The Cross-Industry Approach to Smart Card Standards

In its simplest form, a smart card is a piece of plastic with an embedded microprocessor. However, smart cards today possess the processing power and functionality found in earlier personal computers — in a device that fits in a wallet, or a mobile phone. This form/functionality combination has attracted companies from many industries to deliver to their customers new products and services using multiple application smart cards.

According to the 1999 “Smart Card Systems” study completed by Ovum, an independent research and consulting company, smart card deployment is expected to grow to nearly 7 billion cards by year 2004 across 10 business sectors. This is more than five times the growth of 1999 card issuance levels. To achieve these exciting projections, standards must be established.

Although the technology has provided much of the attraction to smart cards, it is also one of the inhibitors to implementation. A variety of technologies to support smart card programs have emerged. Self-contained programs have enjoyed limited success using proprietary technology. For these multiple application programs to grow and become interoperable, however, global standards are required.

The development of global standards and promotion of those standards across industries is the role of GlobalPlatform.

Leading global companies representing the financial services and telecommunications industries, government sector and smart card enterprise have joined GlobalPlatform with the objective of developing interoperable solutions. Thereby enabling a company from one industry to deploy applications onto cards issued by a company in another industry.

To ensure the success of this effort, the GlobalPlatform Board of Directors has established a road map with clear objectives for the organization. Each of these objectives is achieved through the activities of four Committees: Card Infrastructure, Device Infrastructure, Systems Infrastructure and Business. The work of these committees establishes a holistic approach to smart card development and ensures that good technical ideas are balanced with rational business judgement.

As the work of GlobalPlatform grows and changes, it is critical that leading card issuing companies from a variety of industries participate in the standards development process.
Any application… any card… with any device

The use of multiple application smart cards is becoming more commonplace across business sectors. GlobalPlatform is working to establish an open smart card technology infrastructure that enables issuers from many industries to deploy and manage multiple applications through a variety of devices for their customers. Here are just a few examples from business sectors that have experienced smart card successes:

**BANKING**

**Business requirements:**
- Core payment functions of debit and credit
- Compatibility with international EMV and CIPS standards
- Ability to add and customize non-banking services

**Summary of Application:**
The banking business sector is consistently one of the most highly regulated industries in the world. As a result, banks are frequently challenged to offer their clients unique products. Multiple application smart cards are an ideal platform for these banks to offer highly customized service combinations based on an individual customer’s requirements. Such programs can include a loyalty program, access control, facility or home banking.

**Case Study/Example:**
American Express Blue was introduced in the United States with significant fanfare in 1999. The card is delivered with a “smart wallet” which contains an American Express Online Wallet and SmartCard Reader, buying on the web becomes faster, more convenient, and more secure.

**BUSINESS SECTOR — INTERNET**

**Business requirements:**
- Improve security / authentication
- Expeditious order entry process
- Simplify shopping experience

**Summary of Application:**
The internet provides an opportunity for buyers to connect with sellers anywhere in the world. Smart cards add value to online commerce by providing a means of portable, digital identification on the World Wide Web. The increased sense of trust provides consumers with greater confidence. Additionally, the internet establishes a flexible pipeline for service providers to deliver new applications to be loaded onto multiple application smart cards.

**Case Study/Example:**
France is considered a pioneer in chip development, and so it was no surprise that seven banks (BNP, Banques Populaires, Caisse d’Epargne, Crédit Lyonnais, La Poste, and Société Générale) together with Carte Bleue were among the first in the world to introduce the most advanced multiple application smart cards. By using Open Platform based on the Java computer language, the banks are free to choose any Java compatible operating system, together with any chip manufacturer and application developer. This provides the banks with maximum choice and promotes innovation in the market.

**TRAVEL & ENTERTAINMENT**

**Business requirements:**
- Incentivize travel expense management
- Ensure corporate negotiated discounts
- Simplify employee travel

**Summary of Application:**
Travel and Entertainment is a multi-billion dollar business sector that impacts most of us in our personal and business life. Convenience is crucial to travelers—convenient times, convenient locations, and convenient schedules. Smart cards have the opportunity to play a significant role in improving the convenience for the lives of travelers.

**Case Study/Example:**
New York based Siemens Corp. in conjunction with USBank, their corporate card provider, have issued multiple application smart cards to their traveling employees. In addition to using it for payment, employees are using the cards when checking into hotels and renting cars to identify and capture negotiated travel rates. Prior to issuing the cards, the company found that more than half of reservations made were not given the preferred rate, resulting in an overpayment of nearly US$1 million in just a six month period. The cards are saving Siemens money and providing business travelers with added convenience.

**RETAIL**

**BUSINESS SECTOR — RETAIL**

**Business requirements:**
- Assist in travel expense management
- Ensure corporate negotiated discounts
- Simplify employee travel

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**BUSINESS SECTOR — TRANSPORT**

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**GSM**

**Business requirements:**
- Secure access to mobile networks
- Store/retrieve information
- Enable value-added solutions

**Summary of Application:**
GSM is a smart card embedded in the handset of a GSM phone. The system allows each operator to keep control of security and payment aspects while facilitating cross border use of the mobile phones. Operators can offer various applications that can be downloaded through the wireless network, directly onto the SIM.

**Case Study/Example:**
The Subscriber Identity Module, or SIM, is a smart card embedded in the handset of a GSM phone. The system allows each operator to keep control of security and payment aspects while facilitating cross border use of the mobile phones. Operators can offer various applications that can be downloaded through the wireless network, directly onto the SIM.

**GOVERNMENT**

**Business requirements:**
- Secure access to mobile networks
- Store/retrieve information
- Enable value-added solutions

**Summary of Application:**
Like many companies in the private sector, governments are looking at smart cards as a solution that can be deployed with their customers. (i.e., taxpayers) as well as for internal efficiency. This results in potentially a great number of applications being distributed by government entities. Some of these applications will be deployed on government distributed cards. Other applications may be downloaded onto cards issued by companies in the private sector.

**Case Study/Example:**
The Octopus system in Hong Kong was implemented in 1998 on behalf of the city’s various public transport operators (train, bus, taxi and ferries). A network of 10,000 terminals was created, and to date over 8 million cards have been issued. The network is currently recording over 4 million transactions per day.

**HEALTHCARE**

**Business requirements:**
- Commercially available technology
- Private sector standardization
- Interoperability of applications

**Summary of Application:**
Seeking to develop mobile electronic services in Asia, Standard Chartered, Microsoft, and a group of mobile phone companies including Motorola, Ericsson, and Nokia jointly aimed to develop mobile electronic services, known as the Asia Mobile Electronic Services Alliance (AMESA). By combining the convenience and flexibility of the smart card and the mobile phone, AMESA gives the public access to multiple application smart cards that will enable a wide range of electronic services, including banking, Internet Commerce, bill payment, trading, and information, using smart card technology.

**Case Study/Example:**
The General Services Administration of the U.S. Federal Government has distributed multiple application smart cards to employees at their Willow Wood facility. The all-in-one smart card contains an ID badge with picture, digital signature and encoded security information, a calling card, a purchase and travel card with magnetic strip, biometric information for computer and building access, an airline pass for direct boarding at the gate, and a property pass. The card introduces several new technologies into GSA operations and showcases GSA’s vision of a multiple application smart card.

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Join the Cross-Industry Movement

Companies are joining GlobalPlatform with the objective of developing pragmatic, implementable solutions that will enable them to achieve business results. Meeting these objectives has been accelerated by the transfer of the Open Platform Card Specifications and Terminal Framework to GlobalPlatform. Already implemented in the financial services and telecommunications industries, the Open Platform allows the issuer of a smart card to continue to manage the card and applications following delivery to the cardholder. This creates a dynamic, yet controlled environment, in which the issuer can fully leverage their technology investment.

Through a streamlined process for developing standards, Members can participate and influence new specifications. Businesses participating in the development of these standards will realize significant benefits:

- provide a voice for your company in the development of multiple application smart card technology standards;
- establish working relationships with potential partners that provide complementary services to your products;
- ensure that the strategic direction your company has defined for smart cards is consistent with future versions of the standard;
- learn by interacting with other industry experts that may have different perspectives on the business.

The objectives of GlobalPlatform are supported by its global network of member organizations. Leading technology organizations actively participate in the work of GlobalPlatform which improves the quality of the output as well as the likelihood of adoption. Members realize that a standardized global smart card platform will enable:

- Issuers to select from competing card and operating system suppliers resulting in reduced start-up costs.
- Suppliers to focus R&D initiatives on truly value-added capabilities that will distinguish your products from the competition.
- Developers to expand their customer base by targeting applications that benefit multiple industries.

Membership is open to any organization with an interest in smart cards. Multiple membership levels have been defined to meet the budget and degree of participation companies expect. Membership materials, a list of current members and more information about the organization’s activities can be found at www.globalplatform.org. Specific questions can be directed to membership@globalplatform.org or +1-650-432-2486.