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Digital Talent Capability Model for Transforming Technology-Based Holding Companies

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Abstract. *Digital transformation is inevitable for organizations to remain competitive in the current business landscape. In reality, organizations rely heavily on their human capabilities to achieve digital transformation goals. However, most studies have neglected this dynamic component and have focused instead on organizational readiness. This study strives to fill such a research gap by uncovering digital talent capabilities that could accelerate digital transformation. We propose a conceptual model based on a literature review and enriched by qualitative research in a representative Telecommunication Company. The conceptual model highlights attitudes to change as a critical factor in transforming individual capability towards digital transformation. The model also explains how culture and digital literacy can positively relate to digital talents' attitudes towards change and performance. Besides giving theoretical contributions to support the literature, the study's outcomes can be utilized by organizations intending to transform their human capitals' digital capabilities. Although there is still a possibility of real behavior arising from individual problem-solving habits, the paper ends with some recommendations, stressing the need for future empirical work.*

Keywords: *Attitudes to Change, Culture, Digital Literacy, Digital Talent Capability, Performance*

1. Introduction

The rapid development of the internet has brought us to the digital economic era, which has significantly changed the way companies conduct their businesses. Nevertheless, digital transformation is essential to beat industry competitors and crucial for company survival (Loonam, Eaves, Kumar, & Parry, 2018). A prominent example is telecommunication companies that face a unique challenge in this era, where their primary source of income, telecommunications services, is becoming less relevant and abandoned. In the '90s, fixed-voice income began to decline, replaced by mobile-voice. Then mobile voice usage also dropped in the 2000s and was replaced by smartphone applications such as Skype and WhatsApp calls. Surprisingly, local telecommunication companies have not produced these digital mobile call applications and rely instead on products from foreign, digital Over-the-Top (OTT) companies.

This condition significantly increases the urgency of digital transformation implementation in telecommunication companies. Fortunately, telecommunications companies should have an easier time exploring this opportunity because they have similar technological capabilities with digital OTT companies such as Google, Amazon, Netflix, Spotify, Uber, etc. As an example, AT&T, a US telecommunication company, has succeeded in extending its service beyond the traditional telecommunication service (AT&T, 2020).

Another example is Telkom Indonesia (Telkom), which is the largest telecommunication holding company in Indonesia. The company is currently being run by a multi-generation workforce with unique values and skills. The company business is regulated by various rules and regulations and tends to be dominated by the government bureaucracy mindset because of its status as a State-Owned Enterprise (SOE).

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However, the telecommunication market changed when Indonesia liberalized its cellular telecommunications business in 1995, demanding Telkom to change its technology, business portfolio, organizational structure & business processes. One of the group discussions quotes conducted in this research that supports this finding is as below:

"In the condition of disruption, technology is only a toolset, but the essence is in changes in humans..."

"The most difficult process for companies to do is how to change employees' behavior, mindset, and culture."

Telkom has gone through three major transformation phases: the transformation of analog, TIMES, and digital Telco, but the outcome has not increased significantly. Based on desk research and observations, Telkom's revenue in 2015 was USD 7.433 million, while in 2019, it was USD 9.765 million, with an average growth of 5.6%. In 2015, 40% of the revenue contribution came from digital business revenue, while in 2019, its contribution increased to 70% with an average growth of 22.8% (Telkom, 2019). This revenue growth is not adequate. To complete the picture, for the last five years, digital companies were growing and dominating at the top-five market capitalization, replacing non-technology-based companies. In comparison, according to Value Today (2019), Telkom ranks 512th. This phenomenon shows that technological developments do affect market changes. It also has become a reason for the Telecommunication industry, specially Telkom, to accelerate digital transformation.

To respond to these conditions and sustain the company, Telkom has formulated a company strategy to build its digital capabilities. In 2019, Telkom had 11,059 employees in the parent company and 13,213 employees in its subsidiaries, and it requires the annual addition of 1,000 digital talents for the next five years. Telkom must seek and build this digital talent ecosystem from internal and external company capabilities, which incidentally are not many. The goals are to attract, retain, and develop talent to embrace cultural change and adapt to new ways of working. While the demands for change are getting higher, companies are simultaneously challenged with the organizational readiness of individuals who have been in an established organizational environment for a long time, especially in an SOE with a bureaucratic climate. Most studies have only addressed organizational readiness towards digital transformation, but few have focused on human cognitive capability. The filling of this gap is crucial because many organizations are in an environment full of change and uncertainty.

This research intends to understand which digital talent capabilities can accelerate digital transformation and give a general overview of organizational capability readiness. The study will then focus on the people aspects to clarify what factors can accelerate human capital capability building to impact digital transformation. The authors expect to provide a theoretical contribution by developing a digital talent capability model as a part of an organization's complex system relevant to the digital transformation situation. For managerial contributions, the authors expect to provide a framework to diagnose, accelerate, attract, retain, transform, and develop organizations' digital talents. Hopefully, this study will also significantly contribute to strengthen attitudes towards digital transformation and impact organizational outcomes.

2. Literature Study / Hypotheses Development

In the digital era, organizations and employees are encouraged to have remarkable capabilities. However, as cited in Schreyögg and Kliesch-Eberl (2007), Collis (1994) remarked that the conception of capabilities has often been left vague. This might be due to the absence of definitive consensus regarding its meaning, specifically on organizational capabilities. Some studies have claimed it as a form of 'core competence',

while others claimed it as 'collective skills', 'best practices', or 'complex routines'. Nevertheless, many agree that the origin of organizational capabilities itself is derived from across the organization. It involves complex processes across the organization that becomes a critical and strategic success factor for the organization.

Organizational capabilities can be induced by social interaction as a standard problem-solving method (Cyert & March, 1963, as cited in Schreyögg & Kliesch-Eberl, 2007), with the latter defined as "a sequence of generating complex combinations of cognitive and habitual acts" (Dosi, Hobday, & Marengo, 2003, as cited in Schreyögg & Kliesch-Eberl, 2007). In organizations, capabilities are synonymous with performances that are recognized and appreciated (Gherardi & Nicolini, 2002; Weinert, 2001, as cited in Schreyögg & Kliesch-Eberl, 2007). Capability is also explained as a system element as part of an enterprise complex system (McNaughton, 2018), as seen in Figure 1, which could be established in a different field and on varied organizational activity levels, such as departmental, divisional, or corporate levels Cyert & March, 1963, as cited in Schreyögg & Kliesch-Eberl, 2007).

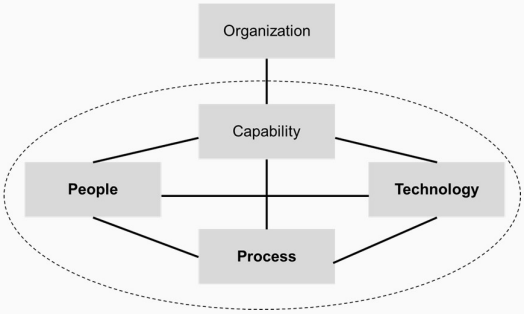

Figure 1.
Capability as a System

McNaughton (2018) uses ISO 9000:2015 to define capability as an object's ability to realize an output that will fulfill that output's requirements. It is accomplished through the interaction of the system elements, namely technology, process, and human. People are assigned to carry out processes and activities or make decisions using information systems and technology to deliver results.

2. 1. Technological Capability

Technological capability is "the ability to perform any relevant technical function or volume activity within the firm, including the ability to develop new products and processes and to operate facilities effectively" (Ortega, 2010). Technology, with appropriate functions and user interface, can improve productivity by automating relevant activities. Technological capabilities that commonly deal with digital disruption are big data and artificial intelligence, connectivity, digital products, etc.

2.2. Process or System Capability

Process capability in an organization is defined as a business process that improves its quality of work systems. Organizations will experience difficulties if they are too focused on improving their product and services alone without enhancing the organization's quality of work systems. This argument is supported by Dery, Sebastian, & van der Meulen (2017), who stated that companies must balance the quality of customer experience and employee experience to implement digital transformation successfully. Some capability examples are strategic innovation, process digitization, etc.

2.3. People or Talent Capability

The last capability element that is most critical is people or talent. Talent capability refers to capabilities originated from the individual's innate ability and the external party (Benevene & Cortini, 2010), which is the organization itself. Some capability examples are related to

human capital behavior, attitudes, digital literacy, commitment, etc. People carry out purposeful actions to deliver results.

In the context of digital transformation, Perkin and Abraham (2017) defined it as "the transformation and reinvention of a company's resources, priorities, and processes to be fit for purpose in a digitally empowered world." He also considers behavior as the key elements of change and agility, not technology. Kane (2019) also argues that most of the organization that starts by prioritizing technology in their digital transformation tends to disappoint their performance. Meanwhile, other organizations that prioritize mindset shifting, employee behavior, and organization system in their digital transformation positively impact their performance. Various business academia like Rudito and Sinaga (2017), Capgemini (2017), Dery et al. (2017), and Hemerling, Kilmann, Danoesastro, Stutts, and Ahern (2018) have a similar argument that people's behavior and culture are the critical success factors of digital transformation.

Depending on employees' skills, attitudes, behaviors, and adaptability can significantly influence a successful transition to an organizational state. This is characterized by good responses to new processes and expectations and the changes in structures, incentives, and responsibilities. Furthermore, the readiness, commitment, openness, and cynicism about an organizational change are the constructs illustrating employees' attitudinal responses specific to organizational change (Choi, 2011). In another study, the authors found an instrument that directly measures organizational change attitudes created by Dunham, Grube, Gardner, Cummings, and Pierce (1989). They stated that individual behavior change is based on a change-oriented organization's general conditions, which are demonstrated in various levels of intensity depending on the respective issues and contexts. Additionally, this general condition also influences the degree of individual willingness to support or reject changes. Thus, it is essential to deeply understand this general condition in facilitating change efforts within an organization, as it influences the extent of support.

3. Methodology

As stated above, there is a gap between Telkom's digital transformation phases and the outcome that has not increased significantly. While many researchers have addressed digital transformation, most have addressed organizational readiness towards digital transformation, and only a few have focused on individual cognitive capability. To meet the research objective, this study built a conceptual model by conducting qualitative research in PT Telekomunikasi Indonesia (Telkom) as the case study. The purposive sampling method was used by selecting participants based on the authors' verdict that enabled them to answer the research question(s) and meet research objectives (Saunders, Lewis, & Thornhill, 2009).

The first data collection was conducted through an exploratory group discussion to understand Telkom's shareholders' aspirations and Telkom's partners' perspectives on business transformation. The discussion was participated by one deputy minister as Telkom's shareholder, 30 President Directors, 30 Human Capital Directors, 30 President Commissioners, and 30 Corporate Secretaries of SOEs (including Telkom) (N=121 participants). In this discussion, the authors' role was as the organizer and observer. The group discussion consisted of two sessions. The first session was an information session involving all participants. It aimed to obtain shareholders' aspirations and have a broader understanding of the urgency of business transformation. In the second session, participants were divided into five small groups with an equal number of members. Three groups discussed SOE's human capital current condition based on semi-structured questions, while the other two discussed the future condition of SOE's human capital.

The second round of data collection was held in the form of another exploratory group discussion. Telkom policymakers participated in this round, consisting of seven Vice Presidents from the Digital Business, Human Capital, Consumer, Enterprise departments, and one Subsidiary Director. In their discussion, the first author's role was as an organizer and facilitator. The group discussion was conducted in three different sessions divided based on the participant's role in the digital transformation context. Participants were asked semi-structured questions based on the current situation and the opportunity to improve Telkom's digital transformation, digital culture, talents, and skills. All group discussions were recorded and transcribed. Important keywords were coded using excel data processing and triangulated using secondary data analysis from journal articles, corporate documents, and online media.

4. Findings and Discussion

Assessment of an organization's general conditions is needed to ensure that the organization has the same orientation as the individual (Dunham et al., 1989). This study attempts to map Telkom's digital transformation efforts using the McNaughton model (2017). In building technological capabilities, Telkom starts its business by providing 2,700 km of telephone access that connects all provinces in Indonesia. To respond to this trend, Telkom formed a subsidiary company that focuses on providing mobile telecommunication services. Next, Telkom carried out several digital initiatives. Cable network modernization was carried out by replacing copper networks with fiber-optic networks, with more than 9.1 million fiber-optic access by the end of 2018. Several investments and initiatives have also been made to accelerate mobile services such as Digital Advertising, Internet of Things (IoT), Big Data & API (Application Programming Interface), Mobile Financial Services, and Digital Advertising.

In building process capability, especially for the organization and system aspect, Telkom aims to transform into an agile organization by conducting a cross-functional structure approach. This approach is to bring new qualities into the transforming organization by minimizing the needs for vertical communication and focusing on specific projects performed by a team, a character lacking in the classical organization.

Telkom employs the top-down approach as the new way of working internalization. Telkom Group's CEO becomes the manifestation of corporate culture and entrusts role models to all unit leaders. Meanwhile, to facilitate the internalization process, the unit leaders appoint culture agents responsible for promoting and encouraging all employees to engage in their respective units' cultural initiatives. These efforts are bounded in Telkom's corporate culture called The Telkom Way (Telkom, 2019). Telkom Group has commissioned almost 1,700 employees to perform their duty as Culture Agents, who, until today, are participating in the Boarding program of Culture Agent. Through this Boarding program, the members are reinforced with proper skills and knowledge to meet the representative image as Culture Agents.

As also studied by Amping et al. (2019), "Tribes, Squads, and Chapters" agile management is implemented by Telkom on its way to become a future enterprise. A tribe is defined as a group of squads within the same business area, depicted as incubators for mini startups. A squad is an autonomous, self-organizing team consisting of experts from various chapters, which acts like a mini startup. Meanwhile, a chapter comprises people with the same competence working within a special area, such as people undertaking one common task: designing or testing. They enhance their way of work across the squad. Telkom also implements Objective Key Result (OKR) to maintain the team's critical performance.

To build people's capability, Telkom has implemented various ways to improve their digital talent experiences, such as flexible work arrangement, open office design, and smart building technology. In terms of boosting digital competence, Telkom addresses the enhancement of digital cultures by granting exercises, such as digital business and human-computer interaction, and including user interface and user experience. Telkom has also prepared digital appliances for employees' routine activities, such as an integrated company information system. Several applications that could be found in the system are e-budgeting, e-offices, collaboration, file sharing, training, and career management.

Work programs that enable employees' creativity and innovation are also implemented, particularly to ensure the survival of a telecommunication company in the digital age, where creative digital startups continue to emerge. Three work programs have been created to respond to this condition: Amoeba, Indigo Centre, and Hack Idea. These programs allow the creation of small teams within the company or with an affiliate partner to grow business ideas to be incubated, improved, developed, and then tested for its business viability. They are also targeted to develop innovation using an agile approach that combines multiple experts in a cross-functional team. All experts work together and collectively to solve the same problem, thus filling the gap of organization performance in each business unit during the digital transformation.

Based on the focus group discussions, to ensure the success of digital transformation in Telkom, transforming talents' mentality is also crucial. Telkom's talents can bring new ways of thinking and can behave in a manner that supports the digital transformation while considering agility and sustainability in the process. The open codes for this discussion are (1) Enjoying synergy, (2) Working in open spaces, (3) Feeling connected, (4) Constantly learning, and (5) Digital culture. These findings are categorized as 'culture'.

Based on observations, Telkom already has a strong corporate culture, namely "The Telkom Way". The core values of Telkom Way are Solid-Speed-Smart. It is a contextual principle and a guiding value for mutual goodness and reinforces each value's existence. This culture must exist in every subculture built within Telkom. The three core values are as follows:

1. Solid, as a value to perform in accomplishing common objectives built upon the spirit of unity, common principles, and mutual trust. The behaviors representing this value are synergy, a shared vision, and trust.
2. Speed, as a character affecting work management by engaging proactively, swiftly, accurately, and with quality. The behaviors representing this value are a high initiative, agile in serving customers, and in doing business.
3. Smart, as the mental approach influencing the completion of work in achieving positive outcomes through intellectual attitude. The behaviors representing this value are understanding goals, setting priorities, and finding new creative and innovative ways.

Based on the group discussions, there is a gap where employees reflect between old behaviors emanated from Telkom Way that has taken root in the company and new behaviors needed to transform into digital companies. These behaviors are reflected by the employees that are spread across various organizational units within Telkom. As quoted in the exploratory group discussion:

"*Telkom uses the Open Digital Maturity Model (ODMM) that was built by the Open Roads Community (2019) to evaluate the digital maturity level. Six dimensions in the model become our guide in implementing the digital transformation, and one that has become our critical concern is digital culture.*"

Based on the group discussions, it was found that Telkom uses the Open Digital Maturity Model (ODMM) approach that was built by the Open Roads Community (2019), which came from global community practices.

However, the authors have not yet seen how the model is explained scientifically. Thus, this research tries to support ODMM, specifically in the digital culture dimension, using supporting literature, as described below:

1. Digital leadership. The organization encourages and demonstrates the characteristics and behaviors of digital leadership, including servant leadership and evidence-based management, supported by Open Roads Community (2019) and Rudito and Sinaga (2017);
2. Adaptive mindset and collective habits. The organization uses digital connectivity and resources to create work environments that encourage innovation and create a common collective culture, supported by the Open Roads Community (2019) and Colbert, Yee, & George (2016);
3. Team agility & empowerment. The organization provisions and incentivizes teams are comprised of individuals with different skill sets, functions, and from different geographical origin. Aspects, including socializing common goals and shared responsibilities, and providing teams with the digital tools and required resources to manage and track deliverables in real-time, are supported by the Open Roads Community (2019) and Burchardt and Maisch (2019);
4. Digital workplace experience. The design of the work, the workplace environment, and policies engender a great employee experience, supported by the Open Roads Community (2019) and Colbert et al. (2016);
5. Social media interconnectivity. Employees productively engage through internal social media tools. These are supported by the Open Roads Community (2019) and Fischer and Reuber (2011).

The five constructors described above complement behaviors in the organizational culture construct. They are a combination of Telkom Way, as a legacy culture, and digital culture, as the external factors that makes up digital talent's innate ability and collectively shape the perception of behaviors and values among its members. As Westerman, Soule, & Eswaran (2019) had stated, the existing culture that becomes a legacy is still required and will support the emergence of other cultures.

Additionally, in this research, we identify digital behavior as a specific culture responding to digital transformation (Perkin & Abraham, 2017; Ulusoy, 2019). These behaviors bind group members to organizational culture, resulting in the same work pattern in undergoing digital transformation (Westerman et al., 2019).

Proposition 1. Organizational culture is positively related to digital talents' attitudes to change.

Besides diverse backgrounds, ages, and demographics, Telkom employees are also spread across various units. However, there seems to be a gap in employees' ability to adopt or use digital technology. The open codes for this discussion are (1) Digital literacy; (2) Familiar with technology; (3) The use of digital technology; (4) Enjoying automation; and (5) Digitalization. These findings are categorized as digital literacy. Therefore, the authors include the digital literacy variable in the framework.

Using digital technology can vary depending on the level of complexity, the needs, and implementation of each department. Digital literacy exceeds the simple understanding of basic program or application usage. By reaching a certain competency level, the digitally-fluent group will fulfill important objectives by using technology to work with information and formulate ideas (Hsi, 2007). Telkom's digital transformation cannot be separated from changes in the use of systems and technology from analog to digital in employees' business processes. This digitalization process demands high digital literacy from everyone. Digital systems and technologies vary in the appearance of user interface and user experience, functionality, and application, depending on the users and their needs. Thus, they are developed to drive the human intention to use the application.

The similarity of all these technologies is

being mobile and connected to the internet. Therefore, the authors brought up the Digital Literacy construct on the initial conceptual framework, which will look at employee digital literacy on the use of internet technology from various aspects. Van Deursen, Helsper, & Eynon (2016) explained that the level of availability could be seen on the usage of internet technology, namely particular proficiencies:

1. Operational proficiencies, which is related to managing different types of technologies;
2. Information navigation proficiencies, which refers to the formal and informational skill items developed when seeking information;
3. Social proficiencies, defined as "communicative digital skills for many of the activities that take place on digital platforms";
4. Creative proficiencies, defined as the skills to create acceptable contents to be published on the internet
5. Mobile proficiencies, which refers to unique skills related to mobile technologies.

On the other hand, an employee's behavior fills the gap between old and new cultures and fills the hole in using technology. As quoted in the exploratory group discussion:

"The description of the upcoming SOE human capital is collaborative, high digital literacy, and familiar with technology.."

"Diverse backgrounds, ages, and demographics of Telkom employees spread across various units; there is a gap in the ability of employees to adopt and use digital technology..."

Based on literature studies (Colbert et al., 2016) and group discussions, in the context of digital transformation, the application of technology and employees' capabilities to interact using digital technology also dominate the daily behavior of employees.

Proposition 2. Digital literacy is positively related to digital talents' attitudes to change.

On the other hand, in this digital era, talents must think in several streams: technology, products, marketing and sales, and profitability. Simultaneously, other factors such as the objective, users and customers, DevOps, and revenue must be considered. The open codes for this discussion are (1) Performance; (2) Evaluation; (3) Seeking goals, (4) Solving the problem; and (5) Increasing capacity. These findings are categorized as performance.

Based on the focus group discussion, Telkom is currently transforming, but the results are not yet significant. Several indicators may represent organizational outcomes, for instance, their digital maturity score, revenue, employee engagement, or net promoter score. Since Telkom's organizational structure varies based on the character and line of business, the efforts made are measured by various performance indicators and are specific to the individual level. Not only because the accumulative individual performance of organizational members will shape organizational performance, but it will also reflect the outcome of each transformed digital talent. Therefore, the authors use individual and organization performances in developing the model in this study. As quoted in a confirmatory group discussion:

"The next generation of workers must be able to act as corporate guardians, play a role in maintaining company performance, maintaining the vision, mission, and strategic goals of the company."

"Telkom encourages employees to display exemplary organizational behaviors, both in all internal and external interfaces. Our leadership is also committed to being role models with distinct sections on behavioral traits forming parts of KPIs and performance evaluation."

Collective organizational change is not only about culture and the use of technology to obtain better organizational outcomes, but it also must be carried out by each member of the organization. This includes how leaders communicate and how everyone accepts reasons and makes the change. The open

codes for this discussion are (1) Changing organization; (2) Having communication; (3) Change employee behavior; (4) Doing the change; (5) Facilitating change. These findings are categorized as reactions to change. As quoted in the exploratory group discussion:

"Culture is not just about changing organizations, but it is a way of communicating leaders with followers, and even to everyday aspects.."
"The most difficult process for companies to do is how to change employee behavior, mindset, and culture."

In this study, based on the literature, a positive correlation will describe a positive attitude in responding to the changes and extra effort to raise performance (Salminen, Vanhala, & Heilmann, 2017). Likewise, positive performance will drive a more positive attitude toward changes (Venkatesh, Morris, Davis, & Davis, 2003).

Proposition 3. Performance is positively related to digital talents' attitudes to change.
Proposition 4. Digital talents' attitudes to change is positively related to performance.

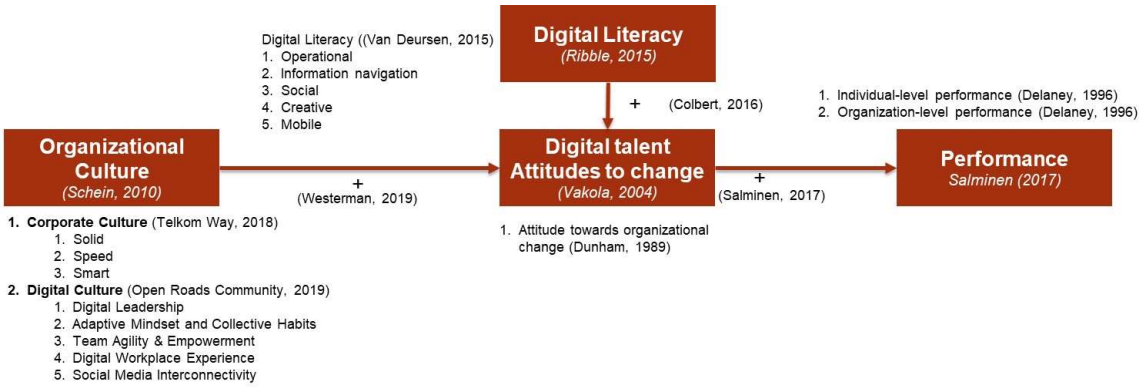

Figure 2.
Digital Talent Capability Model

By categorizing group discussion results and literature study, several key factors were found to build the digital talent capability model, with interconnected independent and dependent variables. The initial conceptual framework, as can be seen in Figure 2, provides an illustration. The key variables are organizational culture, digital literacy, attitudes to change, and performance.

First, *organizational culture* is defined as the basic assumptions learned by a member of a group (organization) when resolving external adaptation problems, whose solution is successful in being considered valid and then taught to new members as the right way of thinking and perceiving (Schein, 2010). It consists of 'Telkom Way' as Telkom's corporate culture and the digital culture as a culture that implements digital transformation, which sets one group apart from others (Ulusoy, 2020), as practiced by Telkom's digital talents. Secondly, *digital literacy* is described as competence in digital technology usage while recognizing the proper manner (Ribble, 2015). Thirdly, attitudes to change are interpreted as an individual's understanding of the change that affects their response and the inclining manner toward change (Vakola, Tsaousis, & Nikolaou, 2004). These attitudes represent attitudinal reactions to Telkom's digital transformation and becomes a part that builds the digital talent capability itself. Lastly, *performance* is defined as an individual employee's subjective perceptions of performance at the individual and organization levels (Salminen et al., 2017).

5. Conclusions

This study shows how organizations prepare their digital transformation by increasing organizational capability. A digital talent capability model was also developed in this study as a subsystem of organizational capability, constructed from organizational culture, digital literacy, attitudes to change, and performance. This model can diagnose digital talent's readiness to be role-assigned, carry out digital transformation iniitiatives, and make decisions using information systems and technology to deliver results to the organization.

By using the model, organizations and practitioners can predict and facilitate change efforts, for example, to attract, retain, and develop their digital talent capability to transform the organization to achieve better performance. This will benefit the current talents as Telkom's employees and future talents to prepare themselves to fulfill this fundamental requirement before joining Telkom's digital ecosystem. This model gives theoretical contributions through the interaction of elements constructing the model as a part of a complex organizational system relevant to digital transformation. This model also shows the central role of attitudes to change as an individual transformation that follows the organizational changes. This element fills the gap of how an individual contributes more substantially to the organizational transformation process because it shows cognitive reaction to changes. It becomes the center and completes the model by giving assurance to the individual involved to achieve better performance. This study's limitation is the digital cultural framework practiced in Telkom derived from a defined framework built by the Open Roads Community (2019). The authors suggests further research on the possibility of a particular behavior resulting from the common collective perception in problem solving. The authors also see opportunities for further study by testing the model on a larger scale.

References

Amping, A., Amirah, M. M. A., Sholehah, D. P. T., Handoyo, A. D. Y., Shihab, M. R., Ranti, B., & Hidayanto, A. N. (2019, September). Telecommunication Business Transformation Towards to Competitive Advantage: Case Study of PT. Telekomunikasi Indonesia. In *2nd International Conference of Computer and Informatics Engineering, IC2IE 2019* (pp. 210-215). Institute of Electrical and Electronics Engineers Inc.

AT&T (2020, April). *AT&T Business*. Retrieved from at https://www.business.att.com/

Burchardt, C., & Maisch, B. (2019). Digitalization needs a cultural change–examples of applying Agility and Open Innovation to drive the digital transformation. *Procedia CIRP*, *84*, 112-117.

Benevene, P., & Cortini, M. (2010). Interaction between structural capital and human capital in Italian NPOs: Leadership, organizational culture and human resource management. *Journal of intellectual Capital*, *11*(2), 123-139.

Capgemini. (2017). The Digital Culture Journey: All On Board!. *Digital Transformation Review, 10*.

Choi, M. (2011). Employees' attitudes toward organizational change: A literature review. *Human Resource Management*, *50*(4), 479-500.

Colbert, A., Yee, N., & George, G. (2016). The digital workforce and the workplace of the future. *Academy of Management Journal, 59*(3), 731-739.

Collis, D. J. (1994). Research note: how valuable are organizational capabilities?. *Strategic management journal*, *15*(S1), 143-152.

Cyert, R. M., & March, J. G. (1963). A behavioral theory of the firm. *Englewood Cliffs, NJ*, *2*(4), 169-187.

Dery, K., Sebastian, I. M., & van der Meulen, N. (2017). The Digital Workplace is Key to Digital Innovation. *MIS Quarterly Executive*, *16*(2), 135–152.

Dosi, G., Hobday, M., & Marengo, L. (2003). Problem-solving behavior, organizational forms, and the complexity of tasks. In CE Helfat (Ed), *The SMS Blackwell Handbook of Organizational Capabilities* (167–192). Malden, MA: Blackwell.

Dunham, R. B., Grube, J. A., Gardner, D. G., Cummings, L. L., & Pierce, J. L. (1989, August). The development of an attitude toward change instrument. In *Academy of Management annual meeting, Washington, DC*.

Fischer, E., & Reuber, A. R. (2011). Social interaction via new social media:(How) can interactions on Twitter affect effectual thinking and behavior?. *Journal of business venturing*, *26*(1), 1-18.

Gherardi, S., & Nicolini, D. (2002). Learning in a constellation of interconnected practices: canon or dissonance?. *Journal of Management Studies*, *39*(4), 419-436.

Hemerling, J., Kilmann, J., Danoesastro, M., Stutts, L., & Ahern, C. (2018). It's not a digital transformation without a digital culture. *Boston Consulting Group*.

Hsi, S. (2007). Conceptualizing learning from the everyday activities of digital kids. *International Journal of Science Education*, *29*(12), 1509-1529.

Kane, G. (2019). The technology fallacy: people are the real key to digital transformation. *Research-Technology Management*, *62*(6), 44-49.

Loonam, J., Eaves, S., Kumar, V., & Parry, G. (2018). Towards digital transformation: Lessons learned from traditional organizations. *Strategic Change*, *27*(2), 101-109.

McNaughton, B. (2018). Enterprise Conceptual Model for The Enterprise as a System of Systems. *Customer Driven Solutions Limited*. Bruce McNaughton Copyright 2000-2019.

Ortega, M. J. R. (2010). Competitive strategies and firm performance: Technological capabilities' moderating roles. *Journal of Business Research*, *63*(12), 1273-1281.

Open Roads Community (2019), Digital Maturity Model. Retrieved from https://openroadscommunity.com

Perkin, N., & Abraham, P. (2017). *Building the agile business through digital transformation*. Kogan Page Publishers.

Ribble, M. (2015). *Digital citizenship in schools: Nine elements all students should know*. International Society for Technology in Education.

Rudito, P., & Sinaga, M. F. (2017). *Digital Mastery, Membangun Kepemimpinan Digital Untuk Memenangkan Era Disrupsi* [Digital Mastery, Building Digital Leadership to Win the Era of Disruption]. Gramedia Pustaka Utama.

Salminen, H., Vanhala, M., & Heilmann, P. (2017). Work-related attitudes as antecedents of perceived individual-, unit-and organisation-level performance. *International Journal of Organizational Analysis*.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.

Schein, E. H. (2010). *Organizational culture and leadership* (Vol. 2). John Wiley & Sons.

Schreyögg, G., & Kliesch-Eberl, M. (2007). How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization. *Strategic management journal*, *28*(9), 913-933.

Telkom (2019). Retrieved from www.telkom.co.id

Ulusoy, B. (2020). Understanding Digital Congruence in Industry 4.0. In *Business Management and Communication Perspectives in Industry 4.0* (pp. 17-31). IGI Global.

Vakola, M., Tsaousis, I., & Nikolaou, I. (2004). The role of emotional intelligence and personality variables on attitudes toward organisational change. *Journal of managerial psychology, 19*(2), 88–110.

Value Today (2019). Retrieved from *www.value.today*

Van Deursen, A. J., Helsper, E. J., & Eynon, R. (2016). Development and validation of the Internet Skills Scale (ISS). *Information, Communication & Society*, *19*(6), 804-823.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a

unified view. *MIS quarterly*, 425-478.

Weinert, F. E. (2001). Concept of competence: A conceptual clarification. In Rychen DS, Salganik LH (Eds), *Defining and Selecting Key Competencies* (pp. 45–65). Seattle, WA: Hogrefe & Huber.

Westerman, G., Soule, D. L., & Eswaran, A. (2019). Building digital-ready culture in traditional organizations. *MIT Sloan Management Review*, *60*(4), 59-68.