



**STRATEGIC GROWTH PLANNING FOR SMART
GARD SOLUTION IN ASIA**

by

Mr. Surachai Ampaitanakorn

**A Final Report of the Six-Credit Course
CE 6998 - CE 6999 Project**

**Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Science
in Computer and Engineering Management
Assumption University**

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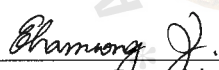
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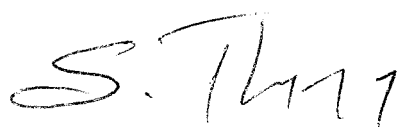
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ABSTRACT

SmartWay is the commercial brand name of Smart Card Solutions developed by SmartWay Sbn., Bhd. in Malaysia. With tremendous successes in its home country as a developer and leader in the field, SmartWay has started its extensive growth plan.

Based on its Feasibility Studies for Asia, there are lots of opportunities that SmartWay can realize through such business models, such indicators are such as; demands for Smart Card and automated Cash Handling Solutions. It will start entering each market with Project Sales that will automatically build a base of Smart Card holders, and strengthen its growth potential by partnering with strong local partners through Licensing Agreement.

SmartWay will provide those partners with its Smart Card Solutions, Backend Systems, On-line Card Center, and Revenue Collection Systems to extend usage of Smart Card among those cardholders. SmartWay Card will become another payment option bundled with Loyalty Program Solutions that will encourage cardholders to spend through the Cards and income will be generated to SmartWay and its partners from either the cardholders' spending or the fee for Loyalty Program charged from participating merchants. To do so, SmartWay will qualify strong local partners and encourage them to invest in the business, and SmartWay will act as a business consultant for the whole development at the first stage, then, it will reduce its role to only a Technical Consultant. Results from Performance Evaluation based on SmartWay's evaluation criteria will determine whether it will further invest in other markets.

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I. INTRODUCTION

1.1 Facts about Smart Card Technology

The Smart Card is one of the latest additions to the world of information technology. Similar in size to today's plastic payment card, the Smart Card has a microprocessor or memory chip embedded in it that, when coupled with a reader, has the processing power to serve many different applications. As an access-control device, Smart Cards make personal and business data available only to the appropriate users. Another application provides users with the ability to make a purchase or exchange value. Smart Cards provide data portability, security and convenience.

1.1.1 Memory vs. Microprocessor

Smart Cards come in two varieties: memory and microprocessor. Memory cards simply store data and can be viewed as a small floppy disk with optional security. A microprocessor card, on the other hand, can add, delete and manipulate information in its memory on the card. Similar to a miniature computer, a microprocessor card has an input/output port operating system and hard disk with built-in security features.

1.1.2 Contact vs. Contactless

Smart Cards have two different types of interfaces: contact and contactless. Contact Smart Cards are inserted into a Smart Card reader, making physical contact with the reader. However, contactless Smart Cards have an antenna embedded inside the card that enables communication with the reader without physical contact. A combi-card combines the two features with a very high level of security.

1.1.3 Smart Card History

The word 'Smart Card' was invented in France. While inventors in the U.S., Japan and Australia, were issued patents that pre-date those of Frenchman Roland

Moreno, it was the French who put up big money to push the technology. They did this in the 1970's, during a period of major national investment in modernizing the nation's technology infrastructure. The first company to make major R& D investment in the technology was Bull, which holds about 60 patents related to MP cards. Cards were original known as "Carte a memoire" or memory card. In 1980, when France began a major campaign to export the technology, the Roy Bright of the government's Marketing Organization Intelimatique coined the word "Smart Card."

Since then, the Smart Card has now been with us for 20 years. From their early limited applications in Europe, Smart Cards have spread to all continents and now address a wide variety of applications from electronic cash to Pay TV access, from mobile phone subscriber identification to personal health information. However despite their increasing visibility, Smart Cards cannot yet be called ubiquitous.

It is increasingly clear that Smart Cards are finding more and more useful, becoming more widespread as chip costs fall and as memory capacity and processing powers increase. A Smart Card nowadays contains a miniature microprocessor that gives it additional read-write and calculation capability. One of the key factors now driving this growth forward is the third generation of Smart Card operating systems: enabling multiple applications to coexist on a single card. Such single application cards are now being overtaken, however, by the next step: multi-application operating systems.

Particularly in Asia, where there is an increasing need for a more sophisticated payment system and little legacy infrastructure to integrate, there are opportunities to build innovative payment networks.

1.2 Background

This project has originally developed to market the multi-application Smart Card in other markets started in South Asian countries based on technology developed by SmartWay Network Sbn, Bhd in Malaysia. Acting in the role of Application Service Provider (ASP) for Payment, Loyalty Program, and other e-Service transactions via the Internet, it is capable of providing end-to-end Smart Card application, implementation and management consultancy in setting up the system for several business purposes with its 2 major software applications, which are:

- (1) BASIC2000 Smart Card engine for billing, clearing and settlement transactions, and
- (2) LOYALTY2000 loyalty engine for management of loyalty programs.

In brief, SmartWay provides in-depth Smart Card solutions that can be separated into two main phases, which are:

- (1) Front-end processing solution

The front-end processing deals specifically 'on the field' operations of the payment and loyalty system where data is transmitted through the usage of a Smart Card and its reader. These data will then be uploaded from the reader's system to the back-end engine, which are the BASIC2000 and LOYALTY2000.

- (2) Back-end engine solutions.

This phase will then allocate and process the proper sum used, the reward and the rightful payment between the system and the banks direct to the Internet. Users will then have the flexibility of reloading, upgrading or querying the system in real-time.

SmartWay currently expands its focus to several Smart Card Applications including front-end electronic payment system for bus, rail, tolling, trains, vehicle parking and university applications. Having been exposed to a big and comprehensive contactless Smart Card project in Malaysia, its team is well experienced at various technical, operational and management capability in any given Smart Card projects, particularly in areas of contactless applications. With such strong experiences in Smart Card applications related to transportation, loyalty program, access control, payphones, identity and secure PC, network and Internet access, it can be considered a specialist in this field.

1.2.1 SmartWay's Core Competency

SmartWay starts its business as a developer and provider of applications for revenue collection and Loyalty programs using Smart Card as a medium for users to gain access to the systems for those services. Considering its core competency, the following are its strengths that describe SmartWay.

- (1) Technology leader in Asia with strong research and development
- (2) Market dominant in Malaysia in this field
- (3) On-line Application Service Provider with complete application suite required for Smart Card implementation in any kind of on-line businesses

Based on such core competencies, SmartWay is in a very strong position in Malaysian market. Lots of funds invested mainly in Malaysia are to establish its business related to usage of Smart Cards. Instead of pursuing new opportunities, SmartWay would need to focus its investment on its core competencies. It needs to efficiently and effectively manage its product portfolio in its local market quite well.

According to its long-term goal to become a regional, and later, global brand of Smart Card, it needs to explore opportunities in other markets as well as maintaining its current successes in local market.

1.2.2 Range of Options in International Marketing

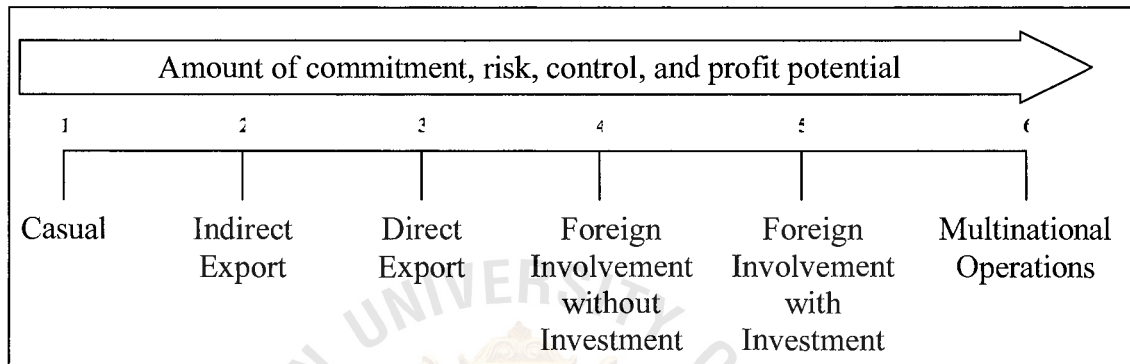


Figure 1.1. Degree of Involvement in International Marketing.

- (1) Casual: Not actively seeking international trade
- (2) Indirect Export: Sell to domestic customers, some of which sell internationally
- (3) Direct Export: The firm itself sells to international customers
- (4) License: Use funds of partners in host countries to establish business there
- (5) Joint Ventures: Use own funds to establish production facilities in host countries
- (6) Direct Investment: View the world as a set of markets and sources of supply

Alike other successful global players in any industry worldwide, SmartWay has moved along and will progress its market development plan according to the above, presented levels of involvement in International marketing activities.

Strongly successful in the first stage, it had started participating in tender requests in several markets surrounding Malaysia. An International marketing team has started presenting its products and services to prospects throughout this region. Its success in project sales to prospects in neighbor market will be a key indicator for each market if it has achieved the third stage or not.

However, as different markets have different philosophies in partnering with others, SmartWay will enter into any between the 2nd to the 4th levels of involvements as opportunities arise as long as its brand will gain exposures in those new markets. Within this medium term, SmartWay will expect to achieve the 4th level of involvement in all high potential markets first.

Evaluation will be executed and whether it should move forward will be subject to results from such evaluation in financial terms.

1.2.3 Market Development

As stated in Philip Kotler's Marketing Management, companies selling in global industries had no choice but to internationalize its operations. Smart Card business is one of the Global Industries, in which the strategic positions of competitors in major geographic or national markets are fundamentally affected by their overall global positions. This business plan will present step-by-step processes SmartWay will follow to win surrounding markets in the shortest possible period and at the lowest possible risks with considerations on constraints placed by the new economy's business concepts. SmartWay chose to manage its market development plan through alliance with local specialists in respective new markets it is entering. It is aiming at the establishment of involvement in business plan development in respective markets with its partners without major investment.

1.2.4 Current Business Portfolio

However, according to its long-term goals to become a regional brand and later a global brand, it needs to market its brand in other markets.

At the moment, SmartWay has its portions in its business portfolio as follows:

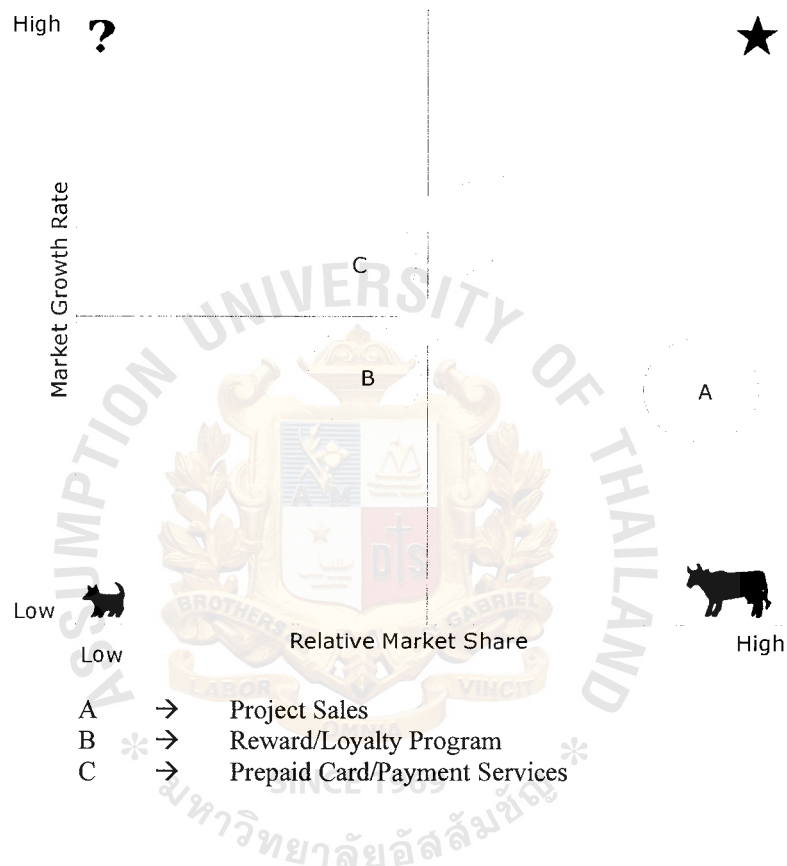


Figure 1.2. Business Portfolio.

(1) Project Sales (Cash Cow)

As presented above, initial investment of SmartWay has been fully covered by all its project sales according to its successes in several tender projects in Malaysia. With such success stories and its cost leadership built through economy of scale simply using its invested systems, and this portion of its product mix has eventually become its major source of

income. Main focus on this portion would be to maintain its leadership position by securing new projects and retain all existing projects on hand. Most of its initial investment has been covered by all those projects it has solicited and won, thus, in order to strengthen its position in the market, it still needs to invest in marketing activities in its own territory focusing on building its business according to its core competencies in the market it is very familiar with.

(2) Prepaid Card/Payment Services (Star)

In order to tap in the most money from its existing market and instead of developing entirely new products or services, SmartWay has decided to add new values to its existing accepted products. That is to “build” up the market and create more usage of its currently marketed cards by adding new features to the Smart Cards of its brand with simply a minor modification to its systems currently used to manage all transactions of Smart Card sold through those projects.

This new service becomes a value-added feature for its existing cards with plenty of distribution channels at all toll units countrywide without additional investment required most of its investment funds generated by its income from its Project Sales will mainly be spent to fueling growth for this portion of its product portfolio.

(3) Loyalty Program (Dog)

SmartWay has invested in this program and this portion of its business does not generate high enough income to cover its own initial investment. It is not yet successful in promoting this portion. Though it seems to be in the unprofitable portion, it is considered a future profitable one as success on

this portion will base mainly on other portions' successes, that is, the major requirement for success in marketing this typical service is the critical mass level of its Smart Card holder base. SmartWay's focus on building success in its Payment Services will also drive this portion to generate more income and even become the highest potential one in the long run. Thus, SmartWay will hold this portion for a period, and later, instead of divesting it, it will try to "build" as soon as its success factors have been achieved.

1.3 Project Objectives

This project is aimed at achieving SmartWay's main business objectives, which are as follows:

- (1) To build a brand name and franchise for prepaid Smart Card and loyalty programs
- (2) To promote the use of electronic payment systems and Smart Card products – where the main role is to provide the solutions and manage the transaction settlement and clearing process
- (3) To establish communities of Smart Card and loyalty where users interact for value added products and services
- (4) To become a major provider of Smart Card -related solutions in Asia region with a minimum of 20-per-cent market share in this region within 3 years
- (5) To establish a strong regional service network ready to expand to global market

Based on the above objectives, it would attempt to seek a licensee, which is a strong local company as its strategic partner. The brand name of SmartWay will be marketed extensively in Thailand and all other markets it is entering in order to conform to its business objectives.

This project proposal will include feasibility study and mainly cover all areas of marketing considerations to the extent that will successfully penetrate into the market and become a major provider of such service in the global market.

Most marketing considerations will basically base on a study of organizational prospects within the industries that SmartWay has very strong experiences and that are the most likely to implement such applications in their operations, which are such as: toll roads, bus/rail public transport, parking service, and payphone operations. It is also aiming at some other secondary markets, which includes: loyalty program, event and access ticketing, retail electronic purse, university Smart Card Scheme, and secure PC and network access operations.

1.4 Scope of the Project

This project mainly involves in business plans for SmartWay to achieve its business goals in penetrating into several other markets with the least possible level of risks in all manners, including financial, cultural, and political risks.

The project will mainly focus on solving problems related to marketing its brands through networks and alliances with local partners in the market nearby Malaysia. Based on practices of successful business models in the global market, this project will outline all practices in step-by-step fashion by establishing business and brands in other countries based on in-house technology development of SmartWay itself. This project will follow the third business objective as it will focus on building markets for Smart Cards within the region first. Opportunities related to global market expansion will not be included in this project study, too.

Though plenty of technological developments exist, product development and several commercial activities are simultaneously done together with its market development activities. This project will thoroughly involve its market development

plan only. None of its plan for the local market in Malaysia will be included in these project considerations.



II. STRATEGY FORMULATION

The development of business plan for this project is designed to present the penetration plan into regional markets in Asia as a base for a next step to achieve global market expansion.

In the new economy, the business world has become borderless and independent from geographical restrictions. Multinational companies have gradually expanded its coverage in the new markets, and during these days, there is only a single market for products in Global Industries. Technology oriented products like Smart Card is in the Global Industries, in which the strategic positions of competitors in major geographic or national markets are fundamentally affected by their overall global positions. Staying local is not a practice for developer of such products and services in this industry.

As presented in the Introduction section, SmartWay has reviewed its own position in its local market based on Boston Consulting Group Model to identify the need to expand and strategy to pursue in this stage. With such a model, the company has found that it needs to reserve its dollars to invest locally in an attempt to build up its profitable portions. With the Globalization concept that forces SmartWay to internationalize its products and services, it has no other choice but develop a new market started from the nearby ones, i.e. regional market, or else, it will also lose its position in the local market, too. Whether to go abroad is a key question for its growth plan, the following are key reasons it should pursue an international challenge:

- (1) It needs to counterattack the new entrants in this market, which are global players.
- (2) With the developed systems, entering into other market will increase profits to the company without needs for major investment. Rather, it also needs a

larger customer base in order that it can achieve the economy of scales from its current systems.

- (3) There are growth in the industries that will require SmartWay's technology, e.g. Toll projects, in other surrounding countries, as being an Asian player, it has some competitive advantage in terms of communication with surrounding countries compared to its competitors from other continents.
- (4) It needs to become independent from only a single market in Malaysia.

In deciding into which market it should grow, the company has decided to start its market development plan with the neighboring countries in Asia. In making such a decision, the following points are considered:

- (1) Neighbor countries are more understandable than other markets
- (2) Psychic Proximity, that is, language, laws and culture are not too diversified compared to other foreign countries.

However, the key indicator identifying when it should start in respective markets is the project sales opportunity as this portion of its business can start right away, and it will automatically have an opportunity to qualify local partners in respective markets.

Then, SmartWay will need to determine the best mode of entry to those markets considering options for International Marketing and level of its involvement in those respective markets. As presented in the Introduction section of this project, there are 3 levels of involvement that SmartWay needs to choose. In choosing the level of involvement in entering those markets, SmartWay will need to conduct feasibility study of each with regards to restrictions in Malaysia, too. SmartWay has decided that its market development plan will not be Direct Investment – the fifth level of involvement in foreign markets, however, the following are major reasons why it needs to start with a lower level of involvement at the time being.

- (1) SmartWay will need to focus on its core competencies, i.e. in continual Research and Development, market dominance in Malaysia, promoting its own products currently marketed in Malaysia with high potential for success. Thus, the majority of its investment will be committed in Malaysian market.
- (2) The true globalization requires far more investment and resources, higher level of risks, and longer periods to succeed, i.e. different opportunities and threats in each market, differences in cultural environments, barriers of entry, awareness building, expected competitions with strong direct and indirect competitors in those respective markets, legal and political considerations in entering those markets, etc.
- (3) Let local specialists in respective markets focus on their competencies, i.e. market knowledge, available customer base, legal and political knowledge, etc., in building acceptance and awareness of SmartWay's brand, and control benefits and losses from their investment will entitle more flexibility for its future plan.
- (4) Market information will be acquired from those respective markets at very low direct and indirect costs, and SmartWay will be in a position that can choose to additionally invest in only markets with high potential.
- (5) Malaysian legal restrictions on movement of investment across its border restricts SmartWay to move its investment out of the country, thus, the opportunity to grow its investment abroad will mainly rely on its success in other markets.
- (6) Legal and political environments in some markets obstruct multinational operations level of involvement.

Conducting the feasibility study in this project, SmartWay has considered 6 major areas of considerations, which include: Market, Economic, Technical, Operational, Schedule and Legal Feasibility Studies.

The market feasibility study will mainly consider the macro view of the region as a whole at this stage. Market potentiality and Demands for its project sales are major points of consideration to enter into those markets at the beginning point. Then the needs for other usage in each respective market will be brought into considerations to review potential for growth in that market. Technical feasibility study will describe how competent SmartWay's technology is. Operational feasibility study will present the points to be considered in qualifying partners in the new markets. Economic feasibility study will focus mainly on cost-benefit consideration to be used in making decisions on the level of involvement to be chosen in entering each market. Finally, the legal feasibility will focus on Malaysia's rules and regulations, and considerations to be reviewed while choosing level of involvement in each market based on allowed practices and strengths of prospective partners in their respective markets.

Once all types of feasibility studies have been completed, the level of involvement in each market will be selected. No matter which level of involvement SmartWay chooses for each market will be, the business model designed for its market development plan is rigid, however, different levels of involvement will impose some different constraints and restrictions rather than deviation on practices and business model. Focus will be placed on the usage of its existing systems to expand the user base of products under SmartWay's brand and using its technology.

The business model designed for this project will mainly focus on Licensing Agreement or Alliances of some form where SmartWay will involve in all business procedures and establishment without major investment. Revenues sharing with an up-

front fee will be the standard model used in entering those markets. The reasons to start with Asian countries first before entering global market are as follows:

- (1) All Asian countries are located nearby, thus, the costs of involvement in most activities are drastically lower.
- (2) Asian countries are countries with high growth rates in their populations, which indicate the high growth in market size.
- (3) SmartWay needs to generate income outside its home country first, which is the only way to transfer assets out of its home country of Malaysia.
- (4) It is a wise practice to test potentiality of each market before fully entering into all of them with direct investment. After a period, SmartWay will establish a database assisting in making further investment decision at lower risks involved.

Implementation procedures are expected to be different in each market, however, the designed model has a rigid format that SmartWay will strictly follow. Some differences may come from differences in environment, culture, politics, legal and several other factors. Such differences may cause some deviation in details of each procedure to be taken, while no matter how different each market it is entering will be, the start-up procedures will still be the same. That is, to set up the alliances, licensees, marketing partners to promote SmartWay brand in those respective markets with binding agreements for SmartWay to invest more once the performance of alliances can meet with its expectation. The implementation will practically end at the stage of Implementation Consultancy provided to allied partners, that is, to ensure the system can operate right away from the beginning for each project. However, the Implementation Plan will continuously be maintained and supported starting from the beginning date of the alliance onward. Technology transfer is the key point that will

link the allied partners to the company. Such transfer must be done as required at the beginning as soon as the ventures formed has been considered successful, the higher degree of technology transfer will be planned. Even the shifts in production, systems and development bases to those new markets may be possible.

Whether the company can achieve its goal is the fundamental evaluation for all types of business worldwide. It is the most important part in entering any business ventures anywhere. SmartWay will need to periodically evaluate its allied partners' performance, and be ready to respond to any changes that may require more involvement anytime with an expectation to achieve its corporate goals as previously stated. It needs to also ensure its performance by benchmarking its competitors either in each individual market or all of them as a whole in order to ensure achievement of its leadership position in this region.

This project will be concluded at the point where all evaluation procedures as planned are completed. At this stage, SmartWay will have enough information gathered to determine which of the participated markets has the highest potential for further growth, which one can help SmartWay achieve the cost leadership position, which ones are supposed to be focused, and it will also have income outside its home country to build up a larger business enough to pursue opportunities in the global market with an established brand name, a number of success stories and a solid list of client references.

III. FEASIBILITY STUDY

In planning for market penetration, SmartWay will need to review its own competencies in all aspects to ensure that all products and services it plans to market are competent and suitable for the market. Under this section of the study, the following reviews will be done:

- (1) Description of Potential Market
- (2) Available products and services of SmartWay

3.1 Market Feasibility Study

3.1.1 Potential Markets

The markets with high potential for success in marketing the prepaid Smart Card Solutions are those markets having high-volume, low-value prepayment transactions. This typically relates to industries where the demand for prepayment of electronic transactions would be prevalent.

As such, most markets being familiar with electronic transactions can be considered potential ones. The widespread of Internet usage and automatic payment for toll operations in all types of businesses have been strengthening the demand for Smart Card Solutions in almost every market worldwide.

With multi-application functionality, any project that choose Smart Card as its preferred mode of payment will also benefit from alliances with other partners, add more values for users, and even develop new revenue streams for their operations without need to limit their revenue sources to only its main operations anymore.

3.1.2 Demands for Products/Services

Studying the market potential for Smart Card Solutions in any market, SmartWay needs to start its operation with the business that will secure revenue streams for its

long-term operation first. Toll lanes are a typical business that will need such solution for its revenue collection, and the revenue streams from such operations will generate large enough income for the company to enter those markets. Therefore, it is a normal practice to consider growth of toll lanes in global market as a valid indicator of feasibility in each market it is entering.

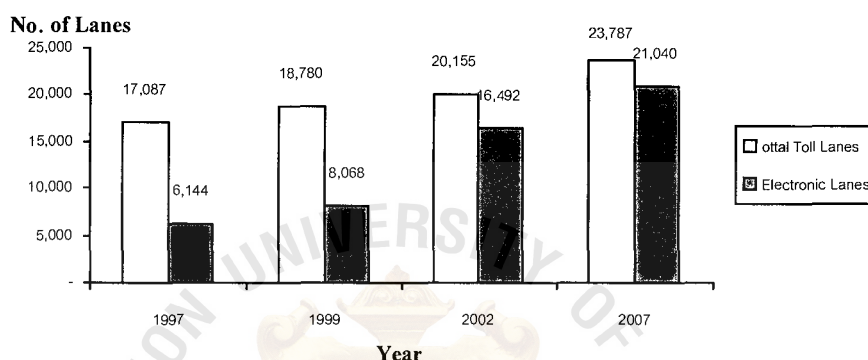


Figure 3.1. Global Toll Lanes (Transport Technology Publishing).

In 1997, only 35% of toll lanes handle electronic toll collection. It is projected that by 2007, 88% of global toll lanes will use electronic toll collection systems to handle toll fare payment and transactions. This trend represents the acceptance by toll operators to implement electronic toll collection to securely and efficiently handle toll revenue collection for their operations- compared to manual cash collection.

With expected, stable growth in the number of toll-lane construction projects, and the trend of rapid growth in usage of electronic revenue collection for those projects, there is expected a very high growth in demand for Smart Card Solution for them.

3.1.3 Projected Number of Smart Card and Tags for Electronic Tolling

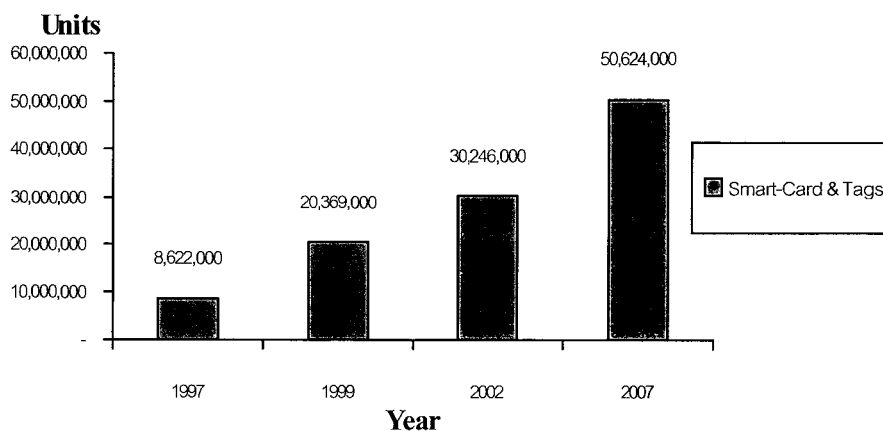


Figure 3.2. Projected Number of Smart Card (TTP).

In 1997, the number of electronic payment mediums used for toll payment is only 8.6 million units. In relation to this, it is projected that by 2007 there will be an estimated 51 million units of Smart Cards and electronic tags being used to pay for toll fare worldwide.

In terms of toll revenue collection by toll operators, the estimated accumulated 5 years toll revenue (2000 – 2005) by toll road operators for Malaysia, China, Thailand, Indonesia, the Philippines, the USA and Japan in USD52 billion.

Table 3.1. Projected 5-Years Toll Revenue Collection.

Market	USD Million
Malaysia	1,970
Thailand	1,230
Indonesia	700
South Africa	1,200
Philippines	750
Japan	11,000
China	7,800
USA	28,000

From the review of market, there is a huge potential of recurring revenues from these transactions by introducing electronic method of toll fare payment via Smart Card. Especially in the Asia Pacific region, the highest growth in terms of Smart Card and Tags used for Toll Applications is expected.

In 1997, the number of Smart Card and Tags used for electronic payment for tolling in Asia Pacific was close to 2 million units – lower than the North America and European markets. By 2002, it is projected to grow to 14 millions units, doubling the size for North America at .6 million units. By 2007, the Asia Pacific projection is expected to grow to 22.4 million units. In comparison to the rest of the world, Asia Pacific has the highest growth rate in terms of electronic payment medium for tolls compared to the rest of the world.

3.1.4 Growth in Smart Card Applications

The use of Smart Card for various applications is expected to grow strongly worldwide. The ever-increasing electronic commerce and the need for secure transaction and identification over the Internet is expected to start another high growth area for Smart Card. The Compounded Annual Growth Rate (CAGR) of 142% for PC

and Secure Internet Access Smart Card for the period 1997-2203 has reflected such high potential growth. See Table 3.2.

Transaction applications will also have a strong growth of CAGR 77% over the same period. Smart Card will continue to be used in many other applications and this offers a great opportunity for Smart Card system and application providers with the broadest range of capabilities. The following Table 3.2. – Global Smart Card Market Forecast illustrates the projected growth in Smart Card applications worldwide.

Table 3.2. Global Smart Card Market Forecast.

Applications	No. of Smart Card 1997	(Millions) 2003	CAGR
Payphones *	684	3,370	30%
Wireless / Mobile Devices	69	760	49%
Banking	49	690	55%
Loyalty *	22	320	56%
Health	16	210	54%
Pay TV	12	150	52%
Transportation *	8	240	77%
Gaming	2	70	78%
Access Control *	10	260	72%
Identity *	2	50	71%
PC, Network, Internet *	1	120	142%
Others	24	170	38%
Total	899	6,410	38%

3.1.5 Needs for Cash Handling Solutions

The main objective of any electronic payment system initiative is to reduce the cost of cash handling. Cash payment is still the predominant method of payment especially for low-value consumer transactions. According to a survey conducted by

Asia Banker Journal on the penetration of payment systems (Asian Banker Journal, Issue 21, 1999 “Special Report in Payment Systems”) the total amount of physical cash transactions in Asia Pacific countries for 1999 was estimated to be USD 817 billion. The survey covered Australia, Hong Kong, China, India, Indonesia, Japan, Malaysia, Korea, Thailand, Singapore, Taiwan and the Philippines.

Prepaid Smart Card electronic payment medium targets these physical cash transactions and the use of Smart Card has proven to be the best tool for consumers to electronically store money and make transactions (e-purse). Assuming that at least 5% of the cash transactions in these economies were spent on payment for transportation, this amounts to about USD41billion per annum.

The use of electronic payment systems as an alternative method to cash is expected to reduce the cost of handling physical cash in any economy. According to another survey conducted by the Asia Banker Journal and Currency Systems International Inc. in 1999, the ‘invisible’ cost to handling physical cash is significant. For example, it takes RM 0.21 to process every RM 1.00 cash transaction. Table 3. Cost of Handling Cash, provides a comparative analysis on the cost of handling cash for a few countries.

Table 3.3. Cost of Handling Cash.

Country	Cost of handling cash in local currency terms	Total visible, invisible and opportunity costs to support local currency in circulation per annum
Australia	A\$0.4 / A\$1.00	A\$7,937.46 million
Hong Kong	HK\$0.09 / HK\$1.00	HK\$7,001.60 million
Indonesia	280 rupiah/1,000 rupiah	6,125,858.76 million rupiah
Malaysia	RM0.21 / RM1.00	RM3,617.59 million
Philippines	15 pesos / 100 pesos	14,621.35 million pesos
Singapore	S\$0.065 / S\$1.00	S\$656.62 million
Thailand	THB 12 / THB100	THB 39,888.86 million

Maximizing the efficiency in handling cash will proportionately reduce cost components for physical cash handling. The cost components can be broken into:

- (1) Security and Cash in Transit (CIT) facilities
- (2) Leakage or pilferage
- (3) Interest rate lost (cost of handling) and storage
- (4) Insurance and fraud
- (5) Manpower for manual cash collection and management
- (6) Manual cash collection systems

The use of Smart Card to drive the deployment of prepaid electronic payment system and reduce the amount of physical cash provides ample opportunities for Smart Card application providers. The banking industry, businesses and service providers, who are involved in the management and handling of cash in their daily business operations, recognize the benefits, efficiency and security that electronic payment provides.

3.2 Technical Feasibility

SmartWay has technological capabilities to develop all types of Smart Cards which will be required by the market. In brief, the word “Smart Card” referred to will include the following three different meanings (in order of usage frequency):

- (1) IC card with ISO 7816 interface
- (2) Processor IC card
- (3) Personal identity token containing IC-s

Integrated Circuit(s) Card is an ID-1 type (specified in ISO 7810) card, into which has been inserted one or more integrated circuits. [ISO 7816]

- (1) IC cards can be devised by the capabilities of the chip:
- (2) Memory cards, which can just store data and have no data processing capabilities.
- (3) Wired Logic aka Intelligent Memory cards, which contain also some built-in logic, usually used to control the access to the memory of the card.
- (4) Processor cards, which contain memory and processor, have thus remarkable data processing capabilities. Very often the data processing power is used to encrypt/decrypt data, which makes this type of card very unique person identification token. Data processing permits also the dynamic storage management, which enables realization of flexible multifunctional card.

As the manufacturing process and most apparent functionality to ordinary user of all ISO IC cards are similar, the “smart card” denotes usually ISO IC card. When the security is the most important, memory card equals to magnetic stripe card and “smart” can be called only an encrypting device. As the number of system designers is small relative to ordinary users, the first meaning suppresses the second one.

With such technical capabilities and know-how, SmartWay is capable of joining in any tender projects throughout this region. Once the qualified allied partners are identified, SmartWay can assist those partners to fulfill all prospective customers' technical requirements, to implement the whole system in parts or turnkey, and to manage any technical development as required.

Qualified partners will need to have experiences in IT field, with strong reputation in delivering typical technical services to those group of prospects. With such a background, it is possible for SmartWay to develop training sessions to improve their capabilities to deliver as required by prospects.

3.3 Operational Feasibility

In order that SmartWay can accomplish its business goals, level of involvement considered for each market it is entering will rely on type of these allied partners, the following are the different levels of involvement reliant on types of allied partners:

- (1) System Integrator: this type of allied partners will require SmartWay to act as an Exporter of Smart Card, and licensor for its solutions
- (2) Card Manufacturer: SmartWay will only be involved as a licensor for its solutions only while those allied partners will act like an Original Equipment Manufacturer for SmartWay's brand of Smart Card solutions
- (3) System Developer: this typical allied partner will be the perfect type of partners for long-term establishment of Joint Venture or Direct Investment plan, especially in case they can operate at the required capabilities at lower costs than in other market or SmartWay's home country.
- (4) Distributor: this typical group of allied partner will only act as a sales agent for SmartWay to accomplish the role of direct exporter, however, this typical allied partner will be very helpful during the market entrance period

only, Smartway will strongly need to find other above stated types of partners to accomplish its goals. Using these typical partners, SmartWay will get into other markets easier and faster.

3.4 Legal Feasibility

Legal restriction on foreign currency control as imposed by Malaysian government seems to be the toughest part for SmartWay to consider its growth plan. It also restricted SmartWay to invest in other countries, and forced SmartWay to start its International operations based on a lower level of involvement at the beginning. Some examples of prospective countries, where SmartWay plans to enter, are such as: Thailand, Singapore, etc.

In Thailand, SmartWay cannot directly invest in establishing its own business, but needs to join with other partners who will hold a larger share on any venture it is investing. Personnel management in Thailand is more flexible as there are not many rules favoring workforces in Thailand; most of them are rather favorable for investors, especially foreign ones. The most dangerous point for SmartWay to start anything in Thailand is government's practices related to Copyright Laws, which it cannot appropriately enforce.

In Singapore, SmartWay has several investment options to choose as the country attempts to attract foreign investment, however, several rules and regulations imposed on an organizational citizen seems to be costly.

With the start-up involvement level as planned, SmartWay can easily enter all Asian markets but the difficult part will start when it attempts to increase its investment as most Asian countries do not sincerely promote free trade as they announced. Most of them have some sorts of trade barriers of some form imposed on practices of foreign

companies in doing business in their countries, and most countries have rules and regulations that favor its own citizens.

In order to ensure proper transit, SmartWay will need to hire a multinational legal consultant to take care of all legal issues in all markets it is entering rather than local ones to avoid conspiracy of those legal firms with its local partners.

3.5 Economic Feasibility

The last part of feasibility study but not the least important is the study of economic feasibility. This typical study is the final one that will indicate whether SmartWay should start any of its ventures in any country or not, whether to further pursue opportunities in those respective markets, and finally whether it should retreat from those markets or not.

As a result from its decision to develop new markets for SmartWay Cards, it needs to additionally invest in the preparation of its systems to be more stable and scalable.

Table 3.4. Invested Capital in Preparation for Its Planned Expansion.

	Year 1 USD	Year 2 USD	Year 3 USD	Year 4 USD	Year 5 USD	Total USD
Opening Net Value:						
FMS Hardware						
CCH System		94,737	84,211	73,684	63,158	
Motor Vehicles						
Office Renovation		7,105	6,316	5,526	4,737	
Office Equipment & PC		42,105	36,842	31,579	26,316	
Research & Development						
Furniture & Fittings		11,842	10,526	9,211	7,895	
Subtotal	0	155,789	137,895	120,000	102,106	
Additional during the Year:						
FMS Hardware						
CCH System	105,263					105,263
Motor Vehicles						
Office Renovation	7,895					7,895
Office Equipment & PC	52,632					52,632
Research & Development						
Furniture & Fittings	13,158					13,158
Subtotal	178,948	0	0	0	0	178,948
Depreciation during the year:						
FMS Hardware 20%						
CCH System 10%	10,526	10,526	10,526	10,526	10,526	52,632
Motor Vehicles 20%						
Office Renovation 10%	789	789	789	789	789	3,945
Office Equipment & PC 20%	10,526	10,526	10,526	10,526	10,526	52,632
Research & Development 10%						
Furniture & Fittings 10%	1,316	1,316	1,316	1,316	1,316	6,579
Subtotal	23,158	23,158	23,158	23,158	23,158	115,788
Accumulated Depreciation:						
FMS Hardware						
CCH System	10,526	21,053	31,579	42,105	52,632	
Motor Vehicles						
Office Renovation	789	1,578	2,367	3,156	3,945	
Office Equipment & PC	10,526	21,053	31,579	42,106	52,632	
Research & Development						
Furniture & Fittings	1,316	2,632	3,947	5,263	6,579	
Subtotal	23,158	46,315	69,473	92,630	115,788	
Net Value:						
FMS Hardware						
CCH System	94,737	84,210	73,684	63,158	52,632	
Motor Vehicles						
Office Renovation	7,106	6,317	5,528	4,739	3,950	
Office Equipment & PC	42,106	31,579	21,053	10,526	0	
Research & Development						
Furniture & Fittings	11,842	10,526	9,211	7,895	6,579	
Subtotal	155,791	132,633	109,476	86,318	63,161	

As previously presented, an extensive development of its systems is invested in SmartWay's preparation for its market development plan. Compatibility and Scalability are 2 major objectives for such investment in order that SmartWay can be ready to serve the larger base of cardholders from other countries in Asia.

As to be presented in section 4.2.2 Revenue Projection; revenue projection is the most important tool for economic feasibility study.

(1) Market Development Project as a Whole

By comparing the projected revenues from all markets against the capital investment as presented in Table 3.4, SmartWay will know its status on the invested capital. Each year, it needs to evaluate its results in financial terms to ensure that at the third year of its investment will end up with profitability. Based on values of projects and projected revenue streams in only a few countries, e.g. Thailand, Singapore, and Philippines, that it can secure now, it is in the position that can realize profits within 2 years after such investment.

(2) Considerations on Each Market

With its robust revenue models as to be presented in Section IV – SmartWay Business Model, SmartWay will receive continual revenues streams, which are highly secure and ongoing without major additional investment to be committed. By simply securing sales of a project in each market, it can ensure profitable position from its operations in any market.

The other key indicator for success level of SmartWay from its operations is the considerations on Return on Investment (ROI) analysis. As previously presented that SmartWay has started investing in preparation for the market development plan, the ROI should be higher than average in this field in order to compensate for the amount

invested as previously presented. With a high value of ROI expected, it can realize its positions as soon as it can secure a few projects in other countries. SmartWay will gradually reduce its ROI expectation when it can secure more sales of projects. However, considering the total amount of invested capital as previously presented, it needs to ensure Overall 5-year ROI (Overall Net Present Value/Overall Costs) of, a minimum, 1.5 during the first 3 years of its international operations.

For Break-Even Analysis, the following table will present that, with its planned business models, it can realize profits even on the first year of its overall operations. It only needs to secure sales of only one project each year to ensure profitable status for the whole period of five years. In the real situation, Sales can be realized within the first year only if SmartWay can identify strong partners in each of all respective markets, the local partner, who can secure sales of a project for SmartWay, will be the only tool to ensure a profitable state of its business. The offer of upfront benefits for local partners at around 30 per cent of the total project value, plus regular revenues of 15% from card transactions, which will be motivated by the client who bought the systems, will ease up SmartWay solicitation of strong partners in any market throughout this region.

Table 3.5. Income from Secured Sales of Projects in Thailand.

Projected Revenues from Systems Sales

Secured Project Sales in Thailand	USD
Toll Systems Sales	280,000
SmartCard Toll System Sales	1,052,632
Total Revenues from System Sales	1,332,632

Projected Costs on Systems Sales

Secured Project Sales in Thailand	USD
Costs of Sales on Toll System	196,000
Costs of Sales on SmartCard Toll System	736,842
Total Costs on Systems Sales	932,842

Net Profit on System Sales	399,790
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Projected Revenues from Revenue Sharing from Card Transactions (Pessimistic Assumption)

Revenues from Transactions in Thailand	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Expected transaction growth (%)		-	6%	7%	8%	9%
Total Projected Toll Transactions (USD)		1,184,210	1,255,263	1,343,131	1,450,581	1,581,134
Expected Card Take-up Rate (%)		15%	17%	19%	22%	23%
Total Revenue Collected via CSC (USD)		177,632	213,395	255,195	319,128	363,661
Total SmartWay's Revenues (4 %)		7,105	8,536	10,208	12,765	14,546
Shared revenues to local partners (15%)		1,066	1,280	1,531	1,915	2,182
Total SmartWay's Net Revenues		6,039	7,255	8,677	10,850	12,364

Net Income Started with Project Sales	399,790	6,039	7,255	8,677	10,850	12,364
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Note: Costs of Sales on Systems Sales includes 30% of revenues shared to local partners

Considering all types of involvement, whether SmartWay should enter any market the following considerations will need to be reviewed:

3.5.1 Direct and Indirect Export

This typical involvement will be very straightforward, each project it is involved in will have differences in details, thus, the calculation will follow normal calculation model for Cost-Benefit comparison and Return on Investment as usual. In this project, such figures and calculation models will not be presented for this typical involvement.

3.5.2 Licensing

SmartWay will attempt to be extensively involved in this model at the beginning in all targeted markets, as this is the model with the highest feasibility for revenue buildup without major investment required. Entering into any market with this model will also involve itself in the Direct and Indirect Export models at the beginning as it

needs to start with Project Sales in the first stage. Then, it needs to identify and solicit for potential partners' investment in setting up facilities to help service its clients based on License Agreement and Revenue Sharing.

Winning project sales in each country will be a key success factor for solicitation of potential partners as they will be entitled to a revenue stream from the project as soon as it starts joining with SmartWay.

3.5.3 Joint Venture

After the market entrance with License Agreement have been successful, SmartWay will need to identify all economic factors for further growth plan by entering into a Joint Venture deal in some markets. SmartWay will need to identify the market that is the most feasible to establish its affiliate network abroad. It needs to find some other market that can help increase its capability at lower overhead costs, such as:

- (1) Smart Card and Chips Manufacturing
- (2) Software Development
- (3) Card Center Operations

However, at the very first stage, SmartWay will need to avoid entering into the deal until the following criteria can be satisfied:

- (1) Revenues generated from its operations outside Malaysia have reached the level that it can invest in some venture with major share holding.
- (2) Information related to Smart Card business with appropriate key economic factor analysis for each market has been acquired.

With Licensing Agreement and Consultancy Services provided to partners, SmartWay will have opportunities to gain access to all economic factors analysis, and build up earnings in foreign currency as planned.

3.5.4 Direct Investment

Like the Joint Venture deal, SmartWay will never consider this type of involvement as its markets entrance model due to difficulties in transferring money out of Malaysian countries.



IV. SMARTWAY BUSINESS MODEL

4.1 Products and Services of SmartWay

4.1.1 Smart Card Solutions

The Smart Card systems that the strategic partner has were designed to support multi-application environment, on both contact and contactless interfaces. Smart Card can be used in running loyalty programs with both types of interfaces. There are several other applications that can use Smart Cards, which are: Toll Fare Payment, Bus Ticketing, Parking Fare Payment, Retail E-purse, Rail Ticketing Event and Access Ticketing, University Smart Card Scheme, and Secure PC and Internet Access

The front-end systems to these Smart Card modules can either be SmartWay's or interfaced to third party systems.

4.1.2 Backend Systems for Payment Settlement and Loyalty Programs

Ranges of its services of this type are as follows:

(1) **Billing Access and Settlement System (BASIC2000)**

The BASIC2000 is a settlement and clearing system for prepaid transactions. Some of its core functionalities are as follows:

- (a) Provide the settlement and clearance of prepaid Smart Card and online (web based) digital payment products
- (b) Operate in a multiple card-issuing environment. BASIC2000 has been designed to operate more than one type of prepaid card scheme at any point of time
- (c) Manage Smart Card payment scheme operating parameters
- (d) Transactions settlement and clearance bank instructions to service providers

- (e) Provide various forms of transaction reporting (web-based, centralised) access to service providers.

(2) Loyalty Program Hosting Server (LOYALTY2000)

LOYALTY2000 is the central management system for the control and reconciliation of loyalty transactions. Some of its core functionalities are as follows:

- (a) Handle more than one loyalty programs (multiple loyalty program schemes and operator) at any point of time
- (b) Manage valid terminals and cards parameters
- (c) Support all types of loyalty cards (Smart Card – both contract and contactless, magnetic stripe)
- (d) Support both physical store front and internet point of transactions i.e. loyalty programs for the shops and web merchants
- (e) Award points to customers based on sales transactions and other activities, schemes and points award rules
- (f) Facilitate the redemption of points for gifts and / or discounts
- (g) Provide a means of controlling loyalty card usage and transactions e.g. blacklisting, void, refunding, others
- (h) Perform financial settlements between the company and the clients for usage of the system

4.1.3 Online Card Center

The Card Center is an online, web based card center where Smart Card users can access and log in securely to conduct account inquiry and customer service transactions.

Among the services available:

- (1) View and print statement or transaction history profile

- (2) Conduct customer service inquiries such as reporting of lost card, apply for new cards, change of card particulars, file in complaints and even reach a customer service agent
- (3) Online card reloading functions and immediate blacklisting

Users can also access and conduct transactions securely at the Reward Points and Redemption Center:

- (1) Reviewing points balance and transaction history profile
- (2) Reviewing point redemption history
- (3) Transacting redemption of points for goods and services in the redemption catalogue
- (4) Transferring reward points to other card users.

4.1.4 Revenue Collection Systems

- (1) Integrated Toll Collection system (INTELLECTSTM)

INTELLECTSTM has an open and modular systems architecture providing the capabilities to automate the control and management of toll collection operations. The system can handle all types of toll payment methods i.e. manual, Smart Card, vouchers, electronic tags and others. It has been designed for all types of vehicle classification and toll operations mode (Open or close toll environment).

There are three tiers to the system namely the Lane Computer System, the Plaza System and HQ Computer System. The Plaza and HQ Computer System has been web enabled to allow for remote access via the Internet.

(2) Packing Access and Revenue Collection System (PARCS)

PARCS is an integrated closed parking solution, which was designed to efficiently manage and control the parking revenue collection operations. IT can handle both magnetic stripe tickets and Smart Card payment media.

The two components of PARCS are the Central Payment System and Central System. The Central Pay System handles the front end parking operations (lane peripherals, Smart Card devices, POS and auto-pay machines) and reconciles all monetary collection.

The Central System manages the back end operations such as daily and periodical collection reports, space management, bank in reporting, parameter management, and staff scheduling among others. The Central System can be accessed via the web to obtain real-time operational data.

4.2 Revenue Model

The revenues are mainly generated from one-time initial Consultancy Fee, recurring transactions and services fees and systems maintenance or support. Other revenues are derived from prepaid float and sales generated from loyalty program point redemption.

4.2.1 Price / Revenue Drivers

With SmartWay's revenue model, the established alliance will earn revenues from many sources. The following Table 4.1. provides the types of revenue drivers and their descriptions.

Table 4.1. Revenue Drivers.

Type	Description
Systems Sales	Smart Card, Toll, Parking, Bus, Rail, Door Access systems
Prepaid Smart Card Transaction Fees	Fee for the settlement of prepaid Smart Card transactions
Interest on Prepaid Float	Interest generated from prepaid floats
Loyalty Contribution Fees	Fee for operation and rewarding reward points to merchant customers
Point redemption Sales	Sales generated when loyalty members redeem their points to buy discounted priced products.

SmartWay has defined a robust business model that has the combination of both recurring earnings and high margin systems sales, which is expected to propel the growth of SmartWay business globally. This is made possible by the range of products and services that SmartWay is currently capable of implementing.

4.2.2 Revenue Projection

As SmartWay plan to start with the project sales in all markets it is entering, the following will present the calculation models used in projecting revenue from operations in each market. Basically, the total package of revenue stream will comprise the following sources:

- (1) Card Transactions on toll high-way projects
- (2) System Sales
- (3) Facilities Management Service Fees
- (4) E-Commerce Sales and Loyalty Contributions
 - (a) E-Commerce
 - (b) Loyalty Contribution Fee

- (5) Other Income
 - (a) Prepaid float
 - (b) Card Deposit
 - (c) Advertisement

The following will present the detailed assumption and calculation models for each item as stated above.

(1) Card Transactions on Toll Highway Operations

The projection of revenue streams to be presented are mainly from transactions incurred from Contactless Smart Cards(CSC) users on the toll highways. Most of assumptions on figures to be presented are based on the pattern of actual operations in Malaysia, which will be deviated in each specific market it is entering.

Revenue Projection are based on the following assumptions:

- (a) Service Fee of 4 per cent is to be charged from Highway Operators
- (b) Total projected toll transaction is T dollars on Year 1, and T is assumed to be USD 1 million in the calculation model presented below
- (c) Majority of Toll Highway users will normally use manual payment process (Cash Payment at toll), and will gradually switch to use CSC (CSC Take-up) instead

Calculation model will be presented on the next page:

Table 4.2. Calculation on Toll Highway Operations.

	Projection (Calculation Model)				
Items	Year 1	Year 2	Year 3	Year 4	Year 5
Expected transaction growth (%)	-	6%	7%	8%	9%
Total Projected Toll Transactions (USD)	T*	Tx1.06	Tx1.07	Tx1.08	Tx1.09
Expected Card Take-up Rate (%)	15%	17%	19%	22%	23%
Total Revenue Collected via CSC (USD)	Tx0.15	Tx1.06x0.17	Tx1.07x0.19	Tx1.08x0.22	Tx1.09x0.23
Total Card Transaction Fee (4 %)	Tx0.15x0.04	Tx1.06x0.17x0.04	Tx1.07x0.19x0.04	Tx1.08x0.22x0.04	Tx1.09x0.23x0.04

* Assume that T is equal to USD 1 million

	Projection (on Assumption)				
Items	Year 1	Year 2	Year 3	Year 4	Year 5
Expected transaction growth (%)	-	6%	7%	8%	9%
Total Projected Toll Transactions (USD)	1,000,000	1,060,000	1,134,200	1,224,936	1,335,180
Expected Card Take-up Rate (%)	15%	17%	19%	22%	23%
Total Revenue Collected via CSC (USD)	150,000	180,200	215,498	269,486	307,091
Total Card Transaction Fee (4 %)	6,000	7,208	8,620	10,779	12,284

(2) System Sales

The System Sales portion of income will contribute around 30 – 35 per cent of the total value of the system. No matter any kind of deals, e.g. License Agreement or Joint Venture deal, is committed, SmartWay will earn an average of 30 per cent of the total value of systems it is selling. The local company established in each country will have the costs on SmartWay's software of around 70% of the total value of sales. It is dependent on that local company's decision whether to add some mark up on them or forward some a part of its 30 percent to its clients or resellers.

For example, the following will present those alternatives:

*Estimated Value of the Project to be sold (Estimated by SmartWay):		1,000,000	USD
Cost of the Project to the local company (Charged by SmartWay):		700,000	USD
Alternatives for local company:			
(1)	If 10% markup is implemented, total sales value:	1,100,000	USD
(2)	If 10% discount is offered, total sales value:	900,000	USD
* Maintenance Agreement of 15 percent is inclusive in the Estimated Value of the Project to be sold. The Estimated Value as presented will be offered to all types of clients except for the case that SmartWay directly selling to its affiliate companies or partners in local countries.			
Maintenance Agreement is mandatory, as the system will need to be maintained and upgrade as soon as SmartWay decides to do so.			

Figure 4.1. The example of System Sales Calculation.

(3) Facilities Management Service (FMS) Fees

The Facilities Management Service Fees, or in short, FMS Fee will be charged instead in case that client prefers not to purchase the whole system right away. Whether this option will be offered to client or not is dependent on local companies' decision. SmartWay will require those partners to purchase in full from SmartWay. As such, SmartWay financial statements related to FMS will become similar to ones of the full purchase agreement as presented in the section number (b) System Sales.

In case that SmartWay needs to directly invest in the project, the whole project including hardware and software will be financed with financial institutions in respective countries. In such case, differences in practices in each country will not be covered in this project presentation.

The FMS Fee to be charged to customers will be calculated from the Annual Equivalent value of the original sales amount with normal interest rate in respective market plus 1 percent. The original sales amount will also have maintenance agreement included.

$$A = P \left(\frac{i(1+i)^n}{(1+i)^n - 1} \right)$$

or $A = P (A/P, i, n)$

While:

A is annual equivalent value

P is the original value of project sales estimated with MA included

i is the effective interest rate in respective market + **5%

n is the number of year extended, which is normally equal to 5 years

*Estimated Value of the Project to be sold (Estimated by SmartWay): 1,000,000 USD

Assume that local interest is 5 per cent, thus i will be equal to 5 + 5 = 10%

Thus, when converted to FMS Fee system,

Annual payment charged to client will be: $1,000,000 \times \left(\frac{10\%(1+10\%)^5}{(1+10\%)^5 - 1} \right)$ USD

263,800 USD

* Maintenance Agreement of 15 per cent is inclusive in the Estimated Value of the Project to be sold. The Estimated Value as presented will be offered to all types of clients except for the case that SmartWay directly selling to its affiliate companies or partners in local countries. Maintenance Agreement is mandatory as the system will need to be maintained and upgrade as soon as SmartWay decides to do so.

** 5 per cent is strongly recommended for the local company to impose on the proposed prices as it is intended to cover risks on fluctuation of interest rate in local market.

Figure 4.2. FMS Fees Calculation.

Alternatives for local company:

- (a) Fully invest in the whole system and offer FMS: This alternative is strongly recommended by SmartWay as the system can also be shared for other activities, thus, there will be other additional income on the invested system, if there is no dedicated server agreement with the client. Rather, this alternative will ensure local companies' commitment in the deals with SmartWay.
- (b) Finance the project and include 30% markup on each annual payment
- (4) E-Commerce, Loyalty Contributions and Advertisement

When there is a project sold in any market, the cardholder base will be established. The local companies will be responsible for extending usage of SmartWay's card among users by building up the base of allied e-Commerce partners. SmartWay's revenue models were designed to facilitate possibilities for building up new revenue sources. The following will be the table showing overall Projected Revenues for these items.

Table 4.3. Calculation for E-Commerce, Loyalty & Advertisement.

Item	Year 1 USD	Year 2 USD	Year 3 USD	Year 4 USD	Year 5 USD
E-Commerce	891,000	2,049,300	3,535,043	5,691,418	8,835,927
Loyalty Contribution Fee	45,820	54,068	63,800	75,284	88,835
Advertising on Portal	89,100	204,930	353,504	569,142	883,593
Subtotal	1,025,920	2,308,298	3,952,347	6,335,844	9,808,355
-					
Revenue to Merchants / Suppliers	712,800	1,639,440	2,828,034	4,553,135	7,068,742
E-Commerce Bank Charge (Credit Card)	22,275	51,233	88,376	142,285	220,898
Loyalty Advertising, Marketing & Promotion (AMP)	36,656	43,254	51,040	60,227	71,068
Subtotal	771,731	1,733,927	2,967,450	4,755,647	7,360,708
-	254,189	574,371	984,897	1,580,197	2,447,647
-					
Currency Exchange at THB 43 to USD 1					
Number of SmartWay members	50,000	100,000	150,000	210,000	283,500
Estimated Growth Rate of member base	100%	50%	40%	35%	20%
Number of Active accounts (45%)	22,500	45,000	67,500	94,500	127,575
Number of Inactiver accounts (55%)	27,500	55,000	82,500	115,500	155,925
E-Commerce (derived from points redemption)	891,000	2,049,300	3,535,043	5,691,418	8,835,927
- 30% of total active SmartWay users	6,750	13,500	20,250	28,350	38,273
- Annual transaction value per member	132	152	175	201	231
- Growth rate on transaction value per member	15%	15%	15%	15%	15%
E-Commerce Gross Margin	20%	20%	20%	20%	20%
E-Commerce Bank Charge (Credit Card)	2.50%	2.50%	2.50%	2.50%	2.50%
Advertising Revenue As Percentage of Online Sales	10%	10%	10%	10%	10%

Note: All figures as presented in the above table are roughly estimated based on SmartWay experiences in Malaysia, and trend study by local partner in Thailand. Those figures presented are used only for the purpose of calculation models demonstration. As to be recommended at the end of this project report, SmartWay, its clients and local partners will need to join together in serious studies of actual trends in each market based on facts and figures gathered from the market survey.

By bundling new usage into the Cards, they will eventually become a comprehensive revenue-generating tool for all parties involved, such additional revenue streams are as following:

(a) E-Commerce Transactions

These typical transactions will include, for example, the following types of transactions:

- (1) Purchases through kiosks or booths with Card Reader installed.
- (2) Purchases on SmartWay E-Commerce Web Sites.

- (3) Purchases on SmartWay's participating E-Commerce Web Site partners.

All product purchased through the Card usage will be charged at the following rate:

- (1) 0.5 percent of total billing amount will be charged from merchants with low profit margin, e.g. groceries, fuel, IT products, etc.
- (2) 1.5 percent of total billing amount will be charged merchants with high profit margin, e.g. restaurant, fashion clothing, etc.

For the case when Cardholders make their point redemption from SmartWay's local partners, payment to those suppliers will be made from the AMP Pool at listed prices of redeemed products. Different percentage will be allocated to different types of suppliers as such deals will be based on case-by-case basis, however, at the beginning stage, SmartWay will mainly focus on sales of product items with high margin.

The percentage of sales as stated above will be converted to point values accumulated in the Card that makes those purchases, and forwarded to the budget reserved for local partners' Advertising, Marketing and Promotion, or the so-called "AMP Pool." (Detailed discussion will be present in the following topic, i.e. Loyalty Contributions).

Though the E-Commerce Concept of merchandising seems not to be very successful in the past, the implementation of e-Commerce revenue model as above stated are expected to be very successful with

the Smart Card deployed. Key success factors for these typical models are:

- (1) Smart Card has good enough security: For example, from NECTEC's survey on reasons obstructing e-Commerce Success, untrustworthy security and payment system on e-Transaction are among the highest concerns of people.
- (2) Prepayment Concept: Consumers have some needs to purchase prepaid cards, the money value will be stored in the Card, which will be carried anywhere. This typical concept will encourage impulse purchases because their purchasing power at the points of purchases is increased by the money value stored on the Cards they are holding at the purchase spots.
- (3) Loyalty program bundled in the Cards: With strong loyalty program, it will encourage them to switch their mode of spending on other items to the Cards in order to entitle them to attractive rewards.

Those success factors are apparently attributes of the Cards by nature of revenue models designed by SmartWay, which have been proven true in Malaysian market. It is highly possible that behaviors of most Asian people are quite close to each other, and therefore, it is expected that result will not be significantly deviated in each market throughout Asia, especially ones in South Asia.

(b) Loyalty Contributions

For this portion of Revenue Stream, the model for calculating is based on the following concepts:

- (1) All spending through the Card will be charged at 0.5 to 1.5 percent as above stated in the previous topic, e-Commerce transactions.
- (2) 80 percent of the amount charged will be transferred into AMP Pool, which will be reserved for point redemption by cardholders in making purchases through SmartWay's e-Commerce channels.
- (3) The remainder of 20 percent will become contributions from loyalty program to the local partners.
- (4) Point redemption rate will be determined in terms of dollar value per point, and redemption can be made by simply transferring the points stored in the Cards through the Internet to be processed by SmartWay's backend engine (LOYALTY2000).
- (5) Then, points remained on the Card will be adjusted based on redemption made, and payment will be directly transferred from AMP Pool to merchant's bank account in exchange for the products/services redeemed by Cardholders.

The following will be the calculation model demonstration in table format with some items related to the previous Table, which presents the calculation model for revenue streams from e-Commerce Transactions.

Table 4.4. Loyalty Contributions Calculation.

	Item	Year 1 USD	Year 2 USD	Year 3 USD	Year 4 USD	Year 5 USD
	Active SmartWay member (45% of total members)					
[n]	- Annual transaction value per member	158	186	220	260	306
	- Annual Growth on Spending	18%	18%	18%	18%	18%
[n] x [d] = [o]	Annual expenditure by active members at participating merchants (45% of total members)	3,555,000	4,194,900	4,949,982	5,840,979	6,892,355
40% x [o] x 1.5% = [p]	- Merchants with High Margin (40%), Contribution of 1.5%	21,330	25,169	29,700	35,046	41,354
60% x [o] x 0.5% = [r]	- Merchants with Low Margin (60%), Contribution of 0.5%	7,110	8,390	9,900	11,682	13,785
[p]+[r] = [s]	Loyal contribution from participating merchant per dollar spent (100%)	28,440	33,559	39,600	46,728	55,139
80% x [s] = [t]	Transfer to AMP Pool (80% of loyalty contribution)	22,752	26,847	31,680	37,382	44,111
	Inactive SmartWay member (55%)					
[u]	- Annual transaction value per member	79	93	110	130	153
	- Annual Growth on Spending	18%	18%	18%	18%	18%
[e] x [u] = [v]	Annual expenditure by inactive members at participating merchants (55% of total members)	2,172,500	2,563,550	3,024,989	3,569,487	4,211,995
40% x [v] x 1.5% = [x]	- Merchants with High Margin (40%), Contribution of 1.5%	13,035	15,381	18,150	21,417	25,272
60% x [v] x 0.5% = [y]	- Merchants with Low Margin (60%), Contribution of 0.5%	4,345	5,127	6,050	7,139	8,424
[x]+[y] = [z]	Loyal contribution from participating merchant per dollar spent (100%)	17,380	20,508	24,200	28,556	33,696
80% x [z] = [aa]	Transfer to AMP Pool (80% of loyalty contribution)	13,904	16,407	19,360	22,845	26,957
[s] + [z] = [bb]	Total Loyalty Contribution	45,820	54,068	63,800	75,284	88,835
[t] + [aa] = [cc]	Total AMP pool (AMP Cost)	36,656	43,254	51,040	60,227	71,068

Note: All figures as presented in the above table are roughly estimated based on SmartWay experiences in Malaysia, and trend study by local partner in Thailand. Those figures presented are used only for the purpose of calculation models demonstration. As to be recommended at the end of this project report, SmartWay, its clients and local partners will need to join together in serious studies of actual trends in each market based on facts and figures gathered from the market survey.

(5) Other Income

This part will present revenue projection for other revenue streams, which are considered extra benefits that SmartWay's local partners can realize if applicable to their cases. The following are types of revenues stream, which are not considered an attribute of the Smart Card project,

however, local partners in some markets may have service networks that will entitle them to such extra benefits.

Normally, it is a rare case that the first 2 items can be considered as revenue sources for local partners because most toll operators will consider this part as their additional income without serious additional efforts. Calculation model demonstration for both sources will not be presented.

Such revenue streams are from 3 sources, which are:

(a) Prepaid Balance Float

In case local partners can take over the role of revenue collector for some or all of its projects sold, they will be entitled to revenues from the float derived from prepayment of Cardholders, too.

(b) Card Deposit

Similar to the revenues from Prepaid Balance Float (PBF), only local partners who can take over the role of revenue collector for some or all of its project sold will be entitled to revenues from this portion. The prepayment will be collected in advance of actual CSC usage, thus, in addition to the PBF, local partners will also have revenues from the float on deposits of pre-collected value of all cards.

(c) Advertisement

Local partners will also be entitled to revenues from advertising sales. There are 2 types of advertising sales they can work on, which are:

- (1) Advertising on Card: Revenues from advertising on Card will be calculated by simply multiplying the advertisement rate by the number of each lot of cards to be issued.

- (2) Advertising on portal site, at which Cardholders need to regularly visit to process their Card Transactions and Loyalty Program.

Normally, toll operators will have full control over sales of advertising on card to be issued, however, as it is deviated from their normal operations, instead of setting up a team to manage this revenue sources, they may delegate responsibilities to SmartWay's local partners instead, and request for a certain percentage of income from this sources.

As those local partners will have to take care of the Portal site, where Cardholders will regularly visit to process their Card transactions and Loyalty Program, they will need to set up teams to be responsible for sales of the advertising spaces on those portal site, newsletters, magazines, etc. They will then need to reach out to meet with prospective media buyers on regular basis; thus, it would be easier and more effective for toll operators to delegate this task to SmartWay's partners instead of managing it themselves.

As there are huge differences in advertising rate setup in respective countries, revenue projection will not be presented in details.

4.3 Basic Requirements for Market Development Plan

With the greatest success as a major Smart Card Solution Provider using the Application Service Provider (ASP) business model in Malaysia, SmartWay has started its expansion plan with the Product Development concept at the beginning, that is, it first started with a single application BASIC2000, and then, has created new

application, i.e. LOYALTY2000, to satisfy other business needs of its current client in Malaysia.

With the increasing acceptance of outsourcing concept worldwide, it is possible for SmartWay to start its Market Development as its expansion plan to regional market. With the ASP business model, it is easier for its prospective clients to start using Smart Card Solutions in their business operation with minimum investment required.

However, in order to achieve in its Market Development plan, SmartWay will need to ensure that it can meet the following requirements, which are:

- (1) High Availability
 - (a) As the Smart Card Solutions are to be implemented in its prospective clients' regular business operations, the system must be stably available all the time.
 - (b) A minimum of fault-tolerant level of its system availability is required.
 - (c) Cross-country connectivity is also needed to consider in its expansion plan.
- (2) Standards Compatibility
 - (a) Its Systems must be able to operate with most or even all types of Operating Systems.
 - (b) The more markets it is entering, the more types of Operating Systems it needs to involve with, thus, it needs to develop its system to be highly compatible.
- (3) Flexibility for Customization
 - (a) Entering the new market, there will be several new requirements, which are different from what it can currently meet with.

- (b) Further customization on its System will be unavoidable in order to satisfy its prospective clients.

(4) Business Alliances

- (a) Alike all electronic business, it has very high potential for growth without geographic limitation.
- (b) However, it is less risky and more possible to achieve its goals growing through alliances with strong partners in all markets it is entering.
- (c) According to Alliance Concept, it will have to set up typical standard policies for all its strategic partners to strictly conform with in order to maintain high level of satisfaction among its prospective clients in all markets.



V. IMPLEMENTATION PLAN

SmartWay has started by forming a Strategic Alliance Planning Team, who will be responsible for the study of each new market, partners solicitation planning, requirements gathering, and consultancy for implementation plan. As soon as the establishment has completed with its selected partners, this team will also need to determine the level of involvement that SmartWay is entering into for each deal, and ensure smooth transition from business development to technical consultant stage.

In the market development plan, SmartWay will follow these steps:

- (1) Competitive Analysis for each market it is entering
- (2) Qualifying potential strategic partners
- (3) Solicitation for Alliances
- (4) Foundation of Alliance
- (5) Systems Customization
- (6) Implementation consultancy
- (7) Technology Transfer and Technical Supports

Details for each step are as follows:

5.1 Competitive Analysis in Each Market

SmartWay needs to be well prepared with the comparison between itself and major competitors in global and regional scales as previously mentioned.

In addition, it is needed to be ready for further information gathering about some other Smart Card Solution Providers, which have already entered each market as much as it can. However, such comparison will strongly be required only if they are major ones with its own research and development.

Normally, though such information are strongly required in most cases, it is unlikely that SmartWay will need to present it on its very first meetings with potential partners or prospective clients. As to be presented in the Partners Solicitation section of this report, SmartWay will only need to set a few high-level meetings before actual solicitation step is started. SmartWay will focus its comparison on only ones that its partners or prospective customers are using as references.

In order to complete this part very well, SmartWay will also start with approaching its prospective clients, which are such as: Toll Road, Rail Service, Card Phone, and Loyalty Program Operators. At this stage, the outcomes expected are as follows:

- (1) Review of market potential and initial prospect list for strategic partners to work on
- (2) List of competitors who are used as references in the market
- (3) Available technology in each market

5.2 Qualifying Strategic Partners

Instead of establishing its own companies in all markets it plans to enter, SmartWay would adopt the Alliance Concept for its growth plan. There are a number of reasons as follows:

- (1) Lower Risks: As it doesn't have expertise in all markets it is entering, it is too risky to invest in everything on its own costs. It is also very difficult and too costly to find good personnel in the field.
- (2) Faster Result: Partnering with a certain partner with strong reputation in the market, SmartWay can gain acceptance within a shorter period. Alliance will also open the opportunity for SmartWay to focus on entering more markets instead.

- (3) Minimum Investment: Investment in market development will be kept to only a minimal level as most activities will be performed by those partners. SmartWay will take its roles as a Business Consultant at the setting up stage, and later, will reduce its involvement to only a Technical Consultant for all its partners on royalty fee charged for such services.
- (4) Highly Flexible: Once it is accepted among most major prospective customers, SmartWay will automatically have more alternatives for its further moves in each market. It can enter into several other kinds of deals later.

On the other hand, the alliance concept also has some drawbacks compared to self-investment, which are such as:

- (1) Smaller Returns: In compensating for lower risk level and faster returns, the company will also have to adopt the lower returns as most income will go to the partners in each market.
- (2) Dependability on Partners: Without its own investment and activities, it is very likely that SmartWay's business in each market it is entering will become dependable on those partners. Negotiations will have to focus on this viewpoint.
- (3) Transfer of Know-how: The riskiest part of this typical kind of deal will be the risk in violation of its copyrights. As it is likely that SmartWay will need to work with its partners as a same team, most trade secrets and technology know-how will be shared among each other. With such a high degree of dependability, SmartWay will have to adopt higher risks in this point. However, with careful consideration in qualifying partners, such risks can also be reduced to acceptable levels.

- (4) In qualifying potential partners with lowest possible level of risks, SmartWay will start approaching prospective partners based on the following criteria:
- (5) Financially Strong:
 - (a) Well-established companies or group of companies in each market
 - (b) Most should be public companies listed in the Stock Exchange of each market
- (6) Trustworthy:
 - (a) Strong reputation and experiences with all high potential prospective clients
 - (b) Successful in its field
- (7) Experiences in Information Technology Field

It is likely that most of the highly reputable public companies in any country will be the very first group of companies that explore new opportunities in Information technology

5.3 Alliance Solicitation

Once qualified prospective partners are identified, SmartWay will start soliciting each of them from the most preferred ones. The following are steps to be taken:

- (1) High-level Meetings:
 - (a) These typical meetings will be dedicated for gathering prospective partners' business requirements and information
 - (b) The expected outcomes are their requirements and expectations from the technology and alliance, identification of potential competitors, and expected values from alliances

- (c) Possible alternative alliance deals will also need to be identified in order that all business values presentation will be right to the point of their interests

(2) Business Value Presentation

- (a) Such presentation will be mostly based on Business Values prospective partners will be entitled to in allying with SmartWay, size of the deal, revenue models, etc.
- (b) Technical discussion will be kept to a minimal level at this stage as it is impossible to settle all their requirements without in-depth study of their current Systems, if available
- (c) Basic technical presentation will be provided just to ensure their understanding of its business values is the main objective of such presentation
- (d) Most alternative alliance deals identified as preferred ones will be included in the presentation with expected returns on their investment. However, those presentations should be done with roughly estimated amounts of investment

(3) Technical Requirements Gathering

- (a) After business discussions are concluded and those prospective partners are ready to move forward, this stage will be conducted
- (b) The expected outcome from this stage is the detailed information about its current main Systems, which will relate to the new system.

(4) Technical Presentation

- (a) Basic idea of technical presentation is to ensure that prospective partners will be capable of all development required for the project

- (b) Demonstration of the Systems and how it works with full details are strongly required at this stage
 - (c) Most expected questions must be pre-identified so that a fast conclusion can be expected
- (5) Alliance Condition Discussion
 - (a) Up to this stage, SmartWay will need to be very flexible to adjust and modify some details of alliance terms and conditions
 - (b) Efforts should be spent on assuring all previously mentioned advantages, and removal of those drawbacks from the deal

5.4 Foundation of Alliance

This stage is the most important one, as all details of previous discussion must be put into a written format.

- (1) Arrangement for Legal Contracts:
 - (a) Most efforts are to be spent on assuring of enforcement of all legal contracts to be signed with strategic partners
 - (b) It is strongly required that SmartWay will need to consult with its multi-national legal consultant with experiences in the market it is entering
 - (c) Though such arrangement may be very costly, it is unavoidable as it cannot rely on less costly local legal firms especially when its strategic partner is a large group of companies in respective markets
- (2) Initial Investment by Strategic partners
 - (a) In order to ensure success, SmartWay will need to convince the highest proportion of investment committed by strategic partner

- (b) The more the initial investment it plans to make, the more likely that favorable results can be expected. Size of their investment can also identify level of commitment they have with the alliance project
- (3) Length of the First Legal Contract
 - (a) SmartWay will need to spend some efforts to keep the first contract at the minimal length in order that it can have a certain level of flexibility for any changes
 - (b) Though the strategic partners are strictly qualified, a certain level of risks can also be expected as those partners are considered an uncontrollable business factor, SmartWay should be well-prepared to be in the position that it can be flexible enough to respond to any unexpected changes
 - (c) Such practice will also open some rooms for SmartWay to explore the opportunity to fully enter into the market in case that any market has generated very large returns in the future.
- (4) Development of Joint Goals
 - (a) This part is extremely important for SmartWay to evaluate performance of its alliances formed together with its allied partners
 - (b) What is expected to achieve must be agreed first before starting the venture
 - (c) Contributions and Expectations must be clearly defined in written statements

5.5 Systems Customization

Entering into other markets, SmartWay will unavoidably need to modify its Systems to be best compatible with its strategic partners'. The more markets it has entered, the more adjustment and modification on its Systems will be required.

- (1) It needs to be well-informed about the Operating Systems their prospective strategic partners are using:
 - (a) Initial determination of modification and adjustment should be identified early before the detailed Technical Requirement Gathering stage.
 - (b) It will waste its time, costs and reputation if plenty of discussions have been concluded and finally it is found later that the systems of those prospective partners have no way to be compatible with its Systems.
- (2) Such requirements will be gathered in detail on the stage of Technical Requirement Gathering:
 - (a) Actual modification will only be started once the deal is concluded, and costs for such modification can be ensured.
 - (b) As previously mentioned, payment made by strategic partners will also ensure their commitment in the deal.

5.6 Implementation Consultancy

At the very first stage in setting up the Systems and business for each new market, SmartWay will need to be well prepared for urgent supports which will be required by all strategic partners from time to time.

Major portion of its Consultant Fee charged from its strategic partners will be consumed during this stage. The following are examples of activities basically required for any alliance formed in any new market:

- (1) Preparation for customized business and technical presentations for its strategic partners' use in dealing with their prospective clients
- (2) Demonstration of the System Usage
- (3) Marketing Plan development together with those strategic partners for their prospective clients
- (4) Setting up of business and technical team for its strategic partners and their prospective clients
- (5) Modification of their existing systems to be compatible with its Systems
- (6) References from its existing clients and strategic partners, especially ones who are very successful

5.7 Technology Transfer and Technical Supports

After all allied projects are developed, SmartWay will reduce its roles to simply a technical consultant and support partner. Their main regular tasks are as follows:

- (1) Provide Technical Consultancy and Maintenance Supports for all projects initiated by its strategic partners in each market.
 - (a) All routine customization and modification required for each project its partners have been involved.
 - (b) Systems update and upgrades from time to time.
- (2) Maintain good relationship with all partners and clients.

VI. EVALUATION

SmartWay will need to review several indicators before and after the Alliance in each country is established in order that it can ensure profitability and success in its Market Development plan.

6.1 Pre-Investment Evaluation

Together with its partner, this typical evaluation will be made against the projections of its revenues from all planned sources. As from its Implementation plan, as soon as the alliance model is chosen and the Alliance is established, the process will be taken in the following respects:

- (1) That partner will start soliciting for a few projects that will require Smart Card Solutions and any of its available products and services before committing itself to any serious investment
- (2) In the meantime, it will focus on an arrangement for technical training sessions for its partner's technical people
- (3) As soon as its partner has any projects to work on, it will start following the next step in its implementation plan, which includes; system customization, implementation consultancy, and arrangement for technology transfer

Upon the solicitation of each project, SmartWay will need to evaluate its long-term profitability evaluation of those projects before committing itself to them. Basically together with its partner, it will forecast revenues from each project it is entering into, based on its revenue model and forecasted number of users from each project.

6.2 Performance Evaluation

With projected revenues from each project it is entering into, SmartWay will need to evaluate its performance to achieve what it has projected.

6.2.1 Performance of Alliance in Each Country

Performance of the Alliance established in each country will be annually evaluated whether it can perform as planned or not. After the initial period of contract, SmartWay will consider further investment or holding back from those countries based on achievement of projected revenues.

In each country, the Alliance established will need to operate at profits within the shortest period possible. As different markets will have different ways to present the statement of profits or losses from operations, moreover, it is a practice in some markets to have very complicated accounting procedures to conceal actual results from its operations. SmartWay will need to investigate each venture in every market based on its Profits and Losses Projection Model in order that it can compare performance of every market in the term that is the most meaningful to SmartWay's considerations. As a part of License Agreement, SmartWay will request for full investigation of local partners' performance in financial terms based on its calculation models.

SmartWay's auditors, who will approach all local partners throughout the region to investigate and fill them up, will use the blank worksheets as presented in Appendix B (Blank Worksheets for Partner's Performance Review) at the end of this report.

6.2.2 Overall Performance of SmartWay as a Whole

Not only performance in each country will be evaluated, SmartWay will also need to evaluate its overall performance in achieving its projected revenues and growth against its plan.

Based on projected growth of Smart Card market size throughout the Asia region, it needs to ensure that, combining together all ventures it is involving in all countries, it can achieve 20 percent of market share in the region. Evaluation will follow the same procedures as presented in Section 3.5 – Economic Feasibility of this project, and SmartWay will need to adjust all projected figures with the ones from actual results of its international operations.



VII. CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

In conclusion, SmartWay is now very successful in Malaysia, and with its own developed technology and know-how, it has started exploring opportunities to become a dominant player in Smart Card Market throughout Asia.

As a Profit-Making Organization, it will need to ensure firm startup and long-term revenue streams. Instead of focusing on self-invested ventures in all countries it is entering into, it will find strong partners to shorten the learning curve and ensure fast expansion. With those partners' experiences in the market and the SmartWay's technological advancement and success with strong references, it is very much likely to get started very easily. As SmartWay is an Asian developer of solutions, it obviously has lower overhead costs in development that will allow a wider gap for its partners for negotiation to get the deal in anywhere in this region.

The key to success is to strictly qualify high potential strategic partners, to extensively support them to achieve the combined goals, and to effectively customize the system to be best suitable for prospective clients in all markets.

With careful evaluation of each project before it is entering in all markets, it is highly possible that SmartWay will achieve its market penetration goals. Then it is important to evaluate performance of each partner in all markets on an annual basis so that it can secure its overall goals to become the dominant player in this field throughout the region within 3 years.

Based on such evaluation with its overall goals in mind, SmartWay will also have opportunities to increase its equities in the profitable ventures, and hold back from the failure projects in time. It will also need to continuously identify other new partners in

other forms, e.g. resellers, Smart Card issuers, etc., next to the License Agreement deal it has in each market to ensure highest opportunity to achieve its overall goals.

To become a dominant player in this field, it needs to expand to other neighboring markets in this region first, and after it can achieve its growth plan in the region, it will also start pursuing opportunities in the Global Market.

7.2 Recommendations

Based on the Feasibility Study for the project in this region, there are lots of opportunities for success in developing the new market for SmartWay towards the goal to become a regional brand of multi-application Smart Card . Reasons for such success potential are as follows:

- (1) Minimum investment as SmartWay will base its business model on Licensing Agreement.
- (2) Local Specialist will be approached to join with SmartWay in their respective markets, with their strong knowledge of their own market, possibility for failure will be reduced to a minimum.
- (3) Technology Expertise of SmartWay itself is a key for further growth as it can focus its own investment on Research and Development while the market is expanding through its alliances, therefore, it can maintain its competitiveness in terms of Technology Advancement.

For SmartWay's partners in developing the market for Smart Card in their respective markets, it is recommended that its partners perform full-scale studies of the market feasibility in their respective markets. SmartWay will assist in ensuring the optimal availability of Smart Card readers at all stations of toll services, which will normally cover most needed locations throughout the highly crowded areas. Project Sales by SmartWay to its project customers will automatically help navigate the

availability of Smart Card readers in almost all required locations. However, evaluation of its overall performance and achievement of its goals in each market will become criteria for its further growth plan consideration. SmartWay will only consider further investment in building up its business in only the market with a high potential for growth, or as previously mentioned, it will choose to invest more in the market that can help extend its competitiveness in some areas.

Partners in each market will then need to proceed with its market study plan based on population around those stations, which are considered an innovator group for the Smart Card market, at the beginning stage in order to determine their needs, spending behavior, distributions, and the way to satisfy their needs through the usage of Smart Card solutions that SmartWay provides. In order for SmartWay to achieve its goal for growth, it should proceed with the following:

- (1) Research and Development to be done to better cope up with new business opportunities and changes in those markets
- (2) In markets with high potential for profitability, it will try to increase its equities in those ventures
- (3) In markets with low potential, it will need to qualify other new partners, and identify the ones with highest potential
- (4) SmartWay will need to act like a Center of Ideas and Information for all its partners throughout the region by simply sharing success and failure in all markets, and all new technological developments among all its partners.
- (5) As soon as SmartWay can realize its goals in the region, it can start exploring opportunities outside Asia region.

As previously mentioned, SmartWay will enter all markets with its Project Sales, and profits from such projects will become its major income stream for its further

development in those markets. As a contingency plan for SmartWay in case that it cannot identify qualified partners, it can also join with all its customers in those markets in their attempts to increase the Smart Card usage and earn more income through Smart Card solutions right away. In such case, SmartWay will only need a small partner that can help support those clients in terms of technical maintenance and support services.

On the other hand, in case that SmartWay's partners do not perform well though those markets have very high potential for Smart Card business, it will consider a business takeover from its partners, and start its full-scale operations by its own team to ensure wide coverage of its Smart Card Solutions availability in this region.



APPENDIX A

BLANK WORKSHEETS FOR PARTNER'S PERFORMANCE REVIEW



Table A.1. Blank Worksheet for Profit and Loss Projection.

Item	Year 1 USD	Year 2 USD	Year 3 USD	Year 4 USD	Year 5 USD
<u>Sales</u>					
Card Transactions					
System Sales					
Facilities Managemt Services Fees					
E-Commerce Sales					
Loyalty Contribution Fee					
Subtotal					
<u>Cost of Sales</u>					
Card Transactions costs paid to SmartWay					
System Cost					
FMS Equipment Cost					
Card Cost					
E-Commerce Revenue Attributable to Merchant					
Loyalty Advertising, Marketing & Promotions					
EDC Loyalty Terminal Rental					
E-Commerce Bank Charge (Credit Card)					
Subtotal					
Gross Profit					
<u>Operating Overhead</u>					
FMS Maintenance & Support Overhead					
CCH Operating Overhead					
Depreciation					
Subtotal					
<u>Other Income</u>					
Interest Earned from Prepaid Float					
Interest Earned from Card Deposit					
Advertising on Cards					
Advertising on Portal					
Subtotal					
Profit Before Taxation					
Taxation					
Net Profit After Taxation					
Cumulated Relating Earnings					

Table A.2. Blank Worksheet for Overhead Costs on Card Center.

CCHS Operating Overhead						
S/N	Items	Year 1 USD	Year 2 USD	Year 3 USD	Year 4 USD	Year 5 USD
(a)	Salary					
(b)	Salary Overheads					
(c)	Rental					
(d)	Utilities					
(e)	Administrative Expenses					
(f)	Marketing Expenses					
(g)	Advertising Expenses					
(h)	Travelling Expenses					
(i)	Lease Line / Internet Access Costs					
(j)	CCS Support & Maintenance					
	Total CCHS Operating Overhead					
CCHS Fixed Assets		USD				
(k)	CCS System (Services & Terminals)					
(l)	Motor Vehcles					
(m)	Office Renovation					
(n)	Office Equipment & PC					
(o)	Furniture & Fittings					

Table A.3. Blank Worksheet for Costs Related to Manpower.

A	Staffing (Per Month)	Q'ty	Rate: USD	Salary : USD	Overhea d %	Salary Overhea USD
	COO	1				
	Financial Controller	1				
	VP Operations	1				
	VP Sales & Marketing	1				
	VP Loyalty & Reward Program	1				
	VP Technology	1				
	Creative Director	0				
	Operations Executive	1				
	VP Branding	0				
	Legal Executive	0				
	Sales & Markeing Executive	2				
	Promotions & Branding Executive	1				
	Finace & Admin Executive	1				
	Logistics Executive	1				
	Procurement Executive	0				
	Card Operations Executive	1				
	Customer Services Executive	1				
	Web Developers	2				
	Portal Content Office	1				
	Web Desingers	2				
	SP / Merchant Management Executive	2				
	Snr Systems Engineer	1				
	Data Center Technician	1				
	Operations Clerks	2				
	Operations Clerks	2				
		27				
B	Yearly increase in Salary	10%				
C	Utilities	5% of manpower costs				

Table A.4. Blank Worksheet for Other Costs in Considerations.

	Other Costs	USD	Yearly Increase %
D	Rental Per Month		10%
E	Administrative Expenses Per Month		10%
F	Promotions Expenses Per Year		5%
G	Advertising Expenses Per Year		5%
H	Travelling Expenses Per Month		20%
I	Lease Line Cost/ Internet Access		10%
J	CCS System(Services & Terminals)		
K	CCS H/W Maintenance & Support		8%
L	Motor Vehicles		
M	Office Equipment & PC		
N	Office Renovation		
O	Furniture & Fittings		



APPENDIX B

GLOSSARY OF ABBREVIATIONS



GLOSSARY OF ABBREVIATIONS

AS\$	Australian Dollar Currency Unit
AMP	Advertising, Marketing and Promotion
ASP	Application Service Provider
CAGR	The Compounded Annual Growth Rate
CCH	Card Center Headquater
CCS	Card Center System
CIT	Cash in Transit
CSC	Contactless Smart Card
EDC	Electronics Data Capturing
FMS	Facilities Management Services
HK\$	Hong Kong Dollar Currency Unit
HQ	Headquater
IC	Integrated Circuit
ISO	International Standard Organization
NECTEC	National Electronics and Computer Technology Center
PARCS	Packing Access and Revenue Collection System
PC	Personal Computer
POS	Point of Sales
Q'ty	Quantity
R & D	Research and Development
RM	Ringit Malaysia
ROI	Return on Investment
SS\$	Singapore Dollar Currency Unit

TTP	Transport Technology Publishing LLC
UK	The United Kingdom
USA	The United States of America
USD	US Dollar Currency Unit



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