

Chapter 1

Introduction

Levels of traffic congestion, environmental pollution and safety are becoming increasingly unacceptable to a substantial proportion of the population of Europe as well as in many other developed and less developed regions. The contribution of transport to global warming is of particular concern. At the same time, our societies cannot function without adequate provision of transport to serve both the needs and desires of individuals and essential business purposes.

The introduction of new infrastructure is important but it is very clear that the construction of new roads will result in the generation of additional traffic and, of themselves, will not necessarily lead to sustainable future transport situations. Thus the general thrust of transport policy in European countries is to build essential capacity only and to better manage all available capacity so as to meet increasingly wide ranging policy objectives as effectively as possible. These policy objectives relate to curbing congestion, improving safety, addressing local and global environmental concerns and meeting broader social needs of access and mobility. The appropriate involvement of both public and private organisations and their relative roles and responsibilities is also an issue, particularly related to the financing of new and improved infrastructure and services.

The rapid developments of new technologies in the areas of location, communication, information, sensors and control are providing, and will continue to provide, ways to better achieve current policy objectives and to enable the evolution of new policies. Intelligent Transport Systems (ITS) is the collective title given to such technologies. This book deals

with the applications and opportunities which are available to address specific issues of land transport using Intelligent Transport Systems and Services. Transport visions which incorporate ITS, the detail of their applications and the ways in which they may be taken forward with ITS are developed. An outline of what is considered in the book is given in Figure 1 below.

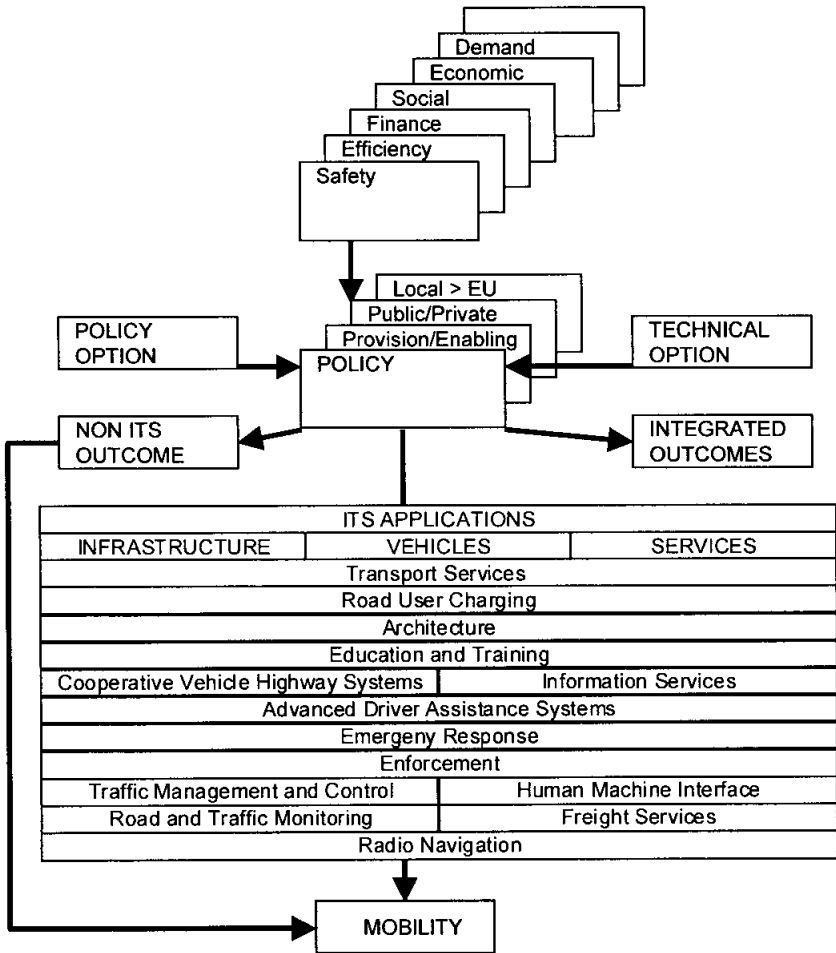


Figure 1: Outline of context

All the ITS applications addressed in the book are targeted at policy objectives and contribute to the performance of the transport infrastructure, the public and private vehicles which use the infrastructure, and a range of systems and services, many of which are only enabled by ITS. Some ITS applications are market driven and some, such as the personal delivery of online information or driver support, provide unique opportunities to integrate the use of infrastructure, vehicles and services to provide new levels of mobility and safety. Global environmental issues are of increasing importance. Some sections deal with fundamental issues such as architecture which provide essential underpinning to ITS applications.

The areas of ITS which are addressed in the book provide a vision for their application in the context of the current state-of-the-art, key issues to be addressed and the future opportunities. An initial chapter deals with the European context and a final chapter draws together conclusions and recommendations and considers issues of ITS which relate to cross area applications, such as functional architecture and education and training. Each section has been drawn together by reviews, and the opinions of the Expert Groups. ITS is a very wide subject area and, whilst the depth of considerations are similar in each section, the maturity of the subjects considered in the individual sections is very different. This has led to some differences in style, structure and referencing.