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THE EFFECT OF E-CHANNEL STRATEGY ON FIRM MARKET VALUE

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ABSTRACT

E-channel has advantages over traditional market channels. This paper employed event study methodology to discover the effect of the e-channel strategy on firm's value by the data from e-channel announcements from 2008 to 2010. We developed a research model to study the stock market reaction to e-channel investment, and to verify whether the e-channel type, product type, firm already has e-channel or not, network type, can moderate the relationship between e-channel announcement and firm market value. The details of event methodology and the research design were introduced in detail. Finally, we concluded this paper with the expected results.

Keywords: E-Channel, Event Study, Firm Value.

INTRODUCTION

Around two thirds of cyber citizens are online customers in the US, Europe and Korea. The Internet has a full potential to fundamentally change the structure of marketing channels, if consumers choose to adopt electronic market channels. Electronic channels or e-channels use the Internet to make products and services available so that the target market with access to computers or other enabling technologies can shop and complete transactions for purchase via interactive electronic means (Kevin 2002). Facing with this huge latent market, more and more firms are willing to invest in setting up e-channels.

If firms decide to develop or operate an e-channel by themselves, their investments include computers, software, operations and maintenances. Besides, finding required on the subsequent channel promotion and other services is always much more. Just as Gartner Group estimates that firm creating e-commerce site spend \$1 million in the first five months, and \$20 million for a place in cyberspace competition (Diederich 1999).

With the significant opportunities in growing of online customers vs. enormous investments, a question should be asked, that is "Does e-channel investment really increase firms value?" And if it does, how the value can be assessed?

Nowadays, online markets and competition among these markets change rapidly. Customers have many choices on which online shops to buy

from. Competitions go beyond just selling end products and services, but also providing value added services such as media advertisements, electronic payment, third-party certifications and product reviews, through e-channels. The relative advantages of e-channels can be conceptualized as a multidimensional construct, perceived relative merits of channels with three dimensions namely, convenience, trust, and efficacy of information acquisition (Choudhury and Karahanna 2008).

Though we can assess firm value change from accounting-based measures of profit, it was criticized because they don't often indicate the true performance of firms. For example, the profit can be manipulated by different accounting procedures (McWilliams, 1997). Even it is not controlled by the firm managers, it is difficult to isolate the effect of e-channel strategy from other business activities effects. We may use empirical study to assess the e-channel performance, which often use questionnaire to collect data. But the limitation is the firm data was self-reported by firm staff, it could induce certain biases.

In order to eliminate the above limitations from using the data inside firms, we apply event study to evaluate the firm value changes. The event method is a powerful tool that can help researchers assess the financial impact of changes in corporate policy (event). It is based on stock price changes to measure the financial impact of a change in corporate policy. In an efficient capital market, investors are assumed to collectively recognize future benefit streams accruing from initiatives announced by firms, a judgment subsequently reflected in the stock price of the firm (Mani Subramani, 2001).

Researcher determines whether there is an "abnormal" stock price effect associated with an unanticipated event, then infer the significance of the event (McWilliams, 1997). This methodology is well accepted and has been used to study the effect on the economic value of firm actions such as IT investments (Dos Santos, Pfeffers 1993), corporate acquisitions (Chatterjee 1986), takeover bids (Jarrel and Poulsen 1989), celebrity endorsements (Agrawal and Kamkura 1995), new product introductions (Chaney et al. 1991), e-commerce (Mani Subramani, 2001) and supply chain disruptions or glitches (Hendricks and Singhal 2003, 2005)

In this paper, we employ event study methodology to discover the effect of the e-channel initiatives on firm market value. We use data on e-channel announcement by firms in the period from 2008 to 2010.

The rest of this paper is organized as the following: First, we review previous related studies on e-channel/e-commerce/IT. We then present a preliminary research model with hypotheses on the relationships between e-channel announcement and firm value. Thirdly, the event study methodology is described in detail. Data collection and sample selection are also presented. Finally, we conclude with the expected results of this study.

LITERATURE REVIEW

Event study is not a newly applied in e-channel investment performance related studies. Except widely used in finance and accounting field, it is already used to discuss the market reaction to the event in IS field.

Subramani and Walden (2001) undertook a study of 251 e-commerce initiative announced by firms between October and December 1998. It discussed the returns to shareholders in firms engaging in e-commerce, and compared the returns to e-commerce in conventional and net firms, the B2C and B2B, digital goods and tangible goods. The results showed that e-commerce initiatives do indeed lead to significant positive CARs for net firms, while there was no significant difference between conventional and net firms. The CARs for B2C announcements were higher than those for B2B. Also, the CARs with respect to e-commerce initiatives involving tangible goods were higher than for those in digital goods.

Even it presents the first test of the dot com effect; discussion on variation of abnormal returns was not involved in their study. It may decrease the feasibility of the research results. In addition, the research period is a specific condition. The last quarter of 1998 is a unique bull market period and the magnitudes of CARs (between 4.9 and 23.4% for different subsamples) in response to e-commerce announcements were larger than those reported for other firm actions in prior event studies.

Further, as time goes by, the e-commerce competition situation has been changing. During the research period of the last quarter in 1998, B2B e-commerce model need buyer-supplier arrangements using EDI technologies to web-based interaction, and at that time it is difficult in establishing effective management processes in inter-organizational relationships

observed by prior researchers (Hart and Saunders 1997, Henderson and Subramani 1999). In late 1998, B2C commerce received far greater attention in the media than B2B, also, as retail investors may have played a dominant role in the trading of technology stocks in this period (Smith 1998). So the risks in technologies and management lead investors to view B2B with lower returns than B2C.

For our study, the issue e-channel is different from e-commerce, or we can view it as one part of e-commerce, especially nowadays the e-commerce actions are complicated. E-channel emphasizes the efficiency to deliver products to customers by Internet. In addition, we choose different period (from 2008 to 2010) to study the e-channel effect, the IS related technologies are accepted by more and more firms, so the interaction of the firms will be easier, and there are some collaboration of firms successfully of establishing e-channel. Recently fierce competition in online market also makes the different explanation of the abnormal return.

Similar to other e-commerce or IT initiatives, e-channel implementation requires investment. In fact investment for e-channel establishment would be enormous. It includes the IT investments and management or operation investment, such as channel promotion and various services. As for the IT investment effect was already discussed by some researchers. Dos Santos et al. (1993) examine the stock price reaction to IT investment announcements in the context of two explanatory variables, industry and innovation. Dos Santos et al. did not find any significant effects for financial firms; they did find that innovative IT investments were related to positive, abnormal stock price returns. Im et al. (2001) discussed the stock market reaction to IT investment in the context of three explanatory variables: industry, size and time period. The results showed that the abnormal returns to IT investment announcements were in fact related to the above three variables. Chatterjee et al (2002) argued that IT infrastructure investments will induce a positive, abnormal market reaction. To some extent, these literatures will provide the related empirical support for e-channel investment effect, but the components of e-channel investment not only includes IT or equipment investment. And the market investors' consensus on the expected benefit of e-channel may different from the earlier stages of e-commerce.

Hence, our study results or discussion will be different from the prior related studies. It is also the value of our study possibly lies in.

RESEARCH MODEL

The research model of this paper is depicted in Figure 1. As empirical evidence and related literatures suggest that e-channel can bring more latent customers and enlarge the market share for firms, the relationship of e-channel and the market value of firm is described as: firm announcing E-channel will positively affect the market value of firm, or the abnormal returns attributable to e-channel announcements are positive. It offers a baseline for overall research in this paper, but not a central contribution. We focus on the factors that will moderate the relationship and explanation for abnormal returns.

There are various e-channels: the company set up its own website to form an e-channel, open its shop on third-party online platform. Is there any difference between these subsamples? The firms engaging the e-channel can be conventional firms without e-channel before, they also includes the firms which already has e-channel, during our research period the e-channel they announced was a new one, not an initiative one. Besides this, there is the new e-channel application during this period, such as mobile commerce. Similarly, is there any difference between them? That is to say, the above factors: e-channel type (self-develop platform or third-party platform), product type (tangible goods or services), firm already has e-channel or not, network type (Internet or mobile Internet), can moderate the relationship between e-channel announcement and firm market value.

As for the explanation for the abnormal return, we will perform multiple regression analysis. The independent variables, such as firm size, industry, time period, these common variables discussed in related event studies, should be considered.

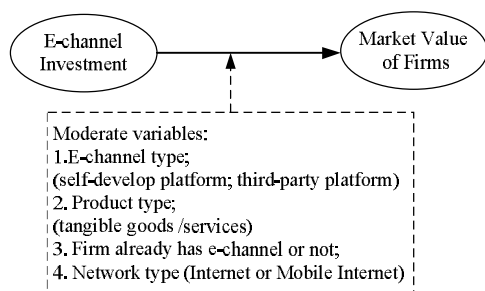


Figure 1. Research Model

RESEARCH METHODOLOGY

We will use event study and the core methodology for this research. The event methodology is developed to measure the effect of an unanticipated event on stock prices, that is calculate the return due to the event, which is called abnormal return. It equals to the actual

return minus the expected return without the announcement (normal return). So the standard approach is based on estimating a market model for each firm and then calculating the abnormal return. There are not one model to computer the normal (market model, market-adjusted model and mean-adjusted model), in this paper, we briefly introduce the market model which is the best specific model controls for the systematic risk of the risks. This model posits a linear relation between the return on a stock and return on the market portfolio over a given period (estimation period) as:

$$r_{it} = \alpha_i + \beta_i r_{m,t} + \varepsilon_{it} \quad (1)$$

r_{it} is the return of stock i on Day t ; $r_{m,t}$ is the market return on Day t ; ε_{it} is the error term; α_i is the intercept term; β_i is the systematic risk of stock i .

Then the Abnormal return for stock i on Day t is the difference between r_{it} (actual return) and $(\alpha_i + \beta_i r_{m,t})$ the normal return (expected return) for stock i on Day t .

$$A_{it} = r_{it} - (\alpha_i + \beta_i r_{m,t}) \quad (2)$$

Where α_i, β_i are the parameter estimates of α_i, β_i .

For stock i , we use OLS (ordinary least squares) to estimate the parameter α_i, β_i from the regression of r_{it} on $r_{m,t}$ over an estimation period.

As for the length of the estimation period, it should more than 40 days suggested by literatures. in order to prevent any potential bias, the data used to estimated the parameters of the market model must be isolated from the impact of the event itself, so it should close to the event period but not include the event period. Thus, a short time period of 10 trading days is typically used to separate the estimations and event periods. Each firm's estimation period ended 10 trading days prior to the announcement date. Generally, estimating two parameters with less than 40 is not statistically sound.

For this study the market portfolio is the equally weighted index of all securities traded on the New York, American and Nasdaq stock exchanges. Though the above statistical method can be used to test the significance of abnormal returns, and prevent some biases, it is well established that the usefulness of event study method depends heavily on a set of rather strong assumptions. (Brown &

Warner 1980,1985). Additionally, research design issues affect the results with the framework (McWilliams, 1997).

Assumptions of Event Study

Readers can be confident that the conclusions from an event study are valid only if they can be confident that the researcher has truly identified the abnormal returns associated with the event. The inference of significance relies on the following assumptions: Markets are efficient; The event was unanticipated; There are no confounding effects during the event window.

Market Efficient

Market efficiency implies that stock prices incorporate all relevant information that is available to market traders. If it is true, then any financially relevant information that is newly revealed to investors will be quickly incorporated into stock price. Then a researcher can identify significant events by their impact on the stock prices of firms. (Bromiley, Govekar and Marsus 1998)

Unanticipated Events

The market previously did not have information on the event, and traders gain information from the announcement. Then the abnormal returns can be assumed to be the result of the stock market's reacting to new information, or the use of the event study methodology will be problematic.

Confounding Effect

The third assumption is based on the claim that a researcher has isolated the effect of an event from the effects of other events. Confounding events can include the declaration of dividends, announcements of an impending merge; sign of a large damage suit, announcement of unexpected earnings, and change in a key executive. Any of these events might have an impact on the share price during an event window.

Therefore it is appreciated to use this method when these assumptions are likely to be valid. The third assumption is critical, because the method, by definition, attributes the abnormal return to the event under consideration. If other financially relevant events are occurring during the event window, it is difficult to isolate the impact of one particular event.

RESEARCH DESIGN FOR EVENT STUDY

In this study, we define an event as a public announcement of a firm's e-channel initiative in the media. We will collect data using a full text search of company announcements related to e-commerce in the period of 2008 to 2010. Two

leading news sources; PR Newswire and Business Wire will be used. A keyword string, "launch or open" and "product or service" and "online shop or store" or "e-channel or electronic channel or e-commerce or electronic commerce" is used to search for relevant announcements.

To avoid potential unanticipated events, sample firms we select should have an announcement of a new e-channel initiative or the extension or expansion of an existing initiative. The event date is the first time e-channel related announcement. To avoid confounding effect, the news contains the information about expected earnings, personnel changes, and strategic partnerships will be discarded. As for the market efficiency concern,

i. newly listed companies will be dropped, because they do not have a trading history of 120 days prior to the event date. There is no sufficient data to estimate the normal return of this firm.

ii. companies with average stock price less than \$1 in that period will also be eliminated, because the price changes in these companies tend to be unrepresentative of the broader market.

iii. companies with average daily traded stock volume less than 50,000 shares in the period should be dropped, as the efficiency of the market is likely to be questionable with small trading volume.

Sample Size

Sample size is a concern because the test statistics used in the event study framework are based on normality assumption associated with large samples. Small samples are quite common in the management literature; especially then events are disaggregated along many dimensions. "Bootstrap" method may need be used to relax the normality assumptions (Barclay & Litzenberger 1988, McWilliams and Siegel 1997).

Nonparametric Tests to Identify Outliers

The test statistics employed in event studies tend to be quite sensitive to outliers, and a small magnifies the impact of any one firm's returns on the sample statistic. Hence, with small samples, interpretation of significance is problematic. It is suggested that eliminating the outliers is a drastic approach, because it is possible that outliers provide an important signal of the existence of confounding effects. One important control for outliers is for researchers to report nonparametric test statistics. One approach is binomial Z statistic, which tests whether the proportion of positive to negative returns exceeds the number expected

from the market model. Another nonparametric statistic to report is Wilcoxon signed rank test, which consider both the sign and the magnitude of abnormal returns (Kohler 1985).

Event Window

There are two problems with the event study on long event windows, as Brown and Warner (1980, 1985), using a long event window severely reduces the power of the test of statistic Z_t . The reduction leads to false inferences about the significance of an event. In addition, it has been empirically demonstrated that a short event window will usually capture the significant effect of an event (Ryngaert & Netter, 1990). Since it is very difficult to control the confounding effects when long windows are used, and event window should be as short as possible. It should be long enough to capture the significant effect of the event but short enough to exclude confounding effects. So it is suggested that the lengths of the event windows used should be justified.

Confounding Effects

There are methods that allow researchers to control for confounding events. Foster (1980) discussed several of them, such as : eliminating firms that have confounding events; partitioning a sample by grouping firm that have experienced the same confounding events; eliminating a firm from the sample on the day that it experiences a confounding event; subtracting the financial impact of the confounding event then calculating the abnormal returns.

Explanation of Abnormal Returns

After determining the significance of the CARs, in a second stage of the analysis, a researcher should explain the normal returns by showing that the cross-sectional variation in the returns across firms in consistent with a given theory. For example, the theory may predict that there should a positive correlation between the size of the abnormal returns and the extent of firm diversification. Thus, in the second stage of the analysis, the researcher should regress the abnormal returns on some measure of firm diversification and report the parameter estimates. According to the assumptions and important research design issue, we will conduct the event methodology as the following steps:

- i. define the e-channel announcement that provides new information to the stock market;
- ii. use related theory to justify the financial response to e-channel announcements;
- iii. identify the event dates of the firms that experienced the e-channel event;

iv. choose an appreciate event window, and if it exceeds 2 days, justify its length;

v. identify the confounding effects;

vi. compute abnormal returns during the event window and test significance;

vii. outline appropriate theories to explain the cross-sectional variation in abnormal returns.

EXPECTED RESULTS

We use the data of the sample firms to calculate the CARs and test its significance. Considering the market situation changed, the investor's consensus expected reactions to the e-channel announcements will be different from the result in the prior event studies on related event studies. We possibly couldn't find the significant positive effect in the relationship between the e-channel initiatives and firm market value. When facing with this seemingly unexpected results, it exactly the opportunity for us to further understand the investor's different views on this business action, and the really value of enthusiasm in the investment and financing in e-commerce fields.

As for the moderate variables effects, we think there is no significant difference in abnormal returns between products and services; the firms that already have e-channel may experience higher positive abnormal return for those firms just involved in, because the former have the more successful experiences, and learning effect will enhance the capacities necessary in online market; the abnormal returns attributable to e-channel via mobile internet also may higher, because mobile phone is more convenient and interactive, which can exhibit the advantages of e-channel.

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