

## **Strategic Decision Making in Small Innovative Firms – the Perceived Importance of Other Voices**

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### **Abstract**

This paper describes the findings from a collaborative study involving researchers in France and Australia. The study explores the strategic risk assessment frameworks originally developed in France but applied to Australian companies. The findings of an initial pilot study are described that outline the importance that entrepreneurial managers within these firms place upon the opinions of others prior to proceeding with future investment in a new innovation. These findings suggest that if entrepreneurs within small innovator firms feel the innovation can be commercialised with relatively few obstacles they will tend to downgrade the importance of external advisors. Greater value is placed on the views of customers and where the entrepreneur has the power to proceed with the innovation without recourse to other stakeholders they are most likely to go ahead if a positive response is received from leading customers. The findings highlight the tendency for small business entrepreneurs to seek to pursue their business activities alone and without third-party support, following customer or market opportunities. While not surprising, this behaviour is contingent on the entrepreneur achieving their goals within a largely benign environment where innovation diffusion can take place relatively easily

### **Keywords:**

Small Firms, Entrepreneurs, Innovation, Strategic Decision Making, Commercialisation, Enterprise Support Networks.

## **Innovation in Small Firms**

Innovation plays an integral role in entrepreneurial activities. Schumpeter (1934) introduced the concept of innovation as creative destruction to the definition of entrepreneurship, arguing that 'new combinations' of behaviour in terms of the introduction of a new goods, quality of goods, method of production, opening a new market, new source of supply, new organisation of an industry, create 'enterprise' and that the individuals who carry out this process are entrepreneurs.

Innovation is a multidimensional concept that can involve product or process, technological or administrative and incremental or radical changes (Cooper, 1998). Innovation can range from the incremental to the radical or a synthetic blending of existing technologies into new designs (Tushman and Nadler, 1986). Innovation is frequently associated with product or process innovations, but might also include new ways to organise a firm's administration, or the approach taken to marketing the firm's products and services (North and Smallbone, 2000). A distinction also needs to be made between product and process innovation that is technological in nature, where emphasis is on improved product performance or process delivery methods that can be objectively measured (OECD, 2001).

Small firms, defined as those having fewer than 250 employees and less than \$50 million in annual turnover (OECD, 2004), have been recognised as key contributors to innovation with some 67 percent of inventions and 95 percent of radical innovations attributed to them since 1945 (Timmons, 1998). Products as diverse as the aerosol spray can, the safety razor and the air conditioner have all been originated by entrepreneurs operating in small firms (NOCE, 2000). Such innovative activity among small firms has been viewed as highly important to the overall competitiveness of the national economy and justifies the maintenance of a healthy small firms sector (GEM, 1999; Stringer, 2000).

By nature small firms offer potentially fertile environments for innovation. Small firms are well placed to develop close partnerships with customers that define a strong market orientation. The need to respond to customer demands or market opportunities is frequently easier for small firms where strategic decisions are made quickly and with the full support of the senior management who are both chief executives and principal share holders (Mazzarol, 2003a).

Due to the potentially disruptive nature of innovation it is an activity containing inherent risk, with uncertainty in future technical, commercial and financial returns to the initial investment required (Gatignon and Robertson 1993; Dziura 2001). An important consideration in the decision to invest in future innovations is therefore the trade off between risk and return. Entrepreneurs from small firms frequently face difficulties in assessing the future risk or return associated with a new innovation due to the lack of adequate market information (particularly with a radical innovation), and trading history. They are likely to focus on the benefits the new product or service offers to their leading customers, and draw upon market signals to make future investment decisions (Mazzarol and Reboud, 2005).

The informal and frequently chaotic nature of small firm planning is also in keeping with the non-linear framework advocated. Small firms that possess innovative orientations are more likely to emulate the autonomous, multi-disciplinary project teams that are often difficult to generate within larger organisations. However the attitude and orientation of the owner-

manager is a key to innovativeness within the small firm (Chandler, Keller and Lyon, 2000). For example, a study of 137 small business entrepreneurs who had indicated that they were seeking to grow their small firms found that the entrepreneur's ability to clearly define quality and ensure that all employees understood this in the same terms and their ability to forge strong partnerships with these employees were key antecedents to innovation within the firm (Mazzarol, 2002).

The entrepreneur therefore plays a significant role in the process of innovation within the small firm. Their attitude toward seeking new market opportunities or satisfying the needs of customers is critical. Also important is the flexibility that they have in their capacity to adapt and change strategy to suit the needs of the market (Smallbone, Leigh and North, 1995). In addition, the entrepreneur serves to set the standards for product or process quality, define the future goals of the firm and lead change in a positive manner, through a partnering process with their key employees and third-party networks (Mazzarol, 2003b; Freel, 2000).

## **The Challenge of Commercialisation**

Commercialisation of a new product or service innovation is contingent on the speed of adoption by the market. The process of innovation diffusion within a market is both a spatial and temporal phenomenon frequently involving innovation centres that serve to disseminate ideas and practice. Such centres are generally influential and are the role models for sub-centres within the periphery. They can be individuals or organisations and are typically influential market leaders or opinion setters within their communities. Because the diffusion process usually involves replacement of existing products, processes or paradigms, there is the potential for conflict and this can serve to delay or slow the diffusion process forcing it to cluster and lump (Grubler, 2000).

The more radical or disruptive an innovation, the more likely it will meet with resistance from established end users who are unwilling to change systems. Many excellent ideas or products fail to take off despite superior apparent advantages. Getting a first customer who can adopt innovation and provide sufficient sales growth to allow the new technology to get a foothold in the market is likely to be critical to future success. It may be better to apply the innovation to a relatively narrow market segment where it can gain acceptance, than seeking to get too many customers to adopt it (Moore, 1996).

Performance in terms of successful commercialisation outcomes among small firms has been associated with both technical and market development processes and the presence of a formal system of new product development (Huang, Soutar and Brown, 2002). However, research into the relationship between innovation and the performance of small firms has highlighted the need for a systematic approach to be taken that is more than just investment in R&D, but also considers the need for management and marketing strategies and the need for establishing strategic alliances with other firms that can assist in the commercialisation process (Kemp, Folkerling, de Jong and Wubben, 2003).

In many cases the failure of a new innovation to gain adoption is due to an inadequate understanding of the dynamics associated with the technological feasibility and the market demand for the technology (Christensen, Johnson and Rigby, 2002). The fact that a new technology is feasible and may fill a particular need within the market does not mean that it will be readily accepted by the end-user if that party is unwilling to adopt it (Price, 1996).

Resistance to technology adoption can be attributed to factors inherent within the organisation, such as structural or systems issues impeding innovation and change (Frambach and Schillewaert, 2002). It can also be found within the individual and can involve psychological and emotional factors (Legris, Ingham and Colletette, 2003).

For entrepreneurs in small firms seeking to commercialise an innovation the most important issue is securing sufficient traction in the market to enable the rapid diffusion of the new technology (Moore, 1996). How quickly this diffusion process occurs is likely to depend on how well the innovation satisfies the customer's existing problems and offers a relative advantage over existing products and services, how easily the new product or process can be adopted and its operation learnt by end users, how compatible the new technology is with existing complimentary technologies already in place, and whether the new innovation can be trialled and evaluated prior to adoption (Rogers, 1995).

The customer is therefore a key actor in the innovation commercialisation process for small firms. Customers are commonly used by larger firms to assist in new product development processes, with the concept of listening to the "voice of the customer" being a foundation for much of the new product development activity of Japanese and western corporations over the past thirty years (Akao and Mazur, 2003). Customers can partner with firms to assist their new product development process, providing a test market in which to explore the boundaries of a new technology, and to allow the firm to experiment, feeding back recommendations for future development (Thomke and von Hippel, 2002).

## **The Entrepreneur's Innovation Support Network**

The strategic management environment of the small firm is significantly different to that of its larger counterparts. For entrepreneurs seeking to manage innovation and commercialisation challenges within small firms there is a need to operate at both a strategic and tactical level, and to maintain a network of stakeholders that includes the employees, customers, suppliers, financial institutions, government agencies and fellow business associates (Jennings and Beaver, 1997). Many of the problems associate with poor performance by small firms can be attributed to a lack of strategic thinking, while success appears to be positively correlated with greater sophistication in strategic planning (Berman, Gordon and Sussman, 1997).

A well established strategic support network is likely to provide the small firm entrepreneur with an opportunity to enhance their firm's market position, access resources and defend against competitors (Jarrett, 1998). Personal strategic networks have the capacity to assist the entrepreneur to pursue specific strategies (e.g. market segmentation, product differentiation, growth) and thereby secure a competitive edge (Ostgaard and Birley, 1994).

However, small firm entrepreneurs are also likely to find strategic networking a challenging task. Despite the apparent benefits, such alliances also pose a potential threat of loss of valuable intellectual property (IP), erosion of independence, a lack of clarity over the value of the alliance, and difficulties associated with finding and then managing suitable partnerships (Dean, Holmes and Smith, 1997). Whether or not an entrepreneur seeks to form a strategic support network seems contingent on their propensity to network, the strength of social ties that serve to bind the network and the social prestige associated with being a member of the network (BarNir and Smith, 2002).

Social ties appear to be a key driver in the development of strategic support networks of entrepreneurs. Also important is the ability of the strategic network to provide the entrepreneur with information about market or competitor behaviour, and business factors such as the management of supplier or customer relationships. A relationship appears to exist between the development of a strategic support network and the successful growth of the small firm (Donckels and Lambrecht, 1997).

Despite the apparent benefits associated with developing a strong strategic support network it is common to find many small firm entrepreneurs seeking to “go it alone” or at least make only limited use of government and professional support networks. For example, a study in the United Kingdom found as many as 45 percent of new venture start ups sought no external help, and of those that did seek external advice the majority consulted friends and family rather than professionals such as Accountants or Solicitors (Greenbank, 2000). In Australia the small business entrepreneur has been found to favour advice from other entrepreneurs or family and friends as highly as the advice given to them by Accountants and Lawyers (Jay and Schaper, 2003). Professional advisory and support agencies are frequently the least utilised by small firms, with many entrepreneurs simply being unaware of their existence or likely benefits (Birley and Westhead, 1993).

Obviously the quality of the support network is of greater value than its size or composition. For most small businesses the most common advisor is the accountant, with bankers, lawyers and more generalist business consultants following in turn. Research undertaken into Australian small business use of business advisory support services suggests that those firms which used both accountants and non-accountants (e.g. marketing consultants) within their advisory network obtained significantly higher levels of profitability and sales growth than firms that used only accountants (Kent, 2000). There is also evidence from the United States that small firms, which use professional consultants are more likely to adopt sophisticated business planning and strategy frameworks, which might enhance overall performance (Bracker, and Pearson, 1985).

Support for innovation and commercialisation within small firms is less available than general business assistance and tends to be highly specialised. The focus of many existing government policies has been on the provision of support via technology incubators and R&D support programmes in which the creation of science parks, co-located near universities has been the norm (Thierstein and Wilhelm, 2001). While such initiatives might provide useful support to those firms that can fit neatly into the designed infrastructure, they are less useful in assisting the entrepreneurs from small firms that lie outside such incubators.

Innovation support systems for small firms need to recognise that entrepreneurs are opportunistic and rarely follow set plans, but prefer to exploit opportunities presented to them by their customers. They are also seeking to manage their firm's in an environment of resource scarcity; as such they secure ideas, assets and financing by the exploitation of a strategic support network that can be both formal and informal in nature. Small innovative firms are also likely to learn by doing in the new product development process, exploiting customer and supplier information and feedback to assist in the process of commercialisation (Lankhuizen and Klein-Woolthuis, 2003). Entrepreneurs from small firms will therefore be more likely to rely upon market signals from leading customers, and informal market intelligence when making future investment decisions regarding innovation than a systematic approach to new product development and innovation.

## **Methodology**

A principal aim of this study was to explore the nature of strategic decision making within small innovative firms. In recognition of the managerial environment in which entrepreneurs from such firms operate, a key focus was upon the level of advice such entrepreneurs took from persons both inside and external to the firm prior to making an investment decision in an innovation. The research questions that the study sought to address were:

1. To what extent do entrepreneurs from small firms seek advice from third party actors prior to making a future investment decision in an innovation?
2. Do entrepreneurs from small firms place a greater importance on the opinions of customers in making future investment decisions regarding an innovation than on other sources of advice?
3. Do entrepreneurs from small firms place a greater importance on the advice of professional or expert actors within their network than less expert or professional actors? and
4. Is the level of independence or autonomy shown by the entrepreneur in their strategic decision making be dependent on the level of equity control they possess within the firm?

## **Sampling**

A survey was distributed by mail to a government database of 550 small innovator firms in Western Australia; the study examined the strategic decision making of the entrepreneurial owners containing a list of items that examined the nature of strategic decision-making, particularly as it related to the entrepreneur manager(s) directing the firm. Of interest was the level of personal power that the respondents considered they possessed over strategic decision-making and then the level of influence that other persons might have on their decisions.

The final sample of this pilot study comprised 57 firms. While small, it was found to be highly representative of the small high innovator firms within the larger database. The questionnaire was targeted at persons within the firms who could report on behalf of the entire organisation. Within the final sample 42 percent were owner-managers, 23 percent were executive managers and principal shareholders, 25 percent were executive manager shareholders and 10 percent were executive managers without shareholdings. Thus the majority of correspondents were both executive managers and owners

Seventy-five percent of the firms in the sample were small, with less than 20 employees and none had more than 250 employees. Eighty-three percent of the firms had annual turn overs below AUD \$5 million. Despite their small size, 76 percent of the firms had a formal business plan, 80 percent were engaged in exporting, and 58 percent claimed to have a formal system of new product development in operation.

Ninety-six percent reported having a new product or innovation ready for launch in the immediate future and the majority (64%) indicated that they had generated this innovation alone, rather than in collaboration with other firms.

### **Questionnaire Design**

The questionnaire employed 7-point Likert-type scales that explored the respondent's sense of personal power over whether the innovation would take place, and how likely they might be to actually proceed with the innovation. Also of interest was the impact that the innovation was expected to have on the industry and on the firm itself. The perceived difficulty associated with the implementation or execution of the innovation was also examined.

In addition to these questions a further series of items was used to measure the influence of other people on the strategic decision making relating to the innovation. These items examined the respondent's views on the relative importance of actors both internal and external to the firm. They examined whether other people might consider the innovation harmful or beneficial, risky or rewarding, and difficult or easy to implement. The respondent was also asked to indicate in general how much notice they took of the views of other people within the firm or external to it.

A further list of items examined the respondent's perceptions of the relative influence of key stakeholders on their strategic decision making. Among those actors listed were customers, suppliers, shareholders, other company directors, the firm's employees, friends and family, other business colleagues, accountants, lawyers, bankers and other financiers (e.g. venture capital suppliers). These items used a three-point scale ranging from strong influence, weak influence or not applicable.

### **Data Analysis**

Data analysis was undertaken in three stages: i) an initial examination of top line data relating to the importance placed by the entrepreneur on the opinions of different potential strategic stakeholders in relation to the decision to proceed with the innovation; ii) an exploratory factor analysis of the items relating to strategic decision making; and iii) a regression analysis of the relationship between the factor constructs generated from stage two and the likelihood of the innovation proceeding.

### **Initial Findings**

Each respondent was asked to consider a particular innovation that they were considering for future commercialisation. Eighty-four percent had product innovations, but others reported process technology innovations, market innovations and administrative innovations. The majority of respondents indicated that they had significant personal power to decide whether to proceed with the innovation and they also indicated that they were highly likely to go ahead with it in the future. When asked to indicate how much importance they placed on the views of others in relation to their decision to proceed with the innovation 91 percent indicated that customers were important, with around 68 and 73 percent considering the views of other senior managers and company directors important. However, professional advisors such as accountants and lawyers were viewed as important by only 23 percent and financiers including venture capital providers as of little more importance.

### **Personal Views on the Merits of the Innovation**

Respondents were asked to rate the level of power they felt that they possessed within their firm over the introduction of the proposed innovation. They were also asked to indicate the likelihood of the innovation proceeding and the impact that it was expected to have on the business and the influence of other people on their decision-making. Table 1 illustrates the findings from these first five items. It can be seen that most respondents considered that they possessed a lot of power in determining whether their proposed innovation proceeded. Analysis of variance tests found that all respondents viewed this item in the same way, except for the Executive Manager/Non-Shareholder, who was significantly less likely to view their power as high. This difference also held true for the second item, but there were no differences found over the 3rd, 4th and 5th items.

**Table 1: Strategic Decision Making in the Firm – Personal Power & Industry Impact**

Item	Mean	Std Dev
1. How much power do you personally have with your firm over whether this innovation will be undertaken? [1=not very much power; 7=a great deal of power]	5.91	1.61
2. How likely are you to decide to proceed with this innovation? [1=extremely unlikely; 7=extremely likely]	6.26	1.09
3. The impact of this innovation on the industry is likely to be... [1=extremely harmful; 7=extremely beneficial]	6.04	1.07
4. The impact of this innovation on my firm is likely to be... [1=extremely risky; 7=extremely rewarding]	5.76	1.32
5. The implementation/execution of this innovation is likely to be... [1=extremely difficult; 7=extremely easy]	3.84	1.36

### **Influence of Others on Decision Making**

The influence of other people on the decision making of the respondent's was also examined with a series of questions the results of which are outlined in Table 2. Here it can be seen that most respondents believed that other people within their firm also considered that the proposed innovation was beneficial, rewarding and achievable.

As with the items outlined in Table 2, one-way Analysis of Variance (ANOVA) tests found significant differences between Executive Managers who were Non-shareholders and the other respondents in terms of these items. This was specifically in relation to items 1 and 2 in Table 2, where Executive Manager/Non-shareholder were less likely than their counterparts to indicate that other people in the firm considered the innovation beneficial or rewarding.

**Table 2: Strategic Decision Making in the Firm – Influence of Others within Firm**

Item	Mean	Std Dev
1. Other people within my firm consider pursuing this innovation to be... [1=extremely harmful; 7=extremely beneficial]	5.87	1.03
2. Other people within my firm consider pursuing this innovation to be... [1=extremely risky; 7=extremely rewarding]	5.40	1.43
3. Other people within my firm consider pursuing this innovation to be... [1=extremely difficult; 7=extremely easy]	3.96	1.39
4. Generally speaking, how much notice do you take of the views of other people within your firm... [1=not at all; 7=very much]	5.84	1.07

### **Influence of Persons External to the Firm**

The influence of people external to the firm was also examined in the questionnaire and these results are shown in Tables 3 and 4. It can be seen that overall the level of such influence was lower than for people within the firm. Once again the Executive Manager/Non-shareholder was found to be the respondent that was most different in their responses, with these individuals being less likely to express the view that those external to the firm with whom they consulted considered the innovation to be beneficial (item 1, Table 3).

**Table 3: Strategic Decision making in the Firm – Influence of Others external to Firm**

Item	Mean	Std Dev
1. Other people external to my firm who I turn to for advice consider this innovation to be... [1=extremely harmful; 7=extremely beneficial]	5.82	0.99
2. Other people external to my firm consider this innovation to be... [1=extremely risky; 7=extremely rewarding]	5.22	1.59
3. Other people external to my firm consider this innovation to be... [1=extremely difficult; 7=extremely easy]	4.11	1.34
4. Generally speaking, how much notice do you take of the views of other people to whom you my turn to for advice? [1=not at all; 7=very much]	5.53	1.14

Such differences were not found to have a significant relationship with such demographics as size of firm or turnover. This suggests that the type of executive leadership within the firm is likely to impact the nature of strategic decision making in the organisation. Executive managers that own equity in the company are not surprisingly more confident of their capacity to make strategic decisions than those that are employees.

### **The Role of Customers**

In Table 4 it is interesting to note the high level of importance placed on the influence of customers to decision making in relation to innovation. An examination of how these items were responded to by different types of executive manager and firm was undertaken using chi-square tests. This analysis found no significant differences between executive manager types in relation to customer or supplier influence; and but did find significant differences between those entrepreneurial managers who owned equity and those that did not in relation to the influence of the boards of directors. Significant differences (at the 0.05 level) were also found between equity controlling entrepreneurs and executive managers without such share holdings over the influence of equity partners/ shareholders on their decision making. No significant differences were found between equity controlling and non-equity controlling executive manager types in relation to the influence of senior managerial staff on their decision making.

**Table 4: Influence of Key Stakeholders on Strategic Decision Making**

Relative influence on decisions...	Weak	Strong	Not Apply
Customers, particularly leading customers	3.5%	91.2%	5.3%
Suppliers, particularly key suppliers	43.9%	38.6%	17.5%
Directors of your management board	7.1%	73.2%	19.6%
Equity partners/shareholders in the firm	5.3%	64.9%	29.9%
Other senior management staff within the firm	8.8%	68.4%	22.9%
General rank and file staff in the firm	46.4%	33.9%	19.6%
Family members (e.g. partners, close relatives)	35.1%	40.4%	24.6%
Friends and social contacts	51.8%	16.1%	32.1%
Other business people with whom you have contact	41.1%	50.0%	8.9%
Accountants	47.4%	22.8%	29.8%
Lawyers or legal advisors	47.4%	22.8%	29.8%
Bankers or providers of debt financing	36.8%	38.6%	24.6%
Providers of venture capital financing	24.6%	33.3%	42.1%

These ANOVA tests also found significant differences in the importance placed upon the opinions of employees by executive managers who did or did not control the firm's equity. Those entrepreneurial managers who controlled the firm's equity were found to either view employee opinions as important or not applicable to their decision-making. Such

entrepreneurs were also more likely to place higher importance on the influence of family, while no significant differences were found between different executive managers over the influence of friends and social contacts or other business people, accountants or lawyers or providers of venture capital.

## **Exploratory Factor Analysis**

Although the sample was small an exploratory factor analysis was undertaken to examine the underlying dimensions within the data. A principal component technique was used to examine the thirteen items shown in Tables 1 to 3.

The measures of sampling adequacy (MSA) were all found to indicate suitability for future analysis (KMO = 0.727; Barlett's  $p = <0.000$ ). Three factors (components) were produced with eigenvalues greater than 1, which explained 66 percent of the variation in data. A varimax rotation was employed to create a simple structure for subsequent analysis and items with less than 0.4 factor loadings were excluded to further facilitate analysis. The final factor model converged through the varimax rotation after 6 iterations. Table 5 outlines the results.

### **Factor 1 – External Views**

Four items loaded onto the first factor with factor scores ranging from 0.798 to 0.452. This factor comprised items relating to the respondent's perception of the views of others external to the firm (e.g. customers, suppliers) in relation to the rewards and benefits associated with the innovation, as well as the respondent's propensity to take notice of such views. A third item examined the respondent's own assessment of the benefits of the innovation to the industry (e.g. external parties). This factor was labelled "**External Views**". Scale reliability testing found that three of the four items had a strong alpha score (0.74) suggesting good reliability. The fourth item (Q84) was retained as a separate item.

### **Factor 2 – Internal Views**

Four items loaded onto the second factor with factor scores ranging from 0.820 to 0.556. This factor comprised items relating to the respondent's perception of the views of others internal to the firm (e.g. board of directors, senior managers) in relation to the rewards and benefits associated with the innovation, as well as the respondent's propensity to take notice of such views. A third item examined the respondent's own assessment of the benefits of the innovation to the firm. This factor was labelled "**Internal Views**". Scale reliability testing found that three of the four items had a strong alpha score (0.82) suggesting good reliability. The second item (Q88) was retained as a separate item.

### **Factor 3 – Ease of Implementation**

Three items loaded onto the third factor with factor scores ranging from 0.854 to 0.679. This factor comprised items relating to the respondent's perception of the views of others both internal and external to the firm in relation to the ease of implementing the innovation, as well as the respondent's own evaluation of this. This factor was labelled "**Ease of Implementation**". Scale reliability testing found that three of the four items had a strong alpha score (0.73) suggesting good reliability.

**Table 5: Rotated Component Matrix of the Factor Analysis**

	Component			
	1	2	3	4
<i>Factor 1: External Views</i>				
Q89b External view of reward	.798			
Q89a External view of benefit	.783			
Q90 Notice taken of external views	.699			
Q84 Benefit of innovation on industry*	.452			
<i>Factor 2: Internal Views</i>				
Q87a Internal view of benefit		.820		
Q88 Notice taken of internal views*		.741		
Q87b Internal view of rewards		.667		
Q85 Reward of innovation to firm		.556		
<i>Factor 3: Ease of Implementation</i>				
Q86 Difficulty of implementation			.854	
Q87c internal view of difficulty			.809	
Q89c External view of difficulty			.676	
<i>Independent items</i>				
Q82 Personal Power to Act				.897
Q83 Likely to proceed with Innovation				.522
Eigenvalues	4.43	1.98	1.16	1.04
Percent of variance explained	34.1	15.2	8.9	8.0
Cumulative percentage	34.1	49.3	58.2	66.2
Cronbach alpha reliability coefficients	0.73	0.82	0.73	0.36

\*Q84 & Q88 excluded from factor due to low alpha score

### **Independent Variables**

Two items loaded onto the fourth factor with factor scores ranging from 0.897 to 0.522. This factor comprised items relating to the respondent's perception of the amount of personal power they had over the implementation of the innovation and their view as to the likelihood of the innovation proceeding. However, scale reliability testing found that the two items had a weak alpha score (0.36) suggesting poor reliability. It was decided not to link them together into a new variable.

### Final Factor Structure

This analysis provided a final factor structure comprising five items along with the group mean rating scores for each item:

1. Likelihood to proceed with the innovation – item Q83 (mean = 6.26)
2. Personal Power to Act – item 82 (mean = 5.91)
3. Internal views – factor 2 (mean = 5.65)
4. External views – factor 1 (mean = 5.52)
5. Ease of implementation – factor 3 (mean = 3.96)

### Regression Analysis

The third phase of the analysis involved a linear regression using a stepwise methodology that took as the dependent variable the item: Q83 “How likely are you to proceed with Innovation?” The independent variables were the other four factors items developed in the previous analysis. This regression procedure produced a model after two steps as shown in Table 6. It can be seen that this model had an adjusted R-square of 0.278 suggesting that the model’s predictive power was not strong.

**Table 6: Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
3	.564	.318	.278	.798

**Predictors:** (Constant), External Views, Q82 Personal Power to Act, Internal Views

**Dependent Variable:** Q83 Likely to proceed with Innovation

#### Coefficients

	B	Std Error	Beta	t	Sig.
(Constant)	2.654	.760		3.490	.001
External Views	.245	.134	.250	1.831	.073
<b>Q82</b> Personal Power to Act	.161	.067	.277	2.391	.020
Internal Views	.240	.120	.272	2.008	.050

**Dependent Variable:** Q83 Likely to proceed with Innovation

It can be seen from Table 7 that the Beta score for the item Personal Power to Act was 0.277 suggesting that it might be the strongest predictor of the decision to proceed with the innovation. Internal views were the next strongest potential predictor (Beta = 0.272) and External views the third best predictor (Beta = 0.250).

The model therefore suggests that the predictors of the influence of various internal and external factors on strategic decision-making with respect to the innovation were:

- The influence of the views of persons external to the firm in relation to the rewards and benefits of the innovation and the respondent's propensity to take notice of such views;
- The respondent's own personal power to determine whether or not the innovation proceeds;
- The influence of the views of persons internal to the firm in relation to the rewards and benefits of the innovation and the respondent's view of how rewarding the innovation will be to their firm.

## Discussion

The findings suggest that the small innovator firm is likely to undertake its strategic innovation decision making within a framework comprising at least five dimensions. The first and most important is the level of personal power wielded by the entrepreneur or key executive manager. The other four dimensions include a consideration of internal and external views, the perceived ease of implementation, and the perceived likelihood that the innovation would go ahead. Where the entrepreneurial manager lacks such personal power they may be inclined to place greater importance on the internal stakeholder network. The most likely predictors as to whether or not a new innovation proceeds is the personal power of the entrepreneurial manager to make the decision, and their evaluation of the views of others both within and without the firm. Of these the personal power of the key decision maker (usually the entrepreneur) is the most important.

Further, as shown in the factor analysis (see Table 5) the construct *Internal Views* comprised views of those within the firm in relation to the benefits and rewards of the innovation and the respondent's own assessment of the innovation's reward to the firm. By contrast the construct *External Views* comprised the views of those external to the firm in relation to the rewards and benefits of the innovation and the propensity of the respondent (the entrepreneurial leader of the firm), to take notice of such views.

This model – despite its relatively weak predictive power – suggests that strategic decision making within the small innovator firm is contingent on the level of power of the entrepreneurial leader (e.g. owner-manager or principal entrepreneur) to make the final decision as to whether the new innovation goes ahead. While this is hardly surprising, the model also indicates that their decision may be mediated by the influences of internal and external views. Such views (as shown in Table 4) are likely to be primarily:

- **External** – customers (91%) and other business people (50%);
- **Internal** – directors of the company board (73%), other senior managers within the firm (68%) and equity partners and shareholders in the firm (65%).

The entrepreneurial manager of the small innovator firm is likely to weight these internal and external views against their own evaluation of the merits of the innovation.

With respect to the four research questions initially posed by this study the findings suggest that entrepreneurs from small firms may not seek the advice from third party actors prior to making a future investment decision in a new innovation if they feel confident of their own decision making power. While the opinions of customers are clearly rated highly they are likely to be balanced by the views of others within the firm, particularly where the entrepreneur's personal power is offset by that of other directors or a Board of Governance.

The relatively low level of importance placed on the advice of professionals is also noted in these findings. The results suggest that if entrepreneurs within small innovator firms feel the innovation can be commercialised with relatively few obstacles they will tend to downgrade the importance of external advisors. Greater value is placed on the views of customers and where the entrepreneur has the power to proceed with the innovation without recourse to other stakeholders they are most likely to go ahead if a positive response is received from leading customers. The findings highlight the tendency for small business entrepreneurs to seek to pursue their business activities alone and without third-party support, following customer or market opportunities. While not surprising, this behaviour is contingent on the entrepreneur achieving their goals within a largely benign environment where innovation diffusion can take place relatively easily.

The influence of equity control within the firm and the level of autonomy in decision making by the entrepreneur is less clearly determined from these findings. Some evidence was found that respondents without significant shareholding were more likely to differ from their counterparts who held equity. Such managers were likely to demonstrate less power to act and greater dependency on internal stakeholders.

## **Conclusions**

This paper has outlined some tentative findings from a pilot study of strategic decision making among small innovator firms engaged in new product or process development. The small size of the sample requires that these findings be treated with some caution as they do not allow the statistical results in the models to be fully validated. Future research should focus on the examination of the relative weight of customer views versus those of professional advisors, especially the providers of venture capital.

The "voice of the customer" is a well-established element of new product development within large firms and is clearly of high importance to small firms. However, the lack of management competencies within the small firm makes the voice of others of equal importance. Professional advisors such as accountants and lawyers have a critical role to play in assisting the commercialisation of small firms. The development of financial models that permit adequate cost control and operational budgeting, and the need to get adequate legal protection for valuable intellectual property (IP) is important. While the voice of the customer is a key to securing a foothold in the market, there is a risk that the small firm will become trapped in an exclusive relationship with a leading customer that prevents it to develop more radical innovations. Professional advisors with experience in commercialisation can assist the entrepreneur to avoid such market traps and extract the most value from the platform IP upon which the new product is based.

Policy makers seeking to assist innovation and commercialisation among small firms should recognise that many entrepreneurs may find it difficult to readily engage with professional advisors and may not fully appreciate the benefits such support networks offer. Initiatives designed to assist entrepreneurs to access professional advisory networks and to better understand how to use them in a commercialisation process should be considered.

Future research should aim to develop an international comparison of the relative importance of external and internal advisors in the decision making process of small innovator firms. Differences appear likely between countries due to the differing levels of professional advisory network that exist in each location, and the characteristics of the national innovation systems that apply there. For example, the Chartered Accountants within both France and Australia make claims to be the most important source of advice for business owners. However, this research suggests that accountants are not considered as critical influencers in the commercialisation process of small firms. The reasons for this apparent gap in perceptions should be examined in future studies.

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