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How does business intelligence solutions can streamline and influence transport networks?

Antoniu Ovidiu Balint^a, Mihaela Toma^{a*}

The Bucharest University of Economic Studies, 6, Romana Square, Sector 1, Bucharest, 010374, Romania

Abstract

For the development of a successful and modern economy, transport companies must be able to ensure a fluently and efficient transport mode for goods and persons. Failure to comply with these requirements constitutes a threat to the competitiveness and also reflects the unsustainable use of transport infrastructure. The importance of developing new Intelligent Transport Systems (ITS) is essential for the growth and evolution of the economy because companies from around the world have to transfer goods between them, communicate and establish new connections.

The central theme of this paper is represented by the fact that Intelligent Transport Systems are indispensable for companies worldwide. The extension and development of new ITS can represent a solution on improving and enhance the actual economic environment

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1. Introduction

Intelligent Transport Systems represent the combination of the information and communication technologies with all types of transport networks that create a smart movement of persons and freight (Kan and Miles, 2000).

* Corresponding author. Tel.: +0-074-937-3331.

E-mail address: balint_antoniou_ovidiu@yahoo.com

The Intelligent Transport Systems (ITS) are currently facing a number of challenges that led to an increasing competitiveness in the actual economic environment. The purpose of ITS is to promote the use of cleaner energies and means of transport especially in the context where the volume of urban traffic areas is constantly increasing. Thus, a more accessible transport system should be prioritized in traffic management (Banciu and all, 2003). The efficiency of the passenger and freight transport systems depends on the optimization and correlation of the ITS with other systems and make them work as a whole. ITS plays an essential role in achieving the objectives and policies aimed by governments worldwide that want to improve the development and efficiency of their transport networks creating this way an efficient and sustainable economy (Perrett and Stevens, 1996).

The effects of the current economic crisis on transport networks are very hard to be predicted on a long term and they appear to be unpredictable at this moment. The present crisis of the economic environment can be seen as a sum of conflicts between different systems and processes that can lead to major dysfunction and require an immediate solution (Mortensen and all 2002).

In general ITS vary from country to country and depends on what type of transport they are used: rail, car, inland or sea navigation.

2. ITS Architecture

Like any other systems of high complexity, integrating ITS applications requires a strategic framework as a basis for the choices that are related to the design and effective use of them, as well as an investment decision; generally such a framework is called system architecture. ITS architectures require covering all the technical, organizational legal and commercial aspects; they can be created at the national, regional or city level and linked to specific sectors or services.

From the definitions given to intelligent transport systems we can say that in order to achieve the required functions of these systems it is necessary to apprehend the integration of systems of different nature in a single system. Intelligent Transport Systems are integrated systems of high complexity, which implies a specific approach in designing and developing such systems.

Defining the objectives and the development goals of Intelligent Transport Systems Architecture can be grouped into two main categories:

- To facilitate the understanding of both the problem and its solutions;
- To provide a stable basis for the design and development of ITS systems.

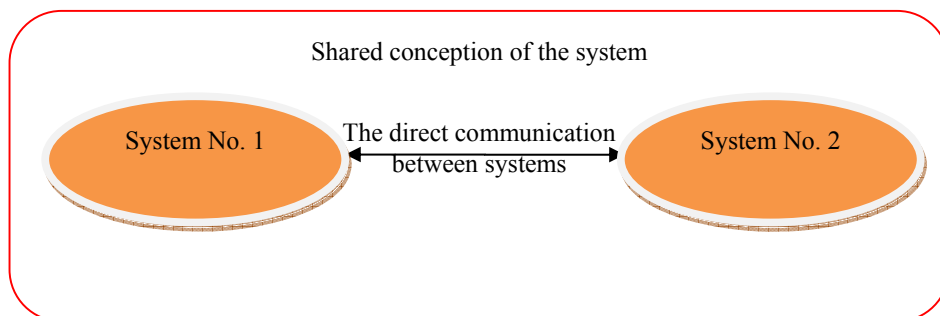


Fig. 1 The integration of ITS

Source: BALINT A. O., TOMA M., Proposed model, 2013

An ITS architecture is important for several reasons:

- Ensures the interoperability between different types of components, even when they are made by different manufacturers, which is also favourable for SMEs;

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