Extensiveness of Business Planning and Firm Performance: An Examination into the Drivers of Success and Survival for Startup Firms

INTRODUCTION

There is much debate about the role of business planning and new venture creation and success (i.e., Gruber, 2007; Karlsson & Honig, 2007). In this paper, we extend this debate and advance our understanding of the potential role of the extensiveness of business planning. Specifically, we investigate the extensiveness of business planning as it affects firm performance and survival using data from a sample of incubator spin-off firms. Extensiveness of business planning is concerned with if the firm has a plan and if it is written down (what Liao & Gartner [2006] refer to as presence and formality), but also the number of sections and the extensiveness each section.

Over the past decade, entrepreneurship research has shown renewed interest in the impact of business planning on startup firm survival and performance. Indeed a number of studies over the past ten years have brought additional empirical evidence concerning the impact of business planning (e.g., Delmar & Shane, 2003). While many of these findings are contradictory, one thing all of these studies agree on is that business planning is a heterogeneous task. Gruber (2007) suggests that future research should take better heterogeneity into consideration that not all functional areas present in a business plan are planned in the same manner and they may not be of equal importance to venture success (Bhidé, 2000). Liao and Gartner (2006) also note that complexity and dynamism may impact business planning effectiveness.

The balance of the paper begins with a conceptual framework, a review of the literature, and hypotheses linking the extensiveness of business planning to two aspects of firm performance: survival and financial performance. Next, the research methodology is described and study results are presented. Finally, a discussion is provided and promising areas for further research are identified.

CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESES

Business Planning and Financial Performance

A number of studies have found that writing a business plan increases the likelihood of firm survival (e.g., Gruber, 2007; Shane & Delmar, 2004). For instance, Shane and Delmar (2004) used a random sample of 223 Swedish entrepreneurs to examine their organizing efforts including business plan completion. Their results showed that entrepreneurs were less likely to fail if they completed a business plan before beginning market activities. In a similar vein, Liao and Gartner (2006) found the firms that completed a business plan were 2.6 times more likely to launch their business than those that did not complete a plan. They also found that the likelihood of venture persistence increased in perceived uncertain financial and competitive environments.

Following this work, Gruber (2007) found that business planning is beneficial for startup firms. He advocated that a contingency perspective should be applied with different planning approaches depending on the type of founding environment (i.e., the extent of dynamism).

On the other hand, some studies have found no association between writing a business plan and success (i.e., Honig & Karlsson, 2004, Karlsson & Honig, 2009). Bhide (2000) found that less than 28% of his sample of Inc 500 firms had completed a business plan. In addition, Honig and Karlsson (2004) showed evidence entrepreneurs only write business plans because they are required to by investors, educators and
advisors. This finding was echoed by Lange, Mollov, Pearlmutter, Singh, and Bygrave (2007) in their study of startups founded by Babson College alumni. They found that firms with business plans had no performance differences from firms without business plans. They suggest that unless an entrepreneur needs to raise substantial start-up funds from venture capital or business angels, there is no compelling reason to write a detailed business plan before opening a new business. Most recently, Karlsson and Honig (2009) collected longitudinal data on six firms over a five year period to examine the impact of business planning on firm success. They found that firms initially conformed to business plan norms but over time they moved farther away from the plans. None of the Entrepreneurs who wrote business plans updated them and it was quite rare for an entrepreneur to refer to the business plans after they launched. Many of these studies do not mention or include the complexity and dynamism of the environment and many are across industries.

While there is a great deal of discussion and research about business planning and firm survival and performance (Gruber, 2007; Shane & Delmar, 2004), there is not as much discussion about the content of business plans. The section below presents the research in this area.

**Business Planning and Content**

Very little of the literature has evaluated the effectiveness of the plan in a substantive way. As discussed above, most research looks at whether or not a plan exists and its impact on firm survival or performance. A written business plan may be 5 pages or 50 pages (and beyond). It may have detailed financial pro-forma statements or not. The plan may contain a well developed analysis of the market with details of consumer needs and expectation or not. We can assume that the comprehensiveness and effectiveness of the business plan also reflects the amount of time and energy the entrepreneurial team has put into developing their business. Business plans and the process of planning help entrepreneurs to become aware about their assumptions of success, map out the necessary resources needed to organize and start the business and the amount of resources needed to operate the business. Indeed Armstrong (1982) notes that business planning, particularly financial planning, can save entrepreneurs’ time and money in the startup process. Business plans also help entrepreneurs figure out who their potential customers are, what kind of customer needs are out in the market, and how the firm will reach customers. Business planning also helps to map out the firms operations and help the entrepreneur how to produce the good or deliver their service. If the entrepreneur decides to produce internally, plant, equipment and personnel can be organized (i.e, equipment, inventory, licenses and permits, trained personnel). Planning can lead to reduction in production delays again saving time and money (Bracker, Keats, & Person, 1988; Liao & Gartner, 2006).

In this vein, Heriot, Campbell and Finney (2004) argue that too much emphasis has been on whether or not a business plan has been written and not enough has been focused on the content of the plan. They go on to say that people assume that just because a plan exists, it represents a good idea has been well written or well developed. Trailor and Wolford (2001) have argued that, “listing the important topics in a business plan creates only generalities. Details must support the arguments made about and for the topics... That is, effective business plans are the outcome not only of covering all the bases, but also of covering them well” (p. 41). This suggests that entrepreneurs may have significant issues writing meaningful business plans because of the details of writing substantive arguments. These issues may become even more significant if the product or service is based on novel technologies that may not
necessarily be easily understood by the market. Thus, we would not expect a written plan to be a good predictor of firm performance if it is not comprehensive. Specifically, we would also expect that all the bases are covered well (number of sections and extensiveness of each section).

**Hypotheses**
The sections above presented the research on business planning and if those differences affect startups’ survival or performance. We are interested in extending this debate by examining the impact of business planning (presence) and the impact of content (extensiveness of business planning). Based on the arguments and based on the debate in the literature reviewed above, we present the following propositions:

H1: There will be differences on the presence and extensiveness of business planning for startup firms that survive and fail.

H2: Differences in presence and extensiveness of business planning will affect startup firms’ survival.

**METHODOLOGY**

**Sample**
The empirical setting is the Top Program of the University of Twente, of one of the oldest incubation programs in North-western Europe. Founded in 1984 and endorsed directly by the University board, Top has incubated more than 350 firms so far. This program stimulates the creation of technology-based spin-offs. It consists of space provision complemented with scientific and business coaching designed for high-tech knowledge intensive start-ups. Selected start-ups enrolling the program gain access to several important resources through the network managed by the university. One of the requirements for firms to gain access to the Top program is the examination of a written business plan both written as well as its oral presentation in front of a board of experts. This makes this setting excellent for the analysis of archival records of written business plans and to answer our main research proposition.

Our sample includes both surviving and failed firms. The database counts more than 5,000 pages of business plans and 10,000 of other documents such as meeting notes, progress reports and further evidence of incubation activities.

**Data collection**
Data was collected during the first half of 2009 using a standardised form. The main purpose was to organize the whole company database creating a single file per incubated company with all the respective information. This involved the detailed inventory of every existent document about a specific firm such as business plans, progress report, meeting notes and official committee assessment among others. Further, we collected data on the current situation of each incubated company to find out whether they still existed and how big they are in terms of employment.

**Variables**
We used as dependent variable a dichotomous variable coding whether the firm is still trading or not. Independent variables are related to the extensiveness of business planning. We used both dummy variables to code the existence of each section of the business plan as well as measured their extensiveness in number of pages. Completeness of business plan was added to evaluate the impact of having incomplete business plans in terms of the four main planning areas we previously
listed. Furthermore, we controlled for the size, age, initial team size and offering (product vs service) of each company. As our empirical setting is an incubation aimed to increase long-term survival of companies, we added amount of support each company received.

RESULTS
Table 1 presents the descriptive statistics and correlations of our sample. About 64% of all incubated firms are still trading. Their average age is about 12 years old. Their business plans are on average about 17 pages long and more than 80% presented the documents with all the four main section we have outlined.

++ PUT TABLE 1 ABOUT HERE ++

Results show that surviving firms are different in their business planning, answering positively our first research question (Table 2). All firms in our sample had business plans, but surviving firms show more extensive business planning. Non-parametric independence tests show that surviving firms have more extensive product descriptions (p-value ≤ 0.10); are less likely to have marketing sections in their plans (p-value ≤ 0.10); and more likely to describe their organization (p-value ≤ 0.10).

++ PUT TABLE 2 ABOUT HERE ++

Logit regression analysis revealed that marketing planning (p-value ≤ 0.10) was the only variable to have a significant impact on survival (Table 3). The coefficient’s signal is negative implying a negative relationship between marketing planning and chances of survival. Further analysis showed that existence and extensiveness of other business planning sections did not explain survival.

++ PUT TABLE 3 ABOUT HERE ++

Some of the control variables are also significant. Age was found to have a negative impact on survival while the number of employees and the amount of support enjoyed during the incubation program have a positive coefficient. Finally, no significant differences were found for service companies or differences in incubation period length.

DISCUSSION AND CONCLUSION
Taken together, our results show that business planning is not always beneficial for high-tech knowledge intensive start-ups. While we found differences among the extensiveness of some business planning section for firms that survived as compared with those that failed, not all of these differences predict survival. In fact, we found a negative relationship between developing a marketing strategy and firm survival. A possible explanation for this could be drawn from Sahlman (1997) who argues that "the more elaborately crafted the document [business plan], the more likely the venture is to, well, flop, for lack of a more euphemistic word" (p. 98). Perhaps marketing strategies can be over developed and the entrepreneurial team looking for too many complex ways to gain consumer attention. Another possible explanation of this finding is that incubated knowledge intensive and high-tech start-up firms are likely to develop businesses based on novel technologies that may not necessarily be understood by the market. In addition, these technologies may be disruptive or create
new industries. Further, these findings suggest that mechanisms other than planning may be contributing more strongly to firm’s survival.

Effectuation (Sarasvathy, 2001), bricolage (Baker & Nelson, 2005; Liao & Gartner, 2006) or improvisation might have taken the place of formal planning for the firms in our sample. Further, incubated firms typically enjoy a business support environment using frequently services such as coaching or networking with other organizations. Under these conditions, planning can be take place throughout the incubation period and develop informally rather than formally.

Age and number of employees of the firm had significant coefficients. Firm age has a negative impact on survival. This is unsurprising since the longer one organization lives the more likely it is to grow obsolete and disappear. Although some authors argue that the liability of newness drives hinders new company establishment and can therefore be responsible for their premature failure (Freeman et al., 1983; Hannan & Freeman, 1984), incubation programmes such as Top set out to counter this effect. As a result, these companies graduate from the programme having overcome their initial danger phase or, in the worse case, experience a delayed liability of newness (Schwartz, 2009). Number of employees had a positive effect on firm survival.

Another important finding was that amount of support has a positive significant impact on firm survival. This contributes to the business incubation literature by providing evidence that incubation efforts are successful in promoting long term survival of firms.

Of course, every study has its limitations. One of the major limitations of the study is the sample. First, all the startup firms were from an incubator. Thus our results can only be generalized to other incubated firms. Second, we only evaluated startups from one incubator; however, we were able to gather business plan data on the entire population of startups firms over a 20+ year period from this incubator. Another limitation of our research is that we have quantitative information on the business plans (length and sections). Finally, there is the issue of excluded variables. Certainly, there may be other, possibly more pertinent aspects of business plans and startups that should be included in future investigations. To address these limitations we urge future researchers to develop more comprehensive and precise measurements for the involved factors.

To further build on the results of this research, we suggest that an alternative approach be taken that uses a richer assessment of the content of the plan. Specifically, we recommend that future research not only examine the comprehensiveness and extensiveness of business planning but also examine the quality of the business. A qualitative examination of business plans by multiple expert raters (allowing for inter-rater reliability) would contribute to the field by moving to substantive discussions versus existence discussion. As Heriot Campbell and Finney (2004) show in their model of business plan effectiveness, if the idea is not good (a pig) putting lipstick on it by writing a business plan will not make it more attractive. Thus, the quality of the core idea and execution of the idea through business plan development should be assessed.

In summation, this study illuminated certain critical gaps in our understanding of the startup business plan effectiveness and firm survival and performance. We contribute to the literature of business planning and its impact on performance for startup firms by moving beyond the formal outcome of the planning effort (e.g. such as the existence of written business plans) by analyzing both the comprehensiveness and extensiveness of business planning. Differentiating between these forms of
planning (comprehensiveness and extensiveness) allows an evaluation of the effectiveness of business planning given the resource constraints of new and established small firms. Our findings show differences among the extensiveness of some business planning sections for firms that survived as compared with those that failed; however not all of these differences predicted survival. We hope that our research will continue the debate on effectiveness of business planning – an issue that is of interest to both academics and entrepreneurs.

REFERENCES


Table 1. Descriptive statistics and correlation matrix

| Table 1 | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---------|------|------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|
| 1. Survival 2009 | 0.636 | 0.482 | | | | | | | | | | | | | | | | | | | |
| 2. BpPages | 17,539 | 12,431 | 0.120 | | | | | | | | | | | | | | | | | | |
| 3. BPProd | 0.975 | 0.156 | 0.021 | 0.153 | | | | | | | | | | | | | | | | | |
| 4. BPProdPages | 1,650 | 1,362 | 0.144 | 0.475 | 0.194 | | | | | | | | | | | | | | | | |
| 5. BPProdShare | 0.085 | 0.069 | -0.082 | -0.616 | 0.200 | -0.080 | | | | | | | | | | | | | | |
| 6. BPMkt | 0.936 | 0.246 | -0.108 | 0.200 | 0.331 | 0.104 | -0.080 | | | | | | | | | | | | | |
| 7. BPMktPages | 3,007 | 3,235 | 0.123 | 0.690 | 0.121 | 0.322 | -0.355 | 0.244 | | | | | | | | | | | | |
| 8. BPMktShare | 0.181 | 0.206 | 0.026 | -0.063 | 0.072 | -0.027 | 0.396 | 0.231 | 0.367 | | | | | | | | | | |
| 9. BPFin | 0.950 | 0.218 | -0.003 | 0.149 | -0.037 | 0.061 | -0.243 | 0.007 | 0.082 | -0.072 | | | | | | | | | |
| 10. BPFinPages | 4,282 | 3,801 | 0.058 | 0.616 | 0.066 | 0.120 | -0.416 | 0.108 | 0.397 | -0.031 | 0.242 | | | | | | | | |
| 11. BPFinShare | 0.084 | 0.073 | -0.071 | -0.572 | -0.350 | -0.297 | 0.651 | -0.284 | -0.354 | 0.283 | 0.264 | -0.321 | | | | | | | |
| 12. BPOrg | 0.900 | 0.301 | 0.094 | 0.251 | 0.175 | 0.107 | -0.331 | 0.252 | 0.181 | -0.032 | 0.197 | 0.185 | -0.314 | | | | | |
| 13. BPOrgPages | 1,418 | 1,309 | 0.117 | 0.563 | 0.086 | 0.330 | -0.337 | 0.106 | 0.290 | -0.072 | 0.136 | 0.414 | -0.306 | 0.362 | | | | |
| 14. BPOrgShare | 0.094 | 0.070 | 0.003 | -0.257 | -0.026 | -0.078 | 0.321 | -0.063 | -0.197 | 0.222 | 0.038 | -0.137 | 0.292 | 0.444 | 0.407 | | | |
| 15. Completeness of Business Plan | 0.821 | 0.384 | 0.073 | 0.321 | 0.343 | 0.182 | -0.320 | 0.562 | 0.270 | 0.056 | 0.492 | 0.258 | -0.247 | 0.715 | 0.306 | 0.167 | | |
| 16. Service Company | 0.868 | 0.339 | -0.076 | -0.105 | 0.005 | -0.069 | 0.053 | 0.027 | -0.019 | 0.039 | 0.007 | -0.077 | 0.028 | 0.046 | -0.020 | 0.082 | 0.066 | |
| 17. Age | 12,421 | 6,335 | -0.319 | -0.153 | -0.044 | -0.107 | 0.299 | 0.059 | -0.227 | -0.055 | 0.026 | -0.063 | 0.192 | -0.204 | -0.141 | 0.016 | -0.128 | 0.008 | |
| 18. Initial Team Size | 3,161 | 0.594 | 0.122 | 0.089 | 0.097 | 0.103 | -0.047 | 0.037 | 0.047 | -0.029 | 0.001 | 0.052 | -0.075 | 0.082 | 0.179 | 0.076 | 0.079 | 0.113 | -0.039 | |
| 19. Employees | 4,964 | 9,386 | 0.227 | 0.053 | 0.034 | 0.079 | -0.008 | 0.047 | -0.051 | -0.037 | 0.017 | 0.051 | -0.017 | 0.047 | 0.093 | 0.059 | 0.056 | -0.144 | 0.174 | 0.212 | |
| 20. Amount of Support | 1,700 | 1,245 | 0.277 | 0.115 | 0.072 | 0.060 | -0.091 | 0.007 | 0.165 | 0.057 | 0.024 | 0.143 | -0.109 | 0.178 | 0.134 | 0.050 | 0.128 | 0.092 | -0.581 | 0.137 | -0.045 | |

N=284
Table 2. Non parametric independence test (grouping variable = survival)

<table>
<thead>
<tr>
<th></th>
<th>Failed\n(N=104)</th>
<th>Survived\n(N=180)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bppages</td>
<td>15.952</td>
<td>18.968</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPProduct</td>
<td>0.962</td>
<td>0.979</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPProductpages</td>
<td>1.375</td>
<td>1.810</td>
<td>≤ 0.10</td>
</tr>
<tr>
<td>BPProdShare</td>
<td>0.092</td>
<td>0.081</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPMkt</td>
<td>0.971</td>
<td>0.921</td>
<td>≤ 0.10</td>
</tr>
<tr>
<td>BPMktpages</td>
<td>2.548</td>
<td>3.270</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPMktShare</td>
<td>0.174</td>
<td>0.181</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPFin</td>
<td>0.952</td>
<td>0.952</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPFinpages</td>
<td>4.048</td>
<td>4.439</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPFinShare</td>
<td>0.089</td>
<td>0.080</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPOrg</td>
<td>0.856</td>
<td>0.921</td>
<td>≤ 0.10</td>
</tr>
<tr>
<td>BPOrgpages</td>
<td>1.202</td>
<td>1.561</td>
<td>n.s.</td>
</tr>
<tr>
<td>BPOrgShare</td>
<td>0.092</td>
<td>0.094</td>
<td>n.s.</td>
</tr>
<tr>
<td>Completeness of Business Plan</td>
<td>0.779</td>
<td>0.847</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
Table 3. Results of logit regression predicting survival

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Company</td>
<td>-0.192</td>
<td>-0.195</td>
<td>-0.309</td>
<td>-0.213</td>
<td>-0.217</td>
</tr>
<tr>
<td>Age</td>
<td>-0.104***</td>
<td>-0.104***</td>
<td>-0.106***</td>
<td>-0.103***</td>
<td>0.105***</td>
</tr>
<tr>
<td>IncYears</td>
<td>0.037</td>
<td>0.037</td>
<td>0.059</td>
<td>0.054</td>
<td>0.027</td>
</tr>
<tr>
<td>Initial team size</td>
<td>0.130</td>
<td>0.130</td>
<td>0.132</td>
<td>0.083</td>
<td>0.164</td>
</tr>
<tr>
<td>Employees</td>
<td>0.141***</td>
<td>0.141**</td>
<td>0.141***</td>
<td>0.144**</td>
<td>0.141***</td>
</tr>
<tr>
<td>Amount of Support</td>
<td>0.297**</td>
<td>0.297*</td>
<td>0.291*</td>
<td>0.301**</td>
<td>0.304**</td>
</tr>
<tr>
<td>BP pages</td>
<td>0.008</td>
<td>0.008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP Completeness</td>
<td></td>
<td></td>
<td>0.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPProd</td>
<td></td>
<td></td>
<td></td>
<td>0.970</td>
<td></td>
</tr>
<tr>
<td>BPProd pages</td>
<td></td>
<td></td>
<td></td>
<td>0.214</td>
<td></td>
</tr>
<tr>
<td>BPProd share</td>
<td></td>
<td></td>
<td></td>
<td>-0.447</td>
<td></td>
</tr>
<tr>
<td>BPMkt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.722**</td>
</tr>
<tr>
<td>BPMkt pages</td>
<td></td>
<td></td>
<td></td>
<td>0.032</td>
<td></td>
</tr>
<tr>
<td>BPMkt share</td>
<td></td>
<td></td>
<td></td>
<td>0.200</td>
<td></td>
</tr>
<tr>
<td>BPFin</td>
<td></td>
<td></td>
<td></td>
<td>-0.100</td>
<td></td>
</tr>
<tr>
<td>BPFin pages</td>
<td></td>
<td></td>
<td></td>
<td>-0.033</td>
<td></td>
</tr>
<tr>
<td>BPFin share</td>
<td></td>
<td></td>
<td></td>
<td>0.668</td>
<td></td>
</tr>
<tr>
<td>BPOrg</td>
<td></td>
<td></td>
<td></td>
<td>0.239</td>
<td></td>
</tr>
<tr>
<td>BPOrg pages</td>
<td></td>
<td></td>
<td></td>
<td>0.045</td>
<td></td>
</tr>
<tr>
<td>BPOrg share</td>
<td></td>
<td></td>
<td></td>
<td>-1.074</td>
<td></td>
</tr>
</tbody>
</table>
## ANNEX I

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Main product/service</th>
<th>Website</th>
<th>Chamber of Commerce</th>
<th>ISIC</th>
<th>Registration Number</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Documents</th>
<th>Y/N</th>
<th># pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Business Plan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product/Service description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other documents (list)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection meeting notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate meeting(s) notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final meeting notes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other documents (list)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>