STRATEGY RECOGNITION AND IMPLEMENTATION BY NEW ZEALAND PASTORAL FARMING STRATEGISTS

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Abstract

Strategic management is often reduced by researchers to a set of simple concepts and processes. They describe what strategy is and how it should be practiced. The models or schools of thought that have been developed began with a quite mechanistic approach to strategic management with little appreciation of how strategy was recognised or created and have evolved to an appreciation of the complexity of the business systems and the important role of the people within them. Farm management literature and extension methods do not appear to have followed this evolution. Three case study farms, all successful strategic managers, were researched to identify the process by which they have identified, developed and implemented strategy in recent years. In all cases it was evident that the practices of these farmers could be described more by the recent schools of thought than by the classical schools. In the volatile, unprotected world that characterises New Zealand agriculture it can be concluded that strategising is a necessary skill and one that requires further research and inclusion in the farm management literature and extension programmes.

Keywords: Strategic Management, schools of thought, strategic thinking, farm businesses

Introduction

Family owned farm businesses are fast becoming multi-million dollar enterprises. The environment in which these businesses operate (both at a regional, national

and international level) is becoming increasingly competitive and turbulent. As such there is an increasing need for effective strategic management and a better understanding of the strategic management process as used by farming families

Corporate business literature has had a strong influence on the understanding of strategic management by rural professionals and its extension to farming families. In many cases the strategic management process is communicated by agricultural extension agents as a formal, step by step process involving the development of a strategic vision and mission, an analysis of the farm's internal and external environments, the identification of key priorities and the development of strategy to achieve strategic goals (Martin & Shadbolt, 2005, Nell, 2005). It is possible that farming families develop strategies in other ways. Research has not been undertaken to confirm that schools of thought from the business literature are consistent with the practices used by strategists in farm management to craft strategies.

Part of the classical strategic management process is the crafting of strategies to be implemented by the farm business. The idea of crafting suggests that all strategies are planned prior to implementation, however some emerge during the implementation process (Mintzberg, 1987) so are identified rather then crafted, or planned. This paper describes the strategic process of three farming families (identified by their peers as excelling in strategic management) and identifies the sources of these strategies (emergent or planned).

Literature Review

There is an extensive body of literature on business strategy with a number of contradictory perspectives presented. As described by Feurer & Chaharbaghi (1997, cited by French, 2009c) the evolution of thinking has been a continuum of developing and overlapping ideas. Various models or schools of thought have been developed. The first three schools to evolve are commonly called the Classical Schools and include the Design, Planning and Positioning Schools. Although these

are the basis of much of the teaching in business schools and undergraduate programmes, French (2009a) states that there is a growing body of opinion amongst scholars that the central tenets of classical strategic theory are no longer as appropriate as they might have been.

The strategic management process identified by Ginter *et al.* (1985, cited by French, 2009a) is found consistently in literature and is the model of choice for many management textbooks espousing classical strategic theory. They identified eight elements:

Vision & mission
Objective setting
External environment scanning
Internal environment scanning
Strategic alternatives (crafting strategy)
Strategy selection
Implementation
Control

Strategic management is discussed in the farm management literature in a number of ways which tend to be different representations of the same classical strategic theory (Martin & Shadbolt, 2005). For example, the model described by Nell (2005) for farm businesses has eleven stages (Figure 1), uses all the elements identified by Ginter *et al.* (1985, cited by French, 2009a) and is typical of the planning school of thought.

Although complex, this model is believed by Nell (2005) to represent the strategic process used by farming families. It encompasses the three management functions of planning, implementation and control recognised in Shadbolt & Bywater (2005). These functions were first identified in the Fayol (1949, cited by French, 2009a) model of plan, lead, organise and control (PLOC) that is the basis of classical strategic models. Such models are also described by French (2009a) as being characterised by concepts of linearity, equilibrium and predictability in

which, he states, there is little room for the concepts of learning, cognition, synergy and emergence. The classical models were developed in an era when the external environment was relatively simple, stable and predictable; as the external environment has become less certain the classical models have been less able to deliver timely solutions, hence the evolution of other schools of thought.

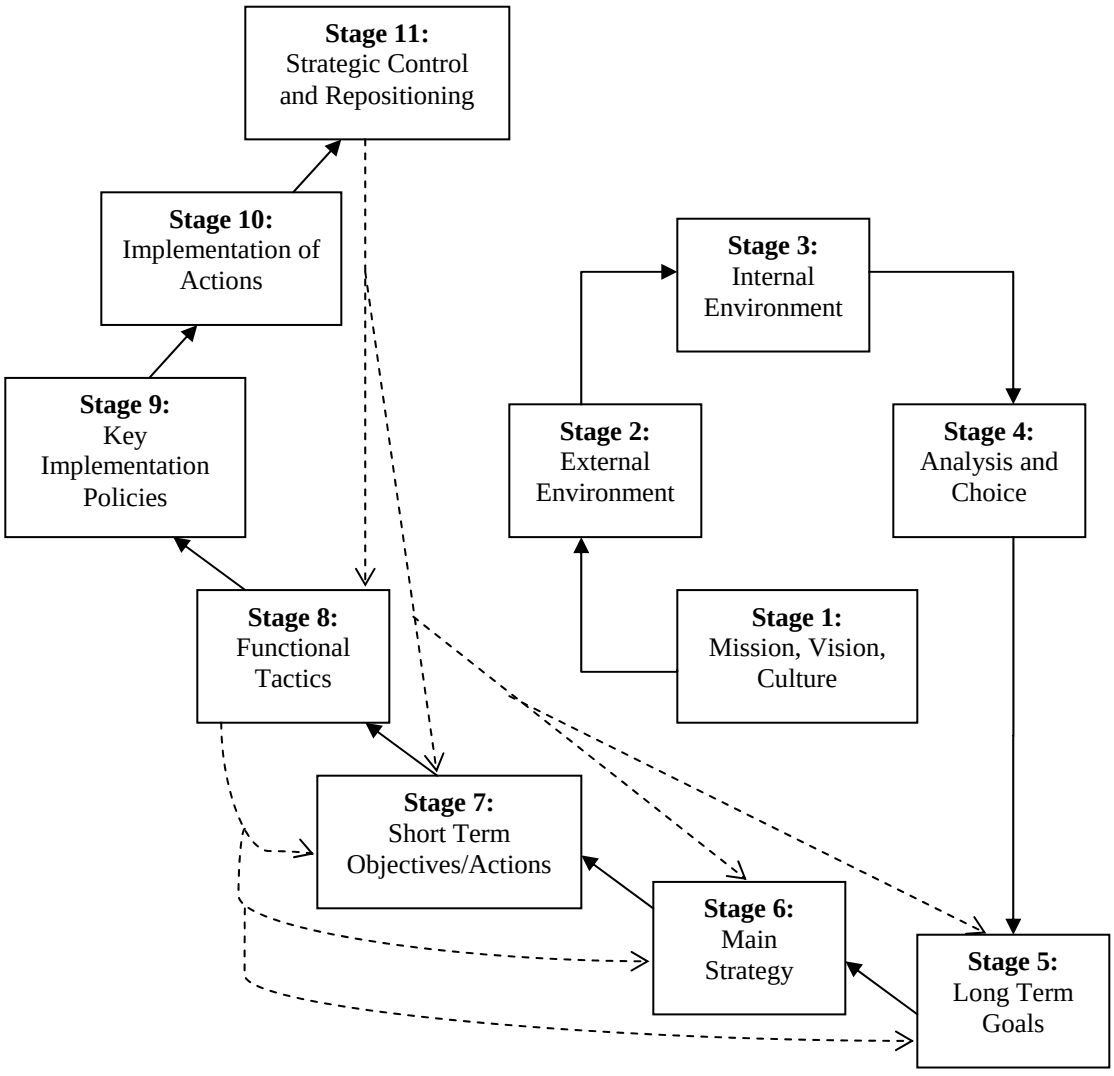

Figure 1 The strategic management process (Source: Nell, 2005)

Farm management and a significant body of business literature describe strategy as a plan for the future. A further four forms in which strategy may exist have been identified suggesting the concept of strategy exists in five major forms, as plan,

ploy, pattern, position and perspective (Mintzberg, 1987, Mintzberg *et al*. 1998; Mintzberg *et al*. 2003). These concepts are interrelated and compatible with each other.

As 'plan' and 'ploy', strategies exist as a set of actions awaiting implementation (Mintzberg, 1987). Strategies as plan and ploy are intended strategies. As 'pattern' strategies are realised; where strategy as plan looks forward, strategy as pattern looks back to see what has been done in the past. Realised strategies exist as a pattern of actions while intended strategies exist as a pattern of decisions an organisation intends to execute (De Wit, 1998). An organisation's fundamental way of doing things is described by strategy as 'position' that look inwards and outwards, and strategy as 'perspective' that look up and down (French, 2009b)

Realised strategies are sometimes not the same as those that were intended prior to implementation; hence strategies may emerge during the implementation of intended strategies in response to changes in either the external or internal environment of the organisation. During implementation some intended strategies go unrealised and are effectively replaced by emergent strategies (Mintzberg, 1987; Mintzberg *et al*, 1998; Mintzberg *et al*, 2003; Porth, 2002). As such realised strategy is often a combination of intended strategy formulated during planning, and emergent strategy, formed during implementation (Figure 2) (Mintzberg, 1987).

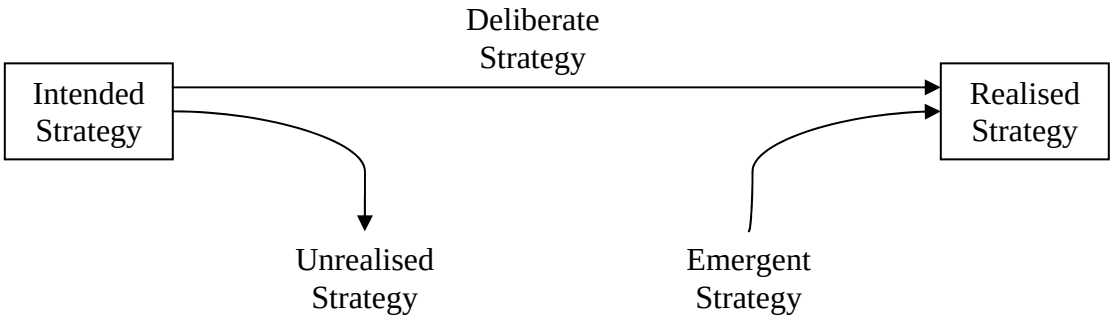

Figure 2. Deliberate and Emergent Strategies (Mintzberg, 1987)

It is rare that realised strategies will consist of entirely intended strategies or emergent strategies. Most realised strategies exist on a continuum between the two extremes (Mintzberg and Waters, 1985).

Strategic thinking, rather then planning is essential for emergent strategies to be identified. Strategic thinking is a creative, synthetic, divergent, intuitive, and innovative thought process compared with the logical, systematic, conventional, prescriptive and convergent thought process used in strategic planning (Graetz, 2002; Heracleous, 1998). As Hamel (1996, cited by French, 2009d) clearly identified "Planning is about programming, not discovering,…it is for technocrats, not dreamers".

Mintzberg *et al.(*1998) identified ten different schools of thought on how strategies (both emergent and intended) are formed. Three are prescriptive, and comprise the classical schools (design, planning and positioning skills) that are concerned with how strategy should be formulated. Six of the schools (entrepreneurial, cognitive, learning, power, cultural and environmental schools) are descriptive, describing how strategies actually form. The final school, configuration, links each previous school to an organisation at certain stages in their business lifecycle.

French (2009d) reported that the body of literature supporting the descriptive schools of Mintzberg *et al.(*1998) is much thinner than that supporting the classical schools. However there is some agreement with Mintzberg *et al.(*1998)'s question of whether or not strategy can be created in a formal planning process. Hamel (1998, cited by French, 2009a) states that the classical models "do not have a theory of strategy creation…they do not know where bold, new value-creating strategies come from". The process of crafting strategy is not described or defined. More specifically, in the positioning school that is based on the premise that strategies are generic, Porter (1997, cited by French, 2009d) considers strategy creation as a deliberate and deductive process, not appearing to recognise the existence of strategic learning, cognition, or strategic emergence.

Systems theory has been applied to the teaching and research of farm management since the 1970s (Spedding, 1979). Initially it was applied to entities (cropping land, housed intensively farmed livestock) with clear boundaries, structures and functions in which control was possible provided the right information was available for decision-making. It was characterised by its 'holistic' approach to problem solving that was in stark contrast to the reductionist approach taken at the time by the scientists (agronomists, soil scientists, animal production and health specialists). However when the boundaries were expanded to include the more complex whole farm system, and beyond, the hard systems approach proved to not adequately cope with the people component (social practices, politics and culture). This, in turn, led to the development by Checkland (1981) of the Soft Systems methodology based on open systems. Stacey (2000, cited by French, 2009b) identifies a continuum of systems thinking categories relevant to strategy that move from hard systems to open soft systems and culminate in the view of a business as a complex self-adapting system. These are open systems that include the concepts of learning, synergy, innovation and emergence.

Further schools of thought have evolved to address, in various ways, the failing of the classical schools. French (2009d) identifies that there is sufficient literature available to identify four further schools. They include:

1. Resource-based School – this school dismisses the generic strategies of the positioning school by putting a greater focus on the internal organisation of the firm. Essentially this view claims it is the firm's resources that determine their response to external opportunities and threats, what Prahalad and Hamel (1990, cited by French, 2009d) call "dynamic capabilities". Because of its use of SWOT terminology it is also viewed as an extension of the classical design school.
2. Contingency School – when the business environment is less certain there is a need to have adaptive strategy (Chaffee, 1985, cited by French, 2009d). This responsiveness is more flexible than the classical school approach. The focus is

on effective structure and how it might adapt to changes in contingency factors such as task uncertainty, size, strategy and environment.

3. Learning School – this school suggests that strategy is as much a state of mind within an organisation as it is a set of actions. It is a response to Hamel's (1998, cited by French, 2009d) premise that strategy innovation is the key to wealth creation. There are number of scholars who have added to this school of thought including Mintzberg *et al.* (1998) who stated that strategies emerge as people come to learn about a situation and the capabilities of the firm. It adds a higher order capability 'learning to learn" to the core capabilities identified in the Resource-based School.
4. Emergence School – the scholars in this school address the complexity of management and how adaptive systems enable strategic thinking. Their premise is that the classical models, based as they are on the practice of PLOC are intended to control a business to the equilibrium of a plan. This control prevents innovation, learning and emergence from occurring resulting in business atrophy.

Methodology

A multiple case study design (Yin, 2002) was used to investigate the strategic decision making processes used by farmers who were judged by their peers as having expertise in strategic management. Industry leaders were asked to identify farmers who they believed had expertise in strategic management. Semi-structured interviews (Gray, 2001) were used to collect data on the case farmer's strategic decisions. The first interview was run in conjunction with and guided by Farmar-Bowers, a visiting researcher who was further exploring farmer decision systems and the drivers of land use change (Farmar-Bowers & Lane, 2006) with New Zealand farmers. This was used to gather information on the pattern of strategy implemented by farming families allowing questions specific to the farming family to be asked at the second interview. Interviews were taped, transcribed verbatim (Denzin, 1989) and then the transcripts were analysed in-depth using qualitative data analysis (Dey, 1993; Miles & Huberman, 1994). The strategies used by the

farmers were derived from the data, verified with them and then compared with the literature. This paper discusses the strategies used by the three case farmers.

Results & Discussion

Pattern of strategy

Each farming family's pattern of strategy was successfully established during the case study investigation. All three farming families had, at some stage implemented both intended and emergent strategy to form a pattern of realised strategies. The findings of this research agree with the ideas of Mintzberg (1987) that not all strategies are planned. Realised strategy was at times the combination of intended strategy, formulated during planning and emergent strategy formed during implementation.

Six different strategy sequences were identified across the three case studies. These are illustrated in Figure 3. All three case studies displayed sequences where an intended strategy was implemented successfully without being influenced by other intended or emergent strategies (Figure 3, Box A). Realised strategy may be a combination of intended strategy and emergent strategy (Figure 3, Box B). A planned strategy of a case study to diversify into dairying through land purchase was not fully implemented due to the emergence of the strategy to expand current enterprises through land purchase. In this case, the farming family struggled to find an appropriate dairy farm, and while attempting to do this, a near-by sheep and beef farm came on the market at an attractive price and the farming family took advantage of this. The realised strategy contains components of both the intended strategy (land purchase), and emergent strategy (expansion within current enterprises) and as such the realised strategy exists on a continuum between the two. The diversification strategy was discarded.

Sequences also exist where no part of an intended strategy is implemented and realised strategy is the result of a strategy that emerged prior to fully implementing the intended strategy. This sequence is illustrated in Figure 3, Box C and results in

the farming family taking a completely different strategic direction. One of the farming families planned to increase economies of scale within their current sheep and beef operation through leasing. However the unavailability of reasonably priced lease land, a change in the economic circumstances of the farming family and forecasts of a relatively high dairy payout meant that the emergent strategy of diversification through farm purchase was implemented instead. In such a scenario the realised strategy is made up of components that originate from the emergent strategy only.

Realised strategy may also be the combination of two intended strategies. One farming family discarded the intended strategy to purchase an off-farm business during implementation in favour of another intended strategy to purchase commercial property. Both strategies had been considered as alternative strategies before an implementation decision was made and hence they were both planned strategies. The inability of the farming family to find a suitable off-farm business, and the risks involved (discovered during implementation) meant that commercial property was purchased instead. In such situations the realised strategy contained parts of both intended strategies, and as such exists on a continuum between the two intended strategies (Figure 3, Box D).

All three case studies displayed sequences where an intended strategy was discarded in favour of a completely different intended strategy (Figure 3, Box E). There were also examples of emergent strategies being implemented after an intended or emergent strategy had been successfully implemented, but prior to the establishment of a new intended strategy (Figure 3, Box F). This phenomenon is not reported in the literature. Such opportunistic strategies may take advantages of short-term opportunities (a neighbouring farm coming on the market).

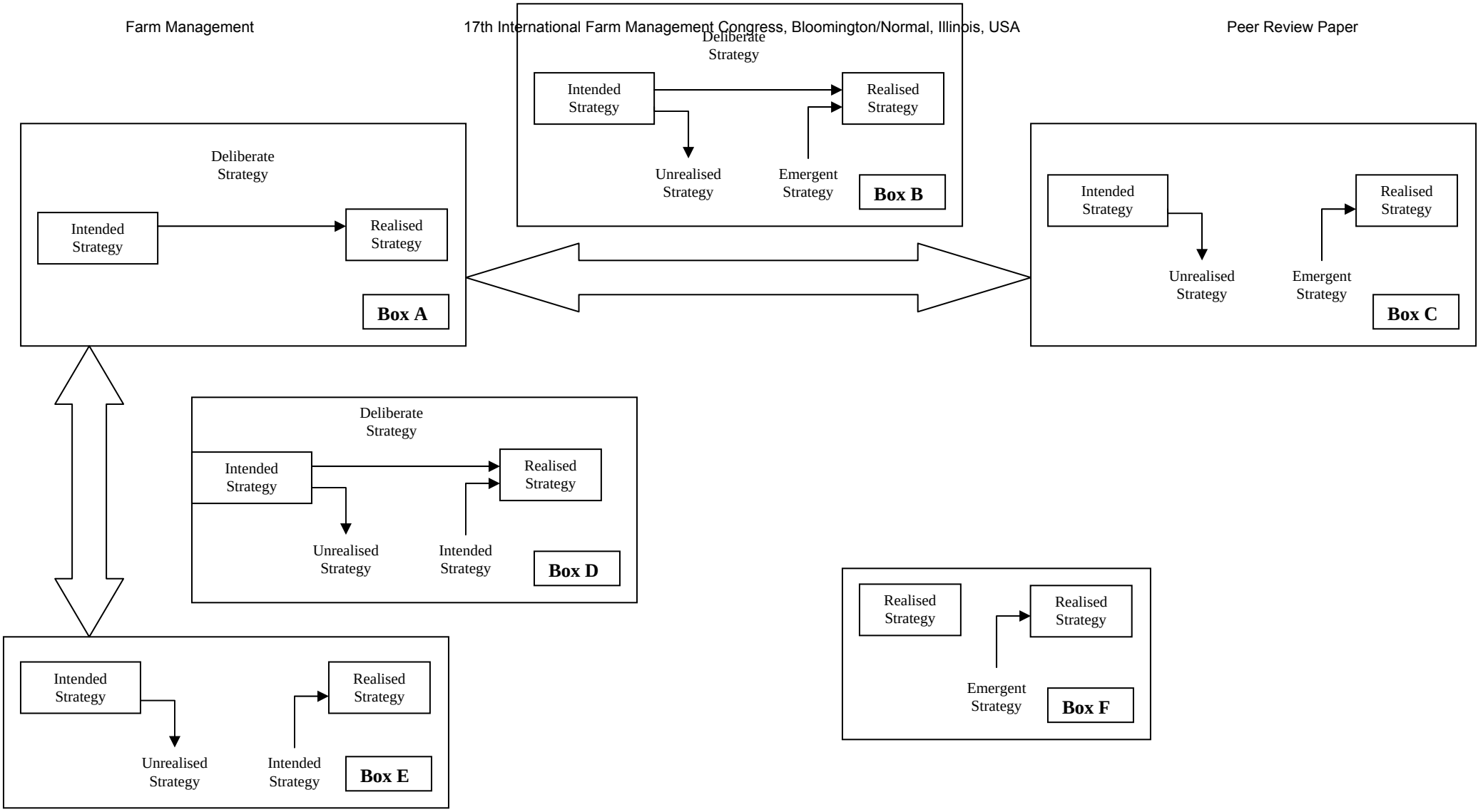

Figure 3. Sequences of strategy expressed in the strategic process of the case study farms

There is little information in the literature on how strategists deal with failure. Nell *et al.* (2005) suggested that during an internal audit, farmers should make note of their failures and take this into account when selecting the next strategy to implement. While the findings of this study do not confirm, nor repute this, it was noted that the progress of strategists in the farming families was not hindered by the failure to implement a strategy. The failure to implement a strategy was in some cases the sacrifice of a strategy part way through its implementation so that limited resources could be used to implement another, better strategy. In other situations a strategy could not be fully implemented, or its full implementation was possible but the predicted outcome unsatisfactory. In such situations the failure to implement a strategy encouraged the decision makers of these farming families to search for alternative strategic options.

Observations of the Strategic process of Farming Families

The three farming families were aware of the concept of strategic management as a function of high level management but they varied in the amount of formal training they had had in the subject. The farming families all had a strategic vision, while only one of these was a written statement, all three case studies described the position they would like to be in the future. In such cases, the strategic vision of the farming family was kept as a mental vision of the future. This is contrary to the classical planning school approach that requires outcomes to be committed to paper, for example “a farm businesses strategic vision is held formally, as part of a larger written strategic plan” (Nell, 2005).

All three case studies mentioned strengths of the farming business (money management, banking knowledge), but not weaknesses, although some of their strategies were clearly aimed at reducing weaknesses (diversifying income streams to reduce financial risk, purchasing different land classes to reduce production risk).

Implementation tests were used by the farming families to assess the merits of strategies before implementation began, or during implementation as new information became available. These tests assessed the ability of the strategy to increase farm profits (performance tests), the farming families ability to successfully implement the strategy (feasibility test), the capacity of the strategy to create new competitive advantages (competitive advantage test) and the consistency of a strategy with a farming families motivations, strengths, weaknesses, threats, opportunities, successes and failures (synchronisation tests).

All three of the farming families were constantly looking for new opportunities. This was achieved by maintaining strong links with key industry personnel, forming strong social networks both within and outside their sector and keeping up to date with the latest information through a range of media (newspapers, farming publications, scientific journals, conferences, television and the internet). This process assisted in the identification of emergent strategies. For example, one of the farming families identified an emergent strategy to purchase a dairy farm after discussing the industry with recognised dairy leaders.

Schools of thought identified during research

Throughout the study there is evidence that the means used by farming families to identify and craft strategy can be tracked to a number of the recognised schools of thought. The knowledge the farming families had of their strengths, and the steps taken (through both intended and emergent strategies) to reduce their weaknesses provides evidence that they were using elements of the design school and the resource-based school. The use of implementation tests to evaluate strategies before and during implementation suggests the farmers use elements reported in the design school. While the crafting of strategies by farming families was less formal than described by the design school, the study suggests that the approach used by farmer strategists is similar to the design school model of assessing the

external and internal environment, crafting strategies, assessing strategies and implementing strategy in some stages of their businesses lifecycle.

The identification of emergent strategy means that not all the strategies implemented by farmer strategists are developed using a process similar to that reported in the design school. Not surprisingly, evidence from the study suggested the farmers used processes similar to those of the Mintzberg *et al.* (1998) entrepreneurial school. As previously stated, this school is most likely to exist in owner-managed firms. The farmer strategists' awareness of their strategic vision as a mental picture is representative of the entrepreneurial school. The decision makers of the farming families were also involved closely in the implementation of strategies. The entrepreneurial school has not been recognised or further developed by other scholars of strategic theory. French (2009d) suggests that this and other Mintzberg *et al.* (1998) descriptive schools represent ideas for strategic practice rather than theoretical 'schools'. Recognition of these strategic practices, as has been possible from this research can assist in the understanding of what characterise successful smaller businesses and help guide future research.

Similarly the strategic practice of implementation tests fits in the Mintzberg *et al.* (1998) cognitive school. The wider definition of the Learning School as defined by French (2009d) would also incorporate these practices. Ohlmer *et al.* (1998) also observed such practices and processes being used by farmer strategists.

There are a number of situations within the strategic pattern of the farming families that are representative of the Learning School. In this school of thought, strategies emerge through learning that occurs during implantation. One of the cases adjusted the land use of a recently leased area as they learnt about the productive capability of the land. In such a situation, the boundaries between strategy formulation and implementation is indistinguishable. The strategy had been implemented almost completely before the alternative land use was recognised as a possible strategy. More broadly the use of social and business

networks to identify opportunities is also a feature of the learning school, the continuous sensitivity to changing events and the exploration of the impact they might have on the business.

That alternative strategies existed on the case study farms suggests the presence of adaptive strategy as described by the contingency school. Agriculture in New Zealand is not protected by the state and is subject to extreme market and climatic variability. As the majority of its product is exported it is also subject to global issues and exchange rate risk. Adaptive strategies are a necessary response to such uncertainty.

Family farms are complex and, in New Zealand especially, they have to be adaptive systems if they are to progress successfully to the next generation. Equilibrium is not an option and, if achieved, is short-lived. The recognition that the case study farms were not mechanistic in their strategy, that they recognised and implemented emergent strategy and discarded planned strategy with minimal set back would suggest that these farmers also exhibited characteristics of the Emergence School.

Implications of research to the extension of strategic management

The results of this study show that, for these case study farmers, the issues being discussed by scholars of strategic theory in the business world are just as relevant to farming businesses. The classical schools of thought have provided a useful framework for understanding the strategic management process but, as the business environment has become more complex and less certain, are proving to be too cumbersome and can stifle business progress. Strategic research should be focused on understanding and challenging how farm managers think. It is the thinking capacity of management that is the key to competitive advantage. The existence of both intended and emergent strategies suggests that the extension of strategic management to farming families needs to go further then the prescriptive classical school techniques used to date.

While evidence of the design school existed, most of the techniques used by the farmer strategist when crafting strategies incorporated aspects from a range of schools. This suggests that while teaching farming familyies the fundamentals of the design school (i.e. vision/purpose, internal, external audit, craft strategies, assess strategies) is important, the process they use when implementing is not. Completing such a formal exercise is possibly quite detrimental to the strategic process, deterring farming families away from strategic management rather then encouraging it. It was reported by Byles (2002) that while farmers are aware of the ideas of strategic vision, objective setting and benchmarking they have difficulty implementing these in practice. Farming families should instead be encouraged to develop strategic thinking skills, to run continuous internal and external audits and use this to out-resource the opposition. Adaptive strategy formulation should be an ongoing activity, rather than a one-off planning exercise.

The idea of emergent strategies should be introduced to farming families alongside those of intended strategies. Restricting the strategy of a farming family to the contents of a formal plan will constrict the business and limit the ability of the farming family to capitalise on opportunities.

Conclusion

Corporate business literature has guided the extension of strategic management to farming businesses for some years. It has evolved beyond the formal classical schools of thought to include recognition of the need for flexible strategy in an uncertain business environment, of the power of understanding and developing the soft system (people) components of the business and the benefit of enabling strategic thinking and the emergence of new strategy.

The case studies investigated in this study provide evidence that these three successful farming businesses displayed many of the characteristics defined by the

strategic theory scholars. The farmers are not constrained by the fact that most farm management literature and extension services promote the classical schools approach; they have responded to the opportunities created by changes in their business environments and are proven strategic thinkers. If other farmers are to be encouraged to act likewise, the literature and extension services need to include the schools of thought that have evolved in recent years. This will involve championing not those with the best formal plans and delivery to those plans but those with the proven track record of strategic thinking and an ability to manage complex adaptive systems over time.

Successful strategic management in farm businesses in the future should therefore include an understanding of both the process of planning (especially important as strategy is absorbed at the tactical and operational levels of the business) and the process of strategizing defined by Boyd (cited by Hammond, 2001in French, 2009a) as "a mental tapestry for harmonising and focusing our efforts as a basis for realising some aim or purpose in an unfolding and often unforeseen world of many bewildering events and contending interests".

References

Byles, S., Le Grice, P., Rehman, T., Dorward, P. (2002). *Continuing professional development and farm business performance.* Paper presented at the 13th International Farm Management Congress, The Netherlands.

Checkland, P. (1981) *Systems Thinking, Systems Practice*, Wiley, Chichester

De Wit, B., Meyer, R.,. (1998). *Strategy: process, content, context* (2nd ed.). International Thomson Business Press. New York

Dent,J.B., Blackie, M.J.(1979) Systems simulation in agriculture. Applied Science Publishers. London.

Denzin, K. (1989) The Research Act: A theoretical introduction to Sociological methods. Third edition McGraw-Hill, New York

Dey,I.(1993) Qualitative Data Analysis: A user-friendly guide for social scientists. Routledge, New York.

Farmar Bowers Q., Lane R. (2006) Understanding Farmer Decision Systems That Relate To Land Use. Report To The Department Of Sustainability And Environment. RMIT University, Australia, May 2006

French, S. (2009a) Critiquing the language of strategic management. *Journal of Management Development Vol. 28 No. 1, 2009 pp. 6-17*

French, S. (2009b) Cogito ergo sum: exploring epistemological options for strategic management *Journal of Management Development Vol. 28 No. 1, 2009 pp. 18-37*

French, S. (2009c) Exploring the house built on sand! *Journal of Management Development Vol. 28 No. 1, 2009 pp. 38-50*

French, S. (2009d) Re-thinking the foundations of the strategic business process. *Journal of Management Development Vol.28, No.1, 2009. pp 51-76*

Graetz, F. (2002). Strategic thinking versus strategic planning: towards understanding the complementarities. *Management Decision, 49*(5), 456-462.

Gray, D.I.(2001) The tactical management processes used by pastoral-based dairy farmers; A multiple-case study of experts. Unpublished PhD thesis. Massey University, Palmerston North.

Heracleous, L. (1998). Strategic thinking or strategic planning? *Long Range Planning, 31*(3), 481-487.

Martin, S., Shadbolt, N.M. (2005). Strategic management. In S. Martin, Shadbolt, N., (Ed.), *Farm Management in New Zealand*. Melbourne: Oxford University Press.

Miles, M.B., Huberman, A.M.(1994) Qualitative data analysis:An expanded source book. Second edition. Sage publications, Beverly Hills, CA.

Mintzberg, H. (1987). The strategy concept I: five P's for strategy. *California Mangement Review, 30*(1), 11-25.

Mintzberg, H., Ahlstrand, B., Lampel, J. (1998). *Strategy Safari*. Norton: Pearson Education Limited.

Mintzberg, H., Lampel, J., Quinn, J.B., Ghoshal, S. (2003). *The strategy process*. Harlow: Pearson Education Limited.

Mintzberg, H., Waters, J.A. (1985). Of strategies, delibrate and emergant. *Strategic Management Journal, 6*(3), 257-272.

Nell, W. T., Napier, R.J. (2005). *Strategic approach to farming success*. Bloemfontein, South Africa: Wim Nell.

Ohlmer, B., Olson, K., Brehmer, B. (1998). Understanding farmers decision making processes and improving managerial assistance. *Agricultural Economics, 18*, 273-290.

Porth, S. J. (2002). *Strategic management: a cross-functional approach*. New Jersey: Prentice Hall.

Shadbolt, N.M., Bywater A. (2005). The dimensions of management. In S. Martin, Shadbolt, N., (Ed.), *Farm Management in New Zealand*. Melbourne: Oxford University Press.

Spedding, C.R.W. (1979). *An Introduction to Agricultural Systems.* London : Applied Science Publishers.

Yin, R.K.(2002) Application of case study research. Second edition. London: sage Publications

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