

Chapter 3

3. Study Methodology

Different methods have been used to reach a consensus. Financial and other necessary information is first gathered from the targeted banks to evaluate the hypothesis. It was then transformed into an observation survey and the required information was gathered. For the final analysis information was gathered through literature review

The marketing strategy literature suggests that the performance of a new entry depends on firm/product characteristics, the introduction strategy, and the marketplace or environment (Gatignon 1990). In this context, one of the main eBusiness school "Penn State's eBusiness Research Centers' group of professionals (Inge Geyskens, Katrijn Gielens, Marnik G. Dekimpe) carried sound research to evaluate the Internet performance based upon a model developed by the above argument.

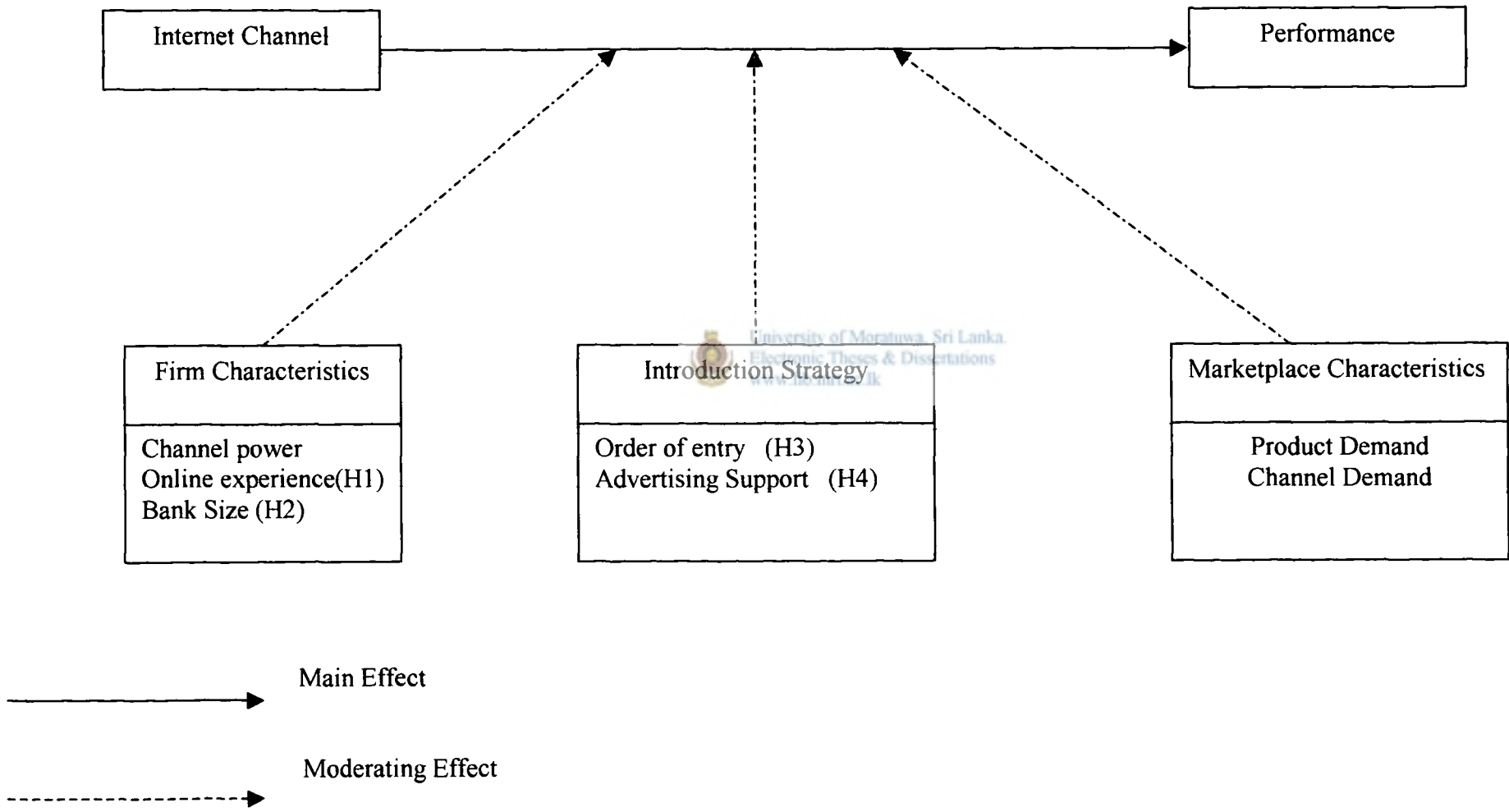
The same model has been used to evaluate the Internet banking sector in Sri Lanka. The specific hypotheses for each of these three categories (see Figure 5 for a schematic representation) has been developed thereafter.

3.1 First study method

The research was carried out according to the adopter frame (Figure 5) work. The Internet performance is evaluated using both standard accounting measures such as expenditure and profits together with non-standard methods such as the number of customers, when evaluating Internet investments. A questionnaire (Annexure 2) was derived for the evaluation. The target group was the banks that are offering Internet banking. However the venture failed as the banks did not comply in replying the questionnaire. Moreover the required information could not be gathered through interviews with the banks' management. Due to the bank

Figure 5 :Internet banking performance evaluation model

Source: "Brand Introduction Strategies and Competitive Environments," *Journal of Marketing Research*



internal policies and rivalries among banks. Therefore quantification on the financial performance implications through an extra Internet channel and its impact on the Bank's performance could not be derived upon. Hence efforts were directed on finding whether the service performance has improved through Internet banking. This service performance survey offers managers an indication of the long-run service quality consequences of setting up an Internet channel.

3.2 Second study method

To evaluate the service quality of Internet banking in Sri Lanka, an observation survey was conducted on transaction sites of the five major banks** that provide Internet banking services in Sri Lanka. This survey was carried out between March and July 2003. An observational survey was considered most appropriate as the research problem had been clearly defined and the information needed had been specified for this exploratory research. Further, to reduce the potential of observer bias, a structured observation technique was devised. A total of 40 questions (Annexure 1) were developed, which mainly focused on the areas of ease of usage, features and "extra mile" services provided by the banks. These questions were extracted from similar questionnaires employed by major Singaporean, Malaysian banks and adapted to suit the Sri Lankan environment.

To enhance the reliability of the findings, a specific method of measurement was developed. Each of the banks surveyed would earn 1 point for a question, if the requirements are fulfilled; a partial fulfillment would be given ½ point and no points if it does not meet the requirements at all. For more complex questions like email support and

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1. Union Bank (www.unionb.com)
2. Sampath Bank (www.sampathwishwa.com, www.sampath.lk)
3. Seylan Bank (www.eseylan.com)
4. Commercial Bank (www.combank.net, www.combank.lk)
5. Nation Trust Bank(www.nationtrust.com)
6. HSBC Sri Lanka Branch(www.hsbc.lk) I did not consider the HSBC

helpfulness of phone support that involve two-way communication, the grading was based on a different scheme.

It is considered crucial for banks to provide an Internet-based feedback channel. From a customer's point of view, it is important that he/she knows that someone is listening and is willing to provide useful information in a timely manner.

The grading on the provision of phone support services was based according to the ability of the respondent in answering technical questions. However, the banks were not rated on a basis of a single telephone query, but by four telephone calls, which were made at different times. If at least three of the calls were responded satisfactorily, the bank earned a full point. Half a point was given to the bank if at least one of the calls was responded satisfactorily, and no points were awarded if none of the calls were responded satisfactorily.

As each question had a maximum of one point, the maximum that a bank would score was 40 points. The total score obtained by each bank was divided by 8 to determine the star ratings of each bank. This way, each bank earned a maximum of five star rating. Any fractional score of 0.25 and above were rounded up to half a star. Likewise, a score of 0.75 and above was rounded up to a full star.

It must, however, be reiterated that this is only an exploratory survey to obtain an insight on Internet banking services and how well it is being handled. An alternate approach was to question consumers on their thoughts with respect to service quality. However, the study being restricted to Internet banking means that customers who patronize this service do not actually come to the banking halls where they can be approached to complete the questionnaire. Hence, the approach was the preferred mode of understanding this study. One may also argue that the rating scale is not totally objective. Admittedly, there is room for subjectivity but as mentioned earlier, this is only a starting point for a much larger study to be undertaken later in the year.

To avoid identifying the banks, their names have been omitted and the section below on 'Analysis and Discussion' merely refers to the banks as A, B, C, D and E.

3.3 Third study method

Third, building upon the afore mentioned conceptual framework, several factors were examined that influence the direction and magnitude of the change in performance associated with Internet banking. This particular target group selection is illustrated in figure 1(chapter 1,p12). Specifically, the impact of a variety of firm (channel power, direct-channel experience, and size), introduction-strategy (order of entry and advertising support), and marketplace (market munificence) characteristics was quantified. The associated hypotheses on a data set of Internet channel entries in the Internet banking sector in Sri Lanka was tested.

3.3.1 Hypotheses for Bank characteristics

Banks are distinctive because they have accumulated different physical and intangible assets, such as capital equipment, financial reserves, employee skills, brand equity, and marketing expertise. These bank-specific resources and capabilities may influence the effectiveness of the bank's new Internet banking channel introduction. Three specific dimensions of a bank's resources and capabilities namely its channel power, direct-channel experience, and size, were considered and a formulated hypotheses on how these may moderate the performance implications of an Internet channel addition.

(i) Channel power

Power is a crucial concept in marketing channels research.

Definitions of power:

*A firm's power over a distributor is determined by the latter's motivational investment in the relationship, and his/her availability of alternatives.

(Emerson's power-dependence theory)

*Motivational investment refers to the value of the resources or outcomes mediated by the firm, and has often been made operational via the 'sales and

profits' approach i.e. greater the sales and profits a firm accounts for, the greater its power.

(Frazier . Organizing and Managing Channels of Distribution)

*The availability-of-alternatives component refers to the difficulty of replacing the outcomes mediated by the firm because of the lack of alternative partners: the lower the number of available alternatives, the more difficult it is to replace the sales and profits accounted for by the firm, and the greater the firm's power over the distributor .

(Buchanan , Vertical Trade Relationships)

So according to the above definitions about channel powers, it can be argued that this is valid to the Internet channel as well. Therefore to analyze the Internet banking power the financial values from corresponding banking institutes is required. But unfortunately this data cannot be gathered directly from the banking institutes.

As relevant data is not available to support any relationship between channel power and performance, an advance on a hypothesis for the relationship between channel power and performance has not been derived.

(ii) Online experience

With more powerful internet technology a bank can go for very user friendly and attractive online support to its customers. But all ways they have to update their system with up-to-date technology or other wise their competitors may take over their organization.

Online experience will be directly compared with the existing systems' traditional methods. Online experience will be compared with the other Internet banking providers as well. If there are significant differences they will be observed quickly by the users. The Internet as a commercial medium, in contrast, has diffused very rapidly, leading us to propose that banks with more experience do *not* have a significant and sustainable physical distribution- cost advantage. In fact, when

technological change is rapid, inexperienced banks may even possess a differential advantage in that they are less committed to old (outdated) routines.

In terms of the transaction costs involved, adopting the Internet as a transaction channel may place considerable stress on the existing banking system network.

When these effects are totaled, the net prediction is that online banking experience is negatively related to the performance implications of an additional Internet channel:

H1: The performance implications of an Internet banking channel is negatively related to the direct-channel experience.

(iii) Firm size

Small banks typically have more to gain from an Internet banking channel than large firms. As the Internet greatly extends the geographical reach of small companies, it allows them to secure new customers from around the country in ways formerly restricted to much larger firms. Therefore, the smaller the bank, the more it can benefit from the geographic market expansion and brand-switching opportunities offered by an Internet banking. In contrast, large banks may be better able to command a higher price/margin. In order to feel more secure when dealing over the Internet, customers may be willing to deal large, well-known banks, as its reputation may signal reliability of service, security of information, dependability of return policy, etc.

On the other hand one could argue that large banks can enjoy economies of scale. The larger the bank, the more efficiently it can fulfill marketing functions in general, and transaction functions in particular. However, in the context of market discontinuities such as the introduction of Internet banking, costly investments and general marketing expertise built up over the years may become useless, and new skills and assets need to be acquired. For example, the software systems that serve as the basis for Internet banking require new, specialized expertise to

develop and operate. As a result, the superior resources and capabilities of larger organizations may no longer give them the same physical-transaction cost advantages as in the old economy.

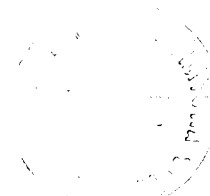
Therefore the hypothesis is that smaller size banks can expect more favorable performance implications through an Internet banking addition than larger size banks:

H2: The performance implications of an Internet banking are negatively related to the bank size.

Firm size. Three measures of firm size was compiled i.e. the number of employees (Number of branches), internet transaction costs (sales), and the market value of the firm. All three are commonly used measures of firm size. After standardization, the three items were averaged into a single scale of firm size. Therefore to analyze the Internet banking power the financial values from corresponding banking institutes is required. But unfortunately this data cannot be gathered directly from the institute.



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- Firm size \propto Number of Employees + Sales + Market value
- Number of Employees \propto Number of branches
- Sales \propto Amount of Money which has transferred through internet (these values are not revealed from the relevant financial organizations)

Linear regression model is been used to analyze the data. The purpose of the regression is to use data on quantitative independent variable to predict or explain variation in quantitative dependent variable.

Simple linear regression – a dependent variable y (*Number of customers*) is a linear function of a single independent variable x (*log value of firm size*).

Statistical model for simple linear regression:

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i \quad i = 1, 2, \dots, n$$

Where n is the number of observations from five different banks, β_0 is the intercept parameter and β_1 is the slope parameter.

ε_i is the residual or “error” that includes measurement errors plus all sources of variability affecting y other than x .

The least-squares estimators of the slope and intercept:

$$\hat{\beta}_1 = \frac{\sum_{i=1}^n (y_i - \bar{y})(x_i - \bar{x})}{\sum_{i=1}^n (x_i - \bar{x})^2} \quad \hat{\beta}_0 = \bar{y} - \hat{\beta}_1 \bar{x}$$

Where $\bar{x} = \sum_{i=1}^n x_i / n$ is the overall mean for x , and $\bar{y} = \sum_{i=1}^n y_i / n$ is the overall mean for y .

$$\text{Standard error for } \hat{\beta}_1 : s_{\hat{\beta}_1} = \sqrt{MSE / \sum_{i=1}^n (x_i - \bar{x})^2}$$

where $MSE = \sum_{i=1}^n (y_i - \hat{y}_i)^2 / (n - 2)$ is the mean square error.

$$\text{Standard error for } \hat{\beta}_0 : s_{\hat{\beta}_0} = \sqrt{MSE \left(\frac{1}{n} + \frac{\bar{x}^2}{\sum_{i=1}^n (x_i - \bar{x})^2} \right)}$$

$$\text{Test statistics: } t = \frac{\hat{\beta}_1 - 0}{s_{\hat{\beta}_1}}$$



- hypothesis testing

$$\text{Total Sum of Squares (TSS)} = \sum_{i=1}^n (y_i - \bar{y})^2$$

$$\text{Sum of Squares due to Regression} = \sum_{i=1}^n (\hat{y}_i - \bar{y})^2$$

$$\text{Sum of Squares due to Error} = \sum_{i=1}^n (y_i - \hat{y}_i)^2$$

Coe. cient of Correlation = r

Remarks.

- (i) $-1 \leq r \leq 1$.
- (ii) $r > 0$ indicates a positive correlation ($\beta_1 > 0$)
- (iii) $r < 0$ indicates a negative correlation ($\hat{\beta}_1 < 0$)
- (iv) $r = 0$ indicates no correlation ($\hat{\beta}_1 = 0$)

3.3.2. Hypothesis for Introduction strategy

The introduction strategy for a new channel sets the platform from which competitive advantages can be gained. The model considers two introduction decisions: the order of entry and the level of advertising support given to the introduction.

(i) Order of entry

The order of entry may influence the Internet channel's impact on market expansion, customer switching, and relationship deepening.

First, the opportunity to benefit from market-expansion effects declines as firms fall lag farther behind in entering the market. Changes in the environment, such as changes in technology, create windows of opportunity that are limited in time. Firms that enter soon after this window has been opened, are able to 'skim off' new category demand, leaving fewer opportunities for firms that enter later.



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Customer-switching advantages are also believed to accrue to early entrants. Early entrants may be able to attract customers from competitors that do not yet have an Internet offering, and avoid that some of their own customers, reluctant to wait any longer for the convenience of Internet banking, will switch away to more proactive competitors. Moreover, early movers may help shape customer preferences, in that they come to see the pioneering Internet channel as a 'prototype' against which later entries are judged. Finally, given a favorable experience, customers may be reluctant to switch upon a later entry of other Internet banking so as to minimize the risks involved.

Postponing the introduction of an Internet channel may further project an image of not being a dynamic, up-to-date bank. This may cause a loss of goodwill among current customers, and affect their decisions to go for the other banks, i.e. the relationship deepening opportunities.

On the customer loyalty dimension, early movers may be able to capture the customer to the new system after which the customer may be reluctant to go to latecomers to the venture.

Early entry may have positive effects on the banks' image as dynamic and future oriented. Even though they have to face the major experience of new technology and see how it reacts later entrants may require more marketing support (more extensive advertising and/or economic inducements) to overcome the barriers-of-entry erected by earlier banks in terms of customer awareness and preference

Other researchers have advocated early imitation as a profitable alternative to moving first. Specifically, technological discontinuities may create physical-distribution-cost advantages to later entrants. When superior technologies are expected to become available, it may be beneficial to postpone the Internet channel introduction, and to immediately incorporate the new technologies once they become available. This may enable later entrants to leapfrog early movers if they stay committed to the older technologies. Also, early banks may make costly mistakes, as there is little precedent from which to learn about the idiosyncrasies of the new channel. In contrast, banks that wait until some competitors have made the move can learn from the latter's experience and do better at a lower cost and efficiently.

In conclusion, the above argumentation suggests that it may be beneficial to wait and learn from the first mover's experience, while still being fast enough to exploit the various demand advantages related to an early entry. As such, early followers may reap the greatest benefits and will outperform both pioneers and late movers.

H3: The relationship between the financial performance implications of an Internet banking and order of entry to the market has a positive relationship.

Simple linear regression – a dependent variable y (*Number of customers*) is a linear function of a single independent variable x (*order of entry*) . Statistical model for simple linear regression:

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i \quad i = 1, 2, \dots, n$$

Where n is the number of observations from five different banks, β_0 is the intercept parameter and β_1 is the slope parameter. The other parameters can be calculated as described under the chapter 3, section 3.3.1 Hypotheses for Bank characteristics, part (iii) Firm size.

(ii) Advertising support

A second aspect of the introduction strategy involves the level of advertising support for the introduction, which may have performance implications through its impact on market expansion, brand switching, pricing, and physical-transaction costs.

Moreover, advertising may affect price sensitivity. If a strong advertising campaign is conducted that may help to compete, that advertising may increase brand loyalty, and hence, reduce price elasticity. As such, more advertising support may allow banks to attract with more customers for the services offered through its Internet channel.

In sum, even though advertising support has one of the main negative impacts on the cost structure of the organization (i.e., higher advertising costs), the positive impact of advertising support is built upon market expansion, brand switching, and profit margins to propose a positive relationship between advertising support and the performance implications of the Internet banking channel addition:

H4: The performance implications of an Internet banking is positively related to advertising support.

3.3.3. Marketplace characteristics

“No decision is expected to be universally superior irrespective of its environmental context”.

In this study, environmental munificence is focused upon, i.e. the capacity of the environment to support organizations in the marketplace. The models has identified and distinguish between two types of environmental munificence:

- (1) The growth in demand for the products and services carried through the Internet banking channel (which is labeled as ‘product demand’), and
- (2) The growth in demand for the new Internet banking (which is labeled as ‘channel demand’).

(i) Product demand

The evolution in product demand may affect the performance implications of a new Internet channel through at least three demand-side mechanisms.

First, a high product/service-demand growth rate implies a greater incentive for all banks to increase the breadth of their channel system to satisfy various growing consumer segments. This combined effort may cause further market expansion through channels like Internet.


Second, because of the culture and society what ever the Internet banking advances creates, the internet banking product and services demand may not be there. Though the technology advances the society can be the greatest threat for the product demand. The peoples’ touch is the essential part in financial matters. This sort of thinking is very strong especially in south Asian countries and in Sri Lanka is no exception.

Third, on line trust is the other important factor when it comes to Internet banking, security on the transactions is a very important factor.

The security mechanisms prevent possible financial and /or other losses to Internet banking services and clients by eliminating the likelihood of unauthorized access to Internet banking systems.

However, irrespective of the extent of security implementation at a specific Internet banking provider, there is a general comfort level in the mind of Internet banking facilities users, with respect to the security methods adopted by their own Internet bankers, and the internet security in general. The questionnaire responses gauge the individual's comfort level and the perception.

(ii) Channel demand

Many researchers have employed a demand-pull perspective towards innovation and change. In this view, the adoption of an important banking innovation such as the addition of an Internet channel is driven by its revenue-generating potential, which is likely to increase as the Internet community grows. This growth may come from both  new customers to the category, or involve switching from traditional channels (company- or competitor-owned).

As for the prices charged, previous researches on these matters have recently shown analytically that the prices banks set depend on the non-profit earned basis level for the Internet. Most of the time they state that it is not for money but as a service to its' customers. As a consequence, average prices on the Internet are likely to be lower than in the conventional channel. Therefore, as the Internet grow, average prices on the Internet increase, and need no longer be lower than prices in conventional channels.

Despite the fact that the Sri Lankan Internet banking industry has grown over a period of more than four years, Internet banking providers have been receiving a comparatively low response from the banking population. Channel demand is very low. Comparing with the active Internet banking usage estimated which is

7,500 individuals, the figures confirm the low usage levels as stated above. In mathematical terms one in ten Internet connection i.e. around 5% of PC users and internet/email users and not even 0.5% of banking population creating an active Internet banking users.

Because it is difficult to get the relevant data from the bank. I do not advance a hypothesis for how channel demand is related to the performance implications of an additional Internet channel.

