The role of innovation in value creation after spin-off in the USA

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Abstract: This paper suggests a model of value creation during the US spin-off process. While it is a well-known fact that the post-spin-off performance is in general positive, the reason for that performance is still unclear. Based on previous research, we suggest that the parent firm would experience better performance after spin-off. We also suggest that the spin-off would experience better performance than its parent benchmark, due to their innovative activity. We argue that the innovation after spin-off would be the key to explain the relationship between spin-off event and post-spin-off performance.

Keywords: spin-off; innovation; learning; process.

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1 Introduction

The importance of global entrepreneurship in the field of management is well-known. Developed countries hope that the dynamism of entrepreneurship would revitalize their mature economy and limited growth opportunity (Carree et al., 2002). Developing countries, like China, would like to promote entrepreneurship to catch up to the technological development of developed countries (Zapalska and Edwards, 2001). When large corporations pursue innovative and entrepreneurial activity, it is called corporate entrepreneurship (Sharma and Czinkota, 1999). However, encouraging corporate entrepreneurship is not an easy process. Organizations often experience familiarity or maturity traps (Ahuja and Lampert, 2001) which prohibits breakthrough innovation and organizational rejuvenation. Sometimes, radical change in organizational structure is necessary to encourage entrepreneurship.

One of the ways to regenerate the sustainability and redefine the business domain is through spin-offs. Spin-offs have attracted growing attention among practitioners and researchers in both the USA and around the globe (Anslinger et al., 1999). This attention is initially due to accumulated findings of value creation from spin-off, including the positive cumulative abnormal return in the stock price of the parent firm during the announcement period and completion period (Hite and Owers, 1983; Schipper and Smith, 1983). Although spin-offs are generally thought to be value-added business activities, relatively little is known about the ways in which spin-offs actually increase worth. Previous research has tended to focus on one of three main research streams:

1. Examining the extent to which goals are fulfilled
2. The amount of organizational slack (Cuyter and March, 1963).

By examining the literature on spin-offs and search, we can begin to ask exactly how the conditions internal to the spin-off affect search intensity. This paper attempts to review research on spin-offs, diversifications, and search. We suggest an advancing theory and propose a future research question that would fill the gap in the literature.

2 Literature review

2.1 The prevalence of spin-offs and their relation to performance

Spin-offs have been prevalent in the USA, especially between 1994 and 1996 (Figure 2). Even in the 1970s, the importance of divestment, including spin-offs, was recognised by Haynes (1972). He described the divestment wave of the 1970s as an 'aftermath of the merger fever in the 1960s'. Some managers are not enthusiastic about reducing the size of their firm. Nevertheless, spin-offs became prevalent in the 1990s for many reasons. One of the reasons included a desire to resolve the 'energy problem' (Linn and Roseff, 1985), which is the opposite of synergy. Famous spin-offs include AT&T, Sears, Marriott, Sara Lee, H&R Block, Kimberly-Clark, General Mills and 3M. The number of spin-offs greatly increased between 1980 and 1995, along with a remarkable rise in the dollar amount of spin-off volume (Figures 1 and 2).
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While Security Data Company (SDC) follows the definition of SEC, the exact definition of a spin-off is still being debated. Tökke (2004) claimed that the term 'spin-off' should be considered broadly, so that it includes corporate spin-offs, institutional spin-offs and university spin-offs. In terms of corporate spin-offs, he differentiated between the restructurin-driven spin-off and the entrepreneurial spin-off. The restructuring-driven spin-off is controlled by the parent firm. Entrepreneurial spin-offs are not necessarily managed by the parent firm. Rather, they are initiated by former employees who worked for the parent firm. Comers et al. (2005) describe this type of entrepreneurial spin-off as 'entrepreneurial spin-off', that is 'creating a venture capital-based entrepreneur' from an established firm. According to Tökke (2004), equity spin-offs are the main form of restructuring-driven spin-off. In financial economics, 'spin-off' usually means 'equity spin-off'. The equity spin-off can be defined in the following way: shareholders of the parent firm obtain stock in the newly created child firm on a pro-rata basis. When the child firm does not receive equity financing from the parent firm, it is called a 'spin-out'.

Other researchers have defined the term spin-off as an equity spin-off and this way of viewing this event follows the SEC's definition. Miles and Woolridge (1999, p.1) defined spin-off as the "divestment of a business division to shareholders through a distribution of the subsidiary's common stock in the form of a dividend". Rosenfeld (1984) defined spin-off as a divestment of a controlled subsidiary separating a publicly traded company in which the current shareholders of the parent firm receive all of the common stocks as dividends.

It is worthwhile to review the spin-off process to provide a better understanding of spin-offs. A typical spin-off process includes five steps:

1. a parent firm publicly announces the planned spin-off
2. the board of directors approves it
3. the company receives the results of applications for the Internal Revenue Service ruling
4. the parent firm receives approval from stockholders
5. the completed spin-off is announced (Kaila and McNish, 1984)

The parent firm must provide several documents prior to a spin-off process, including a plan of reorganization, a proxy statement and a registration statement. A plan of reorganization is an agreement between the parent and the child firm regarding certain details of the spin-off like the division of assets and liabilities. The plan of reorganization should be approved by the board of directors of both firms as well as the shareholders of the parent firm. The proxy statement gives notice to the shareholders about a meeting regarding plans for the firm's reorganization. The registration statement must be submitted to the SEC. A prospectus is included in the registration statement. There, the SEC keeps all the records for the spin-off.

Perhaps, the most amazing feature of spin-offs is their performance. The parent firm receives an average 3% of CAR (Cumulative Average Return) in its stock during the spin-off announcement period. Moreover, both the parent and child firms (spin-off unit) tend to outperform the benchmarking company in the stock market. Spin-offs are...
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Table 1

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Financial announcement day return</th>
<th>Sample size</th>
<th>Type of divestiture</th>
<th>Cumulative average return window</th>
<th>Operating returns (1 year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oudeas (1975)</td>
<td>-2.50</td>
<td>3</td>
<td>1965-1970</td>
<td>Involutionary spin-offs</td>
<td>(-2.0)</td>
</tr>
<tr>
<td>Hite and Owers (1983)</td>
<td>1.49$^d$</td>
<td>110</td>
<td>Sell-offs</td>
<td></td>
<td>(-1.0)</td>
</tr>
<tr>
<td>Alexander et al. (1984)</td>
<td>0.17$^h$</td>
<td>53</td>
<td>Voluntary sell-offs</td>
<td></td>
<td>(-1.0)</td>
</tr>
<tr>
<td>Rosenfeld (1984)</td>
<td>2.23$^{ed}$</td>
<td>62</td>
<td>Sell-offs</td>
<td></td>
<td>(-1.0)</td>
</tr>
<tr>
<td>Heath and Zaima (1984)</td>
<td>1.8$^a$</td>
<td>76</td>
<td>Equity carve-out</td>
<td>5 days</td>
<td>(-1.0)</td>
</tr>
<tr>
<td>Jain (1983)</td>
<td>0.70$^H$</td>
<td>1107</td>
<td>Voluntary sell-offs</td>
<td></td>
<td>(-5.1)</td>
</tr>
<tr>
<td>Linn and Roseff (1985)</td>
<td>1.45$^H$</td>
<td>77</td>
<td>Sell-offs</td>
<td></td>
<td>(-1.0)</td>
</tr>
<tr>
<td>Schipper and Smith (1983)</td>
<td>1.8$^a$</td>
<td>202</td>
<td>Sell-offs</td>
<td></td>
<td>5 days</td>
</tr>
<tr>
<td>Klein (1986)</td>
<td>1.66 (successful)$^p$</td>
<td></td>
<td>Voluntary sell-offs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hite et al. (1987)</td>
<td>1.41 (unsuccessful)$^a$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Klein et al. (1991)</td>
<td>1.06$^a$</td>
<td>52</td>
<td>Equity carve-out</td>
<td>(-1.0)</td>
<td></td>
</tr>
<tr>
<td>Michael and Shaw (1995)</td>
<td>0.4$^a$</td>
<td>28</td>
<td>Equity carve-out</td>
<td>(-2.2)</td>
<td></td>
</tr>
<tr>
<td>Lang et al. (1995)</td>
<td>2.80</td>
<td>93</td>
<td>Voluntary sell-offs</td>
<td>(-5.5)</td>
<td></td>
</tr>
<tr>
<td>Allen and McConnell (1995)</td>
<td>1.90%</td>
<td>186</td>
<td>Equity carve-out</td>
<td>(-1.1)</td>
<td></td>
</tr>
</tbody>
</table>

$^a$Announcement day Cumulative Average Return (CAR), parent firm.
$^b$Average Excess Return, parent firm (seller).
$^c$Cumulative Excess Return.
$^d$Mean-adjusted returns model.
$^e$Single-index model.

The researchers who have previously studied spin-offs were aware that the value creation...
85 papers and books published between 1960 and 2002. The most common focus of the papers is the phenomenon of value creation. The parent firms generate around 3% abnormal positive stock market after spin-offs (Cusatis et al., 1993 among others). Moreover, return on the assets of the parent firm improved by 3% by the end of the first year after spin-offs (Daley et al., 1997). Previous scholars have questioned the conditions of the value creation (Allen et al., 1995; McConnell et al., 2001). Scholars have traditionally considered value creation to be the most significant feature of spin-offs (Tübeké, 2004).

2.3 The moderating and mediating variables affecting the relation between spin-offs and performance

Although researchers have often conducted in-depth analyses of the direct effects of spin-offs on performance, relatively little work has been done on the moderating and mediating variables that affect this relationship. The moderating and mediating variables influence the relation between the spin-off and its performance. The moderating and/or mediating variables include relative size of spin-off, the child firm's executives shareholding (Allen, 2001), prior takeover experience of the parent firm (Allen et al., 1995), the child firm manager's incentive (Aron, 1991), corporate focus (Daley et al., 1997), information asymmetry (Krishnaswami and Subramanian, 1999), technology transfer (O'Shea et al., 2005) and innovative learning (Arrighetti and Vivarelli, 1999).

The first types of variables are based on agency theory. They include executives' shareholdings, managers' incentives and information asymmetry. The subsidiary managers, who later become managers of the child firm, are generally privy to better information than the executives of the parent firm. Because of this inside information, they are more aware of the value of the spin-off firm. They thereby increase the shareholding when the parent firm considers the spin-off (Allen, 2001). One interesting feature of Allen's work is his observation that the insiders who traded during the three-month period directly following spin-off experience the most significant gains. This is inconsistent with the information asymmetry explanation, which dictates that as more people know the true value of the firm, they have fewer gains from the trade. When senior managers monopolise the information, they can experience greater gains than the other market participants. In addition, the manager of the child firm (spin-off unit) has greater incentive to innovate when he owns the shareholdings of the child firm. There are two reasons that a manager with shareholdings would innovate intensively. Firstly, the innovative activity, such as a new patent, may signal the stock market that the firm will prosper. Therefore, the financial performance of the stock would improve. Secondly, the innovative activity can be licensed or used for a new product development, which helps to increase revenue and profits.

The second reason is based on learning and innovation. It includes technological transfer and innovative learning (Tables 2 and 3). The knowledge gained from the parent firm can moderate the relationship between the spin-off event and the child firm's success. Depending on their innovative activity, a child firm's performance can be moderated or mediated. Innovative motivation and learning are important factors in determining the post-spin-off performance (Arrighetti and Vivarelli, 1999). Arrighetti and Vivarelli's study employed a survey method. The interviewees who received of

post-entry performance. They concluded that innovative motivation and innovative learning strongly influence the spin-offs' performance. This study had several limitations. Firstly, the sample only included firms based in Milan, Italy. Secondly, the study utilised the survey method exclusively. It is very common for entrepreneurs to often attribute their success to their own ability, such as their high levels of motivation and knowledge. The self-justification that often follows success is an issue intrinsic to the survey method.

Other variables are related to the prior conditions of the parent firm, such as prior takeover experience of the parent firm and corporate focus of the parent firm (Allen et al., 1995). The relative size of the spin-off is always an important variable, one that positively moderates the relationship between the spin-off event and the stock market reaction to it (Allen et al., 1995). In other words, because the parent firm decided to spin-off a greater proportion of the whole firm, the stock market reaction tends to be more positive.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Result</th>
<th>Measurement</th>
<th>Period</th>
<th>Sample (firms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitt et al.</td>
<td>Divestiture intensity is indirectly negatively related to internal innovation and positively indirectly related to external innovation</td>
<td>Divestiture intensity: (i) number of divestitures made (ii) percentage of sales devoted to external innovation survey, Internal innovation: R&amp;D input intensity</td>
<td>1983–1991</td>
<td>250</td>
</tr>
<tr>
<td>Hitt et al.</td>
<td>Attempted to find the influence of R&amp;D intensity on divestiture intensity but did not find (p. 1211, 1228)</td>
<td>R&amp;D input intensity</td>
<td>1985–1990</td>
<td>203</td>
</tr>
</tbody>
</table>

Table 3 Divestiture and innovative (search) output

<table>
<thead>
<tr>
<th>Authors</th>
<th>Result</th>
<th>Measurement</th>
<th>Period</th>
<th>Sample (firms)</th>
</tr>
</thead>
</table>

3 Propositions and a model

In this section, we attempt to integrate prior research into the current project and introduce variables previously omitted. However, before integrating the prior research, we must discuss which aspect of performance we should discuss. There are many different ways to measure the performance of a given firm. When comparing performance
financial stock market performance (yearly performance vis-à-vis benchmark) and long-term operating performance (yearly performance vis-à-vis benchmark).

Similar variables may have different effects on the different areas of performance. For example, Allen et al. (1995), concluded that the relative size of a spin-off demonstrates a positive relationship with the short-term performance of the parent firm; this is especially true during the time surrounding the announcement period. At the same time, the absolute size of the spin-off negatively moderates the relationship between the spin-off and the long-term financial performance (Sadler et al., 1997, p.30). It means that a small spin-off, one with less than $200 million of market capitalisation, has a greater positive stock market performance than larger size spin-off companies, those with more than $200 million of market capitalisation. In this paper, we want to discuss the long-term financial and operational performance of the child firm. We have interests in long-term performance because there is a lag between innovation and the performance. The announcement of additional R&D expenditures can be considered as a positive sign to the shareholders, leading to a positive stock market response. However, the introduction of new products and services requires time even after the R&D expenditures. The increased revenue and profits come next after the innovation.

According to the previous literature, we can conclude the following propositions. The following propositions suggest that the spin-off events positively influence the long-term performance of both the parent and the child firms.

Proposition 1: The parent firm experiences a greater positive long-term performance after the spin-off than the past.

Proposition 2: The spin-off firm experiences a greater positive long-term performance than the benchmark firm for the first six years after the divergence.

We consider that three years after the divergence is the appropriate time period to measure long-term performance following Cusatis et al. (1993). After three years, we assume that the effect of spin-off disappears. Variables from the prior literature can explain the post-spin-off performance. The spin-off event itself may have a direct effect on the long-term post-spin-off performance. In terms of short-term stock market performance, the spin-off event may influence short-term financial performance because the spin-off announcement itself can function as a signal to buyers of the stock market.

Three variables are especially relevant to the explanation of short-term market performance. Firstly, the parent firm’s reduced focus can positively influence the post-spin-off performance. Secondly, the relative size of the spin-off is known to influence the performance positively after the spin-off, especially the short-term performance. Finally, prior takeover experience is related to a positive stock market response during the spin-off announcement period. These variables may determine a long-term performance. This is because the short-term stock market performance shows the market’s expectation of future firm value.

Changes in top managers (Wruck and Wruck, 2002), managerial shareholdings (Allen, 2001) and information asymmetry are also variables which may influence the child firm’s performance.

Learning variables, such as technology transfer and innovative learning, can moderate or mediate the relationship between the spin-off event and post-spin-off performance.

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**Figure 3** Conceptual relationship among spin-off event, innovation and post-spin-off performance (see online version for colours)

**Figure 4** The relationship among independent variable, mediator and outcome variable and the relation


The innovation of the child firm is a mediator of its long-term performance. There is, of course, a great difference between the mediators and the moderators (Baron and Kenny, 1986). The independent variable influences on the mediator and the mediator influences the dependent (outcome) variable (Figure 4). The spin-off event may influence the innovative activity of the child firm and the innovative activity may determine the long-term performance of the child firm.

The spin-off events have a positive effect on performance, whether we are considering long or short term. Thus, innovation subsequent to a spin-off is a possible mediator. We usually use R&D expenditure over sales as a proxy for innovative intensity. While it is uncertain whether spin-off increases innovative intensity, an increase in innovative intensity might influence performance positively. As a matter of fact, previous research has shown that the announcements of spin-offs are positively related to short- and long-term performance. The source of value creation remains controversial. We can infer that the search activity after spin-offs could be related to their cumulative share price returns. The share price returns during the spin-off announcement period could
Interestingly, the announcement of an increase in R&D expenditures leads to positive abnormal returns during the announcement period (Woolridge and Snow, 1990) (for more information see Table 4). Stock investors consider R&D expenditure announcement a good sign, because it promises growth opportunity. R&D investment today may not increase profits and sales immediately. It is paid back in the long term, opening opportunities for a new market and noble products in the future. It is especially true for the firms in high-technology industry (Chen et al., 1990; Zantout and Tsetsekos, 1994). Assuming that a firm’s sales are constant, an increase in R&D expenditure means a higher R&D intensity (R&D/sales). It is implied that the shareholders consider a more intensive search (increase in R&D expenditures) as a positive signal for the growth of a firm. From the work described in Table 4, we can draw the following propositions.

**Proposition 3: Innovative intensity after spin-off has a positive relationship with the long-term performance of the spin-off firm after the spin-off event.**

The relationship between the spin-off event and long-term performance (path a) is a positive one (Cusatis et al., 1993) among others (Figure 5). The relationship between the managerial commitment to innovation (R&D expenditure over sales) and the long-term performance (path b) is also positive.

Then what exactly constitutes the relationship between the spin-off and the innovation? We can have some idea from the existing literature that questions the relation between mergers and innovation and divestitures and innovation. Spin-offs are often referred to as "reverse mergers" (Table, 2004, p.1). Spin-off can be called as a reverse merger because a merger is integration of two firms into one, whereas spin-off is separation of one firm into two. It is a reverse merger because spin-off can be a way to reverse mergers. Allen et al. (1995), argued that the firms with a positive stock market response during spin-off announcement period tend to have a spin-off earnings announcement.
hypothesis does not apply to the spin-offs. After divestiture, the parent firms may experience a lower morale and the threat of unemployment. However, employees in spin-off firms may have a higher morale. They may even have a more entrepreneurial spirit after the spin-offs because of the decrease in the firm's size and the various organisational changes that occur after spin-offs. Interestingly, Hitt et al. (1996)'s empirical results did not support their hypothesis regarding lower morale and the threat of unemployment.

Finally, we suggest that

1 managerial incentive
2 managerial risk tendency
3 entrepreneurial spirit after spin-off are the reasons that would positively influence the search intensity.

From the previous literature, we can draw the following propositions.

Proposition 5: The sum of the parent and the child firm's search output intensity subsequent to the spin-off is greater than the parent firm's search output intensity prior to it.

4 Conclusion

Spin-offs have gained an increased attention among strategic management scholars. Concurrent with the rise in the importance of spin-offs, research about search has also become significant. Prior research has proved fruitful, especially in the elaboration of the spin-offs' most salient features. However, a little research has been done on the spin-off process itself, especially about search. In sum, we know the following four things from the literature.

Firstly, the stock market reactions surrounding spin-off events are positive. In this stream of research, scholars have simply looked at the stock market reaction using an event study. Secondly, even the long-term performance of the child firms and the parent firms are competitive compared to the benchmarks. In this group of studies, researchers asked whether a spin-off is actually related to value creation over the long term. Scholars also have indicated that the spin-offs are value enhancing (John, 1993). Thirdly, various reasons for such market reactions have been suggested. These reasons include: decrease in agency costs, different clientele effects and wealth transfer from bondholders to shareholders (Galai and Masulis, 1976). Although there are two case studies which support the wealth transfer hypothesis (Alexander et al., 1984; Parrino, 1997), previous literature has found a weak empirical evidence for the wealth transfer theory (Hite and Owes, 1983; Schipper and Smith, 1983). In these studies, the independent variables are the factors surrounding spin-off and the dependent variable is the stock market reaction. In other words, the researchers have examined whether the factors surrounding spin-offs can explain the variance in stock market reactions. Finally, the researchers in diversification and divestiture have suggested that the search intensity and the level of diversification may be related.

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financial distress, agency costs and the degree of autonomy affect innovative intensity. Examining the subject matter in this way would generate a new field of study in relation to this important topic: spin-offs and innovation.

References


