Chapter 5

A Review of Intelligent Transport System and Its People's Needs Considerations for Traffic Management's Policy Framework in a Developing Country:
People's Needs Considerations for ITS Policy

Ayodele Adekunle Faiyetole

https://orcid.org/0000-0001-8103-0663
Federal University of Technology Akure, Nigeria

ABSTRACT

This chapter prospects on the desirability of deployable Intelligent Transport System (ITS) solutions that can improve on the existing traffic management systems in a developing country. The chapter unveils that there is little or no specific plan targeted at any future deployment in Nigeria, for instance. Revealing that a systematic deployment of ITS applications, with candid appreciations from the citizenries, could follow the order of advanced public transport system trailed by advanced traffic management systems, advanced vehicle communication systems or advanced traveler information systems, and intelligent transport pricing systems. It concludes that the country could develop context-specific evidence-based policies toward the deployment of ITS,

capable of intuitively adapting to the future traffic demands and inclusively improve transport efficiency and safety. The chapter also provide a conceptual policy framework considering people's needs as context-specific, which facilitates constructive discussion informing policy direction.

INTRODUCTION

Intelligent Transport System (ITS) is an integration of advanced information, electronics and telecommunication technologies (AIETT) with transport engineering in order to plan, design, operate, maintain and manage transportation systems with the aim to provide innovative and intuitive services including traffic control and management that make for safer, more coordinated, smarter and sustainable use of transportation equipment and related infrastructure. According to IRFNET (2017), Bhupendra and Ankit (2015), Singh *et al.* (2014) and EU (2010), ITS is an integrated system that implements a broad range of communication, control, vehicle sensing and electronics technologies, including smartphones, to help in monitoring and managing traffic flow, through information from live feeds from sophisticated sensors and equipment installed on the roadside or with camera mounted on the traffic signal poles. Thus, ITS helps to reduce traffic congestion, provides optimum routes to travelers, enhances the productivity of the systems, and saving lives, time and money.

The intelligent transport system is being researched, developed, deployed and used in industrialized countries for real-time navigation, traffic updates, lane discipline and predicting travel time. The goals of ITS include improving the effectiveness, efficiency, and safety of the road transportation system. ITS technologies and policies have been successfully deployed in several industrialized countries like in the United States (Steve and Jeff, 2014; USDOT, 2016; 2010; 2008), Japan (JICA, 2015), South Korea (ITS Korea, 2008; Young, 2008), Singapore (LTA and ITSS, 2014; Chiang, 2008), Australia (Nowacki, 2012; Zabrieszach, 2013), Europe (IRFNET, 2017; EU, 2010) and United Kingdom (ITS Report, 2012; ITS UK, 2010). According to Sen *et al.* (2009), deployment of ITS is different in different countries, but the motive is same, i.e. to improve the transportation system performance including reduced congestion, increased safety, and travelers convenience. As a matter of fact, the International Road Federation (IRF) established a high-

Related Content

Affective Games: How iOpiates Elicit an Emotional Fix
Jonathan Sykes (2011). *Affective Computing and Interaction: Psychological, Cognitive and Neuroscientific Perspectives (pp. 344-358).*
www.irma-international.org/chapter/affective-games-iopiates-elicit-emotional/49542

IoT-Based Delineation and Evolution of Kid's Safety Portable Devices
Hemasundari H.and Swapna B. (2021). *Handbook of Research on Innovations and Applications of AI, IoT, and Cognitive Technologies (pp. 148-157).*
www.irma-international.org/chapter/iot-based-delineation-and-evolution-of-kids-safety-portable-devices/285684

Detecting DDoS Attacks Using Polyscale Analysis and Deep Learning
Maryam Ghanbariand Witold Kinsner (2020). *International Journal of Cognitive Informatics and Natural Intelligence (pp. 17-34).*
www.irma-international.org/article/detecting-ddos-attacks-using-polyscale-analysis-and-deep-learning/240242

Cognitive Weave Pattern Prioritization in Fabric Design: An Application-Oriented Approach
Dejun Zheng, George Baciu, Jinlian Huand Hao Xu (2012). *International Journal of Cognitive Informatics and Natural Intelligence (pp. 72-99).*
www.irma-international.org/article/cognitive-weave-pattern-prioritization-fabric/67795

Feature Reduction with Inconsistency
Yong Liu, Yunliang Jiangand Jianhua Yang (2012). *Developments in Natural Intelligence Research and Knowledge Engineering: Advancing Applications (pp. 195-204).*
www.irma-international.org/chapter/feature-reduction-inconsistency/66448