Orchestrating internal and external resources to achieve agility and performance: the centrality of market orientation

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Abstract

Purpose – This study examines the collaborative impact of networking capability and balanced agile project management (APM) on firm performance through the mediating role of market orientation and business process agility of medium and large telecommunication technology providers in Indonesia.

Design/methodology/approach – Research data were collected from the executive management of telecommunication technology providers in Indonesia via a questionnaire survey to obtain 150 valid questionnaires for analysis. This study analyzed the overall model fit and causal relationship using confirmatory factor analysis (CFA) and structural equation modeling (SEM).

Findings – The results indicate that market orientation fully mediates the link between networking capability-business process agility and balanced APM-business process agility. Furthermore, business process agility mediates the relationship between market orientation and firm performance.

Research limitations/implications – This study is based on a cross-sectional nature and might fail to capture the dynamic of the studied variables over an extended period.

Originality/value – The study extends the knowledge that dynamic capabilities, represented by networking capability and balanced APM, must be framed by market orientation to create customer value and improve bargaining position. However, market orientation alone is not enough in a highly dynamic business environment. Organization also requires business process agility, responsiveness and adaptability to timely address customers' needs and requirements.

Keywords Networking capability, Balanced agile project management, Market orientation, Business process agility, Firm performance

Paper type Research paper

Introduction

Agility becomes one of the critical requirements in the telecommunication industry (Ahlbäck *et al.*, 2017; Park *et al.*, 2017; Ravichandran, 2018), transforming into the Telecommunication 4.0 era. A transformation from traditional hardware- and appliance-based approach to cloud-based architecture that relies on software to manage all network functionality characterizes Telecommunication 4.0 (Li, 2018). The domination shrinkage from proprietary hardware market structure and high entry barrier to open and software-based networking generates challenges for telecommunication technology providers (vendors) to address customer requirements with speed but also with customization and localization (Aguirre *et al.*, 2019; Bajpai *et al.*, 2015). Stay agile in a new market with much lower entry barriers and an ever-

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changing environment becomes mandatory (IHS Markit, 2018). The agility becomes one of the most important capabilities that contribute to Huawei's and Lenovo's success as it allows both to secure opportunities immediately when they emerge by implementing successive experimentation, quickly divesting failed projects but scaling up R&D investments in successful ones (Chakravarthy and Yau, 2017).

The telecommunication industry has been becoming an integral part of the Indonesia economy and contributes significantly toward the distribution of economic development throughout Indonesia, especially outside Java Island (Indonesia Central Bureau of Statistics, 2020). It is easily understood since Indonesia is the largest archipelago in the world, with 17.504 islands and characterized by many remote and isolated areas (Planning and Information Bureau of Indonesia Coordinating Ministry for Maritime Affairs, 2017; Sujarwoto and Tampubolon, 2016). In the fourth quarter of 2019, Indonesia's information and communication sector is in the top three economic growth year-on-year showing a growth of 9.71% (Indonesia Central Bureau of Statistics, 2020). Indonesia is a prominent telecom and digital market in South East Asia for multinational information and communication technology (ICT) companies looking for international expansion (Frost and Sullivan, 2018). In 2018, Indonesia's IT expenditure had become the largest in South East Asia, and it is expected to lead the cloud market growth up to the overall market size of more than 1.218 billion USD in 2022 (Frost and Sullivan, 2018). Furthermore, the Indonesia telecommunication industry is unique in South East Asia, particularly and Asia, in broader scope as it skipped the fixed-line communication stage and moved directly to the mobile communication stage, making mobile phone subscription rates reach up to 100% (Hu *et al.*, 2018). This condition attracts 844 telecommunication technology providers, small to large and local (38%) and foreign companies (62%) to compete in the Indonesia business-to-business (B2B) market (SDPPI, 2018).

However, becoming agile is not an easy path for telecommunication technology providers (Li, 2018). First, the shifting toward commodity off the shelf (common) hardware and software standardization necessitates technology providers to complement their current expertise with the additional capability of developing a software-based solution in the new open software ecosystem (Aguirre *et al.*, 2019; Kurniawan *et al.*, 2020a). As the entry barriers decrease, this new market allows competitors to develop network solutions with convenience and promote the emergence of new network equipment and software ecosystems (Aguirre *et al.*, 2019; Duan *et al.*, 2016). Second, technology providers need to have the capability to deliver flexible, customized and secure network solutions that satisfy specific customers' business challenges (Haveman and Vochteloo, 2016). There is no more standard box that can meet requirements from diverse customers and across countries as each of them has its priority of launching different new services (Aguirre *et al.*, 2019; Bajpai *et al.*, 2015). To compete in the global market, technology providers must be capable of doing localization and personalization of their product offering (Haveman and Vochteloo, 2016). Personalization and customization create added value to the offered solution, which is crucial to surviving intense competition and market instability (Gunasekaran *et al.*, 2019). Third, technology providers need to incorporate agile project management practices that enable a more responsive and fast-learning-execution (Balashova and Gromova, 2017; Conforto *et al.*, 2014; Kurniawan *et al.*, 2020b). The project management practices that capable of handling projects under empowered and cross-functional project teams and making adaptation to all kinds of unpredictable changes (Balashova and Gromova, 2017; Conforto *et al.*, 2014; Kane *et al.*, 2016; Olausson and Berggren, 2010; Shipman and Tooey, 2017). However, this study also emphasizes the cruciality of balancing control, which is corporate philosophy and strategic priorities enforcement to maintain teams focus on long-term organization survival and focus on a core set of strategic priorities (Andersson *et al.*, 2019; Kane *et al.*, 2016; Shipman and Tooey, 2017).

Therefore, this study finds that there are three crucial factors influencing business process agility: (1) networking capability, the capability to develop networking with partners and leverage external resources; (2) market orientation, the capability to scrutinize market demands, generate intelligence and perform coordination to suitably address them; and (3) balanced APM, the capability to configure internal resources under flexible and adaptive project management, but under the strict guidance of strategic priorities enforcement. However, this study finds the gaps in the literature. First, there is a lack of well-defined operationalization of balanced APM and its effect on business process agility and firm performance. Second, there is a lack of extensive quantitative study examining the interplay effect of networking capability and balanced APM, where both have dissimilar normative implications regarding the strategies to achieve high performance. Balanced APM represents the resource-based theory that suggests organization to protect, rather than share, valuable, rare, inimitable and non-substitutable resources and know-how to avoid knowledge spillover and elimination of competitive advantage. In contrast, networking capability represents the relational view that suggests an organization to share systematically valuable knowledge with partners, which, in return, acquires valuable knowledge and resource from them. Third, the lack of a precise role of market orientation in relation to networking capability and agile project management and their collective effect on business process agility and firm performance motivate further examination.

A previous study argues that alliance acts as the mediating variable between market orientation and firm performance (Nakos *et al.*, 2018). Similar studies by Peng *et al.* (2018) and Panda (2014) verify that market orientation positively impacts network relationships. To the contrary, this study argues that market orientation as the extent in which an organization generates market intelligence, disseminates it internally within the business and responds to the intelligence (Jaworski and Kohli, 1993; Kohli and Jaworski, 1990; Kohli, 2017), is considered to be affected by organization's capability in developing networking with partners. Another study by Yang and Liu (2012) on 250 companies in Taiwan's glass industry finds that network structure partially mediates agility–firm performance relationship. The study argues that a superior network structure enables firms to improve business agility and enhance their performance. However, this study argues that firms should put more effort into developing and maintaining their network structures to capture external resources and elevate enterprise agility. Other studies demonstrate that market orientation influences dynamic capability deployment or resource reconfiguration (Menguc and Auh, 2006; Naidoo, 2010), and that customer orientation influences resource configuration and process (Ambroise *et al.*, 2017). Whereas another qualitative study argues oppositely that dynamic capabilities deployment are strongly required by market-oriented organizations to respond to or drive market change (Wilden *et al.*, 2018). Specifically, the exploitative and reactive components of market-oriented organizations are argued will significantly benefit from a rapid dynamic capability deployment and need to be further examined (Wilden *et al.*, 2018). Therefore, this study seeks to answer the following two research questions:

RQ1. What is the appropriate relationship between networking capability, market orientation and balanced APM in the B2B telecommunication industry?

RQ2. What is the effect of the interplay between antecedents on business process agility and firm performance in the B2B telecommunication industry?

RQ3. What is the effect of business process agility on firm performance in the B2B telecommunication industry?

The rest of the document is organized as follows. We first discuss the theoretical background that leads to our hypotheses. Then, we described the research method and our empirical design, followed by a discussion of the results. We conclude with a discussion of study limitations and the theoretical and managerial implications of our results.

Literature review

Firm performance and business process agility

Firm performance is the center of strategic management and the main focus for scholars and practitioners as the prime objective of the organization is to achieve performance improvement (Venkatraman and Ramanujam, 1986; Williams, 2018). Discussion on firm performance is crucial in strategic management to expand the organization's knowledge of how various strategies and actions affect organization outcomes (Williams, 2018). However, even though the performance concept is widely recognized by scholars (Connolly *et al.*, 1980; Venkatraman and Ramanujam, 1986), the treatment of performance in academic research is still becoming a debate in reaching any agreement on basic terminology and definitions (Williams, 2018).

Early strategy research applies the narrowest conception of firm performance centers on the use of simple outcome-based financial indicators that are assumed to reflect the fulfillment of the economic goals of the firm (Hofer, 1983). Financial performance typically used in this approach is to examine such indicators as sales growth, profitability (reflected by ratios such as return on investment, return on sale, and return on equity) and earnings per share. Other scholars, Cameron and Whetten (1983), consider business performance a subset of organizational effectiveness when discussing strategic management. Venkatraman and Ramanujam (1986) prefer to circumscribe the scope of the discussion by (1) adopting the perspective of the field of strategic management and (2) focusing on measurement issues. Based on this approach, Venkatraman and Ramanujam (1986) argue that business performance should cover the financial performance as the core domain of performance construct in most strategy research and operational performance as the enlarged domain reflected in recent strategy research. Venkatraman and Ramanujam (1986) then define firm performance as the extent of the organization's success at generating a high level of financial and non-financial (operational) performance.

In more recent studies, the conceptualization from Venkatraman and Ramanujam (1986) is still adopted. Kaplan (2001) and Atkinson and Brown (2001) highlight that non-financial performance measures are recently considered worthwhile indicators of a firm's long-term viability. Non-financial performance measures such as employee satisfaction and customer satisfaction are crucial since they can tell more of the story compared to static financial performance (Miller and Lee, 2001). Chiou *et al.* (2004) consider non-financial performance, such as customer satisfaction, as essential because satisfied customers tend to return and do repeat business that leads to customer loyalty. In the franchising industry, Lee *et al.* (2015) adopt financial and non-financial measures to comprehend business performance. Financial performance includes measures such as achieved goal of net profit, achieved goal of sales, increased net profit, increased sales and achieved the number of franchise contracts. Non-financial performance includes measures such as new products and services improvement, increased employee satisfaction, increased customer satisfaction and increased franchisees' satisfaction. Simon *et al.* (2015) propose to apply a mixture of financial and non-financial indicators since both are valuable tools to measure and control businesses by business leaders. In the B2B context, Carmona-Lavado *et al.* (2020) measure business performance using financial and non-financial measures including return on investment, return on equity, sales growth, market share, net profit margin and return on assets. Another B2B study measures firm performance using operational measures such as better service quality, more efficient internal processes and efficient use of resources (Martínez-Caro *et al.*, 2019). Williams (2018) also suggests using subjective financial measures to address difficulties associated with gathering performance data from private firms and private family businesses.

In this study, the firm performance is defined as the extent of success of the organization at generating a high level of financial and non-financial performance that consists of sales revenue, profit margins, cash flow, market share, products and services quality improvement

and customer satisfaction. This conceptualization is derived from Kenneth Le Meunier-FitzHugh (2009, 2011), Williams (2018) and Simon *et al.* (2015) to cover financial and broader operational criteria and focus on B2B context. Achieving performance improvement is proven to become more difficult as an organization's competitive advantage has become significantly harder to sustain in a highly dynamic environment (Wiggins and Ruefli, 2005).

Accordingly, in recent years, agility has become researchers' attention as it is considered to contribute significantly to the business's success, especially in a dynamic environment (Kale *et al.*, 2019; Tallon and Pinsonneault, 2011; Vagnoni and Khoddami, 2016). The agility concept receives growing attention as it addresses the challenge of a highly dynamic business environment by adjusting and acting business swiftly (Oosterhout *et al.*, 2006; Sarkis, 2001). In a highly dynamic business environment, the ability to respond to changes rapidly and appropriately, to become flexible and adaptable to changes and to control uncertainty is essential to organization survival (Feizabadi *et al.*, 2019; Nejatian *et al.*, 2018; Sambamurthy *et al.*, 2003; Sherehiy *et al.*, 2007). Agility in manufacturing is indispensable for organizations to become the earliest in delivering a leading solution at a competitive cost and to surpass the competition (Gunasekaran *et al.*, 2018, 2019). Therefore, agility is one of the critical factors for the organization to achieve its success by deepening the understanding of environmental uncertainty and managing it (Vagnoni and Khoddami, 2016; Vecchiato, 2015).

Prior studies on agility mainly focus on singular strategic focus, e.g. product innovation strategy perspective (Arnett *et al.*, 2018; Brown and Eisenhardt, 1997; Ravichandran, 2018; Olsen and Sallis, 2006; Yan *et al.*, 2017), market orientation (Han *et al.*, 1998; Lin, 2004), interdepartmental collaboration (Hult, 2011; Keszey *et al.*, 2017; Le Meunier-FitzHugh and Piercy, 2007; Le Meunier-FitzHugh and Lane, 2009; Turkulainen and Ketokivi, 2012), IT capability and competency (Chen *et al.*, 2014; Oosterhout *et al.*, 2006; Ravichandran, 2018; Sambamurthy *et al.*, 2003; Tallon and Pinsonneault, 2011; Tallon, 2008). Teece *et al.* (2016) explored agility at a more fundamental level and related it to dynamic capabilities. Dynamic capabilities are required for supporting the organizational agility to anticipate uncertainty (Teece *et al.*, 2016). Another study focuses on organization structure design to achieve agility and argues that organization needs to function as an agile network, not a top-down bureaucracy, to achieve full gains of operational agility (Denning, 2018) and to attain strategic agility to develop products to open up markets that do not currently exist (Denning, 2017).

However, this study argues that in Telecommunication 4.0 that is characterized by smart and connected technologies in the cloud, Internet of things (IoT) and artificial intelligence (AI) (Hupfer *et al.*, 2018), business process agility is no more singular strategic focus, but a set of firm capabilities particularly concerning adaptability and reconfiguration competency (Mishra *et al.*, 2014; Vaishnavi *et al.*, 2019). It is an orchestration of an organization's capability to exploit and explore internal resources (Barney, 1991; Barney *et al.*, 2011) at one edge and to leverage partners' capability and knowledge to create high-value solutions (Pfeffer, 1982; Pfeffer and Salancik, 1978) at another edge, and orchestrated by the capability to comprehend the market dynamics (Jaworski and Kohli, 1993; Kohli and Jaworski, 1990; Narver and Slater, 1990; Narver *et al.*, 2004; Porter, 1981, 1990).

Doz and Kosonen (2010) conceptualize strategic agility as the sensible and deliberate interplay between three meta-capabilities of top management: strategic sensitivity, leadership unity and resource fluidity. In comparison, other study defines business process agility as an organization's responsiveness to changes in demand, new product development, change in product mix, product pricing, market expansion, supplier selection, IT adoption and diffusion (Tallon, 2008; Tallon and Pinsonneault, 2011). It is the organization's flexibility to easily and quickly retool their business to adapt to the market environment. In this study, we adopt business process agility terminology and define it as the organization's responsiveness to address changes in customer demand, new product development requirements, change in product mix, competitor's action, product pricing,

market expansion, supplier and business partner selection and technology adoption and diffusion.

Business agility allows firms to anticipate or respond to the market changes promptly and with ease (Oosterhout *et al.*, 2006). Therefore, it is expected to contribute to achieving superior firms' financial performance (Sambamurthy *et al.*, 2003). Besides, with the responsiveness to switching suppliers, firms can achieve lower costs, better quality or improved delivery times that eventually improve firms' profitability and revenue (Tallon, 2008). Agility in the supply chain is demonstrated to have a significant positive effect on humanitarian supply chain pre-disaster performance in NGOs, government agencies, military organizations and paramilitary forces involved in humanitarian operations in Asia (Altay *et al.*, 2018). Blome *et al.* (2013) evidence that agility in the supply chain positively affects firm operational performance in multi-national firms located in Germany.

Organizational agility mediates the pursuit of valuable knowledge and allows organizations to develop innovative products and services or respond to competitors' maneuver appropriately to result in superior organizational performance (Cegarra-Navarro *et al.*, 2016). Agility encourages organizations to produce and deliver innovative products, increases customer satisfaction and competitiveness. Therefore, agility is considered an enabler of organizations' performance (Nejatian *et al.*, 2018). An organization's agility capability is a critical source of competitive strategy to achieve superior organization's performance as it enables the organization to react effectively to unpredictable changes (Liu and Yang, 2019; Ofoegbu and Akanbi, 2012; Yang and Liu, 2012). Therefore, based on the above arguments, we hypothesize that:

H1. Business process agility has a positive and direct impact on firm performance.

Market orientation, business process agility and firm performance

Market orientation is one of the strategic orientations that has been considered to have a strong performance impact on B2B context (Frösén *et al.*, 2016; Wilden *et al.*, 2018). Therefore, it receives a considerable interest in academic research and a practical business domain (Masa'deh *et al.*, 2018; Zebal and Saber, 2014). Prior research has highlighted the cruciality of market orientation as it defines how the organization responds not only to current market needs but also to anticipate future market dynamics (Herhausen, 2016; Teece, 2007; Wilden *et al.*, 2018). Market orientation is considered to contribute the most impact to organizational performance compared to other strategic orientations such as entrepreneurial orientation, learning orientation and innovation orientation (Grinstein, 2008).

Market orientation reflects the organization's ability to examine the changes in market conditions and address these dynamics appropriately to sustain its performance (Mandal and Saravanan, 2019). Jaworski and Kohli (1993) and Kohli and Jaworski (1990) conceptualize market orientation as observable behaviors, including intelligence generation, intelligence dissemination and coordinated action. Therefore, market orientation refers to an organization-wide development and distribution of market intelligence that consists of both current and future customers' needs across all functional units and the development of the organization's actions (Jaworski and Kohli, 1993; Kohli and Jaworski, 1990). Narver and Slater (1990), Li (2005) and Grawe *et al.* (2009) conceptualize market orientation as the integration of customer orientation, competitor orientation and inter-functional coordination.

This study adapts market orientation definition from Deshpandé and Farley (1998) and defines it as "the set of inter-functional and inter-partner processes and activities consisting of intelligence generation, intelligence dissemination, and coordinated action directed at creating and satisfying customers through continuous needs-assessment." This study reconceptualizes market orientation as a four-dimension construct, including customer orientation, competitor orientation, inter-functional coordination and inter-partner

coordination. They are considered to represent market orientation variable appropriately in an increasingly open telecommunication ecosystem.

Organizations that implement market orientation value customers the most and dedicate themselves to operate in a market economy (Li, 2005; Panda, 2014). Market-oriented organizations focus on profit creation and emphasize superior customer value creation (Narver and Slater, 1990; Zhou *et al.*, 2005). Market orientation concentrates on delivering products and services through market monitoring and external idea generation (Alpkan *et al.*, 2007). By implementing this strategic orientation, organizations expect to reduce the level of risk associated with new product development as the insight during the generation of market intelligence comes from the customer (Morgan *et al.*, 2015). Furthermore, the market-oriented organization can minimize research and development (R&D) expenditure during product development by utilizing available resources during market orientation activities (Morgan *et al.*, 2015). Market orientation focuses on external idea generation and delivering products and services through monitoring marketing conditions and intelligence gathering (Alpkan *et al.*, 2007; Deshpandé and Farley, 1998; Jaworski and Kohli, 1993; Narver and Slater, 1990).

Yan *et al.* (2017) qualitatively demonstrate that the implementation of complete market orientation brings a positive impact on firm growth compared to a partial market orientation that partially tries to influence the tastes of customer and technology roadmap. Another study by Masa'deh *et al.* (2018) in the Jordanian pharmaceutical sector shows that market orientation provides the most contribution to organizational performance than technology orientation and entrepreneurship orientation. A study by Sarker and Palit (2015) shows that customer orientation and inter-functional coordination significantly affect SMEs' performance in Bangladesh. It is also argued that market orientation enhances business performance as it motivates organizations to develop responsiveness to market information (Deshpandé *et al.*, 2013). Therefore, the hypothesis is proposed as follows:

H2. Market orientation has a positive and direct impact on firm performance.

Market orientation is considered as the organizations' ability to examine the rapid changes in market conditions and generate inter-functional coordination to suitably address them (Mandal and Saravanan, 2019). Therefore, they argue that market orientation positively influences agility in the tourism industry. A study by Zelbst *et al.* (2010) in the manufacturing industry demonstrates a positive influence of market orientation on agility. An organization's capability to scrutinize market demand and generate intelligence has been acknowledged as the necessary condition for organizational agility (Brusset, 2016; Gligor *et al.*, 2016).

Another study by Lin (2004) finds that market orientation positively influences network innovation agility. Gligor *et al.* (2016) and Taghian (2010) argue that market orientation is a strategic orientation that encourages the capability establishment to respond to customer's requirements, both expressed and latent (Narver and Slater, 1990; Slater and Narver, 2000). Therefore, market orientation positively affects supply chain agility as the latter is considered as an organization's capability to provide a fast supply response to customer's changing requirements (Christopher, 2000; Gligor *et al.*, 2016). Based on the above elaboration, it is reasonable to hypothesize:

H3. Market orientation has a positive and direct impact on business process agility.

Networking capability, market orientation, business process agility, firm performance

The partnering capability has been highlighted as a crucial capability for technology, media and telecommunications companies in Industry 4.0 to substantiate their own business and technical competency (Hupfer *et al.*, 2018). In a high uncertainty and dynamic socioeconomic condition, firms undertake networking activities to acquire competitive resources from outside and to overcome these challenges as a single relationship cannot provide all required

resources (Gunasekaran *et al.*, 2019; De Leeuw *et al.*, 2014). Therefore, building networking between firms has recently gained momentum in strategic practice (Yang *et al.*, 2018).

Networking capability is considered to obtain its root from dynamic capability theory (Mu *et al.*, 2016; Teece *et al.*, 1997) and relational view (Capaldo, 2007; Dyer and Nobeoka, 2000; Dyer and Singh, 1998). Dynamic capability theory suggests an organization to develop a capability to adapt, consolidate, renew and reconfigure resources to gain the advantage in seizing and capitalizing opportunities (Teece *et al.*, 1997). The resource configuration should come not only from the internal interface mechanism but also from the external interface embedded in business partners (Teece *et al.*, 1997). By harnessing networking capability, organizations can maximize the opportunity to leverage strategic network resources from networks partners, make it possible for them to integrate and optimize various expertise, capabilities and knowledge that are considered strategic for the organizations (Dyer and Singh, 1998; Lin, 2004; Mu *et al.*, 2016; Mu and Di Benedetto, 2012; Vesalainen and Hakala, 2014).

Prior researches have acknowledged the potential benefits of firms networking. The inter-firm partnership enables firms to deal with the increasing complexity of technological dynamics (Hoang and Rothaermel, 2010; Keil *et al.*, 2008) and to enhance innovative capability (Ahuja, 2000; Baum *et al.*, 2000; Keil *et al.*, 2008). Several studies also argue that firms' predominance performance is generated not only by specific resources but also from the collaboration and arrangement of various resources (Eisenhardt and Martin, 2000; Song *et al.*, 2005).

However, other researches also highlight the adverse effect of networking capability. Yang *et al.* (2018) call to mind that networking may cause an unbalance outflow of firms' specific assets. The more firms invite outside resources to come, the more firms depend on the external capability of network partners. This negative effect is not easy to be overcome as partners become closer to firms, and the relationship becomes more intense, while at the same time there is conflict, discord and ongoing disagreements that lead firms within this partnership into ambiguous pains (Anderson and Jap, 2005; Yang *et al.*, 2018). It is also emphasized networking performance will be diminished when there is opportunistic behavior in dealing with specific resources (David and Han, 2004; Lui *et al.*, 2009) and there will be cost incurred in preempting the opportunistic behavior of networking partners (Yang *et al.*, 2018). Further, empirical research by Yang *et al.* (2018) ratified that networking capability, besides improves the performance growth, it also increases performance variability as firms are required to bring in higher costs to avoid other firms taking advantage of them that furthermore intensify the overall fluctuation of the firms in the network (Yang *et al.*, 2018).

This study defines networking capability based on prior research by Jifeng Mu and Anthony Di Benedetto as the competency of a firm to purposefully search and find network partners, manage and leverage network relationships for value creation (Mu and Di Benedetto, 2012). However, this study reconceptualizes the indicators of "finding networking partners" dimension by adding "partners to count on in time" indicator, and add "a resource sharing support" indicator to "leveraging network relationships" dimension.

Several studies argue that firms' predominance performance is generated not only by specific resources but also from the collaboration and arrangement of various resources (Eisenhardt and Martin, 2000; Song *et al.*, 2005). Recent research has elaborated that networking capability is positively associated with firm performance outcomes (Baum *et al.*, 2005; Capaldo, 2007; Dyer and Singh, 1998; Liu and Yang, 2019; Mu and Di Benedetto, 2012; Ozcan and Eisenhardt, 2009).

Aligned strategies will help firms overcome constraints of existing network structures, attain high-performance portfolios from the synergy, central network positions and finally, superior firm performance (Hallen and Eisenhardt, 2012; Mu *et al.*, 2016; Mu and Di Benedetto,

2012). The correct partners may enhance firm performance at the level of individual ties by providing valuable resources, information and status (David *et al.*, 2007; Davis and Eisenhardt, 2011). Another study by Karami and Tang (2019) verifies that networking capability and experiential learning positively impact the international performance of small- and medium-sized enterprises (SMEs). Therefore, it is reasonable to hypothesize:

H4. Networking capability has a positive and direct impact on firm performance.

Networking capability allows firms to gain the flexibility to leverage crucial resources and business partners and to work across boundaries to reach organizational agility (Battistella *et al.*, 2017; Liu and Yang, 2019). Networking capability enables firms to obtain information and competences reliably and rapidly, making them strategically agile because it is well-positioned in its strategic network core (Liu and Yang, 2019). By having this positioning, firms can capture better and faster opportunities and deal with potential competition and threats (Battistella *et al.*, 2017; Liu and Yang, 2019).

Another study by Rezazadeh (2018) on cooperative entrepreneurship accentuates that synergy can be achieved by cooperation with partners that accelerates the decision-making process. Collaboration with partners enables firms to leverage partners' resources and knowledge during joint project implementation, which is a worthwhile strategy for firms' agility (Sanchez and Nagi, 2001). Partnership with agile firms stimulates partners to achieve an equivalent level of capabilities, competencies and flexibilities in their enterprise to conform with a rapidly changing customer and market demands (Yusuf *et al.*, 2014). Another study argues that supplier relationship management becomes extremely critical for successfully implementing agile manufacturing in a turbulent environment (Dubey and Gunasekaran, 2015). Therefore, it is reasonable to hypothesize:

H5. Networking capability has a positive and direct impact on business process agility.

Networking capability had been recognized in the literature as a means that can produce and improve value for the customer (Mu *et al.*, 2008; Peng and Mu, 2011; Soh and Roberts, 2005; Stuart and Sorenson, 2007). The superior customer value can be achieved by cooperating with partners as product and service development risk can be reduced, time-to-market can be shortened, defect rate can be reduced, product stock can be reduced and flexibility and innovation can be enhanced (Dyer and Nobeoka, 2000). Networking with partners enables the organization to access information from the market, generate and disseminate information related to customer's needs and preferences, and information related to the competition to define the proper strategy (Mu *et al.*, 2016).

Dynamic capability theory and relational view suggest that an organization's capability to access, manage and leverage network resources facilitate customer value creation (Dyer and Singh, 1998; Mu *et al.*, 2016; Teece, 2007; Teece *et al.*, 1997). Davies *et al.* (1995) and Teece (2007) argue that organizations with a higher networking capability will benefit from acquiring more access and better quality of market intelligence from collaboration with appropriate partners. Therefore, based on the above arguments, we hypothesize that:

H6. Networking capability has a positive and direct impact on market orientation.

Balanced APM, market orientation, business process agility, firm performance

Project management has become one of the challenges organizations face in developing innovative products to respond to customer's requirements with speed, especially under dynamic environments (Cattani *et al.*, 2011; Miterev *et al.*, 2017). As projects are pervasive in our today project society and dynamic market (Gemünden *et al.*, 2018; Lundin *et al.*, 2015), there is a necessity to incorporate agile project management practices that enable a more responsive, fast-learning-execution (Balashova and Gromova, 2017; Conforto *et al.*, 2014).

Organizations need to develop project management practices that empower cross-functional teams to work more independently with reduced structural hierarchy and communication overheads to achieve timely decisions about core organizational strategies and actions (Dubey and Gunasekaran, 2015; Kane *et al.*, 2016; Shipman and Tooey, 2017). A flat hierarchy will accelerate decision-making as it reduces the communication layers (Conforto *et al.*, 2014; Leybourn, 2013; Shipman and Tooey, 2017). Agile project management encourages project teams to work more independently and make necessary adjustments and adaptation based on project requirements (Balashova and Gromova, 2017; Chow and Cao, 2008; Conforto *et al.*, 2014; Kane *et al.*, 2016; Sivathanu and Pillai, 2018). Organizations are shifting into cross-functional teams (Balashova and Gromova, 2017; Conforto *et al.*, 2014; Kane *et al.*, 2016; Olausson and Berggren, 2010; Vázquez-Bustelo *et al.*, 2007), applying the project-based approach, reducing rigid and vertical departmental structure and build a structure around customers that able to respond their needs (Birkinshaw, 2018; Kane *et al.*, 2016; Mahadevan *et al.*, 2017; Ronzon *et al.*, 2019). However, this study considers that agile project management also needs to embrace balancing control as one of its dimensions to ensure agile teams focus on strategic priorities and corporate philosophy, which is the organization's long-term survival (Andersson *et al.*, 2019; Shipman and Tooey, 2017). Organizations are maintaining formal structure only for the fundamental background and stimulating horizontally connected and fluid teams to drive speed and nimbleness (Aghina *et al.*, 2018; Kane *et al.*, 2016; Ronzon *et al.*, 2019). This study defines this extended concept as a balanced APM.

In a balanced APM with a decentralized structure and small centralized functions, administrative process and handling speed can be optimized. Simultaneously, the normative control can still be emphasized by assigning the decision-makers to the people responsible for implementing the decision (Andersson *et al.*, 2019). The power distribution and delegation of authority to the managers close to the real events with the always-available support from central expertise are the keys of responsiveness (Andersson *et al.*, 2019). The decentralization is very important as it enables the business decision made by the local manager based on the situation of the individual customer, but it should be within the enforcement of the corporate philosophy, the organization's long-term survival (Andersson *et al.*, 2019; Birkinshaw, 2018). However, there are always performance measurement and reporting to management at the end of project cycles to suit a high level of corporate's long-term strategy and vision (Birkinshaw, 2018; Mahadevan *et al.*, 2017) (see Figure 1).

Therefore, balanced APM is defined as a project management practice emphasizing on the integration of cross-functional and empowered teams built around the customer, with reduced structural hierarchy and communication overheads and functions as an interactive network, but balanced by vigorous enforcement of the corporate philosophy (organization's organization is long-term survival) and strategic priorities. A balanced APM has three dimensions: self-managing (empowered), cross-functional collaboration and balancing control.

The tendency of higher organization performance is evidenced by an organization with an optimum strategy and structure match (Jennings and Seaman, 1994). It is argued that organic and adhocracy structure in managing projects is the best structure for coping with high environmental uncertainty and turbulent environment (Lawrence and Dyer, 1983; Ruekert *et al.*, 1985; Tidd and Bessant, 2014). Therefore, in the telecommunication industry characterized with the highest degree of business environment instability and volatility (Ahlbäck *et al.*, 2017; IHS Markit, 2018), agile project management is expected to bring the highest performance compared to other hierarchical and rigid project management practices (Dougherty, 2001; Herron and Garland, 2019; Macias-Lizaso and Thiel, 2006; Shipman and Tooey, 2017). Wall (2007) argues that high-performance organization needs to promote cross-functional collaboration, to flatten the organization to eliminate bureaucracy and organizational complexity and accelerate information and knowledge sharing. Therefore, we hypothesize that:

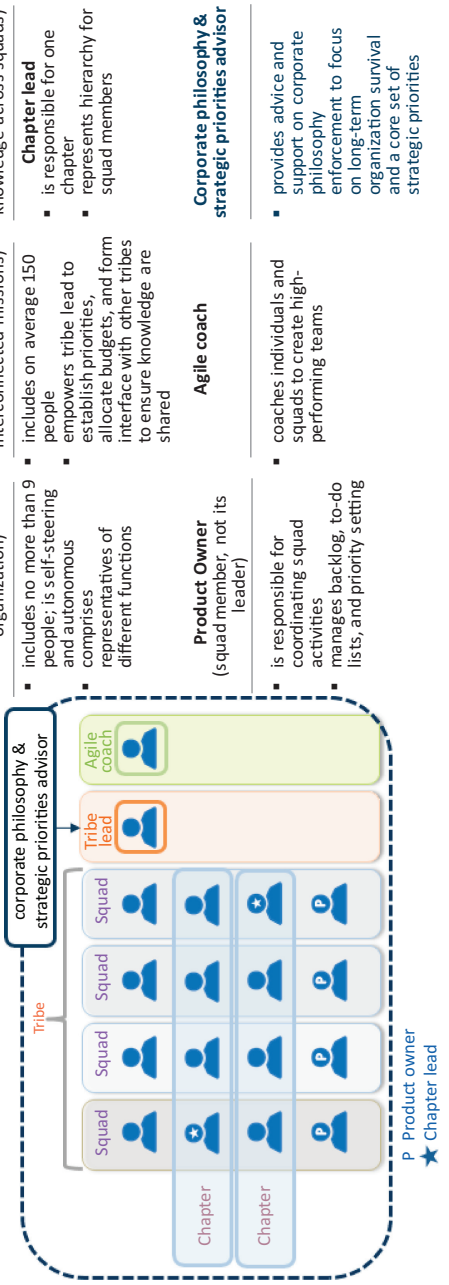


Figure 1.
The balanced APM as an extension to ING's agile project management

H7. Balanced APM has a positive and direct impact on firm performance.

How the organization manages the projects and allocates resources dynamically will impact its business agility (Balashova and Gromova, 2017; Teece *et al.*, 2016). The organization's ability to deploy resources quickly and efficiently is vital to respond to market dynamics (Dubey *et al.*, 2019). Rule-bound hierarchies with many vertical levels may become serious opponents for agility (Alavi *et al.*, 2014). The highly bureaucratic nature of hierarchical organizations in managing project makes decision cannot be made within a short time (Teece *et al.*, 2016). Connectivity and information sharing are pivotal and are considered as important capabilities and antecedents of agility (Dubey *et al.*, 2018). Bock *et al.* (2012) argue that structural simplification through delegation facilitates awareness of new opportunities that result in flexibility. Distributed power, team and work group-based and horizontal structure is argued to allow more flexibility in implementing strategic actions (Child and McGrath, 2001; Perez-Valls *et al.*, 2015).

Agile project management allows teams to collaborate interactively and transparently to achieve one vision delivering accurate products and solutions to customers with speed (Balashova and Gromova, 2017; Denning, 2017). A flatter organization and decentralization in project handling reduce time-consuming hierarchical referrals and promote favorable climates and motivations for teams to contribute to ideas generation (Alavi *et al.*, 2014). Project team self-managing nature enhances agility by providing more opportunities for the employee to contribute and make a decision. Therefore, we hypothesize that:

H8. Balanced APM has a positive and direct impact on business process agility.

The study by Jaworski and Kohli (1993) empirically proves that centralization has a negative effect on market-orientation, while departmentalization and formalization do not show a significant effect on market orientation. Furthermore, several studies show the positive influence of decentralization and autonomy on market orientation (Agirre *et al.*, 2014; Barnabas and Mekoth, 2010). Another study by López *et al.* (2006) contends that as formalization recommends organizational members to communicate and share information through a formalized communication channel, it can inhibit flexible intelligence communication between members and, therefore, negatively influence market orientation. Ouchi (2006) and Sakagawa and Kajalo (2016) argue that centralization negatively influences market orientation as it reduces the degree of intelligence dissemination among organizational members.

Lee *et al.* (2014) argue that most of the organizational structure studies support the view that centralization and formalization against market orientation. A high formalization hinders organizational members from examining new ways or developing a different method to respond to market dynamics and rely on formalized communication mechanisms. Whereas, greater centralization reduces the speed and flexibility of intelligence dissemination and decision making associated with changes in customers and competitors' actions (Lee *et al.*, 2014). On the other hand, it is argued that organizing empowered teams around customers (customer-centric structure) increases customers' relationships and improves the organization's performance (Shah *et al.*, 2006). Therefore, we hypothesize that:

H9. Balanced APM has a positive and direct impact on market orientation.

Based on the above elucidation, the proposed research model is shown in Figure 2.

Research method

Data collection

Research data were collected via a questionnaire which is distributed through electronic format (Google Form) and printed format directly delivered to the respondents. The respondents were the executive management level of the firm, including Board of Director,

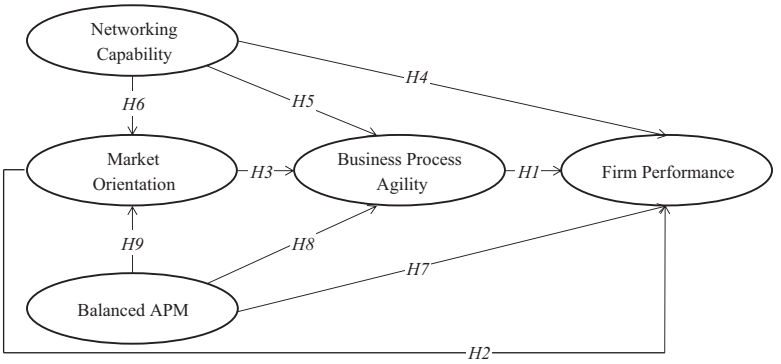


Figure 2.
The proposed research model and hypotheses

CxO, Sales or Marketing Head, Country Manager, General Manager and Senior Manager of the selected companies who were believed to have sufficient knowledge on both company strategy and the business process of the company.

The target populations were medium and large telecommunication technology providers (vendors) in Indonesia, having a legal business entity in Indonesia. Medium and large-scale firms have the same characteristic in terms of project management, in which both types of firms have multiple project teams working simultaneously on different projects. The medium and large company classification is based on Indonesia Central Bureau of Statistics and The Act of The Republic of Indonesia Number 20 of 2008 classification, as shown in Table 1.

Medium and large organizations have functional divisions and multiple project teams suitable to conduct analysis based on the research model. Two hundred thirty-nine companies in the Ministry of Communication and Informatics list between 2008 and 2017 met the criteria and considered the research population. Of the 239 distributed questionnaires, 150 valid responses were obtained, representing a response rate of 62.76%. These valid responses meet the suggestion from Bartlett *et al.* (2001) and Cochran (1977) regarding the minimum sample size, which is 148 respondents. The demographic profiles of the sample are shown in Table 2.

Measures

This study employed multi-item scales to measure the dimensions of constructs. These scales were derived from prior studies and re-conceptualized in this study. All items were assessed on 5-point Likert scales ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Appendix presents the scale items for construct measurement.

Data analysis

The two-stage SEM approach was used based on the recommendation from Anderson and Gerbing (1988) that consists of a measurement model and a causal structural model. This study used LISREL 8.8 to examine the measurement model and test the hypotheses.

Size of the firm	Number of labors	Revenue
Large business	100 or more	≥50 BIDR (≥3.5 MUSD)
Medium business	$20 < x < 99$	2.5 BIDR ≤ x < 50 BIDR (176 kUSD ≤ x < 3.5 MUSD)
Small business	$5 < x < 19$	300 MIDR ≤ x < 2.5 BIDR (21 kUSD ≤ x < 176 kUSD
Micro-business	$1 < x < 4$	<300 MIDR (<21 kUSD)

Note(s): MIDR = Million IDR, B IDR = Billion ID, k USD = kilo (thousand) USD, MUSD = Million USD.

Table 1.
Size of business based on Indonesia central bureau of statistics and the act of the republic of Indonesia number 20 of 2008

No		*n*	%	No		*n*	%
1	*Gender*			6	*Organization origin*		
	Male	102	68.0		China	16	10.7
	Female	48	32.0		Japan	18	12.0
2	*Position*				Korea	6	4.0
	Director	16	10.7		India	3	2.0
	CxO	24	16.0		USA	23	15.3
	Country Manager	47	31.3		Sweden	2	1.3
	Executive GM	55	36.7		Finland	1	0.7
	Senior Manager	8	5.3		Indonesia	62	41.3
3	*Organization size*				Other	19	12.7
	Medium	45	30	7	*Type of legal entity*		
	Large	105	70		Foreign Investment	31	20.7
4	*Yearly revenue*				Domestic Investment	18	12
	176 kUSD $\leq x <$ 3.5 MUSD	45	30.0		Limited Liability Company	87	58
	3.5 MUSD $\leq x <$ 10 MUSD	29	19.3		Limited Partnership	6	4
	10 MUSD $\leq x <$ 25 MUSD	33	22.0		Other	8	5.3
	25 MUSD $\leq x <$ 50 MUSD	27	18.0				
	$\geq$50 MUSD	16	10.7				
5	*Organization age*						
	$1 \leq x \leq 10$	26	17.3				
	$11 \leq x \leq 25$	60	40.0				
	$26 \leq x \leq 50$	52	34.7				
	> 50	12	8.0				

Table 2.
Demographic profiles of the sample ($n = 150$)

Measurement model analysis is performed to obtain a valid and reliable measurement model to be used in a structural model in the next stage. There are three things that should be analyzed during estimation: overall model fit (goodness-of-fit index (GOFI)), validity and reliability. The validity test is based on the construct validity test to understand to what extent a measurement measures the intended construct. It is based on Confirmatory Factor Analysis (CFA) to measure the standardized factor loadings (SFL) of each construct or each variable. A good rule of thumb is that a standardized loading estimate should be ≥ 0.5, and ideally ≥ 0.7 (Hair *et al.*, 2014). Whereas the testing of construct reliability (CR) is based on CR and variance extracted (VE) (Fornell and Larcker, 1981; Hair *et al.*, 2014). A construct is considered reliable if the value of CR and VE is ≥ 0.70 and ≥ 0.50, respectively. This study uses path analysis to test the predicted causal relationships among the variables and determine whether the model provides an acceptable fit to the data.

Result

Measurement model

The confirmatory factor analysis is performed in two stages:

(1) First-order CFA analyzes the observed variables (such as financial performance 1 (FP1) to financial performance 3 (FP3)) and forms latent variable score financial performance (FP).

(2) Second-order CFA analyzes the fitness of the simplified first-order latent variable score (such as financial performance (FP) and non-financial performance (NFP)) and forms the second-order latent variables Firm Performance.

The results of the first-order CFA analysis are summarized in Table 3.

Variable	SFL ≥ 0.5	Error	CR ≥ 0.7	VE ≥ 0.5	RMSEA ≤ 0.08	GFI ≥ 0.90
Firm performance						
FP (Financial Performance)			0.83	0.62	0.00	1.00
FP1-FP3	0.74–0.87	0.24–0.46				
NFP (Non-financial Performance)			0.82	0.61	0.00	1.00
NFP1-NFP3	0.63–0.89	0.20–0.60				
Business process agility						
BPA			0.90	0.50	0.03	0.96
BPA1-BPA9	0.63–0.78	0.39–0.60				
Market orientation						
CTO (Customer Orientation)			0.89	0.63	0.03	0.98
CTO1-CTO5	0.69–0.86	0.29–0.52				
CPO (Competitor Orientation)			0.87	0.64	0.04	1.00
CPO1-CPO4	0.69–0.95	0.09–0.53				
IFC (Inter-functional Coordination)			0.80	0.51	0.00	1.00
IFC1-IFC4	0.58–0.83	0.31–0.66				
IPC (Inter-partner Coordination)			0.85	0.58	0.00	1.00
IPC1-IPC4	0.64–0.86	0.26–0.60				
Networking capability						
FNP (Finding Network Partners)			0.87	0.62	0.00	1.00
FNP1-FNP4	0.70–0.86	0.26–0.51				
MNR (Managing Network Relationship)			0.85	0.59	0.00	1.00
MNR1-MNR4	0.70–0.83	0.35–0.51				
LNR (Leveraging Network Relationship)			0.87	0.63	0.00	1.00
LNR1-LNR4	0.70–0.89	0.21–0.51				
Balanced APM						
SM (Self-Managing)			0.84	0.51	0.07	0.97
SM1-SM5	0.62–0.82	0.33–0.62				
CFC (Cross-functional Collaboration)			0.85	0.59	0.00	1.00
CFC1-CFC4	0.66–0.89	0.21–0.57				
BC (Balancing control)			0.86	0.60	0.00	1.00
BC1-BC4	0.70–0.82	0.33–0.51				

Table 3.
First-order CFA

As presented in Table 3, all variables' SFLs are equal to or higher than 0.5. Hence, all variables have good validity. The reliability of a measurement model is considered good if the CR ≥ 0.7 and the VE ≥ 0.50. Table 3 analysis also reveals that all variables have good reliability. The table also reveals that RMSEA ≤ 0.08 and GFI ≥ 0.90, hence, based on GOFI of Measurement Model of RMSEA and GFI, the model shows a good fit.

After adjusting the modification indices of the model, the second-order CFA result is presented in Tables 4 and 5. The GOFI indicates a good fit of the model.

The validity and reliability result in Table 5 demonstrates that all SFL of the latent variable score (LVS) exceed 0.50 (from 0.79 to 0.99), indicating good validity. The CR values of the constructs all exceed the 0.70 threshold value (from 0.78 to 0.99), and the VE values for all constructs exceed 0.50 (from 0.65 to 0.99), indicating good reliability.

Hypothesis testing

The structural model analysis is performed to determine whether a research hypothesis is accepted or not. The hypothesis is accepted if the absolute t-value > 1.96, with a positive or negative coefficient. The results of hypothesis tests are summarized in Table 6 and the structural equation modeling result is shown in Figure 3. Tables 7 and 8 show the indirect and total effect of the model to be used to analyze further the research model.

Discussion

The second-order LVS CFA test result of balanced APM variable demonstrates the validity (SFL between 0.82–0.85) and reliability (CR = 0,87 and VE = 0.69) of the variable. The finding indicates that balancing control (BC) is an inseparable part of agile project management. Self-

Table 4. Goodness of fit index (GOFI) of the second-order CFA

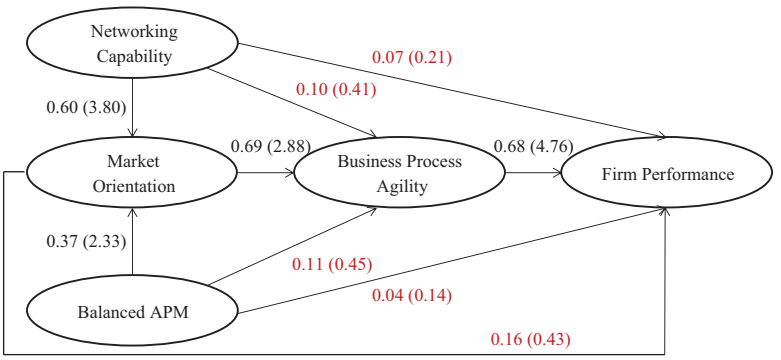
OFI	The GOFI criteria	Result	Interpretation
Value-p	p-value ≥ 0.05	0.292	Good fit
Root mean square error approx.	RMSEA ≤ 0.08	0.026	Good fit
Normed fit index	NFI ≥ 0.90	0.990	Good fit
Non-normed fit index	NNFI ≥ 0.90	1.000	Perfect fit
Comparative fit index	CFI ≥ 0.90	1.000	Perfect fit
Incremental fit index	IFI ≥ 0.90	1.000	Perfect fit
Relative fit index	RFI ≥ 0.90	0.980	Good fit
Standardized root mean residual	SRMR ≤ 0.05	0.023	Good fit
Goodness-of-fit index	GFI ≥ 0.90	0.950	Good fit
Adjusted goodness of fit index	AGFI ≥ 0.90	0.900	Good fit

Table 5. Validity and reliability of the second-order CFA

Variable	SFL ≥ 0.5	Error	CR ≥ 0.7	VE ≥ 0.5	Conclusion
Firm performance			0.78	0.65	Good reliability
FP	0.82	0.33			Good validity
NFP	0.79	0.38			Good validity
Business process agility			0.99	0.99	Good reliability
SA	0.99	0.01			Good validity
Market orientation			0.92	0.75	Good reliability
CTO	0.82	0.33			Good validity
CPO	0.86	0.26			Good validity
IFC	0.91	0.17			Good validity
IPC	0.87	0.24			Good validity
Networking capability			0.88	0.71	Good reliability
FNP	0.87	0.24			Good validity
MNR	0.83	0.31			Good validity
LNR	0.83	0.31			Good validity
Balanced APM			0.87	0.69	Good reliability
SM	0.82	0.32			Good validity
CFC	0.82	0.32			Good validity
BC	0.85	0.28			Good validity

Hypotheses	Standardized effect	*t*-values	Conclusion
H1: Business process agility has a positive and direct impact on firm performance	0.68	4.76	Accepted
H2: Market orientation has a positive and direct impact on firm performance	0.16	0.43	Rejected (not significant)
H3: Market orientation has a positive and direct impact on business process agility	0.69	2.88	Accepted
H4: Networking capability has a positive and direct impact on firm performance	0.07	0.21	Rejected (not significant)
H5: Networking capability has a positive and direct impact on business process agility	0.10	0.41	Rejected (not significant)
H6: Networking capability has a positive and direct impact on market orientation	0.60	3.80	Accepted
H7: Balanced APM has a positive and direct impact on firm performance	0.04	0.14	Rejected (not significant)
H8: Balanced APM has a positive and direct impact on business process agility	0.11	0.45	Rejected (not significant)
H9: Balanced APM has a positive and direct impact on market orientation	0.37	2.33	Accepted

Table 6. Significance test results on structural model



Note(s): 1) $N = 150$
2) Chi-Square = 31.67, df = 38, P-value = 0.75593, RMSEA = 0.000

Figure 3. Result of the research model

Indirect effect (standardized effect/*t*-values)	Networking capability	Balanced APM	Market orientation	Business process agility
Business process agility	0.42 (2.27)	0.26 (1.89)	–	–
Firm performance	0.45 (1.81)	0.31 (1.49)	0.47 (2.62)	–

Table 7. Standardized and *t*-values of indirect effects of the model

managing and cross-functional collaboration needs to be extended and balanced with corporate philosophy enforcement, which is long-term organization survival and strategic priorities focusing (Andersson *et al.*, 2019; Shipman and Tooey, 2017). It is true that organizations developing highly innovative products under dynamic environments, is required to incorporate agile project management practices that enable a more responsive, fast-learning-execution and capable to handle projects under cross-functional project teams (Conforto *et al.*, 2014; Kane *et al.*, 2016; Olausson and Berggren, 2010; Shipman and Tooey, 2017). However, this study demonstrates that an organization implements an agile management project also needs to emphasize the importance of balancing control (Andersson *et al.*, 2019; Kane *et al.*, 2016; Shipman and Tooey, 2017). In this case, agile project management does not need to become free-for-alls and lose control of its strategic guidelines and establish its balance (Andersson *et al.*, 2019; Kane *et al.*, 2016).

Furthermore, even though business process agility in the literature is conceptualized into three dimensions: customer agility, operational agility and partnering agility (Kale *et al.*, 2019; Sambamurthy *et al.*, 2003; Tallon, 2008; Tallon and Pinsonneault, 2011), partnering agility focuses only on one indicator, which is the ability to switch supplier. In a contemporary business environment, the ability to switch business partners (partners that provide the complementary solution, partners that develop relationships with customers or channel intermediary, e.g. reseller, distributor) and become less dependent on a particular business partner also plays an essential role for organizations to be agile. This study reconceptualizes partnering agility to embrace not only the capability to switch suppliers but also the capability to switch business partners. The first-order CFA of business process agility shows that the construct has SFL between 0.63 and 0.78, indicating the validity and CR 0.90 and VE 0.50, showing good reliability.

This study also reconceptualizes the dimensions of market orientation to cover inter-partner coordination as the partnership has become an inseparable part of the contemporary organization. The first-order CFA confirms the validity (SFL 0.64–0.86) and reliability (CR 0.85 and VE 0.58) of the IPC dimension. Second-order CFA based on LVS also shows that IPC has an SFL of 0.87 and contributes to market orientation construct validity (SFL 0.82–0.91) and reliability (CR 0.92 and VE 0.75). The test results show that the reconceptualization of balanced APM, market orientation and business process agility in telecommunication technology providers in Indonesia is valid and reliable.

The SEM results unveil the role of business process agility in a dynamic environment of the telecommunication industry. Prior studies validate the significant direct effect of market orientation on firm performance in the Jordanian pharmaceutical sector (Masa'deh *et al.*, 2018); in the Bangladesh service, manufacturing and trade SMEs (Sarker and Palit, 2015); and in the Canadian biotechnology sector (Wilson *et al.*, 2014). However, this study shows that market orientation significantly affects firm performance only through business process agility. This finding aligns with Wiggins and Ruefli (2005) that achieving performance improvement is proven to become more difficult as organization's competitive advantage has become significantly harder to sustain in a highly dynamic environment (Wiggins and Ruefli,

Table 8.
Standardized and *t*-values of total effects of the model

Total effect (standardized effect/*t*-values)	Networking capability	Balanced APM	Market orientation	Business process agility
Market orientation	0.60 (3.80)	0.37 (2.33)	–	–
Business process agility	0.51 (2.39)	0.36 (1.65)	0.69 (2.88)	–
Firm performance	0.51 (1.78)	0.35 (1.20)	0.63 (1.66)	0.68 (4.76)

2005) and organization's swiftness to adapt toward market change is critically required (Chen *et al.*, 2014; Tallon and Pinsonneault, 2011).

Another potential explanation is elaborated as the following. Market orientation is related to how an organization obtains market intelligence and performs coordinated activities to create different customers' value. However, it does not cover the response time when the organization has to deliver it to the customer. The perceived instability of the pharmaceutical, service and biotechnology industry is considered as medium level. In contrast, the telecommunication industry has the highest perceived instability and complex competing forces (Ahlbäck *et al.*, 2017). Therefore, it is reasonable that market orientation has a significant direct impact on firm performance in the medium-level industry instability but does not have a significant direct impact on firm performance in the telecommunication industry. Speed and responsiveness do matter to win the competition. Another explanation that strengthens the above argument is explained by Solano Acosta *et al.* (2018). Solano Acosta *et al.* (2018) find no significant relationship between international market orientation and SMEs' international performance in Mexico. The study argues that market orientation has a positive impact on performance only if it leads the firm to design and implement an appropriate strategy to approach the market, which is actual planning and action of the company as mediators.

The study results highlight the centrality of market orientation as one of the strategic orientations among B2B organizations (Frösén *et al.*, 2016). In a solution-selling industry such as the B2B telecommunication industry, market orientation becomes the gate that transforms and frames organizations' dynamic capabilities into solution since market-oriented organizations value customers the most and dedicate themselves to deliver the highest value for customers (Li, 2005; Panda, 2014; Zhou *et al.*, 2005). The study results also address the skepticism that market orientation will not promote agility as its responsive nature (Atuahene-Gima and Ko, 2001; Morgan *et al.*, 2015; Rauch *et al.*, 2009; Wiklund and Shepherd, 2003; Zhou *et al.*, 2005). Since market-oriented organizations always develop capabilities to identify changes in customers' demand and competitors' actions, they can respond appropriately to those changes (Brusset, 2016; Gligor *et al.*, 2016; Mandal and Saravanan, 2019). Furthermore, since market orientation can create the highest value for customers, it improves organizations' bargaining power to influence the customers' business process, attracts suppliers and business partners to support, which subsequently creates agility (Lee *et al.*, 2015; Saebi *et al.*, 2017).

The study results also bring to light the role of market orientation in mediating the effect of two dynamic capabilities, networking capability and balanced APM, on business process agility and firm performance. This finding supports Jaworski and Kohli (1993) and Wilden *et al.* (2018) that dynamic capabilities deployment is strongly required by market-oriented organizations to respond to or drive market change. Market orientation will frame dynamic capabilities in the direction of creating customer value. The finding answers the gap in the previous study by Wilden *et al.* (2018) whether in a dynamic environment, organizations need to possess dynamic capabilities first to achieve strategic (market) orientation or another way around.

Supporting the argument by Mu *et al.* (2016) and Mu and Di Benedetto (2012), the result of this study validates that networking capability positively influences market orientation as it enables the organization to access information from the market, generate and disseminate information related to customer's needs and preferences and information related to competition and then perform proper coordinated actions. The finding also aligns with dynamic capability theory and relational view that suggests that the capability of an organization to access, manage and leverage network resources will promote customer value creation through better access and quality of market intelligence (Davies *et al.*, 1995; Dyer and Singh, 1998; Mu, 2013; 2014; Mu and Di Benedetto, 2012; Teece, 2007; Teece *et al.*, 1997). The

finding also highlights that in a solution-selling industry, networking capability does not influence business process agility and firm performance directly, but through market orientation. Therefore, it disproves previous studies by Liu and Yang (2019).

Furthermore, the non-significant direct relationship between networking capability and business process agility and between networking capability and firm performance is explained as the following. Networking capability is crucial to obtain market intelligence. However, without a solution that creates value for customers, technology providers will be compelled to follow customers' business processes and constrained by those business processes since bargaining power is low. Without the capability to translate it into value creation that satisfies customers' needs, high networking capability will not significantly affect business process agility. With the progression of digitization and transparency, the networking capability is required to deepen and sharpen market intelligence generation. However, this intelligence needs to be further manifested as a concrete solution that creates value and solves customers' problems. Besides, the recent procurement process in telecommunication operators is determined not only by the procurement department but also by the finance department and planning department. Target price or market price information may come from the planning department. The finance department provides budget approval based on justification submitted by the planning department. The procurement department leads the procurement process through the bidding process. The increase in procurement process transparency and complex multi-department involvement make networking relationships less relevant to directly create revenue and profit. Therefore, networking capability does not significantly affect firm performance directly.

Another potential explanation is that higher networking capability also increases performance variability (Yang *et al.*, 2018). A strong networking capability may increase the organization's exposure to the leakage of valuable internal knowledge to its competitors. Networking can also create the outflow of specific resources, allowing partners to engage in opportunistic behavior, leading to performance variability and making the effect on firm performance non-significant.

Concerning balanced APM, dynamic capability theory suggests that an organization's capability in orchestrating resources in an agile manner is crucial for innovation and customer value creation (Teece *et al.*, 2016). This study's results indicate that decentralization and promoting empowered teams' autonomy are proven to positively impact market orientation (Agirre *et al.*, 2014; Barnabas and Mekoth, 2010). Therefore, the findings support the previous study that organizing empowered teams around customers improves the relationship with customers (Shah *et al.*, 2006) and enables accurate decision-making to create higher customer value (Cormican and Sullivan, 2004; Lee *et al.*, 2014). The study results also disprove the previous finding by Alavi *et al.* (2014) that decentralization and flat structure affect agility directly. In the solution-selling B2B industry, balanced APM affects business agility only through market orientation since resource allocation needs to be encased by a high-value and competitive solution. Balanced APM must be enclosed by an accurate solution proposal to affect business process agility.

The non-significant direct effect of balanced APM on business process agility and firm performance is explained as the following. Good resources are still needed to be mobilized in the correct direction to achieve revenue and profit quickly. Inaccurately addressing the market may inhibit revenue collection. For example, a bad contract with a harmful and long acceptance process will delay revenue collection even though the company has the best implementation team. Fail to understand customer requirements and competition can cause inaccurate solution proposal and lose in the bidding. Therefore, balanced APM does not significantly affect firm performance directly. The balanced APM also does not affect business process agility directly. The project team's best capabilities must be manifested in the form of a solution that can provide the highest value for customers compared to

competitors. For example, a company has excellent project management and capable of developing a good solution. However, the competitor knows that the customer urgently requires a solution within a very short time, which is the winning key. Instead of developing the solution in-house, the competitor sources the solution from third-party, makes minor customization and delivers it faster. The company fails to understand the customer requirement and comprehend the competition; therefore, it fails to respond to customer requirement faster. The balanced APM must be mediated by market orientation to achieve business process agility.

Another potential explanation of the non-significant effect of balanced APM on firm performance can be obtained from the descriptive statistic result. The descriptive statistic indicates that technology providers need to dedicate a particular unit that act as a balancing control to enforce strategic priorities. One of the dark sides of agile project management is the time pressure caused by inappropriate iterative cycles used in the project, too short or too long, that creates pressure on the team (van Oorschot *et al.*, 2018). Too short iterative cycle leads to poor performance in terms of quality, learning objectives and innovation to address customer's primary requirements (Annosi *et al.*, 2016). Too long iterative cycle leads to cost and time pressure. Therefore, without a particular unit acting as a balancing and monitoring, project management may not achieve its objective, delivering value to customers and achieving firm performance. The time pressure may prohibit creative and useful ideas to address and respond appropriately to the customer's requirements and, therefore, fail to meet the customer's business process requirement or competitor's maneuver.

A similar explanation is elaborated by Lee and Xia (2010) that there is a trade-off between response extensiveness and response efficiency of agile project management. Response extensiveness refers to the number of different types of requirements a team can implement. Response extensiveness is related to the extent, range, scope or variety of software team responses. In contrast, response efficiency is related to the time, cost, resources or effort associated with software team responses (Lee and Xia, 2010). Response extensiveness has a negative impact on on-time completion and on-budget completion. Therefore, without maintaining strategic priority and understanding customer's requirements and competition, agile project management may fail to effectively respond to customer's requirements and contribute to firm performance.

Limitations and future research

Interpretation of the findings of this study is subject to some limitations. First, this study is based on a cross-sectional nature and might fail to capture the dynamic of the studied variables. Thus, a longitudinal research design which could uncover these effects may modify the findings of this study. Second, the choice of a single industry (telecommunication) in a single country provides a limitation on external validity, especially because of solution-selling characteristic of BB relationship. Care should be exercised when applying and generalizing the results in other industries. It is therefore suggested to extend the research efforts to other industry sectors in multi-country environments.

Conclusion

This study unveils that in a highly dynamic market transforming into an open system, organizations' business process agility, which is the responsiveness and swiftness to address customer requirements changes, plays a crucial role in achieving business performance. When competition barrier is declining because of open standardization, responsiveness and speed determine the outcome. Furthermore, this responsiveness to address customers'

requirements can be achieved only through market orientation, the coordinated actions directed at creating value and satisfying customers' requirements through continuous needs-assessment. Market orientation makes it possible for organizations to offer distinctive solutions that increase organizations' value toward customers. The condition that allows organizations to have higher bargaining power and subsequently improves their business process agility.

The study also demonstrates that dynamic capabilities reflected in networking capability and nimble project management precedes strategic orientation (market orientation) in a highly dynamic business environment. This study empirically indicates that market orientation mediates the relationship between networking capability and business process agility, market orientation mediates the relationship between balanced APM and business process agility and business process agility mediates the relationship between market orientation and firm performance.

Therefore, the study contributes to the development of relational theory, resource-based theory and dynamic capability theory by presenting the interplay between external resource utilization (networking capability) and internal resource utilization (balanced APM) where both have dissimilar normative implications regarding the strategies to achieve high performance. According to RBV, an organization is suggested to protect, rather than share, valuable, rare, inimitable and non-substitutable resources and know-how to avoid knowledge spillover and competitive advantage elimination. However, the relational view mentions that an organization needs to create an effective strategy by systematically share valuable knowledge with partners, which, in return, acquires valuable knowledge and resource from them.

Concerning managerial implications, this study provides managers with a comprehensive perspective on how to achieve firm performance for telecommunication technology providers. Aligned with the study results that elucidate the relationship between variables, this study devises a problem-solution model to achieve firm performance by focusing on business process agility transformation for technology providers in addressing dynamic and complex business environment. The solution model applies dynamic capabilities reconfiguration by searching, structuring, bundling and leveraging internal and external resources to generate market intelligence, disseminate and perform coordinated actions. The ultimate solution to achieve business process agility is by enhancing market orientation. It is because market orientation creates value for the customer and answers customer's needs so that the technology provider gains its bargaining position. This bargaining position enables the market-oriented technology provider to gain all supports from partners, suppliers and customers to respond swiftly and easily to the market dynamics.

By understanding the customer requirements, especially latent and future requirements, and understanding the competitive situation, organizations can anticipate and respond appropriately and swiftly to address it. In the new software-defined networking era, the telecommunication network is built to adapt specific needs based on operators' strategy to deliver specific service and content. The service type creation is expected to become more agile through software configuration instead of confined and limited by appliance-based service determination. In this case, technology providers are expected to understand customer-specific requirements and develop the solution on demand. The capability to tailor solutions for the market through coordinated actions between functional departments and partners to create customer value is the key to technology providers.

This study perceives seven principles that need to be undertaken by the technology providers to become market-oriented organizations. It is a continuous cycle that technology providers need to perform during interaction with customers while observing to competitors' actions that include:

(1) Research problems not solutions. In the high technology industry, usually, customers do not really understand what will be the technological advancement and what is the possible condition by the time the product is shipped. Therefore, technology providers need to focus on short development cycles and customer feedback. Focus on solving the real problem and not the long-term solution. There is no long-term solution, but a long-term engagement with continues validated learning of every stage.

(2) Up-skill the teams to become competent in marketing. A high-technology solution is delivered to the customer by various teams. It is not only the customer-facing team (sales and marketing team) who is responsible for marketing the products and services. All people of the organization are unique resources that can bring business. Post-sales people, such as project managers and engineering teams, are powerful marketing teams that can significantly contribute to marketing programs through their effective project delivery and implementation. The engineering team has access to the customer operations team to suggest a particular product or solution that can enhance operational effectiveness or reduce operational cost.

(3) Realize the importance of direct and personal contact. The organization is an arrangement of interworking departments and people. Therefore, direct and personal contact with key customer stakeholders still plays an important role. It becomes increasingly important when the customer grows, and each function within the organization is expected to show its contribution to the organization. People like to do business with people that share the same values and that can support each other in their career within the organization. Therefore, technology providers need to focus on talent development and position the right talent with the correct counterpart on the customer side. Great talent and customers attract each other in a virtuous circle.

(4) Focus on experiences, not features. Consistency is very important in a B2B relationship. When customer experience meets expectations, the seller will get the reputation and trust. Therefore, it is vital that all aspects of the product and service meet customer expectations. When the customer experiences the right expectation, the business will be in the right direction.

(5) Comprehend the competition. Comprehend the competition is crucial in a solution-selling industry and a price-sensitive market. It is not only about the knowledge of competitors' price offering and how low they can go. However, it is about how to differentiate our solution to create higher value for customers that competitors cannot imitate. It is the ability to navigate customers into the preferred direction where competition cannot overtake.

(6) Reshape after-sales service. The market-oriented organization considers business as a recursive process of obtaining customer buying, delivery and implementation, support and other new buying. For a market-oriented technology company, activities during warranty and maintenance periods can create many opportunities to make product improvement, anticipate the next bidding, understand if there are still customer pain points and understand how to develop the next business. Besides, the most crucial is to establish a solid tie and dependency from customers to our organization as customers cannot find better support from our competitors.

(7) Validate learning and improve. The way the organization and its people to an unexpected situation is the differentiator with other competitors. The organization must build appreciative and respecting culture toward the customers' feedback and

contemplate this feedback for further improvement. Even though the customer's decision may not favorable to our organization, the way we respond to the decision with respect will re-create the opportunity to leave a good lasting impression. Summarize the learning experience, revisit the strategy and make continuous improvement is the key for the market-oriented organization.

The study results also suggest managers develop the capability to manage complex business partnerships. The broadness of vision and scalability of telecommunication solutions goes beyond the scope of a single company working with a closed proprietary platform. This study proposes the following to improve networking relationships: alignment on the central objectives for the relationship, development of effective and transparent communication, development of constructive process governance, supportive in competence development, relationship nurturing by building social connections and avoid blind spots since the beginning.

Finally, this study suggests that managers start to develop balanced and agile project management capability based on three underlying capabilities: self-managing, cross-functional collaboration and balancing control. Managers should develop teams that are comfortable to embrace changes continuously so that teams act as adaptive systems to review and identify the deficiency and implement enhancement. Managers should develop consistent ownership of work within the cross-functional team to deliver the result by building transparent communication and strong ties among team members. Finally, managers should maintain the balancing control through continuous awareness development of corporate philosophy, which is long-term organization survival, and develop a preference for cooperation between agile teams to avoid destructive internal competition.

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Appendix

Please indicate how much you agree or disagree with each of the following statements in 5-point Likert scale related to your organization.

Construct	Items	Adapted from
Firm performance	Compared to competitors, our organization can achieve	
Financial performance	(1) increased sales revenue (2) increased profit margins (3) increased cash flow	Simon *et al.* (2015), Le Meunier-FitzHugh and Piercy (2011), Simon *et al.* (2015), Williams (2018)
Non-financial performance	(4) increased market share (5) product and service quality improvement (6) increased customer satisfaction	
Business process agility	Compared to competitors, to what extent you agree that your organization can easily and quickly perform the following business actions? (1) Respond to changes in aggregate consumer demand (2) Customize a product or service to suit an individual customer (3) React swiftly to new product or service launches by competitors (4) Introduce a new pricing schedule in response to changes in competitors' prices (5) Expand into new regional or new markets (6) Change (i.e. expand or reduce) the variety of products or services available for sale (7) Adopt new technologies to produce better products or services (8) Switch suppliers to get better benefits of lower costs, or better quality, or improved delivery times (9) Switch business partners (such as partners for the complementary offer, partners that provide the relationship with the customer, or channel intermediary, e.g. reseller, distributor) to fulfill customer's requirement	Tallon and Pinsonneault (2011)
Market orientation		
Customer orientation	(1) Our organization constantly monitors our level of commitment to serve the customer needs (2) Our organization's business objectives are driven by creating greater customer value	Masa'deh *et al.* (2018), Narver and Slater (1990), Panda (2014)

Table A1.
Scales items for construct measure

(*continued*)

Construct	Items	Adapted from
	(3) Our organization's competitive strategies are based on our understanding of customer need	
	(4) Our organization measures customer satisfaction frequently	
	(5) Our organization pays close attention to after-sales service	
Competitor orientation	(1) Our customer-facing people regularly share information concerning competitor's activities	Masa'deh *et al.* (2018), Narver and Slater (1990), Panda (2014)
	(2) Our organization rapidly responds to competitive actions that threaten our organization	
	(3) Our organization's top managers regularly discuss competitors' actions	
	(4) Our organization targets customers where we have an opportunity for competitive advantage	
Inter-functional coordination	(1) Our organization's top managers from every function regularly visit our current or prospective customers	Masa'deh *et al.* (2018), Narver and Slater (1990), Panda (2014)
	(2) We freely communicate information about our successful and unsuccessful customer experiences across all business functions	
	(3) All our business functions are integrated in serving the needs of our target market	
	(4) We share resources with other business functions when needed	
Inter-partner coordination	(1) There is effective communication between partners to create superior customer value through joint activities	Diaz-Foncea and Marcuello (2013), Rezazadeh and Nobari (2018), Rocha and Miles (2009), Tajeddini and Ratten (2017)
	(2) There is collective decision-making between partners for the creation of superior customer value	
	(3) There is a collective commitment to maintaining the development of superior customer value through the joint processes	
	(4) If needed, a mutual resource sharing can be done between cooperative partners	
Networking capability		
Finding network partners	Our organization has a system or mechanism in place to help us	Dyer and Singh (1998), Gulati (1998), Mu and Di Benedetto (2012), Mu *et al.* (2016)
	(1) Search locally to find proper network partners	
	(2) Search globally to identify appropriate network partners	
	(3) Search widely to look for right partners	
	(4) Find partners to count on in time when the need arises	

(*continued*)

Table A1.

Construct	Items	Adapted from
Managing networking relationships	Our organization (1) Can design an appropriate mechanism to navigate the dynamics of the partner network (2) Can fine-tune network partnership relationships (3) Constantly analyzes relationships with partners so that we know what adjustments to make (4) Can dynamically integrate networking activities into our business operational process	Dyer and Singh (1998), Gulati (1998); Mu and Di Benedetto (2012), Mu *et al.* (2016)
Leveraging networking relationships	(1) Our organization can get the needed assistance from our partners in an accurate manner (2) Our organization can get the needed assistance from our partners in a timely manner (3) Our partners can refer us to a third party who could help if the partners cannot provide direct help (4) Our partners can share resource to us when we need it	Mu and Di Benedetto (2012), Mu *et al.* (2016)
Balanced APM		
Self-managing (empowered)	(1) Work is organized in a lean empowered team (2) The management does not interrupt the team during a work cycle (3) Work goals are defined by the team before each cycle starts (4) The team has the responsibility to create the team's functional structure (5) The team systematically inspects performance to ensure continuous improvement	Denning (2018), Leybourn (2013), Shipman and Tooey (2017)
Cross-functional collaboration	In every project cycle (1) The team contains all the key skills required to deliver customers' requirement (2) The team is capable of delivering the solution without a lot of dependency (input) from other teams (3) There are efficient delivery times with fewer communication delays and handover within the team (4) There is consistent ownership of work as a team is responsible for the delivery of the product from design to completion	Leybourn (2013), Shipman and Tooey (2017)

(*continued*)

Construct	Items	Adapted from
Balancing control	Our organization (1) Keeps equipping the team with corporate philosophy to maintain the team's focus on long-term organization survival or profitability (2) Keeps stressing the team to focus on a core set of strategic priorities (3) Keeps stressing the preference for cooperation to avoid destructive internal competition between teams (4) Has a special team (unit) as a balancing instance (agency) to provide advice for strategic priorities development	Andersson *et al.* (2019), Conner (2000), Shipman and Tooey (2017)

Note(s): 1-Strongly Disagree, 2-Disagree, 3-Neither agree or disagree, 4-Agree, 5-Strongly agree

Table A1.

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