Digital Leaders and Managers in the Age of the Fourth Industrial Revolution and Recommendations for Developing Digital Leaders and Managers in Vietnam

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Abstract: *The Fourth Industrial Revolution has made profound and comprehensive changes in every aspects of social life including the modes of leadership and management as well as the model of public leaders and managers. This paper aims at analyzing and clarifying the characteristics of digital leaders and managers in the context of the challenges and requirements of the Fourth Industrial Revolution. Then, the author offers some recommendation for building and developing a contingent of public leaders and managers in Vietnam in the current context*

Keywords: The Fourth Industrial Revolution, digital leaders, digital managers, public sector, Vietnam

1. Introduction

The Fourth Industrial Revolution has been described as the climax of human civilization and expected to create miracles for human life. It is evident that the development of the Fourth Industrial Revolution has been changing profoundly and comprehensively every aspects of social life. As the subject of macro management and providing direction for the development of social life, therefore, dynamic transformation and adaptation of leaders and managers in the public sector in the new context play the most decisive role. Of course, the development of the Revolution 4.0 has created both opportunities and challenges for leaders and managers in the public sector. Therefore, building a system of values and new requirements for leaders and managers with a new vision in order to be able to resolve the challenges of public management under the impact of the Revolution 4.0 is a very new issue but needs to be seriously acknowledged and studied.

The Fourth Industrial Revolution requires leaders and managers not only to have qualities similar to traditional ones but they must also adapt to become experts who are good at professional knowledge and have creative and innovative thinking as well as analytical and synthesis skills. They need to be capable of working independently and making decisions based on analyzing the evidence and data. They also need to solve the issues such as national economic growth, social security, building a national culture, revitalizing national education or renewing the political system, ensuring security and defense and strengthening international integration. However, they cannot solve these issues by traditional methods.

In the context of the Fourth Industrial Revolution, public leaders and managers have a new mission, that is, to become a driving force for innovation in the society and the political system where they are working in response to the changes and the requirements set by people and businesses in an open society. They need to have leadership abilities, methods, and skills to work and manage in a digital environment. Therefore, for scientists specializing in management, leadership, human resources and policy consultation, the research of the connotation of the term "digital leaders and managers" and manifestations of digital leaders and managers is a new and essential issue.

2. The connotation of the term "digital leaders and managers" in the Age of the Fourth Industrial Revolution

The mankind has experienced four scientific and technological revolutions which has brought about many significant changes in society. The First Industrial Revolution started in 1784 when human beings invented the steam engine and opened a new era in human history. The Second Industrial Revolution stretched from 1870 to 1914 when human beings invented electrical engines to bring about the civilized life and increase the productivity as many times compared to the age of steam engines. And the Third Industrial Revolution began in 1969 when people invented transistors, electronics, satellites, airplanes, computers, phones, and the Internet. Recently, the Fourth Industrial Revolution has made a big breakthrough and huge changes in human society.

The Fourth Industrial Revolution has taken place since 2000s called the digital revolution through technologies such as the Internet of Things (IoT), artificial intelligence (AI), virtual reality (VR), interactive augmented reality (AR), Social, Mobile, Analytics, and Cloud (SMAC), which has transformed the whole real world into the digital one. In 2013, a new term "Industrie 4.0" emerged from a report of German government to refer to high-tech strategy to promote the computerization of its manufacturing industry without human involvement. German Chancellor Angela Merkel continued to mention this term at the World Economic Forum in Davos in January 2015. Public leaders and managers have to face challenges and requirements in the new context. The biggest challenge for them is to adapt

and employ effectively achievements of this revolution. The changes in governance space and nature of national, regional and global social life have forced them to adapt to the new mode of leadership, that is, digital leaders and managers.

In a new study concerning the topic "Work 4.0" conducted by Microsoft Corporation, the researchers found that European leaders were very slow in realizing the needs of their employees and solve the challenges of the new information world (i.e. the world of the Fourth Industrial Revolution). The results of the study revealed that 85% of their employees wanted to access information better, 85% of employees expected to make decision more independently, 84% of employees wanted to have regular feedbacks from their superiors and 71% of them expected to have more flexibility in arranging work and working hours. Leaders and managers had difficulties in changing their leading styles to meet the needs in the new context and deal with pressure from executive staff members. Broadly speaking, it is not only the pressing issue and desire of the private sector but also urgent requirements of the society for national governance and leaders and managers in the current age.

The Fourth Industrial Revolution has made changes in the vision of leaders and managers, therefore, there must be a comparative view between traditional leaders and leaders in the age of the Fourth Industrial Revolution (some people call them digital leaders). In this paper, based on the results of the studies conducted by Mark Elliot Zuckerberg (CEO, cofounder of Facebook) and Elon Musk (CEO, founder of SpaceX) as well as the practices of Vietnam's national public administration and the characteristics of the political system, the author analyzed and pointed out the differences between traditional leaders and leaders in the Age of the Fourth Industrial Revolution in order to help readers to visualize easily the model of digital leaders and managers.

First of all, in regard to the issue of sharing responsibilities, increasing decentralization and assigning employees to actively adapt to the problems of the multi- dimensional world arising in the practices of leading and governing the country, while traditional managers clearly define responsibilities and roles based on groups or by functions, digital managers learn how to assign tasks based on the situations and capabilities of the groups, where the abilities of managers and employees are constantly linked. Success is achieved when all participants make positive contribution in their networks. No matter how talented leaders and managers are, they cannot solve all the work of the system in the best and fastest way, especially, in the context of the Fourth Industrial Revolution when the issues of public leadership and management do not occur in a small and narrow geographical area, space, time, target groups, field and environment. In fact, they are much more complicated. The data has shown that there are enormous pressure of work and challenges for leaders and managers in reality. Therefore, it is a key feature of the Fourth Industrial Revolution which is not only the foundation but also the imperative requirements to force leaders and managers to share responsibilities and authorities based on their assigned power and ensuring sufficient power to solve public issues for human resources at all levels, from the central to the local level.

Secondly, when it comes to the responsibility to share information to limit information asymmetry and increase publicity, transparency and promote accountability of public authorities to the people, traditional leaders often disseminate information compulsorily and provide a part of data according to a specific strategy (since information is considered as power) whereas leaders in the Age of the Fourth Industrial Revolution create a transparent information framework based on accountable and proactive behaviors. A scholar has said that information is the government's property. However, such assets, in a certain situation, need to be used properly, which is the basis for winning the trust of people and enterprises in the integrity and transparency of the public administration. A big question arising in the process of sharing information in the Age of the Fourth Industrial Revolution that public leaders and managers need to concern is how people can get access to the national database system in order to search and extract personal information without any cumbersome procedures and how people and businesses can keep track of the status and level of their own records handled by the government and authorities as well as how the government and authorities at all levels can become "the government never sleeps" or "the government keeps in close touch to the people" on the basis of interaction through digital space.

Thirdly, changing the assessment methods to increase the productivity, shorten time and ensure the continuity is a new requirement for current public leaders and managers. Traditional leaders and managers assess their employees' performance based on fixed time (e.g. every month, quarter and year). With managers of the Age of the Fourth Industrial Revolution, the assessment of employees' performance need to be carried out continuously. In fact, the transformation and practice of solving public services in the context of the Fourth Industrial Revolution occur very quickly, every minute or second, thus the evaluation of public leaders and managers need to have the characteristics as follows:

1) Promptly have reactions (i.e. direction, guidelines) in emergency situations or crises to reassure and solve problems;
2) Shorten time of assessment, preliminary review and summarization to the maximum possible level because the practices of the 4th industrial revolution take place very quickly. If we maintain the current stagnation and periodic assessment, we cannot solve new, hot and complex issues which happen every day, and it is also difficult to avoid similar errors in the similar situations when we have not been able to evaluate them because they are not yet due.
3) In the context of the Fourth Industrial Revolution, when assessing all issues, public leaders also need to adapt and respond continuously, regularly and promptly. This demonstrates the outstanding competence required for the qualities of digital leaders and managers in the public sector. However, this does not mean hasty and authoritarian, unrealistic, subjective, and imposing decisions.

Fourthly, recognizing challenges, mistakes and crises with positive thinking, progressive spirit, listening and enthusiastic to overcome are very essential characteristics of digital leaders and managers. While avoiding mistakes

and contradictions is the dominant thinking of traditional leaders and managers, an open atmosphere with a mindset of learning, sharing and positive actions from mistakes is being established by digital leaders and managers in the public sector. According to the author, these are essential and indispensable qualities for each leader, manager in the public sector to care about and learn. This is because of the following causes:

1) The context of the Fourth Industrial Revolution always poses many new and unpredictable challenges to public administration and therefore it is easy to make wrong and inappropriate decisions. The most important factors are the spirit and attitude of leaders and managers and the whole state administrative staff members towards their own mistakes. They have to unite to resolve crises and mistakes, otherwise, they will destroy their professional development.
2) Digital leaders and managers have to overcome the sense of inferiority, shyness and fear of innovation when dealing with mistakes, crises and challenges of the Fourth Industrial Revolution.

Fifthly, recognizing, advocating changes and innovation and being ready to adapt to changes are the required qualities of digital leaders and managers in the public sector today. Traditional leaders like to maintain the society in orders, being fear of new issues to reduce risks and self-satisfied with the existing achievements which creates little room for breakthroughs, innovation, creativeness, and liberation. Meanwhile, digital leaders and manager of the age of the Fourth Industrial Revolution must always be ready for the ability to change in the system of public administration, as well as encourage quick adaptation between markets, businesses and citizens as customers, government officials and employees. They must express their dedication, integrity, professionalism and the precise, flexible and effective response to the changes in the social life and requirements of businesses which is correlate and proportional with the satisfaction index of people and businesses under the impact of the Fourth Industrial Revolution

Sixthly, being innovative and flexible in assessing the effectiveness of the public services is a mandatory requirement for leaders and managers in the public sector today. Assessment is a very important stage of personnel work in general and a duty of public authorities in particular. Traditional leaders and managers make plan for resources and evaluate results achieved based on the fixed principles in the limited areas of an identified project, plan, program and public policy. However, leaders and managers in the Fourth Industrial Revolution have to control the process of discussing and selecting options, evaluating tasks and results with their team members, and using resources according to their potential and authority. The work results are achieved by integrating continuous feedbacks between internal and external stakeholders. This action can fix the following inherent problems:

i) The evaluation of the results of public services only based on the fixed principles which are sometimes backward and conservative; thereby, it can reduce the employees'

motivation to devote and lead to the stagnation in the performance of assigned tasks. In particular, this type of assessment is characterized by the evaluation framework and criteria led and decided by leaders and managers and legalized by laws, decrees or internal regulations, therefore, it may be not suitable and relevant in practice.

ii) However, the assessment of digital leaders and managers are more open. It is based on discussion, agreement, assignment and then "voluntarily" register to participate of members of the organization. Leaders can evaluate results and effectiveness of public services based on the commitment to take action voluntarily of such officials and public employees themselves. This is reasonable because the principles of assessment and tasks assigned by leaders and managers are always changing and the leaders themselves may not anticipate difficulties or realize the potential of each personnel to deal with specific issues so they may be subjective in the process of assessing. However, this method needs to integrate reasonably with binding regulations.

Therefore, it can be seen that under the impact of the Fourth Industrial Revolution, the transformation of public administration in each country forces leaders and managers to adjust and change themselves in order to adapt and develop. Based on the advantages and challenges of the Fourth Industrial Revolution, the author has generalized the basic characteristics and qualities of digital leaders and managers in the public sector which need to be recognized and concerned. These are important arguments for the author to consolidate recommendations for developing Vietnam's leaders and managers during the era of the Fourth Industrial Revolution.

3. Recommendations for developing leaders and managers in the Age of the Fourth Industrial Revolution

The cause of State administrative reform began when the Communist Party of Vietnam initiated the Innovation period in 1986, however, it was the most powerful since the 8th Plenum of the Party Central Committee (the 7th tenure) in January, 1995. Through the state administrative reform, the face of our country has changed rapidly. The effectiveness and efficiency of State management over the fields of social life, including the economy is increasingly effective. The comprehensive renovation of the national administration and leaders and managers have made great contribution to the achievements in nearly 30 years of implementing our country's renovation.

Statistics have shown that currently there are over 2.6 million people with university and college degrees or higher all over the country, including 18,000 masters and doctors; 6,000 professors and associate professors; 93.8% of officials at vice minister, equivalent or higher level have university and postgraduate degrees. 100% of department- level officials at central agencies have university and post-graduate degrees. These above-mentioned data has shown the mature of public leaders and managers. At the local level, 98% of key officials at the district level and department- level have degrees in senior political theory,

95% of them have university degrees. The number of cadres planned for the provincial-level People's Committee with university or higher degree accounts for 100% and with degrees in senior political theory accounts for 95%. This is a generation of cadres who have been trained and matured through challenges, with a strong will to overcome all difficulties and hardships. They have strong political spirit and innovative mind, and they quickly adapt to market mechanisms, contributing to promoting the country's industrialization, modernization and international integration.

According to the report on public administration reform in the first 6 months of 2017 of the Ministry of Home Affairs, the application of online public services at levels 3 and 4 is higher and higher and the quality is increasingly improved. 63/63 tax departments deploy online tax collection, the rate of e-tax declaration reaches 99.64%. The number of cadres and civil servants equipped with computers is increasing. E-mail exchanges between state administrative agencies are gradually increasing. The website (http://doanhnghiep.chinhphu.vn) connecting the government and businesses and the website (http://nguoidan.chinhphu.vn) connecting the government and tpeople receive hundreds of comments and recommendations which are reviewed, processed, transferred and publicly responded on the Government Portal. This is a success, a good sign for the modernization of the administration and the digitization of the management mode of leaders and managers of our country over the past time.

However, facing the challenges of the market economy, a large number of leaders and managers at all levels have revealed limitations and weaknesses in both professional capacities and political awareness. Assessing public leaders and managers, the report of the Politburo at the 9th Plenum of the Party Central Committee (the 10th tenure) summarized 10 years of implementing the Resolution of the 3rd Plenum of the Party Central Committee (the 8th tenure) on strategies of developing cadres in the period of promoting industrialization and modernization frankly pointed out: "Qualifications, capabilities, knowledge of market economy, law, foreign languages, ability of state management, social management of many officials are still inadequate. The ability to forecast and guide the development of many cadres is still weak" [1 Communist Party of Vietnam (2009). *The document of the 9th Plenum of the Party Central Committee (10th tenure)*. Hanoi: National Politics Publisher, p.202]. A portion of cadres have subjective point of view. They are complacent about their achievements. They are conservative, stagnant, and have obsession with achievements. They are lack of enthusiasm for work, lack of role models. They talk more but do less, or say without doing anything. They are lack of self-criticism and criticism and they have low combativeness. They take advantage of power to gain personal interests" [1 Communist Party of Vietnam (2009). *The document of the 9th Plenum of the Party Central Committee (10th tenure)*. Hanoi: National Politics Publisher, p.203]. In particular, the resolution of the 4th Plenum of the Party Central Committee (the 11th tenure) continued to emphasize: "A not small portion of cadres and party members, including members who hold leading and managerial positions and

senior cadres have deterioration in political ideology, ethics and lifestyle with different manifestations such as ideal fading, falling into selfish individualism, opportunism, pragmatism or chasing fame, fortune, status and local authority and have manifestations of corruption, wastefulness, arbitrariness and unscrupulousness" [1 The Communist Party of Vietnam (2012). *Resolution No.12- NQ/TW-Resolution of the 4th Plenum of the Party Central committee (the 11th tenure): A number of urgent issues about building the Party today.*]. In the resolution of the 4th Plenum of Party Central committee (the 12th tenure), our Party noted that "Many cadres and party members, including the head, have not shown their exemplary role. They have been bureaucratic, autocratic and not kept in close contact with the grassroots. The inspection, supervision and party discipline are not enough to deter, prevent and reverse the recession. The deterioration in political ideology, ethics and lifestyle of not a small portion of cadres and party members have not been repelled, some issues are more sophisticated and complicated; corruption, waste and negative phenomena still occur seriously, focusing on a number of Party members in leading positions in the State apparatus. The above limitations and shortcomings diminish the leading role of the Party and hurt people's sentiments and reduce people's trust in the Party, which is a direct threat to the survival of the Party and the regime". Thus, it can be seen that the quality of leaders and managers is still limited and weak [1 Nguyen Thi Mai Anh. *The requirements and solutions on developing the contingent of leaders in the period of international integration.* Retrieved from http://www.tapchicongsan.org.vn, http://www.tapchicongsan.org.vn/Home/huong-toi-Dai-hoi-XII-cua-Dang-Cong-san-Viet-Nam/2015/32722/Yeu-cau-va-giai-phap-xay-dung-doi-ngu-can-bo-thoi.aspx, 01/4/2015].

The Fourth Industrial Revolution has made great changes in political, economic social life as well as the modes of leadership and management which have been stagnant in the public sector. The 12th National Party Congress affirmed and highlighted the spirit of continuing to innovate, create and promote the achievements of the cause of the 30-year Doi Moi (1986 - 2016) in order to "make our country a modern industrial one". That is a big challenge for leaders and managers in the context of the Fourth Industrial Revolution. From this approach, the identification of digital leaders and managers in public sector in general and the practices of the public administration and the public administrative workforce of our country, the author has offered some recommendations to develop digital leaders and managers in the public sector, as follows:

Firstly, applying the lessons learned from developed countries in the renewal of mechanisms and policies and applying flexibly the model of enterprises in the period of the Industrial Revolution 4.0 with outstanding leaders, autonomous enterprises and creative employees in the operation of our country's public agencies today.

Secondly, renewing the modes of leadership and social management; applying information technology in management and administration according to the spirit of Decision No. 1819 / QD-TTg dated October 26, 2015 of the Prime Minister on approving the National Program on IT application in the operation of State agencies in the period of 2016 - 2020.

Thirdly, for science and technology, leaders and managers should: (i) Invest and create favorable conditions for scientists and inventors to turn prospect ideas into real products of the Fourth Industrial Revolution and special investments for breakthrough ideas; (ii) Take creativity of scientific and technological products as the highest criterion to evaluate the quality of products, as well as to evaluate work efficiency and income norms of bright scientists and inventors.

Fourthly, the study moved from the mode of IQ management to weQ one by giving up the control, believing in employees' ability to solve problems and supporting collective intelligence. The trend in the digital world is shifting from "IQ" to "weQ", that is, the ability to collaborate in organizations with wide networks, especially in the political system and public authorities (Vietnam has still revealed limitations in this issue).

Fifthly, as an active and proactive subject, leaders and managers in the public sector should initiate a roadmap and properly invest in building an e-government and smart cities according to spirit of the Government's Resolution 36a / NQ-PCP dated October 14, 2015 on e-Government. In the immediate future, it is necessary to have a synchronous method of building the national database system, invest in human resources for information technology area, improve the computer skills for administrative staff and modernize the information system step by step in the whole system.

Sixthly, based on the achievements of the Fourth Industrial Revolution, leaders and managers need to increase publicity, transparency and accountability in the spirit of "providing information about the works they have done including limitations and weaknesses. At the same time, they should pay attention to the accountability give answers of the state agencies to outstanding issues, incomplete matters, new guidelines and policies ... Our responsibility is to explain and respond to the people in the spirit that "Government is a server " [1 Dang Hung Vo (2015). Discussing about publicity and transparency in Vietnam. *Journal of economy and prediction*, Vol.3]

Seventhly, the requirements for public leaders and managers today are as follows:

(i) Their thinking and action must always be innovative and creative to manage social development
After 30 years of implementing innovation, the face of our country has really changed. However, there are still many strategic goals which have not been achieved (goals of building socialism, economic slowdown, distance lagging behind the world, etc.). Therefore, current public leaders must be leaders of new and innovative thinking and actions according to the spirit of the Government in the term 2016-2021, i.e. "creation, integrity and development based on historical achievements and achievements of the Fourth Industrial Revolution.

(ii) Their capacities must meet the requirements of this era.
Nowadays, countries are transforming vigorously, starting with changes in the model of civil servants from rowing to steering, from the professional state to the working position,

from the "fat" state to "thin" state, from the post-society government to a constructive and welfare state. It all depends mostly on leaders and their political determination. There are no exceptions for Vietnam. Therefore, one of the most burdensome requirements for Vietnamese public leaders today is "the capacities meet the requirements of our times". These requirements are as follows:

- Having new, up-to-date and profound scientific knowledge (leadership science and management science are the most essential), mastering revolutionary theories and the laws of nature, society and thought which can make the right leadership modes and decisions in the context of the Fourth Industrial revolution
- Approaching, comprehending, inheriting and effectively applying human knowledge of the current revolution into Vietnam, especially in the context of the the Fourth Industrial Revolution in the "flat" world, with complex relationships.

4. Conclusion

To sum up, the term "Digital leaders and managers" in the public sector is a new approach that has emerged and developed in the Age of the Fourth Industrial Revolution. The paper has analyzed and clarified the most basic signs of digital leaders and managers in the public sector and shed light on the practice of Vietnam's public administration to propose some suggestions on forming and developing a contingent of leaders and managers in the public sector who adapt and take full advantage of the success of the Fourth Industrial Revolution into the development of their country in the direction of "rich people, a strong country, an equitable, democratic and civilized society".

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