



*Economía Agraria y Recursos Naturales*. ISSN: 1578-0732. Vol. 10, 1. (2010). pp. 123-134

## Towards an appropriate comprehension of innovation sources in agrifood cooperatives

Cristina Segovia y Manuel Sánchez<sup>a</sup>

---

**SUMMARY:** The existing typologies of innovation sources rely on classification criterions which are excessively generalist and developed under the consideration of private owned organisations. The present paper seeks to shed light on the special structural and operative features of agrifood cooperatives demanding a more comprehensive classification of innovation sources. A sample from the agrifood cooperative industry was selected as the scenario of the empirical research. Findings reveal a classification proposal of innovation sources into four differentiated groups (*managers, technology, market* and *normative context*) with regard to the management orientation of change (*strategic vs. technical/legal*) and the strength motivating the innovation (*internal vs. external*).

---

**KEYWORDS:** Agrifood cooperatives, innovation sources.

---

**JEL classification:** Q13.

---

### Hacia una adecuada comprensión de las fuentes de innovación en las cooperativas agroalimentarias

---

**RESUMEN:** Las clasificaciones sobre fuentes de innovación existentes responden a criterios generalistas y fundamentalmente desarrollados para la empresa privada. Así, el presente trabajo trata de arrojar luz sobre las particulares características de las cooperativas agroalimentarias, en la medida que demandan desarrollar una clasificación algo más profunda sobre sus fuentes de innovación. Como escenario de la investigación empírica se ha seleccionado una muestra de cooperativas agroalimentarias española. Los resultados permiten realizar una propuesta de clasificación de las fuentes de innovación en cuatro grandes grupos (directivos, tecnología, mercado y contexto normativo) en función de la orientación hacia el cambio y la motivación de la innovación.

---

**PALABRAS CLAVE:** Cooperativas agroalimentarias, fuentes de innovación.

---

**Clasificación JEL:** Q13.

---



---

<sup>a</sup> *Department of Business Management, Faculty of Economics and Business Studies, University of Almeria*

*Send correspondence to:* Cristina Segovia. E-mail: csegovia@ual.es

*Acknowledgements:* The authors acknowledge the funding received from the Spanish Ministry of Education and Science and European Funds (research project SEJ2007-67125/ECON) to undertake this research.

Recibido en junio de 2009. Aceptado en febrero de 2010.





## 1. Introduction

Product/service, process or organizational innovation is widely recognized as a cumulative process that includes idea generation, idea evaluation and product development, and methods for the best implementation of new ideas. Idea generation is critical to new product development (Troy *et al.*, 2001), but the majority of ideas generated often turn out not to make sense in commercial terms (Stasch *et al.*, 1992). In an attempt to improve the success of the process from new idea generation to commercialization, in order to reduce market failures, firms are continually seeking new sources of ideas and advice.

Understanding the sources of innovations is important for at least two reasons. First, innovations are an important source of increased productivity, and understanding the different factors that cause firms to innovate may lead to greater knowledge about the sources of economic development. Second, innovation can enable firms to gain competitive advantage. Thus, a better understanding of innovation allows for a greater appreciation of the means by which firms gain and sustain competitive advantage. However, the existing typologies of innovation sources rely on classification criteria which are excessively generalist and most of them developed under the consideration of private owned organisations. It complicates the comprehension of the causes and reasons of innovation strategies, making complex their measuring. This is specially emphasized by agrifood cooperatives, because their government systems and operative dynamics notably differ from capitalist organizations. Moreover, cooperative firms are bolstering an entrepreneurial and innovative management and culture (Cook, 1995).

The present paper seeks to shed light on the special structural and operative features of cooperatives demanding a more comprehensive and specific classification of innovation sources. Thus a different proposal of innovation sources is offered. Likewise the contribution of these innovation sources to the organizational performance and to the achievement of competitive advantages is analyzed.

## 2. Configuration of innovation decisions in cooperatives

Research in the field of strategic organizational behaviour, and specifically innovation, together with analysis of variables connected, has almost entirely been developed in the field of private owned organisations (Olson *et al.*, 2005; Hurley and Hult, 1998).

Nevertheless, *the government systems of cooperatives and their operative dynamics* (collective decision making, democratic control of organization) demand special attention. They are alternative forms of business organization, with different government systems, whose managerial decision making is profoundly influenced by their strategic relationship with main stakeholders (i.e., partners, suppliers, and internal customers). Additionally, the configuration of these relationships becomes especially complex by the coexistence inside agrifood cooperatives of members which assume a triple role, as *partners-owners*; as *suppliers* of products commercialized by the cooperative; and as *internal customers*, because they benefit of a range of services offered by cooperative.



Nevertheless, managerial decision making in cooperatives are profoundly influenced by the organizational and structural context in which they are embedded (Kyriakopoulos *et al.*, 2004). In particular, innovation strategic decisions in agrifood cooperatives tend to be focused on the complex inter-organizational relationships between the organization and strategic interests of their stakeholders, and the search of the social well-being of all them, in contrast to tendencies and requirements of consumer markets (driven-market strategies).

### 3. Innovation sources literature review

New product development literature has stressed the significance of various sources of new product ideas (Afuah, 2000; Sorescu *et al.*, 2003; Wuyts *et al.*, 2004). The study of innovation sources is tackled in the literature from different approaches.

There is a “*technology push*” theory that suggests that a new technology that works will sell itself, whereas the “*market pull*” theory’ proposes that only the voice of consumers can determine what the next best product will be (Alam, 2003). A review of the extant literature reveals a multitude of sources that can be categorized as being either *internal* or *external* to the firm (Hooley *et al.*, 2003). For example, research and development departments, venture teams, new product committees, and marketing department reports are considered useful internal sources of new product ideas (Rochford, 1991; Sowrey, 1990; Stasch *et al.*, 1992), while consumers and lead users (Pavia, 1991; Sowrey, 1990; von Hippel, 1986), distributors, suppliers, competitors, and government departments (Stasch *et al.*, 1992) are considered useful external sources.

Additionally, the importance of *interaction with relevant stakeholders* across various stages of innovation activities is reflected in the growing body of interdisciplinary research on this topic. Several researchers have investigated *user/customer* involvement in new industrial product and service development (Alam, 2002; Gruner and Homburg, 2000; Voss, 1985). Likewise, *supplier involvement* has been the subject of intense scrutiny in the literature (Clark, 1989; Ragatz *et al.*, 1997; Wasti and Liker, 1997). Furthermore, involvement of *university faculty and university research centres* in innovation was found to be useful for developing successful new products (Hise *et al.*, 1980; Roberts and Peters, 1982; Santoro and Betts, 2002). Several other literature bases have emphasized the benefits of inter-organizational exchange relationships for the purposes of innovation strategies. For instance, the alliance literature emphasizes the importance of *strategic alliances*, *technology acquisitions*, and *collaborations with competitors* in successful innovations (Kotabe and Swan, 1995; Lambe and Spekman, 1997; Sivadas and Dwyer, 2000).

### 4. Proposal of a classification of innovation sources for agrifood cooperatives

The typologies of innovation sources existing in the literature respond to excessively generalist classification discernments (i.e., internal vs. external, pull vs. push),



just as we have appreciated in the section 3. This generality makes considerably difficult the identification of the origin in organizational innovation activities at individual and specific level, because each category includes diverse and heterogeneous elements. All this complicates the empirical measuring of innovation sources too. The previous considerations acknowledge the incomplete comprehension of means by which firms gain and sustain competitive advantage.

Preceding criticisms argue about the insufficiency of existing classifications on innovation sources for all organizations. However, it is specially stressed for agrifood cooperatives. The operative dynamics of social entities (collective decision making, democratic control of organization, decision making) is profoundly influenced by the conflicting interests between the cooperative and its main stakeholders (i.e., partners, suppliers, and internal customers). It points out the need to identify organization-level factors that could help predict how these firms manage their stakeholder relationships (Freeman, 1984, 1999; Tangpong and Pesek, 2007) and, consequently, their sources of innovation.

As a result from the former, we postulate the need to develop a more comprehensive analysis about the identification and development of innovation sources and origins for all type of organizations, and mainly concerned about the topic this work is dealing with agrifood cooperatives.

## 5. Research setting and data collection

A sample of fruits and vegetables cooperatives was selected as the scenario of our empirical research. The reason to carry out this empirical study on fresh fruits and vegetables cooperatives has been the peculiarities and significance of this sector as well as the importance of the cooperatives which operate in it, both in the European Union and Spain (Guzman and Arcas, 2008). Fruits and vegetables production in Almeria represents approximately 25 per cent of all fruits and vegetables production in Spain (Department of Agriculture, Fishery and Food, 2007). This production model is enhanced in terms of its high productivity (47 per cent more productive than the national mean), and the capacity to generate employment, with 12 millions of annual wages and almost 14,000 employees in the auxiliary industry.

Agricultural sector is the largest part of the cooperative movement globally. It owns over 408 million farm members in the world (800 million individual members in overall), and is organized in more than 568,560 cooperatives (International Cooperative Alliance, 2008). So agricultural cooperatives are currently an important socio-economic phenomenon in terms of the number of companies, but also in terms of the employment they generate and the volume of business they create. Within this setting, Spain has some 4,175 cooperatives, which have a turnover of more than €14,000 million.

The importance of agricultural cooperatives in economic terms and the significance they have gained in rural development justify the growing interest in studying the performance of their innovations (Guzman and Arcas, 2008).





We collected data from 50 large producer cooperatives in the main agricultural production area in Spain (southeast), by means of personal interview with general managers as key informants. The sample was selected with a non-probabilistic procedure, and the survey was elaborated on the basis of different concepts and measurement scales broadly utilized in marketing literature.

The operationalisation of the constructs and the performance measures are detailed in Appendix 1. The performance scale was adapted from Atuahene-Gima (1996) and Weerawardena (2003) to measure the contribution of innovation activities to such broad performance measures as: (i) entering new markets; (ii) increasing the market share; (iii) increasing customer satisfaction; (iv) gaining a higher return on investment; and (v) above-average gross profits. For convenience, the performance scale was reduced to a combination of three self-evaluations (on a five-point Likert-type scale) of: (i) sales; (ii) market share; and (iii) profitability.

## 6. Data analysis and results

In order to develop a brief description of sources of innovation in agrifood cooperatives, it is possible to state that most of the analyzed firms find their innovation sources outside the installations. So the compliance with current legislation and the adaptation to the quality requirements represent the most influential factors on the new knowledge generation, and consequently, on organizational innovations. Likewise, distribution agents' demands and managers' contributions fill an important role too (see Table 1).

TABLE 1  
Sources of innovation in agrifood cooperatives

	Mean (1-5 scale)	S. D.		Mean (1-5 scale)	S. D.
fi1. Top management	3.73	0.915	fe4. Changes in consumers' behaviour	3.58	1.096
fi2. R+D department	2.96	1.313	fe5. Distribution channels' requirements	3.73	0.845
fi3. Marketing department	2.98	1.248	fe6. Cooperation with the distribution sector	3.55	0.901
fi4. Production department	3.66	0.914	fe7. Accomplishment to quality management systems	4.11	0.945
fi5. Discussion groups/ Brainstorming	2.79	1.103	fe8. Cooperation with others firms	3.36	1.131
fe1. Monitoring of technological development	3.16	0.834	fe9. Cooperation with research centres/Universities	2.73	1.321
fe2. Public support programs for innovation	2.87	1.198	fe10. Accomplishment to government legislation	4.24	0.802
fe3. Competitive situation	3.64	0.967	Fe11. Fairs, exhibitions, meetings	3.18	1.007

Source: Own elaboration.



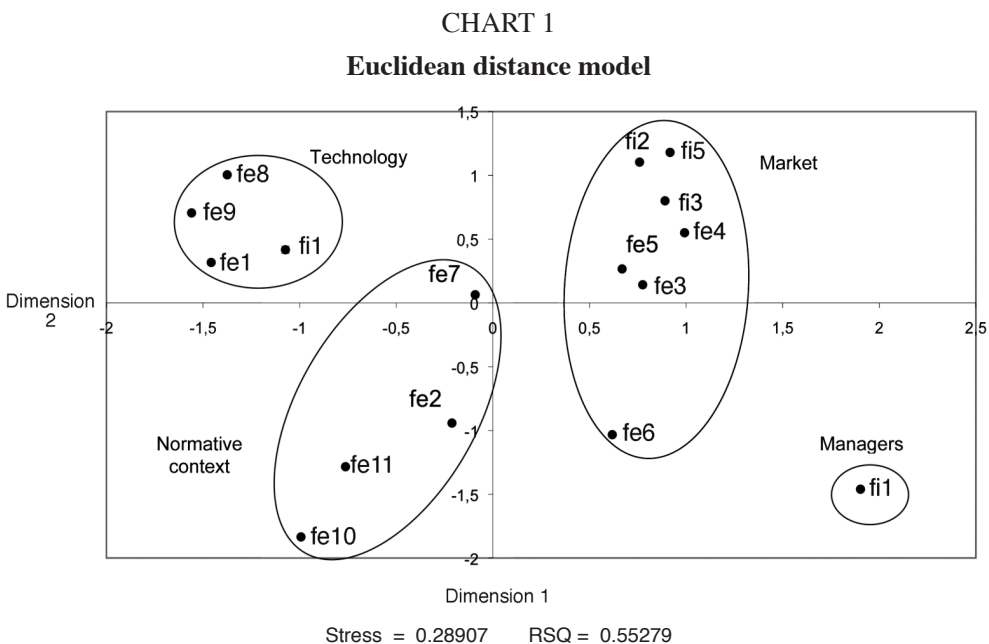


To explore the perceptions which are considered as underlying structures within a set of preferences about sources of innovation, Multidimensional Scaling (MDS) has been developed. MDS helps us make observable processes or constructs that may determine the sources of the innovation activities. MDS is useful as it can produce a visual geometrical representation of subjective constructs or dimensions that would otherwise be hidden within the data. It assumes that geometric space is equal to psychological space (Ferguson and Kerrin, 1997). It provides a visual representation deemed a perception map on which objects that are close together and deemed similar or close together in terms of preference. In MDS the focus is not on the objects themselves, but on how they are perceived or interpreted. The challenge is to understand the subjective dimensions along which items are placed and then related these to objective judgements. This in turn should help to predict behaviour with respect to innovation activities.

The first task in MDS is to identify the relevant issues that pertain to a particular object. In this paper it has been devised through survey work. In this sense, firms were asked to evaluate the origin of their innovations using a five-point Likert scale from strongly disagree to strongly agree. These items included several sources of innovation, both internal and external to the organization. The responses were aggregated and then evaluated to create similarity measures between the attributes. The proximities and ALSCAL routines within SPSS created distances from the ordinal data based on an Euclidean scaling model of two dimensions. Group plots of the aggregated data were produced, the so-called “perception maps” which placed the different sources in geometric space along two dimensions.

Group plots, s-stress statistics and RSQ values are displayed in Chart 1. The position of the attributes relative to each others reflects either their similarity or dissimilarity in terms of firms’ evaluations. Descriptive analysis alone of the sources of innovations would not allow for such links to be identified nor would it allow for the relative positions of the attributes to be identified.

In general, *dimension 1* points out the management orientation of change: *strategic orientation* (the change being encouraged by top management or promoted by the need for satisfying markets’ demands in a better way) or *technical/legal orientation* (the change being advocated by technical and regulative requirements). *Dimension 2* determines the source type of strength motivating the change and innovation process: an *internal source* (managers, and somehow it includes normative exigencies which the organization may appropriate them, i.e., product healthiness –these normative constraints so often taken for granted, are able to become part of the internal exigencies of the own organization. As a consequence, they stop being considered as external impositions and start being part of the internal necessary routines and practices for the acceptance of agrifood products in consumption markets. In this sense, the compliance with current legislation and public support programs do not represent external incentives to innovation but are a legal imperative–; or an *external source*, driven by technological developments and changing demands of consumers (technology, market). Therefore, it is necessary to remind that agrifood cooperatives try to incorporate technological advances developed by agricultural investigation institutions in their labours of production, manipulation, storage and transport of products,



Source: Own elaboration.

in order to sustain their competitive survival, although the main purpose of these organizations is not the technological development.

According to the obtained group plots, it is possible to identify four differentiated groups, which respond to four main innovation sources based on a management and innovation literature review:

#### A. *Managers.*

Many studies in the literature point out the relevance of perceptions and consciousness of managers on innovation processes (Kim and Mauborgne, 1999; Sutcliffe and Huber, 1998; Hage and Dewar, 1973). So we should consider their interests and opinions related to the different innovation types, meaning and priority of innovation activities, wished results from innovations, ways of implementation, etc. (Sharma, 1999; Kuczmarski, 1996).

#### B. *Technology.*

Technological change is a major competitive force with important strategic implication for individual organizations (Porter, 1983). Technological resources, on the one hand, could be developed by firms themselves through in-house activities, while on the other hand, technology could be externally originated and acquired by firms (García and Burns, 1999). Within these two extremes, however, there is a wide range of intermediate options.



### C. Market.

In an increasingly competitive environment coupled with rapid changes in consumer demands, major sources of new ideas include user input and feedback on existing products, scanning competitors' product strategies and emerging consumer trends. The ongoing search for product improvement from consumer perceptions and measures to enhance manufacturing efficiency and product or service delivery can also themselves lead to successful line extensions (Katz, 1993). The needs and ideas of *suppliers, competitors and customers* all need to be considered.

### D. Normative context.

Other *external environmental factors*, including economic, regulatory, social, political and ecological variables can also provide sources of novel ideas (Connell *et al.*, 2001). The *regulatory environment* may, for example, provide opportunities for customized products to meet regulatory requirements in areas such as pollution and emission control, or indicate the need for new services to assist businesses to meet regulatory requirements.

Then we proceeded to analyze the contribution of the four identified innovation sources to the achievement and sustainability of competitive advantage. So we calculated the means of the different items configuring each one of the four main innovation sources, according to the results being showed by MDS. Later we realized a correlation analysis between the mentioned means and the competitive advantage items.

According to this analysis, we can state some considerations (see Table 2) with regard to the contribution of different innovation sources to the achievement and sustainability of competitive advantage.

All innovation sources contribute to the *increased consumer satisfaction*. This is clear because of the heterogeneity of factors determining the satisfaction of consumers' needs and exigencies. The normative context constitutes a facilitator element to *new markets access*, because it identifies the minimal demanded requirements related to compliance with current legislation, quality requirements, etc. The assimilation and incorporation of these normative requirements assurance the achievement of a minimal guarantee and consequently, the possibility to benefit from *gross profits higher than competitors*. Market and technological sources provide a superior economic profitability, because they directly response to the efforts from R+D, production and marketing departments. So they try to add the last modern technologies in the products/process, through the vigilance process and cooperation with others firms, distributors, consumers, or research centres.. Nevertheless, results show the notable influence of political character in agrifood cooperatives (and as a consequence, the managers' discretionarily to impose their own preferences) and the tight legislation which regulates them exert on their market share.

Table 3 shows that it is precisely the normative context which achieves the greatest contribution to the organizational performance. So the normative context represents a key element to the appropriate comprehension of inter and intra organizational structures (Park and Krishnan, 2003).



TABLE 2

**Relationship between sources of innovation and competitive advantage  
(correlations analysis)**

Competitive advantage	Innovation source			
	Managers	Technology	Normative context	Market
Entering new markets	0.204	0.161	0.361(**)	0.105
Increased market share	0.275(*)	0.025	0.265(*)	0.222(*)
Increased customer satisfaction	0.282(*)	0.358(**)	0.357(**)	0.448(***)
Gain a higher return on investments (ROI)	0.117	0.288(*)	0.239(*)	0.303(**)
Gross profits higher than industry average	0.127	0.201	0.295(**)	0.247(*)

\* P &lt; .10; \*\* P &lt; .05; \*\*\* P &lt; .01

Source: Own elaboration.

TABLE 3

**Relationship between sources of innovation and performance  
(correlations analysis)**

Performance	Innovation source			
	Managers	Technology	Normative context	Market
Sales	0.023	0.199	0.363(***)	0.099
Market share	0.046	0.211(*)	0.336(**)	0.241(*)
Profitability	0.005	0.143	0.315(**)	0.095

\*P &lt; .10; \*\*P &lt; .05; \*\*\*P &lt; .01.

Source: Own elaboration.

## 7. Conclusions

Firms interact with many outside organizations (i.e., customers, suppliers, competitors, universities) and inside agents (i.e., managers, employees) to obtain input for their new product/process development programs. The value of each source depends on the firms' existing stock of knowledge and their ability to access, absorb and exploit new ideas (Rosegger, 1996). Yet, given the growing complexity and risks in new product development, there seems to be a need for managers to obtain a more comprehensive view from all these innovation sources.

However, the existing typologies of innovation sources, which turn out excessively generalist and consequently provide insufficient arguments, rely on privately-owned organisations considerations. These present radical differences in their government systems of social entities and operative dynamics with regard to social entities. Managerial decision in social organizations is profoundly influenced by their strategic relationship with main stakeholders and the coexistence inside the firm of

members which assume a triple role, as partners-owners, as suppliers, and as internal customers. The special configuration of agrifood cooperatives demands a more specific and comprehensive classification of organizational innovation sources.

For that reason, we tried to identify the main innovation sources in agrifood cooperatives, obtaining a classification based on four central innovation sources (managers, technology, market and normative context). Nevertheless, the obtained findings reveal that these innovation sources are a priori neither exclusive innovation sources for agrifood cooperatives nor restricted for this type of organizations. So they are able to be considered for any other investor owned firms too.

In any case, in the context of analyzed agrifood cooperatives, it is precisely the normative context the most outstanding source, providing the most contribution to the organizational performance. Regulatory, social and political pressures and the need for meeting these demands constitute the main drivers of organizational strategies and decisions in agrifood cooperatives. These factors are placed in an outstanding position in front of the managers, the technological evolution and the preferences and requirements of the competitors and customers which configure the markets. So where is positioned the innovation?

The results suggest that in the specific context of agrifood cooperatives, innovations do not respond to the initiatives taken from marketing and R+D departments. They do not respond either to the requirements or to the demand requirements. Innovations in agrifood cooperatives are rather mostly driven by normative constraints and legal regulations of the industry, and less by internal organizational decisions. As a result, we can postulate that these organizations, because of their special features, take action rather in a passive way to innovate. In this sense, agrifood cooperatives leave exploration activities in a second place, since exploration strategies imply defiant changes and promote more radical innovations (Kyriakopoulos and Moorman, 2004).

This paper strengthens the emergence of an innovation approach considering structural, organizational, social, institutional, cultural and political dimensions next together with the technological dimension. It increases the value of social and relational capital in organizational innovation processes.

## References

- Afuah, A. (2000). "How much do your co-opetitors' capabilities matter in the face of technological change?" *Strategic Management Journal*, 21(3):387-404.
- Alam, I. (2002). "An exploratory investigation of user involvement in new service development". *Journal of the Academy of Marketing Science*, 30(3):250-261.
- Alam, I. (2003). "Commercial innovations from consulting engineering firms: An empirical exploration of a novel source of new product ideas". *Journal of Product Innovation Management*, 20(4):300-313.
- Atuahene-Gima, K. (1996). "Market orientation and innovation". *Journal of Business Research*, 35(2):93-103.
- Clark, K.B. (1989). "Project scope and project performance: The effects of parts strategy and supplier involvement on product development". *Management Science*, 35(10):124-163.



- Connell, J., Edgar, G.C., Olex, B., Scholl, R., Shulman, T. and Tietjen, R. (2001). "Troubling successes and good failures: Successful new product development requires five critical factors". *Engineering Management Journal*, 13(4):35-39.
- Cook, M.L. (1995). "The future of U.S. agricultural cooperatives: A neo-institutional approach". *American Journal of Agricultural Economics*, 77(December 1995):1153-1159.
- Department of Agriculture, Fishery and Food (2007). <http://www.marm.es>. Last access, November, 2008.
- Ferguson, E. and Kerrin, M. (1997). "The use of multidimensional scaling: A cognitive mapping technique in occupational settings". *Journal of Managerial Psychology*, 12(3):204-214.
- Freeman, R.E. (1984). *Strategic management: A stakeholder approach*. Pitman, Boston.
- Freeman, R.E. (1999). "Divergent stakeholder theory". *Academy of Management Review*, 24(2):233-236.
- Garcia, M. and Burns, J. (1999). "Sources of technological development in the Spanish food and drink industry. A 'supplier-dominated' industry?". *Agribusiness*, 15(4):431-448.
- General Confederation of Agricultural Cooperatives in the European Union (2008). <http://www.copa-cogeca.be>. Last access, November, 2008.
- Gruner, K.E. and Homburg, C. (2000). "Does customer interaction enhance new product success?". *Journal of Business Research*, 49(1):1-14.
- Guzman, I. and Arcas, N. (2008). "The usefulness of accounting information in the measurement of technical efficiency in agricultural cooperatives", *Annals of Public and Cooperative Economics*, 79(1):107-131.
- Hage J. and Dewar, R. (1973). "Elite values versus organizational structure in predicting innovation". *Administrative Science Quarterly*, 18:279-290.
- Hise, R.T., Futrell, C. and Snyder, D. (1980). "University research centers as a new product development resource". *Research Management*, 23(3):25-28.
- Hooley, G., Saunders, J. and Piercy, N. (2003). *Marketing Strategy and Competitive Positioning* (3 Ed.). Prentice Hall, Financial Times.
- Hurley, R.F. and Hult, T.M. (1998). "Innovation, market orientation, and organizational learning: An integration and empirical examination". *Journal of Marketing*, 62:42-54.
- International Cooperative Alliance (2008). <http://www.ica.coop/coop/index.html>. Last access, November, 2008.
- Katz, P.H. (1993). "Scoring big in product development: Four steps to building a strong team for quick successful launches". *Food Processing*, 54(11):53-57.
- Kim, C.W. and Mauborgne, R. (1999). "Strategy, value innovation and the knowledge economy". *Sloan Management Review*, 40(3):41-54.
- Kotabe, M. and Swan, K.S. (1995). "The role of strategic alliances in high-technology new product development". *Strategic Management Journal*, 16(8):621-636.
- Kuczarski, T.D. (1996). "What is innovation? The art of welcoming risk". *Journal of Consumer Marketing*, 13(5):7-11.
- Kyriakopoulos, K. and Moorman, C. (2004). "Tradeoffs in Marketing Exploitation and Exploration Strategies: The Overlooked Role of Market Orientation". *International Journal of Research in Marketing*, 21(3):219-240.
- Kyriakopoulos, K., Meulenbergh, M. and Nilsson, J. (2004). "The impact of cooperative structure and firm culture on market orientation and performance". *Agribusiness*, 20(4):379-396.
- Lambe, C.J. and Spekman, R.E. (1997). "Alliances, external technology acquisition, and discontinuous technological change". *Journal of Product Innovation Management*, 14(2):102-116.
- Olson, E.M., Slater, S.F. and Hult, T.M. (2005). "The performance implications of fit among business strategy, marketing organization structure and strategic behaviour". *Journal of Marketing*, 69(3):49-65.



- Park, D. and Krishnan, H.A. (2003). "Understanding the stability-change paradox: Insights from the evolutionary, adaptation, and institutionalization perspectives". *International Journal of Management*, 20(3):265-270.
- Pavia, T.M. (1991). "The early stages of new product development in entrepreneurial high-tech firms". *Journal of Product Innovation Management*, 8(1):18-31.
- Porter, M. (1983). "The technological dimension of competition strategy". *Research on Technological Innovation Management and Policy*, 1:1-33.
- Ragatz, G.L., Handfield, R.B. and Scannell, T.V. (1997). "Success factors for integrating suppliers into new product development". *Journal of Product Innovation Management*, 14(3):109-202.
- Roberts, E.B. and Peters, D.H. (1982). "Commercial innovation from university faculty". *Research Management*, 25(3):24-30.
- Rochford, L. (1991). "Generating and screening new product ideas". *Industrial Marketing Management*, 20 (4):287-296.
- Rosegger, G. (1996). "Firms' information sources and the technology life cycle". *International Journal of Technology Management*, 12(5-6):704-716.
- Santoro, M.D. and Betts, S.C. (2002). "Making Industry-University Partnerships Work". *Research Technology Management*, 45(3):42-46.
- Sharma, A. (1999). "Central dilemmas of managing innovation in large firms". *California Management Review*, 41(3):146-164.
- Shaw, B. (1985). "The Role of the Interaction between the User and the Manufacturer in Medical Equipment Innovation". *R&D Management*, 15(4):283-292.
- Sivadas, E. and Dwyer, R.F. (2000). "An examination of organizational factors influencing new product success in internal and alliance-based processes". *Journal of Marketing*, 64(1):31-49.
- Sorescu, A.B., Chandy, R.K. and Prabhu, J.C. (2003). "Sources and financial consequences of radical innovation: Insights from pharmaceuticals". *Journal of Marketing*, 67(4):82-102.
- Sowrey, T. (1990). "Idea generation: Identifying the most useful techniques". *European Journal of Marketing*, 24(5):20-29.
- Stasch, S.F., Lonsdale, R.T. and La Venka, N.M. (1992). "Developing a Framework for Sources of New Product Ideas". *Journal of Consumer Marketing*, 9(2):5-15.
- Sutcliffe, K.M. and Huber, G.P. (1998). "Firm and industry as determinants of executive perspectives of the environment". *Strategic Management Journal*, 19(8):793-807.
- Tangpong, C. and Pesek, J.G. (2007). "Shareholder value ideology, reciprocity and decision making in moral dilemmas". *Journal of Managerial Issues*, 19(3):379-396.
- Troy, L.C., Szymanski, D.M. and Varadarajan, R.P. (2001). "Generating new product ideas: An initial investigation of the role of market information and organizational characteristics". *Academy of Marketing Science*, 29(1):89-101.
- Von Hippel, E. (1986). "Lead Users: A Source of Novel Product Concepts". *Management Science*, 32(7):791-805.
- Voss, C.A. (1985). "The Role of Users in the Development of Application Software". *Journal of Product Innovation Management*, 2(2):113-121.
- Wasti, S.N. and Liker, J.K. (1997). "Risky business or competitive power? Supplier involvement in Japanese product design". *Journal of Product Innovation Management*, 14(5):337-355.
- Weerawardena, J. (2003). "The role of marketing capability in innovation-based competitive strategy". *Journal of Strategic Marketing*, 11(1):15-35.
- Wuyts, S., Dutta, S. and Stremersch, S. (2004). "Portfolios of interfirm agreements in technology-intensive markets: Consequences for innovation and profitability". *Journal of Marketing*, 68(2):88-100.



## Appendix 1

### Survey: Measures and operationalisations

We would like to know the importance that the following sources of technological development have on the innovations taken place in your organization:

#### INNOVATION SOURCES

	Not at all			A great deal	
Top management	1	2	3	4	5
R+D department	1	2	3	4	5
Marketing department	1	2	3	4	5
Production department	1	2	3	4	5
Discussion groups/ Brainstorming	1	2	3	4	5
Monitoring of technological development	1	2	3	4	5
Public support programs for innovation	1	2	3	4	5
Competitive situation	1	2	3	4	5
Changes in consumers' behaviour	1	2	3	4	5
Distribution channels' requirements	1	2	3	4	5
Cooperation with the distribution sector	1	2	3	4	5
Accomplishment to quality management systems	1	2	3	4	5
Cooperation with others firms	1	2	3	4	5
Cooperation with research centres/Universities	1	2	3	4	5
Accomplishment to government legislation	1	2	3	4	5
Fairs, exhibitions, meetings	1	2	3	4	5

Source: Adapted from García and Burns (1999).

To what extent innovation activities have facilitated to your organization achieving the following competitive advantages with regard to your competitors?

#### PERFORMANCE

	Not at all			A great deal	
1. Entering new markets	1	2	3	4	5
2. Increased market share	1	2	3	4	5
3. Increased customer satisfaction	1	2	3	4	5
4. Gain a higher return on investments (ROI)	1	2	3	4	5
5. Gross profits higher than industry average	1	2	3	4	5
	Not at all			A great deal	
A. Sales	1	2	3	4	5
B. Market share	1	2	3	4	5
C. Profitability	1	2	3	4	5

