



# MULTOS Case Study

## The 'TaiwanMoney Card' - the world's first payment smart card to combine both transportation and shopping

*Southern Taiwanese carry one card for all their payment needs*

### Profile

In October 2005, Kaohsiung City Government (KCG), the second largest city in Taiwan, launched the Smart Transport Card Project, as part of its initiative to transform Kaohsiung into an e-City through the deployment of next-generation technologies. Using multiple application smartcards as part of a wider project to implement a cost-effective, high-performance and open standards-based computing and communications platform, the project aims to accelerate the city's economic development.

The KCG Smart Transport Card Project will introduce a truly integrated retail and transport payments solution, through extending open retail payments into the transport system (rather than trying to expand a closed transport card scheme into retail payments). The solution is at pilot stage of development with the first project (KCG in South Taiwan) going live in Q4 2005.



### Challenge

As part of the e-City initiative, KCG wanted to introduce a single smart card, with a single balance, to enable both retail and transport contactless payments thereby improving the efficiency and convenience of the city's transport system. In doing so, KCG was keen to avoid the hidden costs of card issuance (production, distribution, customer support), the management of the scheme (risk, clearing, settlement) or the legislation (for example, obtaining banking licenses).

### Solution snapshot

Using the TaiwanMoney Card, KCG was able to implement a workable system. As the world's first MasterCard OneSMART™ PayPass™ Chip Combi Card running on a dual-interface MULTOS chip, users benefit from a faster processing system to keep the transport network, with the huge volume of travellers, running smoothly.

Acting on behalf of seven cities in Southern Taiwan, KCG is the official project owner. Mondex Taiwan is operating the MPA host solution and clearing and settlement service, Cathay United Bank, E.Sun Bank and Bank of Kaohsiung will focus on issuance of the TaiwanMoney Card, as well as marketing and customer services, Acer is the systems integrator, device provider and project manager and China Engineering Consultants, Inc. (CECI) is in charge of programming the electronic transportation terminals.

### Business value

The MasterCard OneSMART™ transport solution offers benefits to all stakeholders. Transport operators will experience reduced operational costs, the banks will be able to offer enhanced value for their customers, while end users will be able to use a single card for all their retail and transport payments.

### How it works in practice

Rather than trying to expand a closed transport card scheme into retail payments, KCG and its partners have opted to extend an open retail payment scheme into their transport scheme. KCG has been able to adopt this approach in a cost-effective manner by partnering with local banks already performing many of the required processing functions in their daily business. As a result, KCG avoids the cost of duplicating these functions. For the banks, it is a cost-effective means of marketing to a new set of cardholders.

The project's ultimate goal is to use a single card, with a single balance, for both retail and transport contactless payments. The project is split into two main phases:

- Contactless TaiwanMoney validators will be implemented on all buses and the first TaiwanMoney top-up terminals will be deployed (contact-only).

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- An upgrade of retail POS terminals and the upgrade of consortium banks' retail POS to accept TaiwanMoney and/or MasterCard *PayPass*™. Finally, non-consortium banks' retail POS will be modified to accept MasterCard *PayPass*™ cards.



Two types of cards will be issued by MasterCard Taiwan members. The *Standalone Card* for children, non-local and non-banked customers, features a single payment brand (associated with transport payments in this market), utilising *OneSMART*™ pre-authorized and *PayPass*™ technology. The second card, *Payment Plus*, is aimed at existing cardholders and new account customers and will be a dual-branded card including MasterCard credit and/or debit. The TaiwanMoney Card is the first card to combine both transportation and shopping. It can also be used as an e-purse. This allows for Southern Taiwanese to carry one card for all their needs.

Kaohsiung City Mayor, Mr. Frank Hsieh said; "The project will revolutionise the way that Southern Taiwan's commuters use the transportation system. In addition to increased accessibility and convenience, the TaiwanMoney Card will bring numerous value-added advantages to the public."

## Trial run

In October 2005, KCG distributed 2,005 TaiwanMoney cards to the public as part of a trial run. The electronic ticketing system which uses an innovative contactless payment solution has added to the ease and convenience with which commuters pay for their transportation. It is hoped that the speed and efficiency of the MasterCard *PayPass* "tap-and-go" mode of contactless payment will encourage more consumers to take public transport.

Moreover, the new payment system also tracks traffic data and information about the condition of public vehicles to improve the transportation network and increase efficiency for passengers.

## A win-win situation

Since the system allows a single card to be generated for both retail and transport applications, all parties involved

have experienced vastly reduced operational costs. Moreover, transport operators can now implement the value added services offered by banks to increase card usage and generate new revenue, including e-coupon and loyalty programmes. Transport operators can also take advantage of improved payment security without the additional burden of acquiring 'bank-like' payment and fraud expertise.

As a flexible solution that allows multiple transport operators to be included under a single payment platform, end users are treated to the added convenience of card top-ups, customer support and replacement cards being issued from a single location. With just one card, end users can also enjoy the ability to link the transport functions and payments to existing accounts, without having to manage additional accounts/balances and having a single bank relationship to manage both transport and general payment functions.

Using the MULTOS platform, the open standards environment enables both proprietary and off-the-shelf applications to be added pre- or post-issuance. This encourages more competitive sourcing and global interoperability based on EMV, MULTOS ISO 14443 (Type A/B) contact-less technology and the *PayPass* global standard for contactless payments.



Banks are able to maintain an open payment system, make use of economies of scale and enhance cardholder value, while using their existing issuance process channels. New EMV technologies, such as contactless *PayPass*, can also be used to reduce card and terminal costs.

The introduction of the TaiwanMoney Card marks a significant milestone in the industry. In addition to bringing the latest smart card technology to Southern Taiwan, it will also provide mass transit users a higher level of security, convenience and service.