# FIRST-MOVER ADVANTAGE IN THE ONLINE RETAIL INDUSTRY: AN ANALYSIS OF THE ONLINE TRAVEL INDUSTRY

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FIRST-MOVER ADVANTAGE IN THE ONLINE RETAIL INDUSTRY: AN ANALYSIS OF THE ONLINE TRAVEL INDUSTRY

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Economics

**Abstract**

As the Internet becomes an increasingly popular medium in which to conduct business, strategists have argued over the best generic strategy for online firms, and one topic that has remained controversial is first-mover advantage theory. This thesis looks at first-mover advantage and the electronic commerce industry. In particular, it will study the effects of pioneering status on consumer cognition (specifically retrieval, recall, and preference) in the online travel-booking industry. By replicating the methods and analysis of a previous survey-based approach study conducted by Alpert and Kamins ("An Empirical Investigation of Consumer Memory, Attitude, and Perceptions Toward Pioneer and Follower Brands"), this thesis was able to analyze how a convenience sampling of Colorado College students think about the pioneer brand in the online travel-booking industry. A close analysis of the survey results rejects the three initial hypotheses that favor the pioneer.

KEYWORDS: (First-mover Advantage, Electronic Commerce, Consumer-based Advantages, Pioneering Brands, Online Travel)

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

# CHAPTER I

# INTRODUCTION

In the past ten or twenty years, the Internet has provided a unique medium for firms to conduct business with, and its influence on daily lives around the world is growing by the day. As Schlender writes, people are spending less time "surfing" the Internet and more time doing specific things like emailing, shopping, searching, and watching content.[1] This makes competitive strategy an essential tool for companies who conduct their business online. Many strategists have argued over the best generic strategies for industries like electronic commerce (also known as e-Commerce), and one controversial topic revolves around first-mover advantage theory.

This thesis looks at the relationship between first-mover advantage theory and the electronic commerce industry. In particular, this study will examine the effects of pioneering status on consumer cognition (specifically retrieval, recall, and preference) in the online travel-booking industry. Scholars disagree on whether pioneering status leads to sustainable competitive advantages in the e-Commerce industry, and there are many contrasting opinions in the literature related to this field. However, there is one idea that all scholars seem to agree with—the fact that there is a need for more empirical evidence.

By replicating a survey-based study conducted by Alpert and Kamins and narrowing its focus to only to the e-Commerce industry, this thesis studies and analyzes

[1] Brent Schlender, "Dawn of the Web Potato," *Fortune,* 156, no. 6 (September 2007): 52.

how consumers think about first-movers and followers within the industry.[2] There are three hypotheses that connect pioneering status to retrieval, recall, and preference. Respectively, these hypotheses are:

- $H_1$: Respondents will retrieve pioneer brands to a degree that is significantly higher than any other brand.
- $H_2$: Respondents will be able to correctly recall the pioneer brand in a given product category to a degree greater than chance.
- $H_3$: Other things being equal, respondents prefer the pioneer brand in terms of purchase performance.

The study measures consumer retrieval, recall, and preference rates; specifically, the study measures differences between groups of data where companies *are* or *are not* the pioneer.

## Background

First-mover advantage, as defined by Lieberman and Montgomery, endogenously arises within a pioneering firm when some asymmetry is created, potentially enabling the pioneering firm to gain advantages over rivals.[3] As discussed in Chapter 2, first-mover advantages can be categorized into producer-based advantages (stemming from the firm) as well as consumer-based advantages (stemming from the consumer). Essentially, studies looking at consumer-based advantages analyze how consumers learn about the pioneering product, how they process information about the

[2] Frank H. Alpert and Michael A. Kamins, "An Empirical Investigation of Consumer Memory, Attitude, and Perceptions Toward Pioneer and Follower Brands," *The Journal of Marketing* 59, no. 4 (October 1995): 34-45.

[3] Marvin B. Lieberman and David B. Montgomery, "First-Mover Advantages," *Strategic Management Journal* 9, no. 1 (1988): 1.

pioneer product, how they think about the pioneer product, and how they react to the pioneer product. Consumer-based advantage is a relatively under-researched field compared to the more traditional literature rooted in producer-based advantages. The study by Alpert and Kamins that this thesis replicates falls under this lesser-studied category.

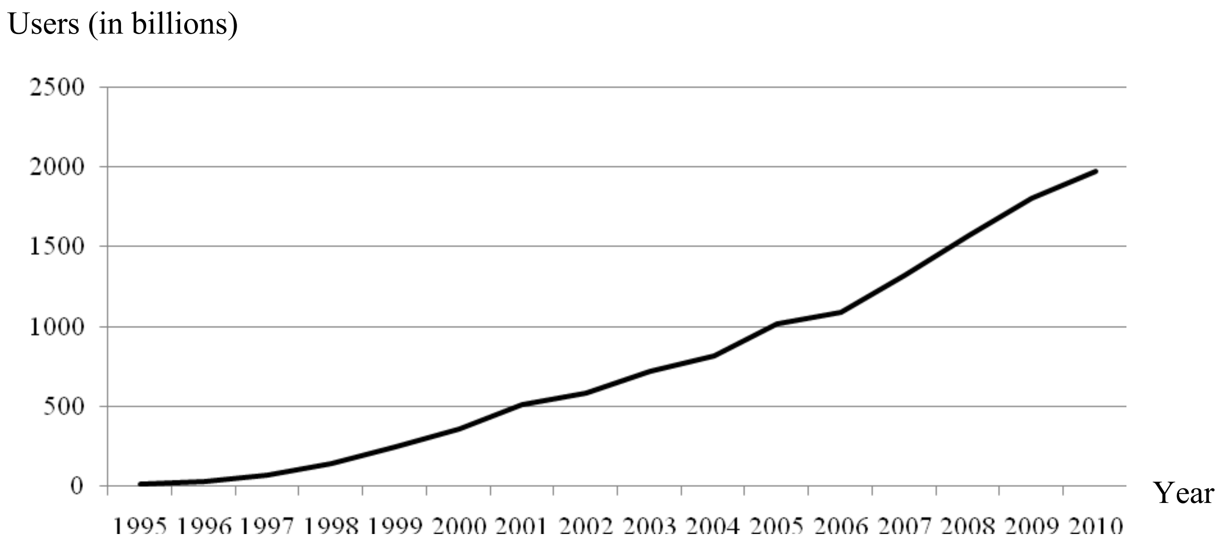
And while the e-Commerce industry is a hot topic among scholars today, there is no consensus on whether first-mover advantages actually exist in the industry. For every example of a first- or early-mover that succeeds (like Amazon.com), there is an example of a first- or early-mover that has squandered any hope of pioneering advantages (Toys.com).[4] Most of the studies looking at pioneering advantages specifically within the e-Commerce industry look at producer-based advantages, or advantages stemming from the firm's strategic use of resources, technology, patenting, and more. There have been very few studies analyzing how consumers think about e-Commerce companies and how that contributes to pioneering advantages. This thesis hopes to contribute to that gap in literature. More about first-mover advantage, consumer-based advantages, and the e-Commerce industry will be discussed in Chapter 2.

## Significance of the Study

One reason why this thesis is noteworthy is because of the scope of the industry it is analyzing. The Internet has grown a tremendous amount in the past fifteen years, and it will continue to grow for quite some time (see Figure 1.1).

[4] T. P. Liang et al., "Leveraging First-Mover Advantages in Internet-Based Consumer Services," *Communications of the ACM* 52 no. 6 (June 2009): 146-148.

FIGURE 1.1
THE GROWTH OF INTERNET USERS IN THE PAST 15 YEARS




SOURCE: Internet World Stats, "Internet Growth Statistics," *Global Village Online* [online]; available from http://www.internetworldstats.com/emarketing.htm; accessed 6 December 2010.

It makes sense that, as the Internet is growing, so is the e-Commerce industry. The U.S. Census Bureau reported that in 2008, e-Commerce activity accounted for 39.3% of manufacturing shipments, 20.6% of merchant wholesale trade sales, and 3.6% of retail trade sales.[5] This means that 39.3% of all manufacturing shipments during 2008 were ordered online, 20.6% of merchant wholesale trade sales occurred on the Internet, and so on. It is safe to say that conducting business on the Internet has become immensely popular. This thesis will narrow its focus to online retailing, which currently accounts for only a small percentage of overall retail sales in the United Sales but is a growing and significant industry nonetheless. U.S. retail e-Commerce sales

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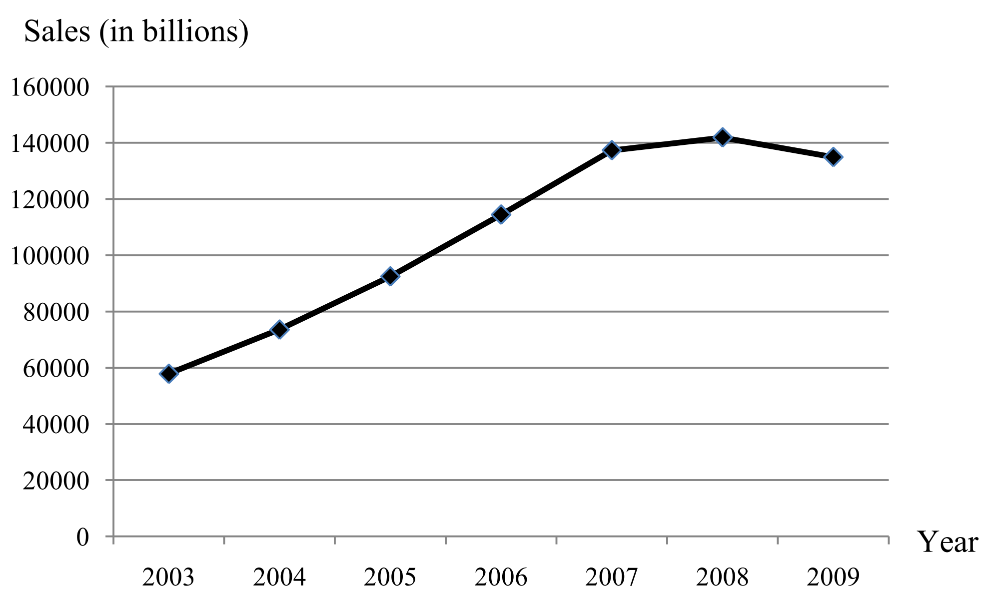
[5] "U.S. Census Bureau E-Stats Final Report 2008," *U.S. Department of Commerce: U.S. Census Bureau* [online]; available from http://www.census.gov/econ/estats/2008/2008reportfinal.pdf; Internet; accessed 6 December 2010.

reached almost $142 billion in 2008, up 3.3% from $137 billion the year before.[6]

Figure 1.2 shows the annual growth in the past few years of U.S. online retailing.

FIGURE 1.2
ANNUAL SALES GROWTH OF U.S. ONLINE RETAIL INDUSTRY (IN BILLIONS)




SOURCE: *U.S. Census Bureau E-Stats Final Report 2008* (U.S. Department of Commerce: U.S. Census Bureau, 2010).

This study becomes important, then, because of the immense growth of the e-Commerce industry in relation to online retail sales over the past few years. Pioneering firms in the e-Commerce industry are dealing with a good amount of risk with the decision-making process. With the rapid diffusion of technology, low switching costs for consumers, and easy replication of products and services that firms encounter when dealing with the Internet, each decision can literally make or break a firm. Understanding how consumers perceive pioneers and followers in the electronic commerce industry, then, is important because of the implications it can have on strategic management decisions. Learning more about this phenomenon can help

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[6] Ibid.

pioneering managers exploit their first-mover status and can help firms who are later entrants work around this issue.

## Methodology

Because Alpert and Kamins were the first to conduct survey-based research looking at consumer cognitions, affect, and reported behavior (or, pioneering advantages from the consumer standpoint), this study will be modeled after their study.[7] They provide credible research methods that look at pioneering advantages across a large number of industries. This study will narrow the focus down to one specific industry and one specific age group to see if the results are similar. Thus, the method to be used will be creating and distributing a survey. The survey uses similar questions to Alpert and Kamins' survey as well as similar methods to analyze the responses; all survey questions and data can be found in the Appendix.

The data will come from a convenience sampling of Colorado College students. CC students were chosen as the population to look at because that choice is the most convenient and lowest-cost option. The survey was distributed online through Surveymonkey.com and participants were contacted via the Internet (by the list-serv email which is sent to all students at Colorado College).

One-tailed and two-tailed t-test analyses were conducted to see if the difference in frequencies of the retrieval of the pioneering brand versus other brands was significant, if the frequency of recall of the pioneering brand was significantly different from the percentage of chance, and if preferences of the pioneering brand were significantly different than neutral opinion.

[7] Alpert and Kamins, 34.

While Travelocity might enjoy certain firm-based advantages stemming from its pioneer status, the results from this study suggest that being the pioneer brand in the online travel industry does not provide any consumer-based advantages other than being well-known as a player in the industry. This recognition, however, does not appear to translate into consumer preference. All three initial hypotheses were rejected based on the data gathered from the survey.

## Overview of Remaining Chapters

Chapter 2 begins by introducing definitions of key terms that will be used throughout this paper. Specifically, Chapter 2 explains the mechanisms of first-mover advantage theory. It then goes in depth with the behavioral origins of pioneer brand advantage, a key mechanism of consumer-based pioneering advantages. It concludes with an overview of literature connecting first-mover advantage theory and the electronic commerce industry as well as addressing gaps in the literature. Chapter 3 discusses the methodology of the study while Chapter 4 introduces, discusses, and analyzes the study findings. Chapter 5 addresses key implications of the findings of the study, limitations of the study, and possibilities for future research.

# CHAPTER II

# LITERATURE REVIEW

First-mover advantage, as defined by Lieberman and Montgomery, endogenously arises within a pioneering firm when some asymmetry is created, thus enabling the pioneering firm to potentially gain a head start over rivals.[1] Because pioneering firms are dealing with new industries that are foreign to the marketplace, the decision-making process can be a difficult one. If a pioneering firm isn't careful, its decisions can squander any hope of first-mover advantages. The more that a firm can understand about first-mover advantage, the better-informed decisions it will be able to make. The purpose of this literature review is to examine not only the theoretical models and mechanisms in which first-mover advantage can be attained but also to examine the contrasting opinions concerning these same models and mechanisms. It will then look deeper into the literature surrounding consumer-based pioneer advantages as well as literature involving first-mover advantage and the e-Commerce industry.

## First-Mover Advantage Theory: A Basic Definition

"First-mover Advantages" by Lieberman and Montgomery provides a solid foundation for understanding the mechanisms that create advantages for pioneering firms, and thus it would be useful to examine each of these particular mechanisms to understand this concept better. The mechanisms that lead to advantages are:

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[1] Marvin B. Lieberman and David B. Montgomery, "First-Mover Advantages," *Strategic Management Journal* 9, no. 1 (1988): 1.

technological leadership, preemption of scarce assets, and switching costs/buyer choice under uncertainty.[2] Table 2.1 provides a list of these terms and their definitions as well as other terms relating to first-mover advantage theory. It would be useful to reference Table 2.1 throughout this chapter.

TABLE 2.1
TERMS AND DEFINITIONS OF FIRST-MOVER ADVANTAGE THEORY

| **Key Term** | **Definition** | **Sources** |
|---|---|---|
| Attribute preference | One benefit stemming from product-usage sequence. It is the idea that consumers will learn to prefer the attributes of the first brand they encounter. | Alpert & Kamins (1994) pg. 245. |
| Brand loyalty | One benefit stemming from product-usage sequence. It is when consumers stick with a particular brand. | Alpert & Kamins (1994) pg. 245. |
| Buyer choice under uncertainty | One mechanism that can lead to sustainable advantages for first-movers. It is the idea that rational consumers will stick with the first brand they encounter if that brands performs satisfactorily. | Lieberman & Montgomery (1988) pg. 9; Schmalensee (1982) pg. 360. |
| Categorization of pioneer as prototype | One benefit stemming from information-exposure sequence. It is the idea that consumers may categorize the pioneer brand as the best brand in that category, or the ‘prototype’ in that category. | Alpert & Kamins (1994) pg. 247. |
| Consumer-based view | Looking at first-mover advantage theory from the viewpoint of the consumers; explaining advantages from how consumers learn and acquire information about the pioneer and follower brands and how consumers think about the pioneer and follow brands. | Alpert & Kamins (1994) pg. 244. |
| eCommerce or eBusiness | It is the buying and selling of products or services on the Internet. It consists of either business to consumer interactions (known as B2C commerce) or business to business interactions (B2B commerce). | Hidding & Williams (2004) pg 1. |

[2] Ibid.

TABLE 2.1 – Continued

| | | |
|---|---|---|
| First-mover advantage | Any benefits accrued by the first firm to enter a market because of the fact that it was first to enter that market. | Lieberman & Montgomery (1988) pg. 1. |
| Information-exposure sequence | One behavioral origin of pioneer brand advantage. It is the order and manner that consumers learn information about the pioneer and follower brand—consumers may be exposed to information about pioneers before they are exposed to information about followers. This happens through mediums like advertising, notice of the brand in the store, word-of-mouth, etc. | Alpert & Kamins (1994) pg. 247 |
| Knowledge of pioneer status | One behavioral origin of pioneer brand advantage. It is the idea that consumers knowing the fact that a brand is the market pioneer can be beneficial for these firms. | Alpert & Kamins (1994) pg. 249. |
| Order-of-entry advantages (or order-of-entry effects) | Synonym of first-mover advantage | Lieberman & Montgomery (1988) pg. 1. |
| Pioneer brand advantage | Benefits acquired by first-movers specifically from how consumers think about first-movers. These benefits come in the form of enhanced consumer preference, attitude, awareness, learning, and memory of pioneer brands. | Rettie, Hilliar, & Alpert (2002) pg. 2. |
| Preemption of scarce assets | One mechanism that can lead to sustainable advantages for first-movers. This includes possessing limited resources, geographic spaces, equipment, and input factors. | Lieberman & Montgomery (1988) pg. 5. |
| Producer-based view | Looking at first-mover advantage theory from the viewpoint of the firm; explaining advantages from what the firm does and how the firm acts. | Lieberman & Montgomery (1988) pg. 2. |
| Product-usage sequence | One behavioral origin of pioneer brand advantage. It is the order that consumers use different brands—consumers will use the pioneer brand until other brands are available. | Alpert & Kamins (1994) pg. 245. |
| Switching costs | One mechanism that can lead to sustainable advantages for first-movers. It occurs when buyers incur extra costs by switching from one product to another. Switching costs include the time and resources spent qualifying a new product and cost of ancillary goods. | Lieberman & Montgomery (1988) pg. 8. |

TABLE 2.1 – Continued

| | | |
|---|---|---|
| Technological leadership | One mechanism that can lead to sustainable advantages for first-movers. This includes having experience or learning curves, successful patenting, and superior R&D to later entrants. | Lieberman & Montgomery (1988) pg. 2 |

Technological Leadership

Technological leadership, seen through learning curves (where unit production costs falls with cumulative output), patent protection, and/or research and development, can lead to competitive advantages of a pioneering firm.[3] Empirical evidence which supports this statement can be found in a study by Agarwal and Gort who argue that the time period when the first-mover enjoys a monopoly in the market is caused in part by technological leadership.[4] Likewise, Robinson, Kalyanaram, and Urban found that market pioneers who have innovative strategies yield higher returns.[5] However, not all scholars agree that technological leadership brings benefits to first-movers. Many argue that the rapid diffusion of technology today weakens learning curves significantly, and as a result, greatly diminish any advantages stemming from technological leadership. In a study looking at stock market reactions to new product introductions and imitations, Lee, Smith, Grimm, and Schomburg found that first-movers suffer when imitators enter the market, suggesting that as soon as later firms enter the market, any advantage that

[3] Ibid.

[4] Rajshree Agarwal and Michael Gort, "First-Mover Advantage and the Speed of Competitive Entry, 1887-1986," *Journal of Law and Economics* 44, no. 1 (April 2001): 161.

[5] William T. Robinson, Gurumurthy Kalyanaram, and Glen L. Urban, "First-Mover Advantages from Pioneering New Markets: A Survey of Empirical Evidence," *Review of Industrial Organization* 9, no. 1 (February 1994): 1.

innovation initially brought to the first mover diminishes significantly.[6] Agarwal and Gort, who examined data sets from 46 different product categories, found that the time interval that pioneers enjoy when they are the only competitors in the market has decreased significantly in the past century. This time interval decreased from 33 years at the beginning of the twentieth century to 3.4 years in the mid-eighties, partly because of factors like rapid diffusion of technical information present in the environment.[7] Even the acquisition of patents doesn't guarantee protection for firms, and Robinson suggests that patents only account for a very small percentage of perceived advantages by first-movers.[8] In any case, the literature revolving around this concept is controversial and provides many contrasting opinions concerning the effects of technological leadership on advantages for first-movers.

Preemption of Scarce Assets

The next mechanism in first-mover advantage theory that leads to potential advantages is the preemption of scarce assets, which includes input factors, locations in geographic space, and investment in plant or equipment.[9] If pioneering firms can gain access to limited resources that are necessary for survival in the market, these firms potentially will have a leg up on later entrants. Michael lends support to this idea with his study of first-mover advantage through restaurant franchising. Empirical results indicated that restaurants who franchised heavily early on could acquire an advantage

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[6] Hun Lee et al., "Timing, Order and Durability of New Product Advantages with Imitation," *Strategic Management Journal* 21, no. 1 (January 2000): 23.

[7] Agarwal and Gort, 161.

[8] William T. Robinson, "Sources of Market Pioneer Advantages: The Case of Industrial Goods Industries," *Journal of Marketing Research* 25, no. 1 (February 1988): 316.

[9] Lieberman and Montgomery, 5.

over later entrants—"first in the form of a greater number of retail outlets than competitors, then by market share, and finally, superior profitability."[10] Even when many resources are easily attainable for imitators, some scholars argues that it takes just one key resource to create a sustainable competitive advantage. Empirical data from Makadok's study of the money market mutual fund industry indicates that though barriers to entry are low and imitation of the initial product is easy in this particular industry, access to one key resource makes certain competitive advantages sustainable for first-movers.[11] Lieberman and Montgomery argue in a later paper that there are benefits of linking first-mover empirical studies to a more resource-based view of the firm, which revolves around the idea of competitive advantages stemming from the strategic investment of resources.[12] Wernerfelt provides a similar suggestion of linking empirical evidence of pioneers to the resource-based view theory—he argues that resource position barriers are partially analogous to entry barriers in a market.[13] Thus, there is much research on early-entrant advantages arising from preemption of scarce assets, but much like the other mechanisms of first-mover advantage theory, scholars can't agree if this particular mechanism can truly help pioneers gain a sustainable advantage over later entrants.

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[10] Steven C. Michael, "First Mover Advantage through Franchising," *Journal of Business Venturing* 18, no. 1 (January 2003): 61.

[11] Richard Makadok, "Can First-Mover and Early-Mover Advantages be Sustained in an Industry with Low Barriers to Entry" *Strategic Management Journal* 19, no. 7 (July 1998): 683.

[12] Marvin B. Lieberman and David B. Montgomery, "First-Mover (Dis)Advantages: Retrospective and Link with the Resource-Based View," *Strategic Management Journal* 19, no. 12 (December 1998): 1111-1125.

[13] Birger Wernerfelt, "A Resource-Based View of the Firm," *Strategic Management Journal* 5, no. 2 (April 1984): 171.

Switching Costs

The last mechanism that leads to first-mover advantages revolves around switching costs that buyers incur when they switch from an initial product to a new one as well as buyer choice under uncertainty. Buyer choice under uncertainty is the idea that rational consumers will stick with the first brand they encounter if that brand performs satisfactorily.[14] The basic advantages that first-movers enjoy from these two ideas are branding loyalty and the fact that later entrants must invest in extra resources in order to attract customers.[15] Robinson, Kalyanaram, and Urban lend support to this concept by arguing that pioneers tend to shape consumer tastes and preferences in favor of the pioneering brand.[16] However, not all scholars agree with this: the model in Hoppe's study predicts that second- and later-movers gain more advantage from times of uncertainty than first-movers.[17] Wernerfelt and Karnani produced similar results: their study suggests that in times of uncertainty or rapid environmental change, learning curve advantages of pioneering firms may act as an impediment to these firms.[18] Thus, the empirical literature revolving around switching costs and buyer choice under uncertainty is likewise controversial, with some scholars agreeing and other scholars disagreeing that these mechanisms cause advantages for pioneering firms.

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[14] Richard Schmalensee, "Product Differentiation Advantages of Pioneering Brands," *The American Economic Review* 72, no. 3 (June 1982): 360.

[15] Lieberman and Montgomery, 8.

[16] Robinson, Kalyanaram, and Urban, 1.

[17] Heidrun C. Hoppe, "Second-Mover Advantages in the Strategic Adoption of New Technology Under Uncertainty," *International Journal of Industrial Organization* 18, no. 2 (February 2000): 315-338.

[18] Birger Wernerfelt and Aneel Karnani, "Competitive Strategy Under Uncertainty," *Strategic Management Journal* 8, no. 2 (March 1987): 187.

First-mover advantage theory is a well-developed and well-researched field of study. That 'traditional' literature about pioneering advantage stems from the producer-based mechanisms, like technological leadership and pre-emption of scarce assets, which come from the firm itself. Less studied and certainly less understood is how consumer knowledge and exposure to pioneer and follower brands work. Since this study will be focusing on the less-traditional branch of consumer-based pioneering advantages, it would be useful to have a deeper understanding of the mechanisms (switching costs and buyer choice under uncertainty) that are at work.

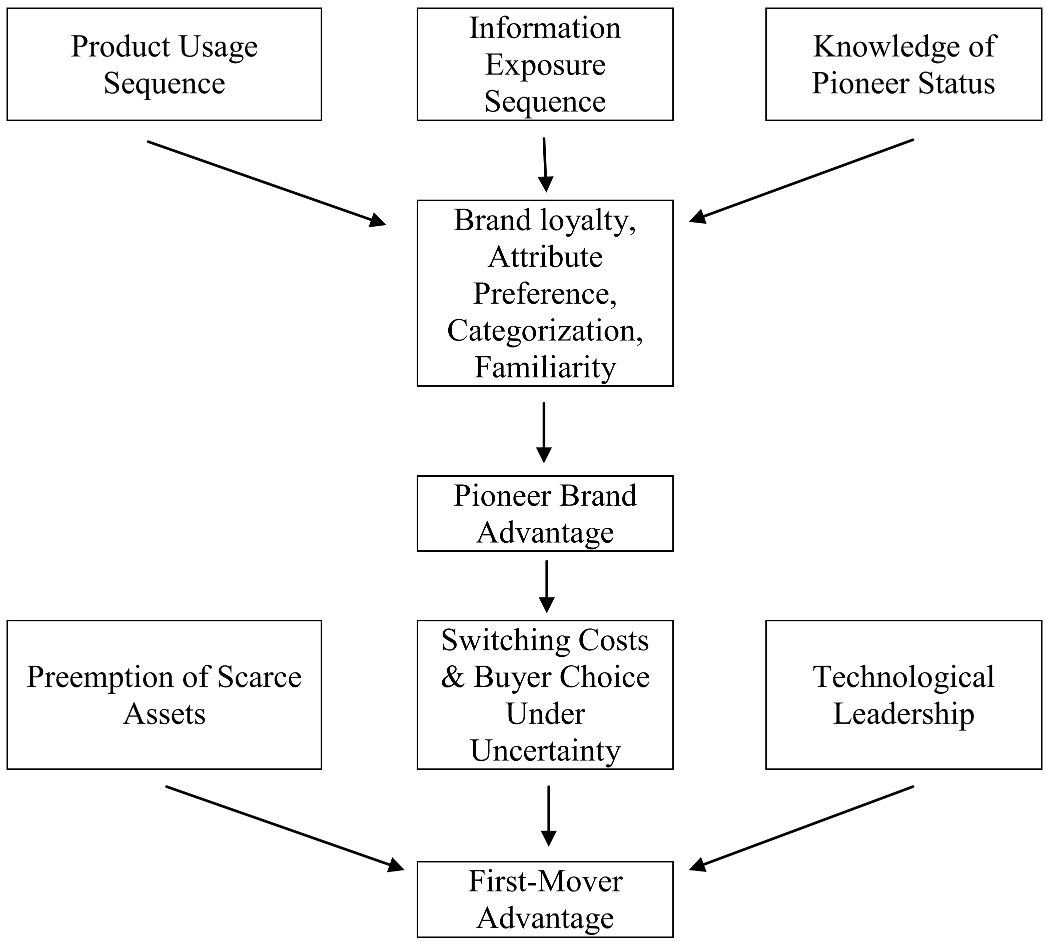
## Consumer-Based Advantages

A recent surge of literature starting in the early 1990s has identified consumer-based advantages as an integral part of first-mover theory. Despite the current interest, it is still an under-researched field. Understanding how consumers perceive pioneers and followers is important because of the implications it can have on strategic management decisions, and learning more about this phenomenon can help pioneering managers exploit their first-mover status and follower managers work around this issue. Any benefits gained from being a pioneer, from the consumer-based standpoint, are called pioneer brand advantages. Rettie, Hilliar, and Alpert describe pioneer brand advantage as the idea that the first entrant in a new market has the potential to gain certain consumer-based advantages in the form of "enhanced consumer preference, attitude, awareness, learning, and memory of pioneer brands."[19] Alpert and Kamins provide a solid foundation for understanding the behavioral origins of pioneer brand advantage, and it would be useful to examine each one individually in order to

[19] Ruth Rettie, Simon Hilliar, and Frank Alpert, "Pioneer Brand Advantage with UK Consumers," *European Journal of Marketing* 36, no. 7/8 (2002): 895-911.

understand the theory better. They argue that consumers are exposed to sources of pioneer brand information in three ways: product usage sequence, information exposure sequence, and knowledge of pioneer status (see Figure 2.1).[20]

FIGURE 2.1
ORIGINS AND MECHANISMS OF FIRST-MOVER ADVANTAGE




SOURCE: Frank H. Alpert and Michael A. Kamins, "Pioneer Brand Advantage and Consumer Behavior: A Conceptual Framework and Propositional Inventory," *Journal of the Academy of Marketing Science,* 22, no. 3 (Summer 1994): 244-253.

[20] Frank H. Alpert and Michael A. Kamins, "Pioneer Brand Advantage and Consumer Behavior: A Conceptual Framework and Propositional Inventory," *Journal of the Academy of Marketing Science* 22, no. 3 (Summer 1994): 244-253.

The first way that consumers can be exposed to pioneer brand information is when they actually purchase and use the product (termed by Alpert and Kamins as product usage sequence).[21] A consumer will buy and use the pioneer product until other products become available, and this can potentially result in advantages like brand loyalty and preferences toward the attributes of the pioneer product.[22] Schmalensee goes into depth with the concept of brand loyalty, or the idea of a consumer sticking with a particular brand. He argues that "when consumers become convinced that the first brand in any product class performs satisfactory, that brand becomes the standard which subsequent entrants are rationally judged. It thus becomes harder to later entrants to persuade consumers to invest in learning about their qualities than it was for the first brand."[23] Empirical studies seem to support the importance of coming first in a market. In a study looking at regression data of baby diapers, Heilman, Bowman, and Wright found that consumers were more loyal to a product with increased purchasing experience, especially in a new market. They argue that brand loyalty increases with increased purchases of the product; first-movers, then, gain an advantage because they have the potential to be purchased more than later entrants.[24] This study highlights the importance of trying to develop relationships with consumers early on in the market life-cycle.

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[21] Ibid.

[22] Ibid.

[23] Schmalensee, 360.

[24] Carrie M. Heilman, Douglas Bowman, and Gordon P. Wright, "The Evolution of Brand Preferences and Choice Behaviors of Consumers New to a Market," *Journal of Marketing Research* 37, no. 2 (May 2000): pp. 139-155.

Another benefit stemming from the product usage sequence is what Alpert and Kamins call "attribute preference."[25] Carpenter and Nakamoto give a good definition and example of the concept of attribute preference in their article "Consumer Preference Formation and Pioneering Advantage." They argue that a successful early entrant can have a large influence on how attributes are valued in the minds of their consumers—"Coca-Cola, for example, may have had a significant impact in its early years on the formation and evolution of individuals' preferences for cola."[26] Consumers did not know what cola should taste like because cola had never existed before, and so there was an opportunity for Coca-Cola to mold consumers' preferences to their own product. Empirical studies tend to prove the importance of attribute preference. Kardes and Kalyanaram used several experimental tests on 29 MBA students to find that pioneering advantages increased over time, especially when subjects were exposed repeatedly to the features of the pioneer.[27] Basically, as consumers use a product more and more, they tend to prefer that product and think of that product as having the most ideal attributes. First entrants, then, have a leg up on later entrants because they potentially have the opportunity to have more product usage.

Another way that consumers can be exposed to pioneer brand information is, not by buying and using the product, but simply by being exposed to information about the

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[25] Alpert and Kamins, 245.

[26] Gregory S. Carpenter and Kent Nakamoto, "Consumer Preference Formation and Pioneering Advantage," *Journal of Marketing Research* 26, no. 3 (August 1989): 288.

[27] Frank R. Kardes and Gurumurthy Kalyanaram, "Order-of-Entry Effects on Consumer Memory and Judgment: An Information Integration Perspective," *Journal of Marketing Research* 29, no. 3 (August 1992): 343-357.

product, which is coined “information exposure sequence by Alpert and Kamins.[28] This can happen through several mediums—the most common is advertising. And since pioneers enjoy a time period where they are the only competitors in the market, there is the opportunity of more information exposure to consumers than later entrants. Benefits that can stem from information knowledge are similar to those benefits from product usage sequence and include consumers’ categorization of the pioneer brand as the prototype of that product category.[29] Carpenter and Nakamoto argue that the sequential learning process (i.e., consumers learning first about pioneer and then about later entrants) “can produce a competitive advantage apart from influencing the consumer’s ideal combination of attributes: the pioneer can be strongly associated with the product category as a whole, and as a result, become the “standard” against which all later entrants are judged.”[30] Empirical studies tend to disagree if information exposure sequence truly gives pioneers a leg-up on their competition. Kardes and Kalyanaram conducted two experimental studies with twenty-eight MBA students with results that acknowledge the importance of consumers learning about the pioneer brand first. In the first experiment, brand information was presented in a sequential manner (where first-mover information was presented first, and so on) to the students. The amount of information was held constant across brands; however, “subjects learned more about the pioneer than about later entrants, and consequently judgments of the pioneer were more extreme and held with greater confidence.”[31] In the second

[28] Alpert and Kamins, 247.

[29] Ibid.

[30] Carpenter and Nakamoto, 286.

[31] Kardes and Kalyanaram, 343.

experiment, brand information was presented to the subjects in a simultaneous manner (where the information for all brands was presented at the same time). The results indicated that "order-of-entry effects on consumer memory and judgment are eliminated when information about a set of brands is presented simultaneously."[32] However, not all scholars believe in the importance of knowledge exposure sequence. Schmalensee's model puts more emphasis on product usage sequence than information exposure sequence. In fact, he found that product differentiation advantage of early movers "has nothing to do with advertising" which suggests the minimal effect of information exposure sequence in relation to product usage sequence on pioneering advantages.[33] Likewise, Barnett, Feng, and Luo use a regression analysis of banking data to suggest that pioneering advantages stemming from information exposure sequence is short lived and quite minimal. They write that "early on, audiences distinguish the originality of the first mover compared to those who come later. But as time passes, such differences in the distant past become less recognizable."[34] The empirical research, thus, is quite contradicting when it comes to measuring how important the order and the way that consumers learn information.

Just because a consumer purchases and uses a pioneer brand or a consumer learns about special attributes of a pioneer brand through advertising doesn't mean that he or she knows that that particular brand is the pioneer. Alpert and Kamins argue that the third way consumers are exposed to pioneer brand information is actually knowing

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[32] Ibid.

[33] Schmalensee, 360.

[34] William Barnett, Mi Feng, and Xaioqu Luo, "Social Identity, Market Memory, and First-Mover Advantage" (Ph.D. diss., Stanford Graduate School of Business, June 2010): 2.

that the brand is the pioneer.[35] Why is this important? Porter writes that "a firm that moves first may establish a reputation as the pioneer or leader, a reputation that emulators have difficulty overcoming."[36] Basically, if consumers have knowledge of the pioneering status of a firm, they might have special product or attribute beliefs that are favorable to the pioneer. Results from a survey-based approach study by Rettie, Hilliar, and Alpert show "for the first time that identification of pioneer status is related to actual purchase of that brand;" the study also indicated that communication (through mediums like advertising) of pioneer status may enhance purchase interest.[37] Alpert, Kamins, and Perner likewise found a positive relationship between brand evaluation and knowledge of pioneer status in their survey-based approach study. Not only did survey results indicate a "significant enhancement in brand evaluation for those brands perceived as leaders or pioneers relative to followers," but brands misperceived as the market pioneer accrued all the benefits of the brands correctly perceived as the market pioneer. They conclude that "evaluation, attitude, and purchase intention were higher when consumers believed the brand was either a market leader or pioneer as opposed to a brand lacking either of these characteristics."[38]

In essence, the field of consumer-based advantages as a part of first-mover theory is under-researched with contradictory results. More empirical studies are

[35] Alpert and Kamins, 249.

[36] Michael Porter, *Competitive Advantage: Creating and Sustaining Superior Performance* (New York: The Free Press, 1985), 570.

[37] Rettie, Hilliar, and Alpert,1.

[38] Michael A. Kamins, Frank H. Alpert, and Lars Perner, "Consumers' Perception and Misperception of Market Leadership and Market Pioneership," *Journal of Marketing Management* 19, no. 7 (September 2003): 807.

needed to help explain how consumers' minds think when they learn about and purchase pioneer products and follower products.

## First-Mover Advantage Theory in the e-Commerce Industry

What does the empirical research say about first-mover advantage in the e-Commerce industry? Much like the literature studying first-mover advantage theory and much like the literature looking deeper into the consumer-based benefits, the literature studying first-mover advantage theory specifically within the e-Commerce industry is very contradictory.

Some critics argue that certain environmental factors of this particular industry make sustaining any first-mover advantages very difficult. Porter questions first-mover advantages by arguing that switching costs for consumers are quite low in the e-Commerce industry.[39] In most cases, consumers just have to type in a new web address to purchase from another brand. Varadarajan, Yadav, Shankar likewise argue that first-movers should take note of and make adjustments for the "potentially diminished significance of some traditional sources of first-mover advantage" including spatial preemption, preemptive investment in capacity, and consumers' choice behavior under conditions of uncertainty about product quality.[40] Other factors that could lead to a diminished first-mover advantage are low barriers to entry and easy imitation of products due to high technology. Hidding and Williams analyzed profits for twenty-five Internet product categories and found that in half of the categories studied, current

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[39] Michael E. Porter, "Strategy and the Internet," *Harvard Business Review* 79, no. 3 (March 2001): 62-78.

[40] Manjit S. Yada, Rajan Varadarajan, and Venkatesh Shankar, "First-Mover Advantage in an Internet-Enabled Market Environment: Conceptual Framework and Propositions," *Journal of the Academy of Marketing Science* 36, no. 3 (Fall 2008): 293.

leaders were among the first three entrants. However, in at least eighty percent of the product categories, the first-movers lost their initial advantage and the majority of current leaders in each product category entered on average two to four years after the first-mover.[41] Lieberman, through a regression analysis of 206 publicly-traded Internet firms, found that there was a large premium in stock market capitalization for early entrants. However, he found that this was true only for pioneers in environments with network effects and for firms with patented innovation technology. Other than that, first-mover advantages in the industry were quite minimal.[42]

However, there are some scholars who believe that moving first on the Internet can very beneficial. First-mover enthusiasts argue that while there are certain obstacles within the e-Commerce industry that diminish benefits for pioneers, advantages can still exist. Lee, Koo, and Nam conducted a survey-based study of e-Commerce companies in South Korea at a time of rapid technological expansion and found that "early movers have more cumulative strategic capabilities than followers do in market differentiation, innovative differentiation, and cost leadership."[43] In a case study looking at Amazon.com, Johnson and Mellahi argue that Amazon.com has sustained consumer-based advantages as an early-mover, mainly because of "largely intangible assets and capabilities, such as innovativeness, technical expertise, and knowledge," or in other

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[41] Gezinus Hidding and Jeffrey Williams, "Are There First-Mover Advantages in B2B eCommerce Technologies?" (paper presented at the Hawaii International Conference on System Sciences, Big Island, Hawaii, January 6-9, 2003).

[42] Marvin B. Lieberman, "Did First-Mover Advantage Survive the Dot-Com Crash?" (2007): 1-22.

[43] Sang-Gun Lee, Chulmo Koo, and Kichan Nam, "Cumulative Strategic Capability and Performance of Early Movers and Followers in the Cyber Market," *International Journal of Information Management* 30, no. 3 (June 2010): 239.

words, knowledge barriers.[44] Nikolaeva used a regression analysis on 460 online retailers to find that order-of-entry advantages (which are advantages gained by early entrants because they entered the market first) were observed but were short lived. Thus, she found that first-mover advantages existed but only for a short time.[45]

What does the literature say specifically about *consumer-based* advantages in the e-Commerce industry? It is a very under-researched field, but there are a few studies concerning how consumers think about, learn about, and purchase from the e-Commerce industry. Thakor, Borsuk, and Kalamas acknowledge that there are difficulties for pioneers in the e-Commerce industry. However, they argue that "early Web users seem to consist predominantly of the demographic segments most desirable to advertisers (i.e., younger, higher-income, and professional), and they possess word-of-mouth-influence beyond their numbers by virtue of their status as lead users."[46] They suggest, then, that information exposure sequence is relevant in the industry. Nikolaeva came up with contrasting conclusions to Thakor, Borsuk, and Kalamas when she looked at a regression analysis of web-site traffic. She found that order-of entry and off-line advertising were not significant drivers of website traffic (a necessary condition for success in the industry). Thus, she suggests that the information exposure sequence that Alpert and Kamins discuss is not a legitimate advantage for e-Commerce

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[44] Kamel Mellahi and Michael Johnson, "Does it Pay to be a First Mover in e.Commerce? The Case of Amazon.Com," *Management Decision* 38, no. 7 (2000): 445.

[45] Ralitza Nikolaeva, "Strategic Determinants of Web Site Traffic in on-Line Retailing," *International Journal of Electronic Commerce* 9, no. 4 (Summer 2005): 113-132.

[46] Mrugank V. Thakor, Wendy Borsuk, and Maria Kalamas, "Hotlists and Web Browsing behavior—an Empirical Investigation," *Journal of Business Research* 57, no. 7 (July 2004): 784.

companies.[47] Although under-developed, there do exist several popular opinion articles which touch on the importance of consumer-based advantages in the industry. Liang, Czaplewski, Klein, and Jiang write that in order to sustain early-entrant advantages, "the entrant must have a vision about the desires of the customer that are novel and exceed those of the current competition."[48] Thus, any first-mover advantages must "reside in understanding the customers rather than any product dependencies."[49]

## Alpert and Kamins Study

The study that this thesis will be replicating comes from "An Empirical Investigation of Consumer Memory, Attitude, and Perceptions Toward Pioneer and Follower Brands," conducted by Frank H. Alpert of the University of Wollongong, Australia, and Michael A. Kamins of the University of Southern California. Their study was the first survey-based approach for examining consumer cognitions, affect, and reported behavior toward pioneer brands.[50] They chose the survey-based approach because of the alternative perspective it offered and, "hence, convergent validity to the study of a phenomenon that has been traditionally addressed in the literature from other research perspectives."[51] Alpert and Kamins tested six hypotheses. The following three were chosen to replicate in this thesis because of data availability:

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[47] Ralitza Nikolaeva, "The Dynamic Nature of Survival Determinants in e-Commerce," *Journal of the Academy of Marketing Science* 35, no. 4 (Winter 2007): 560-571.

[48] T.P. Liang et al., "Leveraging First-Mover Advantages in Internet-Based Consumer Services," *Communications of the ACM*, no. 6 (June 2009): 148.

[49] Ibid.

[50] Alpert and Kamins, "An Empirical Investigation of Consumer Memory, Attitude, and Perceptions Toward Pioneer and Follower Brands," *The Journal of Market* 59, no. 4 (October 1995): 34-45.

[51] Ibid.

- $H_1$: Consumers will retrieve pioneer brands to a degree that is significantly higher than any other brand.
- $H_2$: Consumers will be able to correctly recall the pioneer brand in a given product category to a degree greater than chance.
- $H_3$: Other things being equal, consumers prefer the pioneer brand in terms of purchase performance.[52]

The other three hypotheses that Alpert and Kamins analyzed looked at consumer perception of pioneer brands on a multi-attribute subjective dimensional scale, pioneer brand image and its effect on ideal consumer self-image, and the impact of the communication of pioneer status through labeling. Data was collected through the use of the Arkansas Household Research Panel (of 560 households), and one- and two-tailed t-tests were conducted to see if the responses favored toward the pioneer brand were significant. Essentially, they found that even though retrieval, recall, and actual purchase were less favorable to the pioneer brand, perceptions, overall attitude, and purchase intentions were clearly favorable to the pioneer.[53] Alpert and Kamins write that because of certain limitations in the study, "further replication and extension would be wise before the findings could be considered definitive," especially with new and different product categories.[54] This study intends to do just that with the analysis of consumer perceptions of the electronic commerce industry.

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[52] Ibid.

[53] Ibid.

[54] Ibid.

## Conclusion

Nikolaeva sums it up well when she writes that "the existence of an early-mover advantage…has been accepted as a marketing generalization, but hardly any studies have proved it empirically" within the e-Commerce industry.[55] This literature review has provided a brief overview of the mechanisms leading to advantages in first-mover advantage theory and has provided explanations of the origins of pioneer brand advantage. In comparison to traditional literature studying the producer-based benefits from the first-mover advantage theory, the less-traditional literature on consumer-based advantages is under-researched and less understood. The general consensus of scholars who have studied pioneer brand advantage in the past is that there is a desperate need for more empirical studies in order to understand how consumers think about pioneering brands and follower brands. With a better understanding of how this works, managers will have the ability to make smarter strategic decisions for their firms. This study hopes to contribute to the empirical literature by replicating part of the Alpert and Kamins survey-based approach study specifically looking at the online retail industry. Chapter 2 has provided an overview of first-mover advantage theory and its relation to the e-Commerce industry; Chapter 3 will describe the research methods used in this study.

[55] Nikolaeva, *The Dynamic Nature of Survival Determinants in e-Commerce*, 560-571.

# CHAPTER III

# METHODOLOGY

The purpose of Chapter 3 is to communicate the research methods used by this study to find out how consumers think about first-movers in e-Commerce, and specifically, online retailing. It will provide an overview of the Alpert and Kamins' study, and it will explain how this study replicates some of the methods used in their study. Chapter 3 will also review the product categories chosen from the online retail industry, the creation and implementation of the survey, the procedures for the analysis of the results, and the limitations of the previous research methods.

As mentioned previously, this study replicates the survey-based methods conducted by Alpert and Kamins in their study "An Empirical Investigation of Consumer Memory, Attitude, and Perceptions Toward Pioneer and Follower Brands." This particular study was chosen because it was the first survey-based approach to look at how consumers think about first-movers and followers in certain industries as opposed to the more traditional research perspectives (like econometric models or experimentation). They wanted to see if "it matters to consumers to know, years after the product's introduction when follower brands are also available, that a particular brand was the product pioneer."[1]

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[1] Alpert and Kamins, "An Empirical Investigation of Consumer Memory, Attitude, and Perceptions Toward Pioneer and Follower Brands," *The Journal of Market* 59, no. 4 (October 1995): 34.

## Product Categories

Alpert and Kamins tested six hypotheses (three of which this study replicates) by asking a sample population for their opinions on several different product categories. In the study, Alpert and Kamins note that they chose product categories "that would have reasonably broad recognition and in which the pioneership was fairly well known during the product's introduction, though it now no longer dominates the market."[2] This was to ensure that a strong recall or preference of the pioneer brand's name could not be attributed to its current market share. Product categories for this study were thus researched within the online retail industry to find first-movers who are still major players in the industry but who no longer dominate market share. The online travel-booking industry stood out clearly as Travelocity (the first-mover) is still an important force in the industry but no longer holds the most market share. Although the current market share breakdown was not available to cite, several popular-opinion articles name Expedia as the clear leader in the U.S. market.[3] Unfortunately, at this time, the online travel-booking industry is the only obvious product category that fits the criteria of Alpert and Kamins. In many other categories online, the first-mover is either by far the dominant player in the market (like Netflix in the online video rental industry) or is no longer present in the industry (like Toys.com in the online toy industry). In order to ensure that results would be based on pioneering status rather than a high market share, the only product category used in the survey was the online-travel booking industry.

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[2] Ibid.

[3] Stacey Higgins, "Hotel-OTA Relationship Not Wedded Bliss" *Hotel News Now* [online]; available from www.hotelnewsnow.com/Articles.aspx/4864/Hotel-OTA-relationship-not-wedded-bliss; Internet; accessed 31 January 2011.

Because of this, the findings surely cannot be representative of the *entire* online retail industry but are at least representative of one product category within the industry.

## Data Source and Collection

Alpert and Kamins used data collected from the Arkansas Research Panel, an "omnibus panel of 560 households largely representative of Arkansas" operated through the University of Arkansas.[4] The survey was conducted by mail, and a total of 366 respondents participated and returned the survey for a response rate of 65.4%.[5] The Arkansas Research Panel has been used for other studies and has appeared in several marketing and consumer research journals; thus, it was a credible means of study.

For this particular study, an online survey was created through surveymonkey.com and distributed to students of Colorado College (CC) through the list-serv, an email digest sent daily to every student at the college. Although some scholars argue that studies using student populations are not representative of entire national populations, CC students were chosen as the population to look at because it was the easiest, most convenient, and lowest-cost option. The survey was advertised for two days (December 17-18, 2010) as well as sent out to all economics majors in an email. Thus, the method used for data collection was a convenience sampling of Colorado College students. Participants were asked to mark the first response that came to mind, and they were allowed to skip any questions they weren't sure about. A copy of the questionnaire can be found in the Appendix.

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[4] Alpert and Kamins, 37.

[5] Ibid.

A total of 174 students responded and participated in the survey. For a total school population of about 2,000, this means that there was an 8% response rate. Of the sample, 136 respondents (or 78.2%) were female, which is significant considering that the school is 54% female and 46% male.[6] This could be attributed to the fact that, possibly, more females than males at Colorado College check their email daily and participate in the surveys advertised on the list-serv. The results from this particular group of participants is significant especially when one considers the subject of the survey (online travel-booking companies) and the fact that 48.3% of the respondents said they book their travel plans online every single time they are planning a trip. The percentage of participants who responded "Every single time" or "Most of the time" when asked how often they use online travel websites when booking travel arrangements was 75.3%, an overwhelmingly high statistic. Thus, this is an important sample to look at and analyze since this particular group of respondents frequently visit travel-booking websites. One limitation of the survey is the fact that all of the survey participants *chose* to take the survey, a concept known as self-selection bias. Because each individual selects himself or herself in the survey, it creates a biased sample where the results can be misleading. However, in this study, the advertisement for the survey did not mention the subject of the survey (online companies), so it is safe to assume that the participants did not select themselves to take the survey because of a strong opinion about online companies.

[6] "Colorado College: Alumni Admissions Representatives- FAQ about CC," *Colorado College* [online]; available from http://www.coloradocollege.edu/stripes/FAQ.asp; accessed 31 January 2011.

## Measurement

The study tested three hypotheses modeled after the Alpert and Kamins study that connect pioneering status to consumer retrieval, recall, and preference of first-mover and follower brands. Respectively, these hypotheses are:

- $H_1$: Respondents will retrieve pioneer brands to a degree that is significantly higher than any other brand.
- $H_2$: Respondents will be able to correctly recall the pioneer brand in a given product category to a degree greater than chance.
- $H_3$: Other things being equal, respondents prefer the pioneer brand in terms of purchase performance.

The study measures consumer retrieval, recall, and preference rates; specifically, it measures differences between groups of data where companies *are* or *are not* the pioneer. That is, the study measures differences in the *frequencies that consumers can list brands in a particular industry, frequencies that consumers identify different brands as the pioneer brand when asked to,* and *frequencies of consumer preference of the pioneer brand versus a neutral opinion.*

In order to measure $H_1$ (which tests brand name retrieval, or how frequently consumers can name the pioneer brand when asked to list all of the brands in an industry), respondents were asked: “Please name all the companies or websites you can recall that are associated with online travel booking.” The results are simple: either the respondent lists the pioneer brand or they don’t. To see if the difference in the frequency of retrieval of the pioneer brand versus other popular brands was statistically significant, a two-tailed pair-wise t-test was conducted between the pioneer, Travelocity, and other market competitors. The general equation for a t-test can be seen below.

$$t = \frac{\overline{x_1} - \overline{x_2}}{\sqrt{\frac{var_1}{n_1} + \frac{var_2}{n_2}}}$$

Where:

$t = t\ value$

$\overline{x_1} = mean\ of\ values\ from\ data\ set\ 1$

$\overline{x_2} = mean\ values\ from\ data\ set\ 2$

$var_1 = variance\ of\ data\ set\ 1$

$var_2 = variance\ of\ data\ set\ 2$

$n_1 = Number\ of\ survey\ participants\ in\ data\ set\ 1$

$n_2 = Number\ of\ survey\ participants\ in\ data\ set\ 2$

After computing the t-value, the risk, or alpha level, was set at 0.05. This particular alpha level indicates that one would find a statistically significant difference between the two means even if there was none five times out of 100. Using this significance level and the degrees of freedom (which is $\{(n_1 + n_{2)} - 2\}$), the t-stat can be compared to the critical value, and if it is higher, then this indicates that the difference in frequency of retrieval rates is significant.

In order test $H_2$ (which measures pioneer brand recall, or how frequently consumers can correctly choose the pioneer brand when given a list), respondents were presented with a list of four brands in the online travel-booking industry and were asked to identify the pioneer brand. There was also a “Don’t know” option to reduce wild guessing. Respondents could either correctly identify the pioneer, incorrectly identify the pioneer, or respond with “Don’t know.” In order to test if respondents were able to choose the pioneer brand to a degree significantly greater than the results that would occur if choice was entirely due to chance (e.g. 20% of the five answer choices), a one-tailed t-test was conducted. Thus, the t-test compared the frequency that Travelocity was identified as the pioneer against the frequency that would occur if the results were based on chance. The same equation stated above was used to find the t-value, and since the "Don't know" option was selected by an overwhelmingly high percentage of respondents, a t-test comparing the frequency of the "Don't know" option being picked versus the frequency that would occur if the results were based on chance was also conducted.

To test $H_3$ (which measures pioneer brand preference, or if consumers prefer the pioneer brand significantly more than other brands in that industry), participants were asked if they preferred Travelocity (the pioneer brand) over other brands, other things being equal (e.g. price, quality). Respondents were given a scale that they could choose from ranging from "Strongly disagree" to "Strongly agree;" a "Don't know" option was also available to pick. Each answer choice was given a numerical value. For example, "Strongly disagree" was given the numerical value of -2, "Neither agree or disagree" was given the numerical value 0, and "Strongly agree" was given the numerical value of 2. Each answer choice was given a value so that a one-tailed t-test could be conducted to see if the results were significantly different from a neutral opinion score of 0.

## Expected Outcomes

In the Alpert and Kamins study, the authors found that consumers had positive attitudes toward pioneer brands and found limited support for the three hypotheses that this study analyzes. However, using the Internet as a medium for conducting business is a novel concept that is changing the business world as we know it. The Internet is a dynamic setting for the rapid diffusion of technology, low switching costs for consumers, and easy replication of products and services that firms encounter when dealing with the Internet.[7] Based on this and the results from Alpert and Kamins' study that did not favor the pioneer brand in terms of consumer retrieval and recall, it is not expected that the three hypotheses in this study will be supported.

## Limitations

Definitions of key terms were presented at the beginning of the survey, using the following wording: "The very first brand of a new type of product which comes to the market is called the 'pioneer' brand. All brands of that same type of product that enter the market after the pioneer brand are called the 'follower' brands." One of the limitations of the Alpert and Kamins survey (and of any survey-based research for that matter) is that responses potentially can be based on the perceived meanings of the words involved—in this case, there might have been a positive connotation associated with the word "pioneer" and a negative connotation with the word "follower." As with Alpert and Kamins, many precautions were taken in order to minimize the biases in the survey. For example, they noted that participants were given a neutral opinion or a "don't know" option in order to not *force* a choice for most questions.

One change made to the study from the original study conducted by Alpert and Kamins concerns the third question of the survey: when respondents were asked if they preferred the pioneer brand over other brands in the industry, the word "pioneer" was

[7] T. P. Liang et al., "Leveraging First-Mover Advantages in Internet-Based Consumer Services," *Communications of the ACM* 52 no. 6 (June 2009): 146-148.

replaced with the name of the pioneer brand, Travelocity, to ensure that any bias of the word “pioneer” would be removed.

Another change made to the methodology of Alpert and Kamins’ deals with the analysis of the second question of the survey. In the original study, respondents were asked about several product categories. For each product category, they were presented with a list of five brands and asked to identify the pioneer brand. There was also a “Don’t know” option, adding up to a total of 6 answer choices. However, when they conducted the t-test to see if the difference in recall was significantly different from the results that would occur due to chance, they only considered the five brands during the computation, rather than adding in the “Don’t know” option. This does not seem to be mathematically accurate; if a “Don’t know” option is included in the answer choice selections, then it has an equal likelihood of being chosen. In this study, the “Don’t know” was counted in the computation of question two because of this reason.

## Conclusion

Chapter 3 discussed the research methods that this study used to look at how consumers think about pioneer and follower brands in the online travel industry. Chapter 4 discusses the analyses performed with this methodology, and Chapter 5 summarizes key findings, implications of the research, future research propositions, and limitations of the study.

# CHAPTER IV

# RESULTS AND ANALYSIS

The purpose of Chapter 4 is to present and analyze the findings of the survey. A total of 174 Colorado College students responded to the survey. 136 participants were female, suggesting that perhaps more females than males at the college check their list-serv email daily and respond to the survey advertisements. 96% of the sample only spend 0-5 hours shopping online per week; however, 48.3% of the survey participants stated that whenever booking travel arrangements, they always use online travel-booking websites. Since there are three hypotheses presented throughout this thesis, Chapter 4 will be divided into three segments looking at each of the hypotheses: consumer retrieval, recall, and preference.

## Consumer Retrieval and $H_1$

The first hypothesis addresses the ability of consumers to retrieve the pioneer brand and is stated as follows:

- $H_1$: Respondents will retrieve pioneer brands to a degree that is significantly higher than any other brand.

In order to test this hypothesis, survey participants were asked the following question: "Please name all the companies or websites you can recall that are associated with online travel booking." Table 4.1 shows the results of the question. Companies that were named at a less than 3% retrieval rate are omitted from the table for simplicity.

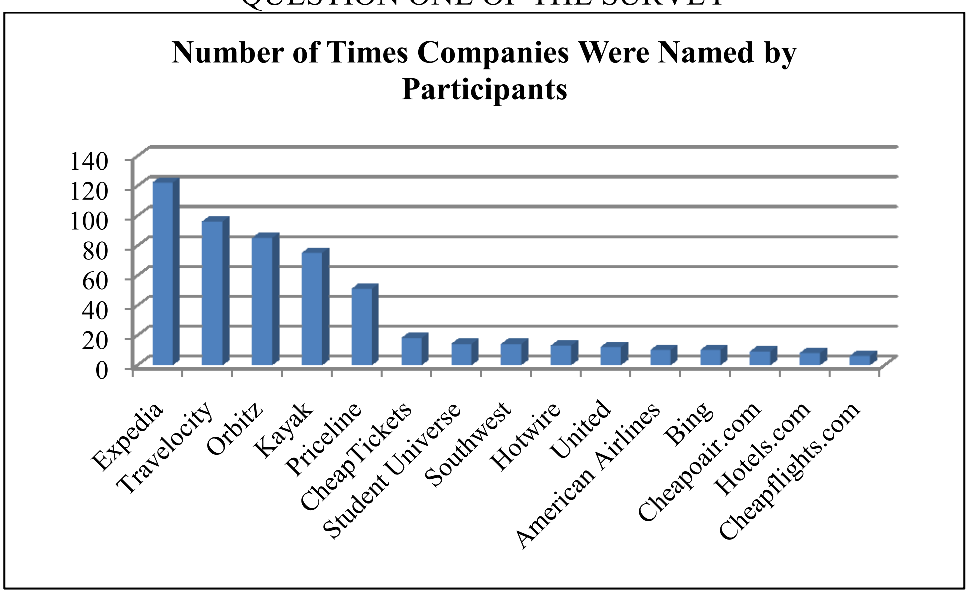
This information is also displayed graphically in Figure 4.1

TABLE 4.1
NUMBER OF TIMES COMPANIES WERE NAMED BY PARTICIPANTS IN QUESTION ONE OF THE SURVEY

| Travel-Booking Site | Response Count | Response Percentage |
|---|---|---|
| Expedia | 122 | 70.11% |
| Travelocity* | 96 | 55.17% |
| Orbitz | 85 | 48.86% |
| Kayak | 75 | 43.10% |
| Priceline | 51 | 29.31% |
| CheapTickets | 18 | 10.34% |
| Student Universe | 14 | 8.05% |
| Southwest | 14 | 8.05% |
| Hotwire | 13 | 7.47% |
| United | 12 | 6.90% |
| American Airlines | 10 | 5.75% |
| Bing | 10 | 5.75% |
| Cheapoair.com | 9 | 5.17% |
| Hotels.com | 8 | 4.60% |
| Cheapflights.com | 6 | 3.45% |

*Denotes the first-mover

FIGURE 4.1
NUMBER OF TIMES COMPANIES WERE NAMED BY PARTICIPANTS IN QUESTION ONE OF THE SURVEY



Travelocity was named 96 times, or by 55.17% of the survey participants. Expedia, the market leader was named a total of 122 times, or by 70.11% of survey participants. At first glance, these findings seem to contradict the initial hypothesis that consumers will retrieve the pioneer brand to a degree significantly higher than other brands. To assess whether the difference in frequency of retrieval between Travelocity and Expedia is statistically significant, a two-tailed pair-wise t-test was conducted. The t-test assesses whether the means of two groups are significantly different from each other. In equation form adapted to question one of the survey, the t-value is expressed as:

$$t = \frac{\bar{x}_T - \bar{x}_E}{\sqrt{\frac{var_T}{n_T} + \frac{var_E}{n_E}}}$$

Table 4.2 identifies the variables and provides the numerical values calculated with the data from Expedia and Travelocity from question one of the survey.

TABLE 4.2
VARIABLES AND NUMERICAL VALUES COMPARING EXPEDIA AND TRAVELOCITY IN QUESTION ONE

| **Variable** | **Definition** | **Equation** | **Numerical Value** |
|---|---|---|---|
| $t$ | T-value, assesses whether the means of two groups are significantly different | $t = \frac{\bar{x}_T - \bar{x}_E}{\sqrt{\frac{var_T}{n_T} + \frac{var_E}{n_E}}}$ | -2.9072 |
| $\overline{x_T}$ | Mean of Travelocity retrieval | $\overline{x_T} = \frac{Number\ of\ times\ retrieved}{Total\ number\ of\ participants}$ | 0.5517 |
| $\overline{x_E}$ | Mean of Expedia retrieval | $\overline{x_E} = \frac{Number\ of\ times\ retrieved}{Total\ number\ of\ participants}$ | 0.7011 |
| $var_T$ | Variance of Travelocity retrieval | $var_T = \sigma^2 = \frac{\sum x_T^2}{n_T} - \overline{x_T}$ | 0.2488 |
| $var_E$ | Variance of Expedia retrieval | $var_E = \sigma^2 = \frac{\sum x_E^2}{n_E} - \overline{x_E}$ | 0.2108 |

TABLE 4.2: Continued

| | | | |
|---|---|---|---|
| $n_T$ | Number of survey participants | - | 174.00 |
| $n_E$ | Number of survey participants | - | 174.00 |
| $\alpha$ | Risk or alpha level | - | 0.05 |
| $df$ | Degrees of freedom | $df = (n_T + n_E) - 2$ | 346.00 |

Plugging the numbers into the equation reveals a t-stat value of -2.9072, as seen in Figure 4.2:

FIGURE 4.2
COMPUTING THE T-STAT BETWEEN EXPEDIA AND TRAVELOCITY IN QUESTION ONE OF THE SURVEY

$$t = \frac{0.5517 - 0.7011}{\sqrt{\frac{0.2488}{174} + \frac{0.2108}{174}}}$$

$$\downarrow$$

$$t = \frac{-0.1294}{\sqrt{0.00264}}$$

$$\downarrow$$

$$t = \frac{-0.1294}{0.0514}$$

$$\downarrow$$

$$t = -2.9072$$

The t-stat is -2.9072. A .05 significance level was chosen as the risk level, which indicates that one would find a statistically significant difference between the two means even if there was none five times out of 100. One can see that the absolute value of the t-stat, 2.9072, is greater than the critical value of 1.96 at a 5% significance level and with 346 degrees of freedom. This means that the difference of frequency of retrieval between the two brands is statistically significant.

What do these results indicate? Essentially, the data suggests that in this particular sample, consumers are not able to retrieve the pioneer brand more frequently than the fast-follower, Expedia. What's more, the t-test revealed that the difference in frequency of retrieval for Travelocity and Expedia is statistically significant. This means that the fact that survey participants named Expedia 12% more than Travelocity is most likely *not* due to chance. Thus, we can reject $H_1$ which states that respondents will retrieve pioneer brands to a degree that is significantly higher than any other brand. With the data provided, this does not seem to be true in the travel-booking industry.

It is important to note that Travelocity was the first-mover in the travel-booking industry with Expedia being considered the "fast-follower." [1] While these two companies are the ones named the most by survey participants, the fact that Travelocity is named significantly less than Expedia shows that, in this industry, being the first-mover doesn't pay off quite as much as being the fast-follower.

Another t-test was conducted to see if the difference in retrieval of Travelocity and Orbitz was significant. Orbitz was chosen because after Expedia and Travelocity, it was the most frequently named. Table 4.3 shows the numerical values that were used to calculate the t-stat between Travelocity and Orbitz.

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[1] Submarianian Rangen and Ron Adner, "Profits and the Internet: Seven Misconceptions," *MIT Sloan Management Review* (Summer 2001): 44-53.

TABLE 4.3
NUMERICAL VALUES FOR VARIABLES COMPARING TRAVELOCITY AND ORBITZ IN QUESTION ONE

| **Variable** | **Numerical Value** |
|---|---|
| $t$ | 1.1792 |
| $\overline{x_T}$ | 0.5517 |
| $\overline{x_O}$ | 0.4885 |
| $var_T$ | 0.2488 |
| $var_O$ | 0.2513 |
| $n_T$ | 174.00 |
| $n_O$ | 174.00 |
| $\alpha$ | 0.05 |
| $df$ | 346.00 |

Figure 4.3 shows the calculations.

FIGURE 4.3
COMPUTING THE T-STAT BETWEEN TRAVELOCITY AND ORBITZ IN QUESTION ONE

$$t = \frac{0.5517 - 0.4885}{\sqrt{\frac{0.2448}{174} + \frac{0.2513}{174}}}$$

$$\downarrow$$

$$t = \frac{0.0623}{\sqrt{0.0029}}$$

$$\downarrow$$

$$t = \frac{.4264}{0.0536}$$

$$\downarrow$$

$$t = 1.1792$$

The t-stat is 1.1792. Given the alpha level (0.05), the degrees of freedom (346), and the t-value from the equation, one can see that the absolute value of the t-stat, 1.1792, is less than the critical value of 1.96. This means that the difference of frequency that consumers named Travelocity and Orbitz is not significant. Essentially, this means that the difference of retrieval rates can be explained by chance. Even though Travelocity was named more times than Orbitz, the pioneer was not named to a degree *significantly* higher than Orbitz.

## Consumer Recall and $H_2$

The second hypothesis deals with the idea of consumer recall, or whether consumers *know* which firm in an industry is the first mover. $H_2$ is stated as follows:

- $H_2$: Respondents will be able to correctly recall the pioneer brand in a given product category to a degree greater than chance.

In order to test $H_2$, survey participants were asked to respond to the following question: "Of the following four brands in the online travel booking industry, which is the pioneer brand? NOTE: The very first brand of a new type of product which comes to the market is called the 'pioneer' brand. All brands of that same type of product that enter the market after the pioneer brand are called the 'follower' brands." Four companies in the travel-booking industry were listed as well as a "Don't know" option. The results can be seen in Table 4.4 and are graphically represented in Figure 4.4.

TABLE 4.4
NUMBER AND PERCENTAGE OF RESPONDENTS WHO IDENTIFIED THE BRAND AS THE PIONEER IN QUESTION TWO

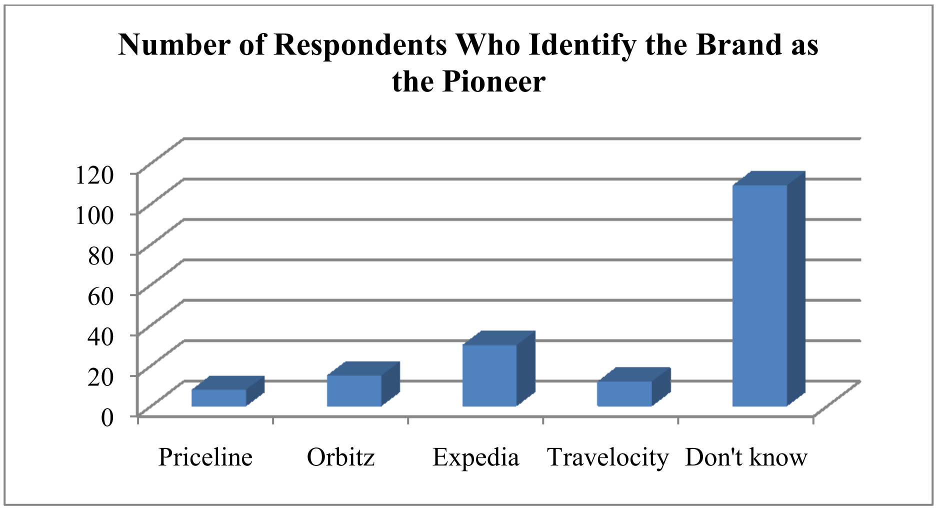
| **Travel-Booking Site** | **Response Count** | **Response Percentage** |
|---|---|---|
| Priceline | 8 | 4.6% |
| Orbitz | 15 | 8.6% |

TABLE 4.4: Continued

| | | |
|---|---|---|
| Expedia | 30 | 17.2% |
| Travelocity * | 12 | 6.9% |
| Don't know | 109 | 62.6% |

* Denotes the first-mover

FIGURE 4.4
NUMBER OF RESPONDENTS WHO IDENTIFIED THE BRAND AS THE PIONEER




Out of the list, Travelocity was chosen 12 times, or by 6.9% of the total number of respondents. 109 respondents picked the "Don't know" option, denoting that they weren't sure who the pioneer was. In order to test the hypothesis, a one-tailed student's t-test was conducted comparing the frequency at which Travelocity was picked against the results that would occur if choice was entirely due to chance (in this case, 20% because there are 5 answer choices). If the results were entirely due to chance, then 20%, or 34.8 respondents, would have picked Travelocity as their answer. A t-test was conducted to see if the pioneer was identified by the consumer sample to a degree significantly different from chance. Adapted to question two of the survey and in equation form, the t-value is expressed as follows:

$$t = \frac{\bar{x}_T - \bar{x}_C}{\sqrt{\frac{var_T}{n_T} + \frac{var_C}{n_C}}}$$

Table 4.5 identifies the variables and provides the numerical values calculated with the data from question two.

TABLE 4.5
VARIABLES AND NUMERICAL VALUES COMPARING TRAVELOCITY TO CHANCE IN QUESTION TWO

| **Variable** | **Definition** | **Equation** | **Numerical Value** |
|---|---|---|---|
| $t$ | T-value, assesses whether the means of two groups are significantly different | $t = \frac{\bar{x}_T - \bar{x}_E}{\sqrt{\frac{var_T}{n_T} + \frac{var_C}{n_C}}}$ | -3.6473 |
| $\overline{x_T}$ | Mean of Travelocity recall | $\overline{x_T} = \frac{Number\ of\ times\ chosen}{Total\ number\ of\ participants}$ | 0.0690 |
| $\overline{x_C}$ | Mean of recall that would happen by chance | $\overline{x_C} = \frac{Number\ of\ times\ chosen}{Total\ number\ of\ participants}$ | 0.2 |
| $var_T$ | Variance of Travelocity recall | $var_T = \sigma^2 = \frac{\sum x_T^2}{n_T} - \overline{x_T}$ | 0.0646 |
| $var_C$ | Variance of recall that would happen by chance | $var_E = \sigma^2 = \frac{\sum x_C^2}{n_C} - \overline{x_C}$ | 0.16 |
| $n_T$ | Number of survey participants | - | 174.00 |
| $n_C$ | Number of survey participants | - | 174.00 |
| $\alpha$ | Risk or alpha level | - | 0.05 |
| $df$ | Degrees of freedom | $df = (n_T + n_C) - 2$ | 346.00 |

Plugging the numbers into the equation reveals a t-stat value of -3.6473, as seen in Figure 4.5:

FIGURE 4.5: COMPUTING THE T-STAT BETWEEN TRAVELOCITY AND CHANCE IN QUESTION TWO

$$t = \frac{0.060 - 0.2}{\sqrt{\frac{0.0646}{174} + \frac{0.16}{174}}}$$

$$\downarrow$$

$$t = \frac{-0.2690}{\sqrt{0.0013}}$$

$$\downarrow$$

$$t = \frac{-0.2690}{0.0359}$$

$$\downarrow$$

$$t = -3.6473$$

The t-stat is -3.6473. Again, a 5% significance level was chosen as the risk level, which indicates that one would find a statistically significant difference between the two means even if there was none five times out of 100. Given the alpha level, the degrees of freedom, and the t-value from the equation, one can see that the absolute value of the t-stat, 3.6473, is greater than the critical value of 1.645 at a 5% significance level and with 346 degrees of freedom. This means that the difference of frequency of recall between the actual frequency that Travelocity was chosen and the frequency that would occur if the results were based on chance are significantly different.

What do these results mean? Survey participants identified Travelocity correctly as the pioneer only 12 times, or 6.9% of the total number of participants. This seems to contradict $H_2$. The t-test revealed that the difference in frequency that

Travelocity was picked as the pioneer is significantly different from the frequency that would occur if the results were due to chance. This means that the fact that survey respondents chose identified Travelocity as the pioneer only 12 times is most likely *not* due to chance. As a result, the data rejects $H_2$, which states that respondents will be able to correctly recall the pioneer brand in a given product category to a degree greater than chance. Any first-mover advantages based on the consumer's knowledge of pioneer status appear to be non-existent in the travel-booking industry.

A one-tailed student's t-test was also conducted comparing the frequency at which the option "Don't know" was picked against the results that would occur if choice was entirely due to chance (or 20%, because there are 5 answer choices). If the results were entirely due to chance, then 20%, or 34.8 respondents, would have picked "Don't know" as their answer. The same equation for the t-value was used. The only difference is that values for the "Don't know" data were used instead of the Travelocity data. Table 4.6 provides the numerical values from the data that were used in calculating the t-stat.

TABLE 4.6
NUMERICAL VALUES FOR VARIABLES COMPARING "DON'T KNOW" OPTION AND CHANCE IN QUESTION TWO

| **Variable** | **Numerical Value** |
|---|---|
| $t$ | 8.9460 |
| $\overline{x_D}$ | 0.6264 |
| $\overline{x_C}$ | 0.2 |
| $var_D$ | 0.2354 |
| $var_C$ | 0.16 |

TABLE 4.6: Continued

| | |
|---|---|
| $n_D$ | 174.00 |
| $n_C$ | 174.00 |
| $\alpha$ | 0.05 |
| $df$ | 346.00 |

Figure 4.6 shows the calculations.

FIGURE 4.6
COMPUTING THE T-STAT BETWEEN "DON'T KNOW" OPTION AND CHANCE IN QUESTION TWO

$$t = \frac{0.6264 - 0.2}{\sqrt{\frac{0.2354}{174} + \frac{0.16}{174}}}$$

$$\downarrow$$

$$t = \frac{0.4264}{\sqrt{0.00227}}$$

$$\downarrow$$

$$t = \frac{.4264}{0.0477}$$

$$\downarrow$$

$$t = 8.9460$$

The t-stat is 8.9460. Given the alpha level (0.05), the degrees of freedom (346), and the t-value from the equation, one can see that the absolute value of the t-stat, 8.9460, is greater than the critical value of 1.645 at a 5% significance level and with 346 degrees of freedom. This means that the difference of frequency of recall between the actual frequency that the "Don't know" option was chosen and the frequency that would occur if the results were based on chance are significantly different.

What do these results indicate? From a quick glance, it seems that many of the survey participants from this particular sample cannot recall who the pioneer is in the travel-booking industry. When analyzed in more depth, the t-test indicates that the frequency that the survey respondents picked "Don't know" is significantly greater than the frequency that would occur if the results were based on chance. This means that the fact that the sample population chose "Don't know" as an answer so many times is most likely *not* due to chance. Although $H_2$ has already been rejected with the previous t-test, this conclusion solidifies that consumers simply don't know who the pioneer is in this industry. Any advantage for the first-mover stemming from the consumer's knowledge of pioneership in the travel-booking industry seems to be non-existent.

## Consumer Preference and $H_3$

The third hypothesis dealt with consumer preference, or if consumers prefer the pioneer brand significantly more than the other brands in the industry. It is stated as follows:

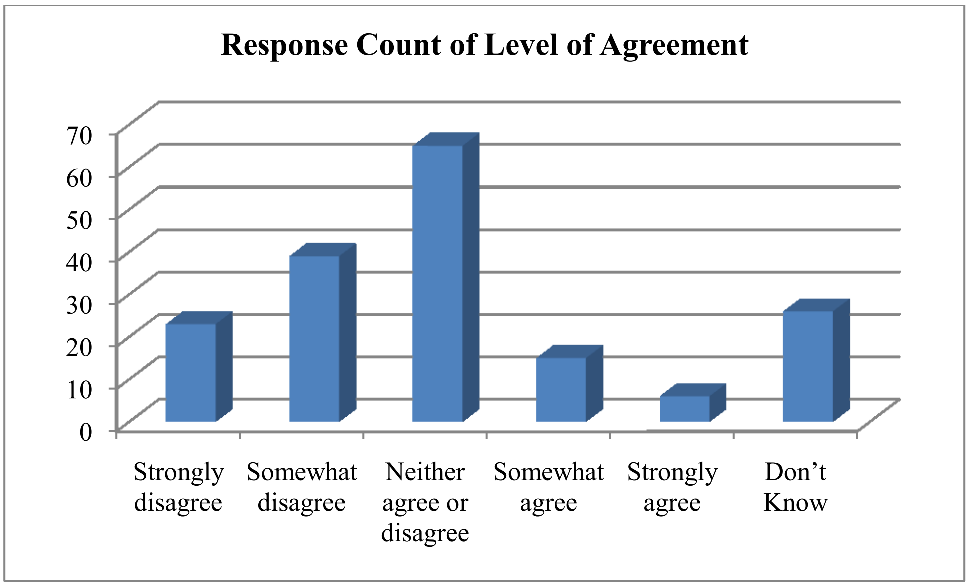
- $H_3$: Other things being equal, respondents prefer the pioneer brand in terms of purchase performance.

In order to test this, the survey participants were asked the following question: "Other things being equal (e.g. price and product quality), please rate your level of agreement with the following: I prefer Travelocity over any of the other brands." They were given a scale with the answer choice options of "Strongly disagree," "Somewhat disagree," "Neither agree nor disagree," "Somewhat agree," "Strongly agree," and "Don't know." The results of the question can be seen in Table 4.7, and Figure 4.7 shows the results graphically.

TABLE 4.7
LEVEL OF AGREEMENT WITH THE STATEMENT: I PREFER TRAVELOCITY OVER ANY OF THE OTHER BRANDS.

| **Level of Agreement** | **Response Count** | **Response Percentage** |
|---|---|---|
| Strongly disagree | 23 | 13.2% |
| Somewhat disagree | 39 | 22.4% |
| Neither agree or disagree | 65 | 37.4% |
| Somewhat agree | 15 | 8.6% |
| Strongly agree | 6 | 3.4% |
| Don't Know | 26 | 14.9% |

FIGURE 4.7
LEVEL OF AGREEMENT WITH THE STATEMENT: I PREFER TRAVELOCITY OVER ANY OF THE OTHER BRANDS




23 respondents "strongly disagree" with the statement that they prefer Travelocity over other brands while 39 "somewhat agree," 65 "neither agree nor disagree," 15 "somewhat agree," 6 "strongly agree" with the statement. 26 participants chose the "Don't know" option. In order to see if these results are considered statistically significant, a one-tailed t-test was conducted. Unfortunately, there is a limitation with the way the question was worded. Each answer value (except the "Don't know" option) was given a numerical value based on a scale in order to find the mean of the whole data set. For example, the option "Strongly disagree" was given a

value of -2. However, the "Don't know" option does not logically fit on the scale. This particular answer option was originally added as an answer choice for those respondents who might not feel comfortable giving an opinion on the question (i.e., for those who aren't familiar enough with the travel-booking industry to have a strong opinion on the matter). It is important to note that the "Don't know" option is different from the "Neither agree nor disagree" option, as those who selected the latter as their answer choice are probably more familiar with the travel-booking industry and do not feel a strong opinion on the matter. As a result, in order to conduct the t-test, the 26 responses that indicate "Don't know" were excluded from the data set. To find the mean for this set of data, the number of times that each answer choice was chosen was multiplied by the numerical value it was assigned. These numbers were then added up to find the mean. Table 4.8 shows the numerical values for each answer choice, the number of times it was chosen, and the overall mean of the data set.

TABLE 4.8
FINDING THE MEAN OF THE DATA SET FOR QUESTION THREE

| **Level of Agreement** | **Numerical Value** | **Response Count** | **Total** |
|---|---|---|---|
| Strongly disagree | -2 | 23 | -46 |
| Somewhat disagree | -1 | 39 | -39 |
| Neither agree or disagree | 0 | 65 | 0 |
| Somewhat agree | 1 | 15 | 15 |
| Strongly agree | 2 | 6 | +12 |
| TOTAL (MEAN) | | | **-58** |

With a mean of -58, a one-tailed t-test was conducted to see if the difference in the mean of the data set was significantly different from the mean that would result from a neutral opinion score of 0. The same t-stat equation was used in the previous survey question analyses:

$$t = \frac{\bar{x}_A - \bar{x}_N}{\sqrt{\frac{var_A}{n_A} + \frac{var_N}{n_N}}}$$

Table 4.9 identifies the variables and provides the numerical values calculated with the data from Question three.

TABLE 4.9
VARIABLES AND NUMERICAL VALUES COMPARING ACTUAL OPINION AND NEUTRAL OPINION OF TRAVELOCITY IN QUESTION THREE

| Variable | Definition | Equation | Numerical Value |
|---|---|---|---|
| $t$ | T-value, assesses whether the means of two groups are significantly different | $t = \frac{\bar{x}_A - \bar{x}_N}{\sqrt{\frac{var_A}{n_A} + \frac{var_N}{n_N}}}$ | -5.1647 |
| $\overline{x_A}$ | Mean of actual data set | $\overline{x_A} = \frac{(-2 * 23) + (-1 * 39) + (0 * 69) + (1 * 15) + (2 * 6)}{Total\ number\ of\ participants}$ | -0.3919 |
| $\overline{x_N}$ | Mean of data set that would occur from neutral opinion | $\overline{x_N} = \frac{(0 * Number\ of\ particpants)}{Total\ number\ of\ participants}$ | 0 |
| $var_A$ | Variance of actual data set | $var_T = \sigma^2 = \frac{\sum x_A^2}{n_A} - \overline{x_A}$ | 1.00018 |
| $var_N$ | Variance of data set that would occur from neutral opinion | $var_E = \sigma^2 = \frac{\sum x_N^2}{n_N} - \overline{x_N}$ | 0 |
| $n_A$ | Number of survey participants | - | 148.00 |
| $n_N$ | Number of survey participants | - | 148.00 |
| $\alpha$ | Risk or alpha level | - | 0.05 |
| $df$ | Degrees of freedom | $df = (n_A + n_N) - 2$ | 294.00 |

Plugging the numbers into the equation reveals a t-stat value of -5.1647, as seen in Figure 4.8:

FIGURE 4.8
COMPUTING THE T-STAT COMPARING ACTUAL OPINION AND NEUTRAL OPINION OF TRAVELOCITY

$$t = \frac{-0.3919 - 0}{\sqrt{\frac{1.0018}{148} + \frac{0}{148}}}$$

$$\downarrow$$

$$t = \frac{-0.3919}{\sqrt{0.0058}}$$

$$\downarrow$$

$$t = \frac{-0.2690}{0.0759}$$

$$\downarrow$$

$$t = -5.1647$$

The t-stat is -5.1647. A 5% significance level was chosen again as the risk level, which indicates that one would find a statistically significant difference between the two means even if there was none five times out of 100. Given the alpha level, the degrees of freedom, and the t-value from the equation, one can see that the absolute value of the t-stat, 5.1647, is greater than the critical value of 1.645 at a 5% significance level and with 294 degrees of freedom. This means that the difference of the mean of preference gathered from the data set is significantly different than the mean that would occur from a data set of neutral opinion (0).

What do these results indicate? $H_3$ states that other things being equal, respondents prefer the pioneer brand in terms of purchase performance. Not only did the sample population *not* prefer the pioneer brand, but the degree that they disagreed with the statement "I prefer Travelocity over any of the other brands" was significantly different from the results that would have occurred from neutral opinion. Because of this, $H_3$ can be rejected. More importantly, one can conclude that any advantages enjoyed by the pioneer in the online travel-booking industry due to consumer preferences do *not* exist.

## Conclusion

Chapter 4 statistically analyzed the results gathered from the data of the sample population survey. From the numerous t-tests conducted, all three hypotheses involving consumer retrieval, consumer recall, and consumer preference in terms of purchase performance were rejected. Essentially, the data suggests that consumer-based advantages for pioneering firms in the online travel-booking industry are limited, with the only potential advantage being consumer retrieval, or the ability of the consumer to list the pioneer brand when asked to list all of the companies in that industry. Other than that, advantages seem non-existent—consumers don't prefer the pioneering brand over other brands, which is probably the most important piece of information to take out of this. Thus, the analysis of the data suggests that being a first-mover in the online travel-booking industry does not earn any consumer-based advantages because of the pioneership status. Chapter 5 will go in depth with the implications of the analysis of the data, will list limitations of this study, and will suggest further research options.

# CHAPTER V

# CONCLUSION

The purpose of Chapter 5 is to summarize the study and discuss implications of the research, limitations of the study, and directions for future research.

## Managerial Implications

As Chapter 4 discussed, this study rejects the three initial three hypotheses:

- $H_1$: Respondents will retrieve pioneer brands to a degree that is significantly higher than any other brand.
- $H_2$: Respondents will be able to correctly recall the pioneer brand in a given product category to a degree greater than chance.
- $H_3$: Other things being equal, respondents prefer the pioneer brand in terms of purchase performance.

Survey respondents did not retrieve the pioneer brand to a degree significantly higher than all of the other brands when they were asked to list all of the brands they knew in the online travel-booking industry. In fact, Expedia, the fast-follower, was listed to a degree that was significantly higher than Travelocity. Because Travelocity is the first-mover in the industry and Expedia is considered to be the fast-follower, the fact that they were the two brands named the most out of all travel-booking brands suggest that early movers in the online travel industry *do* enjoy the advantage of being well-known brands in the industry. However, since Expedia was listed to a degree that was significantly greater than Travelocity, this indicates that being the absolute *first*-mover gives you less of an advantage than the fast-follower in this particular industry. Perhaps the only managerial implications coming out of the first hypothesis apply to potential first- or early-movers in industries that have yet to appear on the Internet: being the first-mover is not necessarily as important as being a *smart* mover. Hamel provides a good definition of a smart mover: "The goal, after all, is not to be first to market in some absolute sense, but to be first to put together the precise combination of features, value, and sound business economics that unlocks a profitable new market."[71]

As for the second hypothesis, survey respondents were not able to correctly recall the pioneer brand in the travel-booking industry to a degree significantly higher than chance. In fact, the degree that survey respondents were able to correctly recall Travelocity as the pioneer brand was to a degree that was significantly *lower* than the results that would have occurred due to chance. Essentially, the survey participants didn't know the pioneership status of Travelocity, and an overwhelmingly high percentage responded that they weren't sure who the pioneer was. Since so many studies support the benefits from being known as the pioneer, perhaps the management at Travelocity should find a way to advertise their pioneership status more to their customers.

Even if consumers can name Travelocity as a brand in the online travel-booking industry more than later entrants like Kayak, Cheaptickets, and Priceline, this doesn't necessitate positive consumer preference in terms of purchase performance. The third hypothesis, which states that survey respondents prefer the pioneer brand over any of

[71] Gary Hamel, "Smart Mover, Dumb Mover." *Fortune* 144, no. 4 (September 3, 2001): 191-195. *Academic Search Complete*, EBSCO*host* (accessed February 7, 2011).

the other brands to a degree significantly higher than the results that would occur due to neutral opinion, was rejected by the data. Not only did respondents not prefer Travelocity, but the degree that they didn't prefer the pioneering brand was significantly *lower* than a neutral opinion. This is probably the most important finding in this study. Even though consumers know Travelocity as a major player in the online travel-booking industry, they certainly don't prefer Travelocity over other companies—the results say that they prefer the company *less* than others.

While Travelocity might enjoy certain firm-based advantages stemming from its pioneer status, the data suggests that being the pioneer brand in the online travel industry does not provide any consumer-based advantages other than being well-known as a player in the industry. This recognition, however, doesn't translate into consumer preference. Travelocity and other first-movers in the online retail industry might benefit from investing more time and resources in communicating its pioneer status to its consumer market.

## Limitations

As with any research, there are always limitations, and this study is no exception. One limitation has to do with the sample population tested. Since the survey tested college-aged students, it makes sense that the survey participants were not able to correctly identify Travelocity as the pioneer since Travelocity entered the market in the late 1990s, a time when many of the survey participants were still in elementary or middle school. The sample population is limited in age; perhaps testing an older and more varied population would gather different results. And while there was a strong response rate, most of the survey participants who took the survey were female. This can also be considered a limitation of the study.

In addition, survey respondents were asked about only one product category: the online travel industry. As a result, the data cannot be applied to the general online retail industry but only to the online travel-booking industry.

There was an error that was made with the wording of question three in the survey. Participants were asked if they preferred Travelocity over other brands in the industry. They had six answer choice options to choose from: “Strongly disagree,” “Somewhat disagree,” “Neither agree nor disagree,” “Somewhat agree,” “Strongly agree,” and “Don’t know.” In order to analyze the results quantitatively, each answer choice was given a numerical value based on a scale. Unfortunately, the “Don’t know” option does not fit on the scale, a realization made when analyzing the results. As explained in Chapter 4, the 26 participants who responded by choosing the “Don’t know” option were excluded from the data analysis, which has an impact on the results.

## Future Research

In order to expand on this study, there are two directions that this research could go. First, it would be very beneficial to look at other product categories within the online retail industry. Online travel-booking is a beneficial industry to look at, but more research is needed on many other online retail industries in order to see how consumers *truly* think about pioneers online. Also, unfortunately in this study, pioneers in online retail who currently dominate the market could not be studied because of the chance that consumers would have biases to those companies due to their current market share and not due to pioneership status. There needs to be a way to separate the two ideas, so that these industries can be studied; it is crucial for scholars to come up with a way of measuring consumers' thoughts and opinions and finding out how consumers think about pioneers who are the dominant players in their industry.

Besides the fact that more research is needed on more product categories, this study had limited resources in terms of conducting the survey. Students were chosen as the sample population because that was the most convenient and lowest-cost option. The same study using a larger and more diversified sample in terms of age would be very beneficial to validate the results of this study.

## Conclusion

Because the Internet is a relatively new medium in which to conduct business, there is much to be learned about how phenomena such as first-mover advantage work on the Internet. The results of this study seem to support idea that because of the rapid diffusion of technology, low switching costs for consumers, and easy replication of products and services that firms encounter when dealing with the Internet, consumer-based advantages for pioneering firms seem minimal; however, only time and more research will shed light on how this phenomenon truly works in the online retail industry.

## APPENDIX A

Key Definitions: The very first brand of a new type of product which comes to the market is called the 'pioneer' brand. All brands of that same type of product that enter the market after the pioneer brand are called the 'follower' brands. Please mark the first response that comes to mind. Remember that there is no right or wrong answer.

1. Please name all the companies or websites you can recall that are associated with online travel booking.

____________

____________

____________

____________

____________

2. Of the following four brands in the travel booking industry, which is the pioneer brand?

A. Priceline
B. Travelocity
C. Expedia
D. Orbitz
E. Don't know

3. Other things being equal (e.g. price and product quality), please rate your level of agreement with the following statement: I prefer Travelocity over any of the other brands.

Strongly disagree … Neutral… Strongly agree …Don't know

-3 -2 -1 0 1 2 3 (no value)

4. What is your gender?

A. Male
B. Female
C. Prefer not to answer

5. How many hours do you spend online per week?

A. 0-5 hours
B. 5-10 hours
C. 10-15 hours
D. 15-20 hours
E. 20 or more hours

6. How many hours do you spend shopping online per week?

A. 0-5 hours
B. 5-10 hours
C. 10-15 hours
D. 15-20 hours
E. 20 or more hours

7. When you want to book travel arrangements, how often do you use online booking sites?

A. Every single time
B. Most of the time
C. Sometimes
D. Rarely
E. Never

APPENDIX B

TABLE 7.1
RESULTS TO QUESTION ONE

| Travel-Booking Site | Response Count | Response Percentage |
|---|---|---|
| Expedia | 122 | 70.11% |
| Travelocity* | 96 | 55.17% |
| Orbitz | 85 | 48.86% |
| Kayak | 75 | 43.10% |
| Priceline | 51 | 29.31% |
| CheapTickets | 18 | 10.34% |
| Student Universe | 14 | 8.05% |
| Southwest | 14 | 8.05% |
| Hotwire | 13 | 7.47% |
| United | 12 | 6.90% |
| American Airlines | 10 | 5.75% |
| Bing | 10 | 5.75% |
| Cheapoair.com | 9 | 5.17% |
| Hotels.com | 8 | 4.60% |
| Cheapflights.com | 6 | 3.45% |

*Denotes first-mover

TABLE 7.2
RESULTS TO QUESTION TWO

| Travel-Booking Site | Response Count | Response Percentage |
|---|---|---|
| Priceline | 8 | 4.6% |
| Orbitz | 15 | 8.6% |
| Expedia | 30 | 17.2% |
| Travelocity * | 12 | 6.9% |
| Don't know | 109 | 62.6% |

*Denotes first-mover

TABLE 7.3
RESULTS OF QUESTION THREE

| Level of Agreement | Response Count | Response Percentage |
|---|---|---|
| Strongly disagree | 23 | 13.2% |
| Somewhat disagree | 39 | 22.4% |
| Neither agree or disagree | 65 | 37.4% |
| Somewhat agree | 15 | 8.6% |
| Strongly agree | 6 | 3.4% |
| Don’t Know | 26 | 14.9% |

TABLE 7.4
RESULTS OF QUESTION FOUR

| Gender | Response Count | Response Percentage |
|---|---|---|
| Male | 38 | 21.8% |
| Female | 136 | 78.2% |
| Prefer not to answer | 0 | 0.0% |

TABLE 7.5
RESULTS OF QUESTION FIVE

| Number of Hours | Response Count | Response Percentage |
|---|---|---|
| 0-5 | 8 | 4.6% |
| 5-10 | 48 | 27.6% |
| 10-15 | 56 | 32.3% |
| 15-20 | 35 | 20.1% |
| 20 or more hours | 27 | 15.5% |

TABLE 7.6
RESULTS OF QUESTION SIX

| Number of Hours | Response Count | Response Percentage |
|---|---|---|
| 0-5 | 167 | 96.0% |
| 5-10 | 6 | 3.4% |
| 10-15 | 1 | 0.6% |
| 15-20 | 0 | 0.0% |
| 20 or more hours | 0 | 0.0% |

TABLE 7.7
RESULTS OF QUESTION SEVEN

| Frequency | Response Count | Response Percentage |
|---|---|---|
| Every single time | 84 | 48.3% |
| Most of the time | 47 | 27.0% |
| Sometimes | 21 | 12.1% |
| Rarely | 10 | 5.7% |
| Never | 12 | 6.9% |

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