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# Industry 4.0 Implication for The Vietnamese Communist Party

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## Abstract

**Key words:**  
Vietnam, political system, apparatus, ruling mode, reform.

*The fourth Industrial Revolution (Industry 4.0) offers several opportunities for institutions; nonetheless, implementing Industry 4.0 is a significant issue. Although the sophisticated applications of Industry 4.0 contribute to increased efficiency and effectiveness, implementing Industry 4.0 is the most important task. Similarly, the communist party of Vietnam, the dominant party of Vietnam, has a similar dilemma. Consequently, this study aims to investigate the function of Industry 4.0 for the Vietnamese communist party. The current study utilized secondary data to attain its purpose. Secondary data consist of the evidence from prior studies. According to the study, Industry 4.0 plays an important role for the Vietnamese communist party. Industry 4.0 applications accelerate the digital transformation of political parties, government agencies, and mass groups. It aids the governing party in reevaluating the role and functions of the state, the manner of party rule, and the overall structure of the political system in light of the new situation. In addition, Industry 4.0 promotes reforms in the political system's overall structure and the party's manner of leadership. Therefore, this study makes a substantial contribution to the body of knowledge, which has a variety of practical applications.*

## Introduction

In the current technological context, the Fourth Industrial Revolution (Industry 4.0) (Nyagadza, Pashapa, Chare, Mazuruse, & Hove, 2022; Poma & Shawwa, 2022) is of vital importance. It is built on highly integrated connection systems in digitalization, physics, and biology, as well as groundbreaking technologies in the internet of things (IoT), artificial intelligence (AI), and big data. Globally, Industry 4.0 is transforming human life, manufacturing, communication, and work patterns. This is the natural progression of the planet and Vietnam in particular. The Communist Party of Vietnam (CPV) has been engaged in renewing its ruling mode and changing the political system for several decades. These include: boosting the forecast and policy formulation capacity, (ii) enhancing the quality of the party's promulgated documents and demonstrating excellent examples of Party members, particularly the top cadres, and (iii) reforming the political system machinery. By the end of 2019, 500 000 permanent employees, four central agencies, 97 provincial offices, eight district-level offices, 565 commune-level offices, and over 5000 public institutions would have been cut (London, 2009). Approximately VND 1.4 trillion (US\$ 0.062 billion) in operating expenses would be reduced between 2020 and 2024. (Huy, Thu, & Hien, 2022).

However, there are constraints and obstacles. According to the political report presented at Congress XIII, "the general structural design of the political system has not been finished as required. The apparatus reform

process of the political system lacks determination, consistency, and efficacy. Staff reduction prioritized numbers over effectiveness, efficiency, and quality. The evolution of job descriptions is sluggish and rather unclear (Vietnam, 2021b).

The industry 4.0 technologies and processes, including digitalization, digital transformation, and synchronization, will aid in systematically and effectively addressing difficulties associated with the party's rule mode and political system apparatus reform. These include: (i) updated and detailed regulations, guidance, and instruction at all levels; (ii) clarity on the functions and duties of state agencies, the fatherland front, and mass organizations; (iii) clear identification of the role, mandate, authority, and relationship of the party's committees, organizations, and members in the state offices, the fatherland front, and mass organizations; and (iv) consistency in processes, organizational structure, and human resource to carry out the Part's objectives. While industry 4.0 gives emerging nations, such as Vietnam, prospects for accelerated growth, it also poses challenges to the CPV, the single ruling party in Vietnam. Therefore, analyzing the prospects, problems, and repercussions of improving the party's ruling mode and political system apparatus in the digital age is essential.

Consequently, this study aims to investigate the function of Industry 4.0 for the Vietnamese communist party. This purpose has special significance for both the literature and practice. Because achieving this task has significant theoretical ramifications. It also led to the practical consequences necessary to reap the benefits of industry 4.0. Industry 4.0 is illustrated by numerous prior research conducted by diverse organizations (Dreyfus, Psarommatis, May, & Kiritsis, 2022; Frank, Mendes, Ayala, & Ghezzi, 2019; Skomoroshchenko, Vasyakin, Samodelko, & Kucheryavenko, 2021). Therefore, industry 4.0 applications have been extensively studied in prior research (Sanders, Elangeswaran, & Wulfsberg, 2016; Zheng, Ardolino, Bacchetti, & Perona, 2021). Nonetheless, it is not considered about Vietnam's ruling parties. The effectiveness of industry 4.0 for ruling parties in various nations is not discussed, despite its importance to the body of knowledge. Thus, the current study examined the uses of industry 4.0 for Vietnam's ruling parties. The relationship between industry 4.0 and Vietnam's ruling party has important ramifications and contributes to the literature.

## Literature Review

Cortellazzo, Bruni, and Zampieri (2019) demonstrate that leaders are crucial actors in the development of digital culture: they must create relationships with multiple and dispersed stakeholders, prioritize enabling collaborative processes in complex settings, and attend to pressing ethical concerns. Their primary conclusions include: (i) there is no strong unifying theory of the relationship between leadership and digital transformation, necessitating a larger focus on theoretical contributions; and (ii) there is a need for stronger alignment between information technology and strategic

management. Long-term digital transformation success is achieved when: (i) the overall organizational objectives align with the need to adopt new digital tools or instruments; (ii) there are gaps and unanswered questions in the mapping of research, data collection, and reviewing processes; and (iv) there is a consistent digital transformation implementation process across organizations, communities, and teams.

According to [Lachapelle and Maarek \(2015\)](#), political parties are increasingly necessary for the digital age. These are in an unrivaled position to reestablish social and political ties since they occupy both the center and the perimeter of the new public and political realm. [Koc-Michalska, Lilleker, Michalski, Gibson, and Zajac \(2021\)](#) contends that political parties benefit from the Internet. From recording people's wants and interests to predicting the voting list, anything may be located on the internet, including the predictions of the voter list. It saves time and costs less than conventional methods. Additionally, the internet can be used to deliver a message and provide pertinent information to a large number of individuals. However, it would take a decade for people to discover the negative effects of the internet since they are too busy enjoying its benefits to notice its drawbacks.

[Lioy, Del Valle, and Gottlieb \(2019\)](#) investigate the interaction of organizational and technological changes adopted by parties in response to members' demands for more participation by developing a framework for identifying how parties use platforms to open or close intra-party decision-making. They conclude that the contradictions between existing organizational structures and internet-based platforms result in several unforeseen implications for parties, which could be disruptive.

[Chalmers, MacKenzie, and Carter \(2021\)](#) "We need a new generation of political entrepreneurs to address the most intractable problems of our day. In the age of the Fourth Industrial Revolution, global society must determine how to deal with: the automation of jobs; the shifting of power to global tech companies – the new industrialists of our time; fake news distorting democratic debate; threats to net neutrality, and cyber security; the ownership of citizens' data; and new forms of labor exemplified by the gig economy. He anticipates that political entrepreneurs will ensure that industry 4.0 improves the state of the world by diversifying political party membership, educating future political entrepreneurs, influencing current political leaders on the changes occurring, and developing a new political philosophy to guide leaders of all political stripes in this new era.

[Park \(2018\)](#) argued that the innovations that sparked the Industrial Revolution supported modern democracy and paved the way for establishing modern economies. They upset society by destroying old structures and constructing new ones. "Politics must rapidly adopt a new mentality and consider how to construct institutions that capitalize on the possibilities brought by technology," he advised. There are a few obvious

obstacles, but humans primarily drive technology. Politics' role is not to oppose it but to direct it toward the best societal consequences.

According to [N. H. Thanh and Van Quang \(2020\)](#), the Vietnamese discourse around 4IR is still immature and immature. While Vietnamese politicians are responsible for initiating the conversation, their efforts so far have mostly consisted of political rhetoric and not policy responses. This lack of government action also results in a lack of coordination and communication between academics and policymakers. According to [Bezin et al. \(2017\)](#), online social movements in Vietnam are in their infancy. They are anticipated to expand alongside the increasing influence of the internet and the communist government's control. [\(Tolbert & McNeal, 2003\)](#) argued that technology might play a significant role in increasing political and democratic participation. In the digital age, it is becoming increasingly simple for individuals to interact with one another and their political officials without leaving their homes.

[Wogu, Ezeah, Gever, and Ugwuanyi \(2019\)](#) examined engagement in computer-mediated political communication and citizens' perceptions of political parties, politicians, and the government. Engagement significantly predicted perception, perception significantly correlated with selective exposure, selective perception, selective attention, and selective retention to computer-mediated political messages, and selective exposure significantly predicted selective perception, selective attention, and selective retention. Additionally, computer-mediated political communication correlates considerably with the voting decision.

[P. Q. Thanh, Nam, Van Khanh, Nga, and Phuong \(2020\)](#) clarify some theoretical and practical issues related to the ruling model of the Communist Party of Vietnam and the solutions to continue renewing the ruling model of the Communist Party of Vietnam in the future (488–512).

[Boylan, McBeath, and Wang \(2021\)](#) examines the role of political leaders, public and private agents (governments, private agencies, NGOs), and followers (public, citizens, community) in the war on COVID-19 in several countries, including Vietnam, using an integrated framework based on the institutional theory of Nobel laureate in Economics Douglass North. He contends that the role of actors and followers is frequently undervalued and that while leaders' efforts are essential and significant, they are not sufficient. The success or failure of leaders will depend on these factors in addition to their expertise, dedication, and sense of duty. He demonstrates that a health crisis does not automatically result in a leadership crisis, as evidenced by the success of nations such as New Zealand, South Korea, and Vietnam. [Nyagadza et al. \(2022\)](#) argued that leadership values must be modified, augmented, and cultivated to meet the demands of industry 4.0..

## Research Methodology

Prior research has employed various methodologies to investigate the applicability of industry 4.0 in various industries. Few studies have assessed the role of industry 4.0 in various industries using a quantitative research approach in which questionnaire surveys were used to collect data, and statistical tools were used to analyze the data. Few studies addressed the significance of industry 4.0 and its numerous applications through qualitative research using interviews. In addition, numerous studies have highlighted industry 4.0 using a mixed-method approach that combines quantitative and qualitative research. The choice of research method is based on the nature of the investigation; therefore, the purpose of this study was considered when selecting the research method. It is observed that the function of industry 4.0 in governing parties is not discussed in the literature; consequently, a suitable tool to quantify industry 4.0 and its efficacy in ruling parties has not been devised. As a result, secondary data selection was favored to meet this study's purpose. Therefore, the study's findings depend on secondary data from published sources. Previous research on industry 4.0 and ruling parties is analyzed to acquire secondary data. In addition, secondary data is collected from many websites and reliable sources to reach the study's conclusion. Evidence from prior research is utilized to evaluate the relationship between industry 4.0 and the Vietnamese communist party.

## **Discussion**

CPV has both opportunities and challenges in renewing its ruling model and the political system apparatus reform in industry 4.0.

## **Opportunities**

### **First, The Digital Transformation of The Party's Governing Paradigm and The Reform of The Political Machinery**

Digital transformation is "the transformation of the skills, capacities, and operational models of industry 3.0 to those of industry 4.0." (Tony Saldanha, 2021). This is the crucial stage for gaining access to and achieving industry 4.0 potential. The digital transformation of the apparatus of the political system and the party's governing model entails replacing current skills, capacities, and operational models with digital age equivalents.

Vietnam has advantages over the industry 4.0 latecomer. Thanks to the accomplishments of 35 years of reform and robust global integration, Vietnam has the opportunity to move directly into new technology fields and leverage technological advancements to close development gaps and expedite the industrialization and modernization process. Vietnam can get an advantage by investing in futuristic and superior technologies. As stated by the Minister of Information and Communication, Mr. Nguyen Manh Hung, "Vietnam is one of the first countries in the world to issue a national policy on digital transformation, making us a country with an awareness of digital transformation comparable to that of developed nations." This is an

appropriate circumstance for Vietnam to investigate the technological revolution's chances to leapfrog and alter its ranking (Nyagadza et al., 2022).

According to a World Bank assessment using a four-pillar framework on connect, harness, innovate and protect (CHIP), Vietnam has relatively good results compared to its peer countries and even advanced countries in connection (pillar 1), with good progress in using new digital tools by firms and government (pillar 3), but ranks relatively low in harnessing (pillar 2) and user protection (pillar 4) (Bedford, 2012).

The CPV is acutely aware of industry 4.0's potentials, opportunities, and problems and is moving to realize the opportunities and confront the challenges associated with the political system apparatus to revitalize the party's leadership. The Central Committee published Resolution No. 52-NQ/TW on active involvement in industry 4.0 on September 27, 2019, emphasizing the urgent need to accelerate digital transformation. The Congress XIII Document stressed the development of information and telecommunication infrastructure, laying the groundwork for national digital transformation and the growth of the digital economy and society. Based on these considerations, on June 3, 2020, the Prime Minister announced Decision No. 749/QĐ-TTg, approving the national plan for digital transformation to 2025 and direction to 2030. Approved on June 15, 2021, the Strategy to develop e-government, moving toward digital government 2021-2025, orientation to 2030 established the following six national priorities: (i) legal framework improvement; (ii) digital infrastructure development; (iii) development of digital platforms and national system; (iv) development of national database; (v) development of national applications and services; (vi) national information and cyber security. These are essential building blocks for the future digital political system.

The CPV exercises leadership by giving directives, plans, and policies; by communicating, persuading, and educating individuals; by coordinating, examining, and monitoring the implementation process; and by the activities of its members. The party leads through its cells and members acting throughout the organizations of the political system. Congress XIII stated: "Continue to specify the Party's leadership manner as outlined in the Fundamental for country development in the transitional period to socialism (revised and supplemented in 2011) at all levels by issuing regulations, rules, and processes for Party cadres, members, and people to be aware of and monitor the implementation" (Vietnam, 2021a). These tasks will become simpler, quicker, more effective, and more efficient due to digital transformation. The methods and duration for promulgating rules and regulations will be accelerated, made more transparent, and better connected. Additionally, implementation, evaluation, testing, and monitoring will be simplified, accelerated, and more effective.

The digital transformation makes the organizational infrastructure of the political system and Party agencies more compact, contemporary, effective, and efficient. This is a reasonable approach for organizational reorganization and staff reduction under Resolution No. 18-NQ/TW of the Central Committee and Congress XIII.

The potential and advantages of digital transformation in Vietnam are illustrated by the following instances ([Vietnam, 2021b](#)): The national inter-agency documentation system was introduced in March 2019 to facilitate the sharing of e-documents across state agencies. In 2020, more than 4.5 million documents will have been shared in this system, which is double the amount shared in 2019, resulting in an annual savings of approximately VND 1.2 trillion (US\$ 0.052); (ii) the government public service portal has been disseminating information to serve people and businesses efficiently. Various payments and applications are made available, including tax declaration, vehicle registration tax and fee, electricity bill, insurance card change, document verification, payment of traffic fines, and social insurance. During the previous year, this system provided 2 800 online services with 468 000 registered accounts, 43 million synchronized documents, 116 million access, 940 000 online applications processed, and 42 000 e-transactions; (iii) nationwide online conference on Congress XIII documents held 27-28 March 2021 with approximately one million participants from 67 provincial points and 7 400 communal points. This is the first online event of this magnitude, and it would not have been possible without a robust digital infrastructure. While the COVID-19 epidemic has significant negative effects, it speeds up the digital transformation. As a result, the Central Committee has agreed to conduct special meetings of the party's cells online, under the direction of the Secretariat. This is a pertinent shift in this context and an excellent precedent for future virtual activities.

### **Second, Reorienting the Thinking of Party Cadres and Government Officials, Strengthening Their Capabilities, and Teaching Them New Skills.**

Industry 4.0 has significant effects on many facets of life, particularly the consciousness of leaders and managers. This is a significant chance for Party cadres and government officials to refresh their perspectives and enhance their abilities. March 22, 2018, Politburo No. 23-NQ/TW on orientation on national industrial development to 2030, vision to 2045 outlined the following direction: "Improving the Party's leadership capacity, the state's management effectiveness, and efficiency, and promoting people's participation in the development and implementation of national industrial policies."

The implementation of industry 4.0 technology will aid in personnel reduction, administrative procedures and operational costs, and the improvement of the party's leadership and public service quality. In addition, it will minimize bureaucracy, accelerate inter-agency and

personal connections, improve dialogues, and respond to people's questions. Therefore, the renewal of the party's leadership and the reform of the political system's infrastructure are both a cause and a result of the country's progress and the global integration process in industry 4.0.

### **Thirdly, Fostering A Climate Conducive to Accelerating Political Transformation in Vietnam.**

Despite recent efforts, the outcomes continue to be restricted. Lack of systematic ability and synchronizability is a major factor. Industry 4.0 will address these voids by generating momentum and digital platforms and instruments for revolutionary reform of the party's leadership and political structure.

Industry 4.0 will enable public management that is democratic, open, and transparent. Transparency and democracy will be bolstered in state administrative agencies due to increased dual engagement between citizens and government, improved accountability and accessibility, and citizens' more active participation in various stages of policy creation (drafting, implementation, and monitoring). Moreover, industry 4.0 will enable technological applications to improve state administration. These include the developing and interconnection of databases across all industries and sectors for more efficient use and collaboration. Emails, e-documents, software, and online platforms facilitate data processing, exchange, reporting, and decision-making more efficiently and transparently.

### **Fourth, Harnessing the Digital Potential of Vietnam**

The socio-economic achievements of the previous 35 years of reform have laid the groundwork for the nation's digital transformation and digital economy development. Vietnam's advantages in creating big data, essential for IoT and AI application and development, are a young and inventive population, a high proportion of smartphone and internet users, and good technological access and application. In 2020, Vietnam will rank 42/131 on the Global Innovation Index. In Vietnam, 68.72 million internet users and 72 million social media users in 2021, representing 70.3% and 73.7% of the population, respectively. The number of mobile phone subscribers is 14.4 million (Hootsuite, February 2021). The World Bank affirms that Vietnam's e-education, e-payment, and e-government sectors provide tremendous prospects (World Bank, June 2020). Approximately 23 million people frequently shop online at this time. The digital economy, digital business, and digital governance are immense possibilities. Vietnam ranks second in ASEAN for its digital economy, with an average growth rate of 27% between 2015 and 2020 and a size of US\$ 14 billion in 2020. (Thong, 2017).

### **Fifth is the Development of Telecommunications and Digital Infrastructure.**

While industry 4.0 promotes the CPV's political reform, the reform will have beneficial effects on the nation's digital infrastructure. This is the basis for industry 4.0, especially the digital economy and digital governance. These are machines and equipment, databases, technologies, processes, and application tools. Vietnam has a relatively well-funded telecommunications infrastructure, and 3G and 4G costs are fair. The country was among the first to implement 5G. In addition, the legal framework and the development of human resources are crucial components of industry 4.0. Since 2000, Vietnam has been advancing e-government alongside institutional and public administration reform. In 2020, Vietnam ranked 86 out of 193 on e-government (<http://egov.chinhphu.vn/>) and would create a digital government by 2025. (Chalmers et al., 2021). This will further reform the party's governing paradigm and political apparatus.

## Challenges

### **First, there was a Gradual Shift in Thought, Managerial Style, and The Infrastructure of a Sophisticated Political System.**

Specifically, these are as follows: (i) In the modern period of global integration, a market economy, and industry, the theoretical concepts and consciousness of CPV's leadership and ruling model evolve slowly; 4.0. As stated in the CPV's Congress XIII document, "The Party's leadership model changes gradually, despite confusions. The internal control mechanism inside the Party and state remains insufficient, inconsistent, ineffectual, and inefficient" (Park, 2018; Poma & Shawwa, 2022). In addition, overlapping functions between Party and state agencies, the lingering effects of the centrally planned period, limitations in cadre affairs and a shortage of theoretical and practical research, and a sluggish political system reform are major concerns; (ii) the outdated mentality and habits of cadres, businesses, and individuals with online and digital services. There is reluctance and apathy among public authorities.

Consequently, the effects remain limited. The IT application and government administration are disconnected in some way. In addition, disparities persist among populations, geographies, and ethnic communities; (iii) the political system's organizational machinery has not evolved substantially from a centrally planned economy.

Complex and expensive structure, overlapping and redundant functions and responsibilities among Party and state agencies and mass groups. The model of local government is inconsistent and ineffective. Staff quantity is high, but the quality is poor. According to the thirteenth Congress of the CPV, "public administration and judicial reform have not been adequate to meet the country's growth needs. The organization and operation of local government have not been sufficiently overhauled, with unclear functions

and responsibilities, delegation, and accountability. Large personnel numbers at the commune and public institution levels, inadequate skill and quality, lack of professionalism and reputation, and inability to satisfy new context requirements" (Vietnam, 2021c).

The second factor is inadequate readiness for digital transformation. Digital transformation is the integration of digital technologies into all operational components of an office, agency, or organization to radically alter the operational mode, leadership, management, processes, and working culture. Digital transformation reduces costs and improves and scientifically grounds decision-making processes. It also contributes to a 15-21 percent boost in labor productivity (Chen, Ai, Niu, Zhang, & Han, 2021).

Vietnam's primary digital transformation limitations include: (i) limited quality of human resources. In industry 4.0, current comparative advantages such as young and inexpensive low-skilled labor will no longer be advantageous. In the future, the availability of automation and robotic technology could make this a burden. Vietnam is not yet prepared for industry 4.0, with scores of 70/100 for human resources and 81/100 for a highly trained workforce (Cooke & Lin, 2012). (ii) insufficient security, dependability, and poor data exchange across agencies and offices. Numerous information systems fail to meet e-business security and dependability standards. The sharing of data/information between agencies has been limited. The cyber security of Party/state agencies has not received sufficient consideration. There is a significant disconnect between service suppliers and consumers. While government organizations have accelerated the delivery of online public services, the methods for attracting users remain inadequate. The 2019 PAPI survey reveals that less than ten percent of residents in 63 provinces utilize local online public services.

### **Third, Possible Adverse Effects of Industry 4.0.**

These include (i) cybercrime, negative communication, the dissemination of fake news, and the improper use of the internet, social media, and digital technology for disruptive social and political activities. (ii) threats to information and data security. This demands adequate focus and investment in security-related technical and human resources. (iii) political and social disorders. Industry 4.0 may result in profound technological, industrial, and social transformations that undermine the social and economic stability and labor market equilibrium. Low-skilled workers face a substantial danger of becoming redundant. Different population groupings may see a widening of the rich-poor gap—the societal consequences of cybercrime, social ills, and security. Consequently, it is essential for leaders, managers, and legislators to design appropriate human resources, employment, social security, and stability policies.

### **Fourthly, Challenging State Administration**

These include the following: the state's role and functions are altered due to international obligations and cross-border contacts. State macroeconomic management autonomy deteriorated due to increased reliance on scientific, technological, and innovative capabilities, as well as the growing importance of the private sector. As a result of the information explosion and technological advancement, (iii) global citizens are interconnected across nationalities. (iv) legislative framework development, state management, and international cooperation must be approached differently when a global network with many global participants and powerful global technical giants is developed.

### **Fifth, Technical Access and Transfer Constraints**

Among these are institutional restrictions. Regarding future production, Vietnam is in the vulnerable group (53/100) with 4.9/10 points, an average score of 4.9/10. (World Economic Forum, 2018). Regulations about personal and organizational identity, e-transactions, and the legal validity of e-documents in administrative and financial transactions continue to be limited. The implementation assurance method is deficient, the finance and investment channels are obsolete, and there is limited engagement from the business sector. (ii) poor infrastructure, namely the absence of a national database and mismatches and incompatibilities across software and platforms. (iii) inadequate information and data security.

### **Recommendations for the Ruling Communist Party of Vietnam Based on Results**

[Gainsborough \(2007\)](#) has pointed out, "When the situation changes, and we need to solve new tasks at different times, it would be better not to look backward and keep using the past methods". In the digital age, the party's ruling method and the political apparatus organization should be reformed accordingly.

Key implications for the ruling CPV include:

#### **First, Accelerating Digital Transformation Within the Party Organizations, Government Agencies, and Mass Organizations.**

The groupings of work described in Politbureau resolution 52-NQ/TW must be completed by September 27, 2019. These include: (i) taking the lead in digital transformation in Party organizations, government agencies, the Fatherland Front, and mass organizations, and ensuring a consistent, connected, and synchronous manner; and (ii) developing a database of government and local authorities to make information on the state's operation accessible to all citizens. Investment in infrastructure for data collection, management, and internet-based platforms at state agencies;

(iii) development of human resources in industry 4.0, standardization and strengthening of various levels of state managerial cadres; (iv) clarification of role, function, and cooperation mechanisms across state agencies in the digital transformation process. Adapting systems and procedures to the digital government and decreasing direct transactions.

Priorities over the next few years include (i) the development of a national database on population, land, and businesses; (ii) the completion of a database for socio-economic development (geographical and spatial infrastructure, insurance, health care, social security, finance, identification, residential registration, education and training, government cadres and officials, agriculture, labor, employment, traffic vehicles, construction, import-export, etc.); and (iii) the completion of the national portal.

**Second**, *renewing thinking about the role, functions of the state, the ruling mode of the party, and the political system apparatus structure in the new context.* Industry 4.0 compels us to reconsider and update our understanding of the nature and purpose of the state, the manner of Party rule, and the apparatus structure of the political system. The political system must undergo digital transformation, create databases, and implement current technology to work successfully and efficiently. The digital age will alter the state's and its citizens' roles, as seen in [Table 1](#).

**Table 1.** Public Management Transformation at Various Levels in The Digital Age

	<b>Industria age</b>	<b>Digital age</b>
Democracy	Representation	Participation
People	Passive objects	Active partners
Political interaction	Massive, big quantity, divided sides	Direct face-to-face, one-to-one
State	National, monoculture	multicultural

**Source:** Don Tapscott và David Agnew (2019) (Don Tapscott and David Agnew, December 1999)

Consequently, perceptions and thoughts regarding the function of the state, the method of Party rule, and the form of the political system machinery must alter. Role, functions, authority, and accountability, as well as the interaction between organizations, individuals of the party, the state, and mass groups, must be reconsidered. The formation, dissemination, and implementation of the party's directives and policies must be genuine, open, transparent, and deliberative. Checking, monitoring, and feedback inside the political system will be more rapid, direct, and effective, as will conversations with the public.

**Third**, *reform the political system structure and the party's ruling mode.* The following are key directives: I further clarify the roles, responsibilities, and duties of the party's organizations, state agencies, and mass organizations at various levels. It is essential to (i) streamline the organizational

structure, eliminate middle agencies and positions, merge overlapped and duplicated agencies/positions, and improve public service quality, effectiveness, and efficiency; (ii) strengthen the party's leadership in state agencies with capable Party cadres selected and appointed in key state positions and the party's cells embedded in state agencies to lead, oversee, check, and monitor the implementation of the party's resolutions; and (iii) streamline the organizational structure, eliminate the middle agencies and positions, Development of state management apparatus with modern and multi-sectoral ministries under the country's situation; (iii) reorganization of the Fatherland Front and mass organizations to perform two primary functions: monitoring the party's policies implementation process and mobilizing social support. The role, functions, organizational structure, and working relationship with Party organizations, state agencies, and local authorities should be studied and reformed; (iv) development of standards, criteria, rules, and regulations on the organizational structure of the political system with a clear mandate, role, functions, job description, authority, accountability, and cross-check and monitoring mechanisms; (v) development of competent personnel. The high-skilled workforce is the industry's primary success element. 4.0. Vietnam must convert its resource-based and poor value-added growth paradigm into one based on knowledge and high added value. Investing in IT human resources is essential and improving the quality of education and vocational training; (vi) continued enhancement of the telecommunications infrastructure, application of information technology, and transition to digital infrastructure. The foundation of the digital economy and digital society is digital infrastructure. It covers infrastructure for telecommunications in addition to cloud, AI, IT, data analysis, and blockchain. It is essential to have a proper legal framework (data and privacy regulations), a sufficient database, and a reliable link.

## **Conclusion**

Industry 4.0 presents the Communist Party of Vietnam, the ruling party in Vietnam, with opportunities and obstacles. Opportunities include (i) the digital transformation of the party's ruling model and political apparatus reform; (ii) renewing thinking, enhancing capacity, and developing new skills of Party cadres and government officials; (iii) creating an enabling environment for the acceleration of political reform in Vietnam; (iv) releasing Vietnam's digital potentials; and (v) telecommunication and digital infrastructure development. Challenges include: (i) slowly changing mindsets, management styles, and complicated political system apparatus; (ii) poor digital transformation readiness; (iii) potential negative effects of industry 4.0; and (iv) difficult state management; and (v) technology access and transfer hurdles. Key CPV findings include: I accelerating digital transformation within Party organizations, government agencies, and mass organizations; (ii) rethinking the role and functions of the state, the ruling mode of the party, and the apparatus structure of the political system apparatus in the new context; and (iii) reforming the overall political system structure and the party's ruling mode.

## Study Implications

Due to the one-of-a-kind nature of the current work, it has numerous theoretical and practical ramifications. Previous research has not addressed the relationship between industry 4.0 and the Communist Party of Vietnam. Rarely do studies examine the role of industry 4.0 applications among the ruling parties of any nation. Consequently, the nature of this interaction is crucial and has significant repercussions. This study addressed a significant gap in the literature by examining the role of industry 4.0 in the Communist Party of Vietnam. Although the Vietnamese Communist Party is covered in other studies, it is not considered concerning industry 4.0. By studying the significance of technology in Communist Party activity, significant practical implications are derived. A recent study demonstrated the practical significance of digital transformation within a political party and a government institution. Therefore, the Vietnamese Communist Party should encourage industry 4.0 to speed up digital transformation. In addition, this study revealed that the party's and political system's ruling mode could be enhanced using industry 4.0 applications. Therefore, practitioners should promote industry 4.0 applications among the ruling parties. This study proposed that the political system and the actions of political parties for the benefit of the people can be enhanced through the application of industry 4.0.

## Limitations and Future Directions

Despite making a significant contribution to the literature by examining the connection between industry 4.0 and the Communist Party of Vietnam, the current study has several limitations. This study's shortcomings are its recommendations for future research into the relationship between industry 4.0 and ruling parties. The most significant disadvantage of the present study is that it is based on secondary data acquired from earlier investigations. The study's conclusions are drawn from previously published studies and other sources. However, a questionnaire survey or interviews might better serve this research. The interviews could provide a clearer picture of industry 4.0 in connection to the activity of ruling parties. Interviews with various members of the Communist Party of Vietnam can yield superior findings. In addition, the additional shortcomings of this study stem from the fact that it examined industry 4.0 as a single variable. As industry 4.0 is a broad field with multiple applications, the Communist Party could not execute all of these applications. Thus, future research should select a variety of significant pillars of industry 4.0 to assess their impact on the operations of the Vietnamese Communist Party. In addition, a questionnaire survey should be done to collect data from the communist party of Thailand, followed by statistical analysis.

## Declarations

## Author Contributions

The author contributed to the design and implementation of the research, the analysis of the results, and the writing of the manuscript. The author has read and agreed to the published version of the manuscript.

## Data Availability Statement

No new data were created or analyzed in this study. Data sharing does not apply to this article.

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## Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication, and falsification, double the author has completely observed publication and/or submission, and redundancies.

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