

Not being radical – a case exploring the low-tech, incremental innovation and commercialisation process

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Abstract

The path to commercialisation is fraught for all innovating businesses. This is as true for businesses developing the much researched high-tech innovation as it is the less frequently studied low-technology innovation. In this case study we explore the pathway to commercialisation of a low-tech, incremental innovation, comparing it to the extant empirical evidence regarding innovation and commercialisation of high-tech radical innovations. This case shows that like the high-tech innovating business, the firm developing and commercialising a low-technology product relies heavily on the network in which it is embedded and the social capital it is able to accrue. This case suggests that recent work on the “network competencies” of managers (in high-tech innovating businesses) will be applicable to all businesses seeking to develop and commercialise their products.

Keywords: Innovation, Incremental, Commercialisation, Case Study

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Introduction

Networks form a key part of the explanation for entrepreneurial and innovation success (Elfring and Halsink 2003); however there is considerable ambiguity regarding the appropriate network configuration for successful innovation (Pittaway et al 2004). Numerous studies focus on radical innovation (particularly in hi-tech contexts) but less consideration is given to the network configurations that support low-tech incremental innovations. Pittaway et al., (2004) in a comprehensive review of the extant literature concluded that the most pressing need for further research pertains to network dynamics and configurations. This paper complements existing work on the significance of innovation networks by considering a case study of a low-tech, incremental innovation.

Innovations vary in the extent of their novelty – incremental innovations have lower levels of novelty while radical innovations embody a discontinuous change in technologies or design. Incremental innovations require less R&D expenditure and gain market acceptance more quickly than radical innovations. While the innovation literature tends to focus on radical innovations, there is evidence that networks are critical for developing both radical and incremental innovations. Networks support opportunity identification, facilitate access to resources and assist in developing legitimacy. In related work, Cook (2007) argues that SME's embedded in networks where there is higher social capital derive considerable performance benefits, enabling them to compete effectively (with larger innovators) by pooling knowledge resources (for example).

There is some evidence that the type of network partner involved in the innovation process tends to vary with the type of innovation (Pittaway 2004). Businesses involved in incremental innovation tend to involve customers (Pittaway 2004) and business service providers (Tödtling et al, 2009) in the innovation process, while more radical innovations are supported by suppliers and consultants. In contrasting work, Dal Fiore (2007) speculates that the context of community or network facilitates the emergence of different types of innovation, rather than impacting innovation performance. Incremental innovations are more likely to emerge in communities, rather than networks, where communities are characterised by homogeneity and conservatism. This work suggests that the business context may not only play a role in the eventual success of the innovation but in the type of innovation that emerges.

Case Study

The focal organisation has developed a continuous fabric baby carrier that is characterised as an incremental innovation. The business commenced operation in 2004 as a sole trader / hobbyist. By 2007 the business had grown significantly with an annual turnover of approximately \$60,000. In 2008 a company was formed to support the early product commercialisation. Continued growth in sales and increasing demands on the innovator/owner led to a family member investing in the business resulting in a change of ownership structure. This family member had been involved in many of the early innovation and commercialising decisions in an informal capacity since the business inception and the increased investment will be directed to further marketing efforts.

Data for the case was collected by personal interview involving story-telling and historical recounts. During the interview the network pictures were collected. Sales data as well as online performance data was also collected. The data was analysed using narrative event sequencing processes (Buttriss and Wilkinson, 2006) and by evaluation of the network pictures.

Innovation to commercialisation – the product development process

The product development and commercialisation process can be understood by examining three critical phases. Early innovation commenced in 2004 and is characterised by trial and error involving a number of different product variations each tested by the innovator. At this time there was no intention to commercialise the fabric baby carrier as it was developed for personal use only. Shortly after settling on an early product configuration the innovator began receiving requests from friends to make similar fabric carriers for their personal use. Increasing positive feedback and a willingness on the part of users to pay for the fabric carrier, as well as encouragement from family members prompted the move to a second cycle of development and pre-commercialisation activity.

During this second phase the innovator's efforts focused on testing different fabrics, minor modifications to the product design and the development of the brand considered an essential commercialisation activity. In early 2005 the product was launched on eBay and within one year the brand had achieved early sales success. The product was priced on a par with online competitors and features additional stitching for superior product durability. Demand began to exceed manufacturing capacity and fabric supply became a problem. The pre-commercialisation network developed at this time, with the appointment of a manufacturer (sewer) and an additional fabric supplier. By 2007 the turnover was approximately \$60,000 per annum. Revenue came from a number of local and international retailers (although sales through this channel were very low); online sales via eBay (a significant proportion of the business) and online sales from the business website comprising about a quarter of total sales volume.

In late 2007 the innovator commenced a third phase focusing on designing a range for exclusive retail sales, including product modifications to increase user utility, redevelopment of the brand and subsequent registration of the brand name and trademark. Considerable efforts were extended to the development of packaging and promotional materials to support the growing retail business. During this period (and early 2008) the business spent between \$20,000-25,000 on marketing materials (over one third of the annual turnover). This expenditure was funded by growth and private sources.

In 2008 the retail brand was launched at a baby expo exclusively targeting new parents; online sales continued although less emphasis was placed in this channel. Within one year the business had more than 30 nation-wide retail distributors and turnover remained consistent at \$60,000 per annum. However, the business model was significantly different. The business had successfully shifted from direct sales via eBay to predominantly retail sales supported by its own website and attendance at baby expos. The shift in distribution via resellers necessitated a corresponding increase in retail price resulting in a marked decline in online sales. By 2009 direct distribution through eBay ceased. The establishment of an extensive supply, manufacturing and distribution network was central to the successful commercialisation of the new retail brand.

Characteristics of the network

At phase one the network was extremely limited – during this period the business could be characterised as a “hobby” business with the early commercialisation network emerging during phase two — pre-commercialisation. The business located a second fabric supplier and retained the services of a manufacturer to assist with production. The first of these relationships proved to be very significant in the development of the early commercialisation network (phase three) as shown in Figure 1.

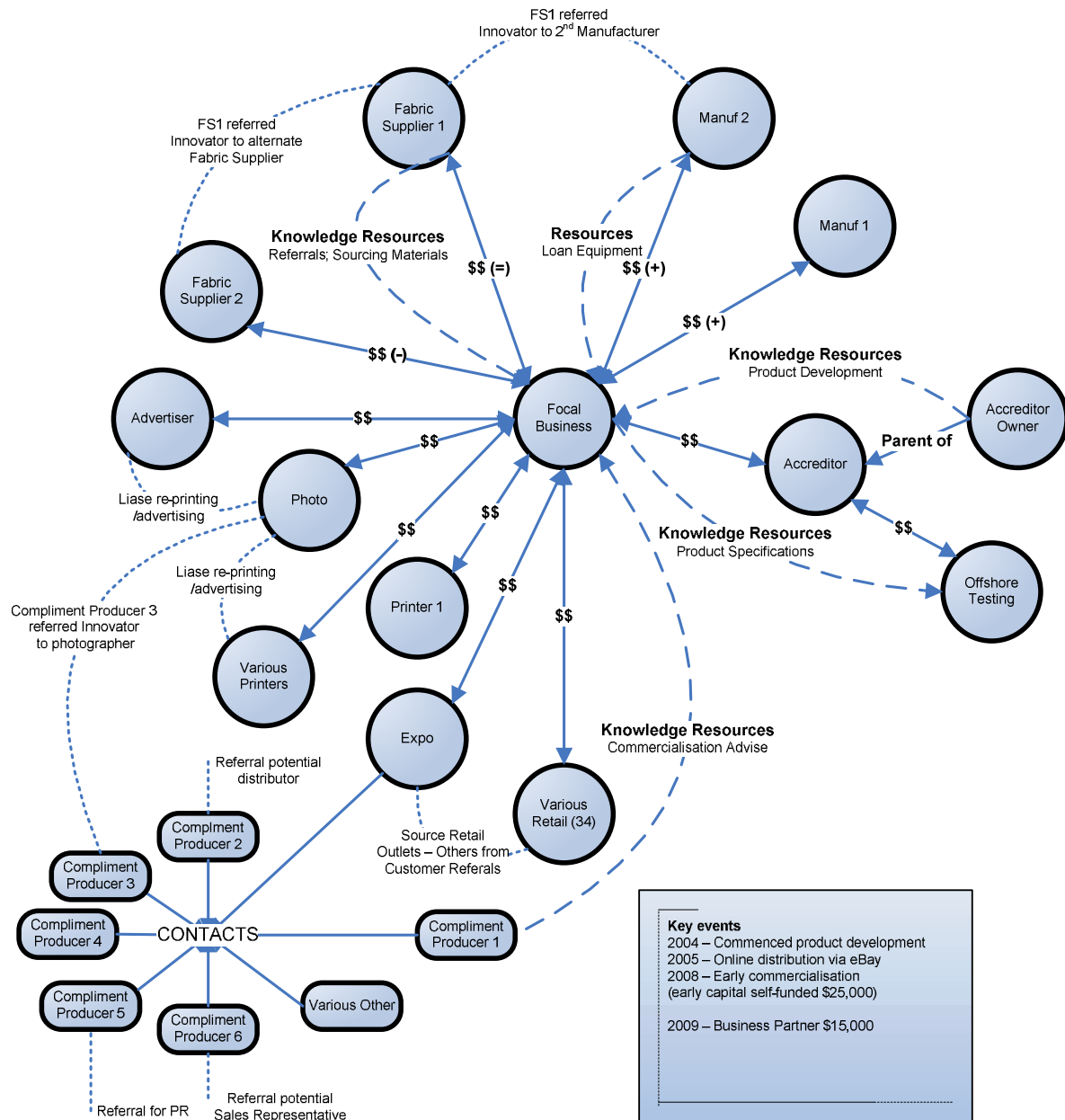
Figure 1 illustrates the early commercialisation network as had developed by mid-2009. Trading relationships are indicated by solid connectors marked with (\$\$) with bi-directional flow arrows. Other relationships are indicated by solid line with no flow arrows, particularly for the contacts established from the expos. Other resource flows are uni-directional and are indicated by a broken line. These flows typically involve knowledge resources of various types. Finally, for a number of key relationships the power balance is indicated (+ in favour of the focal business, = balanced, and - in favour of the other business).

This network developed over a 12-18 month period and reflects the additional business connections that were essential for the commercialisation of the product. The plan to launch the retail channel required the business to resolve two critical resource issues, (i) a secure supply of fabric at wholesale prices and (ii) additional manufacturing support to cope with increasing product demand.

One of the initial fabric suppliers (Fabric Supplier 1) proved to be instrumental in resolving both these resource problems. This supplier referred the innovator to a second fabric supplier who was able to provide fabric at wholesale prices for the premium product range. This enabled the business to cease purchasing from the retail outlet which they had previously used. Fabric Supplier 1 also assisted by importing a fabric line for the exclusive use of the business. This cotton fabric was used for the new core-product line (the signature collection). In 2009 this same fabric supplier was able to refer the innovator to a second manufacturer, resolving production concerns for the near future. The relationship between Fabric Supplier 1 and the focal business is strong and characterised by high levels of mutual trust.

In contrast, the relationship between Fabric Supplier 2 and the focal firm is more tenuous with the innovator not confident of continuing capacity to provide the fabric range required. The focal business has identified a third supplier who could provide fabric, although at substantially higher prices and, therefore the innovator characterises the relationship between Fabric Supplier 2 and the focal business as imbalanced (in favour of the supplier).

Figure 1: Network at Early Commercialisation



By mid-2009 the business used the services of two manufacturers on a regular basis. The business had earlier made the decision to promote the “Australian Made” attributes of the brand and the appointment of the second manufacturer is crucial in ensuring a reliable on-demand production capacity. On-demand production is important as it enables the owner to reduce operating costs. The second manufacturer also loans equipment to assist in production. Both these relationships are important and characterised by mutual trust. However, in both cases the innovator feels that the power relationship is asymmetrical, with the balance in favour of the focal business.

Insurances and product liability concerns prompted the business to obtain independent accreditation and product performance testing. The innovator contacted an accreditation agency who arranged for testing in China. This relationship has proved to be helpful as the

manager/owner of the parent accreditation organisation has been very supportive in providing product development advice. Again this relationship is characterised by mutual trust.

Prior to launching the retail brand a number of relationships developed with printers, and various advertisers. One of the printers was referred to the innovator by the family member who subsequently joined the business. These relationships are important but are not significant business connections – all of the business services provided by advertisers could be replaced by other service providers.

The final relationship of considerable significance is that between the business and the expo. Attendance at the baby expos enables the innovator to develop numerous relationships with other complementary producers. A number of these businesses refer the owner to other suppliers (for example, Complementary Producer 3 provided links to a photographer) and provides considerable commercialisation advice (Complementary Producer 1). In particular, Complementary Producer 1 is a relationship of particular importance. The owner of this business has provided commercialisation advice over an extended period. In fact it was on the advice of this business that reinforced the decision to cease trading on eBay.

Discussion

Social capital has emerged as a significant factor in this businesses path to commercialisation. The focal business has been successful in cultivating business relationships characterised by high levels of trust and which have benefited the business (over and above the direct trading relationship). Notable among these relationships is the trading relationships with Fabric Supplier 1 (access to resources), and the accreditation authority owner (legitimacy), as well as the non-trading relationship with a Complementary Producer 1 (opportunity identification). Each of these relationships has played a part in the focal business to successfully commercialising the innovation. This case confirms the work of Elfring and Halsink (2003) and others that networks are a key factor in securing entrepreneurial success for incremental as well as more radical innovations.

Consistent with work examining the impact of type of innovation on the type network partners, we note that the initial period of innovation early users (friends of the innovator) provided feedback on the product design. However, as Tödtling et al (2009) point out business service providers were also identified as key business partners (accrediting agency and owner). Although suppliers (fabric and manufacturing services) have proved important in the process their input has assisted more with commercialisation than innovation, suggesting that the significance of network members is likely to vary with both the type of innovation and at different times during the innovation- commercialisation process.

Much of the work considering the importance of and the need to develop network competencies has is targeted at more radical innovation, in the high-tech sector (Harris et al 2004; Möller and Svahn, 2005). This case suggests that this insight will be of equal importance to manager of businesses perusing incremental innovation strategies. Given the evidence that different actors are likely to be involved at different times (than for radical innovations) it will be important to consider the specific competencies at each stage of the innovation-commercialisation process for incremental innovation.

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