

# European Transport Networks, Telematics and the Environment

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## 1 Introduction

Our mobile and environmentally unfriendly society shows a clear network configuration. The transition towards a network economy - not only at a local, but also at a global scale - has in combination with world-wide liberalisation trends created the conditions for a globalisation of our economies. This globalisation is already clearly reflected at the European level, where internationalisation has taken a rapid pace in recent years, but is gradually becoming a basic feature of all industrial economies. The emergence of component industries, the creation of new industrial configurations based on outsourcing and the advanced telecommunication infrastructure have played a critical role in the above mentioned trend. As a result we are witnessing nowadays an extraordinary rise in international transport, supported by modern logistics and telematics. International trade and international mobility are at present rising at a rate which exceeds the growth of GNP in many countries. While the economic benefits of globalisation trends are to be recognized, it is also evident that the accelerated rate of growth in international transport causes a formidable burden on environmental quality at a world-wide scale, not only in terms of landscape destruction, but also in terms of noise and air pollution.

New information and telecommunication technologies applied to the transport sector, often named "Advanced Transport Telematics" (ATT) have the potential to offer new solutions to these transport problems in Europe. However, the successful exploitation of ATT in European transport markets depends on the technology

*La nostra società, mobile e nemica dell'ambiente, mostra una chiara configurazione a rete, a livello locale ma anche a livello globale. La globalizzazione in un'economia di rete e la liberalizzazione hanno determinato uno straordinario sviluppo dei trasporti (nazionali ed internazionali) con un formidabile detrimento della qualità ambientale globale e locale. Nuove tecnologie, nuovi criteri di scelta modale, nuovi modelli di trasporto potranno determinare l'andamento futuro dell'impatto ambientale. Tuttavia, anche le nuove tecnologie di informazione e comunicazione applicate al settore dei trasporti (Advanced Transport Telematics - ATT) potranno in un futuro prossimo offrire, per l'Europa, ulteriori soluzioni al problema. Tali tecnologie costituiscono una parte importante nell'evoluzione della rete dei trasporti europea. Dal momento che il mercato delle ATT comprende un largo numero di utilizzatori intermedi, privati e pubblici, nel presente studio si delineano le possibilità di tale mercato, secondo quanto emerge da una serie di interviste ai potenziali utenti le quali mettono alla luce le abitudini e le aspettative degli utilizzatori in merito alla telematica nel trasporto.*

being implemented in a way which meets the defined needs of the different road user groups in order to achieve social acceptance and thereby political approval. It is, therefore, vitally important that decision makers (i.e. those influencing the adoption of ATT) have sufficient information on the needs of (commercial) road users and on the way they perceive ATT options in addressing those needs. The paper contains therefore also some empirical results. The empirical part of this study consists of an investigation of the potential ATT market among the intermediate user group of road transport authorities/operators. In-depth interviews have been used to gather relevant information on their attitudes and expectations with regard to the potential and the benefits of these modern transport telematics as being a new part of developing transport networks.

The following section starts with some general

considerations regarding the evolution of the European transport network. In Section 3 the main future transport trends are identified and discussed. Subsequently, in Section 4 the role of telematics is discussed as a new integrative part of the transport network. Section 5 summarizes some of the major areas of telematics technologies for inter-urban road management, while Section 6 contains empirical results from a series of in-depth interviews with road managers in the Netherlands. Finally, in Section 7 the main results are summarized.

## 2 The Evolution of the European Transport Network

As mentioned in the introduction, Europe is gradually