

Chapter XXIII

Channel Management Schemes to Support Services in Ubiquitous Communications Infrastructures for Future Transportation Technologies

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ABSTRACT

Transportation and Internet Technologies have evolved dramatically during the last decade, laying solid foundation for the future generation of the Ubiquitous Internet access, omnipresent Web technologies and ultimate automated information cyberspace. As a result, the current efforts in the research and development in the areas of Future Transportation and Next Generation of Internet Technologies promotes formation of inter-disciplinary international teams of experts, scientists, researchers and engineers to create a new generation of applications and technologies that will facilitate the future transportation system. The authors present a dynamic channel management scheme for a Mobile Communication System, that supports services in Ubiquitous Communications Infrastructures for Future Transportation Technologies (DCMS-FTT). The performance is improved as it can be seen from the simulation results.

I. INTRODUCTION

The motor industry faces a time of change. Increasing competition, globalization and newly developing markets are challenges to all businesses involved in the industry. How they respond may determine the way future generations around the world live their lives.

The past 20th century left us with legacy of the US highways, UK and German motorways, final flight of Concorde Air, global Internet and CISCO monopoly in computer networking, etc. The current 21st century is perhaps one of the most interesting times in history to be alive. We are witnessing a phenomenal abundance of change in societies around the world in a very short period. Large, medium and small corporations alike have discovered the need to adapt to the new technologies, or sink in the emerging global knowledge economy.

There is no facet of life in the industrialized world that has not undergone some form of shift. The resultant new information economy has brought with it different approaches to work. In the past decade we have seen every aspect of the lives of individuals and organizations go through many evolutions and uncertainties. There are plenty of publications on the subject of futuristic and ubiquitous computing for the 21st century presenting excellent discussion and possible scenarios in the subject area. History proved that one must look forward and accept the futuristic vision as possible scenarios of tomorrow's reality. Nowadays, modern transportation technologies, controlled traffic, ubiquitous Internet access via mobile phones, road surveillance cameras are essential part of daily life. Transportation technology will continue be present and essential for everyone. After introduction section, the in second section author discusses issues related to future transportation. In the third and forth sections author discusses future computing and ubiquitous communications infrastructures. Section five presents conclusions.

II. FUTURE TRANSPORTATION

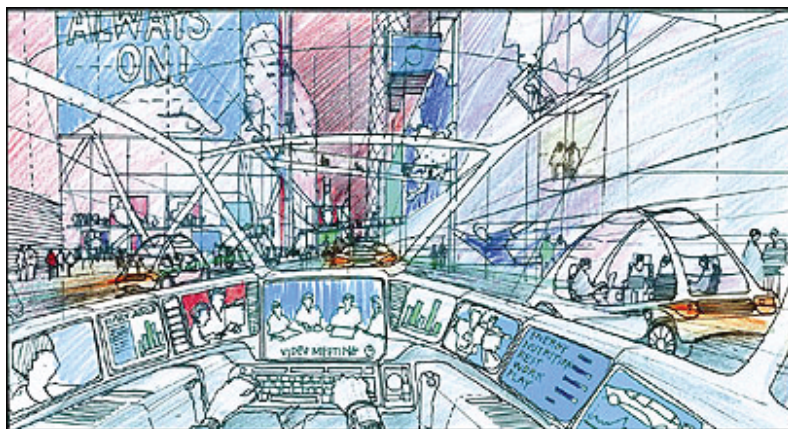
The global economy and mobility of people inspires the various authors to plan for the future transportation that will be environmentally friendly, most economical and available on command at any time, anywhere for anyone.

You leave home, step into your car, turn the seat around and start working your way through your e-mail inbox, as the car drives you to work. Or you use whatever comes to be your mobile phone to summon one of a swarm of automatic buses.

Don't fancy stepping out into the rain? Then perhaps Telepresencing is how you'll win friends and influence people. It's the three-dimensional visual conference call of the future. These are all visions of Britain in 2055 from the heavyweight government Foresight report into how we'll travel in the next five decades. Futurology often goes too far. There aren't many of the mono-rails or flying cars predicted 50 years ago. But this report claims not to be a prediction of the future, but a set of alternative futures.

You don't have to steer, obviously. But your car will also talk to others to find out where all the traffic is and avoid it. Communications are mobile, instantaneous, and constant, 24/7. One scenario has been given the name "Perpetual Motion". It assumes personal transport continues to be the norm, but everything future technology has to offer is used to make getting around easier.

Figure 1. Perpetual motion by Tom Symonds



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