



Digital Military Leadership in Digital Transformation

Armanu, Ainur Rofiq, Ananda Sabil Hussein, and Putu Dian Ekawati^(✉)

Doctoral Program in Management, Brawijaya University, Jakarta, Indonesia
dianekawatipm@gmail.com

Abstract. The Industrial Revolution 4.0 and Society 5.0 are digital transformation phenomena that collaborate with cyber technology and automation technology and have been adapted and adopted well. Organizations need to evolve adapting a changing environment. Organizations need technology that focused on results, innovation and continuous improvement. Organizational leaders have an important role to encourage their organizations so that these changes can increase productivity significantly. Digital technology creates challenges where leaders say that the most difficult issues revolve around data security and privacy threats, as well as the shortage of human resources who have the talent of technology skills. Nowadays, the use of technology and information carried out by the military organization is not optimal due to differences in the level of digital maturity of the organization and the existing information system is lack of integration of system. Within the military organization, the role of the leader is a key to make a change. The aim of this study is to examine the role of military digital leadership in digital transformation. The researcher uses a qualitative research method with a library research approach. Where research on digital transformation has been carried out several times, but it is still very limited when it comes to military organizations. Therefore, the researcher argues that qualitative research is the most effective way to be used in seeking responses and views from informants, so that they can be investigated in depth. The results of the study see that there are differences in the characteristics and organizational culture of military organizations when compared to organizations in general, where the culture of military organizations is a strong culture and tends to be static in the long term. However, in terms of strategy, the military organization has different characteristics from non-military organizations, namely the principle of unity of command. So the role of military digital leadership is very influential on the digital transformation that occurs in military organizations. And also, with the existence of digital-based data management, it allows all decisions to be made more quickly, easily and efficiently.

Keywords: Digital Military Leadership · Digital Transformation · Military Organization

1 Introduction

The Industrial Revolution 4.0 is a phenomenon that collaborates cyber technology and automation technology. The concept of its application is centered on the concept of automation carried out by technology without the need for human labor in the application process. McKinsey explains that digitalization is related to technological and organizational processes that allow companies become agile [1]. Skog widespread digitalization will transform the business and technology environment, presenting opportunities and challenges for every organization to change [2]. Organizations should be evolve to adapt in a changing environment. Organizations need technology focused on results, innovation and continuous improvement.

Hoglund et al. [3] state that strategic planning is considered an important process in large organizations, both public and private. This has become more prominent in public organizations due to recent public management reforms, but the literature reveals that little research has explored how public organizations implement strategic management in practice and what tools to use.

Digital transformation is a major challenge in change management. A leader is expected to be able to bring his organization to adapt to the existing changes so as to increase productivity and a significant competitive advantage. Rogers argues that digital transformation is not basically about technology, but about strategy [4]. Organizational leaders have an important role to encourage their organizations so the changes significantly increase productivity. Digital transformation is not only how to apply the technology in organization, but also how organizations are able to change and develop at each level of their organization to achieve the results.

The development of science and technology does not only affect the national life system, but also in national defense. The Industrial Revolution 4.0 also led to a revolutionary in military affairs (RMA) which had implications for changes in war strategy, combat tactics and leadership in the military world. The Indonesian Armed Forces as the main component in the national defense system, has different characteristics from non-military organizations in general, namely the principle of unity of command and hierarchies.

The rapid development of technology has changed the military leadership style to digital military leadership. A digital military leader is required to have digital maturity, the ability to innovate and defend his ideas. Sharpness in applying digital military leadership benchmarks demonstrates a fast, cross-hierarchical, cooperative, and team-oriented approach that often integrates innovation.

The demands for Digital Transformation have not been realized optimally, where in military organizations there is still a paradigm shift in leadership patterns from traditional leadership to digital leadership patterns without leaving the art of military leadership. Researchers see differences in organizational characteristics and culture in military organizations when compared to organizations in general, where the culture of military organizations is a strong culture and tends to be static for a long time. The combination of digital leadership patterns that are being developed and the art of military leadership that has special characteristics according to researchers is a research opportunity. However, research on digital leadership in military organizations is still limited, therefore researchers are interested in researching military digital leadership.

In accordance with the formulation of the research problem, the purpose of this research is to produce and formulate the ideal digital leadership concept for military organizations. The results of this study are expected to be a positive contribution to the development of science in the field of strategic management studies, especially in leadership, information, and technology management, as well as digital transformation in military organizations. Likewise, it can be a useful reference for the development of management science in the future. In addition to providing theoretical benefits, this research will also provide practical contributions. This research is expected to provide practical benefits to the leadership of military organizations, which is related to the importance of establishing digital leadership in military organizations.

2 Research Methods

Researcher used phenomenological qualitative research methods and literature review as a complement to the research data. According to Patton [5], qualitative methods allow researchers to examine selected issues, cases or events in depth and detail, facts in the form of data sets that are not limited by predetermined categories. Where research on digital leadership has been carried out several times, but it is still limited when it comes to military organizations. Therefore, researcher argues that qualitative research is the most effective to be used in finding conformity, so that it can be investigated in more depth. In this case the researcher is one of the military personnel so that he has direct experience during the research process to describe and analyze the phenomena that occur within the organization.

Researcher conducted interviews with 12 people (officer level), who are leaders in a military organization, both the highest leadership of the unit, as well as leaders at the middle level. The informants already have sufficient competence, in the sense that when viewed in terms of age, the informants have an age range from 35 to 58 years, the informants have served in military organizations with a minimum service period of 15 years, the informants already have service experience in the region (outside Jakarta as central unit).

3 Literature Review

3.1 Leadership

Kauffeld [6] describes leadership as functioning individually and intentionally influencing, motivating and/or enabling others to contribute to the achievement of the collective goals of the organization. Leadership as the formation of a goal-oriented company (company management) or the influence of goal-oriented people [7].

House et al. [8] defines leadership as a person's ability to influence, motivate, and make others to contribute to the effectiveness and success of the organization in which they are members of the organization.

Kurt Lewin divided leadership styles as Autocratic Leadership, Democratic Leadership and Delegative Leadership [9]. Autocratic Leadership defines as one who rules by himself. Democratic Leadership shows attention and understand with empathetic,

it motivate their subordinates to achieve their hope. Delegative Leadership shows a delegation in making decision from top to his subordinates.

In the classical literature on leadership, leadership styles are divided into two, namely transactional and transformational leadership. Transactional leadership defines leadership as an exchange relationship, in which the leader rewards performance based on contracts in the form of money, promotions, praise, rewards, etc. In transactional leadership there is the term reward for performance results and punishment for failure. Burns defines transactional leadership by measuring when a person takes the initiative to make contact with others for the purpose of exchanging things of value, economic, political or psychological [10]. While transformational leadership improves performance through the transformation of values, attitudes, etc. Transformational leaders control the behavior of their subordinates through vision. They have charisma and exude great confidence, and with that they create trust and confidence to achieve organizational goals. His subordinates are characterized by high loyalty and dedication. However, the benchmark for the success of a charismatic leader is whether the noble goal can actually be achieved [11].

3.2 Digital Leadership

A research study from the World Economic Forum (2018) found that there are two substantial barriers to organizational leadership, namely a lack of interest in technology adoption (29%) and a skills gap (59%). Kotter mentions that leaders must embrace and not be defensive to change.

The literature on digital transformation and leadership has increased rapidly over the last 5 (five) years, especially in the context of strategic management and information systems. Henriette et al. conducts research that focuses on strategic leadership in digital transformation [12–14]. The leadership challenge does not only concern top management, but all levels of management. In previous studies, the middle management level was not given much attention, which was further investigated by Maartje Henderik and Jol Stoffers [15]. Middle managers play an important role in leading and supporting organizational change where they are responsible for translating the organization's strategy into day-to-day operations and are also responsible for managing and leading the day-to-day operations of the organization [16].

Digital leadership must be built with high intrinsic value as technology changes. Digital leadership is also known as e-leadership or virtual leadership [17]. Digital leadership is about creating a thriving digital environment that leads to high levels of effectiveness, productivity and morale [17].

Furthermore, the definition of digital leadership according to Sandel is the ability to provide a creative environment to utilize digital technology and capabilities. De Araujo et al. define similarly where digital leadership as a new leadership approach, is defined as the use of an organization's digital assets to achieve business goals at the organizational and individual levels. The results of Klus' research show that important traits for managers who manage digital workplaces include empathy, open-mindedness, patience, creativity, flexibility and adaptability. In addition, to keep up with continuous changes due to the rapid development of digital and technology, learning, collaboration, and knowledge sharing are needed as part of organizational culture. From this definition,

it can be interpreted that digital leadership is a combination of digital competence and digital culture.

Westerman G et al. highlights the role of a leader in carrying out digital transformation, where digital leaders are individuals who mobilize organizations through the creation of the right digital awareness and who have the power of influence over people.

Meanwhile, according to Doyé et al. digital leadership means assigning responsibility to employees, not only freedom but also in creating. Digital leaders rely on employees and no longer on a top-down structure. Employees are involved when making important decisions. The performance of individual team members is more transparent and introduces a more results-oriented remuneration. For Generations Y and Z, work-life balance has a completely different meaning than previous generations.

Kollmann said that digital leaders are characterized by a mindset that leads to digital transformation (digital mindset), digital technology skills (digital skills) and consistently applies the results obtained. Thus, digital leadership focuses on new technologies by anticipating technical developments and communicating them internally and externally through a meaningful vision.

Zeike et al. states that digital leadership consists of 2 (two) dimensions, consist of:

- Competence in the use of technology.
- Awareness of the digital transformation process and the capabilities required to implement digital strategies within the organization.

According to the results of a study by Oxford Economics and SAP of 4,000 executives and employees in 21 countries, reported in Dailysocial.id, organizations that adopt digital leadership show better business results, as evidenced by:

- Better financial performance, 76% of executives who exercise digital leadership have greater revenue and profit growth.
- Employees are satisfied and engaged, more than 87% of employees in organizations implementing digital leadership are happier with their jobs.
- Loyalty and strong leadership. Digital leadership has employees who are 21% more likely to stay in their jobs even though they have a chance to quit.
- Better decision making. About 80% of digital leaders make data-driven decisions, and 2/3 of them make decisions in real-time. They tend to be more transparent and distributed in the decision-making process.
- Prioritizing diversity and inclusion. Companies with digital leadership tend to have a diverse workforce with a higher proportion of female employees than other companies. They also recognize the positive impact of an inclusive culture on company performance.

3.3 Military Digital Leadership

Moltke argues, if there is a significant change in military organizations that has been predicted by the higher command will shake the confidence of leaders and subordinates and cause feelings of insecurity in the troops. Moltke said that more orders that are given, especially if they are clearly secondary, the higher the probability that they will not be carried out at all or will be carried out inadequately. Instead, military leaders will focus and concentrate on the important thing [18].

This way of leading known as Mission Tactics as distinct from Command Tactics. Mission tactics mean that subordinates understand the meaning of an order and therefore they are not only able to act on their own authority if the situation changes but are also encouraged to do. The leader relinquishes control but also continues to lead. As a command tactics, subordinates must carry out orders literally.

The definition of mission tactics is one of the definitions of digital leadership. Where, digital leadership is the right way of leadership, because it can be used to react flexibly to new challenges, even and especially unexpected ones.

The transformation of organizations to digital forms today is the fourth industrial revolution. In addition, organizational leaders must also adjust to what is described as the world of VUCA. The American military uses this acronym to train and educate officers for the 21st century, and many industries and writers have increasingly used the term in recent years. The name VUCA has become a trendy managerial acronym according to Bennet and Lemoine [19].

Mack and Khare said that this is a new leadership style and is needed due to changes in digitalization, Industry 4.0 and the VUCA (Volatile, Uncertain, Complex and Ambiguous) concept. Unkrig, Mack and Khare explain VUCA as an abbreviation intended to characterize the world today, which is determined by 4 (four) factors:

- Volatility (Volatile) indicates the rapid rate of change in the observed dynamic patterns in the socio-economic system.
- Uncertainty, the effect of uncertainty manifests itself in uncertainty, uncontrolled development, and lack of understanding of relationships. There are several factors that act as a catalyst, namely past mistakes, rejection, social fear and perfectionism.
- Complexity fundamentally depends on the number of factors, the type and number of relationships, the number of unknowns and the degree of uncertainty. Complexity relates to the network structure and dynamic relationships between system components.
- Ambiguity, the blurring of reality and the potential for misinterpretation. What may be relevant in the future is uncertain, ambiguous, and difficult to predict.

A study on e-leadership by Contreras, Baykal and Abid argues that managing and leading virtual and hybrid teams requires a new type of leadership that includes trustworthy relationships with employees and less hierarchical organizations.

Christina Boesenberg a leadership consultant at Global Leadership Consultants Oxford Leadership gives the idea that there are seven characteristics of digital military leadership, including: responsibility, results, distribution of information, goals and judgments, mistakes and conflicts, change, and innovation.

4 Results and Discussion

Based on the results of interviews conducted by researchers, the following results were obtained.

1. Military Organization Leadership. The pattern of leadership in military organizations is Guided. Where in making decisions, the leader receives advice from subordinates as a form of perfecting decision making. Called the principle of the chain of command,

which is essentially from top to bottom. The leadership policies that have been set will be directly supported and implemented by their subordinates.

2. **Influence of Leaders in Military Organizations.** The influence of leaders in military organizations, if they receive orders from superiors, as subordinates, inevitably have to carry out the orders of their superiors. A leader who is visionary and has a strong will and ability can force and change and plan a program for the betterment of the organization he leads. The leadership policies that have been set will be directly supported and implemented by their subordinates.
3. **Digital Leader Competence.** Leaders must have intellectual knowledge about digital, master digital data management, management skills and the ability to analyze dynamics that are rapidly changing, be able to adapt to technological developments according to the field they are tasked with so that they can control digital transformation and not be controlled by digital transformation.
4. **Military Digital Leadership.** Combining field leadership with adapting digital transformation. Leadership that can adapt to the times and can follow it by applying according to the acceleration and needs of the organization.
5. **Special Characteristics of Military Organizations.** Discipline, hierarchy, military honor and there is a strong principle of command. **Guided Leadership.** In a military organization, if you get an order from your superior, as a subordinate, you have to carry out the orders of your superiors. In a military organization, an order is an obligation that must be carried out. In addition, it is in terms of confidentiality and security.

Based on the results of the interview, the ideal digital leadership in military organizations is a combination of field leadership and adapting to digital transformation. It takes a visionary leader character and has the will and ability to be able to coerce (autocratic leadership) and change and plan a program for the advancement of the organization he leads. Have knowledge of digital, because if not, then the organization he leads will be left behind. Must be flexible and able to adapt to the dynamics of the times, but still uphold the doctrines that exist in military organizations.

Based on the results of the researcher's observations, the combination of military leadership that has the specificity of the principle of unity of command but is accompanied by intellectual abilities and the ability to follow the development of existing digital transformations, if implemented properly will accelerate the pace of digital transformation in military organizations. Given the orders given by the leadership is an absolute thing that must be implemented.

President hopes that military organization is able to adopt the latest developments in military technology based on information technology, nano technology and automation technology. Along with the development of military technology, referring to Kollman's opinion regarding digital leadership, military digital leaders must be willing to change their mindset to a digital mindset and improve digital technology capabilities (digital skills) and consistently achieve organizational digital maturity to face opportunities and challenges. The challenges of the Industrial Revolution 4.0 era.

Aris Sarjito argues that digital military leaders are the knowledge of military leaders and prospective military leaders so that they can direct the organizations they lead to transform into digital.

Digital military leadership is inherent in both individuals and organizations. At the individual level, the digital military leadership is responsible for overseeing digital assets, including e-mail and electronic documents, according to their respective duties and responsibilities. At the organizational level, military digital leaders strategize their digital assets to maintain a competitive advantage. Digital military leaders must have managerial skills in terms of developing a digital mindset and digital skills, not only for themselves, but also for all members in the organization they lead so that they can explore how information technology (IT) can be used to help military organizations become more responsive to task needs and challenges. A successful military digital leader is a leader who understands the importance and is responsible for incoming data and its processes within the organization, as well as digital information generated by the military organization, he leads so that it can exist.

Faced with military organizations that have specific principles of unity of command and hierarchy at each level of leadership, this can be described in terms of top management, middle management, and subordinates. Where all these levels have their respective participation in military digital leadership. Top management or top military leadership has the responsibility to make strategic decisions related to digital transformation for the organizations they lead. Middle management in this case has responsibility for the continuity of duties in the military organizational unit it leads, including the understanding of its subordinates. Meanwhile, at the executive or subordinate level, which is currently dominated by generations Y and Z, they can innovate with their technological and information capabilities, which of course are conveyed hierarchically to their leaders and do not go outside the corridors of existing military regulations.

5 Conclusion

5.1 Conclusion

Digital leadership is related to the values and culture that is lived in an organization. Leaders also face the biggest challenges in ensuring successful digital transformation in organizations. Leaders play the most important role in the process of implementing digital transformation where they must be able to influence and encourage their subordinates to act as digital players with the ability to use digital tools and carry out the organization's digital strategy. Bach and Sulikova (2021) point out that digital leadership, in contrast to transformational leadership, cannot be classified as the opposite of transformational or transactional leadership, but as a third variant.

Military digital leaders must have managerial skills in terms of developing a digital mindset and digital skills in the organizations they lead so that they can explore how digital transformation can be applied in military organizations that are responsive to the needs and challenges of the task. Digital leadership is faced with military organizations that have the specificity of the principle of unity of command and hierarchy at each level of leadership, which can still be applied which of course does not go out of the corridor of existing military regulations. Where all these levels have their respective participation in military digital leadership.

5.2 Limitations and Suggestions for Further Research

Researchers have limited research in terms of the object of research that researchers take is military organizations, where research related to military organizations is still very limited. Suggestions for further research are research not only at every level of management but also at subordinates as subjects who feel the success of the military's digital leadership pattern, both at the top management level as well as middle management and subordinates.

References

1. Alanazi, A.T.: Digital Leadership: Attributes of Modern Healthcare Leaders. *Cureus*, 14(2), 1 (2022).
2. Becker, W., Schmid, O., and Botzkowski, T.: Role of CDOs in the Digital Transformation of SMEs and LSEs—An Empirical Analysis. In: *HICSS 2018: Proceedings of the 51st Hawaii International Conference on System Sciences*, Hilton Waikoloa Village, Hawaii (2018).
3. Bennett, N., and Lemoine G.J.: What VUCA Really Means for You. Retrieved from <https://hbr.org/2014/01/what-vuca-really-means-for-you>. Last access on 08/12/2020.
4. Berghaus, S.; Back, A. Stages in Digital Business Transformation: Results of an Empirical Maturity Study. In *Proceedings of the Mediterranean Conference on Information Systems (MCIS)*, Paphos, Cyprus, 4–6 September 2016.
5. Bolden, R., and O'Regan, N.: Digital Disruption and the Future of Leadership: An Interview with Rick Haythornthwaite, Chairman of Centrica and MasterCard. *Journal of Management Inquiry*, 25(4), 1 (2016).
6. Drechsler, K.: Information Systems Executives: A Review and Research Agenda. In: *ECIS 2020: Proceedings of the 28th European Conference on Information Systems*, An Online AIS Conference, p. 116, Jerman (2020).
7. Engesmo, J. and Panteli, N.: Chief Digital Officers as protagonists in Digital Transformation. In: *I3E 2019: The 18th IFIP Conference on e-business, e-services and e-society*. 1(1), 730–737 (2019).
8. Haffke, I., Kalgovas, B., and Benlian, A., The Transformative Role of Bimodal IT in an Era of Digital Business. In: *HICSS 2017: Proceedings of the 50th Hawaii International Conference on System Sciences 2017*, Hilton Waikoloa Village, Hawaii (2017a).
9. Hansen, A. M., Kreammergaard, P., and Mathiassen, L.: Rapid adaptation in digital transformation: A participatory process for engaging is and business leaders. *MIS Quarterly Executive*, 10(4), 175-185 (2011).
10. Hinings, B., Gegenhuber, T., and Greenwood, R.: Digital innovation and transformation: An institutional perspective. *Information and Organization*, 28(1), 52-61 (2018).
11. House, R.J.; Hanges, P.J.; Javidan, M.; Dorfman, P.W.; Gupta, V. (Eds.) *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*; Sage: Thousand Oaks, CA, USA, 2004; ISBN 978-0761924012.
12. Kotter J.: *Leading Change*, Harvard Business School Press, Boston, MA. Leadership in the Context of a New World: Digital Leadership and Industry 4.0 Christoph Bach Comenius University in Bratislava, Slovak Republic ch.bach-frankfurt@t-online.de Rozália Sulíková Received: 10 March 2021 · Accepted: 23 May 2021.
13. Maartje Henderik and Stoffers, J., An Exploratory Literature Study into Digital Transformation and Leadership: Toward Future-Proof Middle Managers, 14, 687 (2022).
14. Sarjito, Aris.: Model Kepemimpinan Militer Digital di Era Revolusi Industri 4.0. *Manajemen Pertahanan*, 5(2), 2.

15. Stephanie Jones and Jim van Hulst.: Leadership and Digital Transformation: Building Strategic Conversations, *Effective Executive* Vol. XXIII, No. 4, 2020.
16. Westerman G, Bonnet D, McAfee A.: *Leading Digital: Turning Technology into Business Transformation*. Harvard Business Publishing, Brighton, MA; 2014.
17. Whiteman W.: Training and Educating Army Officers for the 21st Century; Implications for the United States Military Academy”. Retrieved from <https://apps.dtic.mil/dtic/tr/fulltext/u2/a345812.pdf>. Last visited on October 4, 2020.
18. Yopana M., Kasali R., Ezni B.T., Pasaribu M., The Role of Digital Leadership, Customer Orientation and Business Model Innovation for IoT Companies, *International Journal of Business*, 27(2), 2022, ISSN: 1083–4346.
19. Zeike, S.; Bradbury, K.; Lindert, L.; Pfaff, H. Digital leadership skills and associations with psychological well-being. *Int. J. Environ. Res. Public Health* (2019).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

