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The impact of patent litigation on shareholder value in the smartphone industry

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ABSTRACT

In recent years, patent lawsuits in the smartphone industry have become a sensitive issue. While numerous studies have investigated the wealth effect of patent and corporate litigation, few have examined current patent litigation in the smartphone industry. This paper investigates the wealth effect of patent lawsuits between Apple and other smartphone manufacturers, such as Samsung and HTC, using an event study method. The empirical results show that a firm in a vantage position in a patent lawsuit experiences a positive stock price return when it sues a rival firm for patent infringement, but one that does not have a vantage position in a patent lawsuit experiences a negative stock price return when sued by a rival firm. The results also show that in contrast to the general findings, Apple experienced negative stock returns regardless of its litigation position when it fought Nokia, but it did not experience any abnormal stock return regardless of its litigation position in disputes with Asian firms. However, consistent with the general findings, Asian firms experienced negative stock returns when they were sued by Apple.

1. Introduction

In recent years, numerous instances of patent litigation have occurred in the smartphone industry. Since the San Jose case in April 2011, Apple and Samsung have filed more than 30 such lawsuits against each other in 10 countries. After these numerous lawsuits, the verdict of August of 2012 was intriguing. The verdict of the court was that Samsung was guilty of infringing on six Apple patents. As a result of this decision, Samsung was ordered to pay more than one billion dollars to Apple as compensation for patent infringement. After this announcement, the stock price of Samsung decreased by almost 5%, while that of Apple increased by 2%. Therefore, this situation shows that patent lawsuit results can have a major effect on companies. If the impact of the results of a patent lawsuit is large, the impact of filing a patent lawsuit would also be significant either positively or negatively because stock price reflects future value. Consequently, this paper examines the impact of patent litigation on shareholders' wealth through an event study taking into account patent lawsuit filing dates. Furthermore, this paper is not confined to the case of Apple and Samsung, and includes cases involving other smartphone manufacturing firms. For example, Nokia and Apple have filed patent lawsuits against each other over the last two years, and other Android manufacturers such as Motorola and HTC have brought suits against Apple.

Patent lawsuits in the smartphone industry have been considered more important than those in other industries because a high-tech company that invests a high proportion of its revenue in R&D is more sensitive to decisions regarding patent lawsuits (Bessen and Meurer, 2008). This may be because one smartphone includes thousands of patented technologies. Armstrong et al. (2014) argued that there are two main factors which drive this enormous amount of

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litigations in the smartphone industry. First, a modern smartphone is a converged device which includes a variety of functions that were once in separate devices. This convergence has brought into competitors, which originally operated in different markets, and accelerated the assertion of patents which related with the competitors. Second, the smartphone market has exploded. The huge amount of sales is an incentive for patent holder to assert their own patents since this big market increased rewards when patent holders win the lawsuits.

Bessen and Meurer (2008) performed an event study to measure the effect of patent litigation, showing that the impact of patent litigation on the value of a firm depends on the firm's characteristics, such as the firm's size and financial condition. Raghu et al. (2008) also investigated the effect of patent litigation in the IT industry with event study methodology. While Bessen and Meurer (2006), Bhagat et al. (1998), Lerner (1995), and Meurer (1989) discussed related issues, no research has investigated the wealth effect of continuous lawsuits between two firms, as occurred in recent patent lawsuits in the smartphone industry. In such a case, being on the plaintiff's or defendant's side does not fully explain the wealth effect of a lawsuit because a firm could always be on either side. This paper also suggests that the wealth effect of filing a patent lawsuit in the smartphone industry depends on which firm initiates the lawsuit. For the firm that initiates the lawsuit, a positive wealth effect caused by patent litigation ensues. Shareholders expect that a firm that initiates a lawsuit has a greater chance of winning. Otherwise, it would not have initiated the lawsuit.

The purpose of this paper is to examine whether patent litigation has any impact on the value of plaintiff or defendant firms in the smartphone industry, including whether the act of initiating the lawsuit influences the wealth effect of the announcement of patent litigation by the firm. This paper is organized as follows. After reviewing previous studies related to the impact of patent litigation in Section 2, this paper presents the research methodology and data in Section 3. Section 4 represents the empirical results, and Section 5 concludes.

2. Literature survey and development of hypothesis

2.1. The impact of corporate litigation

Englemann and Cornell (1988) investigated the wealth effect associated with filings, settlements, and verdicts using five examples of interfirm disputes, and they observed the combined wealth losses incurred by the litigating parties. Combined wealth means the sum of the wealth effects of plaintiff and defendant. Bhagat et al. (1994) examined the impact of lawsuit filings and settlements on shareholder value using 550 interfirm disputes, and they found combined wealth losses. Ellert (1976) examined market reactions to lawsuit announcements pertaining to mergers and antitrust actions in the period 1950–1972, and they found a negative return on the firm value of defendants. Bhagat et al. (1998) also studied the impact of a lawsuit on shareholder value with 920 lawsuit filings or settlement cases, and they found wealth losses for the defendant firm. The empirical results of these studies regarding corporate lawsuits showed that the combined wealth effect of litigation is generally negative. In particular, the negative effect on the defendant firm was statistically more significant. The main reason is that corporate litigation increases the cost of financial distress of the defendant firm (Englemann and Cornell, 1988; Bhagat et al., 1994). This implies that the wealth effect of corporate litigation depends on indirect costs as well as on direct legal costs.

2.2. The impact of patent litigation

Some research has shown that the wealth effect of patent lawsuit cases differs little from that of other corporate litigation. Bhagat et al. (1998), using an event study, showed that the wealth effect of patent litigation is negative for defendant firms and insignificant for plaintiff firms. Lerner (1995) investigated the wealth effect of patent litigation on biotechnology firms and found a negative effect on stock prices. Bessen and Meurer (2008) examined the negative impact of a patent lawsuit on shareholder value of US public firms from 1984 to 1999. The results showed that after certain factors pertaining to firm characteristics are controlled for, a patent litigation filing announcement has a negative effect on defendant firms. The negative effect of patent litigation is due to the direct and indirect business costs of litigation. The direct costs include only litigation costs, such as attorney fees and the damages for patent infringement. The indirect business costs include costs such as loss of market share and increased financial costs from greater risk (Bessen and Meurer, 2008).

Previous research papers have focused on the negative effects of patent litigation. However, there is also a positive effect of patent litigation. For example, if shareholders expect benefits from the patent litigation, such as patent royalties, announcing the filing of a patent lawsuit will have a positive impact on the stock price. Raghu et al. (2008) showed that the plaintiff firm could experience positive market return when the patent litigation is announced contrast to the defendant firm which experienced negative market return.

2.3. The impact of brand attitude and patent announcement

2.3.1. Brand attitude

Patent litigation has an impact on a firm's brand image. When Samsung was sued by Apple, many newspapers initially reported that ‘Samsung is a copycat.’ It is very likely that this kind of news harmed Samsung's brand image and boosted Apple's. This impact on brand image should be related to stock price. Aaker and Jacobson (2001) found that changes in brand attitude are associated contemporaneously with stock returns and affect financial performance. Therefore, an event that affects brand attitude positively or negatively would also have an impact on firm value. While Jarrell and Peltzman (1985) found that a firm experiences a negative stock return when it is associated with product problems as drivers of brand attitude, Chaney et al. (1991) found that the announcement of a new product has a positive effect on firm value.

This argument might be applied by analogy to lawsuits. First, regarding the negative impact of brand image, Alexander (1999) studied the relationship between corporate crime and reputational penalties, showing that firms experience reputational losses when they are linked to corporate crime. Karpoff and Lott (1993) showed that the initial news announcement that a firm is a defendant in a lawsuit has a significant negative impact on shareholder value and that the losses in shareholder value of the