MODE OF ENTRY INTO A NEW MARKET: DOES THE TIMING OF ENTRY AND/OR EFFECT OF INNOVATION ON COMPETENCIES MATTER?

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Focusing on the timing of entry has led to a relative neglect of the mode of entry into a new market. The purpose of this research is to extend the literature on market entry by developing and testing a model that predicts the entry mode into a new innovative market. The entry mode is here characterized as a function of two parameters: the entry timing and the effect of innovation on firm's capabilities. Four modes of governance are included in the model: internal development, acquisition, alliance, and market transaction. The empirical analysis examines 76 entries that occurred in the U.S. online brokerage market between 1995 and 1999. Results of the multinomial logit indicate that: 1) internal development is favored by late entrants, 2) alliances and acquisitions are favored by late entrants, 3) market transactions play a significant role during the emerging phase of the market. Results regarding internal development and market transactions are contrary to our predictions. Results also indicate that the impact of innovation on firm's capabilities does not appear to influence the mode of entry into a new innovative market.

Keywords: Entry, Governance, Innovation, Competencies

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1. INTRODUCTION

Innovation frequently translates into the creation of new markets. Then, firms having decided to enter a new market must choose an appropriate strategy. While the timing of entry has drawn a lot of attention (Yip, 1982; Mitchell, 1991), the entry mode into innovative market has been partially neglected by scholars in management despite the fact that the entry mode may condition the development of the firm, and hence its future performance.

The purpose of this article is to extend the literature on market entry by developing and testing a model that predicts the entry mode into a new innovative market. The entry mode is here characterized as a function of two parameters: the entry timing and the effect of innovation on firm's capabilities. The empirical analysis examines entries that occurred in the U.S. online brokerage market between 1995 and 1999.

The main contribution of this article is to develop a model of entry modes which takes into account both governance choice and timing. We show that choices made in the setting of a new market are highly correlated to the timing of entry. In our study, market transactions are used to enter a new market. They can be seen as a mean to access new capabilities through licensing or commercial contracts.

The paper proceeds as follows. Section I reviews the literature on entry timing and entry modes. Section II presents and discusses an empirical framework for better understanding entry modes in the context of innovation. Section III outlines the main features of the empirical study. Results of the multinomial logit are discussed in Section IV. Limitations and perspectives for strategic management are outlined in the final section.

2. ENTRY INTO A NEW MARKET: LITERATURE REVIEW

The broad question of entry into a new market has been a continuing subject of research in the strategic management literature. The two main themes in this literature are:

1) the relationship between the timing of entry and the performance (e.g. Mitchell, 1991; Makadok, 1998; Coeurderoy and Durand, 2001; Folta and O'Brien, 2004) ;

2) the relationship between the type of diversification and the entry mode (e.g. Yip, 1982; Lamont and Anderson, 1985; Simmonds, 1990; Chatterjee and Singh, 1999).

Surprisingly, there is no empirical study on the mode chosen by firms to enter a new market created in the aftermath of the introduction of an innovation. In this paper, the questions we address and seek to answer are: How does the timing of entry influence the

mode of entry? How does the impact of innovation on firm's capabilities influence the mode of entry? Four entry modes are considered: internal development, acquisition, alliance, and market transaction.

Before reviewing the literature on entry mode and impact of innovation on a firm's capabilities, we define the notion of new market.

2.1. WHAT IS A NEW MARKET?

Realizing that the concept of new or emerging market is not explicit in the literature and that definitions vary across studies, Helfat and Lieberman (2002) proposed a new classification of entry opportunities: 1) new industry, 2) new product-market niche, 3) new geographical localization, 4) established product-market.

The innovation analyzed in this research results in the creation of a new market within an existing industry. The category of entry is therefore a new product-market niche in Helfat and Lieberman's typology. Examples of such markets are online brokerage, IP telephony, and Internet music.

2.2. ENTRY TIMING AND MOVER ADVANTAGES

In the market entry literature, the timing of entry has been the subject of many works. This interest can be explained by a willingness to identify under which conditions an early or a late entry may influence the performance of the firm. A pioneering advantage (or first-mover advantage) is defined as the capability of a firm to obtain an advantage over its competitors thanks to the early introduction of a new product category (Suarez and Lanzolla, 2005). Empirical results are often contradictory, some studies showing a first-mover advantage while others conclude a late-mover advantage.

Lieberman and Montgomery (1988, 1998) have written two important articles on first-mover (dis)advantages. Since 1998, new research on pioneering have focused on: a) international dimension (Cho, Kim and Rhee, 1998), b) insights of game theory (Narasimhan and Zhang, 2000), c) new performance measures (Lee and al., 2000), and d) durability of the pioneering advantage (Agarwal and Gort, 2001).

However, no relationship has yet been established in the literature between the timing of entry and the mode of entry into a new market despite the potential effect of the mode of entry on the pioneering advantage.

2.3. Effect of Innovation on Competencies

The second dimension of the model deals with how the impact of innovation on firm's capabilities can influence the entry mode, capabilities being defined as the capacity of a firm to deploy resources (Amit and Shoemaker, 1993: 35).

Many concepts exist to assess innovation and technical change (Gatignon and al., 2002). The dichotomy that is certainly the most referred to is the "competence-enhancing" versus "competence-destroying" dichotomy (Tushman and Anderson, 1986) that tries to explain why incumbents have difficulties to react to innovation. Competence-destroying innovations are introduced by new organizations capable of rapidly accessing and using new technologies. The inertia of established firms limits their abilities to adopt innovation, and their competitive position. Competence-enhancing innovations reinforce the competitive position of established firms.

One criticism that can be made to dichotomies on innovation is the difficulty to assess them ex-ante. Indeed, it is not obvious that firms can, during the emerging phase of a new market, predict whether the innovation will have a destroying or an enhancing effect. For the remainder of the discussion, we therefore prefer to consider the potential disruptiveness of an innovation on a firm's capabilities.

2.4. Governance Choices and Modes of Entry into a New Market

Roberts and Berry (1985) distinguishes seven entry mechanisms (internal development, acquisition, licensing, new venture, joint-venture or alliance, venture capital and learning acquisitions). This research excludes venture capital as an entry mode. The six other entry mechanisms correspond to four organizational modes: a) hierarchical mode or internal development, b) acquisition, c) alliance, and d) market transaction. We hereafter analyze how these four modes can be chosen as modes of entry depending upon variation in the timing of entry and the impact of innovation on capabilities.

2.4.1. Internal development

Developing new competencies has proven to be difficult (Dierickx and Cool, 1989; Henderson and Clark, 1990; Leonard-Barton, 1992; Henderson and Cockburn, 1994). Combining, deploying, and mobilizing competencies is path-dependent (Barney, 1986, 1991) and the routinized behavior of firms is often an obstacle to the construction of new

competencies (Teece, Pisano and Shuen, 1997). Capabilities' trap may even hinder firms' growth (Barnett and Sorenson, 2002).

A strong argument in favor of internal development is that capabilities are not given to the firm but must be built within its boundaries (Rumelt, 1984). Indeed, critical resources are accumulated rather that acquired through strategic factor markets (Barney, 1986; Capron and Mitchell, 2004). Increased returns are obtained by firms engaged into the development of specific resources (Ghemawat and del Sol, 1998).

Theoretical studies (Kogut and Zander, 1992) as well as empirical ones (Kogut and Zander, 1993) show that learning is more efficient within the firm than across its organizational boundaries. Novak and Eppinger (2001) argue that producing internally is more attractive for complex products.

Internal development is a slow and methodological process, and several years may be needed for a new activity to become profitable (Biggadike, 1979). Nevertheless, a new activity developed internally will have a higher contribution than acquisition to the competitive advantage and value of the firm (Hitt and al., 1991).

In the context of a new market, the internal development mode is the mode allowing the highest level of appropriation. The main downside of this mode is the delay required before entering a new market.

2.4.2. Acquisition

Many firms choose to obtain new technologies and capabilities from other firms rather than through internal development or alliances (Haspelagh and Jemison, 1991; Huber, 1991; Ahuja and Katila, 2001). Indeed, acquisitions frequently serve as a substitute for innovations (Hitt and al., 1990) and allow firms to undertake substantial expansions of resources that might be difficult to develop internally (Karim and Mitchell, 2000; 2004). Another advantage of acquisitions is to accelerate the time required to enter a new market (Biggadike, 1979; Hennart and Park, 1993).

But firms that make acquisitions have to integrate acquired capabilities within the firm, which also takes time and can be hazardous (Capron, 1999). Using acquisitions to access capabilities can be costly, for reasons ranging from legal constraints to the necessity of leveraging acquired capabilities (Hennart, 1988; Kogut, 1988, 1991; Quélin, 1997; Barney, 1999). In rapidly evolving industries, this cost can be particularly high and acquisitions constrain a firm's options in a costly-to-reverse way (Barney, 1999).

Acquisitions are not exempt of moral hazard issues since the acquirer can find it difficult to assess the value of the acquired resources and may encounter a performance downturn of the acquired personnel (Chi, 1994). Another disadvantage of the acquisition mode is that it involves a high level of commitment from the acquiring firm (Roberts and Berry, 1985).

An acquisition requires a high level of commitment (Roberts and Berry, 1985). Reversing an acquisition is more complicated than a licensing or joint-development agreement (Steensma and Fairbank, 1999). Nevertheless, one can argue that reselling an acquired firm whose capabilities do not meet expectations can be a reasonable opt-out option.

Overall, one must note that there is no empirical consensus on the expected returns from acquisition (Quélin, 1997; Karim and Mitchell, 2000).

In summary, acquisitions reduce the delay for entering a new market. The appropriation of new competencies can be hazardous and the flexibility of an acquisition as an entry mode into a new market is limited.

2.4.3 Alliance

An alliance is another way of accessing missing capabilities or combining resources in order to create new capabilities (Prahalad and Hamel, 1990; Hamel, 1991). They are often used to access resources possessed by other firms (Ring and Van den Ven, 1992; Hamel and Prahalad, 1994) and allow entering a new market faster than through an internal development (Harbison and Pekar, 1998; Powell, Koput and Smith-Doerr, 1996).

Alliances can strengthen the capability base of a firm (Kogut, 1988; Hamel, 1991). They have been proven to be a way to access capabilities more quickly than through in-house development, to share the risk, to diminish uncertainty, and to benefit from reversibility (Balakrishnan and Wernerfelt, 1986; Mitchell and Singh, 1992; Hagedoorn, 1993; Parkhe, 1993). Firms can also use alliances to gain an early window on emerging opportunities they may decide to commit to more fully in the future (Mitchell and Singh, 1992).

On the one hand, organizing transactions through hybrid forms alleviates some of the bureaucratic and shirking costs associated with a more hierarchical mode (Williamson, 1991). On the other hand, this mode can be less useful because adaptations cannot be made unilaterally or by fiat (Williamson, 1991). Moreover, weak regimes of appropriability (Teece, 1986) increase the cost of alliances as compared to hierarchy (Williamson, 1991).

Reversing an alliance that does not satisfy the partners' expectations or is not aligned with the evolution of the market is a reasonable option. But one downside of alliances is that the firm is not able to fully control jointly developed capabilities. The economic rent has to be shared between partners.

The success of an alliance is linked to the absorptive capacity developed over time (Cohen and Levinthal, 1990), which is itself a function of the knowledge possessed by the firm (Klavans and Deeds, 1997).

Alliances are not the panacea to enter a new market since firms may encounter difficulties to reap benefits from an alliance (Hamel, 1991; Mowery, Oxley, Silverman, 1998; Nicholls-Nixon and Woo, 2003). Mitigated results can be explained by a lack of common language, routines and coordination mechanisms developed within an integrated firm (Ghoshal and Moran, 1996). The attractiveness of alliances may vary across the lifecycle of an industry: motivation for entering alliances being limited when the market emerges but peaking when the level of uncertainty diminishes (Lambe and Spekman, 1997).

In summary, alliances exhibit characteristics that lead firms to frequently choose them to enter a new market, even if specific challenges exist (Hergert and Morris, 1988).

2.4.4. Market transaction

Market transactions are not specifically considered in the literature as a mode of entry. Market failures on knowledge transactions explain the very limited number of market transactions (Arrow, 1962; Nooteboom, 1996; Capron and Mitchell, 2004).

Market transactions have been thoroughly studied in contrast to the choice of hierarchy. Transaction cost economics assumes that the market solution is more costly than the hierarchy when exchanges are surrounded by a high level of uncertainty and specific assets are involved (Williamson, 1975).

Although market failure for knowledge-related transactions is widely documented, researchers have also highlighted that new skills can be accessed through the market (Pisano, 1990; Steensma and Fairbank, 1999; Van den Ende, 2003). Accessing external capabilities through a market transaction is quicker than through other modes. However, since the knowledge remains outside the boundaries of the firm, using that mode does not allow the appropriation of new capabilities. One advantage of market transactions is the high degree of flexibility, but opportunism has been proven to be a downside of this mode (Williamson, 1975).

Among the four governance modes that have been discussed, no mode can be regarded as being superior in the context of a new market since each of them presents its own advantages and disadvantages.

3. THEORETICAL MODEL: ENTERING A NEW MARKET

This section sets out the theoretical framework to predict the choices made between internal development, alliances, acquisitions, and market transactions. Facing an innovation, firms have to evaluate the efficiency of each mode. Here we consider more specifically the timing of entry and the impact of innovation on existing capabilities.

3.1. ENTRY TIMING AND ENTRY MODE

The first hypothesis establishes a link between the entry timing and the entry mode. Following several researchers on entry timing (e.g. Mitchell, 1989; Coeurderoy and Durand, 2001; Robinson and Chiang, 2002), categories of actors are distinguished according to their order of entry into the new market.

First entrants in a new industry possess unique capabilities. In our framework, we assume that all actors need to access new capabilities. Because high-growth potential markets tend to encourage market entry (Aaker and Day, 1986; Day and Schoemaker, 2000), other entries are very likely. Anticipating that other actors will enter the market, early entrants try to develop first-mover advantages (Lieberman and Montgomery, 1988) by reinforcing the uniqueness of their offers. One advantage of developing capabilities internally is the higher appropriability of such capabilities. Accumulating imperfectly substitutable assets and hard-to-imitate competencies (Markides and Williamson, 1994) allows firms to strengthen their strategic advantage.

During the initial stage of a new industry, alliances are also a means to share the risk and to diminish the uncertainty (Barney, 1999). Many first-entrants are new actors lacking key complementary assets (Teece, 1986). A willingness to share the risk combined with a lack of capabilities should lead new entrants to engage in partnerships. In addition, partnerships help new actors increase their subsequent performance (Baum, Calabrese and Silverman, 2000).

The newness of an industry limits the availability of potential targets for acquisition (Robinson, Fornell and Sullivan, 1992), thus making acquisitions a limited option for (Lieberman and Montgomery, 1988), they have to compete with existing offers. Indeed, an

innovative offer has already been introduced onto the new market and first-movers have dedicated time and resources to building new capabilities. Consequently, accessing new capabilities within a reasonable timeframe represents a key challenge for late-movers. Because time-compression diseconomies, asset mass efficiencies, asset interconnectedness, and causal ambiguity tend to impede a rapid accumulation of assets (Dierickx and Cool, 1989), internal development is a lengthy process. Moreover, there should be few suppliers possessing the relevant knowledge with whom to engage into market transactions.

Even if late-movers can obtain a superior strategic advantage, the timing for entering the new market is a central issue for them. Therefore, late-movers should not make internal development their primary choice.

Alliances should be considered a viable option because they accelerate the time needed to access new capabilities. Contrary to first-movers for whom acquisitions are not an option, late-movers can expect the number of potential targets for acquisition to have increased. Potential acquisition targets may be new entrants having participated in the introduction of new offers but lacking the capabilities and complementary assets to further develop their advantage (Teece, 1986).

This discussion suggests the following hypotheses:

Hypothesis 1a. In a new market, the earlier the entry the more the internal development and alliance modes are favored.

Hypothesis 1b. In a new market, the later the entry the lesser the internal mode is favored.

3.2. COMPETENCE AND MODE OF ENTRY

When an innovation is introduced, firms' capabilities are often affected (Christensen and Bower, 1996). But developing new competencies does not exclude the reliance on existing competencies. Indeed, capabilities do not become obsolete when an innovation is introduced into a new market. The value of capabilities depends upon the correspondence with market expectations (Amit and Shoemaker, 1993) and relative value may be affected by market changes (Hamel and Prahalad, 1994; Miller and Shamsie, 1996). Capabilities possessed by firms can be subject to a « c*ompetence-enhancin*g » effect. Firms that fall in this category can

exploit some of their existing capabilities in the setting of the new market and benefit from favorable organizational routines (Nelson and Winter, 1982) in new market conditions. These routines should facilitate the development of new competencies (Leonard-Barton, 1992) within the boundaries of the firm. We predict that firms possessing competencies subject to a competence-enhancing effect will favor internal modes to enter the new market.

By contrast, firms whose capabilities are subject to a competence-destroying effect should be in a weak competitive position. Specialized organizational routines often act as barriers for developing new competencies internally (Leonard-Barton, 1992). Firms in that position should favor external modes for entering the new market.

Hypothesis 2a. In a new market, the stronger the potential disruption effect, the more firms will rely on external modes of entry.

Hypothesis 2a. In a new market, the lesser the potential disruption effect, the more firms will rely on internal modes of entry.

4. METHODS

This section presents the new market in which the theoretical model is tested, the data collection process, measures of variables, and the statistical method.

4.1. SAMPLE: ENTRY MODES IN THE ONLINE BROKERAGE MARKET

The empirical setting is the U.S. online brokerage industry. This industry presents several characteristics that make it a good candidate to empirically analyze our research question: the introduction of innovative offers, a need for new competencies, and the anecdotal evidence that firms have made differentiated choices in terms of entry modes. Furthermore, the newness of the online brokerage allows tracing rather meticulously what has occurred within the emerging phase of the industry (Claude-Gaudillat and Quélin, 2004).

Traditionally characterized by robust growth, and generous profit margins, the brokerage industry has been revolutionized by the diffusion of the Internet. Until the online trading revolution, competition in this industry was divided between full-service brokers (e.g. Merrill Lynch, Morgan Stanley), and discount brokers (e.g., Charles Schwab, Quick & Reilly). The emergence of pure online brokers (e.g., E*Trade, WebStreet) has blurred the frontiers between full-service and discount offers. Online equity trading by individuals jumped to 27% in 2000. Full-service brokers have been laggards in their answer to the

emergence of online offers. For instance, the online trading market shares of Charles Schwab, E*Trade, Ameritrade, and Datek amounted to 57.2 % during the second quarter of 2000 while the market share of Merrill Lynch was 3.3%. In 1990, leading full-service brokers controlled 84% of U.S. investment accounts. By the end of 1999, their market share had dropped to 55%. .

4.2. DATA COLLECTION

Both primary and secondary data have been collected for this research. Primary data have been collected through interviews of online brokerage managers based in the San Francisco area during the Winter 2001/2002. We met with managers from Charles Schwab (3 persons), Credit Suisse First Boston, E*Trade, Fidelity, and Merrill Lynch.

Secondary data have been collected according to the principles of historical analysis (Golder, 2000), a method that allows to account for the chronological dimension characterizing research on market entry (Golder and Tellis, 1993). Roberts and Amit (2003) have referred to that method in a study of innovation. The historical analysis method presents several limitations: excess of confidence in declarations, excess of confidence in internal validity, and accessible but incomplete data (Baumard and Ibert, 2003). Folta (1998) noted that samples derived from announcements in secondary sources are subject to selectivity bias since the media is more aware of certain governance choices, i.e. acquisitions.

The second step of our data collection process was the construction of a database identifying the modes chosen by online brokers that entered the new market between 1995 and 1999. Our starting point for identifying the actors having entered the industry was the list established by the Security and Exchange Commission (SEC) at the end of 1999.

To alleviate observation bias, we used several sources of information to identify entry modes. Secondary data were collected by using companies' reports, companies' websites, newspapers, professional newsletters, online database and financial reports (c.f. Table 1 for a list of data sources). In total, several hundred articles were analyzed. Our dataset includes 76 entry modes. Figures 1 and 2 show the percentage of entry per year and the modes of entry selected by firms in our sample.

4.3. MEASURES OF MODE OF ENTRY

The dependent variable - entry mode – has four categories: internal development, acquisition, alliance, and market transaction. Each category is defined hereafter.

4.3.1. Internal development.

Several scholars have operationalized internal development based on secondary data. For Yip (1982), internal development is present when no acquisition is made in the context of a diversification. Lamont and Anderson (1985) and Busija, Neill and Zeithaml (1997) measure diversification by the relative frequency of acquisitions for entering a new business. For Kochhart and Hitt (1998), firms that score low on the number of acquisitions are adopting a direct entry strategy, i.e. internal development. Pennings, Barkema and Douma (1994) measure internal development by the absence of acquisition of an existing division or firm.

Criticizing past studies that have assigned arbitrarily diversification moves, Chatterjee and Singh (1999) argue that a continuous measure can capture the degree of emphasis on internal expansion or acquisition. The mode of expansion is a continuous variable ranging from 0 to 1 calculated as the part of the sales for a particular SIC code that can be traced back to an acquisition. All other businesses are marked as internal expansion. Certainly more precise than previous measures, this variable still relies on an "all or nothing" approach. Karim and Mitchell (2004) apply the same logic for analyzing a quarter-century of boundary evolution at Johnson & Johnson.

In our research, the entry is a direct one when a firm declared an entry through internal development. No "all or nothing" assignment was made. Twenty-two entries through internal development have been identified, which confirms the interest of this approach.

4.3.2 Acquisition

There is no particular problem for the Acquisition category since the media is largely aware of acquisitions (Folta, 1998). Secondary data can therefore be regarded as a reliable source of information.

4.3.3. Alliance

Despite the plethora of work on alliances, the definition of that mode is often rather vague. Some scholars even analyze partnerships without defining them (e.g.: Gambardella and Torrisi, 1998).

In numerous articles, an alliance refers to the hybrid mode as defined by Williamson (1985), i.e. a neo-classical contract that is an intermediary form between market and hierarchy. For example, Pisano (1990) compares internal development and collaborative modes, i.e. external sourcing.

But the degree of contractual complexity and reciprocity of alliances can differ (Mowery et al. (1998). A joint development involves a sharing of the rent. In this research on market entry, it is essential to make a distinction between firms accessing new capabilities and firms appropriating new competencies.

A partnership may imply that two (or more) firms put in common their capabilities. In this case, firms A and B may enrich their portfolios of capabilities. It may also happen that a firm A signs with a firm B a contract stipulating it will pay it for a given product or service. In this last case, the effect is neutral on the capabilities of both firms. For instance, an outsourcing operation does not allow the outsourcing firm to augment its stock capabilities since deployed capabilities remain outside the boundaries of the outsourcing firm.

In this research, an alliance is the case when two firms put in common their capabilities.

4.3.4. Market transaction.

Following the above discussion, a firm enters through a market transaction when it buys a given product or service from another firm, that service or product being central to the market entry. For example, several brokers relied on service providers to develop their new online brokerage offer. That mode of entry is coded as a market transaction.

4.4. MEASURE OF ENTRY TIMING

Existing measures of entry timing belong mostly to two types. The first type of measure is a numerical variable based on the rank or year of entry. The second type of measure relates to categories of entrants.

Suarez and Utterback (1995) and Agarwal, Sarkar and Echambadi (2002) measure entry timing by the logarithm of the entry rank Mitchell (1989) counts the number of years between the emergence of the new market and the year of entry. The instrument chosen by Schilling (2002) is the year of entry.

Robinson, Fornell and Sullivan (1992) distinguish two categories of pioneers (first-movers and other pioneers) and two categories of followers (early followers and late entrants). For Shankar, Carpenter and Krishnamurthi (1998), pioneers are first-entrants in a given category and late-entrants are classified following a logit function (S-curve). Boulding and Christen (2003) use the pioneering indicator provided by the PIMS database.

Establishing a robust ranking of market entries is often difficult (Coeurderoy and Durand, 2001), we have therefore decided to follow Mitchell (1989) and operationalize the Entry timing variable as a numerical variable based on the difference between the year of emergence of the new market and the year of entry of the firm into the new market.

4.5. MEASURE OF DISRUPTIVENESS

Scale measures are frequent to assess the extent to which an innovation may impact firm's capabilities (King and Tucci, 2002; Gatignon and al., 2002).

Interviews as well as secondary data have shown that the disruptiveness effect of the online brokerage market varied more across categories of entrants than across firms. The strongest effect was felt by full-service brokers. Discount brokers also felt a disruptiveness effect but to a lesser extent. Overall, the effect of the online brokerage innovation was more or less neutral for other categories of actors. The Disruption variable is therefore coded as a numeric variable ranging from 0 to 2. 0 corresponds to other categories, 1 to discount brokers, and 2 to full-service brokers.

4.6. MEASURE OF CONTROL VARIABLES

Four control variables are included in the model. The Age of the firm may influence the mode of entry. The Age of the firm is measured as the year of firm's incorporation. That data was collected on the website of the NASDR (National Association of Securities Dealers).

Company size can significantly relate to the choice of the entry mode. Company size is defined as a categorical variable: fewer than 25 employees, 25 – 99, 100 to 499, and 500 or more.

The third control variable refers to the ownership status of the firm: Is the company public or private? Indeed, a public firm may access financial markets and hence make moves like acquisitions more easily than a private firm to enter a new market. A dummy variable was included in the model to capture the potential effect of the ownership on the entry mode (0: private firm, 1: public firm).

Since the attractivity of the new market may also influence the mode chosen by firms, this variable was also included as a control and measured as the logarithm of the Nasdaq index on December 31st year-1.

All variables are coded so that any increase in the value of the variable will have a positive effect on the associated probability.

Table 2 summarizes measures of dependent variable, independent variables, and control variables.

4.7. DATA ANALYSIS

We conducted a multinomial logit (MNL), which is the most commonly used method for testing our category of dependent variable, i.e. an unordered and categorical dependent variable (Long and Freese, 2003).

5. RESULTS AND DISCUSSION

Table 3 shows means, standard deviation, and correlations.

Insert Table 3 about here

Coefficients of the multinomial logit are given in Table 4.

Insert Table 4 about here

Table 5 presents the results of the predictive probabilities.

Insert Table 5 about here

5.1. ENTRY TIMING AND ENTRY MODE

Hypothesis H1a predicted that first entrants favor internal development and alliances. Hypothesis H1b predicted that late entrants favor all modes but internal development.

Coefficients of Equation 1 (Acquisition versus Internal development), Equation 2 (Alliance and Internal development), Equation 5 (Acquisition versus Market transaction), and Equation 6 (Alliance versus Market transaction) are positive. Coefficients of Equation 3

(Market transaction versus Internal development) and Equation 4 (Acquisition versus Alliance) are negative.

Predictive probabilities indicate that each increase of one unit of Entry timing increase the probability that firms enter through Internal development, Acquisition or Alliance. But Entry timing diminishes the recourse to market transactions.

Results for Entry timing are all significant at the $p<0.1$ to $p<0.01$ levels. Hypothesis H1a and H1b are validated for the Alliance and Acquisition modes. Late entrants will favor alliances as a mean to accelerate the access new capabilities (e.g. Hamel, 1991; Lambe and Spekman, 1997). Our results also confirm that acquisitions can reduce the delay for entering new markets (Biggadike, 1979; Roberts and Berry, 1985; Hennart and Park, 1993; Belderbos, 2003) and allow access to new resources in the context of a new business (Karim and Mitchell, 2000, 2004; Ahuja and Katila, 2001; Nichols-Nixon and Woo, 2003; Capron and Mitchell, 2004; Zollo and Singh, 2004; Puranam, Singh and Zollo, 2006).

Results are contrary to our predictions for Internal development and Market transaction. We predicted that the earlier the entry the more firms will favor internal development and the later the entry the more market transactions are chosen.

In the online brokerage market, the slow and methodical characteristics of internal development did not appear as a constraint for late entrants. One explanation may be that firms balance opportunity costs of a late entry with the importance of developing internally the organizational routines that are essential for the commercialization of a new offer. The direct entry strategy of Merrill Lynch who entered the online brokerage in 1999 may illustrate that willingness to enter through a mode facilitating the appropriation of new organizational routines despite the lateness of the entry. Also, it is possible that an internal development is a per default choice for late entrants when neither an acquisition nor an alliance is available. We tried to control for that in the model through the attractiveness variable but it was not significant. Anecdotally, an interviewee told us that Credit Suisse First Boston (CSFB) was willing to enter the online brokerage market through the acquisition of an online broker. Realizing that very high market capitalizations of online brokers made that option impossible, Credit Suisse launched an internal project in 1999. In the end, CSFB entered the market in November 2000 by acquiring DLJDirect for 13.7 billions $. It was the type of acquisition that CSFB had been considering for more than two years but only the drop in market capitalization during the spring of 2000 allowed CSFB to concretize it.

Our results also indicate that late entrants relied less on market transactions than did early entrants. One explanation to the diminishing role of service providers may be that firms that delivered online brokerage systems when the online brokerage market emerged did not have the capability to follow the development of the new market. For example, several providers, such as Farsight Financial, Security APL or Vantra Group, developed the online system of many brokers, mostly small or medium ones, who were early entrants. But our data indicate that the number of firms that entered through market transactions with service providers decreased as from 1998. At first, the online brokerage capability was mostly centered on the technology dimension. As the market evolved, financial advice, financial products, and customer relationships became strategic factors in the new market. IT service providers were not capable of delivering an offer corresponding to new market expectations.

A third explanation to the preference of late entrants towards internal development may be that the timing and mode of entry are endogenous to the resources and capabilities that firms possess (Shaver, 1998; Helfat and Lieberman, 2002). Late entrants may be firms that intrinsically prefer internal development.

5.2. DISRUPTION / ENTRY MODE

Hypotheses H2a and H2b predicted that the higher the disruptiveness of innovation the lesser firms enter through internal modes and the more they enter through external modes.

Coefficients of Equation 1 (Acquisition versus Internal development), Equation 3 (Market transaction versus Internal development), Equation 4 (Acquisition versus Alliance), and Equation 5 (Acquisition versus Market transaction) are negative. Coefficients of Equation 2 (Alliance and Internal development) and Equation 6 (Alliance versus Market transaction) indicate a positive relationship.

Predictive probabilities of the multinomial logit (cf. Table 4) indicate a positive relationship between disruptiveness and an entry through internal development or alliance. The probability is negative for an entry through acquisition and market transaction.

But the only significant coefficient is for Equation1. Facing an innovation, firms should tend to favor the internal development mode over acquisitions.

Based on our results, the disruptiveness engendered by an innovation does not explain the entry mode chosen by a firm to enter a new market. Firms do not make entry decisions

based on the potential destruction or enhancement of their existing competencies in the setting of a new market.

A first explanation may be that factors such as the timing of entry are more influential than the potential disruption to predict the mode of entry. A second explanation to that absence of results might be that firms have cognitive difficulties to frame innovations as well as their consequences (Greve and Taylor, 2000; Tripsas and Gavetti, 2000; Johnson and Hoopes, 2003; Kaplan, 2004). This could explain firm's difficulties to assess the potential impact of innovation on their capabilities, and hence the absence of relationship between disruptiveness and choice of entry mode.

Also the construction of the disruption measure may explain that lack of results.

6. CONCLUSION

The purpose of this study was to address an overlooked subject in the literature: the lack of theoretical and empirical studies on the governance modes chosen by firms to enter a new innovative market.

The main theoretical contribution of this paper is the development of a model of entry modes. The test of the model in the online brokerage market shows that choices made in the setting of a new market are highly correlated to the timing of entry. The later the entry into a new market, the more firms will favor modes other than market transactions.

Another insight from this research is that market transactions are used to enter a new market. Market transactions as a mean to access new capabilities through licensing has been cited by a few scholars (Roberts and Berry, 1985; Pisano, 1990; Gambardella and Torrisi, 1998; Steensma and Fairbank, 1999; and Capron and Mitchell, 2004). But no research had highlighted that market transactions may be an entry mode.

Also, this research shows that alliances have played a very limited role, which tends to be contrary to what the literature on alliance suggests. Indeed, as shown in Figure 2, 4% of firms in our sample decided to enter through an alliance. This is rather contradictory with the literature. One interviewee told us that many brokers decided not to enter through alliances because of very high coordination costs. White and Lui (2005) recently recalled that the TCE focus on opportunism (Williamson, 1985) tend to overlook coordination costs, a type of cost that often explains the failure of strategic alliances (Park and Ungson, 2001). Since asset specificity and uncertainty, two key features of a new market, increase coordination costs

(Artz and Brush, 2000), the limited recourse to alliances in the online brokerage market may be explained by high coordination costs.

While this research has strengths, there are certain limits inherent in its design. Firstly, no distinction is made between incumbents, start-ups and new entrants. But this distinction is frequently made, mainly in research grounded in the population-ecology paradigm (Carroll, Bigelow, Seidel and Tsai, 1996; Sorenson, 2000; Carroll and Khessina, 2005). Differences might exist depending on the firm's category. However, we can justify this absence of distinction by the limited number of start-ups in the online brokerage market.

Another limitation is that the study is not cross-sectional. The online brokerage market is not representative of all new markets. Its specific characteristics limit the generalization to other new markets. Results are also contingent to the sample as well as to the data collection methodology. The limited number of alliances in the sample is also a limitation of this research. One could wonder whether the data collection method was relevant to the observation of alliances. Reliance on multiple sources of information (newspapers, company's websites, research reports, etc.) should have limited observation bias.

While this study examines two factors that influence entry modes, it suggests several venues for development.

Firstly, a cross-sectional study may allow testing the external validity of the model on a larger sample.

Secondly, empirical results have shown that market transactions played a decreasing role when the online market developed. Factors such as licensing policies or complementary assets have been underlined in the literature. But no work has, to the best of our knowledge, focused on the role of providers in innovation. One new venue for development of the entry literature may therefore be to analyze the role of service providers in the innovation dynamics inherent to a new market. One theme may be to identify innovation characteristics that lead providers to play a significant role.

Thirdly, the endogeneity of entry timing may also be an interesting opportunity for future research (Helfat and Lieberman, 2002).

Fourthly, few studies have aimed at understanding the special characteristics of service innovation, which is the case of the online brokerage market. The increasing weight of services in contemporary economics certainly calls for more attention to be paid to this type of innovation (Pennings and Harianto, 1992; Brouthers and Brouthers, 2003).

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TABLE 1. SOURCES OF DATA

SOURCE	TYPE OF INFORMATION COLLECTED
EDGAR (Securities and Exchange Commission) http://www.sec.gov/edgar	Online brokerage offers in the US at the end of 1999
NASD (National Association of Securities Dealers) http://www.nasdr.com/	• Name of company • Year of incorporation
LexisNexis® http://www.lexisnexis.com/	• Entry modes
Hoover's http://www.hoovers.com/	• Entry modes • Size of the firm
Factiva http://global.factiva.com/	• Entry modes
Investex http://www.investex.com/	• Entry modes
Multex http://www.multex.com/	• Entry modes
One Source http://www.onesource.com/	• Entry modes
Dun & Bradstreet	• Size of the firm
Companies' website	• Size of the firm

TABLE 2. MEASURES

Variable	Measure	Proxy for
	DEPENDENT VARIABLE	
ENTRYMOD	Nominal variable 1: Internal development 2: Acquisition 3: Alliance 4: Market transaction	Entry mode
	INDEPENDENT VARIABLES	
DISRUPTN	Ordinal variable 0: other 1: discount broker 2: full-service broker	Disruptiveness of innovation on firm's capabilities
ENTRYTIM	Numerical variable based on the year of entry	Entry timing
	CONTROL VARIABLES	
ENTRYAGE	Numerical variable	Age of the firm at entry
FIRMSIZE	Categorical and ordinal variable 1: nb. employees < 25 2: nb. employees >= 25 and < 100 3: nb. employees >= 100 and < 500 4: nb. employees >= 500	Size of the firm
MKTATTRA	Numerical variable Logarithm of Nasdaq index at Dec. 31 of n-1	Attractivity of the new market
OWNERSHI	Dummy variable: 0: private firm 1: public firm	Ownership status

Table 3. Means, standard deviation and correlations

	Mean	S.D	ENTRYMOD	ENTRYTIM	DISRUPTN	ENTRYAGE	MKTATTRA	FIRMSIZE	OWNERSHP
ENTRYMOD	2.8	1.35	1.00						
ENTRYTIM	1997.25	1.31	-0.15	1.00					
DISRUPTN	.888	.836	-0.14	0.35	1.00				
ENTRYAGE	17.98	28.299	-0.11	0.11	-0.05	1.00			
MKTATTRA	7.19	.254	-0.02	0.88	0.33	0.05	1.00		
FIRMSIZE	2.51	1.167	-0.39	-0.04	-0.02	0.37	-0.11	1.00	
OWNERSHP	.26	.444	-0.24	0.09	-0.03	0.40	0.09	0.66	1.00

Table 4. Coefficients of the multinomial logit

	Equation 1: Acquisition vs Dvlpt interne	**Equation 2: Alliance vs Dvlpt interne**	**Equation 3: Trans. marché vs Dvlpt interne**
ENTRYTIM	1.79 (.99)*	5.67 (2.13)***	-1.44 (.69)**
DISRUPTN	-1.58 (0.789)**	4.32 (5580.81)	-.438 (.439)
MKTATTRA	-5.71 (5.24)	-8.29 (161.35)	6.08 (3.06)
OWNERSHI	.48 (1.26)	14.0401 (1293.854)	-.13 (.93)
ENTRYAGE	.04 (.028)	.028 (.032)	.03 (.03)
FIRMSIZE	-.014 (.63)	8.17 (862.49)	-1.27 (.48)***
	Equation 4: Acquisition vs Alliance	**Equation 5: Acquisition vs Mkt transaction**	**Equation 6: Alliance vs Mkt transaction**
ENTRYTIM	-2.49 (1.31)***	3.23 (1.08)**	7.1 (2.13)***
DISRUPTION	-5.921 (203.)	-1.14 (.77)	4.76 (580.94)
MKTATTRA	-.515 (56.55)	-11.79 (5.42)**	-14.39 (161.39)
OWNERSHI	-11.45 (452.46)	.61 (1.37)	14.17 (1294.14)
ENTRYAGE	.01 (.02)	.02 (.03)	.011 (.03)
FIRMSIZE	-8.2 (301.63)	1.25 (.66)*	9.44 (862.67)

*p<.1, **p<0.05, *** p<0.01

Table 5. Predictive probabilities

	Dvlpt interne	Acquisition	Alliance	Market transaction
ENTRYTIM	.21	.25	1.24e-12	-.46
DISRUPTN	.14	-.12	9.36e-13	-.02
MKTATTRA	-.96	-.87	-2.19e-12	1.83
OWNERSHP	.01	.05	2.31e-09	-.06
ENTRYAGE	-.01	.01	2.86e-15	.01
FIRMSIZE	.24	.07	1.75e-12	-.31

Figure 1. Entry by Year

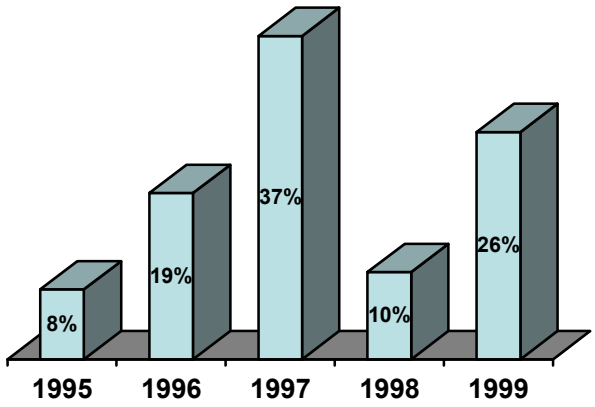

Figure 2. Entry by Mode