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# Financial bootstrapping and venture development in the software industry

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## Abstract

Access to finance has been identified as a significant constraint on the development of technology-based businesses. Although important, institutional venture capital and business angel finance are used by only a small proportion of new and growing ventures. The role of bootstrapping – defined here as access to resources not owned or controlled by the entrepreneur – has been largely overlooked in studies of small firm financing. This paper redresses this omission by analysing the role and importance of bootstrapping in product development and business development in the independently-owned software industry. Results from two regions of the UK – Northern Ireland and South East England – are compared with equivalent data from the USA (Massachusetts). Overall, bootstrapping techniques are less extensively used in the Northern Ireland industry than in South East England, and in both regions bootstrapping is less common than in Massachusetts. This may account for the smaller employment size, growth

profile and stronger service/consulting orientation of these firms. Moreover, there appear to be considerable variations in the use of bootstrapping. Larger firms tend to make more use of bootstrapping for product development, and consider it more important than do smaller firms, who more highly value business development-related bootstrapping. Small firms are also more likely to use and value cost-reducing bootstrapping techniques, whereas larger firms make more use of the exploitation of value-chain based relationships.

Keywords:

software industry    entrepreneurial finance    bootstrapping    product development    business development  
regional development.

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## Notes

1. These studies define bootstrapping to include both financial aspects, which limit, reduce or eliminate the financial outgoings of the business or provide additional financial resources without the costs and obligations of equity or debt finance, and non-financial aspects, where resources are acquired at low or no (immediate) cost on the basis of leveraged social capital relationships. Although there is growing interest in the latter as a specific research theme (Winborg and Johannisson [2001](#)), both the financial and the non-financial aspects are important to the venture development process.
2. It is interesting to note that although they define bootstrapping specifically in terms of the reliance on personal sources of finance capital, Smith and Smith ([1998](#)) in their exemplars of the importance of bootstrapping do include a number of references to resource, rather than finance, provision by other actors in the social capital network of the founder(s) of entrepreneurial ventures.

3. Non-ICT firms in the industry are those with a significant ICT input into other operations (such as banking, accountancy, public agencies), and have been excluded from this discussion (NISIF [2000](#)).
4. For example, in software product development, manufacturing costs are low (and often out-sourced overseas – O'Malley and O'Gorman [2001](#)), while R&D and marketing costs are increasing rapidly. Even by 1994, Microsoft was reporting R&D expenditure equivalent to 13% of revenues and marketing expenditure of 30% of revenues (Niosi [2000](#)).
5. As the experience of the rapid increase in venture capital investment in the late 1990s, and the subsequent collapse in technology markets after 2000, suggests, the US venture capital industry erred in the opposite direction and became over-exposed to technology investments.
6. The Massachussetts survey was undertaken in 1994/1995; the Northern Ireland survey was undertaken in 1996; and the smaller scale survey in South East England was undertaken in 2000.
7. These specifically fall into the category of bootstrapping represented by the acquisition of financial resources directly without incurring the cost or other obligations of conventional debt or equity instruments. As these 'soft' funding sources carry no cost of capital, they represent both an addition to the financial resource endowment of the business and a reduction in the related costs of acquiring access to those resources.
8. Equivalent data for the South East are not available on a consistent basis for this measure.
9. Defined as response categories 'crucial' and 'very important' on a 5-point scale.
10. No data on bootstrapping for business development is available for the South East sample due to constraints on the extensiveness of the survey process.

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