

Centre for Entrepreneurial Management and Innovation

**Innovativeness in Small Firms: An Exploratory Study of the Perspectives of Growth Oriented Owner-Managers**



# Innovativeness in Small Firms: An Exploratory Study of the Perspectives of Growth Oriented Owner-Managers

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# INNOVATIVENESS IN SMALL FIRMS: AN EXPLORATORY STUDY OF THE PERSPECTIVES OF GROWTH ORIENTED OWNER-MANAGERS

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## ABSTRACT

The present paper is an exploratory study that examines the findings of a sample of 137 growth-oriented owner-managers of Australian small to medium enterprises in terms of their attitudes toward innovativeness among their employees. It considers the possible relationship that may lie between a set of factors identified as having relevance to the successful development of small businesses. The paper suggests that enhanced innovative behaviour among employees is likely to take place in conjunction with other variables that influence overall organisational culture within the firm and highlights the importance of the owner-manager as a leader and role model.

**Key words:** small business, innovation, owner-managers, growth orientation.

## INTRODUCTION

Innovation has been closely studied in recent years, with strong interest shown by policy makers and practicing managers due to its promise of providing enhanced competitiveness. However, like 'entrepreneurship,' the term 'innovation' has been given numerous meanings and has been viewed both as a social process and as a set of technological outcomes (Chaharbaghi and Newman, 1996). Further, there has been some criticism of the methodological approaches taken in the investigation of innovation, which have been viewed as either too narrow, or overly reliant on indirect observation through statistically analysed surveys, rather than through more grounded, direct observational approaches (Lowe 1995).

Definitions of innovation vary. Porter (1990 p. 45) defined it as an attempt "to create competitive advantage by perceiving or discovering new and better ways of competing in an industry, and bringing them to market." VanDenVen (1986 p. 590) viewed it as "the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order." It has also been defined as the development of significant technical advances within a given industrial context (Thwaites and Wynarczyk 1996).

Innovation is frequently seen as involving the generation and the implementation of new processes and products in order to develop competitive advantage (McIntyre 1982). At least three distinct forms of innovation have been identified, namely:

- **Incremental** - gradual changes to products or processes;
- **Synthetic** - combining existing ideas in new ways, and;
- **Discontinuous** –the creation of radically new ideas (Tushman and Nadler, 1986).

According to Stein and Pinchot (1998), innovation involves the “creation and implementation of new products, services, processes, relationships, and methods of organisation”, and “conceptual creativity”. Innovation cannot be purchased; it must be developed from within an organisation’s culture. It requires careful nurturing and that attention to be given to the development of structures that are likely to promote creativity and initiative, leadership by project champions who are willing to take risks and can motivate the group and the ‘cross-fertilisation’ of ideas through multi-disciplinary (Perry 1995).

## THE ANTECEDENTS OF INNOVATION

The complexity of innovation creates difficulty in identifying its causes. An organisation’s propensity to innovate appears to be influenced by its cultural context, particularly the creativity inherent in the people (Drazin and Shoonhoven, 1996). More recently, there has been a call to ensure that innovation is examined from the perspective of people within biological or human systems, rather than technological or industrial ones (Senge, Carstedt, and Porter, 2001).

Culture has been stressed as a critical factor in the innovation process (Baran, Zandan and Vanston 1986; Lorsch 1986). Gresov (1984) has suggested that culture and organisational structure are linked and that there is an inverse relationship between an organisation’s homogeneity and its innovation. There is a critical need to balance chaos and control when seeking to encourage innovation (Quinn, 1985). Planning processes (strategy formulation) need to be ‘non-linear’ or ‘holistic’ if innovation is to occur (VanDenVen, 1986; Ansoff, 1987).

Innovation seems to involve not only new ideas and their development, but also change and risk (Norris, 1981). It is a positive force for any enterprise seeking to develop competitive advantage. According to Quinn (1980; 1985), successful innovation has three essential elements:

- A market orientation;
- A management style (structure and culture) that fosters innovation; and
- A ‘non-linear’ planning process.

This last point suggests the need for a flexible planning process that allows all of the functional areas of an enterprise to contribute (Takeuchi and Nonaka, 1986; VanDenVen, 1986).

Creativity is also an important element in innovation (Raudsepp, 1987). This involves developing organisations with “the ability to process information such that the result is new, original and meaningful” (Badaway, 1985 p.29). According to Takeuchi and Nonaka (1986, p.138), successful enterprises generate creative work environments through a “self-organizing capability.” In new product development, this frequently involves project teams that:

- Have a high degree of autonomy
- Have a capacity to set challenging goals for themselves and
- Benefit from the “cross-fertilisation” of skills, ideas and behaviours.

In attempting to promote innovation through creativity, it has been suggested that an enterprise should seek to develop a process of “internal corporate venturing” (Burgelman, 1984). This has been seen as achievable through the empowerment of middle management (Kanter, 1989) or by the formation of “innovation management task forces” that can motivate employees and implement strategies (Foster and Pryor, 1986). Creative organisations frequently possess a climate in which the line between work and play is blurred (Sonnenberg, 1991). Senior management within such enterprises are supportive of subordinate staff and

encourage autonomy and risk taking (Pearson, 1988). Such approaches are likely to be increasingly important in industries where product and process technologies have reached the limit of further development. Under such conditions, an investment in human resources through training and skill development can be a source of competitive advantage (Pfeffer, 1994).

Another likely influence on organisational innovation is the role leaders, particularly the CEO, play. Leaders need to be vision setters and motivators who can direct a team toward new innovations (Hart and Quinn, 1993). In a study of 97 manufacturing firms, Papadakis and Bourantas (1998) examined the relationship between technological innovation and the role the personalities and roles played by CEOs. While there was a relationship between the CEOs' characteristics and technological innovation, organisational culture and structure were more important factors.

In the new product development process, an emphasis has been placed on staying close to the needs of the market place through identifying customer needs and using superior technology to deliver added value. Within this framework, an organisation needs to develop an internal culture that is supportive of innovation. However, an organisation's culture is dependent on the CEO and his/her capacity to provide leadership and encourage innovation (Brunner, 2001).

In a study of 172 technical or scientific employees, Scott and Bruce (1994) examined the influence of leadership, work group relations and individual attributes on the employee innovativeness. There was a significant relationship between the level of employees' innovative behaviour and such variables as leadership and the level of support for innovation, managerial role expectations, the career stage of employee and management's problem solving style. They suggested that innovative behaviour is determined by the strength of the relationship between employees and supervisors or leader-managers.

In addition to leadership, innovation has been linked to the development of performance benchmark, particularly quality assurance and human resource management strategies that encourage creative thinking and learning, as well as knowledge transfer (Appleby and Mavin, 2000). A commitment to quality assurance and benchmarking enables customers to be reassured about a firm's product or service integrity, while focusing attention on what constitutes 'best practice' within the industry. Innovation is more likely to follow when a firm has control over its production process (through quality assurance), can meet or exceed customer expectations, and is clear about the activities of its competitors (benchmarking) (Riddle, 2000).

Uncertainty about the direction to move, what to change and the difficulties involved in implementing changes frequently challenge innovativeness in large firms. These forces combine to create inertia that only strong leadership can overcome and the creation of a culture that questions the status quo and is willing to experiment (Markides 1998). Large firms, with substantial track records in product innovations have been studied to try to understand their innovativeness. For example, 3M Corporation has been identified as having a strong tradition of innovative behaviour based on a clear sense of vision or direction, as well as strong leadership that focuses on adaptability, and good collaborative teamwork. Further, 3M monitor their customers closely; even thinking ahead to find solutions for problems customers may not have recognised (Coyne, 2001).

## **INNOVATION IN SMALL FIRMS**

Small firms (e.g. those with less than 200 employees that are independently owned and managed) are often thought to have a greater potential to innovate than do their larger counterparts. In the United States, small firms produce twice as many "innovations" as large firms and significantly greater numbers of patents

(Stringer, 2000). However, some who caution that innovation in small firms is typically more pronounced than in larger firms, as many small firms constantly adapt to changing environments have tempered this view. As small firms grow, they must introduce new products, processes, and management changes and acquire new systems, all of which can be viewed as innovative (Gibb, 2000). Nevertheless, the need for adaptation and change, the lack of bureaucracy, the multi-disciplinary nature of the work environment and the closeness of entrepreneurial leaders to employees, all serve to increase the likelihood of innovation in smaller firms, a view supported by empirical research (Vossen, 1998).

Autio and Lumme, (1998), in a study of 392 small new technology-based firms in Finland, identified four types of innovators:

1. Application innovators (apply existing technology into established markets);
2. Market innovators (develop new products through existing technologies);
3. Technology innovators (introduce new generic technologies into existing markets); and
4. Paradigm innovators (produce products with new technology).

They found that the greatest potential for growth was among market and paradigm innovators.

North and Smallbone (2000), in a study of 330 small British rural firms identified five types of innovative behaviour, from which they developed a multi-dimensional index for measuring innovation, namely:

1. Product-service innovation (new product development and R&D);
2. Market development innovation (penetration into new markets, or exporting);
3. Marketing innovation (branding strategies, use of information technology or database marketing);
4. Process technology and innovation (the use of new tools, application of computerised control systems); and
5. Information systems innovators.

According to Byron (1994 p.39) small firms are lower in marketing diversification but equal in technological diversification than are large firms. This was attributed to the roles played by the entrepreneur or owner-manager of the small firm who, "apparently is likely to be as reluctant as a bureaucracy to deviate from the firm's core technology." Chandler, Keller and Lyon (2000) found a positive relationship between innovativeness and the level of supervisory support and reward systems but a negative relationship between innovativeness and work overload. Firms with innovative cultures were smaller and had informal human resource management systems. Freel (2000) found there were several factors that might impede innovation, namely: 1) Access to finance, 2) Access to skilled labour and information, and 3) The capacity of the management and marketing team.

While access to finance was not found to be a major barrier to innovation, access to information (through networking) was. More innovative firms were more likely to employ professionally educated managers or were attempting to train existing managers. Clearly, innovation is a complex phenomenon that is important to all organisations but may be of critical importance to small businesses. Despite this, relatively little is known

about innovation in such firms. The present study, which is discussed in subsequent sections, attempted to improve our knowledge by examining a number of factors that might be related to small business innovation.

## THE PRESENT STUDY

The present study was based on a survey of 137 owner-managers who were participating in a university-based enterprise development program that was designed to assist growth oriented small firms. The sample was self-selected in that participants had made a conscious decision to undertake the enterprise development program. While all of the firms had less than 200 employees, the average number of employees in each firm was 23. All industry sectors were represented, with a balance between services and non-service businesses. The average time for which the owner-managers had operated their business prior to completing the survey was 12 years. Average sales turnover among the firms over the four years prior to the administration of the survey ranged from AUD\$2.8 million to AUD\$4.3 million. Few firms had management staff, with an average of 1.5 qualified managers reported. The majority of respondents were males (89.8%).

The majority of respondents (79.6%) said that they were planning to launch new products or services in the next 12 months, and 87 per cent said that they planned to substantially increase production levels over the same time period. Only 31 per cent had a formal written business plan. The sample reflects a group of growth-oriented owner-managers with relatively high levels of new product or service development intentions. As with most small business owner-managers, their planning tends to be intuitive rather than formal.

The purpose of the present study was to examine the business performance questionnaire originally developed by Hall (1992). The questionnaire contained 183 items measuring a range of business activities across six broad dimensions, namely:

1. **Focus/direction** – the overall vision and mission of the owner-manager,
2. **'Customerising'** – the firm's orientation toward the market,
3. **Partnering** – the owner-manager's ability to work closely with staff, customers, suppliers and others;
4. **Personality** – the culture of the firm;
5. **Quality** – the firm's commitment to quality and customer service; and
6. **Systems** – the presence of systems to assist the management of the firm.

The study also sought to explore the nature and context of these dimensions from an owner-manager perspective, with a particular focus on their strategic thinking and its relationship to their employees' innovative behaviour.

Data were collected over a four year period from 1997 to 2001 and the questionnaire was sent to the respondents three weeks prior to their joining the yearlong program designed to assist owner-managers improve their management and strategic planning skills. Each item was assessed on a 5-point Likert disagree-agree scale. Two weeks after the completion of the questionnaire, the results were presented to respondents and discussed in depth during a half-day session on the program. Groups of up to 16 owner-managers discussed the results with the researcher and among themselves. There were a total of 12 such workshop sessions during this period, usually with between 12 and 16 owner-managers.

## DATA ANALYSIS

For present purposes, the data were examined through factor analysis to identify potential underlying dimensions. Factor analysis examines interdependences among variables and an examination of the way in which different variables depend on each other makes it possible to determine which variables are measuring the same thing and which measure something else (Holbert and Speece, 1993).

As the questionnaire was organised into the Hall's (1992) six dimensions, six factor analyses were undertaken. Kaiser's (1974) measure of sampling adequacy (MSA) was computed in each case to see whether a factor analysis was likely to be useful. Principal components analysis with varimax rotation was used in each case to obtain a "simple structure" to assist in interpretation. In keeping with the convention, factors with eigenvalues greater than one were returned (Hair 1992). Cronbach's (1951) alpha coefficient was then used to assess the factors' internal reliability.

The six MSAs ranged from 0.77 to 0.88, suggesting there were likely to be underlying factors (Stewart, 1981). The factors obtained related well to Hall's (1992) structure, although some (17) items had low communalities and were excluded from the analysis. After these exclusions, the 35 factors shown in the Appendix were found. As will be seen in the statistics shown in the Appendix, the means scores were reasonably close to the midpoint of the scale and there was reasonable dispersion around the means, suggesting there was some information in the data. Further, the alpha coefficients ranged from 0.49 to 0.95, suggesting that the factors were all sufficiently reliable to be used in subsequent analysis.

Eleven factors seemed to be relevant to the level of innovation within the firms operated by the owner-managers participating in the study. Of these, "**Innovativeness**" measured owner-managers' perceptions of employees' innovativeness through the generation of new ideas that added value to the business. "**Key indicators**" measured owners' perceptions as to whether their business had systems for monitoring and reporting key performance measures (e.g. break-even, cash flows, and customer satisfaction), and whether these systems were used to track performance that was communicated to staff. "**Business values**" measured owner-managers' personal values (e.g. my business is a 'good' business) and how these were used to guide decision-making. "**Role modelling**" measured owner-managers' perceptions of how well they served as a role model for staff, through symbols, action and values. "**Leadership**" measured owner-managers' abilities to communicate their personal vision for the business to employees and to use this vision to motivate employees. "**ASA/ISO 9000**" measured owner-managers' views as to the relevance of formal quality assurance and whether their firm used formal quality management procedures. "**Staff partnerships**" measured owner-managers' views about employees' commitment to the firm and whether they were a source of competitive advantage. "**Business Change Readiness**" measured the owner's perceptions of how well their employees accommodate individual differences, and whether staff were responsive to change. "**Organisational Culture**" measured the perceived level of 'fit' between the social and political environment within the firm and its business aims. "**Changing Beliefs and Attitudes**" measured the owner-manager's role in encouraging change within the firm through communicating their vision and facilitating change. "**Defining Quality**" measured the owner's perception of their own and their employee understands of quality and what it means for their customers.

To investigate potential relationships between these factors a linear regression analysis was undertaken. The factor "Innovativeness" was selected as the dependent variable because it provided a measure (albeit through the owner-manager's eyes) of the level of innovative behaviour among employees within the firm. The remaining factors were used as independent variables in the analysis. The linear regression modelling was undertaken using the SPSS statistical program. A step-wise method was used.



## THE RESULTS OBTAINED

Of the ten independent variables selected for the analysis, five were found to be significant within the final model. Table 1 shows the mean scores, standard deviations and coefficient alphas obtained by summing the underlying items that loaded highly onto each factor, as well as the standardised beta coefficients, *t*-scores and significance levels for each item. The R Squared statistic for this model was 0.40 and the adjusted R Squared statistic was 0.37.

**TABLE 1: FACTORS RELEVANT TO INNOVATION MODELLED IN REGRESSION ANALYSIS**

<u>Factor</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Alpha</u>	<u>Beta</u>	<u>t-value</u>	<u>Sig.</u>
Changing Beliefs and Attitudes	3.13	0.65	0.81	0.35	3.85	0.000
Defining Quality	3.74	0.67	0.85	0.30	3.32	0.001
Business Values	3.77	0.67	0.86	-0.30	-3.41	0.001
ASA/ISO 9000	3.13	0.99	0.79	0.20	2.86	0.005
Staff Partnerships	3.12	0.76	0.86	0.19	2.07	0.040
<i>Dependent variable:</i>						
Innovativeness	2.95	0.91	0.81			

## DISCUSSION

The original even factors identified as having a possible association with innovativeness measure the owner-managers' perceptions of their own behaviour and that of their firm. In the subsequent discussions, the owner-managers felt that employees' ability to innovate would be influenced by the strength of the 'leadership' and 'role modelling' they (the owner-managers) displayed. They also felt there was a need for partnering between employees and the owner-manager to develop a team that could achieve positive outcomes. The importance of monitoring the firm's 'key indicators' was seen as desirable to ensure employees were aware of how the firm was performing, as this was likely to improve problem solving and troubleshooting.

There was more contention over the relevance of formal quality assurance as an antecedent to innovation. While many of the owner-managers used quality assurance management systems and viewed them as beneficial, many others disagreed. The primary opposition to formal quality assurance systems was that they were expensive and did not provide a direct competitive advantage. There was also an equivocal view as to the role played by owner-managers' 'personal values.' While owner-managers may have a strong sense of their values (and most felt they did), the role they play in encouraging innovativeness was difficult to determine. Strong owner-manager values may be an impediment to innovativeness if these views are imposed on staff, stifling creativity.

The regression analysis suggests that possible antecedents of innovativeness among the firm's employees are the role of the owner-manager in facilitating a readiness for change within the firm through communication of

their vision. A further antecedent may be the development within the firm of a collective understanding of the nature of 'quality' and common agreement as to how to define this. Formal quality assurance benchmarking would seem a logical additional antecedent to accompany this. The level of commitment or 'partnering' that exists between owner-manager and the employees may also be important. By contrast, the personal business values of the owner-manager appear to have a negative influence.

In the post-survey discussions, a respondent who owns a computer software development company employing 32 people admitted that, while he saw his employees as an important source of competitive advantage and valued them as an asset, he would like them to be more proactive in generation of new ideas. He confessed that, while he was clear in his own mind about where his company should head (e.g. his personal vision was clear), he needed to do more to communicate this vision to staff by devoting more time talking to employees and sharing his vision. The other owner-managers in the discussion group agreed that they also needed to spend more time talking to employees and sharing their personal visions to provide a sense of direction for their companies.

## CONCLUSIONS AND FUTURE RESEARCH

The sample was made up of owner-managers from small firms that have a strong growth orientation and a high level of commitment to launching new products or services. While the sample is not representative of the small business community, it is representative of those owner-managers who are focused on growth and are, therefore, seeking to launch new products or services and expand production. In this sense they are likely to be the more innovative small businesses.

The present study found that Hall's (1992) survey contained a number of factors relevant to innovation and suggests that it might provide a framework for a future investigation of small business innovation. The preliminary modelling and subsequent discussions with the respondents suggests that the antecedents of innovativeness within the small firm may be the owner-manager's ability to encourage an understanding of quality (particularly in terms of what it means to the customer), a commitment to the firm and a willingness to change and adapt when required. In developing this environment the owner-manager may need to avoid imposing their own values too rigidly on their employees.

Although such findings are of interest the study remains exploratory. The relationship between the factors could be examined using structural equation modelling procedures, probably Partial Least Squares because of sample size issues and a desire to predict innovation (Chin and Newsted, 1999). In addition to this quantitative approach, there needs to be a qualitative investigation of the behaviour and perceptions of owner-managers using multiple case studies. Access to the original sample of respondents is available and the factor structure identified in this study provides a useful protocol for guiding future case investigations. The objective of future research will be to produce new theory on the nature of innovation within small firms, and hopefully contribute to a richer understanding of the way in which small, entrepreneurial firms behave that is grounded in the direct experiences of the owner-managers themselves.

**APPENDIX: FACTORS IDENTIFIED IN THE STUDY**

Factor	Mean	Std. Dev.	Alpha
<b><i>Focus/Direction Dimension:</i></b>			
Mission – clear sense of mission	2.90	1.07	0.95
Core Skills – understands distinctive competencies	3.65	0.66	0.85
Key resources – possesses key resources	3.21	0.71	0.81
Environmental Scanning – environmental monitoring	3.22	0.67	0.80
Personal Vision – owner’s sense of future direction	3.59	0.78	0.78
Leadership Vision – communicating vision to staff	3.13	0.92	0.82
<b><i>Customerising Dimension:</i></b>			
Customer Delight – customer commitment/delight	3.70	0.54	0.90
Networking – owner’s networking ability	3.00	0.74	0.68
<b><i>Partnering Dimension:</i></b>			
Supplier Partnerships – firm’s relationship with suppliers	3.49	0.84	0.85
Staff Partnerships – firm’s relationship with staff	3.31	0.76	0.86
Customer Partnership – firm’s relationship with customers	3.67	0.64	0.82
Support Network Partnership – relations with bank etc.	3.00	0.76	0.78
Partnership Orientation – owner’s propensity to partner	3.63	0.84	0.86
Structure=Strategy – fit between firm strategy and structure	3.20	0.80	0.67
<b><i>Personality Dimension:</i></b>			
Image – firm’s image in the market	3.70	0.68	0.90
Business Values – owner’s personal values for business	3.77	0.67	0.86
Role Modelling – owner’s role modelling to staff	3.15	0.70	0.75
Personal Change Readiness – owner’s change readiness	3.70	0.64	0.66
Business Change Readiness – firm’s change readiness	3.12	0.67	0.69
The “Shadow Side” – unwritten ground rules	3.05	0.75	0.57
Psychometric Testing – use of formal tests for staff selection	1.95	1.08	0.57
Organisational Culture – fit between firm culture and aims	3.20	0.63	0.58
<b><i>Quality Dimension:</i></b>			
Right Product/Services – delivery of right products to market	3.75	0.57	0.81
ASA/ISO 9000 – level of formal quality assurance	3.13	0.99	0.79
Changing Beliefs and Attitudes – owner’s role in change	3.13	0.65	0.81
Defining Quality – firm’s understanding of quality	3.74	0.67	0.85
Premium Pricing – value adding that leads to premium prices	3.22	0.86	0.83
Innovativeness – staff levels of innovative behaviour	2.95	0.91	0.81
Not Price Sensitive – firm’s ability to avoid price competition	2.56	0.92	0.78
<b><i>Systems Dimension:</i></b>			
Key indicators – firm’s monitoring of key performance data	2.58	0.86	0.91
Taking action – owner/firm’s willingness to act on KPI’s	3.36	0.77	0.86
Critical Information – firm’s analysis of cost/control	3.28	0.84	0.87
Information Systems – firm’s use of computer/IT systems	3.16	0.80	0.85
Market Research Data – firm’s use of market research data	2.87	0.76	0.72
Financial Control – firm’s financial resources and control systems	3.01	0.84	0.49

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