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Eventuality of an Apartheid State of Things:
An Ethical Perspective on the Internet of Things

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ABSTRACT

Notwithstanding the potential of IoT to revolutionise our personal and social lives, the absence of a solid framework of ethics may lead to situations where smart devices are used in ways uncongenial to the moral fabric of a society. In this work, the authors seek to provide a conceptual framework toward incorporating ethics in IoT. They employ the concept of object for each smart device in order to represent ethics relevant to its context. Moreover, the authors propose dedicating a separate ethics layer in the protocol stack of smart devices to account for socio-cultural ethical aspects of a society. The ethics layer enables us to account for ethical responsibilities of smart devices vis-a-vis society so that inadvertent physical, emotional or psychological harm to human beings is avoided. Such mechanism ensures that devices operate ethically not only at individual level but also at D2D level to give rise to high order ethical structures e.g. ethical home, ethical office, ethical university, ethical city, etc.

KEYWORDS

Apartheid, Ethics, Information Society, Internet of Things, Racism, Smart City, Social Considerations, Socio-Technical Systems

INTRODUCTION

Modern technologies are often heralded to usher in a new era of human prosperity, but to what extent these assertions really hold is debatable. No doubt, technology has been really shaping our lives: the way we interact, conduct businesses, exchange information, get entertained etc. and the recent wave in this technological streak is the Internet of Things (IoT) - a pervasive technology that seeks to connect virtually all things on the planet to global Internet. Though the idea of 'smartening' ordinary things for greater good of humanity has been romanticised for quite some time, design of a framework for implementing ethics into smart devices of the IoT has not been duly considered. Such technological enhancement would ensure that artificially intelligent pervasive technologies do not inadvertently jeopardise essential human values.

IoT has been hailed as the technology with far reaching consequences, poised to transform the way we perceive and interact with the physical world. IoT seeks to create a virtual world that contains a counterpart for everything in the physical world in order to provide an advanced class of services to people. IoT offers immense market opportunities particularly for manufacturers, ISPs and application developers. The IoT based smart devices are expected to reach 28 billion by the end of 2021("Ericsson Mobility Report," 2015). IoT is anticipated to have unprecedented economic impact estimated to be in the range of $2.7 trillion to $6.2 trillion by 2025 with IoT healthcare having a share of about

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