <i>Naser Bagheri Moghaddam and Aida Mohajeri</i>	764
66. Environmental and Economic Model of Charcoal Production <i>Sueli De Fátima De Oliveira Miranda Santos and Kazuo Hatakeyama</i>	778

67. A Multi-Dimensional Information Technology Service Quality Framework	
<i>Chelma Sliap and Carl Marnewick</i>	796
68. Factors of Investments Via Initial Coin Offering	
<i>Marina Arkhipova, Viacheslav Sirotin and Yan Buzhinsky</i>	809
69. Industrial Competitiveness of Solar Firms from India: Exploring Role of Technology Management and Policy	
<i>Sanjeev Chachondia, Pranusha Manthri and Kirankumar Momaya</i>	816
70. Firm's Response to Government's EV Policy: A Case of Indian Automobile Sector	
<i>Chandrashekhari Chaudhari, Vishwas Dohale Priya Ambilkar and R. Mukundan</i>	828
71. A Review of Best Practices for Enterprise Enablement	
<i>Kegomoditswe Ntwagae, Arnesh Telukdarie and Pavitra Dhamija</i>	833
72. Future of Public Organizations in the Digital Transformation Era	
<i>Mohamed Azzam, Nezar Sami and Tarek Khalil</i>	842
PART V: SUSTAINABILITY	
73. National Innovation Systems, Sustainability and Inclusive Growth	
<i>Gita Surie</i>	855
74. Entrepreneurial Communities: A Living Systems Perspective	
<i>Bernd P. Platzeck and Leon Pretorius</i>	871
75. Social Impact of Technology: A Systematic Review and Analysis	
<i>Pavitra Dhamija, Arnesh Telukdarie and Nickey Janse Van Rensburg</i>	887
76. Sustainable Resource Recovery through Waste Collection Systems: Households Perspective	
<i>Bupe Getrude Mwanza and Charles Mbohwa</i>	893
77. An Analysis of the Sustainability of an Emerging New Technology-building Houses using 3D Printers with Robot Technology	
<i>Janne Leinonen</i>	901
78. Natural Method to Regenerate Air and Water Quality	
<i>Manoj Kumar Jha</i>	909
79. A Study on the Feasibility of Producing Polylactic Acid from Cotton and Coffee Waste in Egypt	
<i>Irene Samy Fahim, Hani Chbib and Asmahan Mohamed Farid</i>	916
80. Technology based Monitoring of Public Health Activities in India	
<i>Mohd. Zuber, Mohd. Juned and Praveen G.</i>	929
81. Rural Entrepreneurship: Reviewing Customer Research through a Standard Operating Procedure	
<i>Victor Mofokeng, Nita Sukdeo and Pule Kholopane</i>	934
82. Lean as a Tool for Business Sustainability in the Manufacturing Sector	
<i>Joseph Ndikumana, Arnesh Telukdarie and Hannelie Nel</i>	944

83. Drivers and Barriers for Energy Management in Process Industries: Critical Review of Literature	
<i>Nishita D. Parekh, Jinu Kurian, Rajesh Patil and Richa Gautam</i>	952
84. Technology and Plastic Recycling: Where are We in Zambia, Africa	
<i>Bupe Getrude Mwanza and Charles Mbohwa</i>	964
85. Review of Life Cycle Assessment and Environmental Impacts from the Oil & Gas Sector	
<i>Shilpi Shrivastava and Prof. Seema Unnikrishnan</i>	972
86. A Roadmap for Development of Sustainable End-of-Life Vehicle Management System in India	
<i>Gajanan J. Badwe, R.R. Shrivastava and Rakesh L. Shrivastava</i>	985
87. Renewable Energy Normative Impacts in the Environmental Protection, Inclusive Development and Technological Transfer	
<i>José Carlos Alvarez Merino and Kazuo Hatakeyama</i>	990
88. Towards Inclusive Innovation Systems: The Role of the Excluded Groups	
<i>María Luisa Villalba Morales, Walter Lugo Ruiz Castañeda and Jorge Robledo Velásquez</i>	996
89. Innovation Capabilities Assessment: A Sectorial View Supported by an Original Diagnostic Tool—The Potential Innovation Index	
<i>Manon Enjolras, Alice De Casanove, Laure Morel and Johan Claire</i>	1008
90. Sustainable Integration of Human Beings into Industry 4.0	
<i>Johannes W. Veile, Daniel Kiel, Christian Arnold, Kai-Ingo Voigt and Corinne Bundscherer</i>	1020
91. Human Development Index based in the Forecast by Neural Networks	
<i>Yslene Rocha Kachba, Carlos Eduardo Oliveira Santos, Gustavo Campos Morettin and Kazuo Hatakeyama</i>	1040
 <i>AUTHOR INDEX</i>	