

# REVISITING THE MILES AND SNOW TYPOLOGY

## Strategic Path Mediating Business Strategy and Resource Configuration for Innovation

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### Abstract

*This article provides the results of an exploratory study that investigated the effect of Capability Lifecycle Path on attaining effective adaptation through innovation. Based on Miles and Snow (1978), an empirical study was conducted to explore whether performing firms are those that indicate consistency within the strategy, process, structure and Capability Lifecycle Path arrangement. The basic premise of this study is adaptability for sustainability, where firms go through adaptation cycles through Business Model Innovation would perform well when they are able to consistently create value and effectively manage adopted business models, or denoted as Business Model Effectiveness. Using data obtained from seven Indonesian firms in various industries, PLS Analysis was conducted to investigate the relationships between Business Strategy, Firm Resource Configuration, Capability Lifecycle Path and Business Model Effectiveness. Findings indicated that Capability Lifecycle Path, or decisions made on the development of capabilities at the mature stage, is an important part of the series of decisions made during adaptation to ensure performance.*



*Keywords: Organizational configuration, capability lifecycle, business model innovation, organizational adaptation.*

A recent study showed that a single source of advantage from position, scale and unique product delivery or offering, is no longer sufficient where environmental uncertainties require firms to acquire adaptability to attain Sustainable Competitive Advantage (SCA) (Reeves and Deimler, 2011). More firms are recognizing the need to conduct Business Model Innovation as the organizational transformation approach to adapt and attain sustainable competitive advantage (Nunes and Breene

2011; McGrath, 2011; Johnson, Yip and Hensmans, 2012). A Business Model Innovation can be defined as implementation of a new mechanism, method or approach in the firm's commercial activities (Gambardella and McGahan, 2009).

One of the most prominent theories on organizational adaptation is the Miles and Snow (1978) Typology. Miles and Snow (1978) prescribed that firms go through adaptation cycles where internal congruence between strat-

egy, structure and processes leads to performance (Miller, 1986; Miller and Mintzberg, 1983; and Mintzberg 1990). Moreover, the Miles and Snow (1978) typology was defined considering that a patterned firm behavior exists through multiple cycles of adaptation. In other words, performing firms are those that not only indicate consistency within the strategy, process and structure arrangement, but also demonstrate consistency in the selection of arrangements between the adaptation cycles. Consequently, based on the basic premise of adaptability for sustainability, firms that go through adaptation cycles through Business Model Innovation is said to perform when they are able to consistently create value and effectively managed both old as well as new business models, or denoted as Business Model Effectiveness.

In Miles and Snow's (1978) definition of an adaptive cycle, one cycle of adaptation consists of the firm's formulation of strategy, or denoted as solving the entrepreneurial problem, followed by implementation of the articulated strategy in the firm's process and structure, or denoted as solving the engineering and administrative problems. Such notion is in accordance with strategy process view where a series of strategy formulation and implementation make up the formation of firm strategy (Chakravarthy, et al. 2003). Therefore, firm adaptation process through Business Model Innovation is equivalent to a strategy formation where firms transform their business models. Ultimately, sustained performance, or denoted as Business Model Effectiveness, is attained when firms are able to manage transforma-

tions that occurred and successfully complete the strategy formation cycles.

Investigations on effective adaptation through Business Model Innovation need to include an exploration on how existing process and structure constrain strategy when such transformation opportunities arise. Organization structure and processes are the building blocks that construct firm capabilities (Eisenhart and Martin, 2000). In addition, firm capabilities go through stages from development to maturity similar to stages of product lifecycles. Such cycle is denoted as Capability Lifecycle where further development of capabilities at the mature stage is solely determined by management's choices (Helfat and Peteraf, 2003). When firms go through adaptation processes, implementation of formulated strategy requires decisions on the capabilities development, denoted as Capability Lifecycle Path (Helfat and Peteraf, 2003). To ensure performance, decisions that determine the Capability Lifecycle Path has to be in-line with the formulated strategy as well as appropriately reflected by the processes and structure that make up the Firm Resource Configuration (Zubaedah and Fontana, 2012). The term Firm Resource Configuration used in this article denotes how the firm's resources are constructed in terms of the business process and structure as well as innovation process and structure.

Extending the Miles and Snow (1978) theory on adaptive cycles, we argue that Capability Lifecycle Path becomes part of the series of decisions made during adaptation. When firms are faced with conditions that require a

reaction to adapt, then the existing Capability Lifecycle has reached a stage where a selection of choices is necessary to define the Capability Lifecycle Path. Consequently, Capability Lifecycle Path determines how capabilities are to be developed. In other words, firm's Capability Lifecycle Path represents one cycle of adaptation, which reflects the formulated strategy and dictates the configuration of firm resources required for implementation (Zubaedah and Fontana, 2012).

The main objective of this study is to investigate the effect of Capability Lifecycle Path on a set of strategy-process-structure arrangement. Strategy formulated determines the structure required for effective implementation and correspondingly, organization design constraints formulation of new strategy for the firm (Miles and Snow, 2003). Understanding the effect of Capability Lifecycle Path on the organization adaptation process allows for determining how decisions on capabilities development relate to effective adaptation through innovation. Furthermore, the exploration is conducted using quantitative approach, which allows for empirical evidence on the relationship between Capability Lifecycle Path and Firm Resource Configuration. This way, the study offers an explanation on the occurrence of adaptation cycles and the triggering factors of adaptation process as well as factors that lead to effectiveness.

In the next section, literature review related to the constructs as well as relationships between constructs are presented. This leads to the conceptual framework and the research model used in the study. Following the litera-

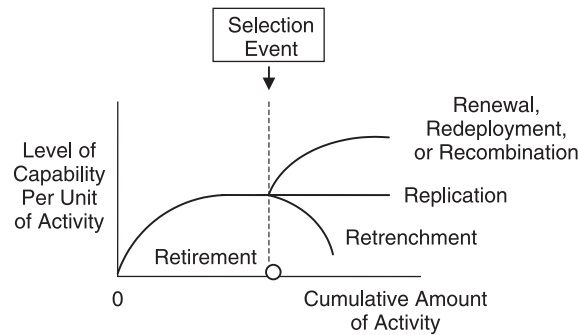
ture review is a brief discussion on the research method, which is preceded with the hypotheses testing and analysis discussions. Based on the determined research model, hypotheses are tested using SEM-PLS, which allows for inferences and conclusions as presented in the final section.

## LITERATURE REVIEW

### *Capability Lifecycle Path Contributes to the Construction of Firm Resource Configuration*

An organizational capability is the firm's ability to conduct operational activities necessary to convert inputs into outputs (Helfat et al., 2007). Capabilities of the firm are shaped by the processes and the structure in place to manage those processes (Eisenhardt and Martin 2000; and Maritan 2001). The path of which the capability development undertakes solely depends on management choices. If a business strategy defines the set of management decisions on how to compete, then we can define selected capabilities development path as the set of choices intended to manage resources. Helfat and Peteraf (2003) denoted Capability Lifecycle Path as the selected strategic decision on resource management that determines how firm capabilities should be further developed when the performance can no longer be further improved.

The Capability Lifecycle consists of the founding, development and maturity of capabilities that lead to capability 'branching' into several possible forms. Capability branching is denoted as the shift in the capability development trajectory, or path, due to significant circumstances that



Source: Helfat and Peteraf (2003, p. 1005)

Figure 1. Capability Lifecycle Branches

Table 1. Strategy-structure Distinctions for Radical and Incremental Innovations (Ettlie, Bridges and O’Keefe 1984)

	Radical Innovation	Incremental Innovation
Strategy	Unique, aggressive technology policy	Traditional, market-dominated growth strategy
Structure	- High concentration of technology specialists - Centralization of decision	- Large, complex, high formalization - Decentralization similar to a bureaucracy (Hatch 2006)

emerged from outside the capability, or denoted as capability threat and opportunities (Helfat and Peteraf, 2003). Branching occurs on capabilities that have reached the mature stage. When a particular capability threat or opportunity occurs, management strategy determines the option to branch the capability lifecycle to six possible paths, which are retirement, retrenchment, renewal, replication, redeployment and recombination. The branching selection in the capability lifecycle path is dependent on management. Hence, distinct types of firms may select different path development choices (Adner and Helfat, 2003; and Peteraf and Reed, 2003).

Ettlie, Bridges and O’Keefe (1984) found that specific strategy-structure sequence has a tendency to lead to a certain innovation strategy. Specifically, focus on technology in the business strategy tends to lead to the adoption of radical innovations. However, firms with traditional market-dominated growth strategy tend to pursue

incremental innovations. Although the study focused on process innovations, we expect similar patterns will emerge in Business Model Innovations. The table below summarizes the findings of this study.

The Miles and Snow (1978) typology defines four types of business strategies based on the pattern of strategic actions in adapting to environmental changes. This particular discussion only included three of the four business strategies, which are Defenders, Prospectors and Analyzers. Reactors will be excluded in this study given that it is considered to be a “residual strategy” when the other three strategies are not implemented properly (Miles, et al. 1978). Based on the perspective of how an organization responds to the changing environment, a Defender is a firm focused on a specific business domain, while a Prospector is expected to be on the opposite spectrum and define a broad domain. In turn, Analyzers fall in between the two extremes.

Table 2. Selecting the Right Structure for Innovation (Christensen and Overdorf 2000)

Type of Innovation	Type of Team	Governance
Fit well with existing values and processes	Functional team or lightweight team	Within existing organization
Fits well with existing values but poorly with existing processes	Heavyweight team	Within existing organization
Fits poorly with existing values but well with existing processes	Heavyweight team	Within existing organization for development, followed by a spin-off for commercialization
Fits poorly with existing processes and values	Heavyweight team	In a separate spin-off

Table 3. Strategy in Managing Multiple Business Models (Markides and Charitou 2004)

	Low Strategic Relatedness (different market)	High Strategic Relatedness (similar market)
Serious Conflict	Separation Strategy	Phased Integration Strategy
Minor Conflict	Phased Separation Strategy	Integration Strategy

Consequently, in accordance with Configuration Theories, each type of strategy works effectively with certain structure and process conditions. In organization design, the main concern is on managing tradeoffs, where flexibility comes at a cost (Galbraith, 2000). Miles and Snow (1978) typology defines firm types based on the extremes of the trade offs, where Defenders are on the efficiency side, Prospectors are on the flexibility side and Analyzers are somewhere in between. Strategy employed becomes the determining factor in selecting which trade off to make between flexibility and efficiency.

Depending on the type of innovation employed, changes in the organization require proper management in parallel with already established processes. Christensen and Overdorf (2000) conducted a study to identify the determining factors for companies to overcome challenges arising from managing innovation. The study concluded that the success of firms in carrying out innovation is determined by the structure of which processes are organized. In

particular, the structure should be established to ensure fit between existing and new processes that emerged from the innovation. As a result, Christensen and Overdorf (2000) prescribed a practical framework where agility of organization design is determined by the types of team that organize the combination of existing and new processes within the organization or outside of the organization.

Another study that discussed determining factors for managing innovation successfully was conducted by Markides and Charitou (2004). Focusing on innovation process, Markides and Charitou (2004) distinguished between separation, phased separation, integration and phased integration strategies. The distinction between types of innovation process is based on two dimensions, namely level of seriousness of conflict as well as level of relatedness between existing and new business models. Various case studies indicate that low strategic relatedness innovation is better executed using separation or phased separation strategy, while high strategic relatedness

Table 4. Adaptation Configurations Types

Strategy Focus	Process (Miles , et al. 1978)	Structure (Miles , et al. 1978)	Innovation Process (Markides & Charitou 2004)	Innovation Structure (Christensen & Overdorf 2000)
Defender	<ul style="list-style-type: none"> <li>• Cost –efficient, single core technology</li> <li>• Vertical integration</li> <li>• Maintain efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Financial and production experts</li> <li>• Intensive planning</li> <li>• Functional structure, highly divisionalized</li> <li>• Centralized control</li> <li>• Hierarchical</li> <li>• Rewards system</li> <li>• focus on production and finance</li> </ul>	Integration; OR Phased Integration	Lightweight Team; within organization OR Heavyweight team; within organization
Prospector	<ul style="list-style-type: none"> <li>• Flexible, multiple technologies</li> <li>• Low routinization</li> </ul>	<ul style="list-style-type: none"> <li>• Marketing and R&amp;D experts</li> <li>• Extensive and diverse expertise</li> <li>• Production structure with low formalization</li> <li>• Decentralized control</li> <li>• Focus on coordination mechanisms</li> <li>• Rewards system focus on marketing and R&amp;D</li> </ul>	Phased Separation; OR Separation	Heavyweight team; towards spin off OR Heavyweight team outside organization
Analyzer	<ul style="list-style-type: none"> <li>• Duel technological core</li> <li>• Large and influential applied engineering group</li> <li>• Moderate degree of technical rationality</li> </ul>	<ul style="list-style-type: none"> <li>• Marketing and Engineering dominance</li> <li>• Intensive planning for stable portion and comprehensive planning for new products</li> <li>• Loose matrix structure</li> <li>• Moderately centralized control</li> <li>• Complex coordination mechanism</li> <li>• Reward system based on both effectiveness and efficiency</li> </ul>	Integration OR Phased Integration OR Phased Separation; OR Separation	Lightweight Team; within organization OR Heavyweight team; within organization OR Heavyweight team; towards spin off OR Heavyweight team outside organization

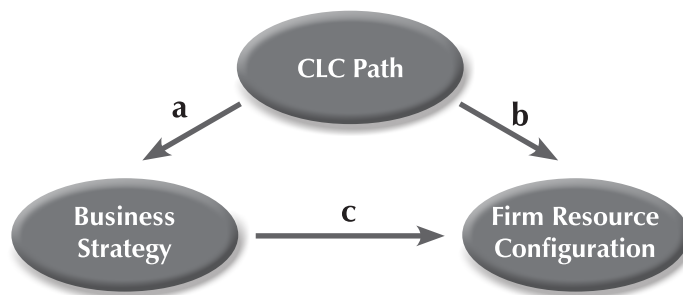
is executed better using integration or phased integration strategy.

One of the key barriers to Business Model Innovations is the conflicts that arise between the new and existing business models (Chesbrough, 2009). Similar to the necessity of adopting the right organization configuration to ensure effectiveness in implementing Business Strategy and attain performance, implementation of innovation requires appropriate structure and processes. In short, there is a certain structure design appropriate for a particular business strategy (Miller 1986) and, consequently, certain Firm Resource Configuration suitable to manage the selected innovation initiative.

Based on the abovementioned studies, three distinct types of strategy-

structure-process configurations were defined as Defender, Prospector and Analyzer Configurations, which are theoretical configurations expected to yield performance can be seen in table 4.

Furthermore, there are six possible branches that can be selected when significant conditions directly impact the trajectory of the capability life-cycle path. Considering the focus of discussion of this study is on Business Model Innovation, we will not include the retirement or retrenchment branches in our analysis since they do not represent branches that lead to value generation and growth. Therefore, four branches will be included, namely, renewal, replication, redeployment and recombination. Firms can renew capabilities through modifications in order



Source: Adopted from Baron and Kenny (1986)

Figure 2. Capability Lifecycle Path as Mediator

to improve performance. Alternatively, firms can replicate the capability to a new geographic market (Winter and Szulanski, 2001) or redeploy the capability to a new product market (Helfat and Peteraf, 2003). Although costs associated to undertake the branching initiative is a key consideration, branch selection is mostly determined by distinct firm strategies. Hence, the strategic choice on the transformation of the capability lifecycle should correspond to the business strategy employed. Moreover, the strategic choice to renew, replicate, redeploy or recombine capabilities should be reflected in the Firm Resource Configuration.

The choice to renew, replicate, redeploy or recombine capabilities depends on the strategic policies adopted to respond to capability threats or opportunities. Theoretically, there should be consistency between the selected capability development path and firm strategic policies, which correspond to the pattern of responses to environmental dynamics, or the firm's Business Strategy. Therefore, the strategic choice on how the capability is to be developed, or the Capability Lifecycle Path, should reflect how the Business Strategy is implemented in the construction of the Firm Resource Configuration (Zubaedah and Fontana, 2012). Hence, Capability Lifecycle Path me-

diates the relationship between Business Strategy and Firm Resource configuration where Capability Lifecycle path provides sufficient explanation on that relationship.

Based on Configuration Theories, alignment between strategy, structure and processes yield to performance. Correspondingly, alignment between Capability Lifecycle Path and Firm Resource Configuration is expected to result in Business Model Effectiveness. Hence, Capability Lifecycle Path should further induce the relationship between a particular Business Strategy and the corresponding Firm Resource Configuration. Business Strategy is the antecedent to the Capability Lifecycle Path, where the pattern of behavior reflected in the Business Strategy should be the pre-conditioning factor of the selection of a particular Capability Lifecycle Path. Such conditions are appropriate for treating Capability Lifecycle Path as mediator (Baron and Kenny, 1986).

As prescribed by Baron and Kenny (1986), the three main conditions when a variable is appropriate to function as mediator are: (1) the strategic choices included in the Business Strategy should be consistent with the strategic choices represented by Capability Lifecycle Path (see path a in Figure 2);

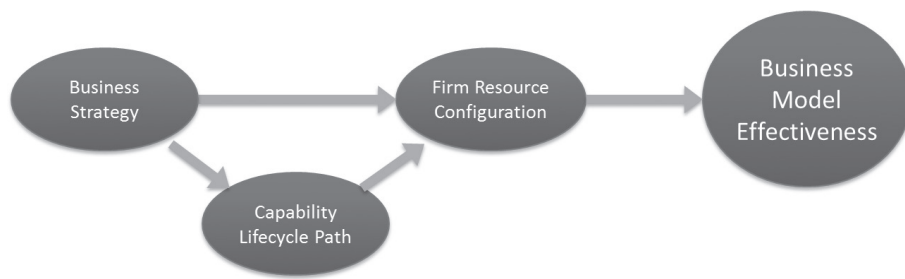
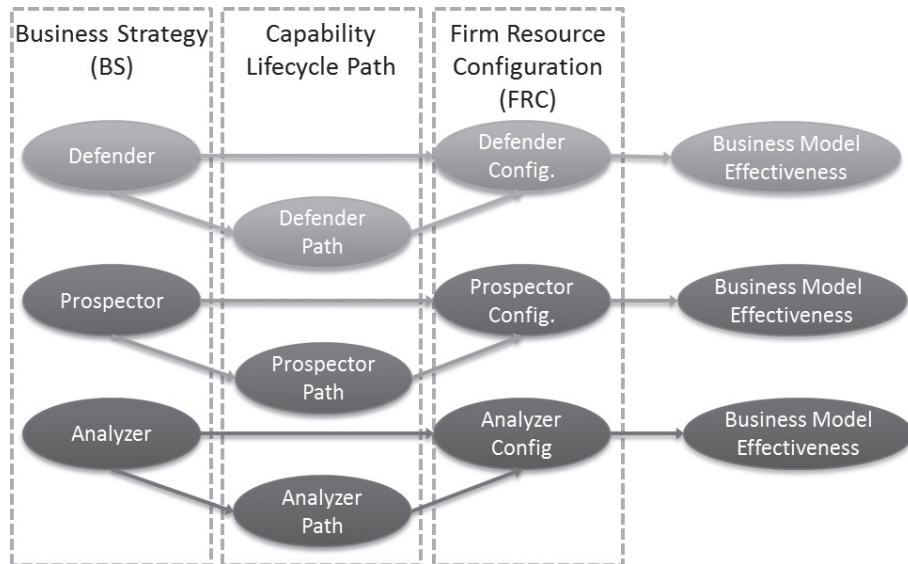


Figure 3. General Research Model



Source: Zubaedah (2013)

Figure 4. Research Sub-Models

(2) the specific Capability Lifecycle Path would account for certain Firm Resource Configuration indicated by strong correlation in path b; (3) the significance of the Business Strategy and Firm Resource Configuration relationship should be determined or at least more significant mediated by Capability Lifecycle Path rather than direct (path c is less significant or equal to zero). Hence, the overall research model is illustrated in figure 3.

Considering the three organization types prescribed by Miles and Snow (1978), the research model can be further broken down into three sub-models, namely the Defender, Prospector and Analyzer Models. The proposed

hypotheses presented in this study are based on the three sub-models, as illustrated in figure 4.

*H1 : The more firm's tendency to select the Defender Path mediates the relationship between Defender Strategy and Configuration*

Defenders are conservative and focus innovation activities in the existing product (Pleshko, 2006). Consequently, when faced with a threat or opportunity, it is expected that Defenders will select renewal as the most conservative branch. In this study, the Capability Lifecycle Path of Defenders is denoted as Defender Path. Defender Path reflects the resources strategy of firms that adopt Defending Strategy.



Table 5. Summary of Capability Lifecycle Path by Business Strategy Type

Business Strategy Typology (Miles and Snow, 1978)	Capability Lifecycle Path	Set of Strategic Choices (Adapted from Helfat and Peteraf (2003))
Defenders (DEF)	Hypothesis 1: Defender Path (DPATH)	Capability Renewal
Prospectors (PRO)	Hypothesis 2: Prospector Path (PPATH)	<ul style="list-style-type: none"> <li>• Capability Replication</li> <li>• Capability Redeployment</li> <li>• Capability Recombination</li> </ul>
Analyzers (ANA)	Hypothesis 3: Analyzer Path (APATH)	<ul style="list-style-type: none"> <li>• Capability Renewal</li> <li>• Capability Replication</li> <li>• Capability Redeployment</li> <li>• Capability Recombination</li> </ul>

Therefore, Defending Path should direct firms to Defender Configuration.

*H2. : The more firm's tendency to select the Prospector Path mediates the relationship between Prospector Strategy and Configuration*

On the other hand, Prospectors are aggressive innovators that consistently pursue new opportunities, and, therefore, will resort to replication, redeployment or recombination. In addition, Prospectors aggressive nature will exclude the cost considerations associated for such developments. It is expected that Prospectors will consistently select a more innovative path rather than reserve to renewal. The set of strategic option that represents Capability Lifecycle Path of Prospectors will be denoted as Prospector Path. Similar to the role of the Defender Path, the link between Prospecting Strategy and Prospector Configuration is expected to be attributed to the Prospector Path.

*H3 : The more firm's tendency to select the Analyzer Path mediates the relationship between Analyzer Strategy and Configuration*

As the balancing firm, Analyzers will equally likely to select any of the four branches. For Analyzers, the costs considerations will be the key determinant in deciding which branch to

pursue. When faced with capability threat or opportunity, Analyzers will evaluate which path deemed to be the most appropriate given the specific conditions instead of consistently selecting one particular path such that of Defenders and Prospectors. The four possible paths represent a set of strategic choice indicated as Analyzer Path. In turn, Analyzer Path accounts for a strong relationship between Balancing Strategy and Analyzer Configuration.

Table 5 summarizes the posed Hypotheses and describes the distinction between different sets of strategic choices in determining Capability Lifecycle Path.

### ***Consistency in Adaptation Configuration Leads to Business Model Effectiveness***

Referring back to its basic definition, an innovation constitutes a significant transformation, which creates both economic and social values (De Meyer and Garg, 2005; and Fontana, 2009). In addition, effective Business Model Innovation provides entry barriers and creates organization transformations that are not easily imitated (Teece, 2009). To evaluate organizational adaptation through Business Model Innovation, in line with Miles and Snow (1978), it was suspected that a consistent pattern exists, which indicates

the attainment of Business Model Effectiveness. Hence, Business Model Effectiveness is the performance output defined as how well firms able to manage Business Model Innovations as well as the existing business operations throughout adaptive cycles.

Considering that a business model articulates how a business captures, creates and delivers value to customers, a business model innovation may involve the introduction of new product innovation, or technology, or implementation of new processes for converting costs to profit (Teece, 2009; Amit and Zott, 2001; and Johnson, 2010). In order for a particular initiative to be categorized as a Business Model Innovation, there needs to be a major reframing or alteration in one or more of the business model components, or a new combination of previous elements. Based on previous literature on business model components, this study identifies Business Model Content and Business Model Structure as the basic elements of Business Model. Consequently, Business Model Effectiveness must be reflected in both Effective Content and Structure. Transformation of Business Model components reflects effectiveness when the Business Model Content and Structure demonstrate significant increase in value creation. Here, value creation includes value to customers and therefore, beyond economic value.

Business Model Content defines what customers acquire, which includes customer value proposition (McGrath, 2009; Johnson, Christensen and Kagerman, 2008; and Amit and Zott, 2001). This component reflects the specific needs and benefits addressed

to customer demands (Davenport, Leibold and Voelpel, 2006). Business Model content simply reflects, "What customers pay for" (McGrath, 2009). Transformation of the content component needs to result in an increase or re-definition of value delivered to the customers. Increased value may be in the form of product improvement or additional offering, while re-definition of value may include addressing a new target market or provide a solution not yet addressed by competitors (Johnson, Christensen and Kagerman, 2008).

Business Model Structure refers to the parties involved and processes employed to deliver value with superior performance (McGrath, 2009; and Amit and Zott, 2001). Transformation of the business model structure refers to changes in the activities that directly impact firm performance in delivering content to customers. In addition, Business Model Structure is characterized by the transaction mechanisms that take place (Amit and Zott, 2001) and driven by key metrics to identify operational advantages necessary to deliver value (McGrath, 2009). Hence, innovation of the Business Model does not only involve a significant shift in the organization mechanisms but also need to rest in the adherence to new metrics of performance.

For example, in order for a food company to maintain low cost production, a key metric would be to ensure sufficient, continuous and sustainable supply of raw materials at a reasonable cost. In turn, the company would be able to offer products at reasonable prices. This may require acquisition of a supplier company or implementation

Table 6. Business Model Effectiveness Components

Business Model Components	Amit and Zott (2001)	McGrath (2009)	Effective Components (Johnson, Christensen and Kagerman, 2008; and Galbraith, 2000)
Business Model Content	Content	Basic Unit of business or “items on the invoice”	• Customer Value Proposition, to include customer base, job-to-be-done and offering
Business Model Structure	Structure	Key Metrics or required processes to deliver superior performance	• Key Resources, or acquired resources to be included in the value chain • Key Processes, or activities related to exchanges / transactions • Reconfigurable structure, which allows for swift allocation of resources • Profit Formula, to include a new revenue model, cost structure, margin model and resource velocity

of a long-term supply contract as well as acquisition of new processes to support such actions. Level of efficiency attained must be greater than before. Increasing value creation means increasing level of efficiency. Therefore, transformation of business model structure would result in revision or re-definition of profit formula, which articulates how a firm captures value for itself and at the same time creates value for its customers (Johnson, Christensen and Kagerman, 2008).

Furthermore, in addition to effectively re-define the business model components, firms must be able to manage operations during shifts that occurred within as well as in-between the business model components. Business Model Innovations encompass the implementation of entirely new businesses on top of the existing one. This may cause tensions between the existing and the new business models (Markides and Charitou, 2004). Moreover, implementation of a new business model requires experimentation and, therefore, needs to be managed accordingly (McGrath, 2009; and Chesbrough, 2009). The capability to accommodate voluntary and emergent changes of the business model components while at the same time con-

sistently ensures performance (Demil and Lecocq, 2010) requires organizational agility.

One of the requirements of organizational agility is the ability to properly allocate resources between the new and existing businesses swiftly and in a timely manner. This ability is denoted as resource fluidity, or the capability to administer existing business model operations and innovation processes at the same time, which needs to be embedded in structure and processes that make up the organization. In other words, resource fluidity needs to be reflected in the organization design. Specifically, the organization design must incorporate the capability of simultaneous exploitation and exploration of available resources. Such capability is the main characteristic of an ambidextrous organization. Ambidexterity exists when different structures and processes are managed with different strategies and cultures to maintain existing and new activities in parallel. Galbraith's (2000) concept of reconfigurable organization structure satisfies this requirement. A reconfigurable structure consists of both stable and flexible components (Galbraith, 2002). Hence, in addition to properly establishing the new processes, Busi-

ness Model Effectiveness Structure must include a reconfigurable structure.

Table 6 summarizes the Business Model components that indicate effectiveness as well as performance measures.

Since Capability Lifecycle Path represents a pattern of decisions on the development of firm capabilities, the lifecycle indicates when firms go through their adaptation process. Consequently, the lifecycle of firm capabilities determines cycle of adjustments on the organization, which directs the construction of Firm Resource Configuration. Therefore, throughout the adaptive cycles, Firm Resource Configuration is directly affected by the selected choices that make up the firm's Capability Lifecycle Path. Moreover, in line with Miles and Snow (1978), effective adaptation is attained when there are a consistent pattern of strategic decisions that are congruent with the implemented organization design throughout the adaptive cycles. Correspondingly, alignment between the selected Capability Lifecycle Path and the implemented Firm Resource Configuration leads to performance.

*H4: The more consistent Capability Lifecycle Path with Firm Resource Configuration, the higher Business Model Effectiveness*

*H4a: The more firm's tendency to adopt Defender Path and Configuration, the higher Business Model Effectiveness.*

*H4b: The more firm's tendency to adopt Prospector Path and Configuration, the higher Business Model Effectiveness.*

*H4c: The more firm's tendency to adopt Analyzer Path and Configuration, the higher Business Model Effectiveness.*

The attainment of Business Model Effectiveness requires congruence between the Capability Lifecycle Path and Firm Resource Configuration. In other words, adoption of Defender Path, Prospector Path and Analyzer Path would increase the likelihood for firms to adopt Defender Configuration, Prospector Configuration and Analyzer Configuration, respectively. Business Model Effectiveness would be attained when the selected Capability Lifecycle Path is implemented in alignment with the corresponding Firm Resource Configuration.

## RESEARCH METHOD

For this particular study, the unit of analysis is the Strategic Business Unit (SBU) of the firm and the object of the analysis is the business model employed by the SBU. Based on the core competences perspective, Prahalad and Hamel (1991) prescribed that an SBU entails sharing of resources and offers a potential source of core competences. For the purpose of this study, an SBU is defined as an independent unit that manages end-to-end product delivery processes as defined in the firm strategy policy. This is to ensure that the entire business model adopted is properly captured in the study. Therefore, an SBU does not necessarily represent one brand or product-market, but rather as an autonomous strategy execution unit. In other words, the definition of SBU as the unit of analysis depends on how each firm manages its operations strategically.

Table 7. Means and Standard Deviations of Construct Categories

	Individuals N=113		Bank N = 15		Food Producer N = 21		Airline N = 18		Insurance N = 3		Health-care N = 16		Hotel N = 20		Telco N = 20		All SBU N = 7	
	Mean	St. Dev	Mean	St. Dev	Mean	St. Dev	Mean	St. Dev	Mean	St. Dev	Mean	St. Dev	Mean	St. Dev	Mean	St. Dev	Mean	St. Dev
Defender	4.02	0.15	4.05	0.57	3.78	0.63	3.95	0.54	4.14	0.50	3.96	0.51	4.30	0.51	4.03	0.54	4.02	0.15
Prospector	<b>4.62</b>	0.14	<b>4.73</b>	0.48	<b>4.42</b>	0.52	<b>4.66</b>	0.60	<b>4.59</b>	0.44	<b>4.78</b>	0.48	<b>4.46</b>	0.71	<b>4.68</b>	0.58	<b>4.62</b>	0.14
Analyzer	4.31	0.22	4.49	0.54	4.24	0.63	4.32	0.51	3.88	0.88	4.33	0.45	4.37	0.37	4.58	0.66	4.31	0.22
Defender Path	4.29	0.23	4.57	0.52	3.95	0.57	4.13	0.76	4.18	0.94	4.40	0.69	4.35	0.71	<b>4.51</b>	0.66	4.29	0.23
Prospector Path	3.33	0.35	2.97	0.94	3.08	0.54	3.22	0.79	4.03	1.00	3.35	0.77	3.08	1.02	3.66	0.75	3.33	0.35
Analyzer Path	<b>4.42</b>	0.23	<b>4.88</b>	0.49	<b>4.27</b>	0.64	<b>4.36</b>	0.56	<b>4.23</b>	1.00	<b>4.41</b>	0.75	<b>4.46</b>	0.62	4.41	0.73	<b>4.42</b>	0.23
Defender Config.	<b>4.05</b>	0.16	<b>4.12</b>	0.44	<b>4.09</b>	0.57	<b>3.99</b>	0.48	<b>3.73</b>	0.34	<b>4.09</b>	0.37	<b>4.10</b>	0.71	<b>4.24</b>	0.45	<b>4.05</b>	0.16
Prospector Config.	3.70	0.21	3.58	0.53	4.03	0.64	3.60	0.50	3.54	0.62	3.49	0.52	3.76	0.79	3.93	0.56	3.70	0.21
Analyzer Config.	3.86	0.17	3.72	0.52	4.04	0.59	3.73	0.50	3.64	0.48	3.84	0.48	3.93	0.77	4.08	0.46	3.86	0.17
Business Model Effective- ness	4.32	0.31	4.78	0.53	4.02	0.68	4.28	0.43	4.16	0.55	4.19	0.43	4.11	0.85	4.74	0.49	4.32	0.31

Note: Mean Scores that are in bold indicate the highest score among each construct categories

A measurement instrument to be used in this study is a survey questionnaire. In line with the exploratory nature of this study, the appropriate SEM approach is the SEM-PLS method. This allows for prediction and theory development as opposed to theory testing and confirmation provided by the SEM-CB method (Hair, Ringle and Sarstedt, 2011). The sample includes seven (7) Indonesian firms in different industries, namely, Banking, Airline, Food Producer, Insurance Provider, Healthcare Services, Hotel Services and Mobile Telecommunications Services. Due to confidentiality agreements, the sample firms are identified using pseudonyms, which are Bank, Airline, Food, Insurance, Healthcare, Hotel and Telco.

Focus of this research study is on the strategy process that includes formulation and implementation of strategy that define firm adaptation process. This research study investigated management decisions based on the per-

ceived circumstances surrounding the organization, including environmental settings. In particular, investigations were focused on the pattern of decisions and not on the external conditions per se. Therefore, the industry component is not seen as an object but rather as how it is perceived by managers (Bourgeois III, 1986). Moreover, since this study is considered to be an exploratory study, a sample of firms from various industries allow for a generalized analysis and conclusions. Nevertheless, the boundary of this research was on the set of decisions included in the firm's strategy formation and excluded specific industrial characteristics.

## RESULT AND DISCUSSION

Appropriateness and reliability of the measures were evaluated using statistical analysis. First, we can compare the mean scores based on averages obtained from individual responses versus from SBU, as presented in Table 7.

Table 8. Reliability Statistics

	Cronbach's Alpha	Number of Measures
Defender	.551	8
Prospector	.621	8
Analyzer	.643	8
Defender Path	.830	10
Prospector Path	.883	10
Analyzer Path	.868	10
Defender Config.	.845	28
Prospector Config.	.867	28
Analyzer Config.	.880	26
Business Model Effectiveness	.947	26

Table 9. Correlations between Constructs

	Business Strategy			Capability Lifecycle Path			Firm Resource Configuration		
	Defender	Prospector	Analyzer	Defender	Prospector	Analyzer	Defender	Prospector	Analyzer
Defender	1								
Prospector	.373**	1							
Analyzer	.393**	.689**	1						
Defender Path	.281**	.609**	.577**	1					
Prospector Path	.213*	.187*	.244**	.326**	1				
Analyzer Path	.258**	.428**	.295**	.572**	-.034	1			
Defender Config.	.297**	.473**	.368**	.521**	.199*	.363**	1		
Prospector Config.	.288**	.332**	.273**	.378**	.254**	.260**	.664**	1	
Analyzer Config.	.311**	.451**	.367**	.510**	.298**	.344**	.866**	.868**	1
Business Model Effectiveness	.254**	.417**	.435**	.475**	.176	.282**	.632**	.511**	.583**

There appears to be no significant distinctions between averages obtained from individual responses and from calculations of each SBU. Moreover, highest mean score for each construct category indicate categorization of the SBU under study. All seven SBUs are categorized as Prospectors. However, only the Insurance and Healthcare providers adopt Disruptive Business Model Innovation, while the rest of the SBUs adopt Sustaining Business Model Innovation. All SBUs adopt Analyzer Path except the Telco Company who adopts Defender Path. Moreover, all seven SBUs adopt Defender Configurations.

A measure of internal consistency can be obtained from Cronbach's Alpha for the data are as presented in Table 8.

Overall, the reliability indicators are deemed sufficient to ensure internal consistency of measures for each evaluated construct.

Moreover, Pearson correlations analysis provides few preliminary indicators related to the prescribed hypotheses. First of all, strong and significant correlations are found between Defender Strategy and Configuration, Prospector Strategy and Configuration, as well as Analyzer Strategy and Configuration. There are also strong and significant correlations between each Firm Resource Configuration and Business Model Effectiveness. These scores provide preliminary indicators of the hypothesized relationships between each Business Strategy Type and the corresponding Firm Resource

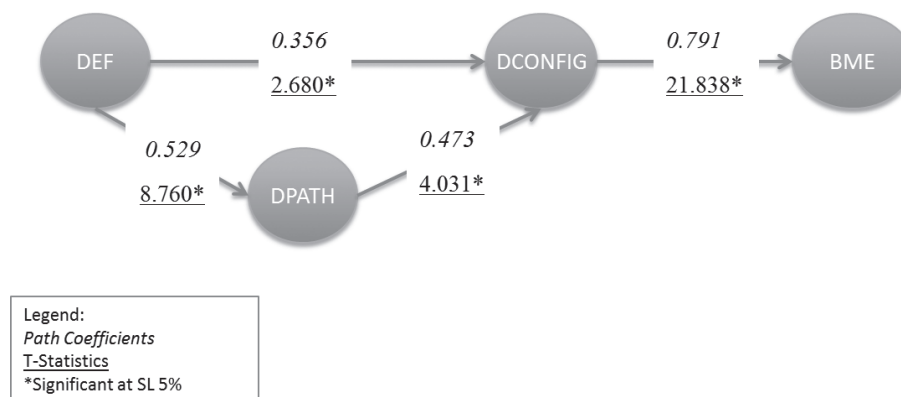


Figure 5. PLS Calculations and Bootstrapping Results: DPATH as Mediator

Configuration, which may lead to effectiveness.

Second, the correlations between Business Strategy and the corresponding Capability Lifecycle Path are significant, yet, moderately weak. Furthermore, correlation scores between Capability Lifecycle Path and the corresponding Firm Resource Configuration are also significant and moderately strong. In other words, Defender Path has stronger correlations with Defender Configuration than Defender Strategy; Prospector Path has stronger correlations with Prospector Configuration than Prospector Strategy, as well as Analyzer Path has a stronger correlation with Analyzer Configuration than Analyzer Strategy. Further analysis and conclusions will be attained in more detailed using PLS analysis.

***Hypothesis 1: Defender Strategy – Defender Path – Defender Configuration***

This hypothesis is intended to investigate the mediator effect of Defender Path (DPATH) on the relationship between Defender Strategy (DEF) and Configuration (DCONFIG). It is

expected that consistency between selected strategies and configuration would yield to higher performance, which is denoted as Business Model Effectiveness (BME), than non-consistent arrangements. The PLS calculations is presented in the following figure, which include the path coefficients and T-Statistics of the path coefficients obtained after bootstrapping.

In accordance with Baron and Kenny (1986), as defined in the path model presented above, PLS calculations indicated that a mediator effect exists where DEF-DPATH (0.528) path is significant, DPATH-DCONFIG (0.473) path is significant and DEF-DCONFIG (0.356) path is significant but the magnitude is smaller than DEF-DPATH and DPATH-DCONFIG. Hence, this study found statistical evidence that Defender Path (DPATH) partially mediates the relationship between Defender Strategy (DEF) and Configuration (DCONFIG). This implies that adoption of DPATH leads to implementation of the corresponding DCONFIG. If we refer back to the Descriptive Statistics discussed previously, we can observe the correlation scores between DEF and DPATH, as

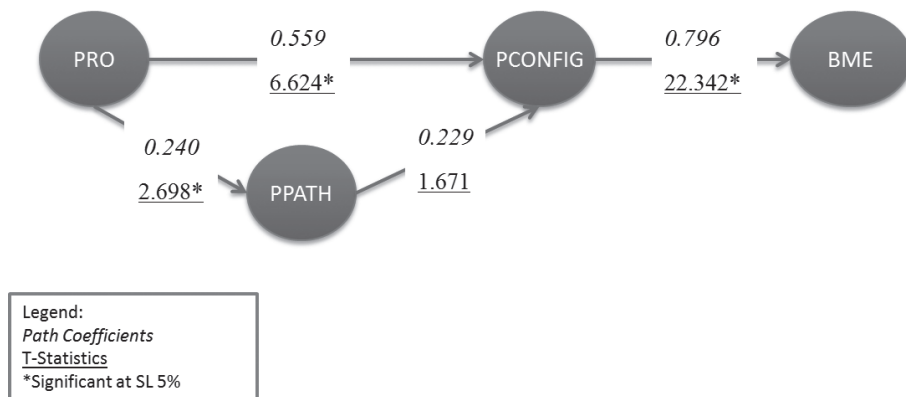


Figure 6. PLS Calculations and Bootstrapping Results: PPATH as Mediator

well as between DPATH and DCONFIG are 0.281 and 0.521, respectively. However, the SBU Mean Scores signifies that only one SBU is categorized to adopt DPATH and DCONFIG, which is the Telco Company. In-depth interviews concluded that the Telco Company confirms its current state of transforming to adopt Prospector Strategy to initiate new growth, while the DPATH and DCONFIG is still in-place to ensure efficiency of existing operations. This further supports the finding for H1 where mediation effects signify DPATH to explain the construction of DCONFIG.

**Hypothesis 2: Prospector Strategy – Prospector Path – Prospector Configuration**

This hypothesis is intended to investigate the mediator effect of Prospector Path (PPATH) on the relationship between Prospector Strategy (PRO) and Configuration (PCONFIG). As discussed in the previous hypothesis, it is expected that consistency between selected strategies and configuration would yield to higher performance or Business Model Effectiveness (BME) than non-consistent arrangements.

Based on Baron and Kenny’s (1986) prescription for mediator effects, results of PLS calculations and bootstrapping cannot conclude that PPATH is a mediator for PRO to PCONFIG because the basic requirement for PPATH is only partially satisfied where PRO-PPATH (0.240) path is significant, but PPATH-PCONFIG (0.228) path is not significant, while PRO-PCONFIG (0.558) path is significant and the magnitude is larger than PRO-PPATH and PPATH-PCONFIG. Hence, analysis on the Prospector model found no significant mediation effects from Prospector Path (PPATH) to Prospector Configuration (PCONFIG).

Statistically weak correlation scores were obtained between Prospector Strategy (PRO) and PPATH, and between PPATH and PCONFIG, which are 0.187 and 0.254, respectively. Although SBU Mean Scores indicate that all SBUs are Prospectors, sample data specifies that six SBUs adopt Analyzer Path and Defender Configuration, which may explain why there is no significant mediator effect from PPATH to the relationship between PRO and PCONFIG. This signifies that Prospectors do not necessarily



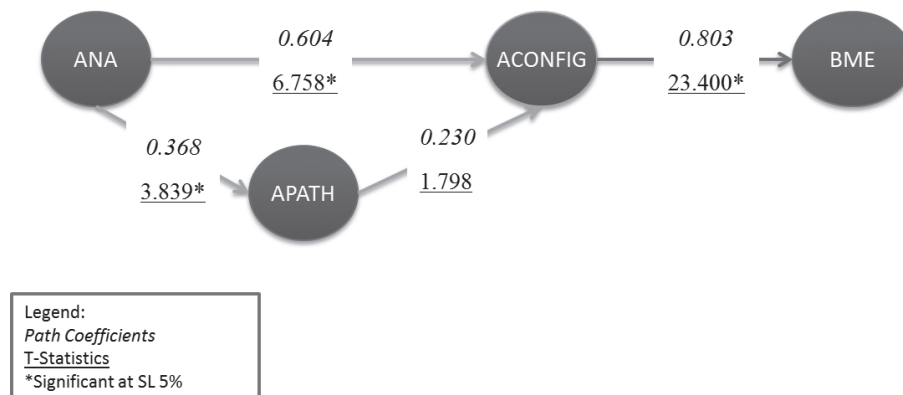


Figure 7. PLS Calculations and Bootstrapping Results: PPATH as Mediator

transform their capabilities, but rather include capability renewal in-line with the adopted configuration. In other words, CLC Path appears to balance between Business Strategy and Firm Resource Configuration.

The PLS calculations is presented in vfigure 6, which include the path coefficients and T-Statistics of the path coefficients obtained after bootstrapping.

**Hypothesis 3: Analyzer Strategy – Analyzer Path – Analyzer Configuration**

This hypothesis is intended to investigate the mediator effect of Analyzer Path (APATH) on the relationship between Analyzer Strategy (ANA) and Configuration (ACONFIG). Similar to previous hypotheses, consistency between selected strategies and configuration is expected to yield a higher performance, or Business Model Effectiveness (BME), than non-consistent arrangements. The PLS calculations is presented in the following figure, which include the path coefficients and T-Statistics of the path coefficients obtained after bootstrapping.

In accordance with Baron and Kenny’s (1986) prescription on mediator effects, results obtained from PLS calculations and bootstrapping cannot conclude APATH is a mediator for ANA to ACONFIG. Basic requirement for APATH to be a mediator is only partially satisfied, where ANA-APATH (0.368) path is significant, but APATH-ACONFIG (0.230) path is not significant, and, while, ANA-ACONFIG (0.604) path is significant and the magnitude is larger than ANA-APATH and APATH-ACONFIG paths. Correlation scores between Analyzer Strategy (ANA) and Path (APATH), and between APATH and Configuration (ACONFIG) are 0.295 and 0.344, respectively. Although Mean Scores indicated that all SBUs are categorized to adopt Analyzer Path, none of the sample SBUs adopted Analyzer Strategy and Configuration, which may explain the non significant mediator effect from ANA to APATH. However, analysis on path coefficient comparisons as well as the fact that APATH is a significant mediator at SL 10% indicated that expanding the sample data may provide support to the hypothesis that APATH intervenes ANA and ACONFIG during adaptation.

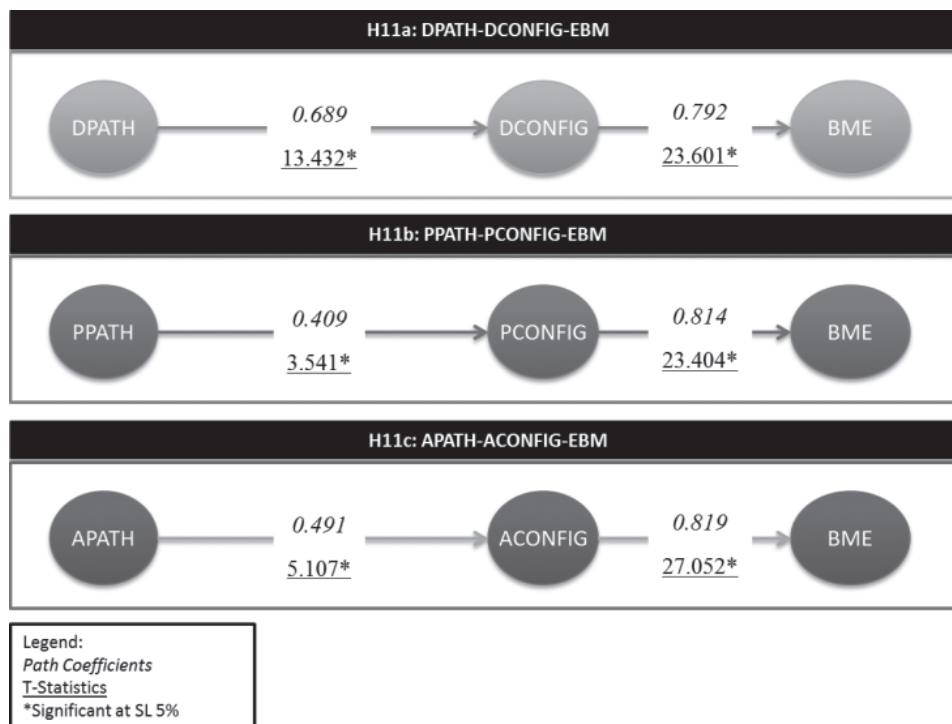


Figure 6. PLS Calculations and Bootstrapping Results H4a, b, c

**Discussions for H1 – H3**

The explorations included investigations on the effect of Capability Lifecycle Path (CLC) as a mediator for Business Strategy (BS) to Firm Resource Configuration (FRC). In overall, empirical analysis partially supported the argument that Capability Lifecycle Path intervene the relationship between Business Strategy and Firm Resource Configuration. It is apparent that expanding the sample may provide strong conclusions to the hypothesized mediator effects. Findings implied that there are no one-to-one relationships between each Business Strategy and a specific Capability Lifecycle Path. In other words, Defenders, Prospectors and Analyzers may not necessarily be intervened by a specific Capability Lifecycle Path to the corresponding Firm Resource Configuration. However, statistical correlations as well as PLS calcula-

tions showed strong relationships between each Capability Lifecycle Path and the corresponding Firm Resource Configuration. In other words, a particular Capability Lifecycle Path directs the construction of a specific Firm Resource Configuration.

Nevertheless, SBU Mean Scores showed that all seven companies adopt Prospector Business Strategy and Defender Firm Resource Configuration, but, six out of the seven adopt Analyzer Path. Such results signify that Analyzer Path was selected to balance between the Prospector strategy and the Defender Configuration. Therefore, Capability Lifecycle Path is selected to harmonize between formulated Business Strategy and implemented Firm Resource Configuration. In other words, analysis showed that Capability Lifecycle Path provides a synchronizing component for firm configuration during adaptation.

***Hypothesis 4: Capability Lifecycle Path – Firm Resource Configuration – Business Model Effectiveness***

This hypothesis is intended to investigate the direct relationships between each Capability lifecycle Path and the corresponding Firm Resource Configurations. Based on previous Configuration Theories, consistency between Capability Lifecycle Path and the Firm Resource Configuration is expected to yield performance.

Consequently, strong and significant relationships between Defender Path and Configuration (Hypothesis 4a), Prospector Path and Configuration (Hypothesis 4b), as well as Analyzer Path and Configuration (Hypothesis 4c), would lead to Business Model Effectiveness. The PLS calculations is presented in the following figure, which include the path coefficients and T-Statistics of the path coefficients obtained after bootstrapping.

Based on the evaluations of the path coefficients, relationships between constructs in the theoretical configurations of Capability Lifecycle Path, Firm Resource Configuration and Business Model Effectiveness (BME) are all significant. Specifically, significant relationships are found between Defender Path (DPATH), Defender Configuration (DCONFIG) and BME, between Prospector Path (PPATH), Prospector Configuration (PCONFIG) and BME, as well as between Analyzer Path (APATH), Analyzer Configuration (ACONFIG) and BME. This indicates that we can Accept H4a, H4b and H4c. In turn, we can also Accept H4 that summarizes the significant relationship between Capability Life-

cycle Path and Firm Resource Configuration. Based on this set of analyses, effectiveness appears to be obtained when the set of decisions on capability development is implemented with the consistent set of process and structure.

Implementation of strategy through firm processes and structure is determined by management choices that make up the Capability Lifecycle Path, which includes a set of decisions on how resources are to be allocated. Referring back to the Miles and Snow (1978) typology, Business Strategy is defined as how entrepreneurial problems are resolved. As summarized in table 10, the Capability Lifecycle Path reflects or become the consequence of the entrepreneurial resolutions that characterize each strategy type.

Focused and stable domain of Defenders would require capabilities development in the form of renewal, or continuous improvements of those capabilities. On the other hand, the broad and constantly changing domain of Prospectors would drive transformation of capabilities instead of opting for renewal. Consequently, balancing between changing and stable domains would require Analyzers to select either to renew or transform the capabilities in accordance with the defined business strategy.

## **CONCLUSIONS**

Although H1-H3 was only partially supported, results indicated sufficient evidence of the significance of Capability Lifecycle Path in explaining the construction of Firm Resource Configuration during strategy formation. In other words Defender Path, Prospector Path and Analyzer Path direct

the formation of Defender, Prospector and Analyzer Configurations, respectively. The strength of the relationship between Capability Lifecycle Path and Firm Resource Configuration is consistent with Helfat and Peteraf (2003) who prescribed that management would need to determine the branching direction, or development of firm capabilities, given a particular threat or opportunity that lead to the capabilities' mature stage. Extending from previous Configuration Theories, to gain effectiveness, Capability Lifecycle Path should reflect the adopted Business Strategy and, in turn, directs the Firm Resource Configuration. This supports Miles and Snow (1978) theory that firm capabilities constrain adaptation process.

Furthermore, one cycle of adaptation is equivalent to one set of strategy formation, which includes strategy formulation and implementation. During adaptation process, the Capability Lifecycle Path represents the set of decisions on the allocation of resources as the firm reactions towards capabilities that are at a mature stage. In turn, the Capability Lifecycle represents the cycle of adjustments in the resource allocations, which determine the structure and processes. In other words, Capability Lifecycle represents the firm's organizational adjustments, or adaptation cycles. Once firm capabilities reach a mature stage, management decides how those capabilities would be further developed. This implies that the occurrence of adaptation cycles can be observed from the firm Capabilities Lifecycle (Zubaedah and Fontana, 2012). Correspondingly, effectiveness could be achieved when there are consistencies between Ca-

pability Lifecycle Path and Firm Resource Configuration. Moreover, the Capability Lifecycle Path definition provides the linkage and the harmonizing component between formulated Business Strategy and the implemented structure and process.

Observations on sample firm behavior indicated that as a company goes through adaptation, companies strive to maintain stability and align between configurational elements. In line with Miles and Snow (1978), performing firms attain stability by demonstrating a consistent pattern of decisions throughout adaptive cycles. Observed companies may appear to adopt inconsistent Business Strategy and Firm Resource Configuration, but the selection of Capability Lifecycle Path reflects management's direction towards strategy-process-structure congruence. Therefore, inconsistency between Business Strategy and Firm Resource Configuration indicated emphasis on emergent strategies and the existence of synchronizing components.

Moreover, the conclusion that Capability Lifecycle Path directs the construction of Firm Resource Configuration contributes to providing a potential indicator for adaptation. Considering that Capability Lifecycle Path reflects the strategic decisions when capabilities have reached a mature stage, the lifecycles of capabilities determine the need for firms to adjust. This provides evidence that supports adaptation cycles are constrained by existing capabilities. Consequently, Capability Lifecycle signifies the time to initiate adjustments. Adaptation is necessary when the lifecycle of firm capabilities have reached a mature stage and can

no longer promote growth. Hence, this study contributes to providing an alternative variable that can indicate when adaptation should occur.

Ultimately, findings from this study indicated the need for management to focus more on conditions of the internal resources to ensure effective implementation. As discussed, firms tend to focus on emergent strategies during implementation and may not be consistent with formulated strategy. In other words, leaders must be aware of the possibility that strategies are not always deliberate but also can be realized without intentions (see Mintzberg and Waters, 1985). Setting strategies, especially establishing new positioning, requires full comprehension of existing as well as potential capabilities that the firm can acquire. Such understanding would allow leaders to select decisions that can effectively direct implementation to ensure value creation and growth.

In short, this study offers an alternative approach to applying firm configuration aimed at sustaining effectiveness. Unraveling of the Miles and Snow (1978) Typology allows for extending the configuration to address the transitioning stage during innovation adoption. This study was able to address the adoption of innovation during adaptation process. In other words, adaptability is observed based on the firm's ability to ensure desirable innovation outcomes and manage growth.

#### ***Limitations and Future Research***

The set of indicators for Business Model Effectiveness has not been tested or used in previous studies in a manner utilized in this study. Hence,

there may be measurement bias issues considering that PLS analysis did not include evaluations on the measurement model. Moreover, the complexities surrounding the subject consequently limit the sample size that can be included in the study. Completing the questionnaire requires respondents to be carefully selected to represent each SBU. In addition, respondents included were required to dedicate a substantial amount of time to participate. This, in turn, tends to demotivate companies to participate in the study and provides a challenge to obtain a larger sample. Expanding the sample size appears to potentially improve some the statistical conclusions obtained from this study.

In addition, another limitation is that the measurement tool did not make distinctions between deliberate and emergent strategies. The existence of a particular firm configuration pattern is based on the underlying assumption that firms adhere to the formulation-implementation sequence prescribed by strategy process theories. Further analysis should include such distinctions, which would contribute to the body of works in configuration theories as well as strategy process.

The main objective of this study was to determine adaptability of firms in the current industrial dynamics. However, environmental aspects were not included as an object being measured but rather as how the participants perceive it. Therefore, findings obtained from this study would not be able to explain competition, market conditions, or distinguish configuration appropriate for a particular industry. This provides an opportunity for future research to ac-

commodate environment conditions in assessing the attainment of Business Model Effectiveness. Such study allows for investigating whether certain configurations apply in specific industries or whether one configuration can outperform others given a certain set of industry characteristics.

Nevertheless, despite the identified weaknesses and limitations, analysis provided strong conclusions and lead to the development of an adaptation

model relevant to the current business conditions. This study offers a new approach to using configurational prescriptions for attaining Business Model Effectiveness. In particular, the method of unraveling between strategy formulation and implementation allows for analyzing effective innovation process. Adopting innovation as a model for adaptation requires firms to maintain stability and emphasize on consistency during strategy process.

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