The role of emerging organization capabilities on firm performance in digital era and the moderating effect of industry type: dynamic capabilities approach

Pichet Nampulsuksan and Phusit Wonglorsaichon

Abstract—Digital era has changed the behaviours of the customers and consequently affect how the companies do business and perform. To maintain performance, firms must adapt and transform to cope with changing environments. By using dynamic capabilities approach, this study aims to develop a framework to investigate the role of emerging organizational capabilities on firm performance in digital era. The framework covers 4 subconstructs of emerging organizational capabilities: digital leadership, agility and responsiveness, customer experience management and personalization, and digital innovation. This study also examine the relationship between organizational capabilities and performance in digital context with indystry type has a moderating factor. Finally, we conclude our managerial implications of this framework.

Keywords— organizational capabilities, dynamic capabilities, performance, digital era, industry type, digital leadership, agility and responsiveness, customer experience management and personalization, digital innovation

I. Introduction

Digital technologies like social media, mobile, and analytics are being used widely by consumers and employees. It has transformed the customer experience and therefore influenced business. The customers are digital savvy than the sellers. Greater numbers of companies are trying to leverage digital technologies to compete and perform by adapting, transforming, and creating new organizational capabilities. With this in mind, identifying the emerging organizational capabilities that affects the firm performance in different industries is an area of interest not only to academics but practitioners.

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Phusit Wonglorsaichon University of Thai chamber of commerce Thailand In our study we focus on the role of organizational capabilities on firm performance by using dynamic capabilities approach. Dynamic capabilities are defined as the firm's ability to integrate, build, and reconfigure external and internal competences to cope with dynamic market or rapidly changing environment (Teece, 1997). A review of literatures revealed that dynamic capabilities that may be the drivers of performance in digital context can be conceptualized into 4 constructs: digital leadership, agility and responsiveness, customer experience management and personalization, and digital innovation. We have also observed that industry type may be the moderating factor of the relationship between organizational capabilities and performance. Different industries have different level of digital maturity.

Limited studies have empirically tested the relationship between organizational capabilities and performance in digital context. This study aims to explore the role of 4 organizational capabilities on performance and the moderating effect of industry type.

This research may contribute to the knowledge of dynamic capability approach and performance in digital context for both academics and practitioners.

II. Theoretical background, research framwork, and hypotheses

A. Theoretical background

Dynamic capabilities are defined as the firm's ability to integrate, build, and reconfigure external and internal competences to cope with dynamic market or rapidly changing environment (Teece et al. ,1997). Dynamic capabilities are a group of identifiable and specific processes, paths, and positions. These include integration/coordination, structural assets, reconfiguration and transformation, path deficiency, product development, strategic decision making, alliancing, knowledge creation, etc. (Eisenhardt & Martin, 2000).

Dynamic capabilities' multiple definitions are originally diverse in early times but seems to converge overtime. Teece (1997) originally perceived dynamic capabilities as higher order capability since its definition was about the ability to integrate, build, and reconfigure resources and competences. Later in Teece (2014) have mentioned that



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dynamic capabilities is different from ordinary capabilities but can involve a combination of entrepreneurial leadership and organizational routines. Eisenhardt & Martin (2000) argued that most of the dynamic capabilities such as product development and alliance formation may be thought of as ordinary capabilities or lower level competences. Dynamic capabilities generally are at organization level and hence may be the special form of organizational capabilities involving change. (Peteraf and Tsoukas, 2017). Ordinary organizational capabilities are the abilities of the firm to perform task and activities in a routine and repeatable manner. Types of organizational capabilities may vary with the context, e.g. manufacturing capability (Macher and Mowery, 2009), customer service capability (Ethiraj et al, 2005), Research and development capability (Dutta et al, 2005), marketing capability (Vorhies, Morgan, and Autry, 2010), etc.

How dynamic capabilities developed through past performances may be context-specific. The exploration of processes through which dynamic capabilities enacted in specific context can be done by empirical researches (Peteraf and Tsoukas, 2017).

In this study, we draw on Dynamic capability (DC) approach since the context we want to study is in digital context which is considered a dynamic market. We have reviewed both dynamic capabilities and ordinary capabilities in digital context and conceptualized organizational capabilities into 4 constructs which are Digital Leadership, Agility & responsiveness, Customer experience management & personalization, and Digital innovation.

Dynamic capabilities or firm processes could lead to firm performance and competitive advantage as well as new paths and positions (Teece, 1997). Later, Teece (2007) addressed that Dynamic capabilities are the abilities of the firm to sense, seize, and reconfigure which affect firm performance and competitive advantage as well as lead to new paths and positions. Likewise, Eisenhardt abd Martin (2000) stated that dynamic capabilities have both direct effect on firm performance and competitive advantage and indirect effect through resource reconfiguration.

Competitive advantage is a relative performance of competitors in a specific market environment. Competitive advantage typically refers to superior financial performance which can be described as value creation or above normal returns (Winter 1995; Peteraf and Barney, 2003). In this study, we see competitive advantage and performance as similar and undistinguishable terms. Therefore, we use the term "performance" which is comprehensive and measurable as a dependent factor.

B. Research framework and hypotheses

We hypothesized that organizational capabilities (Digital Leadership, Agility & responsiveness, Customer experience management & personalization, and Digital innovation) have positive impact on performance with industry type as the moderator. The details of the proposals are as follows.

Regarding Digital leadership and performance, although a number of studies have not directly tested the relationship of digital leadership and performance but the concepts are consistent that digital leadership is crucial for the perfiormance of firms in digital era. Digital leadership is needed for the success of digital transformation as only CEO or the management can successfully convey message about the need for digital change, the scope and direction to the employees to create the sense of urgency which is essential for the success of digital transformation initiatives. Leaders can create the sense of urgency to overcome inertia or barriers in the company by convincing and inspiring all the stakeholders particularly employees, managers, investors, suppliers, and partners about the need of change (Meffert, 2018). Important skills that digital leaders should have are transformative visions, forward looking, technology literacy, change-oriented, and strong leader skills. Therefore, we propose that:

H1 : Digital leadership capabilities have positive impact on performance

Agility is defined as the ability of the firm to prepare for and respond to changing capacity demand, changing functional requirements very quickly, and is the ability to use technology to extend capacity when necessary. Agility and flexibility are not clearly differentiated (Termer, 2016). Agility is the precondition to digital transformation for both the customer and employee aspect. As for the employee perspective, digital transformation project impose flexibility demand on employees in the work execution, Agility can bring about greater motivation, productivity and flexibility in work execution.

Agility is an integral part of digital business strategy and help the firm to self-tune the organization to changing environment such as shifting business when the customer need shift. Agile operating models, ability to scale fast and learn quickly, ability to reallocate resources and reorganize rapidly are needed for digital organizations and the success of digital business strategy (Holotiuk, 2017).

Organizational responsiveness is the action taken in response to new technology or intelligence that is generated and disseminated. Managers used this capability to integrate, build, and configure internal and external competencies to address changing environment (Karimi & Walter, 2015; Kohli & Jaworski, 1990).

Literatures on dynamic capabilities and management have underlined the significance of responsiveness on organizational performance (Teece, 1997; Teece, 2007; Eisenhardt & Martin, 2000; Hult et al., 2007).

In dynamic environment, responsiveness or response time is critical. Slow responses may result in missed opportunities. Companies that are able to response quickly to competitors, customer changes, and technologies have superior performance compared to their peers (Bhatt, 2010; Lucia-Palacios et al., 2014). Therefore, we propose that:

H2: Agility & responsiveness capabilities have positive impact on performance

Customers in digital era are better informed and expecting individualized product and service as well as a unique customer experience. Business have to reassess what



customers value most and design the customer experience accordingly for competitive advantage (Vey, 2017).

Digital customer's accessibility has increased making companies find it more difficult to keep in touch with their customers (Gimpel, 2018).

Customer experience refer to customer's subjective experience through both direct and indirect interaction with organizations at different levels such as rational, emotional. physical, sensory, and spiritual level. Customer experience management is important in digital era and is crucial for the sustainability of customer relationships. Customer experience management is about managing a subjective experience instead of an efficiency or sales process automation. Customer experience management cannot be successful without information about customer insights data which can be collected along customer journeys and touchpoints from various digital channels such as social medias, mobile applications, and smart products or services. The phenomenon that customers use digital channels for all interactions with the organizations forces organizations to engage in multi-channel and omni-channel management to response to the customers' individual demands (Gimpel, 2018).

There is an increasing number of digital savvy customers. New value propositions in digital enabled context such as greater accessibility, higher affordability, and wider social connectivity should be analyzed. To successfully design new digitally enabled customer experiences, the people of the organization need to have a customer service mindset focusing on total customer experience. The organization should have a position or unit responsible for customer experience management. Emerging technology like analytics can be used to manage and maximize customer experience (Sia, 2016).

Customer experience was found to be one of the most important key success factors of digital business strategy. Customer experience focus on seamlessly integrated offline and online channels especially mobile channel, digitalization of customer interaction and products and services, analytics to customize and create products and services, direct contact for customer centricity, customer integration with open innovation, outstanding customer experience and satisfaction (Holotiuk, 2018).

Similarly, personalization is a feature that improve the relationship between the company and its customers. The organization should be able to deliver customized communications and experiences to customers at the right time and right channel. Literatures suggested that omni-channel management may have positive impact on profitability, customer retention and loyalty, and relationship quality (Melero, 2016). Therefore, we propose that:

H3: customer experience & personalization capabilities have positive impact on performance

Innovation is vital to uncovering new opportunities and better competitive advantage. Companies not only need to adapt to new environment but also explore the future by innovating (Solis, 2017). A survey found that top 3 types of investments on innovations are to build in-house innovation lab with dedicated resources to advance new partnerships,

opportunities, and expertise (55.9%), investing in a culture of innovation to create new learning, work, and creativity (52.7%), and established a venture capital branch to invest in startup companies to help propel innovations. (Solis, 2017).

Innovation may be the driver of digital transformation as innovation may spark transformation or vice versa as digital transformation may start as innovation initiative (Gobble, 2018)

Digital successful transformation relies not only a leader but a smart and talent employees with digital skillsets. Skills such as data analytics and striving for latest technical development are values to the organizations. The organization can promote creativity and innovation by acquiring or partnering with digital talent or start-ups (Gimpel, 2018)

To manage digital innovation, digital evolution scanning is one of the key elements. The organization should be able to identify opportunities for innovation from digital environment by gathering information on new digital devices, emerging channels (eg. mobile payment, analytics, fintech, social media,etc.) and associated emerging user behaviors (Nylen, 2014).

Additionally, Digital innovation require new skills. The organizations ought to promote continuous learning of the unique properties of digital technologies in order to acquire new skills and secure dynamic innovation teams (Nylen, 2014). Therefore, we propose that:

H4 : Digital innovation capabilities have positive impact on performance

As mentioned in the introduction, different industries should have different level of digital maturity. Industry types or industry characteristics have been found to influence the performance levels of the firm and the industry (Bain, 1959; Scherer, 1970; Hitt, 1982). Although dynamic organizational capabilities have direct impact on performance, the relationship between dynamic organizational capabilities and performance should be different in various industry types. For example, the relationship should be more dominant banking industry than healthcare industry. Different industries have dissimilar level of digital maturity. Firms with higher level of digital maturity was found to be more profitable than lower ones. Industries with digital maturity level from high to low are high technology, banking, insurance, travel, telecom, retail, consumer packaged goods, utilities, manufacturing, and pharmaceuticals respectively (Westerman, 2014). The idea is consistent with the findings from Gandhi (2016) that some business sectors are leading others in terms of digital advancement specifically digital assets, usage, and labor. Emerging organizational capabilities are expected to have a postive impact on performance with with industry type as the moderator. Therefore, we propose that:

H5: Industry type moderate the relationship between organizational capabilities and performance

Fig.1 depict the conceptual framework of this research.



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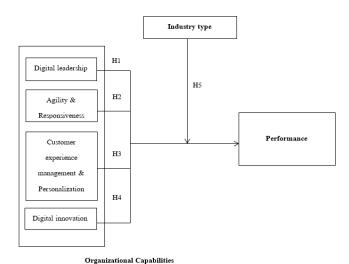


Figure 1. Conceptual framework

Methodology

This study will use quantitative approach to test our model. The purpose is to test the relationship between 4 distinct organizational capabilities (Digital Leadership, Agility & responsiveness, Customer experience management & personalization, and Digital innovation) and performance with industry tupe as a moderator.

A. Data collection

This research investigate firms that are headquartered in Bangkok, Thailand among 5 different industries: banking, insurance, telecom, automotive, and healthcare. Constructs are measured at organizational level. A number of 400 respondents (N=400) were aimed. Specifically, the respondents' position in the organizations should be managers or management level who are able to answer questions regarding the strategy, leadership, and management decisions. The first step was to identify potential respondent by phone calls. After the confirmation by phone, Semi-structured questionnaires are mailed or uploaded online for the respondent to answer.

Sample characteristics are classified as industry type, firm size, and respondent's job title as follows.

- 1.Industry: Banking, Insurance, Telecom, Automotive, and Healthcare
- 2.Firm size: Less than 500, 500-999, 1000-4999, above 5000
- 3.Respondent's job title : Managers, IT director, HR director, Chief information officer, Chief executive officer

B. Procedures

The quantitative procedures will include descriptive statistics and inferential statistics. For descriptive statistics, frequency, mean, and SD will be measured for each constructs. To test the relationships between the constructs, we will use inferential statistics specifically structural equation modeling (SEM) technique. Exploratory factor analysis (EFA)

will be done to explore the sub-dimensions of each construct and make sure each construct is unidimensional. Confirmatory factor analysis (CFA) will be done to assess the validity of data whether it fit the hypothesized model. Convergence and discriminant will also be testes for construct validity.

Once all constructs in the model are validated and model fit achieved, the structural model can be tested and get results from AMOS.

c. Constructs and Measurements

Althought variations across the studies were found, the conceptual measurements were consistent. We summarized the measures of each construct as follows.

Digital leadership is needed for the success of digital transformation. To measure Digital leadership, we adopted 6 items from literatures: Change oriented mindset(Kane, 2016), Digital Literacy (Michelman, 2016; Hunt, 2015), Transformative vision(Westerman, 2013)., Collaborative skills(Hay Group, 2014)., Inspiration(Meffert, 2018)., and IT investment prioritization (Sia, 2016). 5 point Likert scales are used for the questionnaires.

Agility and responsiveness are critical for organizations. To measure agility and responsiveness, we adopted 5 items from literatures: Agile and scalable digital operations(Sia, 2016)., Agile way(Denning, 2013), Customer Responsiveness (Bhatt, 2010)., Technological responsiveness (Lucia-Palacios et al., 2014)., and Competitor responsiveness (Bhatt, 2010). 5 point Likert scales are used for the questionnaires.

Customer experiences management and personalization have become one of the key business priorities in digital era. To measure customer experiences management and personalization, we adopted 5 items from literatures: Customer service mindset (Sia, 2016), Customer experience unit/office (Sia, 2016), Use of technology (Sia, 2016), The use of Omni-channel marketing (Melero, 2016)., and Personalization (Melero, 2016). 5 point Likert scales are used for the questionnaires.

Digital innovations can drive digital transformation and performance. To measure digital innovation, we adopted 5 items from literatures: Culture of innovation (Solis, 2017)., Partnership with customers (Sawhney, 2005)., Partnership with digital talents and start-ups (Gimpel, 2018), Digital evolution scanning (Nylen, 2014), and New skills (Nylen, 2014). 5 point Likert scales are used for the questionnaires

Firm Performance is a complex and multi-dimensional construct (Kaplan and Norton, 1996). Numerous performance measurements are available for the firm to use for business management depending on the aspects and context. In this study, we use perceived measures adopted from Delaney and Huselid, (1996); Tan, (2015) and categorized performance as financial and non-financial performance as follows.

- 1. Financial performance:
- 1.2 Sales growth
- 1.3 Profitability
- 1.4 Market share
- 2. Non-financial performance:



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- 2.1 Increase in new customers
- 2.2 Increase in customer satisfaction
- 2.3 Company reputation
- 2.4 Increase in company brand value
- 2.5 Development of new products and services
- 2.6 Ability to retain essential employees
- 2.7 Quality of products, services
- 5 point Likert scales are used for the questionnaires

III. Implementing the framework

This is a working paper. However, this framework may be adopted or empircally tested in other countries and other levels (eg. Individual, governmental, and national level). Future research could also investigate the role of organizational capabilities as mediators instead of drivers according to resource based view (RBV) theory in digital context.

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[Across every industry, firms must adapt to changing digital environment to maintain performance by creating organizational capabilities namely digital leadership, agility and responsiveness, customer experience management and personalization, and digital innovation]

