Connected and Sustainable Mobility

Written specifically for Connected Urban Development Global Conference 2008
by the Cisco Internet Business Solutions Group

Overview

Sustainable urban development pursues a balance among environmental soundness, economic efficiency, and social inclusion. It's a concept that is especially applicable to urban transportation,[1] due to transportation's impact on the environment and society.

Sustainable urban transportation provides accessible and efficient services that help citizens achieve a healthy and desirable quality of life. It is affordable, offers choice in transportation modes, and supports a vibrant economy. It limits emissions and waste, recycles its components, and minimizes land use.[2]

As cities become wealthier, motor vehicle ownership tends to increase, as do energy consumption, carbon dioxide emissions, traffic accidents, and unproductive time spent on the road.

Innovative solutions based on information and communications technology (ICT) can meet these challenges by helping to make public transportation more attractive to citizens.

Connected Urban Development Perspective

The concept of sustainable urban transportation is a response to missteps in transportation policy, practice, and performance. These have resulted in unsustainable usage of resources, increased carbon dioxide emissions, and declining service levels despite escalating investments. The sustainable transportation movement has gradually gained momentum over the last 15 years, shifting public spending away from transportation infrastructure and supply, and toward management and demand.[3]

Connected and sustainable urban transportation provides better consumer options and incentives, leading to more efficient transportation systems and more productive and livable cities. It focuses on using ICT to change behavioral patterns, with a goal of minimizing carbon dioxide emissions and other pollutants.

1. Sustainable Urban Transportation Policy, Presidential Commission on Sustainable Development, Korea, 2005
2. "Definition and Vision of Sustainable Transportation," The Centre for Sustainable Transportation, 2002
3. Sustainable Transport, Wikipedia

ICT-enabled transportation solutions include the **Personal Travel Assistant (PTA)**, a service designed to resolve complex, frustrating experiences within urban transportation environments. PTA integrates urban transportation services, experiences, and transactions, providing travel information and support in a convenient format through various information channels and devices (including PCs, mobile phones, and kiosks). PTA streamlines transactions, route selection, and "disruption management" (such as response to traffic congestion), and integrates with other services such as calendaring and social networking. PTA is unique, due to its focus on citizens' experiences across all forms of urban transportation, along with its visionary integration of Web 2.0 and social networking technologies. It synthesizes existing sources of information via a multichannel, Unified Communications-based services platform, providing up-to-date information on the most energy-efficient, rapid, and inexpensive methods of transportation. PTA will be pilot-tested in Seoul, South Korea, to take advantage of that city's many PTA-centric provisioned services, which can be easily integrated into PTA's Web-based services model.

Smart Transportation Pricing (STP) encompasses a set of pricing reforms intended to encourage more efficient travel behavior. In recent years, transportation pricing reforms—especially congestion charging—have gained consideration as a means of conserving energy and reducing both emissions and traffic congestion. STP systems employ flexible, area-wide, time- and distance-based road-charging schemes, and feature a universal mobility account as an integrated transportation payment system. STP systems incorporate GPS transponders and onboard units (OBUs) installed in each vehicle to track when and where it is driven. STP systems are designed to increase public acceptability of road charging by improving travel options and providing positive incentives for using efficient modes of transportation. STP will allow more flexible pricing, reduce transaction costs, and encourage the modal shift from personal vehicles to public or cleaner transportation. In addition, it will increase economic returns for cities by increasing transportation system efficiency and avoiding the need to add capacity.

Connected Public Transit (CPT) is a set of information services intended to make public transit more convenient, comfortable, efficient, and appealing. CPT services provide real-time information for better predictability and seamless transportation connections. Such improvements are particularly important to attracting wealthier travelers, who tend to be increasingly sensitive to service quality features such as convenience and comfort. Some CPT capabilities will integrate with PTA systems, which use handheld devices and public displays located at transit stops and on transit vehicles to provide travel information, when and where it's needed.

Discussion Points

1. How can strategic transportation policies help create connected and sustainable mobility?
2. Which roles does ICT play in creating a healthy and efficient transportation system?
3. How can a city provide citizens with greater transportation choices?
4. How can a city increase its ability to manage traffic?