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# A system model for corporate entrepreneurship

Corporate entrepreneurship

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## Abstract

**Purpose** – To measure the factors contributing to corporate entrepreneurship cultivation and examine the relation between corporate entrepreneurship and innovation performance.

**Design/methodology/approach** – With interviews and questionnaires, 58 large-middle size enterprises in China were randomly surveyed to test the hypotheses. Factor analysis is used to corporate entrepreneurship cultivation factors, corporate entrepreneurship and innovation performance. And then, a series of multiple linear regression analyzes have been conducted to test the causality between the above three aspects.

**Findings** – It is found that there are four factors contributing to corporate entrepreneurship, and it is suggested that corporations can cultivate corporate entrepreneurship to enhance corporate innovation performance.

**Research limitations/implications** – It's not an exhaustive list of corporate entrepreneurship cultivation factors. And the size of samples is not large enough which perhaps limits its usefulness.

**Practical implications** – Lack of corporate entrepreneurship is a common problem of the large corporations in China, so the system model which proved in the paper is useful to offer a guideline.

**Originality/value** – The paper brings forth a system model to better the methods of cultivating corporate entrepreneurship to enhance corporate innovation performance based on an empirical study.

**Keywords** Entrepreneurs, Organizational performance

**Paper type** Research paper

## 1. Introduction

It has been shown that entrepreneurship plays an indispensable role in improving productivity and promoting economic growth (Covin and Slevin, 1991; Zahra, 1991, 1993; Yu, 1998). As China has entered WTO, the extend to which corporate entrepreneurship is brought into play is the key to enabling China to catch up with more advanced countries. Corporate entrepreneurship, which is embodied in the innovative and venturing activities of a corporation, does not mean only the entrepreneurship of the CEO or of any other particular individual in a corporation, but the entrepreneurship of the whole staff in a corporation. The innovative spirit is the quintessence of entrepreneurship and the most basic quality requirement of modern enterprise system for entrepreneurs as well (Drucker, 1985). Besides, entrepreneurs should always be ready for any risks because of the uncertainties in corporation



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management. However, lack of corporate entrepreneurship is a common problem of the large corporations in China. On the other hand, in China, the research in this field is still in its infancy, and thus the theoretical foundation now available in China cannot offer any guidelines to the corporations in China. Therefore, with a consideration for the given circumstances in China, a research is done on the factors contributing to the cultivation of corporation entrepreneurship, and a system model is thereupon brought forth after an empirical study is conducted to verify this model.

## 2. A hypothetical system model for cultivating corporate entrepreneurship

Corporate entrepreneurship is essential in competitive markets nowadays. Considerable attempts have been made to identify the factors that promote a corporation's commitment to corporate entrepreneurship (Lumpkin and Dess, 1996; Zahra *et al.*, 2000). Based on a thorough study of the established academic researches in this field in the world and the relevant successful experiences of the internationally famous companies, three factors are found to influence the cultivation of corporate entrepreneurship in Chinese corporations. They are the system of the director board and the management, the quality of the entrepreneur, the corporate strategic entrepreneurial management and the whole corporate circumstances (Figure 1).

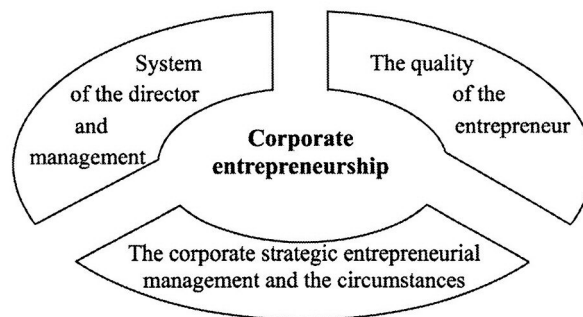
### 2.1 The system of the director board and the management

Corporate entrepreneurship cultivation cannot be carried on unless it is supported by the top management and the shareholders. Innovation, domestic and international venture require constant and patient investment. Without the incentives from the shareholders and the top management to promote the long-term and potentially risky projects, corporate entrepreneurship cannot gain strong support. Therefore, the system of the director board and the management are the premier factors in cultivating corporate entrepreneurship (Bantel and Jackson, 1989). Based on these theoretical starting points, the first research hypothesis (*H1*) is framed as follows:

- H1.* The system of the director board and the management is positively associated with corporate entrepreneurship cultivation.

Concretely, the system of the director board and the management includes:

- H<sub>11</sub>.* The proportion of the stocks of the company held by the senior executives. Increasing the senior executives' ownership of the stocks of the company they run can make their wealth more dependent on their company's long-term



**Figure 1.**  
The hypothetical system model of cultivating corporate entrepreneurship

performance, and empower them to initiate and champion corporate entrepreneurship activities (Jenkins and Seiler, 1990; Finkelstein and D'Aveni, 1994)

- H<sub>12</sub>. A proper-sized corporate director board.* The relationship between the size of the director board and corporate entrepreneurship may just resemble an inverted U (Zahra *et al.*, 2000). A too large or too small size will negatively affect the cultivation of the corporate entrepreneurship.
- H<sub>13</sub>. The number of the outside director representatives.* Inside directors might be reluctant to take the long-term uncertainties and risks resulting from the actions of the entrepreneur (Wright *et al.*, 1996), while outside directors welcome these uncertainties and often bring in new competition information from different viewpoints.
- H<sub>14</sub>. Outside directors' stock ownership.* The stock ownership makes the outside directors able to take part in the strategic-decision-making, gives them the chance to supervise the CEO's work, and thus helps the management to heighten the corporate entrepreneurship (Zahra *et al.*, 2000).
- H<sub>15</sub>. Separating the CEO from the director board.* If the CEO is a member of the director board, he or she tends to refuse the innovative and risk-taking activities (Miller, 1983), which impedes the cultivation of corporate entrepreneurship.

## 2.2 The entrepreneurial quality

The staff possessing the entrepreneurial quality is the foundation to cultivate the corporate entrepreneurship. If the staff are lacking of the entrepreneurial insight, any innovation for the corporation is impossible. Without the risk-taking talents, it is impossible to develop business abroad or even home. The entrepreneurial quality includes two aspects, ability and personality. Many research works have been done on the abilities and personalities of successful entrepreneurs. It is found that successful entrepreneurs possess some common personalities, such as endless energy, strong willpower, self-efficacy and independence (Littunen, 2000). The hypotheses (*H2*) concerning the entrepreneurial quality are formulated as follows:

- H2.* The staff with the entrepreneurial quality will promote the cultivation of corporate entrepreneurship.

In detail, the factors positively contributing to corporate entrepreneurship most are as follows:

- H<sub>21</sub>. Self-efficacy.* Self-efficacy is an individual's cognitive estimate of his or her own (Wood and Bandura, 1989). An increasingly strong emphasis has been put on the role of self-efficacy in the study of entrepreneurship (Chen *et al.*, 1998).
- H<sub>22</sub>. Independence.* An entrepreneur needs creative and independent thinking to bring in new ideas and undertake risks.
- H<sub>23</sub>. Achievement motivation.* Individuals with the strong need to achieve often find their way to entrepreneurship and succeed than others (Carsrud and Johnson, 1989; McClelland, 1965).

- H<sub>24</sub>. Risk-taking.* As the undertaker of innovation and venture business, entrepreneurs should have the courage to forward venture (Caird, 1988).
- H<sub>25</sub>. The capability to endure the uncertain circumstances.* Entrepreneurs should have enough confidence and endurance in the uncertain circumstances.
- H<sub>26</sub>. The ability to seize business opportunities.* The ability to identify and seize opportunities from the complicated market is the main difference between an entrepreneur and common employees (Caird, 1988).
- H<sub>27</sub>. Interdisciplinary knowledge and multi-function working background.* The entrepreneurial activities require comprehensive qualities.
- H<sub>28</sub>. The ability to learn from failures.* This ability is a key feature of an entrepreneur, and a significant source of innovation and new business.

### 2.3 The corporate strategic entrepreneurial management and the whole corporate circumstances

Even with the support from the director board and senior executives, not all corporations are able to enhance corporate entrepreneurship efficiently. As a matter of fact, the corporate strategic entrepreneurial management is very important in efficiently heightening the corporate entrepreneurship (Igel and Islam, 2001). In practice, it's a vital element in cultivating corporate entrepreneurship because the entrepreneurial activities depend on the corporate strategic entrepreneurial management (Covin and Slevin, 1991; Zahra, 1991). On the other hand, corporate entrepreneurship is the spirit permeating among the whole corporation, so the whole circumstances in a corporation can directly influence the cultivation of corporate entrepreneurship. The favorable corporate circumstances, which are beneficial to the training and developing of entrepreneurs, can do good to the cultivation of corporate entrepreneurship by formulating proper strategies and protecting entrepreneurs' enthusiasm and innovation (Charlene *et al.*, 2000; Bluedorn *et al.*, 1994). The third hypothesis (*H3*) derives from the above observations.

- H3.* Corporate strategic entrepreneurial management and the favorable corporate circumstances give a positive impetus to cultivating corporate entrepreneurship.

To be exact, the elements in the corporate entrepreneurial strategic management and the corporate circumstances contributing to the cultivation of corporate entrepreneurship are the following:

- H<sub>31</sub>. Identifying, assessing and selecting opportunities scientifically and systematically.* It is vital to scientifically analyze the opportunities because this process reflects and improves corporate entrepreneurship.
- H<sub>32</sub>. The staff's participation in strategy formulating.* Without the staff's participation, the viewing angle is inevitably limited and consequently the cultivation of corporate entrepreneurship will be impeded (Goold and Campell, 1987; Camillus, 1982; Bossak and Nagashima, 1997).
- H<sub>33</sub>. The flexible strategy formulation.* It is good for promoting and giving expression to corporate entrepreneurship to keep pace with and take

advantage of the changes of the circumstances by breaking the limitation of the circumstances (Covin and Slevin, 1990; Birley, 1985).

- H<sub>34</sub>. Strategically financial control.* Both strategic control and financial control are the most commonly used control forms in corporations. Merely stressing the former, however, may damage the financial income of the corporation while putting the latter in the first place would hinder the venture of a corporation. As a result, a strong emphasis should be put on a strategically financial control (Zahra, 1991, 1993).
- H<sub>35</sub>. An enterprising strategy.* Faced with the highly uncertain and dynamic circumstances, it is no longer important to possess sufficient information to formulate the strategy. The most significant is the time difference in obtaining information and taking actions.
- H<sub>36</sub>. Constant support from the top management.* Only with constant support from the top management, an organization structure beneficial to the cultivation and development of corporate entrepreneurship can come into being (Bryant, 1997).
- H<sub>37</sub>. The flattening of the organization structure.* In big corporations, flattening the corporate structure is an effective way to stimulate innovation and venture, and consequently the corporate entrepreneurship.
- H<sub>38</sub>. The establishment of a special department in charge of innovation and venture.* Block and MacMillan (1993) suggested that a special department should set up in a large corporation to be responsible for innovation and venture so as to enhance corporate entrepreneurship.
- H<sub>39</sub>. An innovation-oriented corporate culture.* Without a corporate culture advocating innovation and risk-taking, it is impossible for corporate entrepreneurship to take shape within a corporation.

### 3. The verification of the system model

#### 3.1 Samples

With interviews and questionnaires, 75 large-middle size enterprises in China were randomly surveyed to test the above hypotheses. Two surveying methods were adopted. One is the face-to-face interview. Based on the mutual understanding between the surveyors and the interviewees, scores were given to the questions on the questionnaire. This method is mainly for the entrepreneur or the CEO of the corporation. Another method is to directly hand out the questionnaires to the rest of the staff and later have them handed in. This method is for those division managers and part of senior executives who are responsible for the innovation and venture. Two hundred copies of the questionnaire were distributed, with 156 copies handed in. Because of the complexity of the questionnaire and the doubts of some interviewees, part of the collected questionnaires were not fully answered, and thus only 58 copies could be used for further analysis. Among the 58 effective copies, 20 copies were from manufacturing industry, 14 from service industry, and 24 from foreign trade, communications and the others.



3.2 Measurements

With interviews and questionnaires, the factors contributing to corporate entrepreneurship cultivation, corporate entrepreneurship, and the corporate performance are measured in a five-point scale, ranging from 5 to 1.

3.3 Measurement for the factors contributing to corporate entrepreneurship cultivation

The above factors positively associated with corporate entrepreneurship should be rated, including the system of the corporate director board and the management, the entrepreneurial quality, corporate strategic entrepreneurial management and the whole corporate circumstances.

3.4 Measurement for corporate entrepreneurship

Corporate entrepreneurship is the aggregation of innovation and venture. In order to assess corporate entrepreneurship scientifically, a multi-index measurement was designed for both the innovation and the venture components of corporate entrepreneurship.

3.4.1 Innovation. A significant way for an entrepreneur to improve corporation's performance is innovation (Miller, 1983; Lumpkin and Dess, 1996). Innovation gives important expression to corporate entrepreneurship as well. The indices of innovation are shown in Table I.

3.4.2 Venture. Venture reflects corporate entrepreneurship in another way. The corporate domestic development needs venture; moreover, the success of globalized business needs creativity, commercial wisdom, and risk-taking (Bossak and Nagashima, 1997). Therefore, the measurement for venture is for both domestic and international venture (Debroux, 2000; Acs *et al.*, 1997) (Table II).

3.5 Measurement for the corporation's performance

Although there are considerable risks in innovation and venture, corporate entrepreneurship can bring huge profit for a corporation, which can compensate for

Products innovation (I <sub>1</sub> )		Process innovation (I <sub>2</sub> )		Technique innovation (I <sub>3</sub> )	
I <sub>11</sub>	Products breakthrough	I <sub>21</sub>	Process breakthrough	I <sub>31</sub>	Technique breakthrough
I <sub>12</sub>	Evolutional products innovation	I <sub>22</sub>	Evolutional process innovation	I <sub>32</sub>	Evolutional technique innovation
I <sub>13</sub>	R&D investment in new product	I <sub>23</sub>	R&D investment in process innovation	I <sub>33</sub>	R&D investment in technique innovation
I <sub>14</sub>	New products marketing			I <sub>34</sub>	Commercialization of new technique

**Table I.**  
Innovation indices

Domestic venture (V <sub>1</sub> )		International venture (V <sub>2</sub> )	
V <sub>11</sub>	Opening up new domestic markets	V <sub>21</sub>	Opening up new international markets
V <sub>12</sub>	Diversifying new domestic industries	V <sub>22</sub>	Diversifying new international industries
V <sub>13</sub>	Supporting new domestic venture activities	V <sub>23</sub>	Supporting new international venture activities
V <sub>14</sub>	Investment in domestic venture	V <sub>24</sub>	Investment in international venture

**Table II.**  
Venture indices

the loss resulting from the risks. Moreover, corporate entrepreneurship can help to improve the corporation's competitive position in domestic and international markets by renewing its capabilities of acquiring and using new competence. It is suggested that corporate entrepreneurship is positively associated with a company's growth and profit (Covin and Slevin, 1991; Zahra, 1991), and it is likely to improve corporate performance (Zahra *et al.*, 2000). In order to analyze the relationship, the corporation's performance is measured. As Banker *et al.* (1996) suggested, return on investment, return on sales, sales growth, and net profit growth are used to measure the corporate performance.

### 3.6 Statistical analysis

**3.6.1 Factor analysis and reliability test.** In order to test the conception validity of the system model, the factor analysis was conducted, and then the Cronbach's  $\alpha$  coefficient was measured to test reliability. Factor analysis of the corporate entrepreneurship cultivation factors (Table III).

From Table I, it can be found that there are some deviations between the analysis result and the assumptive model. Factor I refers to the corporate strategic entrepreneurial management and the corporate circumstances is named as F4. In factor II, the item  $H_{36}$ , the support from top management obviously has nothing to do with other items, so it is removed and the left items are named as F2, which refers to the

Items	Factors			
	I	II	III	IV
$H_{32}$	0.784	0.291	$-3.975 \times 10^{-2}$	$1.724 \times 10^{-2}$
$H_{39}$	0.773	0.312	-0.117	-0.135
$H_{34}$	0.701	$-6.594 \times 10^{-2}$	-0.171	0.128
$H_{35}$	0.692	0.288	0.451	0.116
$H_{38}$	0.686	0.290	0.253	-0.202
$H_{31}$	0.666	0.108	0.183	0.232
$H_{33}$	0.640	0.206	$4.584 \times 10^{-2}$	0.375
$H_{37}$	0.575	0.210	0.119	0.112
$H_{25}$	0.250	0.740	$-9.082 \times 10^{-2}$	0.273
$H_{26}$	0.359	0.727	$1.494 \times 10^{-2}$	0.144
$H_{24}$	0.347	0.694	0.294	$6.386 \times 10^{-2}$
$H_{36}$	0.471	0.546	0.149	0.205
$H_{28}$	0.395	0.525	$8.706 \times 10^{-2}$	0.486
$H_{27}$	0.370	0.478	0.256	$2.978 \times 10^{-2}$
$H_{13}$	0.186	-0.258	0.780	0.137
$H_{12}$	$-8.921 \times 10^{-2}$	0.115	0.709	$-3.848 \times 10^{-2}$
$H_{23}$	$6.118 \times 10^{-2}$	0.228	0.546	$6.606 \times 10^{-2}$
$H_{14}$	0.265	-0.510	0.534	0.368
$H_{15}$	$1.968 \times 10^{-4}$	$3.440 \times 10^{-2}$	0.454	$1.108 \times 10^{-2}$
$H_{11}$	$8.658 \times 10^{-2}$	0.150	0.450	-0.428
$H_{21}$	0.249	0.205	$3.594 \times 10^{-2}$	0.693
$H_{22}$	$-6.773 \times 10^{-2}$	0.426	0.191	0.605

**Notes:** Here,  $H_{1*}$  refers to the system of the corporate director board and the management;  $H_{2*}$  refers to the quality of entrepreneurs;  $H_{3*}$  refer to the corporate strategic management and the corporate circumstances

**Table III.**  
Factor analysis of the  
corporate  
entrepreneurship  
cultivation factors

ability characteristics of the entrepreneurs. In factor III, the item  $H_{23}$ , the achievement motivation is evidently not relevant with  $H_1$ , the system of the corporate director board and the management, and consequently  $H_{23}$  is cancelled and the left items are classified as F1, which refers to the system of the corporate director board and management. Factor IV, including self-efficacy and independence, is defined as F3, which refers to the personality characteristics of entrepreneur. With the above analysis and adjustment, the results of the new analysis on corporate entrepreneurship cultivation factors are shown in Table IV.

Factor analysis of corporate entrepreneurship (Table V).

From Table V, it is noted that, between the analysis result and the assumptive model, there are some deviations. Factors V, together with the hypothesis, can be classified as innovation activities (F5). The items in factor VI are mainly assessed international venture.  $V_{13}$ , supporting new domestic venture activities, is cancelled and the left items are named as F6. In factor VII, the assessment of domestic venture,  $V_{12}$ ,

**Table IV.**  
Adjusted factor analysis  
of the corporate  
entrepreneurship  
fostering factors

Factors	Items	$\alpha$ coefficient
F4	$H_{32}, H_{39}, H_{34}, H_{35}, H_{38}, H_{31}, H_{33}, H_{37}$	0.88
F2	$H_{25}, H_{26}, H_{24}, H_{28}, H_{27}$	0.85
F1	$H_{13}, H_{12}, H_{14}, H_{15}, H_{11}$	0.60
F3	$H_{21}, H_{22}$	0.60

**Note:** After the adjustment, the  $\alpha$  coefficient of each factor reaches 0.60 or more, an acceptable degree

**Table V.**  
Factor analysis of  
corporate  
entrepreneurship

Items	V	Factors VI	VII
$I_{33}$	0.839	0.188	0.206
$I_{32}$	0.834	0.218	0.201
$I_{23}$	0.792	0.365	$9.638 \times 10^{-2}$
$I_{22}$	0.792	0.189	$3.206 \times 10^{-2}$
$I_{21}$	0.701	0.536	$-1.494 \times 10^{-2}$
$I_{31}$	0.678	0.445	0.196
$I_{34}$	0.654	0.287	0.444
$I_{13}$	0.650	0.168	0.594
$I_{12}$	0.643	0.230	0.467
$I_{11}$	0.496	0.376	0.427
$V_{23}$	0.204	0.848	0.214
$V_{24}$	0.335	0.839	0.195
$V_{22}$	$8.470 \times 10^{-2}$	0.799	0.275
$V_{13}$	0.254	0.749	$-2.911 \times 10^{-2}$
$V_{21}$	0.209	0.720	0.411
$V_{14}$	0.444	0.643	$4.390 \times 10^{-2}$
$I_{14}$	0.403	0.239	0.717
$V_{11}$	0.212	0.169	0.676
$V_{12}$	0.214	$-1.826 \times 10^{-2}$	-0.308

**Note:** Here,  $I_{**}$  means the ability of innovation and  $V_{**}$  means venturing activities



diversifying new domestic industries, is of little important, so it is cancelled and the left items are classified as F7. After analysis and adjustment, the results of new analysis are shown in Table VI

### 3.7 Regression analysis

To test the causality between the main corporate entrepreneurship cultivation factors, corporate entrepreneurship and the corporate performance, a series of multiple linear regression analyzes have been conducted and the regression standardized coefficients have also been tested.

Regression analysis of corporate entrepreneurship and the factors contributing to its cultivation. In order to examine the relationship between corporate entrepreneurship and the major factors contributing to its cultivation, a multiple linear regression analysis has been made. Innovation (F5), international venture (F6), domestic venture (F7), and corporate entrepreneurship (F) are conducted as dependent variables. The system of the director board and the management (F1), the ability characteristics of the entrepreneur (F2), the personality characteristics of the entrepreneur (F3), and the strategic entrepreneurial management and the whole circumstances of the corporation (F4) are conducted as independent variables. The standardized coefficients of the regression and results of their *t*-test are shown in Table VII.

Regression analysis of corporate entrepreneurship and the specific factors contributing to its cultivation (Table VIII).

Regression analysis of corporate entrepreneurship and corporate performance (Table IX).

Factors	Items	$\alpha$ coefficient
F5	I <sub>33</sub> , I <sub>32</sub> , I <sub>23</sub> , I <sub>22</sub> , I <sub>21</sub> , I <sub>31</sub> , I <sub>34</sub> , I <sub>13</sub> , I <sub>12</sub> , I <sub>11</sub>	0.94
F6	V <sub>23</sub> , V <sub>24</sub> , V <sub>22</sub> , V <sub>21</sub> , V <sub>14</sub>	0.91
F7	I <sub>14</sub> , V <sub>11</sub>	0.68

**Note:** According to the adjusted structure of factor analysis, the  $\alpha$  coefficient of each factor reaches 0.60 or more

**Table VI.**  
Adjusted factor analysis  
of the corporate  
entrepreneurship

Contributing factors	F5. Innovation	F6. International venture	F7. Domestic venture	F. Corporate entrepreneurship
F1. System of the board and the management	0.36**	0.24*	0.28*	0.29*
F2. Entrepreneur's ability	0.27**	0.24**	0.29**	0.26**
F3. Entrepreneur's personality	0.42*	0.30*	0.32*	0.35*
F4. Corporate strategic entrepreneurial management and circumstances	0.30**	0.22*	0.28**	0.27**

**Notes:** \*\* $p < 0.01$ ; \* $p < 0.05$

**Table VII.**  
Regression analysis of  
corporate  
entrepreneurship and the  
factors contributing to its  
cultivation

Factors	Items	F5.	F6.	F7.	F.
		Innovation	International venture	Domestic venture	Corporate entrepreneurship
F1. System of the director board and the management	$H_{11}$	0.50**	0.42**	0.44**	0.46**
	$H_{12}$	0.11	0.18	0.22*	0.16
	$H_{13}$	0.08	0.12	0.02	0.10
	$H_{14}$	0.34*	0.38*	0.42**	0.38*
	$H_{15}$	0.38**	0.34*	0.40**	0.37**
F2. Entrepreneur's ability	$H_{24}$	0.16*	0.02	0.09	0.08
	$H_{25}$	0.44**	0.32**	0.38**	0.37**
	$H_{26}$	0.32**	0.24*	0.28**	0.27**
	$H_{27}$	0.13	0.14*	0.08	0.10
	$H_{28}$	0.32**	0.38**	0.24*	0.33**
F3. Entrepreneur's personality	$H_{21}$	0.48**	0.35**	0.37**	0.40**
	$H_{22}$	0.42**	0.43**	0.25*	0.37**
F4. Corporate strategic management and circumstance	$H_{31}$	0.02	-0.10	0.08	0.05
	$H_{32}$	0.21*	0.18*	0.14	0.16*
	$H_{33}$	0.24*	0.28**	0.18*	0.25**
	$H_{34}$	0.38**	0.46**	0.32**	0.37**
	$H_{35}$	0.24*	0.15*	0.18*	0.20*
	$H_{37}$	0.27*	0.14*	0.16*	0.18*
	$H_{38}$	0.31*	0.12	0.18*	0.22*
	$H_{39}$	0.35**	0.24*	0.28*	0.30

Notes: \*\* $p < 0.01$ ; \* $p < 0.05$

**Table VIII.**  
Regression analysis of corporate entrepreneurship and the specific factors contributing to its cultivation

Factors	P. Corporate performance	P1. Return on investment	P2. Return on sales	P3. Sales growth	P4. Net profit growth
F. Corporate entrepreneurship	0.28*	0.25*	0.32**	0.24*	0.35**
F5. Innovation	0.32**	0.21*	0.34**	0.35**	0.24*
F6. International venturing	0.26*	0.18	0.27*	0.30*	0.22
F7. Domestic venturing	0.30**	0.25*	0.33**	0.32*	0.27

Notes: \*\* $p < 0.01$ , \* $p < 0.05$

**Table IX.**  
Regression analysis of corporate entrepreneurship and corporate performance

**4. Discussion and conclusion**

*4.1 The system of the director board and management (F1) and corporate entrepreneurship*

The results are generally, but not universally, consistent with  $H1$ , which suggests that the system of director board and management is consistently and positively associated with corporate entrepreneurship cultivation. The results suggest that the cultivation of corporate entrepreneurship is considerably influenced by the senior executives' ownership of the stock in their corporation ( $H_{11}$ ), outside directors' stock ownership ( $H_{14}$ ) and the separating of the CEO from director board ( $H_{15}$ ). However, it cannot be

proved that the other two items, the size of the director board and the number of outside director representatives, have influence on the cultivation of corporate entrepreneurship.

#### *4.2 The ability characteristics of the entrepreneur (F2) and corporate entrepreneurship*

The fact is supported by the results of statistical analysis that there is a positive relationship between the ability characteristics of the entrepreneur and corporate entrepreneurship fostering. Therefore, the entrepreneurial abilities of the senior executives should be cultivated, which include the capacity to endure uncertain circumstances ( $H_{25}$ ), the ability to seize opportunities ( $H_{26}$ ), and the ability to learn from failures ( $H_{28}$ ). Another two items, however, risk-taking ( $H_{24}$ ), interdisciplinary knowledge and multi-function working background ( $H_{27}$ ), can be hardly proved to have influence on corporate entrepreneurship. The top management's entrepreneurial abilities, which include the abilities of enduring uncertainties, seizing opportunities, and tolerating and learning from failures, have a positive influence on corporate entrepreneurship. Without the top management's entrepreneurial abilities, it is difficult to cultivate corporate entrepreneurship.

#### *4.3 The personality characteristics of an entrepreneur (F3) and corporate entrepreneurship*

The above results prove that there exists a positive relationship between the personality characteristics of the entrepreneur and the cultivation of corporate entrepreneurship. Self-efficacy ( $H_{21}$ ) and independence ( $H_{23}$ ) contribute positively to corporate entrepreneurship. It can be consequently concluded that senior managers' entrepreneurial personality is vital to corporate entrepreneurship. The strength from successfully playing the various roles and accomplishing the tasks of an entrepreneur – self-efficacy (Chen *et al.*, 1998) and independence – makes a positive contribution to the prosperity of a corporation.

#### *4.4 Corporate strategic management and corporate circumstances (F4) and corporate entrepreneurship*

Corporate strategic entrepreneurial management and corporate circumstances are significantly interrelated with the cultivation of corporate entrepreneurship. It is testified that the following items are related to the development of corporate entrepreneurship. They are the staff's participation ( $H_{32}$ ), the flexibility of strategy formulating in accordance with the circumstances ( $H_{33}$ ), strategically financial control ( $H_{34}$ ), the enterprising strategy ( $H_{35}$ ), the flattened organization structure ( $H_{37}$ ), the special department of innovation and venture ( $H_{38}$ ), and an innovation-oriented corporate culture ( $H_{39}$ ). However, it is not proved that the emphasis on identifying, assessing and selecting opportunities scientifically and systematically ( $H_{31}$ ) is related with the cultivation of corporate entrepreneurship. It is hence concluded that corporate strategic management and corporate circumstances is another important contributing factor in the cultivation of corporate entrepreneurship.

#### *4.5 Corporate entrepreneurship and corporate performance*

The above results support the proposition that corporate entrepreneurship is important for a corporation's performance. A corporation's performance is improved by innovations in product, process and technique, and both domestic and international

venture. However, the effect of international venture on return on investment and net profit growth rate is insignificant, and so is the effect of domestic venture on net profit growth rate.

#### 4.6 The hypothetical system model of corporate entrepreneurship cultivating, corporate entrepreneurship and company performance

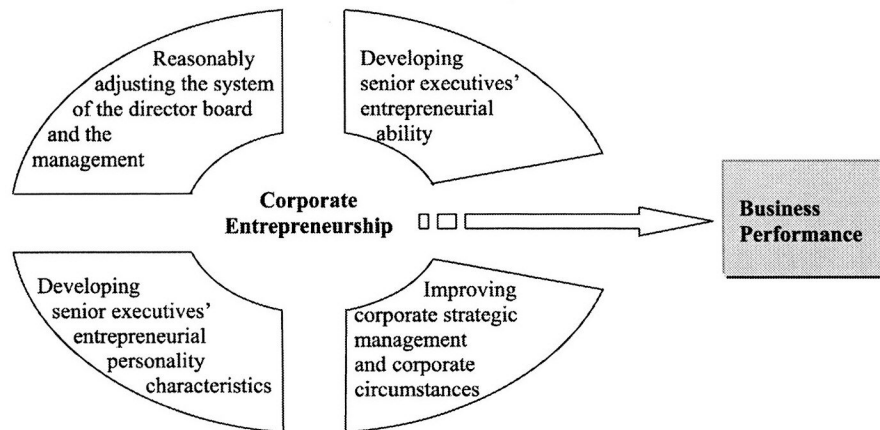
The results of this study suggest a need for some effective measures to heighten corporate entrepreneurship so as to obtain greater corporate achievements. Though there are a few of deficiencies in the sampling of this study, the research results can provide some guidelines for the concerned scholars. In order to guarantee the effective application of the research results in cultivating corporate entrepreneurship, the former model is adjusted according to the above conclusions and thus a new system model, which includes corporate business performance, is shown in Figure 2.

According to Figure 2, it is suggested that corporations can cultivate corporate entrepreneurship to enhance corporate performance from the following four measures.

*Measure 1:* reasonably adjusting the system of the director board and the management.

- (1) *Separating the CEO from the board.* If the CEO is a number of the director board, he or she might be reluctant to promote the long-term and potentially risky projects.
- (2) *Rewarding senior executives with stock right.* Senior executives' support is one of the most important factors to cultivate corporate entrepreneurship. Stock right can empower senior executives to initiate and support long-term and risk-taking activities.
- (3) *Attracting outside directors by rewarding them with stock ownership.* Outside directors' independence help them to think from different viewpoints, and the stock ownership heighten their participation in corporate business.

*Measure 2:* developing senior executives' entrepreneurial ability



**Figure 2.**  
The hypothetical system model of corporate entrepreneurship cultivating

- (1) *Developing the capacity to endure uncertain circumstances.* Innovation and venture means uncertainty. The ability to endure uncertain circumstances is a significant feature of an entrepreneur.
- (2) *Developing the ability to seize opportunities.* Facing different kinds of venturing opportunities, quickly picking up the valuable thoughts is of the utmost importance.
- (3) *Developing the ability to learn from failures.* Innovation and venture always go with failures, but failure is the mother of success. Learning from failure is a significant source of innovation and new business.

*Measure 3:* developing senior executives' entrepreneurial personality.

- (1) *Self-efficacy.* Self-efficacy is an individual's cognitive estimate of his or her own "capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives" (Wood and Bandura, 1989), it is a key feature of an entrepreneur.
- (2) *Independence.* Independent means bringing in new ideas and undertaking risk. Without independence there is no innovation or improvement.

*Measure 4:* improving corporate strategic management and corporate circumstances.

- (1) *Improving the staff participating in strategy formulating.* With the staff's participation, the strategy can be considered from various viewing angles.
- (2) *Formulating strategy flexibly according to the circumstances.* Facing complicate circumstance, flexible strategy formulation is appropriate. It is an important activity of corporate entrepreneurship.
- (3) *Emphasis on strategically financial control.* Strategic control or financial control is not enough to support long-term development, respectively. Financial income and venture business needs a strategically financial control.
- (4) *Enterprising strategy.* Leading up in getting information and taking action is the most important in the information age. Conservative strategy would underrate the importance of innovation and venture and cannot endure the failure, and consequently the corporate entrepreneurship will be nipped in the bud.
- (5) *Flattening the organization structure.* Big corporations are always no longer aware of the need for innovation and venture. Flattening the organization structure can stimulate innovation and venture.
- (6) *Setting up the special department for innovation and venture.* Such a department in charge of innovation and venture would enhance corporate entrepreneurship.
- (7) *An innovation-oriented culture.* Corporate culture is the values, faith and behavior criterions approved and shared by all the staff. The cultivation of corporate entrepreneurship demands a strong cultural support.

#### References

- Acs, Z.J., Morck, R., Shaver, J.M. and Yeung, B. (1997), "The internationalization of small and medium-sized enterprises: a policy perspective", *Small Business Economics*, Vol. 9, pp. 7-20.



- Banker, R.D., Chang, H. and Majumdar, S.K. (1996), "A framework for analyzing changes in strategic performance", *Strategic Management Journal*, Vol. 10 No. 1, pp. 75-87.
- Bantel, K.A. and Jackson, S.E. (1989), "Top management and innovations in banking: does the composition of the top team make a difference", *Strategic Management Journal*, Vol. 10, pp. 107-24.
- Birley, S. (1985), "The role of networks in the entrepreneurial process", *Journal of Business Venturing*, Vol. 1, pp. 107-17.
- Block, Z. and MacMillan, I.C. (1993), *Corporate Venturing*, Harvard Business School Press, Boston, MA.
- Bluedorn, A.C., Johnson, R.A. and Cartwright, D.K. (1994), "The interface and convergence of the strategic management and organizational environment domains", *Journal of Management*, Vol. 20, pp. 201-62.
- Bossak, J. and Nagashima, S. (1997), *Corporate Strategies for a Borderless World: Sharpening your Competitive Edge*, Asian Productivity Organization, Tokyo, Japan.
- Bryant, A. (1997), "Some second thoughts on options", *New York Times*, 21 September, Section 3, 1.
- Caird, S. (1988), *A Review of Methods of Measuring Enterprising Attributes*, Durham University Business School, Durham, NC.
- Camillus, J. (1982), "Reconciling logical incrementalism and synoptic formalism: an integrated approach to designing strategic planning processes", *Strategic Management Journal*, Vol. 3, pp. 277-83.
- Carsrud, A.L. and Johnson, R.W. (1989), "Entrepreneurship: a social psychological perspective", *Entrepreneurship and Regional Development*, Vol. 1 No. 1, pp. 21-31.
- Charlene, L., Nicholls-Nixon, Cooper, A.C. and Woo, C.Y. (2000), "Strategic experimentation: understanding change and performance in new ventures", *Journal of Business Venture*, Vol. 15, pp. 493-521.
- Chen, C.C., Greene, P.G. and Crick, A. (1998), "Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?", *Journal of Business Venturing*, Vol. 13, pp. 295-316.
- Covin, J.G. and Slevin, D. (1990), "Strategic management of small firms in hostile and benign environments", *Strategic Management Journal*, Vol. 10 No. 1, pp. 75-87.
- Covin, J.G. and Slevin, D. (1991), "A conceptual model of entrepreneurship as firm behavior", *Entrepreneurship: Theory and Practice*, Vol. 16 No. 1, pp. 7-25.
- Debroux, P. (2000), "The role of the venture business culture in the renewal of Japanese industry", *International Business Review*, Vol. 9, pp. 657-68.
- Drucker, P.F. (1985), *Innovation and Entrepreneurship*, Harper and Row, New York, NY.
- Finkelstein, S. and D'Aveni, R.A. (1994), "CEO duality as a double-edged sword: how boards of directors balance entrenchment avoidance and unity of command", *Academy of Management Journal*, Vol. 37, pp. 1079-108.
- Goold, M. and Campell, L.A. (1987), *Strategies and Styles*, Blackwell, London.
- Igel, B. and Islam, N. (2001), "Strategies for service and market development of entrepreneurial software designing firms", *Technovation*, Vol. 21, pp. 157-66.
- Jenkins, E. and Seiler, R. (1990), "The impact of executive compensation schemes upon the level of discretionary expenditures and growth in stockholder wealth", *Journal of Business Finance and Accounting*, Vol. 17, pp. 585-92.
- Littunen, H. (2000), "Entrepreneurship and the characteristics of the entrepreneurial personality", *International Journal of Entrepreneurial Behavior & Research*, Vol. 6 No. 6, pp. 295-309.

- Lumpkin, G.T. and Dess, G.G. (1996), "Clarifying the entrepreneurial orientation construct and linking it to performance", *Academy of Management Review*, Vol. 21 No. 1, pp. 135-72.
- McClelland, D.C. (1965), "Achievement and entrepreneurship: a longitudinal study", *Journal of Personality and Social Psychology*, Vol. 4 No. 1, pp. 389-92.
- Miller, D. (1983), "Entrepreneurship correlates in three types of firms", *Management Science*, Vol. 29, pp. 770-91.
- Yu, T.F.-L. (1998), "Adaptive entrepreneurship and the economic development of Hongkong", *World Development*, Vol. 16 No. 5, pp. 897-911.
- Wood, R. and Bandura, A. (1989), "Social cognitive theory of organizational management", *Academy of Management Review*, Vol. 14, pp. 361-84.
- Wright, P., Ferris, S.P., Sarin, A. and Awasthi, V. (1996), "Impact of corporate insider, blockholder, and institutional equity ownership on firm risk taking", *Academy of Management Journal*, Vol. 39 No. 2, pp. 441-63.
- Zahra, S.A. (1991), "Predictors and financial outcomes of corporate entrepreneurship", *Journal of Business Venturing*, Vol. 6, pp. 259-85.
- Zahra, S.S. (1993), "Environment, corporate entrepreneurship, and financial performance: a taxonomy approach", *Journal of Business Venturing*, Vol. 8, pp. 319-40.
- Zahra, S.S., Neuvaum, D.O. and Huse, M. (2000), "Entrepreneurship in medium-size companies: exploring the effects of ownership and governance systems", *Journal of Management*, Vol. 26 No. 5, pp. 947-76.

#### Further reading

- Covin, J.G. (1991), "Entrepreneurial versus conservative firms: a comparison of strategies and performance levels of small entrepreneurial and conservative firms", *Southern Management Proceedings*, pp. 250-2.

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