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The impact of smart technology on users and society

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Special issue on "The Impact of Smart Technology on Users and Society"

In the 21st Century, Smart Technologies are introduced to various stakeholders in Society, namely users, businesses and education, to improve performance, productivity, and to increase satisfaction. Smart Technology has changed stakeholders understanding and perspective towards performing business, collaboration cooperation, communication and connection. Stakeholders are using smart technology for information access, education, entertainment, marketing, political, online shopping, and health information. Adopting these smart technologies in such sectors poses a huge challenge in training and implementation. Nonetheless, using such technologies will improve several areas performance and productivity; reduce costs, improve sustainability, increase users' satisfaction, retention, and loyalty in the long run. However, new threats will be introduced for example, security, privacy, legal conflicts and risky reputation, if it is used inappropriately. This special issue aims to investigate and assess some of the effects and influences of smart technologies on users and society in general.

This special issue of Journal of Information, Communication & Ethics in Society entitled The Impact of Smart Technology on Users and Society comprises five papers that provide cutting edge information and knowledge insights of technology, privacy, security and reputation issues. The guest editors selected these papers from the Internet Technologies and Society 2015 Conference (ITS 2015), and International Conference on Educational Technologies 2015 (ICEduTech 2015), which were both held in Brazil as well as an open call. The conference papers have been extended significantly and all papers have been peer-reviewed further to achieve a final high publication standard.

The first paper is entitled "Cyberbullying a desecration of information ethics: perceptions of post high school youth in a rural community" by Lancelord Siphamandla Ncube and Luyanda Dube. This paper discusses Cyberbullying, which is bullying that takes place using electronic technology devices such as cell phones, instant messaging, e-mail, chat rooms or social networking sites such as Facebook and twitter. Cyberbullying occurs when a minor, is tormented, threatened, harassed, humiliated, embarrassed or otherwise targeted by another child. Given that cyberbullying entails defamation or spreading false information or portfolios about someone, it is regarded as a violation of the ethical code of information use. The purpose of the study was to explore the perceptions, experiences and challenges of post-high school youth with regard to cyberbullying. This is a quantitative study that used a survey approach to gather data using a self-administered questionnaire which was distributed to 60 youth from the Kwa-Zulu Natal computer literacy community engagement project. The findings attest that youth recognise that cyberbullying might have detrimental effects on victims such as alcohol and drugs abuse, low self-esteem, high level of absenteeism, poor grades as well depression and suicidal thoughts. There is a low percentage of victims and perpetrators of cyberbullying in rural contexts in South Africa. It is hoped that findings may have a positive impact in the rural communities and enable the youth to interact with the modern technologies and handle them in an ethical manner. The study recommends that parents need to take cognisance of the probable possible dangers of the various technologies so that they could be instrumental in educating their children about children cyberbullying. Further, the schools as well as educational government departments can play a fundamental role in educating children about cyberbullying as well as cyber ethics.

The second paper is entitled “Defining a Smart Nation: The Case of Singapore” by Siu Loon Hoe. This paper aims to identify the key characteristics and propose a working definition of a smart nation. A case study of Singapore is presented through an analysis of the key speeches made by senior Singapore leaders, publicly available government documents and news reports since the launch of the smart nation initiative in December 2014. Just like smart cities, the idea of a smart nation is an evolving concept. However, there are some emerging characteristics that define a smart nation. The article provides an initial understanding of the key characteristics and definition of a smart nation at the nascent stage and a foundation for further research on the topic. This article contributes to the existing smart cities and smart nation literature by providing insights into the key characteristics of a smart nation and proposes a working definition of the term.

The third contribution is entitled “Fog Computing Architectures for Healthcare: Wireless performance and semantic opportunities” by Lisardo Prieto-González, Corvin Jaedicke, Johannes Schubert and Vladimir Stantchev. This paper argues how embedding of self-powered wireless sensors into cloud computing further enables such a system to become a sustainable part of work environment. This is exemplified by an application scenario in healthcare that was developed in the context of the OpSIT-Project in Germany. A clearly outlined three-layer architecture, in the sense of Internet of Things, is presented. It provides the basis for integrating a broad range of sensors into smart healthcare infrastructure. More specifically, by making use of short-range communication sensors (sensing layer), gateways which implement data transmission and low level computation (fog layer) and cloud computing for processing the data (application layer). A technical in depth analyses of the first two layers of the infrastructure is given to prove reliability and to determine the communication quality and availability in real world scenarios. Furthermore, two example use-cases that directly apply to a healthcare environment are examined, concluding with the feasibility of the presented approach. Finally, the next research steps, oriented towards the semantic tagging and classification of data received from sensors, and the usage of advanced Artificial Intelligence based algorithms on this information in order to produce useful knowledge, are described together with the derived social benefits.

The fourth contribution is entitled “Free vs. Hate Speech on Social Media: The Indian Perspective” by Faizia Siddiqui; Iftikhar Alam and Roshan Lal Raina. This paper examined the take of people on the ‘Free Speech via Social Media’ issue, and their attitude towards the way sensitive messages/information are posted, shared and forwarded on social media, especially Facebook. The research was carried out on a sample of two hundred social media users, all picked up randomly, from five Indian states/Union Territories. Data was collected through a questionnaire, and users contacted through e-mail. Data collected was analysed through K-S Z test. The findings indicate that hate posts/messages are on the rise and more and more users are joining in. A significant proportion of respondents agreed to have posted or shared hate content on social networks. Prosecution happens only when the aggrieved party is influential or powerful in terms of money or political clout. The findings also reveal that majority of people are concerned about the ‘free flow’ of hate contents and endorse strict measures to check the menace. The research is likely to be important for those involved in work on freedom of speech, or hate speech through social media. Social networking sites like Facebook would also get crucial insights into users' perception towards free and hate speech mechanism on social media.

The fifth contribution is entitled “Impact of Privacy, Trust, and User Activity on Intentions to Share Facebook Photos” by Aqdas Malik, Kari Hiekkanen, Amandeep Dhir and Marko Nieminen. This paper examined the popularity of Facebook photo sharing which has not only seen a surge in the number of photos shared, but has also raised various issues concerning user privacy and self-disclosure. Recent literature has documented the increasing interest of the research community in understanding various privacy issues concerning self-disclosures on Facebook. However, little is known about how different privacy issues, trust and activity influence users’ intentions to share photos on Facebook. To bridge this gap, a research model was developed and tested to better understand the impact of privacy concerns, privacy awareness, and privacy-seeking on trust and actual photo sharing activity and subsequently on photo sharing intentions. A cross-sectional data from 378 respondents were collected and analysed using PLS modelling. The study results revealed a significant relationship between various aspects of privacy, including awareness and protective behaviour, with trust and activity. In addition to this, trust and activity significantly impact photo-sharing intentions on Facebook. Different theoretical and practical implications of the study are also presented.