Organizational Strategy Change Associated with Organizational Growth

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ABSTRACT

How does an organization change its strategy when it grows? Previous studies showed a dyad relationships between organizational size (small vs. large) and competitive strategy (flexibility vs. efficiency). However, previous studies did not disclose how the organization changes its strategy from flexibility to efficiency when it grows. This study argues that (1) small firms adopting a 'flexibility' strategy (i.e. shifting strategic emphasis, ΔSE), (2) path-dependence effect (i.e. strategic emphasis in previous period, SE_{t-1}, influenced current strategic emphasis, SE_t) existing in medium firms, and (3) large firms adopting an 'efficiency' strategy. We use 1,553 observations of 291 Taiwan's ICT firms during 1996-2005 to test these arguments. The results support three hypotheses. This study provides evidence of moderating effect of path-dependence in medium firms and thus contributes to elucidate the organizational strategy change associated with organizational growth. This study also implies that managers should decide their firm's SE either flexibility or efficiency emphasized when the firm grows to medium size (between 200 and 500).

Keywords: Strategy, Change, Size, Growth, Flexibility, Path-Dependence, Efficiency

INTRODUCTION

How does an organization change its strategy when it grows? Many scholars suggest organizational form as a management tool to support organizational strategies aligning organization and environment (Van den Bosch & Volberda, 1999; Nickerson & Zenger, 2002). Two main schools have discussed this question. The first school scholars have described that organizational change is either 'proactive' (incremental change to match the environment and achieve an environment-structure fit) or 'competitive aggressive' (delayed change until absolutely necessary, at which time change is comprehensive) (Robbins, 1990; Lumpkin & Dess, 2001). Some scholars suggest that 'competitive aggressive' is the prevailing phenomenon due to organizational inertia (Gresov et al., 2008), which results from members fearing loss of power, bureaucracy, large organizations using strength to manage environment and the organizational culture of conformity (Robbins, 1990); others suggest that 'proactive' is the more likely path of organizations responding to rapidly-changing environments in which business opportunities are highly volatile (Lumpkin & Dess, 2001; Sine & David, 2003). When the environment changes significantly over time, organizations respond with entrepreneurial strategies rather attempts to satisfy planners (Tan, 2007), 'competitive aggressive' 'leaves the internal fit among an organization's activities intact yet decreases the appropriateness of the set of choices as a while (Siggelknow, 2001). 'Proactive' thus is an appropriate mode for organizations in a dynamic environment, while 'competitive aggressive' is appropriate for organizations in hostile environments (Lumpkin & Dess, 2001).

The second school scholars have indicated that that the competitive advantage of a large firm is efficiency through economies of scale, economies of scope (Chandler, 1990; Henderson & Cockburn, 1996), economies of specialization and dynamic learning from strategic resources/capabilities accumulation and configuration (Majumdar, 2000); conversely, the small firm advantage is flexible development of new products for a rapidly changing environment (Verdu-Jover et al., 2006) by strategic resources/capabilities such as entrepreneurship, and a simple capital structure (Yu, 2001).

Although the first school shows the dyadic and correspondent relationship elucidates the relationship between responsive strategy (proactive vs. competitive aggressive) and environment (dynamic vs. hostile), it does not explain how an organization changes its strategy to respond to environment when the organization grows. Similarly, the second school shows that the dyadic and correspondent relationship elucidates the relationship between organizational size (small vs. large) and competitive strategy (flexibility vs. efficiency), however, this school does not explain how an organization changes its strategy when it grows from a small size to a large size.

Answering the question requires a study of the responsive strategies with organizational growth. From an evolutionary perspective, three aspects of the original questions are as following: How does a small organization respond to the environment? When this organization grows to middle size, how does it respond to the environment? Finally, when this organization grows to large size, how does it respond to the environment? This study attempts to answer these three questions via discussing the relationships between organization size (small-, medium- and large-sized) and strategy (flexibility, path-dependence and efficiency) from a strategic-option (SO) and shifts in strategic emphasis (ΔSE) perspective. Through providing empirical evidence of path-dependence effect in medium firms, this study contributes to bridge the existing gap between

organizational strategy (flexibility vs. efficiency) and organizational size (small vs. large) and explain how do organizations response to environmental changes when these organizations grow.

THEORETICAL BACKGROUND AND HYPOTHESIZED MODEL

A central theme of organization theory is organizational effectiveness, namely the degree to which an organization can realize its goals. A proper organizational structure makes an organization effective. Most researchers and practitioners agree that survival is a necessary condition for achieving the goal of organizational success (Robbins, 1990). Most enterprises create value for customers via operational activities and obtain profits for survival. They convert resources to products/services which satisfy customer needs. The organization develops and uses specific resources/capabilities (Lee, 2011; Su et al., 2013) which other competitors cannot imitate, trade or substitute with other resources/capabilities to create value and produce abnormal profit, namely economic rent (Dutta et al., 2003).

Figure 1: The Specific Organization Adapts to the Environmental Change through Resources/Capabilities Recombination which Depends on Manager's Strategic-Options (SO) Decision of Project Portfolios and Resource Allocation on the Corresponding Operational Activities (ΔSE)
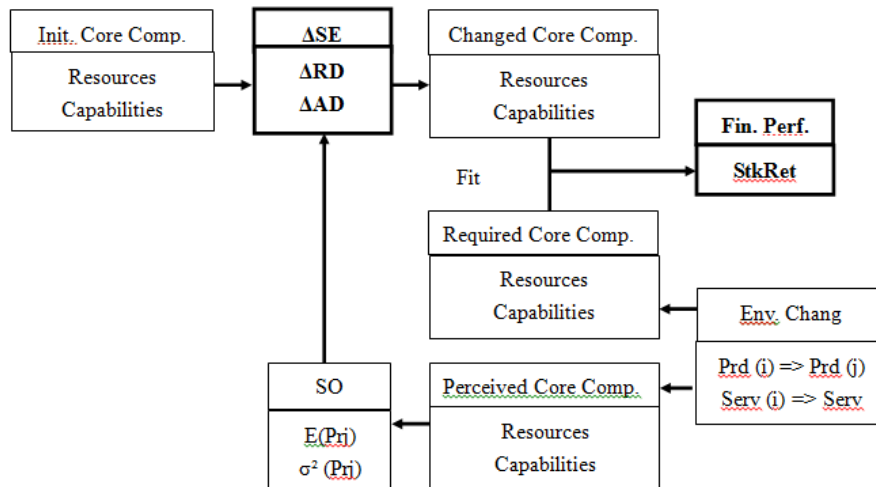
Proper alignment of organizational capability of internal structure with the environment, namely adaptability, is a strategic resource capable of generating economic rents, namely financial performance (Powell, 1992). Lack of adaptability decreases the appropriateness of the set of strategic choices as a whole (Siggelknow, 2001). In a dynamic environment, organizations face unavoidable technology/market uncertainty and risk. Thus, in addition to perceiving environmental change, organizations must evaluate the risks and expected returns of responsive capital investments in project portfolios; make

strategic-options (SO) decisions about project portfolios; shift strategic emphasis (ΔSE) to re-allocate resources of operational activities such as R&D and advertising (Sanchez, 1993; Dutta et al., 1999); and maintain alignment to enhance organizational adaptability. Figure 1 shows a diagram of these organizational tasks. An organization able to align its response to environmental change, strategic adaptive response, and the adaptive resources/capabilities can enhance financial performance (Smit & Trigeorgis, 2006).

Value Creation and Value Appropriation

Value creation refers to the process of innovating, producing and delivering products to the market; value appropriation is the process of extracting profit in the marketplace, e.g. erecting barriers to imitation (Mizik and Jacobson, 2003). Organizational value creation and value appropriation capabilities originate from organizational resource/capabilities and influence financial performance through achieving sustainable competitive advantage (Mizik and Jacobson, 2003). Measuring the competitive advantage of a specific organization requires analysis of a series of organizational activities (i.e. value chain) required to deliver value to customers, such as R&D, manufacturing, logistics, and sales, etc. (Porter, 1995).

From a static perspective, organizations which effectively focus their operational activities on critical activities in the value chain erect barriers to entry (Porter, 1995) and are able to bear distress resulting from aggregate demand shock (Hou & Robinson, 2006). From a dynamic perspective, each organization allocates resources and exerts capabilities on emphasized activities such as R&D (i.e. innovation of technology) and advertising (i.e. innovation of market) to build competitive advantage (Erickson & Jacobson, 1992). Expenditures on these activities enable organizations to earn abnormal profits, which are reflected in stock returns (Chan et al., 2001). Organizations continually adapt their resources/capabilities in response to environmental change by shifting strategic emphasis on operational activities because isolation mechanisms which prevent imitation of innovation are insufficient for either R&D or advertising expenditures to build long-run comparative advantages (Erickson & Jacobson, 1992). Thus, such organizations can create and appropriate more value and improve financial performance through shifting in strategic emphasis on operational activities.

Strategic Emphasis and Financial Performance

Firms divide their limited resource between the two fundamental processes of creating and appropriating value. As a result, trade–offs occur between developing customer-value creation capabilities and developing value appropriation capabilities. An organization is forced to prioritize its resources between these alternative uses according to the way it has chosen to compete (Mizik and Jacobson, 2003). The organization plans and executes capital budgeting for operational activities to disclose its strategic emphasis (i.e. more value creation or more value appropriation) and to make 'strategic moves which direct an organization's critical resources toward perceived opportunities in a changing environment (Bower, 1970).' Figure 1 depicts the relationship between ΔSE and financial performance. The organization adapts to environment change through project choice, namely SO (Sanchez, 1993), and aligns its resources/capabilities with the requirements of the environment (Kung and Kung, 2014). In Figure 1, Prd (i) means product (i), Prd (j) means product (j), Serv (i) means Service (i), and Serv (j) means Service (j). The organization

enhances its financial performance if the changed resources/capabilities (which are initial resources/capabilities changes via ΔSE) fit the required resources/capabilities. The SO bridges the gap between environmental change and organizational resources/capabilities through ΔSE. Accurate and unanticipated ΔSE is unexpected by investors and enhances financial performance, which is reflected in stock return, namely StkRet (Mizik & Jacobson, 2003).

From a static perspective, an organization which perceives opportunities emerging from the environment responds with strategic emphasis (SE) on capital budgeting to prioritize and allocate limited resources to operational activities, and gain an advantageous position in the value chain. Thus, organizations that emphasize R&D, such as Microsoft, reveal a relatively high ratio of capital budgeting allocated to R&D expenditures; organizations which emphasize marketing activities, such as Hewlett Packard, reveal a relatively high ratio of capital budgeting allocated to advertising expenditures. From a dynamic perspective, when the organization perceives its SE is not aligned with the changing environment, it may shift SE from previous period t-1 to period t (ΔSE= SEt-SEt-1) to re-align itself with the environment and improve financial performance (Erickson & Jacobson, 1992). Conversely, when the organization perceives that its previous SE is aligned with the environment, it may refer to SEt-1 to make the SEt decision, namely the path-dependence effect, expressed by SEt= f (SEt-1). A path-dependent is produced by a sequential stream of investment in and of itself and does not constitute a strategic option. Restated, the organization abandons a call option on SE in period t (Adner, 2004). After a sequential stream of abandonment, the organization has decreased adaptability but increased efficiency through accumulated investments.

In sum, the exercise or abandonment of SOs generated by its project portfolios of previous strategic investment in operational activities (e.g. R&D, advertising) indicates that the organization is following a 'flexibility strategy' to adapt to the changing environment (Sanchez, 1993). Organizations which dynamically adapt to the changing environment such as volatile customer requirements obtain a high StkRet. Evidence shows that StkRet is influenced by operational activities because the activities may affect the riskiness of their cash flows (Mizik & Jacobson, 2003; Hou & Robinson, 2006). R&D (Ho et al, 2006) and advertising (Gregory & McNaughton, 2004) are the most significant activities (Erickson & Jacobson, 1992; Chan et al., 2001; Mizik & Jacobson, 2003). In an organization, StkRet reflects the stock market reaction to the specific discretionary expenditures [R&D and advertising] of an organization, namely ΔSE (Erickson & Jacobson, 1992; Mizik & Jacobson, 2003). The effectiveness with which an organization achieves this goal is expressed by Equation 1 (Mizik & Jacobson, 2003).

$$StkR_{it} = \alpha_0 + \alpha_1 \Delta ROA_{it} + \alpha_{20} \Delta SE_{it} + \alpha_{21} \Delta ROA_{it} \Delta SE_{it} + \alpha_{22} SE_{it-1} \Delta SE_{it} + \varepsilon_{it} \qquad (1)$$

Variable definitions are as follows,

StkRet it = (shares outstanding it x price it + dividends it - shares outstanding it-1 x price it-1) / (shares outstanding it x price it)
ROA it = net income before extraordinary items it / asset it
SE it = (advertising expenditures it – R&D expenditures it) / asset it
ΔSE it= SE it - SEit-1

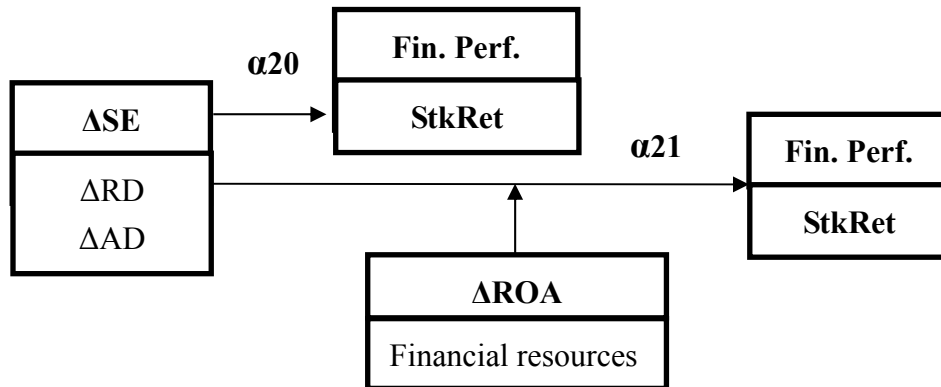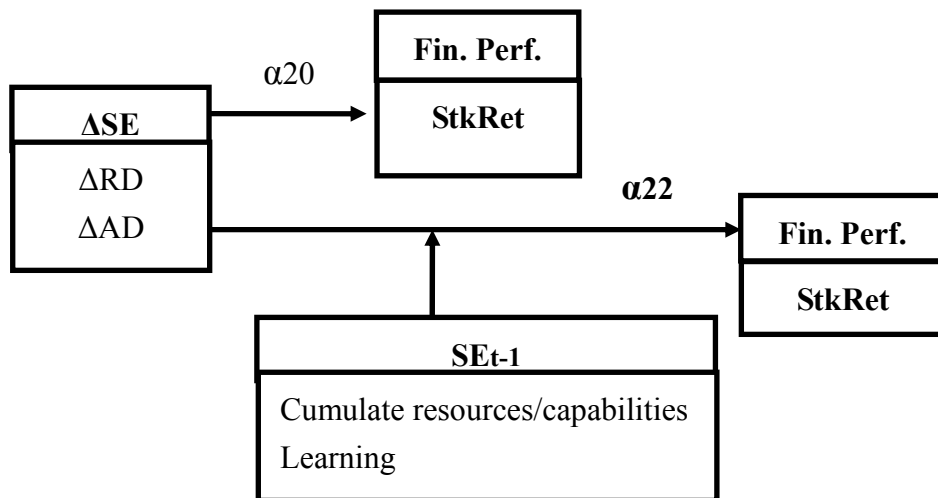**Figure 2: The Direct Influence of ΔSE on StkRet and the Indirect Influence of ΔSE on StkRet through ΔROA**

Figure 3: The influence of ΔSE on StkRet through SEt-1 (path-dependent effect)

Note:

(1) $\alpha 22 < 0$ => diminishing marginal return; $\alpha 22 > 0$ => specialization

This model indicates that the one direct and two indirect influences of ΔSE on StkRet (i.e. financial performance) can be captured for organizations in a dynamic environment through an efficient stock market. Figure 2 and Figure 3 depict the direct influence of ΔSE (non-financial direct effect) on StkRet and indirect influences of ΔSE on StkRet through ΔROA (financial indirect effect) and SEt-1 (path-dependence effect or non-financial indirect effect) respectively. The coefficient of $\alpha20$ (non-financial direct influence) depicts the fitness of ΔSE for the environment on StkRet, namely, the external SO adaptability effect (AE). This effect indicates the extent to which SO decisions in a capital budget are accurately aligned with the changing environment. 'Accurate' means that the result of the SO decision, e.g. increased R&D expenditure, is a correct response to environmental change and is reflected in a higher stock return. This demonstrates that a good ΔSE is aligned with the changing environment. A high StkRet in an initial public offering such as that of Google in 2004 demonstrates this effect. A value of $\alpha20 > 0$ suggests that increasing emphasis on value creation capability (namely, R&D activity) is more important in high-tech markets than in stable- and low-tech markets, and vice versa. The coefficient $\alpha21$ (indirect financial effect) depicts the extent to which ΔROA moderates the effect of ΔSE on StkRet and represents good non-financial resources/capabilities and financial resources re-allocation/configuration, which optimizes risk and expectation of SO to secure cash flow needed to align the ΔSE. A value of $\alpha21 > 0$ would indicate that organizations in a weak (strong) financial position are better suited by emphasizing value creation (value appropriation). A value of $\alpha21 < 0$ would indicate that organizations in a weak (strong) financial position are better served by emphasizing value appropriation (value creation). Figure 2 reveals the stock market response to the exercise of the SO (and the following ΔSE, shifts in strategic emphasis). Further, Figure 3 shows the effects of option abandonment. The coefficient of $\alpha22$ (i.e. indirect influence) depicts the moderating effect of SEt-1 (path dependence) on StkRet response to ΔSE. Values of $\alpha22 < 0$ would support the diminishing marginal returns (DMR) hypothesis; values of $\alpha22 > 0$ would support the specialization hypothesis (Mizik & Jacobson, 2003).

Moderating Effect of Organizational Size

Prior studies indicated that the competitive advantage of a large firm is efficient manufacturing through economies of scale, economies of scope (Chandler, 1990; Henderson & Cockburn, 1996) and economies of specialization achieved by interregional mandate. Competitive advantage is also obtained by efficient R&D through economies of scope achieved by sustaining diverse project portfolios (Henderson & Cockburn, 1996) and dynamic learning from strategic resources/capabilities accumulation and configuration (Majumdar, 2000); conversely, the small firm advantage is flexible development of new products for a rapidly changing environment (Verdu-Jover et al., 2006) by strategic resources/capabilities such as entrepreneurship, and a simple capital structure (Yu, 2001).

A small firm lacks the initial resources/capabilities to ambidextrously seek both flexibility and efficiency. Evidence indicates that firms that pursue mixed efficiency and flexibility strategies significantly underperform (Ebben & Johnson, 2005); from a large-firm perspective, 'the organizational tension between exploration and exploitation [in learning] may become unmanageable when both are pushed to extreme limits, …, very low levels of both exploration and exploitation may not contribute to superior firm performance' in the empirical study (He & Wong, 2004). From an industry perspective, 'when a multiplicity of subsystems interact with each other via modular/standardized

interfaces, the task of balancing exploration and exploitation [in organizational learning] can be delegated to the higher-level systems, and each subsystem can focus on just exploration or just exploitation without any major threats to long-run performance (Gupta et al., 2006).' From the industry perspective, an ambidextrous strategy is questionable not only for individual firms but also for the industry. The prevalence of international businesses and alliances reveal the competitive advantage of division of labor rather than ambidexterity.

In the dynamic environment of today, some new products or services are designed to be disaggregated as modules (Sanchez & Mahoney, 1996) and recombined through standardized interfacing to provide more opportunities to meet market requirements of heterogeneity of demand (Adner & Levinthal, 2001; Hung, 2007) in efficient manufacturing (Zhou et al., 2013). Therefore, an industry may disaggregate operational activities to many sub-industries such as integrated circuit (IC) design, foundry (i.e. IC manufacturing), IC packaging and validating, etc. in the information and communication technology (ICT) industry. Many firms may have the same or similar value chain activity in these sub-industries. The products of these firms may be used in different sub-industries (e.g. foundry firms manufacturing ICs for personal computers, cellular phones and game consoles; motherboard, power supply and chassis firms are similar). This vertical-disaggregated industry is composed of 'a multiplicity of subsystems interact with each other via modular/standardized interface (Gupta et al., 2006)' to form a 'flexibly competitive network' (a system) which can then create market value. This network is also composed of small-sized and large-sized firms (subsystems) characterized by both flexibility and efficiency.

From an evolutionary perspective, flexibility requires more path-independence and efficiency requires more path-dependence (i.e. previous strategic emphasis impacting current strategic emphasis, which enable the firm to more easily accumulate resources/capabilities and learning). The start-up lacks the resources needed to bear/buffer environmental change and is also in a weak financial position for appropriating value. Therefore, the only alternative for a start-up is to flexibly adapt to the environment. At the same time, insufficient resources for advertising prevent start-ups from appropriating value. The start-up also lacks well-established routines or best practices to refer to previous strategic emphasis, SE_{t-1}, when making SO decisions. Specifically, as Figure 2 shows, start-ups or small-sized organizations emphasize ΔSE direct effect ($\alpha20$) instead of indirect effect ($\alpha21$) via ΔROA and SE_{t-1} on StkRet. Thus, ΔSE effect significantly and positively affects ($\alpha20 > 0$) on the StkRet in small-sized organizations as described below.

> **Hypothesis 1** *For small-sized organizations, ΔSE effect significantly and positively ($\alpha20 > 0$) affects stock return (StkRet). Namely, the small organizations adapt to the environmental change with a "flexibility strategy".*

As the organization grows to medium size, it accumulates resources/capabilities through previously effective alignments with the changing environment. Additional routines and best practices for SO are created simultaneously. Managers start referring to the previous strategic emphasis SE_{t-1} to legitimize current ΔSE_t because $\Delta SE_{t-1}= f(SE_{t-2})$ obtains a high StkRet $_{t-1}$. At the same time, the specialization effect should be significant, and the DMR effect should not be significant because learning and accumulation of resources/capabilities are increasing. Thus, as Figure 3 shows and as described below,

Hypothesis 2：For medium-sized organizations, SEt-1 significantly and positively moderates the change in stock return caused by ΔSE (α22 > 0) via the specialization effect in medium-sized organizations. Namely, medium-sized organizations adapt to the environmental change by using "path-dependence strategy".

When the organization continually grows and becomes large-sized, SEt-1 is continually increasing. Furthermore, the specialization effect is decreasing; the DMR effect is increasing because of organizational inertia (either unaligned resources/capabilities or disproportional growth of resources/capabilities in previous periods). Thus, as Figure 3 shows and as described below,

Hypothesis 3: For large organizations, ΔSE=0 and SEt-1 is continually increasing. Furthermore, the increasing DMR effect decreases positive α22. Namely, large organizations adapt to environmental change with an "efficiency strategy".

METHODS

Data Source and Procedure

The data set used in this analysis was derived from Taiwan Stock Exchange. The study sample includes all published annual data (StkRet, ROA, asset, R&D expenditure, and advertising expenditure) for 291 firms in the Taiwan ICT industry during 1996-2005. The ICT industry is comprised of twelve sub-industries, including system manufacturing, motherboard manufacturing, opto-electronics IO, communication and network, IC production, channel, electrical equipment, consumer electronic, software, component, network modem, and others. After excluding inappropriate data, 1,553 observations were obtained.

Of the 291 firms, 156 were further classified as large (i.e. employee number over 500), eighty-five as medium (i.e. employee number between 200 and 500) and fifty as small (i.e. employee number under 200). The definition of small/medium sized firms as those with 500 employees was the same as that used in the U.S. manufacturing industry. This threshold is also common in research on small/medium-sized firms. The criteria of 200 which further distinguish small-sized firm from medium-sized firms come from the definition of small/medium-sized firms in the manufacturing industry in Taiwan. This study examined the Taiwan ICT industry because this industry is characterized by highly dynamical competitiveness (dynamical and hostile) and is composed of 'a multiplicity of subsystems interacts with each other via modular/standardized interface' (Gupta et al., 2006). The relatively high proportion of small/medium-sized ICT firms (135/291= 46.4%) listed in the Taiwan stock market provides sufficient published data for comparable analysis which avoids a common weakness of the case study and survey method.

Table 1 shows descriptive statistics for full sample, large-, medium- and small-sized firms. The next calculations were ΔSE and ΔROA from SEt, SEt-1, ROAt, and ROAt-1 by definitions and regress ΔSE, ΔROA, ΔROA ΔSE, SE it-1ΔSE on Stock Return (StkRet) with control variables such as log (book value/market value), log (market value), sub-industry and year. These control variables were used to extract the impact of firm-specific, industry-specific and economy-wide effects (Mizik & Jacobson, 2003).

Table 1: Descriptive Statistics

	Full Sample	Large-sized group	Medium-sized group	Small-sized group
StkRet Mean	0.153	0.197	0.106	0.078
S.D.	(0.709)	(0.751)	(0.622)	(0.678)
ROA Mean	0.091	0.102	0.102	0.038
S.D.	(0.112)	(0.108)	(0.116)	(0.106)
SE Mean	0.010	0.013	0.008	0.005
S.D.	(0.047)	(0.050)	(0.045)	(0.038)
Number of firms	291	156	85	50
Number of observations	1553	885	400	268

Table 2: Stock Market Reaction to Change in Strategic Emphasis Dependent Variable: Stock Return

	Full Sample	Large	Medium	Small
ΔROA $\alpha1$	2.069*** (13.727)	2.146*** (9.429)	1.385*** (5.974)	2.347*** (6.259)
ΔSE $\alpha20$	0.829 (1.130)	1.096 (0.870)	-0.583 (-0.524)	2.553** (1.732)
ΔROA*ΔSE $\alpha21$	0.002 (0.100)	-0.036 (-0.436)	-0.014 (-0.500)	-0.016 (-0.192)
SE_{t-1}*ΔSE $\alpha22$	0.042 (1.075)	0.037 (0.507)	0.088** (1.733)	-0.047 (-0.365)
R^2	0.492	0.510	0.535	0.558
F	59.223***	35.781***	17.239***	12.795***
Durbin-Watson	1.948	1.905	2.074	1.875
Number of observations	1553	885	400	268

Note: # t-statistics are in parentheses.

* $p < 0.1$; ** $p < 0.05$; *** < 0.01

RESULTS

Table 1 shows the means, standard deviations (S.D.) and sample numbers. Table 2 shows the results of estimating Equation 1 for the entire sample and for the large-, medium-, and small-sized groups. All R^2 values in large-, medium-, and small-sized groups (0.510, 0.535 and 0.558) were higher than R^2 value in the full sample (0.492), indicating that the financial effect of ΔROA and the strategic direct or indirect effects of ΔSE explained more

variation significantly (p<0.01 for all F values 35.781, 17.239, and 12.795; Durbin-Watson values= 1.905, 2.074, and 1.875) in the three groups. The results firstly confirmed the significant positive ΔROA (financial) effect on StkRet (α1=2.069, 2.146, 1.385, and 2.347, p<0.01) reported in previous studies (Miller & Rock, 1985; Mizik & Jacobson, 2003). Second, only in the small-sized group was ΔSE (non-financial or strategic direct effect) significantly and positively related to StkRet (α20=2.553, p<0.05). However, in the full sample, large- and medium-sized groups, ΔSE was not significantly related to StkRet. Thus, hypothesis 1 was supported. Third, no significant ΔSE moderating effect (strategic indirect effect) on the relationship between ΔROA and StkRet was noted in the full sample, large-, medium-, and small-sized groups. Fourth, only in the medium-sized group did SEt-1 (strategic indirect effect) exhibit a significant and positive relationship between ΔSE and StkRet (α22=0.088, p<0.05). No significant SEt-1 moderating effect was observed in the full sample, the large-sized group or the small-sized group. Thus, hypothesis 2 was supported. Finally, in the large-sized group, the findings of α22=0.037 < 0.088 and α20= 1.096, p> 0.1 (insignificant; cannot reject H0: α20 =0) was consistent with hypothesis 3.

DISCUSSIONS AND CONCLUSIONS

The results demonstrated a corresponding relationship between organizational size and organizational strategy 'during the organization's life cycle'. Small-, medium-, and large-sized organizations possess different strategic advantages, namely flexibility, path-dependence, and efficiency, respectively when they respond to environmental change. This study advances prior studies by bridging the gap between small- (flexibility strategy) and large- (efficiency strategy) organizations with analysis of medium-sized (path-dependence strategy) firms. This bridge extends the understanding of 'what' is the fitted relationship between organizational size and organizational strategy (large-sized with efficiency and small-sized with flexibility) to 'how' does an organization respond to environmental change during its life cycle from a strategic-option perspective. Thus, because no studies have empirically examined the path-dependence effect on medium-sized organizations, this study contributes not only to the theoretical development but also managerial implications.

Theoretical Implications

First, this study helps bridge the gap in theoretical understanding between small and business enterprise (SMEs) and large enterprise. By providing evidence of a SEt-1 (path-dependence) moderating effect on the relationship between ΔSE (strategy) and StkRet (performance) in medium-size firms, this study reveals that the strategic effect of path-dependence in medium-size firms bridges the gap between the flexibility of small-sized firms and the efficiency of large-sized firms. Conversely, this study proves the importance and legitimacy of small and medium business management since small and medium firms compete with large firms by using different resource/capabilities allocation/configuration and strategic-emphasis shifting abilities to achieve their goal.

Second, this study extends applied resource-based theory to the organizational life cycle from a strategic-options perspective. When a specific organization grows to medium size, it must make strategic-options decisions. The organization must choose either options-exercise or options-abandonment. When the organization is still small, it chooses

options-exercise and seeks flexibility; when the organization grows larger, it chooses options-abandonment (i.e. activating path-dependence effect) and seeks efficiency. These options originate from previous investment in resources/capabilities (re-)allocation/configuration via projects, which are initiated by the need to adapt to environmental change. Investment aligns the resources/capabilities of organization with environmental requirements and (re-)allocates/configures resources/capabilities in operational activities such as R&D and advertising. Thus, this study clarifies the relationships between operational activities, resource/capabilities and strategic-options during the organizational life cycle.

Third, this study uses published Taiwan ICT data which characterize a relatively high proportion (135/291= 46.4%) of small/medium-sized firms in a dynamic environment for analysis. In contrast with the case study method, this study uses published data to answer the research question and avoids the external validity (especially generalizability) problem; in contrast with the survey research method, published data provide more accurate comparisons and objectivity. By analyzing published data, this study answers the research question and avoids social desirability bias, common method bias, hindsight bias and comparability problems. Thus, this study contributes a rigorous research method for answering the "how" question regarding the theoretical development of the organizational life cycle.

Fourth, this study provides supportive evidence that each subsystem (i.e. small- and large-sized firms) focuses only on exploration with flexibility strategy or exploitation for efficiency strategy and forms an ambidextrous higher-level system (i.e. an industry) (Gupta et al., 2006). This flexibly competitive industry resolves the paradox of flexibility vs. efficiency at a higher industry level rather than at a firm level which every organization seeking ambidexterity for both exploration and exploitation.

Fifth, this study provides empirical evidence of the value of resources/capabilities to financial performance. Through SO and ΔSE, the firm (re-)allocates/configures resources/capabilities to align the required resources/capabilities of the environment. Namely, the firm innovates and creates values for the environment. At the same time, the firm appropriates the created values and obtains profit (financial performance) from the innovation. The findings of this study support resource-based viewpoint (RBV) and demonstrate the importance of dynamic capabilities from the resources/capabilities (re)-allocation/configuration perspective.

Sixth, this study bridges the gap between (re-)resources/capabilities and environmental change by SO and bridges the gap between (re-)resources/capabilities and operational activities byΔSE. Through the external alignment effect and internal alignment effect, organizational resources/capabilities adapt to environmental change and enhance financial performance.

Managerial Implications

Another implication of this study is that managers should review strategic emphasis as the size of the firm grows. When the firm is small, managers must focus on flexibility to compete with large-sized firms in the dynamic environment. The significantly positive direct effect of ΔSE (shifts in strategic emphasis) on StkRet (stock return) ($\alpha20 = 2.553 > 0$, p<0.05) in small-sized firms confirms the importance of flexibility strategy for star-ups or small-sized firms. These firms must be sufficiently flexible to adapt to environmental change for resource/capability allocation in operational activities.

Second, when the firm grows to medium size (between 200 and 500), managers should decide whether to emphasize flexibility or efficiency. The non-significantly positive effect of ΔSE (shifts in strategic emphasis) on StkRet (stock return) in the medium-sized group indicates that flexibility strategy is not critical for medium-sized firms. The significantly positive moderating effect of SEt-1 (path-dependent) between the relationship of ΔSE and StkRet ($\alpha_{22} = 0.088 > 0$, $p<0.05$) in the medium-sized group indicates that managers at this point must either exercise or abandon strategic-options originating from their previous investments. Organizations those choosing to exercise SO focus on flexibility strategy and remain small-/medium- in size; those choosing to abandon SO increase in size and seek efficiency advantage. The choice between path-dependence or path-independence is the most important decision for managers of medium-sized firms.

Third, the non-significantly positive ΔSE effect on StkRet and the non-significantly positive moderating effect of SEt-1 (path-dependence) between the relationship of ΔSE and StkRet indicate that managers in large-sized firms should seek neither flexibility nor path-dependence strategy. Their most important objective is increasing the specialization effect on StkRet and decreasing the DMR effect on StkRet (Mizik and Jacobson, 2003), namely proportionately accumulating resources/capabilities and facilitating dynamic learning.

Fourth, this study reveals evidence that a flexibly competitive industry resolves the paradox of flexibility vs. efficiency (and exploration vs. exploitation) at a higher industry level. The findings of this study remind government of the different foci and strategic goals of small- and large-sized firms when formulating industrial policy. This study also reminds government to play a moderating role in the governance of medium-sized firms. Governments can help medium-sized firms transition to large-sized firms when efficiency is required in the industry or downsize to small-sized firms when flexibility is required in the industry. Medium-sized firms play a buffer function in aligning industrial resources/capabilities. Suitable proportions of small-, medium-, and large-sized firms are needed for a flexibly competitive industry.

Limitations and Future Research

The strength of this study is the use of published data to show different direct or indirect effects on financial performance of small-, medium- and large-sized firms. However, it also has limitations. First, most Taiwan ICT firms focus on original equipment manufacturing/original design manufacturing (OEM/ODM) and sell their products to foreign branded firms. They invest relatively little in advertising activity and lack value appropriation capability as shown in Figure 2. Therefore, as Table 2 shows, ΔSE had no significant moderating effect (all α_{21} coefficients are non-significant) on the relationship between ΔROA and StkRet in the full sample, the large-sized group, the medium-sized group or the small-sized group. Further studies are needed to demonstrate the ΔSE moderating effect on the relationship between ΔROA and StkRet, namely, the value appropriation effect.

Second, as a firm increases in size, the specialization effect originating from path-dependence (SEt-1) facilitates the ΔSE effect on StkRet. Contrarily, the DMR effect originating from path-dependence (SEt-1) impedes the ΔSE effect on StkRet. Theoretically, a significantly negative α_{22} coefficient should occur, namely DMR effect > specialization effect (net path-dependence effect) in the large-sized group. However, employee number (organizational size) exceeded 2,000 in forty-six of 56 large-sized firms in this study.

Robins (1990) indicated that when an organization grows to approximately two thousand employees, operational activities (e.g. administrative activities) become increasingly difficult to coordinate. The DMR effect increases when resources/capabilities cannot be coordinated effectively, namely when employee number exceeds 2,000. Thus, the low incidence (= 46/156= 29.487%) of DMR effect prevented the occurrence of a significantly negative α_{22} coefficient. Further studies including a higher proportion of large-sized firms (employee number over 2,000) are needed to confirm the DMR effect.

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