Abstract

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The Opportunities and Challenges of Applying the Intelligent Transport Systems on Road Transport in Egypt: A Case Study of Cairo-Alexandria Desert Road.

ABSTRACT Title of the Research: The Opportunities and Challenges of Applying the Intelligent Transport Systems on Road Transport in Egypt: A Case Study of Cairo-Alexandria Desert Road. Degree: M.SC. Road transportation plays a crucial role in carrying goods and/or people from one place to another and is considered as the backbone of “from door-to- door services”. However, road transport faces many problems such as traffic congestion, high rate of accidents and injuries. Previous studies shows that these problems are being faced by most of the developed and developing countries. Due to such complexity, the developed countries starting from Japan have integrated communication technologies with road transportation which is known as Intelligent Transport Systems (ITS), in order to overcome such problems. The previous studies shows that the ITS have a variety of applications and user services with a lot of benefits such as enhancing safety, reducing road accidents, traffic congestion, saving time and operation efficiencies. The aim of this research is to focus on the benefits and opportunities of a broad field called Intelligent Transportation Systems, discuss their applications, used technologies and their usage in different areas through a wide range of user services. Furthermore, to investigate the applicability of implementing the ITS in Egypt. A single case study was conducted on one of the main Egyptian highways which is “Cairo-Alexandria desert highway”. In order to investigate the applicability of the ITS, in-depth interviews were carried out with two parties: the first party was the constructor of the highway “Arab Constructors Company”, and the second party are the trucking companies as users of the highway. Moreover, a focus group was conducted with freight forwarders companies in order to verify the current problems on Cairo-Alexandria desert highway (undeveloped twin lane services, undetermined tariffs, lack of information related to the current road conditions, lack of quick response in case of accidents, unqualified drivers, waste of goods and time during transportation, lack of shared information between vehicles, operators and users) and best practice to overcome these problems. Afterwards, the study has discussed the challenges and opportunities of implementing ITS on Cairo-Alexandria desert highway. Moreover, the results have showed that the implementation of ITS requires a Public Private Relationship in order to overcome the stated challenges.