

# **Knitting and Deep Niches: The Importance for SMEs of Focus in R&D and Product Development**

***Graham W Winch\**, *Anthony Gill\*\**, and *Dan Arthur\****

*\*University of Plymouth Business School, Plymouth PL4 8AA,*

*\*\*Phrontis Ltd, Adderbury OX17 3EU*

*Correspondence: Graham.Winch@pbs.plym.ac.uk*

## ***Abstract***

*Small and Medium-sized Enterprises (SMEs) face major challenges in trying to remain competitive in the global market place. An identified strategic ploy to maximise effectiveness in product design and R&D is the ‘deep niche strategy’. This paper demonstrates the use of system dynamics diagramming processes in articulating this strategy, as observed in case studies of two very high-tech SMEs and a niche lingerie company, and in conveying the critical importance of this ploy to SME entrepreneurs, consultants and academics.*

## **Introduction**

Among the most influential texts by the popular business gurus were the ‘*Excellence*’ books of Peters and Waterman (e.g., 1982), and one of the key success factors identified by those authors was ‘sticking to the knitting’. The principle in that phrase was that firms can attain greatest success if they focus on their core business, and do not divert attention into new areas of activity, thereby spreading their resources widely particularly into unfamiliar areas, where the cost and effort investments would be high. This concept has been further developed into what is now termed a ‘deep niche strategy’ (Comes-Casseres & Kohn,1997)

A recent EU-funded research project entitled “Globalising European SMEs in the World Trade System” looked at case studies of eight SMEs in four European countries who had a significant presence in international markets. This short paper uses causal loop diagrams to articulate the concepts in the ‘deep niche’ strategy and relates it to a number of these case study SMEs. The strategy maintains that for R&D investment to be most effective in the SME, it has to be very tightly focused on a market sector where the company enjoys a deep niche. Such a niche would comprise a small, highly specialised sector where a new entrant would find the R and D costs for entry very high, and, at the same time, the small market size would mean a very limited volume of sales over which the investment could be recovered.

The experiences of two of the case study firms – both UK hi-tech companies – map easily and obviously onto this structure. Interestingly, however, another firm in a totally different industry – ladies’ lingerie – also appears to be adopting a successful product development strategy that is consistent with deep niche thinking.

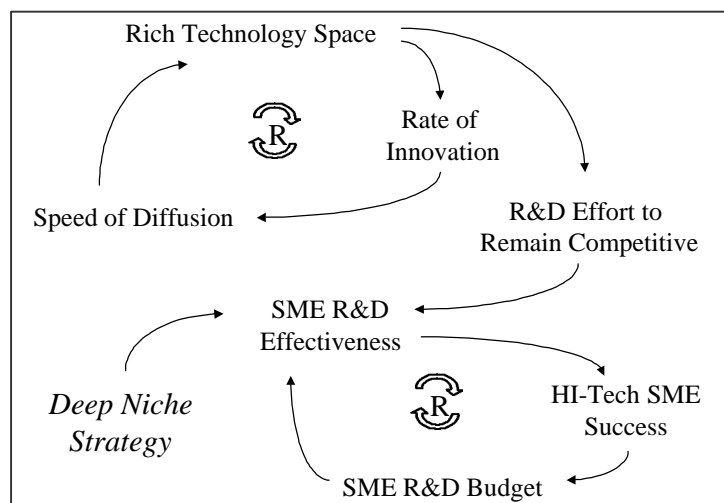
The use of causal loop diagrams was found to be very effective in laying out the thinking behind this particularly SME-oriented policy, and in communicating the concepts to a diverse group of entrepreneurs, consultants and business academics at the workshop to disseminate

the research findings, and to look at ways ahead for raising the performance of SMEs in the world trade system.

### Observing and Articulating the Deep Niche Strategy

The importance and complexities of R&D in the global firm are well known and documented (see, for example, DeMayer, 1992; Bridges *et al.*, 1991). The ‘Globalisation’ project involved the detailed study of eight company cases, two of whom were hi-tech companies – one develops and licenses an electronic device based on surface acoustic wave technology, the other manufactures and licenses bio-medical antibodies and immunoassays kits, based on inhibin. (Gill and Winch, 2001a, 2001b).

During the case researches, it was observed that both companies were adhering closely to a deep niche strategy. They limited their spheres of operations to very narrow fields, indeed the bio-technology was spun-off from a larger company in order to specialise in inhibin-based products and services, and the SAW technology company concentrates its activities only on that technology, and its specific application in the automotive industry (for which it holds world-wide exclusive licences to the patents.) Both companies were very small, undertook limited or no manufacturing, and focuses its research and/or product research and development in these very narrow fields. The use of diagrams based on system dynamics thinking to explain business processes, including those relating to new product development and R&D management is well exemplified by John Sterman (2000). The structures that relate to the deep-niche strategy were therefore articulated for the project workshop using such diagrams – specifically here a causal-loop diagram (see Figure 1) – enabling both the concept of the strategy and its importance to the case study firms to be explained.



*Figure 1 : Importance of a Deep Niche Strategy in an SME's R & D Effort*

In this diagram, the top loop reflects the well reported phenomenon that ‘Technology Space’, the *Rate of Innovation* and the *Speed of Technology Diffusion* are mutually supporting in a reinforcing feedback loop. The bottom loop reflects the R&D effectiveness of a typical hi-tech SME. Linking the two loops is the variable *R&D Effort to Remain Competitive* – this grows as the technology space grows, and thereby poses a major threat to the *R&D Effectiveness* of smaller enterprises with limited research budgets. The importance of the

deep niche strategy, which focuses effort into very narrow niche product areas, is therefore shown to enable the SME to maximise the effectiveness of its limited research budget.

However, a most interesting extension of this thinking emerged, concerning one of the other case study companies in a decidedly non–hi-tech industry. This firm was a Polish apparel company, specialising in undergarment design and manufacture. (Piasecki *et al.*, 2001). Its interesting parallel to the hi-tech firms concerned its fashion design function. They too focused on a very narrow market segment - ladies mid-market-priced luxury lingerie. In an industry where design flare is similarly expensive to acquire and achieved in this case by the employment of an established French designer, this strategy similarly enabled the firm to maximise the effectiveness of their design resource.

## Conclusions

This short paper has used one of the simple diagramming tools in system dynamics, specifically causal loop diagrams, to aid the understanding of an important strategic ploy for innovative companies – the deep niche strategy. The process helped in recognising the presence and value of this strategy both in the obvious innovative context of hi-tech biotechnology and engineering firms, but also in the less obvious context of an intimate apparel company. The process was valuable not only to the members of the project team researching the case study companies, but also in portraying the reasons for, and potential benefits of this ploy to a mixed audience of business academics, small firm entrepreneurs and consultants. Small firms face major challenges in trying to compete against much larger rivals, and it is essential that they are able to understand and implement critical strategic ploys such as this, if they are to be successful in the global market place.

## References

- Bridges E, AT Coughlan, S Kalish, 1991, “New technology adoption in an innovative marketplace: micro- and macro-level decision making models”, *International Journal of Forecasting*, 7
- Comes-Casseres B and TO Kohn, 1997. “Small Firms in International Competition: A Challenge to Traditional Theory?” in *International Technology Transfer by Small and Medium Sized Enterprises: Country Studies* (PJ Buckley *et al.*, eds.), London: Macmillan)
- De Meyer A, 1992, “Management of International R&D Operations”, in *Technological Management and International Business* (O Granstrand, L Håkanson, and S Sjölander, eds.) Chichester: John Wiley and Sons
- Gill A and GW Winch, 2001a, “Oxford Bio-Innovation Limited participating in the World Trade System” (unpublished case study), *Workshop on Globalising European SMEs in the World Trade System*, Palermo, December
- Gill A and GW Winch, 2001b, “Transense Technologies plc participating in the World Trade System” (unpublished case study), *Workshop on Globalising European SMEs in the World Trade System*, Palermo, December
- Peters TJ and RH Waterman, 1982, *In Search of Excellence: Lessons from America’s Best-run Companies*
- Piasecki B, A Rogut and J. Kornecki, 2001, “Strategies and Policies for Globalisation in SMEs: Cases from Poland (unpublished presentation), *Workshop on Globalising European SMEs in the World Trade System*, Palermo, December

Sterman, JD, 2000, *Business Dynamics: Systems Thinking and Modeling for a Complex World*, Boston: Irwin McGraw-Hill.