

## The Three-Lens Approach to Agility: Capturing Distinct Strategic Views on the Organization for Comprehensive Examination of Firm Agility



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**ABSTRACT:** Observing strategic agility as a performance outcome require properly observing the firm over a period of time. This study was conducted to explore and enhance an agility framework for analysing how companies perform as they evolve over time. The theoretical framework developed in this multiple case study emerged based on a combination of an extensive literature review and observed strategic management issues that arise during direct observations. The three-lens approach consists of the Business Model Effectiveness Lens, Productive Information Systems Lens and the Independent – Dynamic Culture Lens. Business Model Effectiveness demonstrates ability in managing the changes in the business model throughout adaptation cycles and is reflected in firm performance. A productive information system is the fundamental support essential for timely, swift and accurate decisions, and, in turn, knowledge cultivation. Culture of an agile company develops in concurrence with firm dynamics throughout adaptation cycles and independent of original founder imprint. Analysis using the three-lens agility framework showed that companies under study did not represent agile companies. All three companies are found to not have business model effectiveness, the information systems were unproductive and the organizations' culture were not independent of the founders and tend to be outdated. Analysis using the three-lens agility framework allows for observing the birth and development of a firm. While each lens offers a distinct approach to analyse agility, together the lenses make up an integrated framework that provides insights on firm evolution and development.

**KEYWORDS:** Agility, Adaptation, Business Model, Information Systems, Organization Culture

### I. INTRODUCTION

In strategic management research, observing how companies perform over a period of time allows for deeper insights and profound learning. Just as humans developed differently over time, each company flourish individually and undergoes distinct experiences from one another. Consequently, a longitudinal study allows for observing how companies develop and assessing the subsequent performance obtained from the series of decisions undertaken. Conducting longitudinal studies on multiple organizations would enrich conclusions and provide room for some generalizations.

More importantly, longitudinal studies allow for properly analyzing agility, which previous research have found to be requiring intent, efforts and focus in order for agility to advance as the firm develops. As the "thoughtful and purposive interplay between three meta-capabilities," strategic agility allows companies to successfully transform the business through building strategic sensitivity, leadership unity and resource fluidity (Doz and Kosonen, 2010). Similarly, Battistela (2017) propositioned the need for forming capabilities of strategy innovation, resource capitalization and networking, that are directed towards consistently reconfiguring the business model, so as to attain strategic agility. As the business dynamics grow increasingly complex, strategic agility becomes more pertinent in order for firms to maintain consistently good performance over the course of time. Facing more diverse and high-speed competition requires achieving strategic agility, which means to be simultaneously flexible, adaptive, purposeful and consistent, in redirecting a firm's strategic position (Doz, 2020). Investigating strategic agility as the performance outcome of strategic management require properly observing the firm over some period of time.

This study was conducted to explore and enhance an agility framework for analysing how companies perform as they evolve over time. The selected companies under study are members of an Indonesian conglomerate group who have been in business for over 30 years. As a former executive in one of the companies included in this group, this author held the position as the head

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of corporate services in one of the holding companies for nine years. As a researcher, such experience allows for direct observations on how companies developed, and then analysed them using an appropriate theoretical framework. Specifically, the theoretical framework developed in this multiple case study emerged based on a combination of an extensive literature review and strategic management issues that arise during direct observations. The literature review, as presented in the following section, focuses on the three main topics that emerged from preliminary exploration of strategic management literature and practical observations, which are the business model construct, information system management and organizational culture. In particular, topics identified were on how the business model, information systems and organization culture, relate with consistently good performance over time. Following the literature review is the formulated theoretical framework consisting of a three-lens approach to analysing strategic agility and the multiple case study conducted using the formulated framework. The article concludes with case discussions and conclusions.

### **II. LITERATURE REVIEW**

In this section, the literature review includes discussions on the business model, information system and organization culture, as well as their relationships with attaining performance. Discussions begin with exploring the relationship between the business model construct and performance, followed by discussions on information systems and its role in managing organizations, and end with understanding how organization culture relates with performance.

#### **A. Business Model and Performance**

As a construct, the business model has undergone a substantial amount of scrutiny that resulted in a broad consensus of its definition. Many research studies have offered a basic definition of a business model as the architecture of firm activities that are directed towards value delivery to the intended customers (Teece, 2009). Shafer, Smith and Linder (2005) defined a business model as a depiction of the core logic of the firm as well as the strategy undertaken to capture and create value for the organization. Business model design requires similar analytical and strategic thinking necessary in strategy formulation (Zubaedah, 2016). Consequently, a business model is an integral part of strategy where the business model communicates firm strategy.

Moreover, a business model is not limited to a financial model, but rather constituting a conceptual model of the firm (Teece, 2009). As both a scale model of a business and the role model for business (Baden-Fuller and Morgan, 2010), a business model encompass of multiple components, which has been defined in various frameworks (Amit and Zott, 2001; Hedman and Kelling, 2003; Davenport, Leibold and Volepel, 2006; Johnson, Christensen and Kagerman, 2008; Demil and Lecocq, 2010; Osterwalder and Pigneur, 2010). Stemming from past studies, Battistella, et. al. (2017) denoted the business model components as building blocks, which are merged together to make up a complete definition of a firm's business model. In particular, the business model components can be categorized into three common themes (Zubaedah, 2016), or denoted here as superblocs. The first theme is the superbloc that depicts value offered, how value is delivered and the intended target customers. In the second common theme, the superbloc describes the processes in place and the parties involved in delivering value to the targeted customers. Lastly, the third theme encompasses the superbloc defining governance and describing the role of management. The performance output of the firm's adopted business model reflects the value captured.

Although the business model is an independent construct and a complementary to business strategy, a unique business model could lead to a good competitive positioning and create barriers for competitors to replicate (Teece, 2009). As a consequence, measuring the performance outcome of a firm's business and the performance outcome of the implemented strategy becomes one and the same. Since the business model defines how value is created for the company while at the same time delivering value to the intended customers (Chesbrough, 2009), a good performing business model is one that successfully and consistently result in good performance for the firm. Nevertheless, as competitive advantage obtained from a good strategy is increasingly becoming transient (McGrath, 2013) where the performance of an implemented business model may be temporary. Rethinking, reformulating, followed by redesigning and renewing the firm's business model becomes a necessity as the company progresses.

Innovating the business model can be defined as reconfiguring the one or more of the business model building blocks (Battistella, et. al., 2017; Moore, 2004). A business model innovation redefines how the firm creates and delivers value, which may encompass product, technology or process innovations (Teece, 2009; Amit and Zott, 2001). Therefore, innovating the business model means changing the architecture of the revenue and costs incurred, which may completely alter the core business and how the company operates. Such complex endeavor poses many challenges to be executed successfully. Costs, time and risks that result in changes in business management has been identified to be one key barrier to business model

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innovation, particularly if the firm does not have the assets and processes necessary for the change (Battistella, et. al., 2017). Consequently, understanding business model innovation can be achieved by observing whether business model superblocks have transformed over time and studying how well the firm manage those changes.

### **B. Information Systems and Managing Organizations**

Based on the strategy process perspective, information system is part of the firm's management systems that play an important role in facilitating formulated and executed strategy to lead to performance. The abundance of studies has contributed to analysing strategy formation, from formulation to implementation, which then extended to the strategic changes that occur in the process (Chackravarthy and Doz, 1992). In Chackravarthy, et. al. (2003), one of the offered frameworks described strategy process to consist of strategy formulation, defined as the firm's organizational context that determines how decisions are made, and strategy execution, which are the undertaken decisions-actions in strategy implementation. This framework prescribed organizational context to include management systems (structure, planning, control, human resource management and incentive systems) and informal organization (values, norms, culture and leadership styles). Therefore, an information system is embedded in the management systems within an organizational context that serves as a basic premise for strategy formulation and facilitate execution.

Managers must incorporate internal and external focus when making decisions throughout the strategy process, which means consideration in formulation and execution should not be separated (Koseoglu, et.al., 2020). Consequently, information systems support managers' decision making throughout the strategy process. One of the most popular information technology products widely implemented is the Enterprise Resource Planning, which serves as the management information systems that have proven to improve performance when effectively implemented (Zubaedah, Ranti and Luhukay, 2017). Information systems, particularly those supported by information technology solutions, allow for effectively automating, producing and sharing of knowledge throughout the enterprise (Rahimi, Moller and Hvam, 2016). In other words, an information system would facilitate organizational knowledge creation necessary to address changes in the business environment and respond to those changes appropriately (Nonaka, von Krogh and Voelpel, 2006). Incorporating knowledge creation in a firm's strategy process would lead to good performance as a proper information system would be in place to facilitate information acquisition and processing necessary to make good decisions (Zubaedah, 2022).

Previous studies have shown a direct correlation between information systems and attaining competitive advantage. Obtaining adequate available information, building expertise, creating knowledge and forming wisdom are made possible with the appropriate information system that is supported by information technology such as through the use of competitive intelligence (Pomffyova and Bartkova, 2016). Studies showed that information systems enable firms to better utilize and develop competencies necessary for competitive advantage (Zhang and Lado, 2001). Wang, et.al. (2022) showed that business intelligence affects performance appraisal capabilities, which in turn, improve performance due to the ease of making better decisions when related present and historical business information are readily available. The capability in managing the information systems would affect the firm's ability to achieve competitive positioning within its industry (Rahman, et.al., 2021). Moreover, effectiveness of strategy process requires the use of a systems approach to facilitate strategy implementation (Kaplan and Norton, 1996). Based on this premise, Srivastava and Sushil (2015) argued that operationalizing strategy execution require alignment of systems to automate standardized processes across the organization to build systemic management mechanisms. Hence, a company's information system plays an important role to effectively facilitate firm activities and decision-making processes so as to ensure performance.

### **C. Organization Culture and Performance**

In strategy formulation, firm context includes the informal organization that consists of values, norms, culture and leadership styles (Chackravarthy, et. al. 2003). Organizational culture, which can be defined as the "shared norms, values and assumptions-in how organizations function," is often underestimated in organization studies, where instead, a thorough observation of firm values and behaviours is necessary to gain a better understanding (Schein, 1996). Studies found that organizational culture, in fact, plays a critical role in determining how a company operates (Sun, 2008). A firm's culture reflects the principles, values and norms that are strongly adopted by the members of the organization (Guiso, et.al., 2015) as well as the "natural glue" for the members to work together (Mujtaba, 2008). Consequently, applying cultural attributes in a firm allows management to instil values necessary to attain performance (Seidu, et. al., 2022).

Many studies have showed positive relationships between organizational culture and performance. In a study of hotel operations in Ghana, Seidu, et.al. (2022) found key culture dimensions, namely, mission, involvement and consistency to have strong positive impact towards performance. Another study of 10 technology companies in India showed positive and significant

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relationships between four types of organizational culture, namely, cooperative, innovative, consistent and effectiveness, with performance (Shea, et.al., 2023). In Turkey, Acar and Acar (2014) also conducted a study that showed positive affect of organizational culture on firm performance. However, other studies also have shown the opposite results where organization culture was found to have a negative effect on performance (De Luca, et.al, 2018) or some cultural items have positive impact on performance while other items affected negatively (Poku, et.al., 2013).

Previous researchers have also identified culture models to offer deeper analysis of a company's adopted culture. For example, the clan, market and bureaucratic culture types advocated by Ouchi (1980). From a different perspective, Hofstede (1980) proposed that culture makes up of dimensions in a continuum, while Schein (1991) made organizational culture classification on the basis of the adopted values, assumptions, symbols and processes. Further studies are necessary to appropriately define culture types, attributes and measures. Nevertheless, there is an accepted consensus on the significance of culture in firm development where strong beliefs and values adopted in the company culture provide for not only competitive advantage but also other advantages such as cooperation, control, communication or commitment (Sun, 2008).

### III. THEORETICAL FRAMEWORK

The agility framework used in this analysis was developed using a three-lens approached in observing firm development over some period of time. The three-lens approach consists of the Business Model Effectiveness Lens, Productive Information Systems Lens and the Independent – Dynamic Culture Lens. A graphic depiction of this framework is presented in Figure 1. Detailed discussions on the lenses included in the framework are discussed in the following sections.

#### A. Business Model Effectiveness Lens

In line with the changes that occur in the world, the business ecosystem evolves in parallel with the advances in technology, sciences and overall human lifestyle. The changes in the conditions surrounding businesses to attain and then maintain

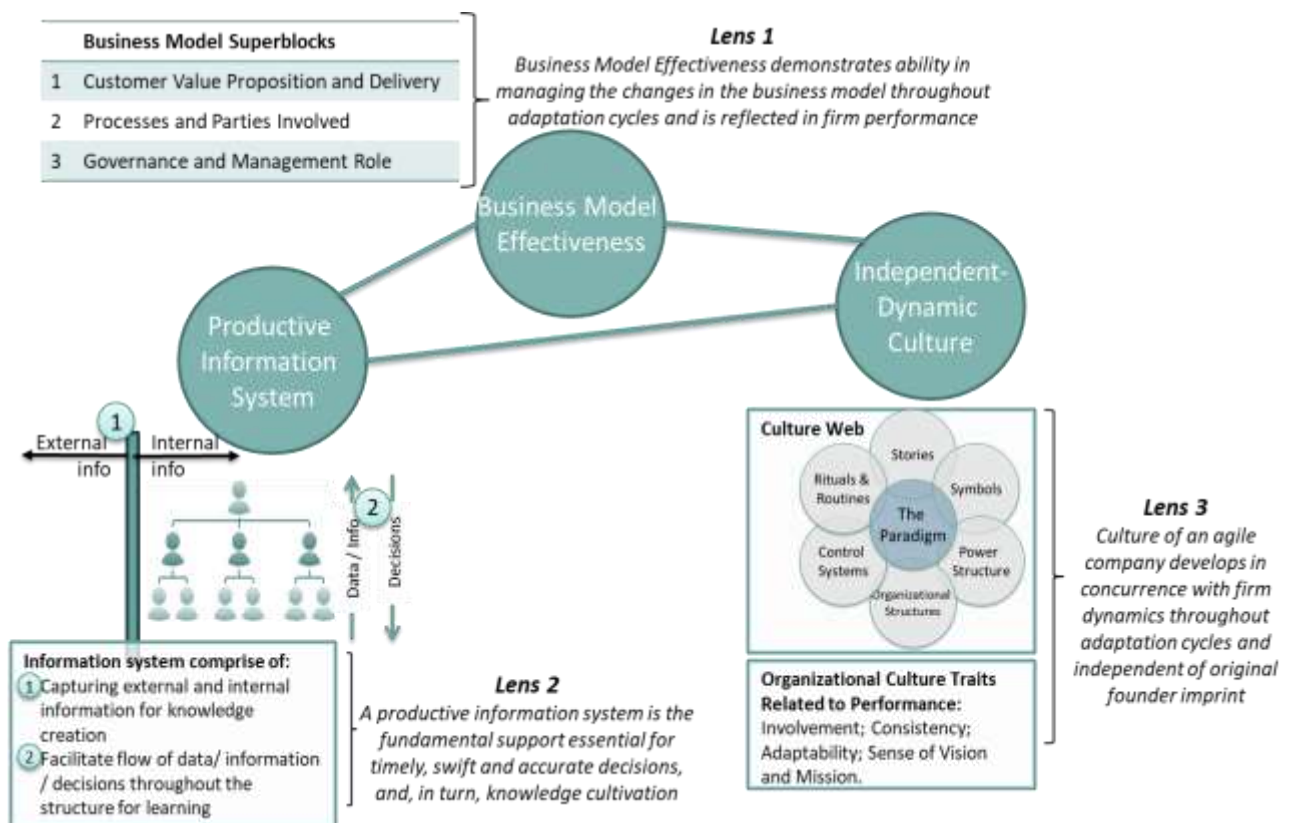


Figure 1. The Three-Lens Agility Framework

Good performance characterizes the adaptation cycles that companies need to adjust to. Using the s-curve to display a company development from infancy to expansion and maturity, at the upper limit of the s-curve is when companies reach the point where growth are stagnant. To address this, firms need to jump to the next s-curve of development by reinventing themselves in order to adapt (Nunes and Breene, 2011). As companies progress, businesses go through adaptation cycles where firms undergo significant alterations in how the business model works (Zubaedah, 2016).

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Previous research has identified certain circumstances that drive firms to adapt by innovating the business model. Johnson, Christensen and Kagerman (2008) identified strategic conditions requiring business model innovation, which are the emergence of a disruptive innovation, capitalizing on a new product invention, undertaking industries with clear market segments, circumstances to deter disrupters, and commoditized markets due to shift in competition. Similarly, Zook (2007) discussed the depletion of the firm's core business, where profit pool is decreasing, inferior economics due to increasing costs, and the business can no longer grow, would compel for a business model innovation. Every organization goes through cycles of adaptation due to changes in the business ecosystem.

Observation of a firm's development is by looking at the changes in the business model over time that reflect firm's strategic responses towards environmental dynamics (Fontana and Zubaedah, 2012). Therefore, a healthy organization is one with the agility to manage a series of business model innovations throughout its lifecycle. Firm agility is reflected in the way firms manage Business Model Innovations effectively as the firm evolves, or denoted as Business Model Effectiveness (Zubaedah, 2016). In other words, Business Model Effectiveness is reflected in successfully navigating the adaptation cycles through adoption of Business Model Innovations consistently and effectively. Hence, agility can be observed by evaluating whether a firm is able to achieve Business Model Effectiveness.

Business Model Effectiveness would be reflected in consistently improving performance measures, namely economic returns and effective transformation of one or more of the business model components (Zubaedah, 2016). Observations on changes in the business model superblocks over time throughout adaptation cycles allows for determining the ability for managing those changes. In terms of economic measures, Business Model Effectiveness is reflected, among others, in the positive and increasing profitability or Earnings Before Tax and Depreciation. Measuring effective transformation of business model superblocks may be more difficult to quantify and would require a longitudinal study as transformation of the components must have occurred. Through direct observations and discussions with management, we can determine whether transformation of business model components have occurred and were effective. Business Model Effectiveness demonstrates the ability in managing the changes in the business model throughout adaptation cycles and is reflected in firm performance.

### ***B. Productive Information Systems Lens***

A firm's information system is an integral part of the management system required to execute strategy and run the organization properly. Previous studies that showed direct relationships between information systems and firm performance provided evidence of the significance in implementing the appropriate information system to attain good performance. Consequently, there are key features that an information system has to have in order to be deemed effective given the particular firm design. As information is inherent in the structure and processes of business operations, design and implementation of the suitable system to manage information flow across the organization is critical to facilitate decisions, actions and, ultimately, ensure firm performance. Moreover, in the face of constant environmental changes, rapid capture and use of information allows for agility to adapt and swiftly respond by adjusting firm systems and implement necessary actions (Ahhammad, Glaister and Gomes, 2020)

There are two main ingredients that make up a firm's information system. First ingredient is the proper management of external information and its interactions with the internal information, which constitute the firm's environmental scanning. During strategy process, environmental scanning involves processing industry factors while at the same time assessing internal resource requirements (Wheelen and Hunger, 1998). While the flow of internal information coincides with the flow of processes across the organization structure, flow of information from external sources needs to be managed carefully. External information is vast and rapidly changing in line with the dynamics of the business ecosystem. Signs and signals relevant to the business need to be quickly discerned from the noise and unrelated information, particularly in today's fast-paced information economy. It is pertinent for a firm's information system to incorporate the mechanisms for acquiring information necessary for knowledge creation, including discerning signs that may threaten performance (Zubaedah, 2022).

The second information system ingredient is managing the flow of data, information and decisions throughout the organization structure. A company is commonly organized using multiple levels of structure, beginning with the executives at the top, management and supervisors at the middle, and workers at the bottom. Data flows from the bottom, which are converted into information at each level of the structure. A firm's information system should include appropriately managed flow of data so as to initiate proper conversion into information that require such considerations as accuracy, completeness and security. Furthermore, data and information are the basic material for creating knowledge in the organization (Nonaka, 1994) necessary for attaining performance. This further reinforces the significance of a firm's information system to have the ability for managing flow of data and information productively so as to support timely decision making and organizational knowledge creation. A productive information system is the fundamental support essential for timely, swift and accurate decisions, and, in

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turn, knowledge cultivation. Here the focus of the Productive Information Systems lens is to look at how well the system facilitates the conversion of data to information, and then information to knowledge.

### **C. Independent-Dynamic Culture Lens**

Considering the ever-changing environment, firms must acquire the ability to navigate and adjust as necessary in order to maintain performance. Schein (1996) observed the centrality of coping and adapting mechanisms as defining the conditions of an organization's health, which should entail how the firm learns, collaborates, build trust and open communications, all of which needs to be built-in the organization design. Therefore, studies on the organization culture are relevant to provide a distinct point of view in observing the firm's agility throughout adaptation cycles. Agility requires a healthy organization that embeds a culture that cultivates productivity and promotes innovation necessary to adjust the firm accordingly.

The culture lens stems from Johnson and Scholes (1999) Culture Web, which is a tool to identify a firm's culture. Centre of the web is the paradigm (beliefs and values) that interlinks with the other elements (routines, symbols, power structure, organizational structures, control systems and stories), which creates a chain around the centre (see Figure 1). As the seven inter-linked elements connect the different aspects of the organization, the Culture Web can be used to observe how a firm's culture is formed and, in turn, how the strategy develops (Sun, 2008). Common practices showed that the organization's founder would set the initial paradigm, such that of a DNA imprint of the organization. Other elements may develop in different time periods in concurrence with the company business operations. Consequently, organization culture develops and adjusts over time as the Company progresses. Therefore, identifying the culture of a particular firm requires longitudinal observation of the culture web elements as they form over time.

Subsequent to observing the formation of the culture web elements, observing agility from the culture lens is based on identified key traits of a high performing culture. Denison and Mishra (1995) conducted a study on the relationship between organizational culture and effectiveness through case studies and empirical research, which resulted in the identified four cultural traits positively related to performance. Such culture traits as involvement, consistency, adaptability and mission are found to have positive relationship with objective performance measures. More specifically, the two traits found to predict growth are involvement and adaptability, while consistency and mission are better at predicting profitability. Based on these findings, observation of firm culture would need to include whether such traits exist as predictors of high performance. Furthermore, since agility is to be observed in a longitudinal manner, it is important to assess whether those culture traits emerge over time despite the initial founder imprinting of the paradigm. Agility should be reflected in the culture formation and adjustments that are concurrent with firm dynamics. Hence, an organization culture that dynamically evolves as the firm progresses and independent of the founder's embedded characteristics demonstrate agility.

### **Multiple Case Study**

The following sections discuss the analyses on the three companies under study, namely, Co-AST, Co-BAP and Co-CKI. Analysis on each case study is organized into three-part discussions representing each lens of the agility framework.



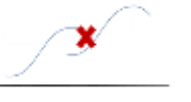
#### **A. Research Design**

This research aims to apply strategic views in observing agility on multiple entities, which was designed in three phases. First phase consists of observing the entities in conjunction with preliminary literature review to determine relevant theories on agility. Key financial data (when available) and company information were collected in the first phase, which was used as the basic consideration on contexts under study. Moreover, preliminary literature review conducted in the first stage identified three strategic views on agility. Just as different camera lenses would able to capture one image in distinct ways, three strategic lenses were defined after a thorough analysis of the combined literature review and company information during the second phase. In the third phase, more detailed analysis of the cases using each of the three-lens were conducted through direct observations and various discussions with key management personnel.

The study combines both deductive and inductive approaches in order to capture strong conclusions. In the first phase, a top-down approach was employed to determine information on the company to be further inquired and determine applicable agility theories to be explored. Succeeding the deductive approach, the second and third phases of analyses adopt the inductive reasoning where the three-point-of-view analyses conducted on each case study were generalized to formulate strategic conclusions. Summarized key information and data collected on the entities under study is presented in Table 1.

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**Table 1. Summarized Information Collected from Various Internal Company Sources**

	<i>Co-AST</i>	<i>Co-BAP</i>	<i>Co-CKI</i>
<b>Core Business</b>	Manufacturing drilling parts and equipment for oil & gas exploration.	Manufacturing and construction of steel structures.	Manufacturing of steel roofing and wall cladding.
<b>Current Conditions</b>	Limited growth, stretched cash flow, fragile margins	A shell Company for 5,5HA land in East Jakarta (no activities)	Declining margins tend to be negative
<b>Assets in IDR Bio</b>	2017: IDR329B 2018: IDR346B 2019: IDR345B	2017: IDR43B 2018: IDR24B 2019: IDR19B	2017: IDR36B 2018: IDR44B 2019: IDR35B
<b>Profit (Loss) in IDR Bio</b>	2017: IDR11B 2018: (IDR6B) 2019: IDR34B 2020: IDR19B	2017: (IDR109B) 2018: (IDR47B) 2019: (IDR20B)	2017: (IDR8B) 2018: IDR0.8B 2019: IDR0.7B 2020: IDR36Bio
<b>Estimated Position on the S-Curve</b>			

There are three companies included in this multiple case study who are subsidiary members of the same Corporate Group of and supervised under one Holding Company. The Holding Company was established to represent the shareholders and facilitate performance management of the subsidiaries. Specifically, the three companies included in this study are pseudo-named Co-AST, Co-BAP and Co-CKI. Analyses on these companies are described in the following sections.

### **B. Case 1: Co-AST**

**Business Model Effectiveness Lens:** Co-AST manages and operates a production facility in Samarinda, East Kalimantan, that manufactures oil drilling equipment. The Company would participate in equipment procurement bids for oil drilling exploration projects managed by oil companies, in various sites in Indonesia. Since each exploration project requires different equipment depending on the complexities of the drilling site, Co-AST production is modeled as made-to-order. Market size is subject to oil exploration projects in the Indonesian region. Product variety is limited to drilling equipment with specifications that vary depending on the customer project requirements. Consequently, product pricing varies from one order to another, depending on the client's specifications.

The Samarinda production facility has a total area of 1.5 hectare and equipped with high value and sophisticated Computer Numerical Control machines as well as many other supporting machineries and equipment to produce steel-based products. Considering the product specifications from oil drilling companies, Co-AST must import raw material to meet the demanded requirements. In addition to the production facility in Samarinda, Co-AST manages an office in Jakarta that mostly manages marketing, sales and administrative functions, as well as a small workshop facility for storage, assembly and quality inspection work. Co-AST organization structure can be described as having four tiers where the first level is the factory or line workers, level two is the supervisors and team leaders, level three is the superintendents and managers, and level 4 includes three Directors (CEO, CFO and Marketing Director) as well as one Head of Factory (General Mill Manager). This structure is divided between the factory located in Samarinda, East Kalimantan, and the head office located in Jakarta. The production facility in Samarinda employs close to 300 personnel while the Jakarta office have around 80 employees.

In terms of Governance, Co-AST is entirely owned by the Group of local affiliated companies. Factory operations are managed under the Head of the Factory and supported by administrative functions, such as finance and accounting, human resources, information technology, warehouse and logistics. Policies and procedures implemented at the factory is in accordance to the requirements of an intensive labour factory with employees working in shifts from Monday to Saturday. Depending on the production requirements, workers' shifts are arranged to meet the predetermined production schedule, which sometimes require 24-hour shifts. On the other hand, the Jakarta office is led by the executive team, which mainly takes care of the marketing, finance and purchasing. Different with managing the factory-type activities, the Jakarta office adopts regular Monday to Friday office hours and do not work in shifts. In other words, manufacturing activities are managed under the structure of the factory while the Jakarta office becomes the centre hub of corporate and administrative activities.

Considering that the main business model of Co-AST is to manufacture products based on order, the revenue depends on the progress and completion of those orders, which lead to untimely stream of cash inflow. Terms of payment vary between

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customer orders while costs incurred immediately after order acquisitions, such as material purchasing, production preparation and workers' salaries. Working capital requirement is high while at the same time cash inflow from sales are slow, which stretches the cashflow of the Company. Increasing costs of imported material further stressed the cashflow and requiring additional working capital. Moreover, in the last five years Co-AST serves one main customer since all oil exploration projects in Indonesia is operated by Pertamina (the Indonesian State-Owned Enterprise in Oil and Gas). Product specifications and terms of payments are all subject to maintaining good rapport with Pertamina. Such conditions are evident of a weak business model that result in fluctuating profitability (see Table 1) and unstable margins.

As disclosed in the internal reports, Co-AST largest expenditures are in production material, energy, employee salaries and overhead. Those expenditures increase over time but product variety and income are subject to only one main customer, which is Pertamina. Without varying the products manufacture and working towards targeting new customers, margins are depleting and growth is impossible. The Company appears to not work towards adopting new business models in responding to the changes in the environment or build new capabilities to manufacture products for other industries. Therefore, Co-AST is overburdened with weak profitability and essentially no value improvement, which indicates its inability to alter the business model or could be denoted as having low Business Model Effectiveness.

**Productive Information Systems Lens:** In the period between 2019-2022, Co-AST undertook major changes by reviewing its human resources performance and recruited a large number of workers, including several mid to upper management personnel. There were significant changes in the organization structure that aimed at improving quality and production efficiency. During midway of the implementation in 2021, management initiated a study to assess whether the changes have effectively been implemented and alter performance. The study was conducted using questionnaires distributed across the first three levels of employees (excluding the executive level), which intended to measure effectiveness of the organization structure to facilitate data and information in supporting decision making that would lead to performance. In other words, the study evaluated the effectiveness of existing information system in providing support for management to make good decisions so as to achieve performance. Key results and conclusions of this study is summarized in Table 2.

**Table 2. Summary of Study Conclusions on New System Implementation at Co-AST**

<b>Level</b>	<b>Key Conclusions from the Co-AST 2021 Study</b>
Level 1 (Factory Workers)	Analyses on Level 1 data resulted in more positive perception towards data quality and organization in supporting good decisions resulting in relatively good performance. However, measures indicate uncertainty towards performance Level 1 employees appear to comply to the Company directions but without full comprehension of the implemented changes.
Level 2 (Supervisors & Team Leaders)	Relatively positive perception towards data quality and organization as the basis of effective decisions made on time, on target and producing good quality products. However, results showed Level 2 employees did not perceive improved performance with the implementation of the new organization. Level 2 employees are behaving in accordance to the prescribed organization changes but do not perceive such changes to result to better performance.
Level 3 (Superintendents & Managers)	Analyses on Level 3 data showed that respondents perceived questionable data quality, particularly in terms of accuracy. Organization implemented is also perceived to be ineffective to support decisions and improve performance. Level 3 respondents appear to be the most skeptical towards changes implemented and have not fully adapt to the new mechanisms that are in place.

Co-AST management initiated this study in order to properly adjust and respond to the business conditions. At some level, management realizes the need for Co-AST to alter their organization and improve its performance. External information was captured by executives and triggered the decision to initiate improvements. However, information on existing performance and the pressing need to change did not appear to be sufficiently distributed at all levels of the organization. The results of the study



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found that there is a significant gap between what is understood at the upper management level, and the operational level personnel. Interestingly, survey results showed that the level 3 employees demonstrated the least positive attitude towards the changes initiated to improve performance. In turn, the implemented information system did not facilitate productive flow of information, which lead to lack of understanding and learning. Consequently, information system in place did not facilitate knowledge creation necessary for firm agility.

**Independent-Dynamic Culture Lens:** After its establishment in 1984, Co-AST was managed by a combination of local and expatriate professionals, placed as representatives of founders. In 2006, a new management team was established and a new CEO was appointed, with few expatriates as the Director of Operations and the Head of Factory. In 2021, there was a shift in the executive management structure, where the expatriate Director retired and two new Directors were appointed to support the executive function of this organization. As previously discussed, the organization structure managing operations under the Head of the Factory is located in Samarinda, which is separated from the structure of the corporate and centralized administrative activities at the Jakarta office.

Although the executive team has the strategic command over the entire organization structure, the different nature of activities between the two distinct locations created different working environments. In Samarinda, the culture is made up of mostly level 1 and 2 workers, which creates a more blue-collar, disciplined, factory-setting atmosphere. In contrast, the Jakarta office with mostly levels 3 and 4 personnel, the office has a routine Monday-to-Friday, nine-to-five, administrative work atmosphere. In addition to the differences between the functions and activities managed at the two sites, the distinct local cultural environments between East Kalimantan and Jakarta (capital city) further exacerbated the differing culture within the organization. The Co-AST organization culture consists of sub-cultures that developed independently at each location with few commonalities given that both sites are under the same executive leadership.

When the Company was first initiated, the founders imprinted the main paradigm for Co-AST to be a high-quality manufacturer of products serving the oil and gas industry exclusively. This cultural DNA imprint remains evident to this day, both at the Samarinda factory and the Jakarta office. Many of the employees at the second, third and fourth tiers have worked at the Company for over ten years. Interactions with key personnel, particularly at the second and third levels of the structure at both locations, expressed not only commitment but also pride to work in a company such as Co-AST. Hence, the exclusivity to provide products for oil and gas industry becomes the underlying paradigm that is engrained and unchanged within the Company's culture since its first establishment. The culture paradigm has not changed, even after the original founders left management where the succeeding executives were not able to alter or adjust such values and beliefs.

Although the paradigm of both locations were uniform and remained unchanged, the other culture elements developed differently between the Samarinda and Jakarta locations. Such elements as rituals and routines, stories, symbols, power structures, organizational structure, control systems are different between the two locations. For example, in Samarinda factory the working conditions have strict dress code related with health and safety rules. At the factory, there are guidelines and procedures associated with employee attendance, clock ins, break times and proper behavior when workers are at the production area. In contrast, the Jakarta office does not have strict dress code, employees do not have to clock in and all employees conduct administrative work in a small-sized office building, which is more easily supervised. Consequently, Co-AST culture encompasses two sub-cultures as the culture elements developed differently between one location and the other.

Nevertheless, the culture imprinted by the original founders prevail up to this day. Further insights can be obtained when we compare to the key traits that Denison and Mishra (1995) identified to be positively relate to performance, which are involvement, consistency, adaptability and mission. Lack of involvement and adaptability is apparent in the employees' complaisance and going along with what has been imprinted by the founders and ignored changes that are happening in the market. The existence of sub-cultures within the organization showed low consistency and sense of mission, as there appears to be no well-defined and unified culture between Samarinda and Jakarta locations. In fact, as the business serves only oil and gas industry, it creates a culture of exclusivity towards this industry and closed off towards other industries. Therefore, Co-AST has not demonstrated a culture that builds agility.

### C. Case 2: Co-BAP

**Business Model Effectiveness Lens:** Co-BAP was established in the 1972 on a five-hectare production facility site located in Cakung, East Jakarta. It is a project-based steel fabricator and provided engineering services for industrial construction projects, such as building manufacturing facilities, office buildings, bridges and toll roads. In particular, the Company provided steel fabricating services as a sub-contractor of major Engineering Procurement Construction companies (EPCs). Initially, the business positioning of Co-BAP was to contribute to the major infrastructure and industrial construction projects that were developing in

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the Jakarta area at the time. The Company adopted the basic made-to-order business model and was able to build strong partnerships with several major EPCs, which lead to the Company's stable performance. Since the related EPCs were the ones who participated in the construction projects and deal directly with the clients, revenue acquired depends on the portion of the work sub-contracted to Co-BAP.

As a consequence, the greatest challenge in the adopted business model by Co-BAP was to maintain the lowest costs while at the same time meeting the project requirements. Such challenges entailed sourcing raw material appropriate for the project at affordable costs and utilizing the most efficient resources to complete the project. Over time, such challenges become increasingly burdensome and stresses the financial capabilities of Co-BAP. The emergence of competitors that target the same markets further heightened the livelihood of the Company's business, which further strained its profit model. In 2012, the shareholders appointed new executive team to remedy the situation.

New appointed leaders initiated a transformation of the Company to diversify its capabilities beyond the sub-contractor business model. The strategy was to add engineering design services and developed more sophisticated engineering solutions, which opened up the opportunity to serve a wider market. To support this strategy, the Company recruited a significant number of new employees as management trainees, acquire the design such products as a small-scale modular power generation system, and also allocated resources to renovate the administrative office area. They also initiated a Corporate Academy program to provide internal training for the designated management trainees.

Nevertheless, all of these efforts to transform the organization fell short due to over investments on the new business program and not enough attention to building new capabilities of existing facilities or developing the existing workforce. Aside from existing projects that need to be delivered, the business model was essentially remained unchanged. The initiatives were similar to adding a new wing of a hospital building, instead of upgrading existing hospital facilities and improving capabilities to care for patients. Investment funds were disbursed completely for the new initiatives without proper considerations to identify steps for quickly obtaining returns, which caused further suffering to the existing business operations and cashflows. In turn, the Company fell into heavy debts that they were not able to repay without leveraging off the available assets. Co-BAP seized operations in 2017 and assets were liquidated to pay off portions of the debt.

As summarized in Table 1, the negative profitability incurred appear to improve as the Company gradually paid off their debts by selling their tangible assets. This process is still ongoing where the highest valued asset owned by the Company, which is the 5.5 hectares of land located in a prime commercial location in East Jakarta, is still up for sale and under negotiations with potential buyers. It is unfortunate that Co-BAP failed to initiate and manage a business model transformation, which lead to this Company's demise. This Co-BAP case demonstrated the necessity for building Business Model Effectiveness so as to be agile and adapt the business model to meet the demands of the industry.

**Productive Information Systems Lens:** During the initiated transformation by the newly appointed executive team in 2012, management decided to invest in one of the most comprehensive information systems to update and upgrade existing system. The selected system is an Enterprise Resource Planning (ERP) software, which required integrating the organization's structure, processes and information with the support of technologies. Such initiative required appropriate implementation methodology and change management considering the significant changes that would entail when implementing an ERP.

Prior to commencing the ERP implementation, management conducted an assessment to determine the organization's readiness for implementing the new system. Organizational readiness assessments found issues in the existing human resources capabilities, structure design and operating processes. Review of the human resources and questionnaires collected on all workers concluded in the weak workforce of the Company at that time. Most of the workers were at the age of 40 and over, who have worked at the Company for over 20 years. Organization structure was adjusted to the additional executive team assigned, which consisted of the CEO, Finance Director, Marketing Director, Operations Director and Business Development Director. Scope of work under the new Directors were unbalanced where HR, Finance and Accounting, Procurement, as well as General Admin were all under the Finance Director. Moreover, at the operations level, processes were conducted in a conventional manner where production mostly entailed manual labour and non-digital administrative records.

The organizational assessment concluded poor human capital conditions with an outdated information system in place and very low digitalization. For example, the inventory recording at the warehouse still used log books and the administrator did not have a master data of their inventory. Nevertheless, the ERP implementation proceeded with the recruitment of more professionals to eliminate the human resources gap in the systems requirement. As previously discussed, the transformation initiative was unsuccessful and the Company operations slowly deteriorated until it seized operations in 2017. This brief analysis

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using the Productive IS Lens concluded in the poor information systems in place, which lead to poor decision making and lack of knowledge creation.

**Independent-Dynamic Culture Lens:** From the very beginning, Co-BAP was established to be a steel fabricator as part of major construction projects in the country. Although the Company extended its capabilities from pre-engineered steel constructions to fabrication of various auxiliary equipment, Co-BAP was positioned to be a sub-contractor and not as an EPC. As the industry landscape changes, the Company was still managed the same way as when it was initially established by the founder. Evidently, the Company's cultural traits that were imprinted by the founder was maintained for over 30 years and remained unchanged.

When the new executive team initiated the transformation initiatives in 2012, focus on the changes were on the business and insufficient attention was placed on the organization culture. This condition was apparent in the approach of the ERP implementation where less attention was directed towards the human resources capabilities and more emphasis was placed on the technology tools. Moreover, most of the workforce had nearly reached a limited productivity stage, some even close to retirement, and there appears to be lack of regeneration. New recruitments were not directed towards renewing the labor but rather for the back-office activities. Hence, the culture established was one of "doing as they are told" without any motivation or curiosity for renewing processes, using technology, new methodology or updating knowledge. In turn, Co-BAP organization culture did not evolve, unchanged over time and did not incorporate the traits necessary for a high performing firm. As a consequence, the Company was unsuccessful in building capabilities to alter and further expand its business.

### D. Case 3: Co-CKI

**Business Model Effectiveness Lens:** Co-CKI is a manufacturing Company that produces steel roofing and wall cladding for large industries in Indonesia. Initially, Co-CKI was established as a joint venture with a Japanese Cooperation in 1996. Major shares of the Company are owned by the Japanese Corporation, which makes Co-CKI falls under the category of a Foreign Company. At the time, the main business objective was to market steel roofing and wall cladding for Japanese industries that were setting up operations in Indonesia. Specifically, the Company became sub-contractors for large Japanese EPC companies and was able to tap into the emerging market of Japanese automotive and electronics industries who were setting up production facilities in Indonesia. Analyses on the financial reports showed that the Company has experienced stagnant growth and worsening profitability (see Table 1). Since it was first established, Co-CKI did not add new products or diversified its business, focusing solely on selling specific products to a niche market. At the same time costs are increasing, which cause profit margins depleting over time.

Co-CKI is a relatively small-sized company, with a total of 59 employees structured under the CEO, the General Manager, the Finance Director and the Operations Manager. The CEO, General Manager and several expert engineers are Japanese, while the rest are Indonesian employees. There are a total of 8 departments included in the structure, where HR and Accounting are under the Finance Director while the six other departments, marketing, purchasing, engineering, workshop, project and trading, report directly to the operations manager who is under the direct supervision of the General Manager. The production facility and administrative office are located in Cikarang, West Java, with a total land area of 7,639m<sup>2</sup>. When observed on site, the workshop area and machineries are in fairly good conditions, yet, the office and supporting facilities appeared dated.

In 2019, the Company initiated a study to analyze existing resource conditions and alternative new businesses that can be pursued. The results of the analysis showed that the declining performance was not only caused by the small targeted market, but also due to the decline in productivity followed by consistent increase in salary and production costs. Targeting Japanese contractors require the Company to import raw material, which prices continue to increase over time. Moreover, the Cikarang location has the highest minimum wage regulation in Indonesia, which consistently increases each year. The fact was, a large number of workers have reached optimum productivity where most of them already reached over the age of 40. Hence, improving productivity and performance with the existing organization would require an organization transformation.

Based on the conducted study, the proposed solution includes moving the facility to another location and larger area as well as pursue new business models in related industries. Existing production facility is already tightly-spaced to cater current operations where adding new business models require new infrastructure and facilities. Moreover, moving to another location with lower minimum wage regulations will give room for new recruitments and alleviate costs. Alternative business models include exploring pre-fabricated constructions to help with natural disasters, or provide housing and offices at remote mining sites. Despite the validity and completeness of the study, all of the proposed solutions were rejected by the Japanese shareholders and no changes were done. Management inclined with continuing the business 'as-is' without diversifying the products but the Company attempted to expand the market to target local construction companies. Hence, Co-CKI did not initiate a business model innovation and the declining performance indicated lack of Business Model Effectiveness.

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**Productive Information Systems Lens:** Given the size of the organization and the low complexity of the business model, flow of data and information throughout the structure runs sufficiently. Control, monitoring and reporting systems have been well-established which largely due to the instilled values of a Japanese production facility. However, there appears to be issues when concerning strategic decisions, which are those that would significantly impact the policy and business model. Executives of this Company tend to not be allowed to make strategic decisions, such as asset acquisition, procure new equipment, recruitment or business diversifications. Instead, executives must go through a lengthy process of approval for changes in such policies or strategic decisions in compliance with the intricate bureaucracy of the Japanese Corporation who owns a majority of the shares. Hence, the implemented information system, particularly in processing external information required in knowledge creation, did not appear to be effective and impede selection of strategies. As a result, Co-CKI is not able to be agile and swiftly adjust the organization to enhance performance.

**Independent-Dynamic Culture Lens:** The analysis on the organization's existing conditions discussed prior also include analysis of the human capital quality. Human capital analysis was conducted in two parts, which are the HR profile, namely age demography, education level of the employees, remuneration and how many years they have worked in the Company, and analysis on potential human capital ability to developing the business and promoting new growth. Data showed that most of the employees have low education background, which may create a large gap in managerial competencies and questions the ability to build new capabilities. Moreover, most of the employees have worked in the current position throughout their entire career working for the Company. Profile of existing HR, such as age, education and remuneration profiles, are evidence that the recruitment, placement and remuneration policies are generalized across all positions and divisions without distinctions based on individual competencies or performance. In addition, the survey found that employees are ambiguous about the Company's competitive positioning. Based on their responses, there appears to be unclear comprehension about Co-CKI's business or how to develop new growth.

Co-CKI has predominantly been managed by Japanese professionals who imprinted a paradigm that promotes discipline, precision and efficiency. Furthermore, the designated market of Japanese construction companies intensified the organization culture towards Japanese work values. Key executive positions are always assigned to Japanese expatriates as representatives of the majority shareholder. Although the Finance Director and the rest of the positions are held by Indonesian employees, the rituals and routines complied with the directions of the Japanese expatriates. The overall culture is more characterized as submissiveness and the existing workforce showed no drive for performance or innovation. As a result, the organizational culture did not cultivate the key traits necessary for a high performing firm.

## IV. DISCUSSIONS

The three-lens agility framework comprises of three distinct strategic views on firm agility but capturing the perspectives at the same time. Just as different camera lenses can capture the same object differently, the three-lens agility framework allows for painting three pictures of the same firm in order to gain complete understanding of the organizations' inner-workings. More importantly, these three pictures provide explanations on why and how the firm is agile. Starting with the Business Model Effectiveness lens, which views the organization at its entirety by looking at the inner-workings of the Company and selected strategies adopted. Next, the Productive Information Systems lens looked at the detailed flow of information that directs decision-making and knowledge creation. Final lens is the Independent Dynamic Culture lens that captures how the culture develops and should embed traits leading to high performing firms. Unfortunately, the multiple case study applying this three-lens agility framework showed that none of the Companies under study represented agile firms.

In line with the demands of adapting to the changes in the business environment, firms must have the agility to change the business model and manage the transformation effectively to ensure performance. Strategic agility is demonstrated by the firm's ability to proactively cultivate specific capabilities necessary for complete renewal of the business model (Battistella, et.al. 2017). The Business Model Effectiveness lens was established based on the basic premise of agility as the ability to successfully manage the series of business model transformations that may have occurred during firm's adaptation cycles. In turn, a firm's agility is apparent when it demonstrates Business Model Effectiveness. Put differently, firms must build capabilities to manage business model transformations effectively in order to be agile. In particular, this lens is defined by the ability to manage changes in the three business model superblocks, which are customer value proposition and delivery, processes and parties involved, governance and management role.

In the Co-AST, Co-BAP and Co-CKI cases, the business models of these companies did not change over time. These companies are not agile as they were not equipped with the capabilities necessary for transforming the business model superblocks. Co-AST

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was unable to build capabilities necessary to manufacture products for industries other than oil and gas, which lead to the inability to shift from the make-to-order to the make-to-stock model. Co-BAP and Co-CKI were unable to rearrange themselves from their positioning as sub-contractors to EPCs due to the inability for exploring opportunities in related industries and exploiting capabilities to make new products. Based on this observation we estimated where in the s-curve the companies are currently positioned (see Table 1).

**Table 3. Summary of Analysis: Business Model Effectiveness**

Superblocks	Co-AST	Co-BAP	Co-CKI
Customer Value Proposition and Delivery	Manufacture quality oil drilling equipment, made-to-order.	Steel fabrication, sub-contractor for major EPCs, project-based.	High quality steel roofing and wall cladding, sub-contractor for Japanese EPCs, project based.
Processes and Parties Involved	Import raw material, production processes located in Samarinda, marketing, major procurement and corporate processes in Jakarta.	Purchase raw material, production processes located in the facility, delivered and assembled on project site.	Import raw material, production processes located in the facility, delivered and assembled on project site.
Governance and Management Role	Shareholders are members of the Group, production organized under Samarinda structure, marketing and administrations centralized under Jakarta structure.	Shareholders are members of the Group, structure was imbalanced where finance HR and GA all under Finance Director.	Majority shareholder is a Japanese Corporation, Japanese expatriates assigned to key leadership positions.

Results from the analysis using the Business Model Effectiveness lens were supported by the Productive Information System Lens. The Productive Information System lens was developed based on the basic premise of converting data into information, which is the fuel for knowledge creation and learning in organizations. Using this lens allows for a two-part analysis, which consists of the information system necessary to address external information, and the management of internal data and information for appropriate decision-making. Addressing external information is part of the environmental scanning process necessary for decisions on internal resources during strategy process, which needs to be facilitated by a proper information system necessary for knowledge creation in the organization. Moreover, an information system needs have a built-in capability for managing flow of the data conversion process throughout the structure and facilitate use of information for organization learning required for performance. The three companies studied appear to not incorporate the productive information systems necessary for agility.

For Co-AST, environmental scanning is limited to oil and gas industry without processes in place to expand the scanning to other industries. This is especially apparent in Co-AST inability to explore possibilities for existing internal resources to make alternative products to respond to the changing circumstances in the environment. In the Co-BAP case, environmental scanning is also limited to only construction industry without formal scanning processes that only depended on top executives to expand their views limited to personal preferences and abilities. Similarly, Co-CKI environmental scanning is bounded by the Japanese construction projects and management did not establish formal processes to expand views to explore servicing other industries. Moreover, the dominant Japanese expatriates in the structure were having difficulties in building marketing and sales capabilities for the local markets or EPC Companies.

**Table 4. Summary of Analysis: Productive Information Systems Lens**

IS Elements	Co-AST	Co-BAP	Co-CKI
Capturing external and internal information for knowledge creation	External information captured is limited, no formal processes in place to expand scanning.	Environmental scanning process is limited to construction industry, limited expansion depending on top leaders.	Environmental scanning process is limited to Japanese construction industry, no processes to expand views.
Facilitate flow of data/information / decisions throughout the structure for learning	Data quality was questionable, information gaps exist, leading to slow decision-making	Manual data was questionable, limited information support when making decisions.	Ineffective strategic decisions due to slow flow of information to shareholders.

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Flow of data and information of these Companies tend to be sluggish, which slowed-down deliberations and accuracy of decision making as not enough information is acquired. Results of the study at Co-AST showed that there is a significant gap between the tiers of the structure and data quality was deemed questionable. More importantly, respondents expressed their uncertainty about the firm’s performance given existing information system. In the Co-BAP case, digital data from operations activities were scarce and not enough information was able to be collected to support performance management. On the other hand, the Co-CKI case had different impediments where decisions related to strategy and policy had to go through a rigorous process of approval from the Japanese shareholders, which inhibits decision-making on major issues. Overall, the information systems in these companies were unproductive and even constrained knowledge creation, which further emphasized the inability to be agile. Difficulties in knowledge creation lead to the inability to build organizational knowledge so as to be used and shared by the firm.

Following the Business Model Effectiveness and Productive IS Lenses, the Independent Dynamic Culture lens provided a better understanding and further provide explanations on each company’s issues with agility. Organization culture needs to be examined and understood as the behavior and way of thinking of human resources are influenced by culture (Hofstede, 1997). Since agility entails swiftly responding and adjusting to the environmental dynamics, culture can help shape behavior and motivations to undertake organizational change. On the one hand, an organization culture should be uniform and converge in accordance with the firm’s vision and objectives. On the other hand, an organization culture should stay current and up-to-date with the needs of adopting good business practices. Development of organizational knowledge and increased use of technology, for example, would most likely emerge in the efforts for continuously improving performance. Hence, an agile company should adopt a positive culture that stays current regardless of initial traits instilled by the founders.

When values or beliefs of the company founders are no longer valid to keep up with the business, an organization culture needs to be fluid in order to adapt, adjust and be agile. The three companies analyzed did not show agility as the organization culture did not change as firm circumstances change. The central beliefs and values making up the culture’s paradigm, conformed with those imprinted by the founders, despite the fact that founders were no longer involved in running the company. The exclusivity of providing products for the oil industry made Co-AST employees overconfident about their capabilities and felt it to be unnecessary to explore products of other industries. Although the structure is managed under the same Board of Directors, the two distinct locations between production facility and corporate office shaped two sub-cultures due to the different rituals and routines, stories, symbols, power structure, organizational structures, and control systems. Despite the employee turnover and management’s efforts to transform the organization structure, the overall Co-AST culture remains the same as when it was originally set by the founders.

**Table 4. Summary of Analysis: Independent-Dynamic Culture Lens**

Culture	Co-AST	Co-BAP	Co-CKI
Culture Web	Paradigm of exclusivity towards oil industry, employees are proud and overconfident, two locations created distinct sub-cultures that adapt to new developments.	Paradigm as sub-contractor not as EPC, process transformations through ERP failed, remained as original founder imprint although under new leadership.	Paradigm as sub-Contractor predominantly for Japanese EPCs, submissive culture complied with Japanese dominant leadership, and did not evolve over time.
Traits Related to Performance	Did not observe traits related to high performance culture.	Did not observe traits related to high performance culture.	Did not observe traits related to high performance culture.

Similarly with Co-BAP and Co-CKI, the original paradigm imprinted by the founders fundamentally did not develop over time. This is apparent in the fact that process transformations at Co-BAP with implementation of an ERP did not lead to improved performance. In the Co-CKI case, the dominance of the Japanese counterparts led to a culture of submission and complied with the initial tone set by the founders. Alas, none of the companies under study built cultural traits that are positively related with high performance.

Analysis using the three-lens agility framework showed that companies under study did not represent agile companies. All three companies are found to not have business model effectiveness, the information systems were unproductive and the organizations culture were not independent of the founders and tend to be outdated. Considering that the companies included in this study were members of the same Group of companies with the same founders, there are two key commonalities that lead these companies to their current circumstances. First common thread is the strategy executors, vis a vis, the human

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resources, that appeared to not have the knowledge and skills necessary to develop growth. Limitations in the human resources led to each if the company's inability to build capabilities to change the business model, or develop a proper information system for knowledge creation and, fundamentally, incapable to evolve into a modern culture that promote performance. Moreover, the analysis showed the need for strong leadership to orchestrate firm resources and organize processes required to increase company value.

Second common thread is the context when these three companies were established in the 70s-80s, where Indonesia's economy was significantly driven by government projects and directed by the political landscape at the time. The founders of this group of Companies took advantage of their network and government relations to arrange positioning in the abundance of government projects that took place at the time. Co-AST was set up in Samarinda, East Kalimantan to support the Government's major oil exploration and drilling project located in Tarakan, North Kalimantan. Co-BAP was established due to the many infrastructure and industrial property developments in the Jakarta area at the time, where not many sub-contractors existed yet. Similarly, Co-CKI was established as a joint venture with a Japanese counterpart, who was looking for local partner to set up sub-contractor operations for Japanese projects in manufacturing industries that were developing in the Cikarang-Karawang industrial estates. In other words, these companies were not established due to entrepreneurial endeavours but rather for servicing the government projects that were flourishing during those periods. The history of the establishment of this Company, ultimately, led to the current trajectory of difficulties and poor performance.

### **CONCLUSION**

In sports, athletic agility encompasses three dimensions, namely, strength, speed and flexibility. Similarly, firm agility is the amalgamation of many organization elements and capabilities that allow the company to be strong but at the same time flexible towards adapting to necessary changes and undertake those changes in a swift manner. Agile firms require structure that can effectively organize resources managed to execute strategy and operate the business model. Agility is not the same as flexibility where agile firms require strong organization structure with adaptive components and developed capabilities that allow for swift responses accordingly. More importantly, just as professional athletes need to be adults in good physical conditions, agile firms have to be healthy and mature. This is why the three-lens agility framework is appropriate for evaluating a firm's health and development.

In this study, analyses were conducted on selected companies that are part of the same group, founded by the same parties and established for similar objectives. The basis for the founders to establish the companies were more opportunistic rather than entrepreneurial. These Companies were formed not based on capturing business opportunities but rather for leveraging off the rise of mega and major projects that occurred at the time. Consequently, the companies were not able to reach a mature state in a more naturally-progressing manner. Instead, these companies were up and running operated in full capacity almost at an instant where acquiring customer orders were not difficult given that the orders exist prior to the company establishment. As a result, the companies in this study were analogous to babies being born prematurely, where vital organs or body parts may have not been fully developed and required incubation. When the companies were first initiated, the organizations were established prematurely and were not incubated properly and, in turn, did not have the components for building agility.

Analysis using the three-lens agility framework allows for observing the birth and development of a firm. While each lens offers a distinct approach to analyse agility, together the lenses make up an integrated framework that provides insights on firm evolution and development. Such discussions are necessary for learning how to develop companies successfully and build agility. More importantly, the three-lens agility framework offers prescriptions of an agile firm. Agility is represented in three ways, specifically, having the capability to manage a series of business model innovations, established information system that support and facilitate knowledge creation, and developed organization culture that resists founders' imprinting when no longer relevant.

For practitioners, the three-lens framework offers a concise tool to assess whether the organization is agile, as well as whether gaps exist, where the gaps are and how to eliminate them. Proper analysis of the three strategic views on agility allows for identifying and recommending focused initiatives to improve agility. For academicians, the three-lens framework provides a novel three-way perspective on such a complex topic of agility. Future research includes more detailed exploration of each lens to identify appropriate measurements for each variable. Moreover, examination of applying the three-lens framework to more diverse companies in different industries would further strengthen arguments and enhance the effectiveness of this analytical tool. Ultimately, the framework allows for prescribing agility and should be use to formulate strategic moves for successful adaptation.

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