Effects of shared vision and integrations on entrepreneurial performance

Empirical analyses of 246 new Chinese ventures

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Abstract

Purpose – This paper aims to examine the possible benefits and effects of shared vision and integration on entrepreneurial management for new Chinese ventures. By examining new enterprises, rather than already established and operating firms, this study can better demonstrate the impact of shared vision and internal or external integration on entrepreneurial performance. The empirical analyses demonstrate the importance of shared vision and both types of integration for new ventures, particularly enterprises in China.

Design/methodology/approach – This study collected data from firms in Greater China, including China, Taiwan and Hong Kong. Five hypotheses were tested, for which the total sample size was 246 respondents. Confirmatory factor analysis and structural equation modeling were applied for statistical analyses.

Findings – The results indicate that entrepreneurial vision correlates positively with shared vision. In its turn, shared vision correlates positively with internal integration and external integration. Furthermore, internal integration correlates positively with entrepreneurial performance. Although external integration is essential during new enterprise establishment, analytical results indicate that external integration is not strongly correlated with entrepreneurial performance.

Practical implications – Shared vision plays a critical role in the integration process during the establishment of new enterprises. The results of this study show that newly established firms need to put more efforts than do operating firms into integrating external resources.

Originality – /**value** This study contributes to a better understanding of the effects of shared vision and the different kinds of integration on entrepreneurial management. Knowing the driving forces behind these phenomena may help new firms to engage more actively in resources integration and enhance their entrepreneurial performance.

Keywords Shared vision, Integration, Entrepreneurial performance, Entrepreneurial management, Entrepreneurial vision

Paper type Research paper

Introduction

China is one of the world's most ancient civilizations, with a 5,000-year written history. As a consequence, contemporary Chinese and international managerial practices are influenced by the ideas of China's early rulers, philosophers and military strategists. Compared with already established and operating firms, does shared vision help or hurt operating performance in newly established firms? An entrepreneur that is concerned

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only with their own vision and management philosophy, who ignores sharing and effective communication with others, can be considered as dictatorial. Eventually, the achievements of new ventures may be limited by such an entrepreneur's personal capabilities or the limitations of their previous work experience (Smits and Kok, 2012; Langerak *et al.*, 2004; Leenders and Wierenga, 2002). By contrast, if the new firm relies for its vision on varied sources, business operations may eventually become inefficient, causing the firm to lose its competitive advantage (Chen and Tjosvold, 2012; Baron and Shane, 2008; Robbins and Coulter, 2012; Li *et al.*, 2011a, 2011b). Previous studies indicate that both leadership management styles can lead to optimal performance or inefficiency. How does the newly established enterprise team determine whether to comply fully with the vision of the founding entrepreneur or pursue a policy of vision-sharing among team members? Which kind of leadership – that is, shared vision or rigid administration – best enhances entrepreneurial performance? These questions have long been of interest as both academic inquiries and practical applications.

The management concept of shared vision and integration has been adopted widely in China since ancient times. To a new venture, a harmonic working environment is particularly important for creating team synergies, both internal and external. According to Confucius, harmony comprises three dimensions: "coordination, cooperation and good inter-personal relationships" (Kong and Zhang, 2011). On the basis of this argument, good coordination and cooperation requires a shared team vision, whereas organizing all team members so they get along requires good integration. Mencius (372-280BC), a Chinese philosopher and sage, extended Confucius's argument by proclaiming, "Work with one heart; fight as one man". The idea of harmony has been expanded considerably in human and even in business relationships (Xi *et al.*, 2010; Kong and Zhang, 2011). Another important Chinese book is the *I Ching*, a Chinese philosophical work that also addresses the fundamentals of management theory and has practical implications for shared vision and integration (Lu *et al.*, 2011). The examples stated above demonstrate the importance placed on management in Chinese culture, and these traditions broadly affect Chinese business administration and its practitioners' attitudes toward shared common visions and the different modes of integration.

Vision and shared vision have been practiced in traditional Chinese families and society for thousands of years (Li *et al.*, 2011a, 2011b; Hill, 2006). Chinese management philosophy stresses harmony and sharing. As a traditional Chinese proverb goes: "a group has tremendous power when united". Entrepreneurs establishing new firms must share their visions with their team. Furthermore, it is necessary for them to share these visions with coworkers to establish cooperation and synergies between all team members. Modern marketing management requires that a product vision be communicated effectively with suppliers and that product information and advantages be delivered to customers accurately and rapidly. For firms, the sharing of a vision is important both internally and externally, and this is particularly so for new firms.

Obtaining adequate financial, physical and human capital from external sources is a vital and challenging entrepreneurial task, especially for start-ups (Martens *et al.*, 2007; Mai and Gan, 2007). The optimal integration of these resources is largely recognized as a critical factor in achieving high business performance. This goal will not likely be achieved without all involved parties sharing a vision; in such environments, staff

members have difficulty understanding the entrepreneurs' strategies and team members cannot communicate with each other effectively. Obviously, these kinds of new organization are likely to be inefficient.

Generally, management by decree increases performance in the short term, as administrative orders integrate resources. Employees are requested to implement orders without giving feedback. Under such circumstances, the integration of implicit knowledge is not a priority, indicating that knowledge management is not prioritized. Conversely, resources internalized by means of a shared vision are prioritized. This situation mixes willingness to adopt a shared vision with administrative decree; however, in such a case, shared vision is prioritized. Willingness to adopt a shared vision originates from the desire to improve business performance and is derived from a vision that is co-opted voluntarily. The achievement of a shared vision grows out of willingness and voluntariness, both of which are difficult to realize by means of mandatory decrees. A new venture that internalizes resources through a shared vision can achieve better performance and higher customer satisfaction, whereas the performance of a new venture managed by administrative decree is inhibited.

As illustrated in Figure 1 below, during the early stages of a new venture, under the guidance of the overall strategy and a shared vision, an entrepreneur should define an integration mechanism to create synergies from external and internal resources as well as to increase corporate competitive advantages, both of which would improve entrepreneurial performance.

The relationships among entrepreneurial vision, shared vision, the differing kinds of integration and their impacts on entrepreneurial performance have long been of interest to researchers studying entrepreneurial management (Simon and Shrader, 2012; Zahra and Nambisan, 2012; Smits and Kok, 2012; Waldman and Javidan, 2009; Pang *et al.*, 2011). Although previous studies have shown that shared vision benefits business performance (Beckman, 2006; Zheng, 2012; Tessarolo, 2007), the mechanisms underlying this effect remain under-examined. Without a clear understanding of the underlying mechanisms, the "shared vision effect" found previously is subject to alternative explanations, and the application for managers is limited (Foss, 2011). This study aims to bridge this gap by taking an entrepreneurial performance perspective.

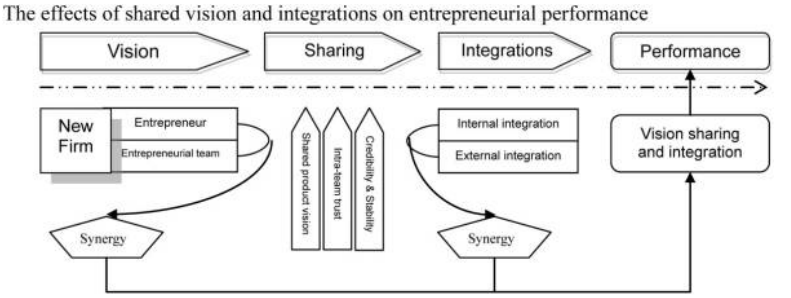


Figure 1.
The effects of SV and integrations on entrepreneurial performance

Research subjects

This study proposes a broader investigation of entrepreneurship management, which includes entrepreneurial shared vision and external/internal integration. To provide detailed insights into these issues, this study focuses on the influence of entrepreneurial shared vision on the outcome variables, namely, entrepreneurial performances, mediated by shared vision and integrations. This study makes four specific contributions by analyzing the following issues:

(1) This study examines how entrepreneurial vision is related to shared vision during the establishment of new enterprises.

(2) The study investigates whether team members should prioritize shared vision or entrepreneurial vision during resources integration. It also examines whether shared vision correlates positively with integration during the establishment of a new enterprise.

(3) To understand how integration affects entrepreneurial performances, we extend the literature on integration and the effects of entrepreneurial performances by demonstrating how two types of integration, namely, internal and external, influence entrepreneurial performances (Stephen and Coote, 2007; Kounetas *et al.*, 2009; Marsh and Stock, 2003).

(4) Finally, while previous research has clarified the importance of shared vision for firm integration, the importance of this factor in the context of newly established enterprises is also unclear (Damanpour *et al.*, 2012). Therefore, this paper seeks insights into the mediating effects of shared vision on organization integration, specifically from the internal and external perspectives.

Theory and hypotheses

In today's dynamic global markets, entrepreneurs must increasingly contend with competition; in this environment of keen competition, entrepreneurs are frequently required to make decisions under conditions of high uncertainty. Compared with firms already operating, new enterprises face growing challenges and must expend additional effort to achieve high performance. Whereas leading economic theories focus almost exclusively on individual decision-makers, such as entrepreneurs, few studies have focused on team members (Harper, 2008). The present environment makes it very difficult for entrepreneurs to rely solely on their previous work experience, expertise and educational background. Rather than relying solely on personal contributions, the encouragement of teamwork is gradually being recognized as the most important attitude at work. Drawing on insights from entrepreneurial vision-sharing, this study examines how integration mediates the relationship between shared vision and entrepreneurial performance during the establishment of a new organization.

Entrepreneurial vision and shared vision

The classical definition of an entrepreneur is that of the founder of a new venture, and an individual with an idea for an organization, who transforms that idea into reality. A successful entrepreneur not only creates a vision but also defines and communicates that vision to their team. In short, an entrepreneur creates a vision for their business to guide the team (Barringer and Ireland, 2010). The main characteristics of entrepreneurs

include risk-taking, the desire for achievement and autonomy, self-efficacy and having a *locus* of control (Li *et al.*, 2011a, 2011b; Lee and Venkataraman, 2006; Mair and Marti, 2006; Vecchio, 2003). The literature on entrepreneurial vision generally focuses on its importance to a venture's creation and growth and the ways in which an entrepreneur's visions differ from those of their executives (Baum and Locke, 2004; Ensley *et al.*, 2003; Kirkpatrick *et al.*, 2002). Entrepreneurial vision is a multidimensional construct that incorporates the following factors:

- the communicative;
- the inspirational;
- the realistic;
- the flexible; and
- the conservative and formalized (Ruvio *et al.*, 2010).

Entrepreneurial vision is the first stage of the venture; once the venture is launched, it will be transformed into a full-fledged strategic orientation for the enterprise. Given that at the beginning of the entrepreneurial process entrepreneurs represent their ventures themselves, they may be more likely to envision the organization strategically as an extension of their own needs. Because it originates from the entrepreneur's intuitive and holistic thinking, entrepreneurial vision bridges the current situation and the future state (Ensley *et al.*, 2000).

Entrepreneurial vision enables entrepreneurs to identify a need in the marketplace and develop concepts that result in the establishment of new organizations. Several studies have observed that entrepreneurial vision influences the early success of an endeavor profoundly. A clear vision can encourage a shared sense of purpose among the founding team. Thus, initial organizational culture, practices and policies can motivate employees, suppliers, customers and investors, and it can influence strategy and, ultimately, growth (Brush, 2008). Additionally, theoretical developments related to entrepreneurial vision encapsulate the temporal and behavioral nature of entrepreneurship together with business strategy dynamics (Jones and Coviello, 2005). The studies above conceive of entrepreneurial vision as an entrepreneurial activity that concerns the proactive formation of strategic networks and goals, enabling firms to develop interfirm and intra-firm relationships among entrepreneurial team members and potential business partners. Entrepreneurial vision is essential to entrepreneurial competence. As discussed above, this study argues that entrepreneurial vision is a future-oriented image of a new enterprise that is used to motivate entrepreneurs, employees and investors to move toward a desirable future, as part of a profitable and sustainable enterprise.

From the societal or imperial perspective of ancient China, Confucianism, Taoism and Fa-jia are the main schools of Chinese administrative philosophy, which have strongly influenced the administrative style of Chinese Governments and influenced the country's social order. From the familial perspective, Jia-Xun (家训) provides important disciplines or rules for all family members. Moreover, at the individual level, most Chinese personal relationships emphasize the importance of friendship. Jia-Xun can be a very important symbol, a normal text or a spiritual asset for all families. It refers to the traditional injunctions that a family passes from generation to generation, which describe the family's vision and disciplinary boundaries, and all family members are

expected to share and obey. Thus, Jia-Xun emphasizes love, respect, unity and vision-sharing (Li *et al.*, 2011a, 2011b).

Vision is about the long view. It concerns where you see your venture in the future; so, shared vision and joint teamwork impact integration significantly (Brush *et al.*, 2008). Tessarolo (2007) stressed the importance of shared vision for integration and presented it as a mediating variable. Post-merger and post-acquisition, if the staff of a targeted firm feels the acquiring firm has a clear picture of a common goal, they are likely to maintain a positive working attitude because they anticipate prosperity and success in the near future (Damanpour *et al.*, 2012; Lodorfos and Boateng, 2006). Some scholars have also noted the importance of a clear vision to achieve superior business performance and have also noted the lack of research on this topic (Hamel and Prahalad, 1996; Marcum and Blair, 2011). Effective vision requires three components. It must be:

(1) clear;

(2) stable; and

(3) supported by others in the organization.

Tessarolo (2007) argued that to reach the level of coordination necessary to process information effectively and efficiently, while aligning functional perspectives with developmental goals, requires those involved to share a strong vision. Lynna and Akgünb (2001) portrayed vision as the meshing of clarity, support and stability during product development. Berson *et al.* (2001) defined a vision statement as an inspirational message to followers that expresses optimism about the future and confidence in overcoming future challenges and exploiting future opportunities. Vision is also personal, and involves the career, life-stage, personal circumstances and various other characteristics of an individual. Vision highlights intrinsic needs and connects them to core organizational values. Pioneering entrepreneurs require a concise vision that is easily communicated.

Successful entrepreneurs develop a vision of where they want their businesses to be and rely on that vision for guidance. A clear vision can create a common purpose for the founding team. It sets the initial culture, practices and policies of the organization; it motivates employees, suppliers, customers and investors; and it influences strategy and, ultimately, growth (Brush, 2008). Entrepreneurial management enables entrepreneurs to create a link between the internal and external environments by accessing and integrating key transorganizational strategic resources and know-how (Sarkar *et al.*, 2001; Khalid and Larimo, 2012). As discussed above, this study considers shared vision to be the ability of an entrepreneur and entrepreneurial team member to define objectives clearly during the establishment of a new enterprise and to share these objectives and strategies voluntarily with all those involved in entrepreneurial management. Elenkov *et al.* (2005) and some others in the literature argue that entrepreneurial vision results from the intuitive and holistic thinking of an entrepreneur. By their reckoning, to bridge the current situation and future state, this expectation needs entrepreneurial team members to share the main idea and to go on to realize and achieve that idea to avoid all efforts being in vain. Entrepreneurial vision can consolidate consensus among team members, increase mutual trust and enable voluntary sharing among entrepreneurial team members. Therefore, this study chooses new enterprises as the subject for proposing the following hypothesis:

H1. During new enterprise establishment, entrepreneurial vision correlates positively with shared vision.

Internal and external integration

In modern business management, integration is achieved by uniting the efforts of various subsystems to accomplish organizational tasks (Burgers *et al.*, 2009; Lawrence and Lorsch, 1967), and it is reflective of specific mechanisms through which organizational units are coordinated and helped to work together. Additionally, Wang and Krakover (2008) noted that integration describes a state of shared vision, mutual goal commitments, collaborative behaviors and promotion of common strategies. Integration not only involves the integration of external resources but also the effective integration of these external resources and core competences with the existing resources of different organizations. A well-organized integration management team provides clear targets and directions to help all members achieve common goals. Kohles *et al.* (2012) defined vision integration as the degree to which followers use the vision offered as a guiding framework to understand the uncertainties inherent in daily organizational life. Their empirical analysis supports the notion that vision integration was significantly and positively associated with organizational commitment, job satisfaction and follower performance. Integration is the most important measure and skill for business management, and it affects the efficiency of resource allocation and the synergies among organizational collaboration both internally and externally.

Generally, low integration is associated with reduced growth and profitability (Stephen and Coote, 2007; Kounetas *et al.*, 2009; Liu and Wei, 2013). Integration can be classified broadly into internal and external integration (Parente *et al.*, 2011; Johnson and Filippini, 2013; Giovanni, 2012). Internal integration includes the integration of engineering, manufacturing designs, standardization, computer-aided design and computer-aided manufacturing. External integration represents the integration of supplier partnerships, supplier development and customer relationships. The strategic approach to external integration sets its general direction. Internal organizations with specific market knowledge must coordinate and communicate with external parties, such as customers and suppliers, to involve them in product design. When there is proper supplier chain integration, external resources frequently become internal resources. External and internal integrations, whether in strategic goals or the integration of function-level resources, are closely correlated. External integration stresses strategic design integration, whereas internal integration focuses on design-process integration.

Shared vision and integration

Shared vision provides clarity regarding directions, goals and objectives for product development within a team (Crawford and Di Benedetto, 2003). Inadequate information processing during the development process may, in its turn, affect process efficiency negatively, through schedule delays, for example (Clark and Fujimoto, 1991). Shared vision serves as the fit between an organization strategy and the needs of the market to create an effective product concept (Brown and Eisenhardt, 1995). Many studies argue for shared vision's importance to successful entrepreneurial management (Ruvio *et al.*, 2010; Avolio *et al.*, 2004; Zheng, 2012). Furthermore, Lynna and Akgünb (2001) define vision in product development as the meshing of clarity (i.e. the existence of very specific goals that provide the team with directions), support (i.e. the sharing and support of

goals and objectives within teams) and stability (i.e. the consistency of objectives over time). Previous research has documented the importance of integration to the effective application of internal resources and its efficiency in new product development (Fain *et al.*, 2011). Furthermore, businesses that remain competitive must not only examine their internal operations but must also communicate and coordinate with all players in their supply chain network (Choy *et al.*, 2004; Rouziès *et al.*, 2005). These studies emphasize the importance of integration mechanisms for reducing intra-organizational conflicts and achieving interdepartmental integration.

Reviews of the related literature have shown extensive research on resources integrations in ancient Chinese management, which demonstrate the importance and value of integration and unity in ancient China. Guanzi (728-645BC), Prime Minister to the King of Qi for 40 years in the spring and autumn periods, saw each individual as a drop of water, together forming a great ocean. Like water, people can either carry or sink a boat easily enough (载舟覆舟). Xunzi (313-238BC) observed that people are weaker than cattle and slower than horses, but nevertheless can use cattle and horses for their own purposes. Why? Because people can unite and integrate diverse resources, while animals do not understand the power of unity and integration. Sun Tzu, who wrote the famous military handbook *The Art of War* 2,500 years ago, believed that military victory depended on careful manipulation of place, time and people (Foo, 2008). The aforementioned arguments and achievements depended on good integration and unity which, in turn, depended critically on a shared vision among all team members.

Shared vision increases the willingness of organizational members to consider and incorporate opposing views, and it boosts the legitimacy of local venture activities throughout the organization (Subramaniam and Youndt, 2005). For example, a sales team must convince customers to accept their offers and services, even before bidding on an open tender. Furthermore, if technical (R&D) and sales teams (distributor partners) are reluctant to share a common vision, the matching of internal and external knowledge and advantages may not occur. Shared vision generates the alignment of goals and values that results in increased access to and interaction between differentiated organizational units (Gupta and Govindarajan, 2000). It makes product development more efficient, by encouraging all supply chain members to cooperate closely and combine their expertise. Without shared vision, project progress during development stages may be slow and time-consuming.

Vision makes a difference only when it has been communicated successfully throughout the organization and institutionalized effectively as a guiding principle (Dvir *et al.*, 2004). Vision-sharing, thus, takes courage because, once ideas or commitments are stated by the entrepreneur, there is an assumption that action will follow (Alexander, 1989). By sharing the vision of the future of an organization and identifying the risks the organization faces, new firms cooperate to develop a strong commitment to action (Gratton, 1996). In the organizational arena, Shamir *et al.* (1993) defined organizational vision as an ideal statement reflecting the shared values to which an organization should aspire. Shared vision represents the orientation of management and employees toward building a knowledge-sharing environment at the firm and the alliance levels. Although various empirical studies support the importance of shared vision, such studies generally focus on already operating firms. For comparative purposes, research on the shared vision and integration mechanisms of new enterprises

may be more worthwhile. Therefore, this study focuses on new enterprises by hypothesizing the following:

H2. During the establishment of new enterprises, shared vision correlates positively with internal integration.

H3. During the establishment of new enterprises, shared vision correlates positively with external integration.

Integration and entrepreneurial performance

The business administration process has been described as the integration of two interrelated segments:

(1) one primarily technical; and

(2) the other, commercial (Marsh and Stock, 2003; Veryzer and Mozota, 2005).

Baldwin and Clark (2000) stressed that individuals no longer make artifacts and, thus, can no longer understand them. Their studies of the modulization of management in the computer industry stress the importance of integration for product development in the technology sector. Extant studies have identified how organizations that do not integrate ongoing performance measurement and feedback into their management development programs tend to experience lower-than-expected performance improvements and higher employee turnover (Zeithaml *et al.*, 1996; Longenecker and Fink, 2001).

Numerous studies have examined the relationship between integration and entrepreneurial performance. Dröge *et al.* (2004) assessed the effects of internal and external integration on both time-based performance and overall firm performance. Kahn (1996) convincingly showed that interdepartmental interactions increase entrepreneurial performance. Schrage (1990) demonstrated how integration helps departments secure contracts and improve customer satisfaction, productivity, morale and departmental confidence. Meanwhile, the effects of management via marketing, R&D and manufacturing are being studied from the perspectives of internal and external integration. In modern business environments, successful new product development depends on cooperation between suppliers, R&D, production, sales, marketing and downstream sales channels, as well as support from the upper management.

Entrepreneurial society exists in places where entrepreneurship is the focus for economic growth, sustainable job creation and global competitiveness. Entrepreneurial vision is the first stage of the venture; once the venture is launched, it is then able to transform its initial vision into a full-fledged strategic orientation for the enterprise (Greenberger and Sexton, 1988; Avolio *et al.*, 2004; Ruvio *et al.*, 2010). In practice, empirical research indicates that the assessment of entrepreneurial performance may vary with the nature of the business model; for example, assessments of business strategy and design strategy differ. Major changes in the global environment suggest that successful entrepreneurs must master three key abilities:

(1) the development of a clear vision;

(2) the creative management of cash; and

(3) the use of social skills to persuade others to commit (Brush *et al.*, 2008).

Successful integration requires effective communication and cooperation among the participants in product development projects. Furthermore, extensive research indicates that cross-functional participation or communication is crucial for successful business administration (Moenaert and Souder, 1990; Griffin and Hauser, 1996). Based on the newly established firm, the following hypotheses are proposed:

H4. There is a positive relationship that exists between internal integration and entrepreneurial performance during the establishment of new enterprises.

H5. There is a positive relationship that exists between external integration and entrepreneurial performance during the establishment of new enterprises.

Methodology

Sample and data collection

The questionnaire was first prepared in English and then translated into Chinese (traditional and simplified). The Chinese version was subsequently back-translated by a third party to ensure accuracy (David, 1998). The three translations indicated no substantial differences in the meanings of the scales. All the firms identified in the databases were included in the reference population, if their development program had developed new products during the process of establishing a new firm or a new department. Because it was impossible to determine whether each respondent extracted from the databases actually satisfied the constraints set forth here, a two-stage sampling approach was adopted. In all, 300 firms (from a total of 1,650 respondents) were contacted by phone, e-mail, fax or posting to the online community to verify whether they were suitable and willing to participate in the study. The questionnaire was mailed to the respondents accompanied by a letter detailing the purpose of the study and the structure of the questionnaire. Phone assistance was provided to ensure that the information gathered was both complete and correct.

The research theoretical model was analyzed primarily using structural equation modeling (SEM) supported by LISREL 9.1. The model-building process applied two steps for SEM (O'Boyle and Williams, 2011; Anderson and Gerbing, 1988; Jöreskog and Sörbom, 1993; Hair *et al.*, 2010). The first step analyzed the measurement model [or the confirmatory factor analysis (CFA) model], and the second step tested the structural relationships among latent constructs. Moreover, having established an adequate measurement model, the latter step in the two-step procedure tested the hypotheses through fitted structural models for relationships among latent variables (Bollen, 1989; Kline, 2010). These tests involved comparisons with the unconstrained confirmatory factor analysis (CFA) model and a test to determine whether models with a hypothesized casual ordering among latent variables reproduced an unconstrained covariance matrix for the latent variables. Alternative models were also analyzed for model fit and interpretability. The two-step procedure, which assessed the reliability and validity of measures before their use in the full model (Anderson and Gerbing, 1988; Thelen *et al.*, 2011), examined the measurement model and, then, the structural model.

Measures

In this study, a new company refers to the new company or a new business unit, or new department established within five years.

Entrepreneurial vision was measured using a five-item scale adopted from the studies by Larwood *et al.* (1995) and Ruvio *et al.* (2010). Shared vision (SV) was valuated using the established scale along three key dimensions:

(1) shared product vision (SV-1, three items);

(2) intra-team trust (SV-2, five items); and

(3) credibility and stability (SV-3, five items) (Tessarolo, 2007; Lewis, 2004; Rau, 2005; Zheng, 2012).

The definition of integration adapted from the study by Tessarolo (2007) encompassed external and internal integration. Furthermore, the dependent variable, entrepreneurial performance (EP), was measured using the questionnaires of Pujari (2006) and Olson *et al.* (1995). Subjects responded to items on a five-point Likert scale (Appendix).

Survey design and validation

To test the five hypotheses presented above, this study collected data from firms in Greater China, including Taiwan, China and Hong Kong, between January 2012 and February 2013. These territories were selected primarily because they are currently the leading manufacturers of consumer electronics and communications products globally. The questionnaire was designed and delivered to entrepreneurs and entrepreneurial team members who participated in planning and management from the early stages of their firms' build-up. In some cases, these team members may have invested in the firm directly. They also have professional skills in different areas, such as R&D, manufacturing, financial and project management, etc. Additionally, most of the entrepreneurial team members surveyed are entitled to certain monetary rewards from stock options and dividends, provided that the operations of their firms hit success targets. Naturally, entrepreneurial vision is recognized. Survey respondents were employed in electronics, optoelectronics, communications, information technology and green energy manufacturing firms. These industries were primarily chosen because their products have short life cycles, and this product characteristic shortened the time interval of the questionnaire that was surveyed. Respondents typically held knowledge-intensive or management positions. Respondent characteristics, such as industry, position and title, their firm's age and orientation are shown in Table I below.

Table II provides descriptive statistics, numbers of observations, standard deviations, variances, maximum and minimum values for all measurements.

The first stage of the questionnaire survey elicited basic information about the new ventures (ten items) and entrepreneurial performance (nine items). Because the study was intended to evaluate entrepreneurial performance, this survey was separated from those of other variables. Among those recovered, 332 were effective and 28 questionnaires were invalid. In the second stage, the questionnaire gathered data regarding entrepreneurial vision (5 items), shared vision (13 items), internal integration (3 items) and external integration (4 items). The 332 questionnaires were then sent to those who returned effective questionnaires during the first stage. Of the 259 questionnaires recovered, 13 were invalid and 246 were effective.

Both SPSS 20 and LISREL 9.1 were used in analyses. Questionnaires were pretested to examine the constructs of reliability and validity and were issued by e-mail, post or delivery. To examine possible non-response bias and the representativeness of the participating firms, a MANOVA analysis was performed to compare early respondents

Category	Description	Respondent	(%)
Position and title	R&D	27	10.98
	Marketing	43	17.48
	Manufacturing	38	15.45
	Financial	47	19.11
	Management	63	25.61
	Project leader	28	11.38
	Total	246	100.00
Age of firm (year)	Below 1	24	9.76
	1-2	55	22.36
	2-3	65	26.42
	3-4	64	26.02
	4-5	38	15.45
	Total	246	100.00
Industry	Electronics	57	23.17
	Optoelectronics	55	22.36
	Communications	42	17.07
	Information tech	26	10.57
	Green energy	48	19.51
	Others	18	7.32
	Total	246	100.00
Orientation	Entrepreneurship	140	56.91
	Intrapreneurship (corporate venture)	106	43.09
	Total	246	100.00

Table I. Respondent characteristics

with late respondents on all of the variables. The results were not significant at $p < 0.05$; suggesting that early respondents did not differ significantly from the late respondents.

To test for common method variance (CMV), this study evaluated a correlated uniqueness model (Podsakoff *et al.*, 2003; Thelen *et al.*, 2011). The model accounts for method effects by allowing the measurement of error terms of constructs using the same method correlated in the measurement model. Comparing the correlated uniqueness model with the original measurement model identified no significant change in model fit or in any of the loading parameters, indicating that common method biases did not significantly affect data analysis results. As avoiding the CMV bias affects validity, several measures were also conducted. The first data collection phase began with in-depth case studies of subjects. Meanwhile, we tried to separate the principal variable, entrepreneurial performance, from other variables by means of a two-stage survey sample. The basic information and entrepreneurial performance were both included in the first stage, and then the others were introduced. Furthermore, the following two tests were conducted to determine whether there were bias effects due to CMV:

(1) reversed items and the time-separation approach for collected data; and

(2) the time-separation approach applied to data collected in two stages with a time interval of four to six weeks.

Measurements	Minimum	Maximum	Average	SD
EV-1	1	5	3.80	0.765
EV-2	1	5	3.51	0.837
EV-3	1	5	3.51	0.916
EV-5	1	5	3.80	0.782
SV1	2	5	3.91	0.800
SV-1-1	2	5	3.92	0.794
SV-1-2	1	5	3.90	0.801
SV-1-3	2	5	3.91	0.795
SV2	1	5	3.89	0.895
SV-2-1	1	5	3.91	0.885
SV-2-2	2	5	3.90	0.911
SV-2-3	1	5	3.88	0.843
SV-2-4	1	5	3.79	0.811
SV-2-5	2	5	3.91	0.799
SV3	1	5	3.81	0.833
SV-3-1	1	5	3.98	0.838
SV-3-2	1	5	3.50	0.821
SV-3-3	2	5	3.89	0.751
SV-3-4	2	5	3.76	0.872
SV-3-5	1	5	3.92	0.888
II-1	1	5	3.62	0.871
II-2	2	5	3.70	0.766
II-3	1	5	3.66	0.860
EI-1	1	5	3.65	0.889
EI-2	1	5	3.61	0.886
EI-3	1	5	3.59	0.860
EI-4	2	5	3.59	0.921
EP-1	1	5	3.48	0.865
EP-2	1	5	3.41	0.832
EP-3	2	5	3.57	0.746
EP-5	2	5	3.70	0.754
EP-6	1	5	3.56	0.794
EP-7	2	5	3.61	0.773
EP-8	2	5	3.69	0.753
EP-9	2	5	3.83	0.749

Table II.
Descriptive statistics
($N = 246$)

Note: Due to low standardized factor loadings (< 0.50), measurements EV-4 and EP-4 were deleted

In this study, 12-32 weeks of lag seems fairly insignificant. This description has followed the suggestions of previous studies (Peng *et al.*, 2006). Though, in fact, the period of the questionnaire survey was from January 2012 to February 2013, actually, for most of the time, the true separation interval was around 12-32 weeks. In this situation, the time lag should not have created bias.

Results

Analysis of measurement model

This study applied CFA to test the measurement model and assess construct validity using LISREL 9.1. The five variables are allowed to co-vary freely in the CFA model. Parameters for all models were estimated using maximum likelihood, with the item

covariance matrix as input. Convergent validity of the scales is verified using the three criteria suggested by Fornell and Bookstein (1982). First, all indicator loadings should be significant and exceed 0.70. Second, construct reliability (CR) should exceed 0.7 (Hair *et al.*, 2010). Third, average variance extracted (AVE) by each construct should exceed the variance due to measurement error for that construct (i.e. AVE should be > 0.50).

Model modification procedures were used to identify observed measurements that had low factor loadings, significant cross-loadings and large residuals. As the minimum cutoff, it was suggested that items with high modification index values due to correlated error terms and low standardized factor loadings (< 0.50) be deleted (Byrne, 1998). As a result, two items (EV-3, conservative and formularized, and EP-4, enhanced environmental image) were deleted. After deleting the two observed measurements, a revised overall measurement model showed a significant improvement in fit. (See Table III.)

Composite reliability (CR) was used to assess the internal consistency of the measurement model. The composite reliability of constructs in the range 0.82-0.92

Dimensions and indicators	Factor loading	*t*-value	Composite reliability	AVE
Entrepreneurial vision (coefficient alpha = 0.81)			0.85	0.60
EV-1	0.68	11.17***		
EV-2	0.75	12.64***		
EV-3	0.86	10.76***		
EV-5	0.79	13.63***		
Shared vision (coefficient alpha = 0.816)			0.82	0.61
SV-1	0.77	12.57***		
SV-2	0.75	11.22***		
SV-3	0.82	9.61***		
Internal integration (coefficient alpha = 0.795)			0.82	0.60
II-1	0.77	13.06***		
II-2	0.79	9.35***		
II-3	0.80	13.83***		
External integration (coefficient alpha = 0.823)			0.86	0.60
EI-1	0.68	11.22***		
EI-2	0.79	13.83***		
EI-3	0.82	14.58***		
EI-4	0.80	13.94***		
Entrepreneurial performance (coefficient alpha = 0.836)			0.92	0.59
EP-1	0.80	9.47***		
EP-2	0.81	9.83***		
EP-3	0.84	10.41***		
EP-5	0.86	10.76***		
EP-6	0.88	12.41***		
EP-7	0.87	11.74***		
EP-8	0.89	11.33***		
EP-9	0.84	10.34***		

Notes: *** Indicates significance levels of $p < 0.001$; due to low standardized factor loadings (< 0.50), measurements EV-4 and EP-4 were deleted

Table III.
Constructs and items

exceeded the benchmark of 0.7. The AVE was 0.59-0.61. Hence, all three conditions for convergent validity were satisfied. The CFA indicated that the measurement model fitted the data (ratio of χ^2 to degrees of freedom was 1.895, NFI = 0.94, CFI = 0.97, SRMR = 0.055, GFI = 0.90, RMSEA index was 0.041), suggesting that the model fitted well with the collected data (Thelen *et al.*, 2011).

Further, the discriminant validity of scales was assessed using the benchmark suggested by Fornell and Bookstein (1982): the square root of the AVE from the construct should exceed the correlation between the construct and other model constructs. Table IV lists the correlations among constructs with the AVE square root on the diagonal. All diagonal values exceeded the correlations between any construct pair. In summary, the measurement model had adequate and sufficient reliability, convergent validity and discriminant validity. (See Table IV.)

Analysis of structural model

The causal structure of the hypothesized research model reflected the assumed linear, and the causal relationships among constructs were tested using a structural model. All model-fit indices of the structural model exceeded their respective common acceptance levels: the ratio of χ^2 to degrees of freedom was 2.05; NFI = 0.94; CFI = 0.97; SRMR = 0.078; GFI = 0.97; and RMSEA index is 0.047, suggesting that the model fitted the data well. The hypothesis test results are discussed below.

The analysis result of *H1*, the result of hypothesis testing ($\beta = 0.88$, t-value = 10.14, $p < 0.001$) indicates that the entrepreneurial vision positively correlates with shared vision, supporting *H1*. During new enterprise establishment, entrepreneurial vision positively correlates with shared vision. Hence, these results are consistent with theoretical expectations.

The analysis result of *H2* and *H3*, the result of hypothesis testing ($\beta = 0.94$, t-value = 9.74, $p < 0.001$) indicates that shared vision correlates positively with internal integration, supporting *H2*. The result of hypothesis testing ($\beta = 0.66$, t-value = 7.27, $p < 0.001$) indicates that shared vision positively correlates with external integration, supporting *H3*. The empirical results of *H2* and *H3* are consistent with theoretical expectations; meanwhile, the situation was also similar to prior studies that stressed the importance of the effective communication of a vision by team members for ensuring that vision is shared, intelligible, relevant, salient and evokes positive employee emotions (Nasution *et al.*, 2011; Oswald *et al.*, 1994; Bono and Ilies, 2006). As discussed above, a shared vision is critical during the establishment of a new enterprise in which the team responsible for product development shares the same understanding of the future as the entrepreneur. Consequently, shared vision correlates positively with integration.

Table IV. Discriminated validity

Construct	Mean	SD	EV	SV	II	EI	EP
Entrepreneurial vision (EV)	3.66	0.66	0.77				
Shared vision (SV)	3.94	0.68	0.47	0.78			
Internal integration (II)	3.66	0.68	0.21	0.10	0.78		
External integration (EI)	3.61	0.74	0.02	0.03	0.04	0.77	
Entrepreneurial performance (EP)	3.61	0.56	0.27	0.17	0.25	0.11	0.77

The analysis result of *H4*, the analytical results ($\beta = 0.45$, t-value = 4.33, $p < 0.001$) indicate that *H4* is supported. A positive relationship exists between internal integration and entrepreneurial performance. The empirical result of *H4* was also consistent with theoretical expectations. In contrast, if the team members have low interest in sharing their vision, they will have difficulty understanding the strategy of entrepreneurs and be unable to communicate with each other effectively.

The analysis result of *H5*, in examining the effects of external integration on entrepreneurial performance, the analytical results ($\beta = 0.17$, t-value = 1.83) indicate that *H5* is not supported. Analytical results indicate that, although internal integration correlates positively with entrepreneurial performance, no significant correlation exists for external integration. Despite some external integration being essential when developing a new product, such achievements are not necessarily successful. Figure 2 illustrates the structural model, path coefficients, significance values and hypothesis test results.

Analysis of mediating effect

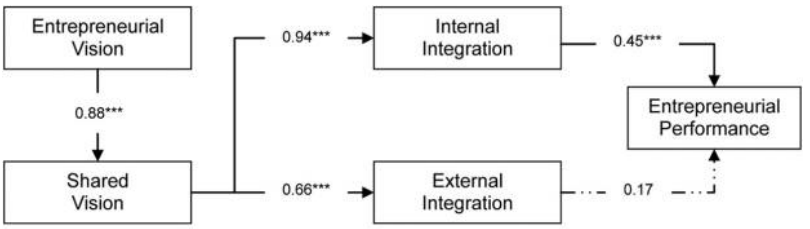
Regarding the mediating effect, a *Sobel* t-test (Sobel, 1982) corrected for un-normal formulation (Sampson and Bruenig, 1971; Mackinnon, 2008) for the indirect effect among shared vision → internal integration → entrepreneurial performance was 4.33. The above t-value met the criterion for statistical significance (1.96). Examination of the mediation effect in terms of a *Sobel* t-test revealed that shared vision was a significant mediator of the influence of internal integration on entrepreneurial performance during the process of establishing a new enterprise.

Besides, the *Sobel* t-test of indirect effect beginning with shared vision → external integration → entrepreneurial performance was 1.83. The above t-value does not meet the criterion for statistical significance (1.96). The examination of the mediation effect in terms of the S*obel* t-test revealed that shared vision was not a significant mediator of the influence of external integration on entrepreneurial performance during the process of establishing a new enterprise.

Discussion and conclusions

Key findings and implications

The empirical results following CFA demonstrate that, due to correlated error terms and low standardized factor loadings, two measurements – EV-4 (conservative and formalized) and EP-4 (enhanced environmental image) – were deleted. The analytical results are discussed below.



Notes: Ratio of $\chi 2$ to degrees of freedom is 2.05; RMSEA = 0.047; ***$p < 0.001$; +$p < 0.1$

Figure 2.
SEM structural analyses

EV-4 (conservative and formalized). Compared to established and operating firms, in the early stages of a new firm's establishment, the entrepreneurial team needs to contribute more to creativity and efficiency. Conversely, established firms may emphasize a conservative and formalized management style, which is an approach that emphasizes discipline and lacks flexibility, but which suits large organizations. However, new firms require more flexibility and contingent management because they must fight for survival from the outset. New firms must also demonstrate explicit achievements to investors to access continued financial investment. Unfortunately, a conservative and formalized management style is inconsistent with a new firm's short-term performance goals.

EP-4 (enhanced environmental image). Although environmental protection is always the most important influence on enterprise sustainability, nowadays, firms wishing to attract customer recognition must contribute to environmental causes. However, environmental protection and image enhancement are expensive and involve long-term planning processes. Although environmental protection is very important, the resulting situation closely resembles that explained by EV-4 (conservative and formalized) above. New firms must pursue survival and, if alternative possibilities exist for resource allocation, enhanced environmental image is not often prioritized highly.

Through appropriate internal integration, this study suggests that a vision that is shared by entrepreneurial team members helps them to achieve outstanding entrepreneurial performance. Although some of the literature has noted the contributions that can be made by the vision, ideas and creativity of entrepreneurs, new firms that rely on a single entrepreneur, adopting an authoritarian leadership style, face obstacles to sustainability and growth. The empirical results of data analyses indicate that the method of vision-sharing significantly correlates with internal and external integration, which supports *H2* and *H3*. Team members' recognition of a shared vision is the key to success. Besides heavy capital spending to purchase equipment and nurture outstanding talent, establishing a team with a common vision is an important task for the management of a new enterprise. In the case of vision-sharing by team members, a new firm is entitled to benefit from entrepreneurial performance; internal integration emphasizes the integration of the design, manufacturing and marketing departments that already exist within an organization. The empirical data analyses support *H4;* so, it can be said that internal integration correlates positively with entrepreneurial performance.

Moreover, we find that the managers of new ventures should pay special attention to external integration. This set of results is interesting. Although appropriate management of external integration enables a new firm to acquire external resources, empirical data analysis indicates that external integration does not correlate strongly with entrepreneurial performance, meaning *H5* is not supported. The analytical result of *H5* contradicts previous empirical results, providing an important warning to entrepreneurial management. Compared with existing operating firms, this finding is especially valid for start-up firms, due to their requirement for effective collaboration with external partners to overcome growth challenges. The synergies created among the external resources, therefore, are extremely difficult to achieve. This study analyzes the situation as follows.

First, Porter (2008) proposes that buyer bargaining power can be used to assess industry attractiveness. In the early stages of the operations of new firms, external suppliers may cooperate tentatively with the so-called new entrant because they need to access possible alternatives to their existing strategic partners, unless they obtain the promised answer that the new entrant will enable them to create higher benefit than the

existing partner. This assessment poses a major obstacle to a new entrant, and it determines their bargaining power. Most suppliers are unwilling to risk damaging their good relationships with existing strategic partners, unless they get a positive assessment result from the alternatives. Without a positive assessment, the new entrant does not receive full support.

Second, external integration includes the integration of the main customers with their supplier chains. During new enterprise establishment, the roles of these staff may change dramatically. These staff may also be new members joining the new venture from time to time, and, under such circumstances, integrating these core competences and resources will certainly have negative impacts.

Third, strategic partners may wonder about the possibility of successfully joining their teams with those at a new firm. Even worse, they may also wonder about the possible survival of this new firm. One frequently asked question is "Is this new firm likely to go bankrupt tomorrow?". Unpredictable risks also exist in relation to working with new firms, such as financial issues involving accounts receivable, the negative effects of strategic cooperation with existing firms and the switching costs associated with different product attributions.

Furthermore, certain extra costs arise from acquiring some familiarity with the working processes and know-how of the new firm. In addition, because the firm is new, its mechanism for cooperating with external organizations may not yet be well established. Therefore, time is required to bed in an efficient operational process. The creation of integration synergies between the external partner and the new firm may be difficult. All of these factors badly affect the willingness of potential partners to cooperate with a new firm.

Conclusions

Generally, entrepreneurs create the business models of most new ventures, and entrepreneurs are certainly the pioneers of new ventures. Naturally, entrepreneurs face various challenges and obstacles during the initial planning stages of their endeavors. Certainly, entrepreneurs must also organize numerous possible business arrangements, including fund-raising, organizing, R&D, manufacturing and production utility set-up, recruitment, etc. After success in these affairs, entrepreneurs are entitled to establish new enterprises. However, none of these efforts promise success because maintaining a survey and the sustainability of an enterprise requires a complex combination of success factors.

Success in a new enterprise is difficult if it relies on the individual capability of a sole entrepreneur. Newly established enterprises obviously require a collaborative effort from all team members, with both their implicit and explicit knowledge, their experience and their existing social relationships. Shared vision profoundly impacts and plays a major role in the establishment of an enterprise, and any new firm must integrate all possible resources internally and externally. The empirical results of this study support these arguments, and, thus, *H2* and *H3* here are supported. A few managers indulge in a "secret recipe handed down from generation to generation" approach to business. Such managers refuse to share constructive ideas with other entrepreneurial team members. However, the results of this investigation indicate the importance of sharing, and that sharing can involve those who wish to be managers and entrepreneurs.

In practice, effective integration significantly and positively affects business performance. Nevertheless, the results of this study significantly contribute to the

efforts of entrepreneurs to emphasize external integration strongly, which is possibly the most important factor in building a successful new firm. However, though early empirical tests in this study confirmed that internal integration impacts on entrepreneurial performance, the empirical results also demonstrate that external integration is not positively related to entrepreneurial performance. During the early stage of operating a new venture, most new enterprises own very limited resources. Entrepreneurs must expend additional effort to nurture optimal solutions to initial operational questions and to acquire and internalize external resources effectively. In fact, this is the top priority for entrepreneurs.

To summarize, from the external perspective, entrepreneurs must help external strategic partners cooperate with newly established enterprises, and they must persuade those partners that they are working with that they are a potential market leader. To this end, they must create an entrepreneurial environment with high motivation and shared vision between the entrepreneurs themselves and all their team members.

Limitations and future research directions

Some limitations of this study suggest directions for future research. Further study of different industries is necessary, as different products have dissimilar product life cycles as well as unique integration patterns. In practice, the assessments of entrepreneurial performance may vary according to the manufacturer's industry, business strategy or design strategy. Finally, time structures should be considered, as a panel analysis of success factors measured at different times may reveal the relationships between success variables.

References

Alexander, J.W. (1989), "Sharing the vision", *Business Horizons*, Vol. 32 No. 3, pp. 56-59.

Anderson, J.C. and Gerbing, D.W. (1988), "Structural equitation modeling in practice: a review and recommended two-step approach", *Psychological Bulleting*, Vol. 103 No. 3, pp. 411-423.

Avolio, B.J., Zhu, W., Koh, W. and Bhatia, P. (2004), "Transformational leadership and organizational commitment: mediating role of psychological empowerment and moderating role of structural distance", *Journal of Organizational Behavior*, Vol. 25 No. 8, pp. 951-968.

Baldwin, C.C. and Clark, K.B. (2000), *Design Rule*, MIT Press, Cambridge, MA.

Baron, R.A. and Shane, S.A. (2008), *Entrepreneurship: A Process Perspective*, Thomson South-Western, Thomson Higher Education, OH.

Barringer, B.R. and Ireland, R.D. (2010), *Entrepreneurship Successfully Launching New Ventures*, Pearson Education, New Jersey, NJ, Vol. 3E, pp. 31-37.

Baum, J.R. and Locke, E.A. (2004), "The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth", *Journal of Applied Psychology*, Vol. 89 No. 4, pp. 587-598.

Beckman, C.M. (2006), "The influence of founding team company affiliations on firm behavior", *Academy of Management Journal*, Vol. 49 No. 4, pp. 741-758.

Berson, Y., Shamir, B., Avolio, B. and Popper, M. (2001), "The relationship between vision strength, leadership style and context", *Leadership Quarterly*, Vol. 12 No. 1, pp. 53-73.

Bollen, K.A. (1989), *Structural Equation Modeling with Latent Variables*, John Wiley, New York, NY.

Bono, J.E. and Ilies, R. (2006), "Charisma, positive emotions, and mood contagion", *The Leadership Quarterly*, Vol. 17 No. 4, pp. 317-334.

Brown, S.L. and Eisenhardt, K.M. (1995), "Product development: past research, present findings, and future directions", *Academy of Management Review*, Vol. 20 No. 2, pp. 343-378.

Brush, C.G. (2008), "Pioneering strategies for entrepreneurial success", *Business Horizons*, Vol. 51 No. 1, pp. 21-27.

Brush, C.G., Manolova, T.S. and Edelman, L.F. (2008), "Properties of emerging organizations: an empirical test", *Journal of Business Venturing*, Vol. 23 No. 8, pp. 547-566.

Burgers, J.H., Jansen, J.J.P., Van den Bosch, F.A.V. and Volberda, H.W. (2009), "Structural differentiation and corporate venturing: the moderating role of formal and informal integration mechanisms", *Journal of Business Venturing*, Vol. 24 No. 3, pp. 206-220.

Byrne, B.M. (1998), *Structural Equation Modeling with Lisrel, Prelis, and Simples: Basic Concepts, Applications, Programming*, Psychology Press, Lawrence Erlbaum Associates, Mahwah, NJ.

Chen, G. and Tjosvold, D. (2012), "Shared rewards and goal interdependence for psychological safety among departments in China", *Asia Pacific Journal of Management*, Vol. 29 No. 2, pp. 433-452.

Choy, K.L., Lee, W.B. and Lo, V. (2004), "An enterprise collaborative management system: a case study of supplier selection in new product development", *Journal of Enterprise Information Management*, Vol. 17 No. 3, pp. 191-207.

Clark, K.B. and Fujimoto, T. (1991), *Product Development Performance: Strategy, Organization, and Management in the World Auto Industry*, Harvard Business School Press, Boston, MA.

Crawford, C.M. and Di Benedetto, C.A. (2003), *New Products Management*, McGraw-Hill, Boston, MA.

Damanpour, F., Devece, C., Chen, C.C. and Pothukuchi, P. (2012), "Organizational culture and partner interaction in the management of international joint ventures in India", *Asia Pacific Journal of Management*, Vol. 29 No. 2, pp. 453-478.

David, C. (1998), "Functional relations among constructs in the same content domain at different levels of analysis: a typology of composition models", *Journal of Applied Psychology*, Vol. 83 No. 2, pp. 234-246.

Dröge, C., Jayaram, J. and Vickery, S.K. (2004), "The effects of internal versus external integration practices on time-based performance and overall firm performance", *Journal of Operations Management*, Vol. 22 No. 6, pp. 557-573.

Dvir, T., Kass, N. and Shamir, B. (2004), "The emotional bond: vision and organizational commitment among high-tech employees", *Journal of Organizational Change Management*, Vol. 17 No. 2, pp. 126-143.

Elenkov, D.S., Judge, W. and Wright, P. (2005), "Strategic leadership and executive innovation influence: an international multi-cluster comparative study", *Strategic Management Journal*, Vol. 26 No. 7, pp. 665-682.

Ensley, M.D., Carland, J.W. and Carland, J.C. (2000), "Investigating the existence of the lead entrepreneur", *Journal of Small Business Management*, Vol. 38 No. 4, pp. 59-77.

Ensley, M.D., Pearson, A. and Pearce, C.L. (2003), "Top management team process, shared leadership, and new venture performance: a theoretical model and research agenda", *Human Resource Management Review*, Vol. 13 No. 2, pp. 329-346.

Fain, N., Schoormans, J. and Duhovnik, J. (2011), "The effect of R&D-marketing integration on NPD success: the case of SMEs in the growing economy of Slovenia", *International Journal of Technology Management*, Vol. 56 No. 1, pp. 92-107.

Foo, T.C. (2008), "The Art of War: system of systems engineering perspectives", *Chinese Management Studies*, Vol. 2 No. 4, pp. 317-326.

Fornell, C. and Bookstein, F.L. (1982), "Two structural equation models: LISREL and PLS applied to consumer exit-voice theory", *Journal of Marketing Research*, Vol. 19 No. 4, pp. 440-452.

Foss, N.J. (2011), "Why micro-foundations for resource-based theory are needed and what they may look like", *Journal of Management*, Vol. 37 No. 5, pp. 1413-1428.

Giovanni, P.D. (2012), "Do internal and external environmental management contribute to the triple bottom line?", *International Journal of Operations & Production Management*, Vol. 32 No. 3, pp. 265-290.

Gratton, L. (1996), "Implementing a strategic vision-key factors for success", *Long Range Planning*, Vol. 29 No. 3, pp. 290-303.

Greenberger, D.B. and Sexton, D.L. (1988), "An interactive model of new venture initiation", *Journal of Small Business Management*, Vol. 26 No. 3, pp. 1-7.

Griffin, A. and Hauser, J.R. (1996), "Integrating R&D and marketing: a review and analysis of the literature", *The Journal of Product Innovation Management*, Vol. 13 No. 3, pp. 191-215.

Gupta, A.K. and Govindarajan, V. (2000), "Knowledge flows within multinational corporations", *Strategic Management Journal*, Vol. 21 No. 4, pp. 473-496.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010), *Multivariate Data Analysis*, Prentice Hall, New Jersey, NJ, Vol. 7E.

Hamel, G. and Prahalad, C.K. (1996), *Competing for the Future*, Perseus Distribution Service, Harvard Business School Press, Boston, MA.

Harper, D.A. (2008), "Towards a theory of entrepreneurial teams", *Journal of Business Venturing*, Vol. 23 No. 6, pp. 613-626.

Hill, J.S. (2006), "Confucianism and the art of Chinese management", *Journal of Asia Business Studies*, Vol. 1 No. 1, pp. 1-9.

Johnson, W.H.A. and Filippini, R. (2013), "Integration capabilities as mediator of product development practices – performance", *Journal of Engineering and Technology Management*, Vol. 30 No. 1, pp. 95-111.

Jones, M. and Coviello, N. (2005), "Internationalization: conceptualizing an entrepreneurial process of behaviour in time", *Journal of International Business Studies*, Vol. 36 No. 3, pp. 284-303.

Jöreskog, K.G. and Sörbom, D. (1993), *LISREL 8: Structural Equation Modeling with the SIMPLUS Command Language*, Scientific Software International, Chicago, IL, p. 155.

Kahn, K.B. (1996), "Interdepartmental integration: a definition with implications for product development performance", *The Journal of Product Innovation Management*, Vol. 13 No. 2, pp. 137-151.

Khalid, S. and Larimo, J. (2012), "Affects of alliance entrepreneurship on common vision, alliance capability and alliance performance", *International Business Review*, Vol. 21 No. 5, pp. 891-905.

Kirkpatrick, S.A., Wofford, J.C. and Baum, J.R. (2002), "Measuring motive imagery contained in the vision statement", *The Leadership Quarterly*, Vol. 13 No. 2, pp. 139-150.

Kline, R.B. (2010), *Principles and Practice of Structural Equation Modeling*, Guilford Press, New York, NY, Vol. 3E.

Kohles, J.C., Bligh, M.C. and Carsten, M.K. (2012), "A follower-centric approach to the vision integration process", *The Leadership Quarterly*, Vol. 23 No. 3, pp. 476-487.

Kong, D. and Zhang, J. (2011), "The research on Chinese ancient management philosophies' similarities with contemporary human resources management thoughts", *Chinese Management Studies*, Vol. 5 No. 4, pp. 368-379.

Kounetas, K., Mourtos, I. and Tsekouras, K. (2009), "Efficiency decompositions for heterogeneous technologies", *European Journal of Operational Research*, Vol. 199 No. 1, pp. 209-218.

Langerak, F., Hultink, E.J. and Robben, H.S.J. (2004), "The impact of market orientation, product advantage, and launch proficiency on new product performance and organizational performance", *The Journal of Product Innovation Management*, Vol. 21 No. 2, pp. 79-94.

Larwood, L., Falbe, C.M., Kriger, M.P. and Miesing, P. (1995), "Structure and meaning of organizational vision", *The Academy of Management Journal*, Vol. 38 No. 3, pp. 740-769.

Lawrence, P.R. and Lorsch, J.W. (1967), "Differentiation and integration in complex organizations", *Administrative Science Quarterly*, Vol. 12 No. 1, pp. 1-47.

Lee, J. and Venkataraman, S. (2006), "Aspiration, market offerings, and the pursuit of entrepreneurial opportunities", *Journal of Business Venturing*, Vol. 21 No. 1, pp. 107-123.

Leenders, M.A.A.M. and Wierenga, B. (2002), "The effectiveness of different mechanisms for integrating marketing and R&D", *Journal of Product Innovation Management*, Vol. 19 No. 4, pp. 305-317.

Lewis, K. (2004), "Knowledge and performance in knowledge-worker teams: a longitudinal study of transactive memory systems", *Management Science*, Vol. 50 No. 11, pp. 1519-1533.

Li, J., Wang, J. and Fan, W. (2011a), "Yin yang and company growth: a case study of a coal company of Shanxi in China", *Chinese Management Studies*, Vol. 5 No. 4, pp. 380-393.

Li, Y., Su, Z., Liu, Y. and Li, M. (2011b), "Fast adaptation, strategic flexibility and entrepreneurial roles", *Chinese Management Studies*, Vol. 5 No. 3, pp. 256-271.

Liu, Y. and Wei, J. (2013), "Business modeling for entrepreneurial firms: four cases in China", *Chinese Management Studies*, Vol. 7 No. 3, pp. 344-359.

Lodorfos, G. and Boateng, A. (2006), "The role of culture in the merger and acquisition process: evidence from the European chemical industry", *Management Decision*, Vol. 44 No. 10, pp. 1405-1421.

Longenecker, C.O. and Fink, L.S. (2001), "Improving management performance in rapidly changing organizations", *Journal of Management Development*, Vol. 20 No. 1, pp. 7-18.

Lu, Y., Qian, Y., Wang, D. and Lu, Y. (2011), "Implications of I Ching on innovation management", *Chinese Management Studies*, Vol. 5 No. 4, pp. 394-402.

Lynna, G.S. and Akgünb, A.E. (2001), "Project visioning: its components and impact on new product success", *The Journal of Product Innovation Management*, Vol. 18 No. 6, pp. 374-387.

MacKinnon, D.P. (2008), *Introduction to Statistical Mediation Analysis*, Lawrence & Francis, LLC, New Jersey, NJ, p. 73.

Mai, Y. and Gan, D. (2007), "Entrepreneurial opportunities, capacities and entrepreneurial environments: evidence from Chinese GEM data", *Chinese Management Studies*, Vol. 1 No. 4, pp. 216-224.

Mair, J. and Marti, I. (2006), "Social entrepreneurship research: a source of explanation, prediction, and delight", *Journal of World Business*, Vol. 41 No. 1, pp. 36-44.

Marcum, T.M. and Blair, E.S. (2011), "Entrepreneurial decisions and legal issues in early venture stages: advice that shouldn't be ignored", *Business Horizons*, Vol. 54 No. 2, pp. 143-152.

Marsh, S.J. and Stock, G.N. (2003), "Building dynamic capabilities in new product development through intertemporal integration", *Journal of Product Innovation Management*, Vol. 20 No. 2, pp. 136-148.

Martens, M.L., Jennings, J.E. and Jennings, P.D. (2007), "Do the stories they tell get them the money they need? The role of entrepreneurial narratives in resource acquisition", *Academy of Management Journal*, Vol. 50 No. 5, pp. 1107-1132.

Moenaert, R.K. and Souder, W.E. (1990), "An information transfer model for integrating marketing and R&D personnel in new product development projects", *Journal of Product Innovation Management*, Vol. 7 No. 2, pp. 91-107.

Nasution, H.N., Mavondo, F.T., Matanda, M.J. and Ndubisi, N.O. (2011), "Entrepreneurship: its relationship with market orientation and learning orientation and as antecedents to innovation and customer value", *Industrial Marketing Management*, Vol. 40 No. 3, pp. 336-345.

O'Boyle, E.H. and Williams, L.J. (2011), "Decomposing model fit: measurement vs theory in organizational research using latent variables", *Journal of Applied Psychology*, Vol. 96 No. 4, pp. 1-12.

Olson, E.M., Walker, O.C. and Ruekert, R.W. (1995), "Organizing for effective new product development: the moderating role of product innovativeness", *Journal of Marketing*, Vol. 59 No. 1, pp. 48-62.

Oswald, S.L., Mossholder, K.W. and Harris, S.G. (1994), "Vision salience and strategic involvement: implications for psychological attachment to organization and job", *Strategic Management Journal*, Vol. 15 No. 6, pp. 477-489.

Pang, C., Shen, H. and Li, Y. (2011), "How organizational slack affects new venture performance in China: a contingent perspective", *Chinese Management Studies*, Vol. 5 No. 2, pp. 181-193.

Parente, R.C., Baack, D.W. and Hahn, E.D. (2011), "The effect of supply chain integration, modular production, and cultural distance on new product development: a dynamic capabilities approach", *Journal of International Management*, Vol. 17 No. 4, pp. 278-290.

Peng, T.K., Kao, Y. and Lin, C.C. (2006), "Common method variance in management research: its nature, effects, detection, and remedies", *Journal of Management*, Vol. 23 No. 1, pp. 77-98 (in Chinese).

Podsakoff, P.M., MacKenzi, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Porter, M.E. (2008), "The five competitive forces that shape strategy", *Harvard Business Review*, Vol. 86 No. 1, pp. 78-93.

Pujari, D. (2006), "Eco-innovation and new product development: influences on market performance", *Technovation*, Vol. 26 No. 1, pp. 76-85.

Rau, D. (2005), "The influence of relationship conflict and trust on the transactive memory performance relation in top management teams", *Small Group Research*, Vol. 36 No. 6, pp. 746-771.

Robbins, S.P. and Coulter, M. (2012), *Management*, Pearson Education Limited, England.

Rouziès, D., Anderson, E., Kohli, A.K., Michaels, R.E., Weitz, B. and Zoltners, A.A. (2005), "Sales and marketing integration: a proposed framework", *Journal of Personal Selling and Sales Management*, Vol. 15 No. 2, pp. 113-122.

Ruvio, A., Rosenblatt, Z. and Hertz-Lazarowitz, R. (2010), "Entrepreneurial leadership vision in nonprofit vs for-profit organizations", *The Leadership Quarterly*, Vol. 21 No. 1, pp. 144-158.

Sampson, C.B. and Bruenig, H.L. (1971), "Some statistical aspects of pharmaceutical content uniformity", *Journal of Quality Technology*, Vol. 3 No. 4, pp. 170-178.

Sarkar, M.B., Echambadi, R. and Harrison, J.S. (2001), "Alliance entrepreneurship and firm market performance", *Strategic Management Journal*, Vol. 22 Nos 6/7, pp. 701-711.

Schrage, M. (1990), *Shared Minds: The New Technologies of Collaboration*, Random House Inc., New York, NY.

Shamir, B., House, R.J. and Arthur, M.B. (1993), "The motivational effects of charismatic leadership: a self-concept based theory", *Organization Science*, Vol. 4 No. 4, pp. 557-594.

Simon, M. and Shrader, R.C. (2012), "Entrepreneurial actions and optimistic overconfidence: the role of motivated reasoning in new product introductions", *Journal of Business Venturing*, Vol. 27 No. 3, pp. 291-309.

Smits, A. and Kok, R. (2012), "The interplay between outbound team strategy and market information processing in the course of 'really new' NPD projects", *Industrial Marketing Management*, Vol. 41 No. 5, pp. 759-769.

Sobel, M.E. (1982), "Asymptotic confidence intervals for indirect effects in structural equation models", *Sociological Methodology*, Vol. 13, pp. 290-312.

Stephen, A.T. and Coote, L.V. (2007), "Interfirm behavior and goal alignment in relational exchanges", *Journal of Business Research*, Vol. 60 No. 4, pp. 285-295.

Subramaniam, M. and Youndt, M.A. (2005), "The influence of intellectual capital on the types of innovative capabilities", *Academy of Management Journal*, Vol. 48 No. 3, pp. 450-463.

Tessarolo, P. (2007), "Is integration enough for fast product development? An empirical investigation of the contextual effects of product vision", *The Journal of Product Innovation Management*, Vol. 7 No. 24, pp. 69-82.

Thelen, S.T., Yoo, B. and Magnini, V.P. (2011), "An examination of consumer sentiment toward offshored services", *Journal of the Academy of Marketing Science*, Vol. 39 No. 2, pp. 270-289.

Vecchio, R.P. (2003), "Entrepreneurship and leadership: common trends and common threads", *Human Resource Management Review*, Vol. 13 No. 2, pp. 303-327.

Veryzer, R.W. and Mozota, B.B. (2005), "The impact of user-oriented design on new product development: an examination of fundamental relationships", *The Journal of Product Innovation Management*, Vol. 22 No. 2, pp. 128-143.

Waldman, D.A. and Javidan, M. (2009), "Alternative forms of charismatic leadership in the integration of mergers and acquisitions", *The Leadership Quarterly*, Vol. 20 No. 2, pp. 130-142.

Wang, Y. and Krakover, S. (2008), "Destination marketing: competition, cooperation or competition?", *International Journal of Contemporary Hospitality Management*, Vol. 20 No. 2, 126-141.

Xi, Y., Cao, X. and Xiangli, L. (2010), "A Chinese view on rebuilding the integrity of management research the evolving He-Xie management theory", *Chinese Management Studies*, Vol. 4 No. 3, pp. 197-211.

Zahra, S.A. and Nambisan, S. (2012), "Entrepreneurship and strategic thinking in business ecosystems", *Business Horizons*, Vol. 55 No. 3, pp. 219-229.

Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60 No. 2, 31-46.

Zheng, Y. (2012), "Unlocking founding team prior shared experience: a transactive memory system perspective", *Journal of Business Venturing*, Vol. 27 No. 5, pp. 577-591.

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Appendix

Table AI. Construct measurement

Variables	Measurement items
EV	EV-1 Communicative: communicative expresses the manner in which vision is imparted to the venture's followers and is considered the most important aspect of implementation EV-2 Inspirational: this factor emphasizes the potential of the entrepreneur vision to lead and to innovate EV-3 Realistic: this factor contains orientation, integrating with visions of others and direct effort EV-4 Conservative and formalized: this factor expresses the formal and representational side of the entrepreneur vision EV-5 Flexible: the flexibility dimension of the entrepreneur vision articulates the strategic aspect of entrepreneur vision as flexible and responsive to competition. Flexibility represents the entrepreneurs' awareness of competitors
SV	SV1 shared product vision SV1-1 Where the projects had clear and formal definitions of development objectives, including, but not limited to, revenues, profits, market share, customer satisfaction SV1-2 Whether these objectives were clearly communicated to all involved in the product development SV1-3 Whether an agreement existed and objectives shared among those involved in the product development SV2 intra-team trust SV2-1 I am confident that my team members will take my interests into account when making work-related decisions SV2-2 I am confident that that my team members will keep me informed about issues that concern my work SV2-3 I am able to count on my team members for help if I have difficulties with my job SV2-4 I am certain that my team members trust me SV2-5 In general, I believe my team members' motives and intentions are benevolent SV3 credibility and stability SV3-1 I was comfortable accepting procedural suggestions from other entrepreneurial team members SV3-2 I trusted that other entrepreneurial team members' knowledge about running the new venture was credible

(*continued*)

Variables	Measurement items
	SV3-3
	I was confident relying on the information that other entrepreneurial team members brought to the discussion
	SV3-4
	When other entrepreneurial team members provide information, I do not need to double-check it for myself
	SV3-5
	I have much faith in other entrepreneurial team members' expertise
II	II-1
	What degree of projects belonging to the program formally adopted a multifunctional team with representatives from at least the design, manufacturing and marketing departments to manage the development?
	II-2
	Whether there was extensive communication and consultation between the design and manufacturing departments
	II-3
	Whether there was extensive communication and consultation between the design and marketing department
EI	EI-1
	What degree of products belonging to the program formally involved their main customers during development to align technical specifications with customer needs?
	EI-2
	Whether some form of e-connection with customers was used during the design stage to facilitate communication and cooperation with customers
	EI-3
	Whether the main suppliers were formally involved from the beginning of development to align the technical specifications of the supplied components with the firm's needs
	EI-4
	Whether there was some form of e-connection with the suppliers involved in the design stage to facilitate communication and cooperation during development
EP	EP-1
	Created new markets
	EP-2
	Increased market share
	EP-3
	Achieved a good return on investment
	EP-4
	Enhanced environmental image
	EP-5
	Created product differentiation
	EP-6
	Senior managers were satisfied with the product results
	EP-7
	Performance improved in numerous similar and competitive goods
	EP-8
	Customers were satisfied
	EP-9
	Promoting corporate image

Table AI.