

December 2003

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Yuxiu Qu

University of Wisconsin-Milwaukee

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Recommended Citation

Qu, Yuxiu, "The Effects of TMT Demographics on Large Traditional Firms' E-Business Strategy" (2003). *AMCIS 2003 Proceedings*. 159.

<http://aisel.aisnet.org/amcis2003/159>

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THE EFFECTS OF TMT DEMOGRAPHICS ON LARGE TRADITIONAL FIRMS' E-BUSINESS STRATEGY

Yuxiu (Sue) Qu

University of Wisconsin, Milwaukee

yuxiuqu@uwm.edu

Abstract

The Internet has been changing the current ways of doing business in traditional firms. Not all the traditional firms show the same enthusiasm in e-business. Some firms' e-business strategies are more aggressive while other firms' e-business strategies are more conservative. This study proposes a framework to investigate whether or not the demographic characteristics of top management team (TMT) influence the aggressiveness of the large traditional firms' e-business strategy. This study contributes to the research about the effects of TMT on IT strategy.

Keywords: E-business strategy, top management team (TMT), large traditional firms

Introduction

E-business incorporates internet-based buying and selling and back-office activities (Biggs 1998). Since the early 1990's, traditional firms have started to exploit the unique e-business opportunities brought by the Internet. The Internet is the most important technology that enables e-business. The Internet has been changing the current ways of doing business in traditional firms. Not all the traditional firms show the same enthusiasm in e-business (Dutta and Biren 2001). Some firms' e-business strategies are more aggressive while other firms' e-business strategies are more conservative. Large traditional firms' strategic moves have always had great impacts on the economy. E-business strategy is one of the most influential strategies in these firms. Therefore, it is very important to study the e-business strategy in these firms. Dutta and Segev (1999) investigate the degree to which large global firms are transforming their business models in the online marketplace. However, they didn't answer the question as to what factors affect the aggressiveness of firms' e-business strategy. In this paper the aggressiveness of a firm is defined as the annual e-business-related activities conducted by the firm: the more activities, the more aggressive the firm. Based on "upper-echelons" theories, the strategies of an organization can be viewed as the reflections of the cognitive bases of top executives in the organization (Hambrick and Mason 1984). This paper proposes a framework to investigate whether or not the demographic characteristics of top management team (TMT) influence the aggressiveness of the large traditional firms' e-business strategy.

Research Model and Hypotheses

E-business can be considered as innovation. Rogers (1983) define innovation as new idea, new object or new practice. New technology and the renewal of thought and action both fall into the realm of innovation (Poutsma et al. 1987). E-business involves not only the adoption of the Internet and other related technologies, but also the changes of business processes. Therefore, e-business has the characteristics of an innovation. Innovation is affected by the characteristics of organizational leaders (Thong 1999). Innovation strategies typically involve external and internal factors as well as managerial factors (e.g. Chau and Tam 1997; Thong 1999). The top management's perceptions of innovation may have effects on the organization's e-business strategy. The top management team captures and interprets the external and internal information through a filtering mechanism built on their cognitive values (Daellenbach et al. 1999). A manager's demographic characteristics are one of the major determinants of his/her cognitive base and values (Hambrick and Mason 1984). Thus, the TMT's demographic characteristics may influence the innovation decisions through the filtering mechanisms. The strong association between top management' profiles and the firms' innovativeness has been proven by previous studies (Bantel and Jackson 1989; Daellenbach et al. 1999).

TMT Age

Older managers have greater difficulty learning new ideas (Hambrick and Mason 1984), so it is very likely that they respond more slowly to the innovation and act more conservatively. Also, studies have found that older top managers have the risk-avoiding tendency (MacCrimmon and Wehrung 1986). E-business spending in large firms is often expensive and risky. Investment on e-business may decrease the short-term profitability while long-term pay-off is not guaranteed. Therefore, I hypothesize:

H1: The average age of TMT members of a firm will be negatively related to the aggressiveness of the firm's e-business strategy.

TMT Tenure

Hayes and Abernathy (1980) find that managers with substantial same company/industry experience are more open to innovation because they have more knowledge of the technological trends in the industry. Some other researchers have opposite conclusions. Hambrick and Mason (1984) argue that executives are more likely to favor current products and markets rather than new ones if they have spent their entire careers primarily in one organization. Bantel and Jackson (1989) suggest that TMT members with longer career in a particular company tend to do limited information-search and rely on a restricted knowledge base, and therefore they have higher tendency of sticking with the status quo. However, this doesn't necessarily mean that they will be biased against all types of innovation. Tushman and Anderson (1986) assert that industry incumbents usually tend to adopt "competence enhancing" innovations. E-business innovations can be considered as "competence enhancing" innovations because successful e-business strategy may improve the firm's core competence. Due to the contradictory and inclusive research findings, I form competing hypotheses as following:

H2a: The average year of work experience within a firm's industry by members of its TMT will be positively related to the aggressiveness of the firm's e-business strategy.

H2b: The average year of work experience within a firm's industry by members of its TMT will be negatively related to the aggressiveness of the firm's e-business strategy.

H3a: The average year of work experience within the current firm by members of its TMT will be positively related to the aggressiveness of the firm's e-business strategy.

H3b: The average year of work experience within the current firm by members of its TMT will be negatively related to the aggressiveness of the firm's e-business strategy.

TMT Education

Researchers have found a positive relationship between a firm's innovativeness and its management team's levels of education (Bantel and Jackson 1989; Hambrick and Mason 1984). The underlying logic is that: higher levels of education are associated with more complex cognitive styles (Hitt and Tyler 1991; Wally and Baum 1994); and more cognitive complexity leads to higher ability to learn new knowledge and accept innovation (Barker and Muller 2002). Therefore, I hypothesize:

H4: The average amount of formal education achieved by a firm's TMT members will be positively related to the aggressiveness of the firm's e-business strategy.

TMT Functional Background

The functional background of a firm's TMT members also has impact on the firm's e-business strategy. The functional experience of a TMT member affects his/her strategic choices (Finkelstein 1992; Michel and Hambrick 1992). Tyler and Steensma (1998) find that managers having technology as their primary work experience were more likely to perceive technological opportunities and less likely to perceive risks. The top management's functional background can be divided into two categories: output functions, i.e. R&D/Engineering and Marketing/Sales; and throughput functions, i.e. Accounting/Finance, Production, Administration and Legal (e.g. Frinkelstein and Hambrick 1996; Hambrick and Mason 1984). TMT members having functional

background in output functions will be more likely to be in favor of innovation strategies because these business functions emphasize growth and the exploration of new opportunities (Barker and Muller 2002; Frinkelstein and Hambrick 1996; Hambrick and Mason 1984). Therefore, TMT members with career experience from output functions may prefer more aggressive e-business strategy. In contrast, a TMT member with career experience in throughput functions (i.e. Accounting/Finance, Production, Administration and Legal) will be more conservative. Therefore, I hypothesize:

H5: The proportion of a firm's TMT members with work experience in output functions (R&D/Engineering and Marketing/Sales) will be positively related to the aggressiveness of the firm's e-business strategy.

Research Methodology

Data Collection

The companies selected for the study will be the Fortune 500 companies (2002 list). Following Dutta and Segev (1999), the list will be classified into nine sectors: Electronics & Computers, Media & Entertainment, Finance & Insurance, Retail & Wholesale, Manufacturing, Travel & Transport, Chemicals & Pharmaceuticals, Telecom & Utilities and Mining, Oil Production and Refining.

Dependent Variable

The dependent variable, the aggressiveness of the firm's e-business strategy, will be measured by the annual sum of the firm's e-business-related activities during the period of 1993-2002. A content analysis of published articles will be done to keep track of the e-business activities that the firm conducted from year 1993 to year 2002. The year 1993 is selected because the commercial use of the Internet started from 1993 (Zwass 1996). I will apply a comprehensive, multiple source method to examine citations of the sample firms appearing in the Predicasts F&S Index for the period of 1993-2002. Predicasts F&S Index provides full text of brief articles and summary of longer articles, covering all manufacturing and service industries and a wide range of business- and technology-related subjects. I will code all cited firm-level activities that are related to e-business. In order to eliminate the effect of the industry, this measurement will be adjusted by the industry-level e-business-related activities (the sum of each individual firm's annual activities in the same industry sector). Therefore, the aggressiveness of the firm's e-business strategy will be operationalized as the quotient resulting from the division of annual firm-level e-business activities and annual industry-level activities.

Independent Variables

All independent variables about TMTs will be drawn from *Dun and Bradstreet Reference Book of Corporate Managements*. This book provides standard demographics on TMTs in large American companies. Because the TMT composition may have changed over years, I will examine the TMT demographics for each year during the period of 1993-2002. The age of each TMT member will be measured in years (a given year minus birth year). The year of working experience of each TMT member in the firm/industry will be measured as the number of years since he/she started working in the firm/industry (a given year minus the year when he/she entered the firm/industry). Then I will calculate the average age and average years of work experience based on each TMT member's age and years of work experience. Education level will be coded as an ordinal variable (0=no college degree, 1=undergraduate degree, 2=master's degree, 3=Ph.D. degree). This coding method was used by Barker and Muller (2002). Finally, I will track the TMT members' career path and classify them into different categories based upon their functional backgrounds. To measure a TMT member's career experience, each member's listed experiences will be coded into six categories: marketing/sales, engineering/R&D, finance/accounting, legal, productions/operations and administration. If a member has experience in more than one area, all the functional backgrounds he/she has will be counted. The proportion of TMT members with output functions will be calculated by dividing the number of output functions by the total number of functions.

Control Variables

I will control the size and age of the firm, which may influence the firm's flexibility of action (e.g. Backer and Cullen 1993; Fombrun and Ginzberg 1990). The size of the firm will be measured by the dollar sales of the firm in a given year (Using COMPUSTAT data). The age of the firm will be measured in years since original corporate founding.

In addition, B2B and B2C firms might have different tendency to e-business strategy. I will include a dummy variable for two different kinds of firms.

A regression analysis will be performed using the panel data of the e-business activity from 1993-2002.

Discussions

This study examines how top management demographic characteristics influence the aggressiveness of the e-business strategy in large traditional firms. The study contributes to the research about the effects of TMT on IT strategy. The results of this study can also be used as a tool to companies, especially the stockholders, to understand what kind of top management team will be more aggressive in e-business.

The measurements of the variables in the research model have some limitations. The aggressiveness of e-business strategy is measured by the e-business activities cited on the public resources. Some firms might not announce all the e-business activities to the public, and therefore the measurement may not cover all the e-business activities conducted by a firm.

Due to the unavailability of data, this study only focuses on the factors that can be measured by available data. The “black box” that exists between the TMT demographics and the e-business strategy has not been explored yet. Also, the research model is not an exhaustive model. More factors can be added to make a better model, for example, besides demographic characteristics the risk-taking tendency of TMT might also have important effects on e-business strategy. When studying the influence of TMT members, I only study the “average” effects of the TMT members’ characteristics (such as average age, average work experience and so forth). The composition of the characteristics may also have effects on e-business strategy, for example, it is possible that two TMTs with the same average age prefer different e-business strategies because of the difference between their members’ age composition. Future research is needed to further explore this area.

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