

2010 Babson College Entrepreneurship Research Conference
SAMPLE - Theoretical Abstract

Principal Topic

Over 80,000 jobs and an average four-year sales growth rate of nearly 2,000% represent the private American firms that made the *Inc* 500 list. But only very few firms can achieve this high growth rate and maintain it over multiple years. Only 70 firms were *Inc* 500 for at least four consecutive years between 1991 and 1999. Both economics and strategy suggest that a trade off exists between long term and short term growth. We therefore attempt to understand more in detail whether firms always need to make short term sacrifices in order to achieve long term benefits and, if so, what the specific nature of such tradeoffs is.

Method

Our paper uses a decision theory approach. A model is proposed where a high growth firm must decide over time on workforce size so as to maximize total discounted profit. Since the firm's workforce decisions will highly influence its sales revenue, sales revenue represents the state of this decision system. Our first objective is to identify optimal hiring policies that prescribe over time for each state (sales revenue) the hiring decision. We formulate this decision problem as a discrete-time, discrete-state Markov decision process. The model offers new insights on the relationships between profitability, size (in sales and number of employees) and growth.

Specifically, our model offers time-based explanations for the tradeoff between relative sales growth on one side and both hiring and workforce efficiency on the other side. The model also identifies conditions under which high growth firms should experience decreasing growth patterns as they age, and a profitability condition that sheds some light on why high growth firms might increase their workforce despite being unprofitable over multiple time periods.

The model is then tested by using a significant longitudinal sample of firms listed in *Inc* Magazine's yearly reports from 1991 to 1999. The results show that the sales dynamics and hiring policies proposed by our model apply closely to this sample.

Overall, our results show that the effect of hiring in early years on current expected sales is positive while that on current expected relative sales growth is negative, and the same phenomena occurs with workforce efficiency in early years. Therefore, lower hiring and lower workforce efficiency should be desirable in early years for high current sales growth.

Results and Implications

Although we test our model with empirical data, the paper is primarily theoretical. Our main contribution consists in the development of a rigorous structural model of the costs associated with high-growth strategies. Within the context of existing theory, the paper contributes to both the strategy literature and the economic literature in industrial organization. In addition, the paper has significant practical implications. Its conclusions may be used to provide useful information to entrepreneurs allowing them to better tailor their hiring decisions over time for

continuous high growth. In addition, the model may provide useful insight for financiers trying to estimate the costs and benefits of financing the growth of a firm, and to policy-makers as they try to fine-tune job generating policies.