



# Developing Vocational Training: Lesson Learnt from Building Business Model Innovation through Customer Experience and Distinctive Organizational Capability

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**Abstract:** A vocational training can be invested based on the degree of innovation, such as on business models to face challenges in the era of Industrial Revolution 4.0. The lesson learnt can be captured through the formulation of strategy that needed to consider internal and external aspects. For example, as in the digital world, customer experience as well as customer satisfaction. Capability on the side of the network owned combined with network and social capabilities are expected to create distinctive organizational capability. Based on this background, the study aims to examine the effects of customer experience and distinctive organizational capability on the business model innovations of telecommunication firms in Indonesia using quantitative research. The target population are 445 telecommunication network companies in Indonesia which includes 312 ISP firms, 34 satellite firms, 27 tower firms, and 72 Telkom subsidiaries and affiliates, with samples taken from 34 firms. PLS is used as the analytical tool to process the data in this study. The results of the study show that customer experience and distinctive organizational capabilities have an influence to business model innovations. Customer experience has a bigger role than distinctive organizational capability in building business model innovation. These findings have practical implications for the management of telecommunications industries in Indonesia as the development of vocational training rely on the needs of business model innovation development, which directly based on the development of customer experience and supported with development of distinctive organizational capability. Further research can be explored by expanding the sample, industry and in other countries.

**Keywords:** Customer experience, distinctive organization capability, business model innovation, telecommunication industry

## 1. Introduction

The investment in vocational training as a job-specific training has not been extensively explored. Investment in vocational training could have a significant impact on financial return and positive impact on society and the environment (Drexler & Nobel, 2013, p. 7). To achieve the objective of the vocational training investment, the vocational training shall be bridging the gap between the developments of skilled worker with the actual experience of organizations (Manfredini, 2013). The graduates' lack of skills demanded by industry is due to limited opportunities for the development of skills (Fontes, Pero, & Berg, 2012). In industry 4.0, vocational education becomes an integrative model that can incorporate both formal and non-formal education through job experience (Samani, 2018). Industry 4.0 has brought changes in all industries, and telecommunication is the key enabler in driving innovation and change market and customer behaviour. A study was conducted by the World Bank (2004) that showed that telecommunication infrastructure positively contributes to economic growth. The World Bank study is aligned with the study by the Institute of Management Development (IMD, 2017) showing the close relationship between the competitiveness of a nation with the competitiveness of digital telecommunication infrastructure. Hence the importance of the telecommunication industry in the development of a nation. Thus, the strengthening of the telecommunication industry has become one of the most important aspects, especially the sustainability of telecommunication firms in developing digital infrastructure. The next question is how does the Indonesian telecommunication industry look like and what model would be the right for Indonesian Firms in the transformation for digital capabilities to adapt to the changing of the market and sustain the business while also leveraging the country's competitiveness?

Indonesian digital telecommunication is currently still at an early stage of digital development (Das, 2017). The opportunity to generate digital revenue is enormous; however, it requires risk and significant investments in the development of infrastructure. Digital competitiveness in Indonesia is ranked at 59<sup>th</sup> place. However, the nation's competitiveness is ranked at 42<sup>nd</sup> place (IMD, 2017). This means that digital telecommunication would not bring an optimal contribution to the growth of the competitiveness of the nation. However, Indonesia is recorded as the country with the highest innovation growth among other Asian countries (IMD, 2017). This finding is aligned with the number of start-ups in the world, where Indonesia is currently ranked at 6<sup>th</sup> place (Startuppranking, 2018). Indonesia is also higher in terms of the length of time spent on the internet, the number of Facebook users, and the number of internet users that utilizes e-commerce compared to the United States (Das, 2017). However, despite the huge opportunity, there is a challenge of mitigating the risk in digital investments where huge investments are required. The tightened competition also raises the question of how to generate a higher return on investment. This gap requires the telecommunication companies to transform their capabilities in the digital business through the innovation of business models and collaboration.

A study conducted by Berman (2012) found that the companies that have the ability to integrate digital aspects with operation processes tend to be able to change their business model successfully. The findings demonstrate that companies are required to develop new capabilities such as business model innovations, community incentives, and customer collaboration. On the other hand, Daniel and Wilson (2003) stated that companies are required to have Dynamics and effective capabilities by integrating with existing assets for digital transformation. Digital technology changes have led to changes in customer behaviour and the creation of a new market. The phenomenon results in the incumbent businesses failing to maintain the sustainability of the business due to new entries brought by the new business model. This is herein called the 'disruptive innovation' (Christensen, 1997), where the customers are of crucial importance. Within the digital ecosystem, measurement of customer satisfaction is not only based on the products and services but also on how to create value for customers so that they would be satisfied enough to recommend to others, making the overall experience a critical aspect. Verhoef et al. (2009) discussed the role of customer experience management and showed that having an experience-based business could generate the growth of revenue.

Another role of digital technology other than to provide the opportunity for revenue is that it allows efficiency in the process and speed of decision making, known as the double-side model. The emergence of Telco 2.0 is the answer to the transformation of telecommunication positions in the digital era which essentially is a business model and collaboration from the upstream left-side of customers, namely partners and suppliers with the leading role of managing costs. Meanwhile, the right side includes customers with the main role of generating income from the business model created by the company. The study of mobile operators demonstrates that the left is the content provider and the right is the customer while the operator has the role of creating innovation within the business model

(Raivio & Luukkaine, 2011). In order to develop the right model for Indonesian firms, the practices by McKinsey (Das, 2016) could be used as a benchmark as he developed four methods for ICT companies to survive in a digital environment. The methods are applied in several aspects, such as product and service innovations, business model, process all aspects related to the product, business model and process. The highest result is in the business model. This finding supports the study on business model innovations where it is known as an essential booster to achieve competitive advantage (Amit & Zott, 2012).

In addition, business models relate to higher operating profits in the practical sense and have become a topic of interest among corporate CEOs (IBM Global Business Services, 2008) as business model innovations are vital to the success of technology-based product commercialization (Chesbrough & Rosenbloom, 2002; Chesbrough, 2010). In general, there are a lot of studies conducted on business innovation models (Amit & Zott, 2001; Markides & Charitou, 2004; Giesen et al., 2007; and Chesbrough, 2007) to support the development of business model innovation.

In formulating the strategy, internal and external factors also need to be considered, such as the customers, which are the main external factor in the effort of maintaining business continuity. Customer satisfaction is not the only important factor when running a business on a digital platform in this era, but customer experience should also be taken into account, as it is also the right communication tool to reach customers. Internally, maintaining the organization's competitive advantage is carried out by expanding its range that depends on the complementary capabilities and assets formed around the core technology and related business models (Teece, 1986; Tripsas, 1997). This is done along with the capabilities on the network side combined with network and social capabilities which are expected to create distinctive organizational capability.

Based on this background, this study aims to examine the effect of customer experience and distinctive organizational capability on business model innovation in telecommunication firms in Indonesia. This paper will discuss the empirical study starting with its background along with a literature review related to each variable, the methodology used, results, and a discussion with a conclusion of its implication and suggestions for further research.

## **2. Related Works**

### **1. 2.1 Industry 4.0**

Industry resolution 4.0 is known as the conceptual era (Pink, 2005). Industry 4.0 is driven by the internet and information technology. Industry 4.0 impacts to globalization that changes not only market and competition but also the whole ecosystem (Teece, 2012). The main drivers of industry 4.0 are innovation, business model collaboration, and integration of process that makes the process shorter and simpler through ICT system (Kiel, 2017). In the history of management, industry 4.0 is the modern phenomenon that closed with digital transformation (Berman, 2012). In the telecommunication industry, industry 4.0 represents the solution based on the Internet of Things (IoT). The product solution could be fulfilled through collaboration with respective stakeholders to innovate business models through digitize system (Hagermann, 2015), sharing economy (Matzner, 2018) and virtualization (Monions, 2015).

In anticipating the changing due to industry resolution 4.0, the incumbent firms required to transform their existing business and the way in doing business in the digital matter. Otherwise, the new entrance will disrupt the business (Christensen, 1997). The incumbent firms are required to integrate with the existing operation process of digital capabilities (Berman, 2012). The firms require digital transformation where the dynamic and distinctive organization capability is integrated with existing assets. Transformation is defined as the changing paradigm of firm activities.

### **2. 2.2 Customer Experience**

In the digital ecosystem, customer experience could bring significant influence on businesses as customers share on the digital platform. The study by Schmitt, Brakus, and Zarantonello (2015) demonstrated that every service exchange leads to customer experience, regardless of size and shape. This broad perspective assumes that customer experience is holistic, combining the customer's cognitive, emotional, initial, social, and spiritual responses to all interactions with the company (Verhoef et al., 2009, Schmitt, 1999). Therefore, personalization is the key to success, mainly when digital technology is applied where trust is the primary driver (Henfridsson et al., 2014).

Customer experience has been a topic of discussion for the past couple of years. However, there is no clear boundary for it (Smith, 2006), such as in Customer Relation Management (CRM). However, Customer Experience

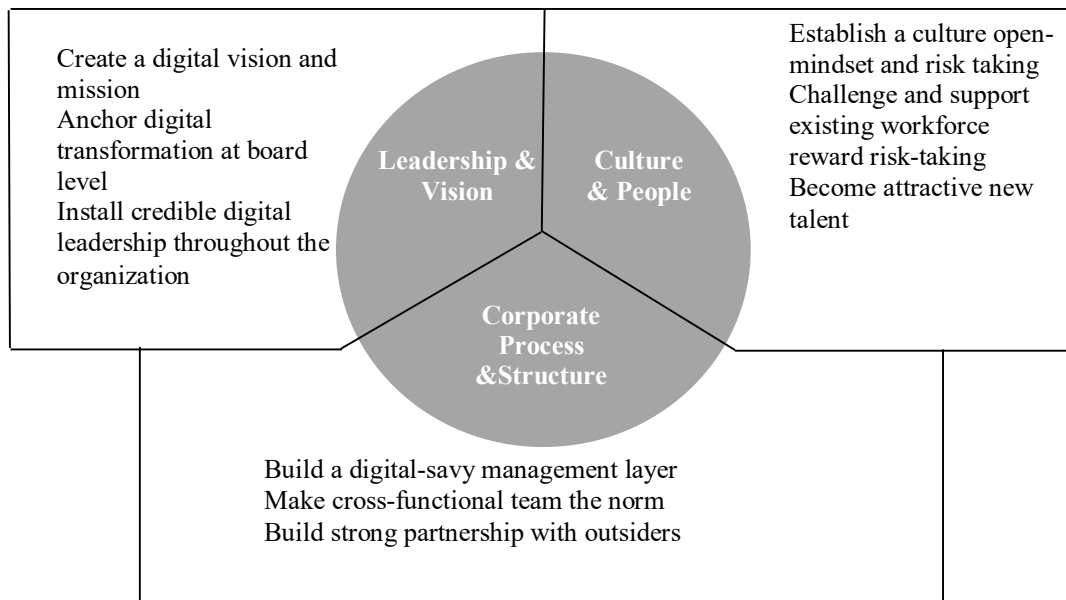
Management (CEM) talks about multidimensional and personalized experiences to customers, as it is multiple of experiences rather than a one-time experience. CEM includes CRM as part of how customers can get the experience of digital technology through virtualization can encourage customer experience (Parise et al., 2016). Schmitt (2011) suggests that in retail, customer experiences can be categorized along the lines of the retail mix (i.e., price experience, promotion experience). Based on the literature review, in this study, customer experience is measured by the dimensions that include price and promotion, CRM and data analytics, trust and personalization, as well as brand performance.

### 2.3 Distinctive Organisation Capability

Gianos (2013) conducted a strategy diagnosis from Ansoff and Donnel (1990), where management capabilities able to evaluate a company's current and future performance and provide detailed plans and prescriptive diagnoses. In the diagnosis of company capability, it is necessary to measure aspects such as the characteristics of the manager, management climate, management competence, and management capacity (Ansoff and Donnel 1990).

Jacobi and Brener (2018) conducted a study on how companies can successfully survive facing changes in the digital environment by focusing on organizational capabilities consisting of; leadership and vision, culture and people, and corporate processes and structures. Leadership and vision are the main factors in transforming a company into a digital company.

Sofie Sandel (2013) defines digital leadership as a capability and capacity that encourages creativity by utilizing digital technology to create value. Other capabilities include competent employees and company culture as the drivers of digital transformation. Another factor to be considered is also lean processes and operations that are more agile to change. These three capabilities, coupled with governance, can be a foundation in providing trust to company management. This supports the study by Wasono and Furinto (2018) that found the significance of digital leadership in the Indonesian ICT market. See Fig. 1.



**Fig. 1 - The capability of Digital Transformation**  
Source: Jacobi & Brener, 2013

### 2.4 Business Model Innovation

Business models are the company's efforts to be able to integrate its business processes (Frankenberger et al., 2013; Lehoux et al., 2014) in the context of sustainability. With a particular focus on business model innovations especially for the incumbent (Massa & Tucci, 2014). In relation to business innovation, Eksell et al., (2017) links the relationship between digital transformation where business model innovation emerges as an alternative to process and product innovation where managers and entrepreneurs create additional value in a specific time (Amit & Zott, 2010; Amit,

Zott, & Pearson, 2012). Jansson and Andervinn (2016) define business model innovation as part of digital transformation. The introduction of new digital technologies has made it possible to have the re-arrangement of business activities to form a new business model with higher value compared to its previous. Business models are a new holistic, integrated and systematic way for organizations to conduct the operation of innovations in order to create value in a dynamic environment through collaborations with internal and external stakeholders Abdelkafi et al., (2013) and Zott *et al.*, 2011 Zott & Amit, 2008). The dimensions used in this study refer to the concept by Amitt and Zott (2010), Amit, Zott, & Pearson, 2012) which include: Content innovation, Structure Innovation, and Governance Innovation Delivery.

## 2.5 Hypothesis Development and Research Model

The study conducted by Racela (2014) demonstrates the role of customer experience orientation in leveraging innovation competence and organization included in the business model. Another study by Al-Dmour (2018) shows the significant impact of customer orientation on innovation. Based on these past studies, it can be concluded that customer experience has a positive impact on business model innovation.

H1 : There is the influence of customer experience to the business model innovation.

Besides, the distinctive organizational capability is also significantly important in driving business model innovation, which includes leadership (Schweitzer, 2014), management innovation and organization (Kuznetsov, 2014). An empirical study by Hurley and Hult (1998) shows that an organization’s capability of learning as well as its market orientation also supports innovation. Previous studies indicate that distinct organizational capabilities have a significant influence on business model innovation.

H2: There is the influence of distinctive organization capability to the business model innovation.

Based on the literature review, it is hypothesized that customer experience and distinctive organizational capability influence business model innovation. Therefore the research model can be defined as shown in Fig. 2 below:

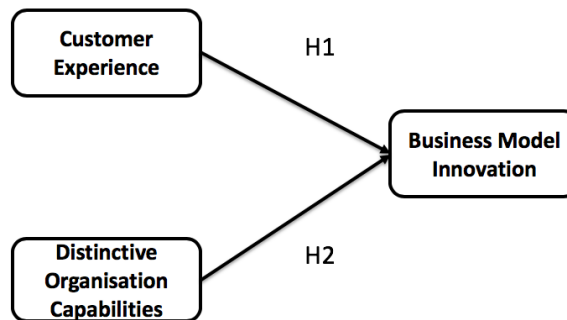


Fig. 2 - A Research Model

## 3. Methodology

This study uses quantitative research design which approaches empirical studies to collect, analyse, and display data in numerical form and to make accurate measurements of something. The unit of analysis in this study is the telecommunications firms in Indonesia with the management of these firms as the observation unit. Partial Least Square (PLS) is the analytical approach and solution technique used in this study. A population is a combination of all elements that have a series of similar characteristics. The target population in this study are telecommunications network firms in Indonesia which include Internet Service Provider (ISP) firms, satellite firms, tower firms, and Telkom subsidiary and affiliates. Based on the documentation, it is known that there is a total of 312 ISP firms, 34 satellite firms, 27 tower firms, and 72 Telkom subsidiaries and affiliates, totalling up to 445 companies. 34 companies

were taken as samples using Simple Random Sampling as the sampling technique. The summary of respondents is depicted in Table 1.

**Table 1 - Distribution Respondents**

Segment	Board/C Level	VP Levels	GM Level	Mgr Level
Network Provider	3	16	3	1
Service Provider	2	1	3	0
Partners	4	0	1	1
<b>TOTAL</b>	<b>9</b>	<b>17</b>	<b>7</b>	<b>2</b>

Data was collected via self-assessment through a website questionnaire. The authors used the seven-point Likert scale which has a range from 1 (Very Bad) to 7 (Very good). The customer experience consists of 18 items adapted from Verhoef et al. (2009). The distinctive operational capability consists of 11 items adapted from Jacobi and Brener (2013), while business model innovation consists of 10 items adapted from Amit and Zott (2001, 2010). The data were distributed through social media applications such as Messenger, WhatsApps, and Telegram or by email. Since the limitation of the data sample, the statistical tool used for the analysis is Smart PLS (Partial Least Square).

## 4. Result and Discussion

### 3. 4.1 Model Analysis Using PLS

#### 4.1.1 Evaluation of Measurement Model (Outer Model)

The analysis of the outer model specifies the relationship between latent variables and their indicators or defines how each indicator relates to its latent variables as depicted in Table 2. Tests performed on outer models include:

- Convergent Validity. The value of convergent validity is the value of the loading factor on the latent variable with its indicators is Average Variance Extracted (AVE). Expected AVE value > 0.5.
- Composite Reliability. Data that has composite reliability > 0.7 has high reliability.

**Table 2 - Convergent Validity and Composite Reliability**

Construct	AVE	Composite Reliability
Customer Experience	0.526	0.952
Distinctive Organization Capability	0.532	0.925
Business Model Innovation	0.698	0.958

Table 2 describes the reliability test results of variables, where AVE value > 0.5, Cronbach Alpha > 0.6, and composite reliability > 0.7. The research variables have good reliability. The value of convergent validity is the value of the loading factor in the latent variable with its indicators as depicted in Table 3. The value of loading factor > 0.5, and t value > t table (2.04) means that each indicator is a valid measurement tool in measuring latent variables for the first order.

**Table 3 - Convergent Validity Dimension-Indicator (1st order)**

Indicator <- Dimension	$\lambda$	Standard Error (SE)	t-value	Conclusion
TP1 <- Trust&Personalization	0.818	0.040	20.321	Valid
TP2 <- Trust&Personalization	0.841	0.046	18.393	Valid
TP3 <- Trust&Personalization	0.814	0.031	26.352	Valid
TP4 <- Trust&Personalization	0.747	0.041	18.061	Valid

Table 3 – (Continue)

Indicator <- Dimension	$\lambda$	Standard Error (SE)	t-value	Conclusion
PP1 <- Price&Promotion	0.785	0.065	11.995	Valid
PP2 <- Price&Promotion	0.813	0.033	24.364	Valid
PP3 <- Price&Promotion	0.820	0.050	16.533	Valid
BP1 <- Brand Performance	0.676	0.056	12.049	Valid
BP2 <- Brand Performance	0.792	0.042	18.654	Valid
BP3 <- Brand Performance	0.827	0.045	18.401	Valid
BP4 <- Brand Performance	0.936	0.014	64.638	Valid
BP5 <- Brand Performance	0.818	0.046	17.719	Valid
BP6 <- Brand Performance	0.653	0.069	9.531	Valid
BP7 <- Brand Performance	0.842	0.036	23.686	Valid
BP8 <- Brand Performance	0.878	0.025	35.738	Valid
CRM1 <- CRM & Analytical	0.886	0.024	37.199	Valid
CRM2 <- CRM & Analytical	0.939	0.015	63.016	Valid
CRM3 <- CRM & Analytical	0.889	0.032	27.562	Valid
DV1 <- Digital Leadership	0.705	0.082	8.644	Valid
DV2 <- Digital Leadership	0.913	0.018	50.084	Valid
DV3 <- Digital Leadership	0.689	0.077	8.974	Valid
DC1 <- Digital Culture	0.883	0.021	42.760	Valid
DC2 <- Digital Culture	0.892	0.020	44.986	Valid
DC3 <- Digital Culture	0.760	0.056	13.480	Valid
DA1 <- Digital Agilty	0.845	0.049	17.264	Valid
DA2 <- Digital Agilty	0.823	0.054	15.141	Valid
DA3 <- Digital Agilty	0.854	0.033	26.099	Valid
Gov1 <- Governance	0.934	0.013	70.551	Valid
Gov2 <- Governance	0.869	0.054	16.202	Valid
CI1 <- Content Innovation	0.928	0.017	56.196	Valid
CI2 <- Content Innovation	0.960	0.009	101.644	Valid
CI3 <- Content Innovation	0.944	0.015	62.975	Valid
SI1 <- Structure Innovation	0.925	0.014	65.745	Valid
SI2 <- Structure Innovation	0.907	0.022	41.459	Valid
SI3 <- Structure Innovation	0.825	0.032	25.585	Valid
SI4 <- Structure Innovation	0.794	0.040	19.795	Valid
Gove1 <- Governance Innovation	0.896	0.016	57.193	Valid

Gove2 <- Governance Innovation	0.878	0.030	29.622	Valid
Gove3 <- Governance Innovation	0.718	0.060	11.987	Valid

The value of convergent validity is the value of the loading factor in the latent variable with its indicators as shown in Table 4. The value of loading factor > 0.5, and t value > t table (2.04) means that each indicator is a valid measurement tool in measuring latent variables for the second order.

**Table 4 - Convergent Validity of Latent Variables, Dimensions (2nd order)**

Latent Variables<- Dimension	$\lambda$	Standard Error (SE)	t-value	Remark
Business Model Innovation -> Content Innovation	0.964	0.007	135.168	Valid
Business Model Innovation -> Governance Innovation	0.907	0.020	45.609	Valid
Business Model Innovation -> Structure Innovation	0.965	0.006	148.461	Valid
Customer Exp -> Brand Performance	0.921	0.015	60.201	Valid
Customer Exp -> CRM & Analytical	0.887	0.015	60.486	Valid
Customer Exp -> Price&Promotion	0.782	0.038	20.581	Valid
Customer Exp -> Trust&Personalization	0.870	0.026	34.065	Valid
Distinctive Organization Capability -> Digital Agilty	0.943	0.012	77.820	Valid
Distinctive Organization Capability -> Digital Culture	0.923	0.021	43.847	Valid
Distinctive Organization Capability -> Digital Leadership	0.876	0.022	39.071	Valid
Distinctive Organization Capability -> Governance	0.689	0.047	14.714	Valid

#### 4.1.2 Evaluation of Structural Model (Inner Model)

The evaluation of the inner model can be conducted through three ways, namely by viewing the value of R<sup>2</sup>, Q2 and GoF, as depicted in Table 5.

**Table 5 - Inner Model Test**

	R Square	GOF
Customer Experience		0.635
Distinctive Organization Capability		
Business Model Innovation	0.689	

According to Tenenhaus (2004), the value of GoF small = 0.1, GoF medium = 0.25 and GoF large = 0.38. From the testing of R<sup>2</sup>, and GoF, the model formed is robust, and hypothesis testing can be conducted. Figure 3 shows the complete path diagram of the research model. Based on the research framework, the structural model obtained is:

$$\eta = 0.552\xi_1 + 0.359\xi_2 + \zeta_1$$



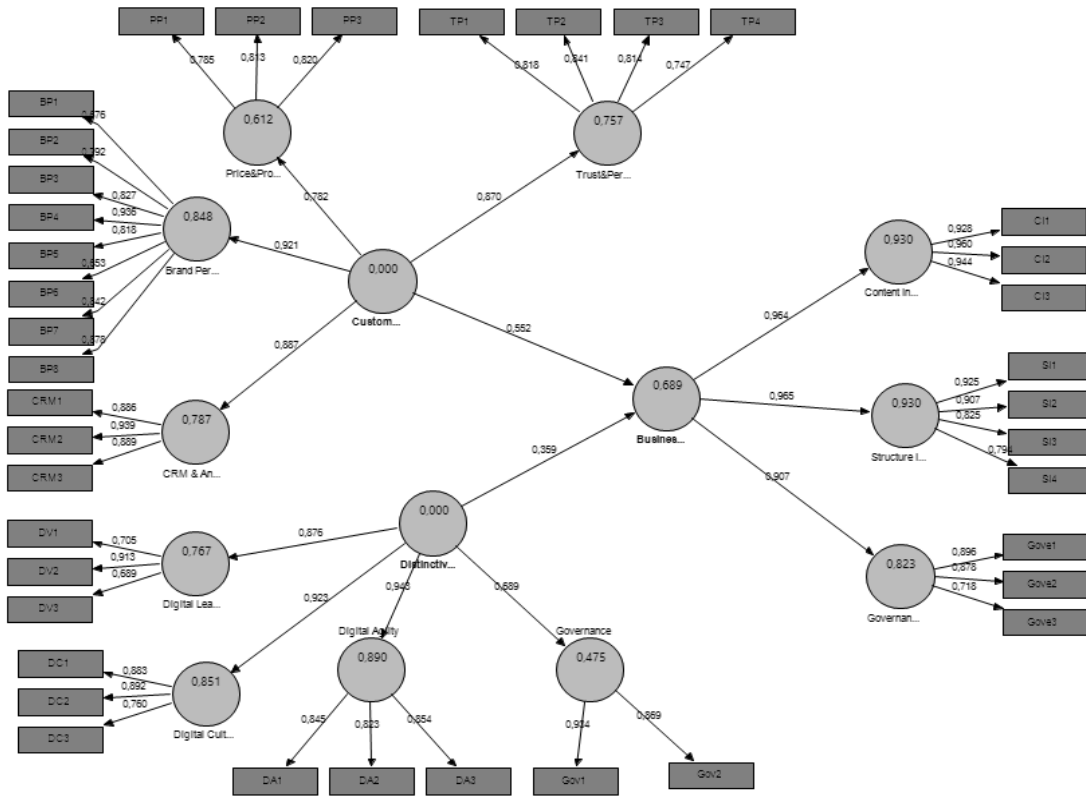


Fig. 3 - Complete Path Diagram of Research Model

## 4.2 Hypothesis Testing

Table 6 shows the result of hypothesis testing for both simultaneously and partially.

Table 6 - Simultaneous Testing of Hypothesis

Hypothesis	R <sup>2</sup>	F	Conclusion
Customer Exp and Distinctive Organization Capability -> Business Model Innovation	0.689	12.812*	Hypothesis accepted

\* significant at  $\alpha=0.05$  (F table =3.31)

Based on Table 6, within the degree of confidence of 95% ( $\alpha=0.05$ ), simultaneously there is the influence of customer experience and distinctive organization capability to business model innovation amounted up to 68.9%, while the rest 31.1% is affected by other factors. Table 7 shows that partially, Customer Experience and Distinctive Organization Capability are significant influentials to Business Model Innovation, where Customer Experience has a greater influence ( $R^2=43.2\%$ ).

Table 7 - Partial Testing of Hypothesis

Hypothesis	$\gamma$	SE( $\gamma$ )	t	R <sup>2</sup>	Conclusion
Customer Exp -> Business Model Innovation	0.552	0.085	6.513*	0.432	Hypothesis accepted
Distinctive Organization Capability -> Business Model Innovation	0.359	0.084	4.265*	0.257	Hypothesis accepted

\* significant at  $\alpha=0.05$  (t table =2.04)

Based on the results of hypothesis testing, the research finding can be described in Fig. 4 as follows:

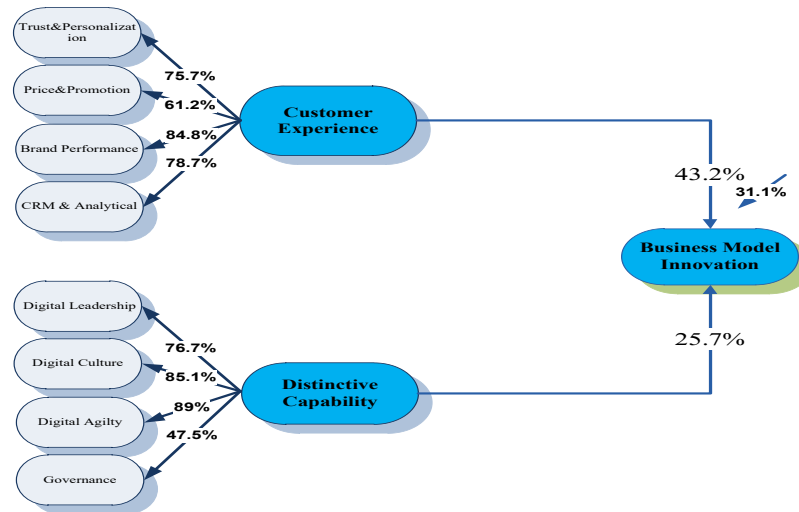


Fig. 4 -Research Finding

The results show that customer experience and distinctive organization capability are influential significantly to business model innovation. However, business model innovation is more dominantly formed by customer experience rather than by distinctive organizational capability. Customer experience itself is most likely shaped by other aspects such as brand performance, CRM analytics, trust and personalization, and price and promotion. Whereas, the distinctive organizational capability is most likely shaped by digital agility, digital culture, digital leadership, and governance.

Customer experience is mostly influenced by how the company is able to create a brand performance that is valuable to its customers. The brand performance here describes the fulfillment of brand promises, brand confidence, reliance, employer brand perception, brand commitment values, brand recommendation (by personnel), organizational culture, brand understanding, and customer loyalty. How a brand performance of a product is perceived by customers would be based on all of those factors listed. Meanwhile, the distinctive organizational capability is more dominantly formed by digital agility. This is achieved if the company is able to conduct direct digitalization, implement agile operations, and develop digital channel integration.

The results of this study support the findings of Racela (2014) and Al-Dmour and Amin (2018) which shows the significant impact of customer orientation on innovation, and the findings from Schweitzer (2014), Kuznetsov (2014), and Hurley and Hult (1998) which shows the significant influence of organizational capability on innovation.

## 5. Discussion and Conclusions

Based on the results and hypothesis testing, it can be concluded that customer experience and distinctive organizational capability has a significant influence on the business model innovation of telecommunication firms in Indonesia. Business model innovation is also more likely to be formed by customer experience rather than by distinctive organizational capability.

This finding has implications for the development of the vocational education curriculum, where it shall base on the ability of graduates to have flexibility through their strong core competence to adapt to the changing of environment and customer needs. This will impact the graduates to have a broad opportunity to enhance their core competence by having experience in creating business model innovation to leverage customer experience. The design of vocational training may consider modularity to open the opportunity to receive the most extensive opportunity training based on the job experience. The combination modularity system with multi-entry and multi-exit systems (MEMES) has been explored by Samani (2018) which was a practical way in the industrial revolution 4.0 to gain flexible and integrated vocational training methods

These findings also would have practical implications on the management within the telecommunications industry in Indonesia. The development of business model innovations then should be based on the development of customer experience supported by the development of distinctive organizational capability. Moreover, while customer experience primarily built through brand performance; digital agility is the essential aspect that needs to be improved in order to build distinctive organizational capability. Further study should explore the topic using extended sampling, industry and taking markets outside of Indonesia into account. Longitudinal research should also be done to ensure that business model innovation continues to have a significant contribution to companies in facing Industry 4.0.

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