

Public Transport Ticketing System

Optimised Public Transport Ticketing System Brings Greater Flexibility, Reliability and Convenience to the Travelling Public

Abstract

Victoria's extensive public transport network services more than 450 million journeys each year. The metropolitan ticketing system (using a paper magnetic stripe card) was ageing and in need of replacement. There was also an opportunity to upgrade the myriad of paper-based ticketing systems in the regional areas.

The State Government elected to pursue the latest technology smartcard transport ticketing in use in other major cities including London (Oyster Card) and Hong Kong (Octopus Card) and for the first time in the world implement the new smartcard system across both metropolitan and regional areas.

In 2003, the Transport Ticketing Authority (TTA) was established to implement the innovative public transport ticketing system 'myki' on behalf of the State Government of Victoria, Australia. In July 2005, Kamco, a wholly owned subsidiary

of Keane Inc, was awarded the contract to build, install and manage the system for the TTA.

The phased introduction of the system commenced on regional bus services in December 2008 and is currently live on metropolitan and regional buses, metropolitan trains and trams.

Challenge

The Victorian public transport network is run by more than 40 operators. There are also a range of ticketing systems in use, with the magnetic stripe on tram, trains and buses in metropolitan Melbourne and localised paper tickets on regional buses and trains. The challenge and indeed the opportunity was to standardise the ticketing system to allow customers to travel throughout the state with one card. The standardised system also provides – for the first time – real time patronage data to assist government and operators to better plan and service their customers.

Background Facts

- » In June 2005, Kamco, the special purpose entity formed to bid for the New Ticketing System (NTS) project, is awarded the contract to build and operate the system for the State Government of Victoria, Australia
- » The system is the largest mass transit smartcard project undertaken in the world so far (Victoria 96,749 sq miles covers a land mass greater in size than the United Kingdom 94,526 sq miles)
- » The contract is AUD \$ 494m to build and operate the system over 14 years (4-5 year build/implement, 10 year operate)
- » The system will run on 21,061 devices — all have Microsoft CE or Windows

Application and Infrastructure Solutions

The major challenge was to implement the new system without inconveniencing customers. Kamco has developed a transition process whereby the two systems can work in parallel. In regional Victoria, the system is being introduced town by town or line by line. In metropolitan Melbourne, all modes (rail, bus and tram) will be myki enabled but still operate on the old system. The transition in Melbourne will see growing numbers of travellers using the myki system until over a period of time (to be determined by the government), the old system is 'turned off' in 2011.

Solution

The new system features a smartcard – a durable plastic card – that is technologically superior to the paper-magnetic stripe tickets. Passengers are able to store value on their cards using self-service machines, the telephone, the Internet or retailers. Their fare is deducted by simply scanning the card each time they use the public transport system.

To use the smartcard, customers simply touch it to a reader as they enter a rail station or board a bus or tram. The card need only be a few centimeters away from the reader to be validated. When disembarking, customers again touch their smartcard to the reader. This 'touch on/touch off' process ensures customers are charged the lowest fare for their trip.

In addition to being easy to use, the new ticketing system brings many benefits to public transport users:

- » **Multi-modal convenience:** Using just one smartcard, passengers will have access to all modes of Victoria's network.
- » **Buying convenience:** Smartcards will be available for purchase in a variety of convenient locations, including retail outlets and rail, tram and bus stations, and via phone and the Internet.
- » **Easy top up:** Smartcard readers and add value machines will be available on trams, at tram and rail stations and at bus stops. These self-service machines will allow customers to see how much value is stored in their smartcard accounts and add value to their card. By registering a smartcard, customers can take advantage of the convenient auto-load feature.
- » **Choice:** Smartcard holders can choose to receive a variety of benefits by personalising their smartcards.
- » **Reliable equipment:** With fewer moving parts, the smartcard readers, electronic gates, and other devices are less susceptible to wear and tear or vandalism than the current system's machines and have demonstrated exceptional performance in high-volume mass transportation systems and vandal-prone environments around the world.
- » **Less fare evasion and fraud:** The convenient locations of smartcard readers and add value machines, increased reliability of the equipment and ease-of-use will lessen the rate of fare evasion.

Background Facts

- » There are 5 modes of integrated transport — tram, metro bus, metro train, regional bus and regional train
- » There are more than 20 subcontractors working with Kamco to deliver the NTS

- » **Protection from theft:** Registered smartcards can be 'hotlisted' or 'blocked' if they are lost or stolen, preventing anyone else from using the cards.
- » **Improved access for people with disabilities:** All new devices have been designed in adherence to the ergonomics requirements outlined in the Disabilities Discrimination Act, ensuring safety and convenience for all passengers.
- » **Longer life/more uses:** The durable, plastic smartcards will be used by regular and infrequent travellers alike, saving the state of Victoria the cost of replacing disposable, paper cards. In addition, the new ticketing system is designed to accommodate additional public services.
- » **Cash-free environment:** Discontinuing the use of cash on the transport system will result in a safer travelling environment and faster boarding times.
- » **Better service:** Because customer usage data is held in a centralised database — and not on the smartcards themselves — transport operators will be able to use this information to provide better coverage, service and more flexible fares.
- » **Cost savings:** By reducing fraud and maintenance, increasing ridership and eliminating disposable cards, the new system will enable the state of Victoria to enjoy significant cost savings.

Results

Quicker, easier, cheaper public transport

myki is one ticketing system for all Victorians – for the very first time. Once it is rolled-out state-wide, it will make travel easier and fairer for all public transport users as you no longer have to work out which ticket to buy to reach your destination. myki will automatically select the best value fare for your journey regardless of your place of origin, destination or time of travel. The days of queuing at a train station to buy or validate a ticket are gone. You can 'top up' the value of your myki when it suits you – including online, at home.

Adding flexibility for the future

The new ticketing solution uses commercial 'off-the-shelf' products. Standard software applications and hardware provide a highly reliable, easy-to-maintain system, where changes can be made without difficulty. In addition, the use of standard applications eliminates dependency on the initial contractor and software supplier — allowing the Transport Ticketing Authority to choose from an extensive pool of qualified resources to support the system as needed.

Latest technology

The new smartcard puts Victoria among an elite group of states around the world that are transforming and future-proofing public transport. The system has sophisticated inbuilt capabilities that will allow it to meet future non-transit uses (as needed).

The new system enables travellers to access all modes of public transport using a single plastic smartcard. The rollout is scheduled to conclude in 2011 with 270 train stations, 480 trams and more than 2000 buses available for uses.

The 'myki' system is currently:

- » Operating on more than 2000 buses across Victoria
- » Supporting a myki card base of around 1.2 million cards
- » Processing around \$ 1,752,000 of fare sales and add values per week (\$ 10m/week in full operation)
- » Supported by Customer and Operator call centres;
- » Offering internet, phone, retail sales and myki machine top up facilities;
- » Providing system reporting to the Transport Ticketing Authority and operators

myki makes public transport easier to use, and ensures that you always travel on the cheapest available fare.

Better for the planet

myki will reduce the use of disposable paper tickets. Each myki smartcard will last approx. four years under normal use. The card readers, electronic gates and other equipment that are part of the myki ticketing system have demonstrated exceptional performance in high-volume transit and vandal-prone sites around the world. They are more resistant to wear and tear and therefore won't need to be replaced as often, saving money and waste.

Better planning

The new system will compile more detailed and meaningful data about public transport usage meaning the Victorian Government and its agencies will be able to identify areas of high growth demand and plan for future service delivery with greater accuracy than ever before. Transport operators, like bus companies, will have instant access to this new-generation information about route patronage including when, where and for how long people are using their services.

The Facts

When the roll-out is complete, myki will include:

- » 1,000 ticket vending machines
- » 12,200 fare payment machines
- » 2,500 bus driver consoles
- » 1,000 tram driver consoles
- » 1,500 hand held devices for public transport operator staff
- » 220 train station gates
- » 220 ticket office terminals
- » 900 retail terminals
- » Approx 4 million cards in circulation at end-state

About Keane

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877.88.KEANE | info@keane.com | www.keane.com

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