

1. International Journal of Technology Management & Sustainable Development
  2. Volume 19 Number 3
  3. © 2020 Intellect Ltd Editorial. English language. [https://doi.org/10.1386/tmsd\\_00025\\_2](https://doi.org/10.1386/tmsd_00025_2)
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## EDITORIAL

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**ASADULLAH SHAIKH**  
Najran University

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**ABDULLAH ALGHAMDI**  
Najran University

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# IoT, smart environments and interdisciplinary applications for technology management and sustainable development

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## INTRODUCTION

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This Special Issue is about the internet of things (IoT), smart environments and interdisciplinary applications that use such technologies. The internet made the interconnection between people possible at an unprecedented scale and pace. The next wave of connectivity is coming much faster to interconnect objects and create a smart environment. There are currently 9 billion interconnected devices, more than the number of people in the world, and it is expected to reach 24 billion devices by 2020 (Eremia et al. 2017). The main advantage of such a massive number of connected devices is accessing big datasets that can be utilized in smart applications. Several industries including

agriculture, mining, manufacturing and automotive have already adopted this technology to improve the efficiency and control of their processes (Borja 2007; Johnson 2008).

The internet made the interconnection between individuals conceivable at an extraordinary scale and movement. The next wave of network is coming a lot quicker to interconnect objects and establish a smart innovative environment. The number of devices is connected with the internet through IoT and this number is growing day by day. Due to the connectivity of these devices, the data sets are getting larger used in smart applications. (Lin et al. 2013).

IoT is generally characterized by the real world and small things, limited capacity, constrained devices and consequential issues such as less reliability, security and privacy. Things can be seamlessly integrated into the information network, and interaction can be made through the provision of intelligent interfaces. In not-so-distant future, IoT will be forcing its way into every aspect of our lives and technologies including smart homes, smart cities, environment and nature, green energy, food, medicine, automotive, aerospace and aviation, telecommunication and so on (Joshi 2016; Anand et al. 2017).

The fast development of smart and IoT-based innovations has taken into consideration different prospects in technological advancement for various parts of life. The principal objective of IoT innovations is to streamline measures in various fields, to ensure better proficiency of frameworks and to improve life quality. Sustainability has become a major question for the population where the dynamic development of IoT technologies is bringing distinctive valuable advantages, yet this quick improvement must be thoroughly observed and assessed from an environmental perspective to restrict the presence of harmful effects and to ensure the keen usage of restricted worldwide resources. To investigate the pros and cons of IoT technologies, critical thinking is required to understand the harmful effects of IoT and sustainability.

Submissions for this Special Issue were received from researchers, engineers and industry professionals. Each article presents an improved approach in the IoT, sustainable development, sustainable innovation, economic growth and corporate social responsibility (CSR).

## OVERVIEW OF THE SUBMISSIONS

The assessment systems of rural administration capacity dependent on the social structure hypothesis thoroughly think about the substance of the fundamental members, assets and governance execution. The model presented in this first article (Stoyanets et al. 2020) gives a target assessment of tests from Henan Province, demonstrating that the general governance limit should be improved, and there are extensive contrasts in various areas. From the perspective of the weight of governance ability markers, the best method to improve by and large governance capacity is to expand capital speculation and build up the nearby economy. The administration, as the main function in provincial governance, should not have any significant bearing in all cases regarding strategy detailing, and ought to completely regard the distinctions.

The idea of sustainable advancement or sustainability-oriented innovation (SOI) has a vital role in sustainable development. The work presented by Kravchenko et al. in the second article examines the possibilities of applying sustainability situated development for the improvement of Ukrainian machine-building endeavours. The deficiency of the current economic improvement technique is advocated. The inconceivability of guaranteeing the

1. improvement of financial frameworks of any level with a three-part portrayal  
 2. of social, monetary and ecological is resolved and the need for including the  
 3. fourth segment to the structure is demonstrated. The practicality of applying  
 4. the fundamental monetary hypothesis, which gives a four-segment portrayal  
 5. of financial frameworks, as another world-view for directing investigations  
 6. of large scale and miniature-level frameworks, is validated. From this situa-  
 7. tion, by the deliberate demonstration of four subsystems of undertakings, the  
 8. characters of the improvement of the ventures are directed, and their current  
 9. and anticipated positions are resolved. The principle stages and target assign-  
 10. ments, which guarantee the development of undertakings dependent on the  
 11. idea of sustainability situated development, were explained and the tools were  
 12. proposed.

13. In the current era, the world of the organic market is gaining popularity in  
 14. the scientific community. The scientific research presented by Koshkalda and  
 15. his colleagues in the third article analyses the part of a brand as an advertis-  
 16. ing tool for improving the deals of natural items. The investigation watches  
 17. the highlights of the natural brand, specifically shopper behaviour, trust and  
 18. brand correspondences, which are impacting the buying conduct of custom-  
 19. ers. Examination shows the importance of brand improvement for small-  
 20. holder ranchers' relationship in the Ukrainian natural market. Fundamental  
 21. information on brand-shaping components impacting shopper conduct was  
 22. gathered by an overview of Ukrainian purchasers. The consequences of the  
 23. overview uncovered a low level of awareness about natural items: 68 per cent  
 24. of respondents are inexperienced with its qualities. The investigation presents  
 25. the calculated premise of the plan of action of the brand affiliation and the  
 26. states of its usage by smallholder ranchers who aggregately sell a natural item.

27. One of the wide ideas in today's world is CSR, and it has seen a few  
 28. reforms since its introduction. Most likely in the current business and moneta-  
 29. ry situation, CSR has been picking up force, consequently, it is urgent, as  
 30. shown in fourth article, to investigate and grasp the essential duty of CSR  
 31. and reasonable turn of events. It is accordingly critical to examine and inves-  
 32. tigate the development of CSR consistently and interface it with a reason-  
 33. able turn of events. The current examination reveals and analyses the different  
 34. CSR models dependent on request of importance, the extent of the obligation,  
 35. function of charity, CSR-CFP (corporate financial performance) relationship  
 36. and engaging quality and its effect on the economical turn of events. The study  
 37. reveals that the idea of CSR and maintainable advancement are consistently  
 38. offering towards a brought together structure, where organizations' responsi-  
 39. bility towards social commitment achieves useful and thorough improvement.  
 40. It was seen that few models have been proposed and adjusted, yet there is a  
 41. wide gap between the idea and realistic execution of CSR models because of  
 42. the various methodologies followed by business associations, which shift from  
 43. country to country depending on their business nature (Jeet et al. 2020).

44. The development area is an asset-driven and asset-dependent industry.  
 45. A rising worldwide interest to consolidate supportability standards in the  
 46. policy-making implies a cautious offsetting of development with sustainabil-  
 47. ity. This work is presented in fifth article, the study of an improved version  
 48. of the framework for the Sustainable Building Assessment Tool (SBAT 2.0) to  
 49. measure building sustainability. To accomplish this end in the Indian struc-  
 50. ture area, a triple primary concern-based structure evaluation instrument like  
 51. GRIHA and IGBC was presented for surveying building supportability. SBAT  
 52. helps to achieve sustainable buildings. The study identified nine criteria and

42 sub-criteria for assessing building sustainability in developing countries by comparing the existing assessment tools, available literature and guidelines (Arukala and Pancharathi 2020).



Sixth article shows a solid relationship between socio-demographics, green attitude and purchase intention. The greener part of the way of life should be investigated considering the demographical measurement of the consumers. Green advertising would add to stores towards promoting green items and convincing customers. This research provides detailed study of natural concern and awareness to the associations and customers who are climate sensitive and are worried about environmental protection.. The fast moving consumer goods (FMCG) area is the fourth biggest area of the economy, and a significant supporter of the gross domestic product of the economy, which makes this investigation more important and results in important consequences. It will help the associations in the key assessment of their promoting plans. It will give a piece of knowledge to the associations about purchasers with various demographical attributes and their demeanour and goal towards climate-friendly items (Bahl Walia et al. 2020).

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## CONTRIBUTOR DETAILS

Asadullah Shaikh has a bachelor degree in software development from the University of Huddersfield, England, an master's degree in software engineering and management from Goteborg University, Sweden, and a Ph.D. in software engineering from the University of Southern Denmark. He is currently working as an associate professor, the head of research and the coordinator of seminars and training with the College of Computer Science and Information Systems, Najran University, Najran, Saudi Arabia. He has more than 80 publications in the area of software engineering in international journals and conferences. He has vast experience in teaching and research. His current research topics are UML model verification, UML class diagrams verification with OCL constraints for complex models, formal verification, feedback technique for unsatisfiable UML/OCL class diagrams. He has worked as a researcher in UOC Barcelona Spain. He is also the editor of the *International Journal of Advanced Computer Systems and Software Engineering (IJACSSE)* and a

1. member of International Advisory Board of several conferences and journals.
2. Further details can be obtained using [www.asadshaikh.com](http://www.asadshaikh.com).
- 3.
4. Contact: Department of Information System, College of Computer Science and Information System, Najran University, Najran and 61441, Saudi Arabia.
5. E-mail: [asshaikh@nu.edu.sa](mailto:asshaikh@nu.edu.sa)
- 6.
- 7.
8.  <https://orcid.org/0000-0003-4806-6159>
- 9.
10. Abdullah Alghamdi has a Ph.D. in computer and information systems engineering from Tennessee State University, Nashville, Tennessee. Dr
11. Alghamdi obtained his M.Sc. in networking and systems administration from
12. Rochester Institute of Technology, Rochester, New York, and B.Sc. in information systems from the Al-Imam Muhammed Bin Saud University, Saudi
13. Arabia. Dr Alghamdi is currently working as an assistant professor and head
14. of Information Systems Department at the College of Computer Science and Information Systems Najran University, Najran, Saudi Arabia. He has
15. many publications in international journals and conferences. He is experienced in teaching, administration and research. He has been a reviewer and
16. guest editor of many journals, and he has attended several conferences. His current research topics are security, privacy, IoT, interdisciplinary applications,
17. computer education and academic leadership.
- 18.
19. Contact: Department of Information System, College of Computer Science and Information System, Najran University, Najran and 61441, Saudi Arabia.
20. E-mail: [aaalghamdi@nu.edu.sa](mailto:aaalghamdi@nu.edu.sa)
- 21.
- 22.
- 23.
- 24.
- 25.
- 26.
27.  <https://orcid.org/0000-0002-5006-8527>
- 28.
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