



“Price-performance will eventually alter the means by which ETC is delivered”

The future is bright for the expansion of tolling across the globe

Traditionally, transportation funding has, by and large, been inadequate as politicians attempt to satisfy the populace with the delivery of facilities as “free” public assets. Politically we are motivated to minimize the perception of having to pay for transportation facilities.

Meanwhile, trends continue towards higher efficiency vehicles and greater vehicle miles traveled. Congestion and delay continues to amplify and economies are impacted with delays to commercial goods movement and smaller vehicle passenger movement. There is a direct connection between economic vitality and vehicle miles traveled. In the US, 87 per cent of the value of all freight shipped travels on a rubber tire.

The stakes are high for the economy and for political leadership. In this environment tolling has come to be recognized as a method for raising transportation revenue, pricing congestion, creating a more sustainable long-term future and being environmentally friendly.

There are several challenges to the expanded use of tolling. This article is the first in a four-part series on these challenges and ways in which they might be addressed.

TECHNOLOGY MUSINGS

The application of computer technology in transportation has resulted in numerous

improvements in navigational systems, incident detection, safety, traveler information and other ITS applications. However, the application that has had a business case from the beginning is Electronic Toll Collection (ETC). It has increased efficiency in the collection process and offers greater convenience to the traveling public.

From its initial emergence in the late 1980s until the present day, ETC has created numerous

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large companies that engage in software development, component hardware supply, maintenance and operations services and the provision of RFID equipment. With some exceptions the industry has been notoriously proprietary. Minimal standards have been government-promulgated and many agencies have found themselves captive to specific vendors.

As ETC technology improved there was reluctance by the private sector to abandon previous proprietary practices and reluctance by the public sector to replace high-cost legacy equipment and systems that conformed to older proprietary standards. Further, each implementation carried with it considerable

risk, a factor which public agencies do not wish to incur.

Nevertheless, technology has continued to improve. Cameras have become more accurate with higher resolution and are available in various spectrums of infrared and visible light. Software used to convert images to recognizable characters has improved. RFID tag readers have become capable of multiple protocols and transponders have become smaller, requiring no onboard

technology has been developed and promoted as an open standard and many manufacturers compete to produce compliant transponders. Price-performance of RFID equipment has significantly changed the equation for implementing ETC applications.

Price-performance will eventually alter the means by which ETC is delivered. Interestingly, RFID tags have become so inexpensive that the application of the technology is expanding in a number of other transportation areas such as Electronic Vehicle Registration and parking applications. Imagine being able to identify a vehicle electronically just as we currently identify them visually by the license plate number. Imagine also being able to reserve a parking spot using a smart phone in a major metropolitan area and the accompanying increase in revenue that would accrue to parking operators utilizing such technology. Applications such as these may provide the synergy to move the tolling market to a higher price-performance capability. 📱

PROPRIETARY MUSINGS

Furthermore, technology is beginning to become less proprietary. ISO 18,000 6C

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