The Journal of Social Sciences Research
ISSN(e): 2411-9458, ISSN(p): 2413-6670
Special Issue. 2, pp: 842-850, 2018
URL: https://arpgweb.com/journal/journal/7/special_issue
DOI: https://doi.org/10.32861/jssr.spi2.842.850

Academic Research Publishing Group

Original Research

Open Access

The Role of Distinctive Organization Capability and Corporate Reputation in Formulating Co-Creation Strategy in the Age of Industry 4.0: Study on Indonesian Telecommunication Firms

Leonardus W. Wasono M.*
Bina Nusantara University, Indonesia

Sasmoko
Bina Nusantara University, Indonesia

Firdaus Alamsyah
Bina Nusantara University, Indonesia

Elidjen
Bina Nusantara University, Indonesia

Abstract

This paper aims to provide the effects of corporate reputation and distinctive organizational capability in formulating co-creation strategy for incumbent firm in facing industry resolution 4.0. A co-creation strategy is critical to sustain the business in anticipating new entries that convey the new business model. The study focuses on incumbent telecommunication companies since the telecommunication industry, while the incumbent has strong corporate reputation and organization capability. Those both capabilities is required to become a distinctive capability to provide strong core competence among others. This study is a quantitative study that was conducted with 35 firms were used as a sample in the study as exploring the model. The analytical approach and the solution technique used is the Smart Partial Least Square (SmartPLS). The results of the study demonstrated that corporate reputation and distinctive operational capability influence co-creation strategy, while corporate reputation has a bigger role than distinctive capability in building co-creation strategy. These findings have practical implications for the management of the telecommunications industry in Indonesia, as the development of a co-creation strategy requires to be based on the development of corporate reputation with the support of the development of distinctive operational capability. Further research can be explored by expanding the sample, industry and in other countries. The study can also expand into a longitudinal study as part of the digital transformational model.

Keywords: Co-creation strategy; Distinctive organization capabilities; Corporate reputation; Industry 4.0.

CC BY: Creative Commons Attribution License 4.0

1. Introduction

Industry 4.0 creates a new paradigm for the new landscape of market and competition. The use of digital technology in the Industry 4.0 era brings major impact on the way business is done. The actors are involved greater interconnectedness and collaboration through networks that are borderless, global and less dependent on firm value propositions (Prahalad C. and Ramaswamy, 2004). The need of collaboration in order to create co-value to fulfill the value chains could not be realized by internal capabilities only. To anticipate the complexity, the digitation of products and services can deliver several solutions (Khorakian and Salehi, 2015) such as to drive processes to become more simple, faster decision making, and enable new capabilities. This also includes sharing economy (Monios and Bergqvist, 2015) and virtualization (Monios and Bergqvist, 2015). The digitization process could transform the traditional business to become more innovative, standardized, modular, interoperable, decentralized, real-time, and service-oriented (Ibarra *et al.*, 2018). All the innovations are created based on the needs of customers to anticipate customer and market changes through business model innovations, herein called the disruptive innovation (Christensen, 1997).

Disruptive innovation does have an impact on incumbent firms, leading these firms to fail in maintaining superiority. This was mostly because the firms were not able to provide the right business model and develop distinctive capability to fulfill customer demands and needs (Christensen, 1997); (Markides and Oyon, 2010); (Sheth *et al.*, 2000). Meanwhile, the new entries use the new business model to bring value proposition for customers, as well as collaboration and co-creation values for stakeholders Zott *et al.* (2011). Telecommunication is the sector that has been significantly impacted by disruptive innovation Loucks *et al.* (2016). The disruptive innovation phenomenon within the telecommunication industry has happened on the Internet of Things (IoT). The growth of startup companies that focus on digital collaboration businesses are able to disrupt traditional business. Some examples of these startups in the Indonesian market include Go-jek, Tokopedia, and Traveloka.

International Business Machines (IBM) has conducted an empirical study on innovation through collaboration and co-creation using a survey that sample CEO respondents all over the world. The study found that 69% of

*Corresponding Author

respondents agree that higher achievements in innovation require strong support from CEOs to collaborate and provide co-creation value with partners (IBM Global Business Services, 2012).

The network plays an important role in to accelerating the impact of value creation in the future (Giesen et al., 2007). However, business models with design innovations that are network-centric still have very limited research in strategy development (Coombes and Nicholson, 2013), hence the concept and antecedent of co-creation to create value is interesting to study. The network plays strong capabilities where the incumbent firms compare to new enters. This network value could benefit the incumbent firms due to the strong corporate reputation of capital and customer base (Lourenco et al., 2014). Reputation can be built by better product quality through virtualization (Fuller *et al*., 2006; Fuller et al., 2010), higher customer satisfaction (Nambisan and Baron, 2007), and risk reduction through customer relations to provide trust and loyalty (Maklan *et al.*, 2008). The development of co-creation was first adopted in the marketing context required new capabilities that are different from the competitors and could be done over Internet and radical innovation (Sawhney, Verona, & Prandelli, 2005); Prandelli *et al.* (2006); (Von, 2004). The use of co-creation in the marketing context needs to go beyond customers, but also to stakeholders to create a strategy that attracts more attention. This is suggested to also improve organization competitiveness (Prahalad C. and Ramaswamy, 2004).

At a strategy level, the highly competitive environment created a new paradigm called the 7s McKinsey (D'Aveni and Gunther, 1994). The construct of co-creation strategy in this paper is done by combining the new 7s McKinsey with the concept of value chain (Porter, 1998) and co-creation within marketing. Currently the study of the role of corporate reputation as the main strong of incumbent firm and distinctive organization capability as another new strong capability toward co-creation strategy was not explore intensively, hence, this study has the objective to assess the effects of corporate reputation and distinctive organization capability in the development of co-creation strategy as part of digital transformation through empirical research to validate the model.

This paper will contribute to the study and practice of co-creation in managing the ecosystem and co-creation management. The paper includes an introduction and background of the study, literature review of respective variables, research methodology, results and discussion that includes a conclusion, practical and theoretical implications, and suggestions for further study.

2. Literature Review

2.1. Industry 4.0

Industry 4.0 is also known as the conceptual era (Pink, 2005), the continuing era after the information age. Industry 4.0 is characterized by innovation, business model development and co-creation development through optimizing digital, Internet and information technology. It also has a large impact on the globalization of market drive, open innovation and the changing of ecosystems (Teece, 2012). Within the Indonesian telecommunication industry, the development of digital technology is still at an early stage in industry 4.0. However, some business model innovations have grown significantly, which indicates the opportunity to grow in telecommunications and other industries (IMD, 2017). The development of digital technologies has become a priority for both private and government sectors, with digital solution and digitization developments significant growth Das *et al.* (2016). Therefore, startup companies have become a major target for investors aiming for startups such as Gojek, Tokopedia, Traveloka. This flow of investments has also led to the intense development of smart cities, e-health, e-hospitals.

To anticipate the changes due to industry revolution 4.0, incumbent firms are required to transform their existing business and internal capabilities by strengthening their business model (Ibarra et al., 2018). The transformation is aimed to turn these incumbent firms into digital firms to ensure their sustainability and generate value creation Kiel *et al.* (2017). Incumbent firms are also required to develop business model innovations through a digitized system (Kagermann, 2015), shared economy (Matzner et al., 2018) virtualization (Monios and Bergqvist, 2015) and an integration with existing operation processes of digital capabilities (Berman, 2012)

2.2. Corporate Reputation

Corporate reputation could take a long time to develop. It can be defined as an aggregation of all previous transactions and activities over the life of a firm and a larger picture of the corporate's image within a snapshot of time that is related with its value Walsh *et al.* (2009). In terms of digital disruptive innovation, corporate reputation is strength for incumbent firms compared to the new entries, other than its capital and customer base Loucks *et al.* (2016). Corporate reputation is a competitive advantage to increase profit due to corporate brand performance. It is also a competitive advantage in terms of development sustainability (Gardberg and Fombrun, 2002). The development of corporate sustainability will also have an impact on creating the value of a firm (Lourenco et al., 2014) based on the intangible values such as customer and organization values, which could generate more incomes Walsh *et al.* (2009).

Therefore, the development of corporate reputation should be related with the long-term journey of firms. This especially applies when it is customer related, such as customer loyalty, customer trust towards firms, customer satisfaction related to product quality and brand reputation Walsh *et al.* (2009); Lourenco *et al.* (2014). Hence, this paper discusses corporate reputation based on customer loyalty, trust, the quality of product, and brand reputation.

2.3. Distinctive Organizational Capability

Theory-based resources discuss the leveraging of internal capabilities to develop the sustainable competitive advantage (Barney, 1991). The distinction of internal capabilities shall be valuable, rare, imperfectly imitable, and non-substitutable, as the concept of capability itself formulated by Hubbard *et al.* (2011).

Capability is defined as an organizational process, system or routine used to coordinate resources for productive use. At a strategic level, strategic capability is defined as a capability used to create value for stakeholders, especially customers. Distinctive organizational capabilities can be explained as a process of identifying, investigating, developing, exploiting and exploring certain products with a diverse and unique characteristic that includes knowledge and routines compared to competitors within a competitive market (Darsono, Yahya, & Amalia, 2016). Collaboration is one way to establish knowledge and distinct behavior (Lorenzoni & Lipparini, 1999). Since it has become a habit and a part of the knowledge, distinctive capabilities are embedded within the organization Hitt *et al.* (2015). The organization capability is an aggregate of source competence.

Leadership and people are key factors in the digital transformation. Digital leadership is one of the leadership capabilities that helps optimize the strengthening of digital knowledge, innovation and exploration of business opportunities (Wasono and Furinto, 2018). Rudito and Sinaga (2017) defines the characteristics of digital leadership consisting of technology leadership, digital visioning and digital execution, where the people and culture shape the successor of a leader. In the digital era, the speed in decision-making and agility are driving the distinct capabilities, therefore personalization helps leverage the competitiveness of firms to shorten the digitization process Henfridsson *et al.* (2014). Digitization makes firms a lot more agile towards the changing market within the industry and turbulent ecosystem (Teece, 2012). However, this could be done through a process of governance.

Therefore, in this study, distinctive capability uses the dimension of digital leadership value, digital culture, digital agility, and governance.

2.4. Co-Creation Strategy

Collaboration with customers is the basis of co-creation in order to develop the co-value of firms (Prahalad C. K. and Ramaswamy, 2000); Sheth *et al.* (2000). Co-creation does not place customers as an object, but a subject in involving value chain business activities. Co-creation in innovation with external partners such as customers has also been discussed intensively, known as an open innovation (Chesbrough, 2003), the concept also relies on the concept of value creation. The bigger value is driven from intangible assets, especially in the form of services to customers.

At a strategic level, co-creation is a new source of value (Kambil, Friesen, & Sundaram, 1999). It is used to transform the value proposition by working closely with customers. In this paper, the extended concept of value creation is driven from marketing co-creation based on the new 7s McKinsey framework (D'Aveni and Gunther, 1994) and value chain (Porter, 2001) and place co-creation as part of the business strategy. In the new 7s McKinsey, the strategy that is used to face the hyper-competition that is relevant to industry 4.0, is divided into 3 categories: strategy capability and tactical. At a strategy level, the co-creation strategy is defined as the vision and direction of senior leaders in the development of co-creation vision and direction. Co-creation capability is the development people, processes and technology to support the implementation of vision and strategy. Tactical strategy focuses on collaboration ranging from co-design, co-production, co-delivery, and co-promotion Sheth and Uslay (2007); Roser *et al.* (2009a); Roser *et al.* (2009b)

Based on the analysis above, this study assesses co-creation strategy based on the dimensions of co-creation strategy, co-creation capability and co-creation tactical.

2.5. Hypothesis Development

In his empirical study, (Sánchez and Sotorrío, 2007) have found a strong relationship between corporate reputation and value creation. Another study by Zarkada and Polydorou (2013) has found a strong correlation between the reputation of a firm that uses social media and the improvement of customer experience and co-creation value. This means that in the digital era, the use of digital technology will be able to provide opportunity in value co-creation with customers. Similar results is found in the study done by Dijkmans *et al.* (2015), with results showing the use of social media as positively related to customer engagement and customer engagement is also positively related to corporate reputation. Based on those indications, the hypotheses are established as the following:

Hypothesis 1: Corporate reputation has a positive relationship with co-creation strategy within the Indonesian telecommunications industry.

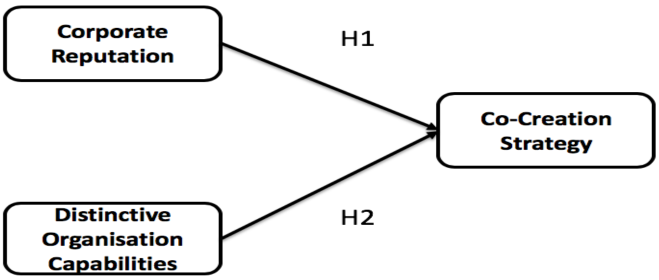
(Khorakian and Salehi, 2015) in his study of distinctive capabilities found that the capabilities are a result of the collaborative strategy in creating value together. The study in supply chain conducted by Wu *et al.* (2011) found that there is a significant effect of internal capabilities on collaboration in creating value. The relationship is needed for internal and external variables to balance, hence the relationship between distinctive internal capability and collaboration (Mundy, 2010). Empirical study by Hurley and Hult (1998) shows that an organization's capability of learning and market orientation supports innovation. Hence, another hypothesis can be defined as following:

Hypothesis 2: Distinctive organization capability has a positive relationship with co-creation strategy in the Indonesian telecommunications industry.

2.5. Research Model

The research model in this study was developed based on the strategy formulation framework as shown in figure 1. Distinctive organization capability has positive relation to co-creation strategy as well as corporate reputation.

Figure-1. A Research Model



3. Methodology

This study is a quantitative research. The units of analysis in this study are telecommunication firms in Indonesia, while the observation unit is the management of these firms. The population is a combination of all elements that has a series of similar characteristics **Error! Reference source not found.**. The target population includes 445 companies made up of 312 Internet Service Provider (ISP) firms (APPJI, 2017) and network provider and partners (34 satellite firms, 27 towers, and 72 Telkom subsidiaries and affiliates). According to Cohen (1992) the recommended sample size is 33 respondents for the model with an endogenous construct has 2 arrows directed, 5% Probability error, 80% statistical power and minimum R2 = 0.25. The purposive sampling method was used to gather a sample size of 35 firms in which 95% of the respondents are represented by senior leaders (GM level and above) from each respective firm.

Table-1. Respondent distribution

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
TOTAL	**9**	**17**	**7**	**2**

Data was collected via self-assessment through an online questionnaire and distributed through Messenger, WhatsApp,, Telegram and email. With the limited sample, SmartPLS (Partial Least Square) is used the statistical tool used for data analysis.

4. Results and Discussion

4.1. Evaluation of Measurement Model (Outer Model)

The analysis on the outer model specifies the relationship between latent variables and their indicators. Tests performed on outer models include:

- Convergent Validity. Based on Average Variance Extracted (AVE). The value of convergent validity is the value of the loading factor on the latent variable with its indicators. Expected value > 0.5.
- Composite Reliability. Data that has a composite reliability > 0.7 has high reliability.
- Discriminant validity. Where the diagonal bold numbers are larger than the horizontally listed numbers, it means that the measurement model has good discriminant validity.

Table-2. Outer Loading, Cronbach Alpha, Composite Reliability & AVE

Dimension		Outer Loading	Cronbach Alpha	Composite Reliability	AVE
Corporate Reputation			**0.915**	**0.929**	**0.568**
Trust	Trust1	0.854	0.787	0.877	0.704
	Trust2	0.893			
	Trust3	0.766			
Product Quality	Product1	0.866	0.713	0.874	0.777
	Product2	0.897			
Brand Reputation	Brand2	0.894	0.776	0.899	0.817
	Brand4	0.913			
Customer Loyalty	Loyalty1	0.845	0.815	0.891	0.731
	Loyalty2	0.916			
	Loyalty3	0.799			
Distinctive Organization Capability			**0.914**	**0.929**	**0.571**
Digital Leadership	DV2	0.890	0.710	0.873	0.775
	DV3	0.871			

Digital Culture	DC1	0.875	0.797	0.882	0.714
	DC2	0.868			
	DC3	0.767			
Digital Agility	DA1	0.850	0.831	0.899	0.747
	DA2	0.879			
	DA3	0.884			
Governance	Gov1	0.842	0.821	0.916	0.846
	Gov2	0.896			
Co-Creation Strategy			**0.909**	**0.928**	**0.649**
Co-Creation Vision	CV1	0.975	0.951	0.976	0.953
	CV2	0.977			
Co-Creation Capability	CC1	0.906	0.758	0.892	0.805
	CC2	0.888			
Co-Creation Tactical	CT1	0.904	0.878	0.925	0.805
	CT2	0.947			
	CT3	0.837			

Table 2 above indicates that the AVE value > 0.5, with Cronbach Alpha value > 0.6 and composite reliability > 0.7. This shows that the research variables have good reliability for all variables and dimensions.

Table-3. Discriminant Validity

No	Dimension	1	2	3	4	5	6	7	8	9	10	11
1	Brand Reputation	0.904										
2	Co-Creation Vision	0.509	0.976									
3	Co-creation Capability	0.195	0.627	0.897								
4	Co-creation Tactical	0.387	0.650	0.666	0.897							
5	Customer Loyalty	0.518	0.749	0.617	0.590	0.855						
6	Digital Agility	0.428	0.796	0.483	0.380	0.656	0.864					
7	Digital Culture	0.562	0.733	0.432	0.419	0.622	0.878	0.845				
8	Digital Leadership	0.308	0.789	0.542	0.540	0.673	0.774	0.683	0.881			
9	Governance	0.309	0.388	0.359	0.308	0.472	0.506	0.558	0.362	0.920		
10	Product Quality	0.718	0.597	0.342	0.410	0.749	0.533	0.568	0.471	0.375	0.881	
11	Trust	0.528	0.710	0.692	0.606	0.840	0.589	0.598	0.572	0.418	0.667	0.839

Discriminant validity can be calculated based on Table 3, where the diagonal bold numbers indicate the square root of AVE. Table 3 shows that only digital culture has that are listed horizontally is slightly higher than the diagonal values, but the rest of the dimensions have good discriminant validity.

The value of convergent validity is the value of the loading factor of the outer path analysis. t value > t table (2.04) and p value < 0.05 means that each indicator is a valid measurement tool in measuring latent variables.

Table-4. Outer Path Analysis

	Path	Standard Deviation	T Statistics	P Values	Remarks
Brand2 <- Brand Reputation	0.894	0.104	8.559	0.000	Valid
Brand4 <- Brand Reputation	0.913	0.039	23.613	0.000	Valid
CC1 <- Co-creation Capability	0.906	0.044	20.396	0.000	Valid
CC2 <- Co-creation Capability	0.888	0.106	8.344	0.000	Valid
CT1 <- Co-creation Tactical	0.904	0.059	15.451	0.000	Valid
CT2 <- Co-creation Tactical	0.947	0.018	51.932	0.000	Valid
CT3 <- Co-creation Tactical	0.837	0.056	14.981	0.000	Valid
CV1 <- Co-Creation Vision	0.975	0.063	15.400	0.000	Valid
CV2 <- Co-Creation Vision	0.977	0.062	15.661	0.000	Valid
DA1 <- Digital Agility	0.850	0.094	9.054	0.000	Valid
DA2 <- Digital Agility	0.879	0.040	22.025	0.000	Valid
DA3 <- Digital Agility	0.864	0.050	17.114	0.000	Valid
DC1 <- Digital Culture	0.875	0.046	18.860	0.000	Valid
DC2 <- Digital Culture	0.888	0.039	23.030	0.000	Valid
DC3 <- Digital Culture	0.767	0.090	8.563	0.000	Valid
DV2 <- Digital Leadership	0.890	0.050	17.874	0.000	Valid
DV3 <- Digital Leadership	0.871	0.075	11.654	0.000	Valid
Gov1 <- Governance	0.942	0.023	40.891	0.000	Valid
Gov2 <- Governance	0.896	0.088	10.205	0.000	Valid
Loyalti1 <- Customer Loyalty	0.845	0.073	11.623	0.000	Valid
Loyalti2 <- Customer Loyalty	0.916	0.025	36.760	0.000	Valid
Loyalti3 <- Customer Loyalty	0.799	0.064	12.418	0.000	Valid

Product1 <- Product Quality	0.866	0.069	12.570	0.000	Valid
Product2 <- Product Quality	0.897	0.025	35.475	0.000	Valid
Trust1 <- Trust	0.854	0.096	8.908	0.000	Valid
Trust2 <- Trust	0.893	0.075	11.925	0.000	Valid
trust3 <- Trust	0.766	0.063	12.068	0.000	Valid

Table 4 indicates that all constructs have path coefficient scores with t-statistics of more than 1.96 and p-value = 0.000 <0.05, which means that all constructs have significant associations with their dimensions.

4.2. Structural Model (Inner Model)

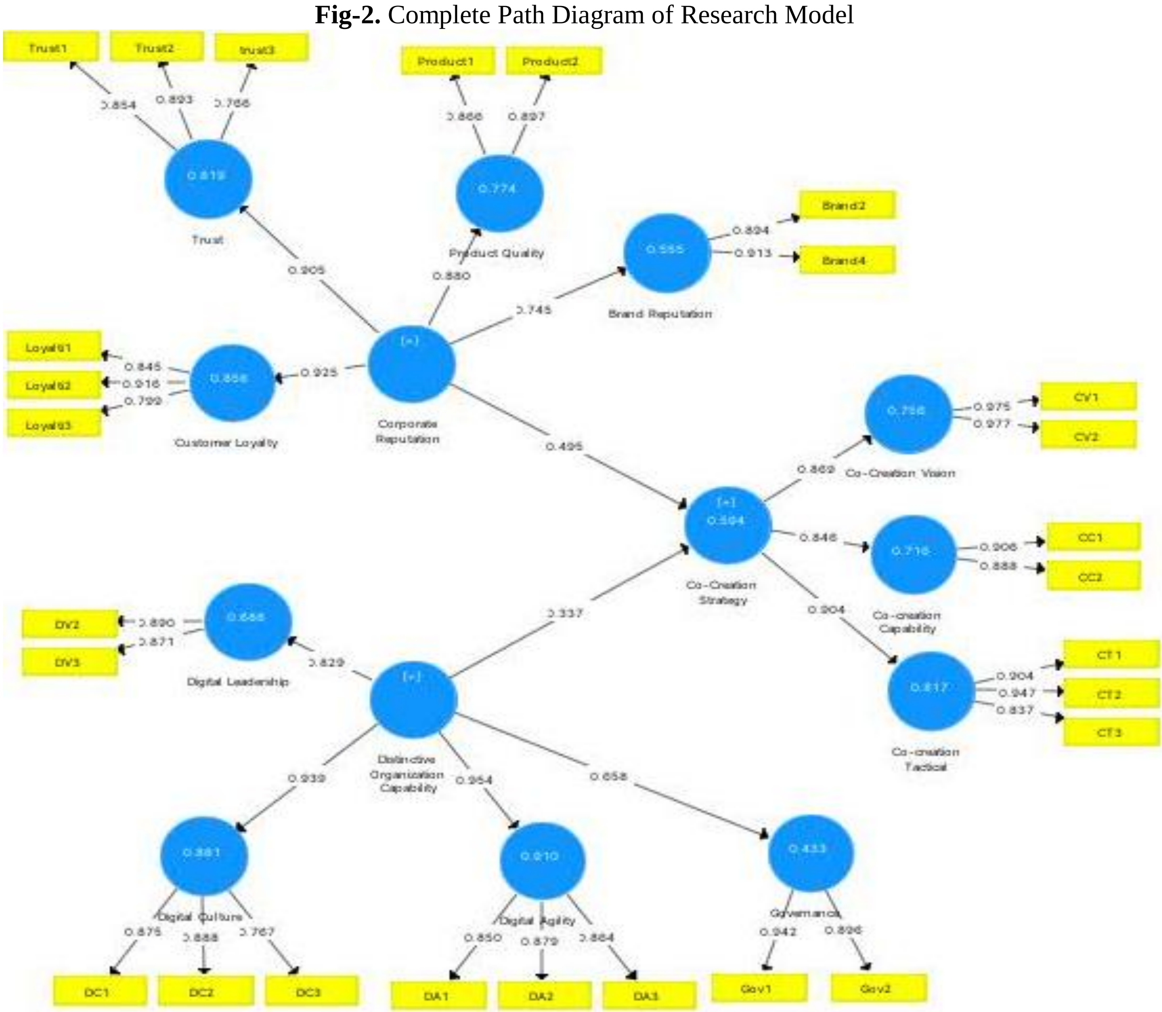
In calculating the score of blindfolding, Q2 was obtained for co-creation strategy = 0.297. If Q2 is greater than zero, it indicates that the structural model has adequate predictive relevance. The evaluation of the inner model can be done through three ways, namely by viewing the value of $R^2$and GoF, shown in table 5 below.

Table-5. R^2 and GoF

	R Square	GOF
Corporate Reputation		0.548
Distinctive Oorganization Capability		
Co-creation Strategy	0.594	

According to Tenenhaus *et al.* (2004), the value of GoF small = 0.1, GoF medium = 0.25 and GoF large = 0.38. From the testing of R^2, and GoF, it is seen that the model formed is robust. So that hypothesis testing can be done.

Fig-2. Complete Path Diagram of Research Model



Based on the research framework, a structural model can be formulated as the following:

$\boldsymbol{\eta = 0.495\xi_1 + 0.337\xi_2 + \zeta_1}$

4.3. Hypothesis Testing

Below is the result of hypothesis testing:

Table-6. Testing of Hypothesis

	Path	Standard Deviation	T Statistics	P Values	Remarks
Corporate Reputation -> Co-Creation Strategy	0.495	0.223	2.224	0.026	Significant
Distinctive Organization Capability -> Co-Creation Strateg	0.337	0.227	1.486	0.138	Not Significant

* significant at α=0.05 (t-statistics > 1.96)

Table 6 indicates that within the degree of confidence of 95% (α=0.05), there is an influence of customer experience and distinctive operational capability on business model innovation, amounted to 82.3%. Meanwhile, the 17.8% is affected by other factors that were not examined.

Partially, the relationship between corporate reputation and co-creation strategy has a path coefficient score of 0.495 with t-statistics = 2.224 and p-value = 0.026. This means that H0 is rejected and H1 is accepted. It proves that corporate reputation has a positive and significant impact on co-creation strategy. Path coefficient of distinctive organizational capability has a path score of 0.337 with t-statistics = 1.486 and p-value = 0.138. It means that H0 is accepted while H2 is rejected. There is no significant impact of corporate reputation on co-creation strategy.

5. Discussion

The results are aligned with the study conducted by Zarkada and Polydorou (2013) that demonstrates that co-creation has a strong relationship with corporate reputation in generating customer experience and value creation. This brings an implication on incumbent firms to use their strong capabilities in corporate reputation to establish co-creation and collaboration by optimizing digital technology. Since corporate reputation has significant impact on co-creation, it will also have impact on the acceleration of value creation (Sánchez and Sotorrío, 2007). This finding has an implication on the development of co-creation strategy and for firms to use strong point of corporate reputation as a basis of attracting customers and stakeholders from outside to put in the domain of value chain. With strong reputation, firms can control and attract valuable customers and stakeholders to create value in a series of activities. Meanwhile, from a customer or stakeholder's point of view, there is benefit in part of the system for value creation. They can both influences to generate value together with firms, which will bring benefit for both parties. Corporate reputation is more dominantly formed by customer loyalty, trust and product quality, however less by brand reputation. This means that in the digital era, product quality will have a more significant influence in creating value with customers and stakeholders. This finding supports the study by Dijkmans *et al.* (2015) and (Zarkada and Polydorou, 2013).

Other results show that corporate reputation and distinctive organizational capability have a positive relationship with co-creation strategy. It means that firms are required to develop distinctive organizational capability to be valuable, rare, imperfectly imitable and non-substitutable (Barney, 1991). The result also strengthens the phenomenon of industry 4.0 to leverage and sustain incumbent firms for a longer term through providing business model innovations by combining distinctive organizational capabilities and strong relationship with customers (Christensen, 1997); (Markides and Oyon, 2010). Firms are also required to build distinctive organizational capability to compete with competitors and new entries. Agility rather than digital culture and digital leadership more dominantly shape distinctive organizational capabilities. Whereas, in innovation, governance is an important aspect but is less prioritized compare to others. These results support the findings of the study on distinctive organizational capabilities by Wu *et al.* (2011), Mundy (2010) and (Hurley and Hult, 1998).

The findings support incumbent firms to optimize strong corporate reputation Loucks *et al.* (2016) and develop distinctive capabilities to create co-creation values with customers and stakeholders. Co-creation is used to develop business models and compete with new entries to mitigate the risk of being disrupted by emerging entries.

6. Conclusion, Limitation and Further Study

6.1. Conclusion

Based on the results and testing of hypotheses, it can be concluded that distinctive operational capability and corporate reputation influences the development of co-creation strategy in Indonesian telecommunication firms. Co-creation strategy is more dominantly significant influenced by corporate reputation rather than distinctive organization capability. These findings have practical implications on the management, as the development of co-creation strategy needs to be based on strong corporate reputation. Corporate reputation is primarily developed by customer loyalty, trust and product quality, while brand reputation is a slightly less priority in facing industry 4.0 and digital transformation.

6.2. Limitation and Further Study

This study has limitation in term of time of study and sample since this study is aims to explore the model, hence further study can be explored through extended sampling, industry and also other markets outside of Indonesia. A longitudinal model could also be used to ensure that business model innovations continue to have significant contribution to telecommunication firms.

References

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1): 99-120.

Berman, S. (2012). Digital transformation opportunities to create new business models. *Strategy & Leadership,* 40(2): 16-24.

Chesbrough, H. (2003). *Open innovation The new imperative for creating and profiting from technology.* Harvard Business School Press: Boston, Mass.

Christensen, C. (1997). Innovator dilemma When new technologies cause great firms to fail. *Harvard Business Review Press*.

Cohen, J. (1992). Quantitative methods in psychology power primer. *Accounting, Organizations and Society,* 112: 155–59.

Coombes, P. and Nicholson, J. (2013). Business models and their relationship with marketing A systematic literature review. *Industrial Marketing Management,* 42(5): 656-64.

D'Aveni, R. and Gunther, R. (1994). Hypercompetition. Managing the dynamics of strategic maneuvering. *Das Summa Summarum des Management*: 83-93.

Darsono, N., Yahya, A., & Amalia, R. (2016). Analysis of Distinctive Capabilities and Competitive Advantage on Business Performance of Tourism Industry in Aceh. Journal of Economics, Business and Management, 4(3), 231–234.

Das, K., Gryseels, M., Sudhir, P. and Tan, K. (2016). Unlocking Indonesia's Digital Opportunity. Available: https://www.mckinsey.com/~/media/McKinsey/Locations/Asia/Indonesia/Our%20Insights/Unlocking%20Indonesias%20digital%20opportunity/Unlocking_Indonesias_digital_opportunity.ashx

Dijkmans, C., Kerkhof, P. and Beukeboom, C. (2015). A stage to engage social media use and corporate reputation. *Tourism Management,* 47: 58-67.

Füller, J., Bartl, M., Ernst, H., & Mühlbacher, H. (2006). Community based innovation: How to integrate members of virtual communities into new product development. *Electronic Commerce Research*, *6*(1), 57–73.

Fuller, J. (2010). Refining Virtual Co-creation from a Consumer Perspective. California Management Review, 52(2), 98–122.

Gardberg, N. A. and Fombrun, C. J. (2002). The global reputation quotient project First steps towards a cross-nationally valid measure of corporate reputation. *Corporate Reputation Review,* 4(4): 303–07.

Giesen, E., Berman, S., Bell, R. and Blitz, A. (2007). Three ways to successfully innovate your business model. *Strategy and Leadership,* 35(6): 27-33.

Henfridsson, O., Matthiessen, L. and Svahn, F. (2014). Managing technological change in the digital age the role of architectural frames. *Journal of Information Technology,* 29(1): 27-43.

Hitt, M., Ireland, R. and Hoskisson, R. (2015). *strategic management competitiveness & globalization concepts and cases.* 11th edn: Cengage Learning: Stamford, Conn.:

Hubbard, G., Rice, J. and Galvin, P. (2011). *Strategic management, thinking, analysis, action.* 4th ed edn: Pearson: Australia.

Hurley, R. and Hult, G. (1998). Innovation, market orientation, and organizational learning An integration and empirical examination. *Journal of Marketing,* 62(3): 42.

Ibarra, D., Ganzarain, J. and Igartua, J. (2018). Business model innovation through Industry 4.0 A review. *Procedia Manufacturing,* 22: .4-10.

IMD (2017). Imd world digital competitiveness ranking 2017. *IMD World Competitiveness Center*: 180.

Kagermann, H. (2015). Change through digitization-value creation in the age of industry 4.0. In Management of Permanent Change (pp. 23–32).

Kambil, A., Friesen, G. B., & Sundaram, A. (1999). Co-creation: A new source of value. Outlook, (2), 38–43. Retrieved from http://kambil.com/accenture/cocreation2.pdf

Khorakian, A. and Salehi, M. (2015). *ISPIM - Connecting Innovation Professionals*: Available: http://www.ispim.org/members/proceedings/ISPIM2015/commonfiles/files/641925595_Paper.pdf

Kiel, D., Muller, J., Arnold, C. and Voight, K. (2017). *Sustainable Industrial Value Creation: Benefit and Challenges of Industry 4.0. In: The XXVIII ISPIM Innovation Conference - Composing the Innovation Symphony.* International Society for Professional Innovation Management (ISPIM): Vienna, Austria.

Loucks, J., Macaulay, J., Noronha, A. and Wade, M. (2016). *Digital vortex: How today's market leader can beat disruptive competitors at their own game.* IMD: Switzerland Lausanne.

Lourenco, I. C., Callen, J. L., Branco, M. C. and Curto, J. D. (2014). The value relevance of reputation for sustainability leadership. *Journal of Business Ethics,* 119(1): 17–28.

Lorenzoni, G., & Lipparini, A. (1999). The leveraging of intrafirm relationships as a distinctive organizational capability: A longitudinal study. Strategic Management Journal, 20, 317–338.

Matzner, M., Büttgen, M., Demirkan, H., Spohrer, J., Alter, S., Fritzsche, A., … Neely, A. (2018). Digital transformation in service management. Journal of Service Management Research, 2(May), 2–21.

Maklan, S., Knox, S. and Ryals, L. (2008). New trends in innovation and customer relationship management. *International Journal of Market Research,* 50(2): 221-40.

Markides, C. and Oyon, D. (2010). What to do against disruptive business models When and how to play two games at once. *MIT Sloan Management Review,* 51(4): 25-32.

Monios, J. and Bergqvist, R. (2015). Using a "virtual joint venture" to facilitate the adoption of intermodal transport. *Supply Chain Management An International Journal,* 20(5): 534-48.

Mundy, J. (2010). Creating dynamic tensions through a balanced use of management control systems. *Accounting, Organizations and Society,* 35(5): 499-523.

Nambisan, S. and Baron, R. A. (2007). Interactions in virtual customer environments: implications for product support and customer relationship management. *Journal of Interactive Marketing,* 21(2)).42-62.

Pink, D. (2005). *A whole new mind.* New York.

Porter, M. a. C. s. (1998). *The Michael E. Porter trilogy.* Free Press: New York.

Porter, M. (2001). Porter, Strategy and the Internet. Harvard Business Review, 3(1), 1–18.

Prahalad, C. and Ramaswamy, V. (2004). *the future of competition: co-creating unique value with customers.* Harvard Business School Press: Boston, Massachusetts.

Prahalad, C. K. and Ramaswamy, V. (2000). *Co-opting customer competence.* Harvard Business Review. 78: 79-87.

Prandelli, E., Verona, G. and Raccagni, D. (2006). Diffusion of web-based product innovation. *California Management Review,* 48(4): 109-35.

Roser, T., Samson, A., Humphreys, P. and Cruz-Valdivieso, E. (2009a). *co-creation new pathways to value: an overview.* Promise & LSE Enterprise: London.

Roser, T., Samson, A., Humphreys, P. and Cruz-Valdivieso, E. (2009b). *New Pathways to Value: Co-creating Products by Collaborating with Customers.* LSE Enterprise: London.

Rudito, P. and Sinaga, M. (2017). *Digital Mastery Membangun kepemimpinan digital untuk memenangkan era disrupsi.* Gramedia Pustaka Utama: Jakarta.

Sawhney, O., Verona, G., & Prandelli, E. (2005). Collaborating to Create: The Internet as Platform for Customer Engagement in Product innovation. Journal of Interactive Marketing, 19(4), 1–14.

Sánchez, J. and Sotorrío, L. (2007). The creation of value through corporate reputation. *Journal of Business Ethics,* 76(3): 335-46.

Sheth, J. N. and Uslay, C. (2007). Implications of the revised definition of marketing: from exchange to value creation. *Journal of Public Policy Marketing,* 26(2): 302-7.

Sheth, J. N., Sisodia, R. and Sharma, A. (2000). The antecedents and consequences of customer-centric marketing. *Journal of the Academy of Marketing Science,* 28(1): 55-66.

Teece, D. (2012). Next-generation competition: New concepts for understanding how innovation shapes competition and policy in the digital economy. *Journal of Law, Economics, & Policy,* 9(1): 97-118.

Tenenhaus, M., Amato, S. and Esposito, V. V. (2004). A global goodness–of–fit index for pls structural equation modelling. *Proceedings of the XLII SIS Scientitific Meeting*: 739-42.

Von, S. B. (2004). Collaboration with other firms and customers: innovation's secret weapon. *Strategy & Leadership,* 32(3): 16-20.

Walsh, G., Mitchell, V. W., Jackson, P. R. and Beatty, S. E. (2009). Examining the antecedents and consequences of corporate reputation A customer perspective. *British Journal of Management,* 20(2): 187–203.

Wasono, L. and Furinto, A. (2018). The effect of digital leadership and innovation management for incumbent telecommunication company in the digital disruptive era. *International Journal of Engineering & Technology,* 7((2.29)): 125.

Wu, H., Lin, Y., Chien, F. and Hung, Y. (2011). A study on the relationship among supplier capability, partnership and competitive advantage in taiwan's semiconductor industry. *International Journal of Electronic Business Management,* 9(2): 122–38.

Zarkada, A. and Polydorou, C. (2013). You might be Reputable but are you Liked ? Orchestrating Corporate Reputation Co-Creation on Facebook. *Social Media in Strategic Management*: 87-113.

Zott, C., Amit, R. and Massa, L. (2011). The business model recent developments and future research. *Journal of Management,* 37(4): 1019-42.