



Payments Innovation in the SE Asia: Through the Looking Glass

April 2004

Principal Analyst
Nick Holland
(001) 508-845-5403
nholland@mercatoradvisorygroup.com



Contributing Analyst
Laura Klink

Table of Contents

Introduction.....	3
1. <u>South East Asia Payment Mechanism Overview</u>	4
2. <u>Japan = Innovation?</u>	6
2.1. <u>Regulatory Environment</u>	6
2.2. <u>Telecommunication costs</u>	6
2.3. <u>Sony FeliCa</u>	8
2.3.1. <u>Suica</u>	9
2.3.2. <u>Edy Card</u>	10
2.3.3. <u>eLIO</u>	12
2.3.4. <u>Hong Kong Octopus Card</u>	12
2.4. <u>NTT DoCoMo – The Rise and Rise of the cellphone</u>	14
2.5. <u>JCB – Justifiably Called Brilliant?</u>	15
2.6. <u>Convergence</u>	16
3. <u>The Rest of SE Asia</u>	19
3.1. <u>China</u>	19
3.2. <u>Korea</u>	21
3.2.1. <u>Kookmin Bank</u>	21
3.2.2. <u>K-Cash</u>	22
3.2.3. <u>MYbi</u>	22
3.3. <u>Malaysia</u>	22
3.3.1. <u>MEPS Cash</u>	23
3.4. <u>Singapore</u>	24
3.4.1. <u>NETS CashCard</u>	24
3.4.2. <u>ez-link card</u>	24
3.5. <u>Taiwan</u>	24
3.5.1. <u>FISC-IC Card system</u>	25
3.5.2. <u>Mondex Taiwan</u>	25
3.6. <u>Unification & Standardization</u>	25
4. <u>Is the grass greener or is the looking glass tinted?</u>	26

Introduction

It has long been perceived that the SE Asia region is technologically light years ahead of the rest of the world. In certain respects, this may be so. The innovation powerhouses of Sony, Panasonic, Fujitsu, Samsung and many others are often the first to come up with products that in concept, seem to be truly futuristic. And indeed, these concepts invariably make it to market in the east far before they see the light of day in the US. It is no coincidence that the movie 'Bladerunner' depicted a future world very like that of modern day Tokyo. But, is our perception of SE Asia as technologically advanced correct, or is it just that the grass is greener?

This report will explore some of the more radical developments that have occurred in payment technologies in the SE Asia region and poses the question – would they be applicable over here? It is not intended to be an in depth analysis of the cultural, societal and political differences that make specific countries evolve different payment mechanisms, although we will explore the evolution of the current systems in Japan as a means of explaining why this particular country has taken such a divergent path from the payment systems of the rest of the world.

We will also have a look at other countries in the region that are leveraging technologies that are considered emerging in the US.

Consider the report a snapshot of where the SE Asia region is today and quite possibly where we could be tomorrow...

Highlights of this report include:

- Overview of the key centers of innovation in the SE Asia region and the key initiatives in place
- Analysis of the Japanese culture of Ikkai Barai and the reluctance to accept revolving credit
- A study of the use of the Sony FeliCa card and its importance as a facilitator of contactless transactions in the region
- Convergence of technologies – initiatives integrating NTT DoCoMo, FeliCa and JCB
- Analysis of individual e-payment mechanisms in Japan, China, South Korea, Malaysia, Singapore and Taiwan
- Reality check – is the SE Asia as technologically advanced as we believe?

1. South East Asia Payment Mechanism Overview

The countries that we will cover in this report are illustrated in Exhibit 1. They are included either for having programs in place that have reached a level of penetration and acceptance significantly beyond that in the US, or that they have programs that could currently be described as pioneering.

Exhibit 1 : SE Asia – Centers of Innovation



Looking at the presence of the two largest international card associations in the region gives us a snapshot of the level of acceptance of card payment mechanisms (Exhibit 2). The hub of card related activity is clearly around Japan and South Korea and looking at the penetration of Visa and MasterCard here, the acceptance of credit is clearly at a high in Korea, historically the country with the least governmental restriction of payment processes. The average spend per card in Korea is more than double the next closest country, Singapore (Exhibit 3)

The usage of MasterCard and Visa in Japan is relatively low in comparison. There are a handful of reasons for this. One significant one is that Japan has its own home-grown card association; JCB. Rather like American Express in the US, JCB is both issuer and acquirer for transactions and is the largest card

association in Japan. There are 49.6 million cardmembers, the vast majority of these in Japan itself. Other reasons for Japan's low credit card usage are covered in the next section.

Exhibit 2: Visa and MasterCard Presence in SE Asia (2003)

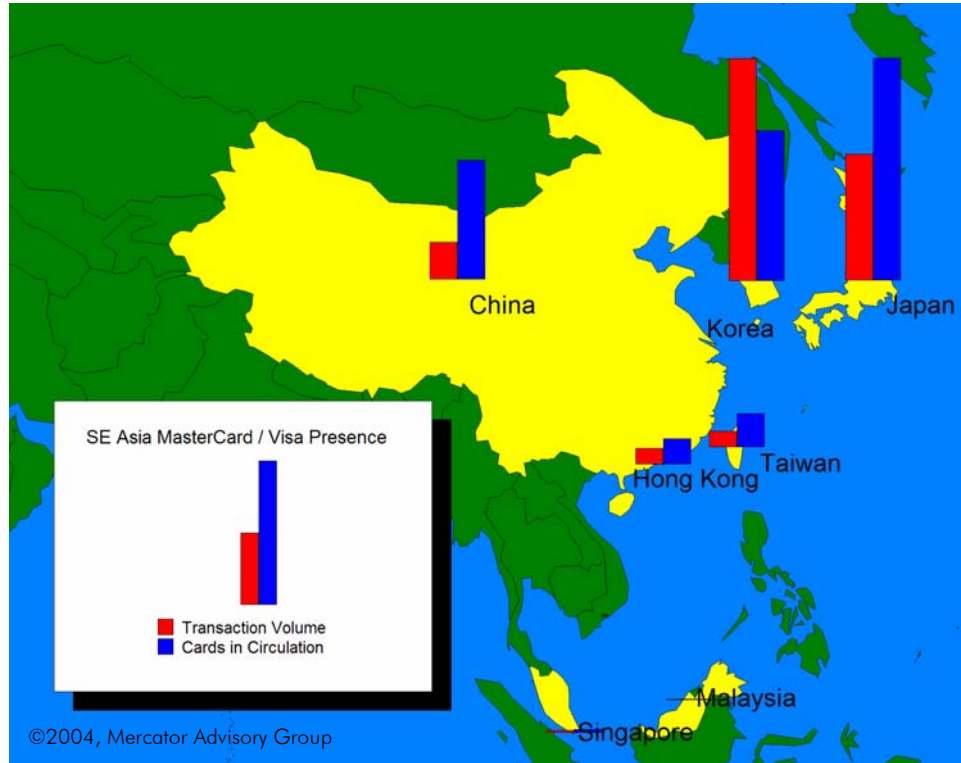


Exhibit 3: Average Spend per Cardholder

Country	Average Spend per Card
Korea	\$ 4,298
Singapore	\$ 2,056
Hong Kong	\$ 1,907
Japan	\$ 1,646
Malaysia	\$ 1,541
Taiwan	\$ 1,355
China	\$ 913

©2004, Mercator Advisory Group

Other countries in the region have also developed innovative card programs. The concepts and technologies for many of these can be seen to germinate in Japan, but the other factor that makes the region exciting to study is the immaturity of some of the markets. China is particularly fascinating in its own right and is

likely to be the subject of much interest over the next few years. Although not seen as an innovator, the sheer magnitude of the card related projects that they are implementing merits their inclusion in this report.

2. Japan = Innovation?

It is of no great surprise that Japan would be the country at the center of innovations in the payments industry in SE Asia. We have grown accustomed to breathtakingly original ideas made real in Japan. We expect cutting edge from Japan and it rarely disappoints. Japan has taken a different path in consumer payment technologies from the US and Western Europe and these differences have permeated through the rest of the region. Why this situation has happened deserves further scrutiny;

Statistics from the Bank of International Settlements show that the average transaction for which a card is used in Japan is likely to be three times as large as that in the US. Japanese cardholders are also much more likely to pay their entire bill each month, borrowing beyond the first statement period years in only about 10% of Japanese credit card transactions, while about 50% of Americans borrow each month. The payment landscape is changing in Japan towards a more western model, but there are still some significant reasons why card based credit hasn't progressed quite as fast as it could have.

2.1. Regulatory Environment

In Japan, banks were entirely barred from issuing credit cards until 1982. Not until 1992 were banks or their affiliates permitted to issue cards that are allowed revolving credit. And not until 2001 for banks permitted to issue cards that include a variety of other borrowing options typical of the industry. These restrictions have meant that until recently there has been something of a barrier to entry by the US card associations and any credit based card offerings in the country are relatively immature compared with the US or Europe. This isolation from external competition has spawned models of payment that are unique.

2.2. Telecommunication costs

An effective credit card system depends on mechanisms of authentication to prevent fraud. In the United States, there is real time authentication with the issuing bank at the time of transaction and this is made possible by telecommunication networks that operate extremely cheaply. Japan has telecommunication costs that are among the highest of any developed nation. These costs typically include charges on a per-call and per-minute basis, which is relatively unheard of in western countries. These high costs pose a significant obstacle in the prevention of fraudulent transactions, so again alternative routes were taken to circumvent this problem and to facilitate real time authentication.