Impact of the Industrial Revolution 4.0 on State Administrative Reform
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Abstract
The Industrial Revolution 4.0 (IR4.0) is taking shape and has a strong impact on all areas of social life. For the state administration, the IR4.0 creates many opportunities as well as challenges that require managers to promptly grasp to have appropriate orientations and solutions, to perfect the state administration, to meet the requirements of national development. On the basis of analyzing the positive effects and challenges of IR4.0 on the reform of the state administration, the article proposes a number of recommendations: actively improve the institutional system of the administration, create a legal corridor for the development of industries and fields; promote the application of modern technological achievements to the management activities of administrative agencies; actively, proactively build and improve the qualifications and capacity of civil servants. Thereby, it will continue to perfect the state administration, and meet the requirements of IR4.0.

Keywords
Industrial Revolution 4.0, on State administrative reform, international integration, Vietnam.

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Introduction
State administrative reform has a particularly important position in the development strategy of the country and each locality; administrative reform itself is a national strategy that has been paid special attention and implemented by governments around the world over the years in all areas of social life. IR4.0 is forming and strongly affecting all areas of social life. For state administration, the IR4.0 creates many opportunities as well as challenges that require managers to promptly grasp to have appropriate orientations and solutions, perfecting the public administration country, meeting the requirements of the development of the country. IR 4.0 is being formed with the development trend based on the highly integrated foundation of the digital - physical - biological connection system. There are three factors that show that IR4.0 is not an extension of the Industrial Revolution 3.0, in terms of speed, scope and system. The unprecedented pace of invention of disruptive technologies is disrupting the structure of almost every industry in every country. The breadth and depth of these changes heralds the transformation of entire production, management and governance systems.

In the process of international integration, the Vietnamese government has always identified administrative reform as a key strategy in the process of socio-economic development and has achieved positive results. When evaluating the results of the administrative reform implementation process in recent years, we see that there are still many limitations, even present, in some areas that are not satisfactory in both scope and nature and quality, some parts also show deviations.

Research questions:
Question 1. How is IR4.0 having an impact (opportunities and challenges) on state administrative reform?
Question 2. What should be done to take advantage of the opportunities of IR4.0 for the current state administrative reform?

Literature Review
It is a subject that attracts a wide range of philosophical, political and economic perspectives for thousands of years, the state and the role and function of the state, state administrative reform for the economic and social development of humanity have been paid special attention to with theories and views complement each other and even oppose each other.

The Developmental State in History and in the Twentieth Century by Aniya Kumar Bagchi (Aniya, 2013) mentioned 3 basic elements of a state, that is preventing conflict by maintaining "law and order" in society and building living standards for people such as health and education through intervention policy, in which the essential element of education is "learning how to education"; a spirit of nationalism based on shared commitment, common insurance and joint action; establish a rational bureaucracy and expand patronage of the state to its citizens.

American economics professor J.E. Stiglitz, a representative of the theory J.M. Keynes, who was awarded the Nobel Prize in economics in 2001, wrote in the commentary column of the British Guardian newspaper on
September 16, 2008, in which he argued that the current global financial crisis is primarily caused by the lack of capacity of policy makers (lawmakers) in the US (Stiglitz, 2008). And economics professor P.R. Krugman - another representative of the theory J.M. Keynes and recipient of the 2008 Nobel Prize in Economics initiated the revival of J.M. Keynes in 2006. In May 2009, while working in Vietnam, he advised the State to develop and supplement regulations by law, ensuring the state management function in the field finance and banking to strictly control these two important areas.

Authors of the book *Stories from the Economic Development Front* assessed “The main role of the state is to create a favorable environment for business development by identifying and then gradually taking measures to overcome the biggest obstacles” and said that “The most important solution among the solutions that the state can apply is that the state leaders must publicize declare their support for economic growth and private economic development as a major priority of the state” (Hinh, Thomas, AliZafar, Eleonora, 2014, p. 493-497). Overview Report, *Vietnam 2035, Towards Prosperity, Innovation, Publicity equality and democracy* by the World Bank group and the Ministry of Planning and Investment (World Bank, Vietnam Ministry of Planning and Investment, 2016), including consists of 7 chapters, of which chapter 7 discusses the building of modern institutions and houses efficient water. This chapter affirms the role of the state in development socio-economic, assessment of institutional quality and identification of institutional obstacles affecting development in Vietnam, thereby proposing policy recommendations to build building a reasonable and effective administrative apparatus with a contingent of talented civil servants, change the role of the state from interfering too deeply in the economy to details, effectively support, build a modern democratic political institution in order to promote the development.

In the book *The Fourth Industrial Revolution*, author Klaus Schwab emphasized: in the process of the IR 4.0, which "has a great and multi-dimensional influence on the global economy", the role of the state in countries is to continue to amend and supplement implementing, improving and enforcing the law, with a change of approach, ensuring that "the law will play a decisive role in the application and dissemination of new technology.” According to the author, the state has a role of "managing innovation to promote innovation", is considered a "public service center” and is “assessed according to its ability to provide the most effective and personalized expanded service(stallest); with the development of the sharing economy, the new digital economy and digital technology without borders, the state in “which country promotes its own rules and regulations to the advantage of domestic manufacturers, while preventing foreign competition and reducing the royalties that domestic companies pay for domestic technology outsiders risk being isolated from the global normative system, and falling behind in the new digital economy” (Klaus, 2018, p.119-130).

Book *Building a constructive government, integrity in the process of promotion industrialization*, modernization of the country and international integration defines the role of the state in in “actively formulating development-oriented policies, actively creating environment and conditions for member states economic part to promote all potentials in the competitive environment and international integration; at the same time, strengthen supervision to detect possible imbalance factors, ensure macroeconomic stability” and propose "Clearly delineating state management functions and market functions”; accordingly, the state establishes a legal framework for the market economy through the promulgation of an appropriate institutional system and the operation of macro-regulatory mechanisms for activities in society, especially those related to social activities economic dynamics; support and promote the role of the private sector; macro control, but not by rigid administrative orders, to ensure economic activity in order, on schedule and to overcome market defects (Vietnam National Academy of Public Administration, Mets Regional Institute of Public Administration French Republic, pp.104-116).

National and international research projects, related to the research topic the above research shows me the role of state administrative reform in social management. This is the basis for the thesis to inherit, supplement and develop in the research process.

**Research Method**

Administration includes many meanings with many different concepts... but the most common meaning of the administrative concept is a process of management, administration, adjustment, orientation and guidance on the movement of development management objects according to the rules and for the purpose of serving the interests of the management subject.

The scope of administrative reform covers all areas where state management is required; that is, in all socioeconomic fields, involving all subjects in society; the administrative reform process takes place in all stages of the management process, such as: researching to advise on promulgating a policy, a management decision; management performance; the inspection of the implementation process; research, draw experience to prepare for the next management phase…

Administrative reform is the implementation of reforms in all management activities in a synchronous manner… in which, administrative procedure reform is the first step in order to make reforms in other stages be implemented quickly reduce costs in terms of human, material, time… reduce the intermediate stages that, if omitted, still achieve management goals. However, the administrative reform cannot be done overnight but is a
long-term, continuous and actively implemented process. In which, a decisive factor to the quality and effectiveness. The effectiveness, speed and extent of administrative reform is to renew thinking in all stages and processes of administrative reform. Therefore, to meet the requirements of administrative reform in the current period, it is necessary to have innovative thinking methods in the reform process, because: (i) Administrative reform is an inevitable trend of each country or locality in its development process, there is no fixed “formula” applicable to every stage of development; the managed object always sets requirements for the management work for itself; management methods in accordance with the laws of motion and the development stage of the managed object will promote the object to develop faster; (ii) The content of administrative reform is comprehensive in all aspects of social life; all fields of socio-economic activities, national defense and security... all fields of human activities are closely related to each other to form a whole of a society; Although each different socio-political regime has different development goals (in socio-political nature), each society is a whole, so administrative reform is a comprehensive reform, not a comprehensive reform. Only administrative reform in a certain field can promote, support, create conditions and premise for comprehensive reform of national administration; (iii) In the process of administrative reform, it is necessary to have researches, assessments, and lessons learned from each level, sector, locality, grassroots unit, for each period. development of each management object... Organize the implementation of effective lessons; at the same time, it is necessary to study and select the good experiences and lessons of localities, sectors and other institutions, including those of countries with a national administrative system with a long reform process and certain successes...
The article uses dialectical materialism, historical materialism of Marxism-Leninism and Vietnam's views on state administrative reform as a theoretical basis and research methodology. The methods used are logic - history, interpretation - induction, analysis - synthesis, comparison, data collection, literature review.

Results and Discussion

Positive effects of the Industrial Revolution 4.0 on state administrative reform
Firstly, IR4.0 contributes to changing the thinking and perception of managers in the state administration. First of all, it affects the perception of managers about the development and changes of the economic, political and social fields and the impacts on the state administration. Thereby, helping managers provide orientations and solutions for administrative reform in accordance with the development requirements of society. The Government's regular meeting in March on 3-4-2017 has assessed and identified important tasks of IR4.0 for Government agencies. The meeting's resolution stated: "The 4th industrial revolution is a development trend based on digitization and connectivity, with a scale that has a strong impact on all aspects of socio-economic life, making changing production methods and forces in the future, can bring Vietnam many opportunities to accelerate industrialization and modernization, and also pose challenges to the development process.

At the same time, the resolution also specifies the task: "Vietnam needs to proactively have orientations and practical solutions to seize opportunities and minimize negative impacts of the 4th industrial revolution, first of all is to have a breakthrough in information technology". In addition, the Prime Minister also issued Directive No. 16/CT-TTg dated May 4, 2017 on strengthening capacity to approach Industry 4.0, which defines specific tasks for ministries and sectors, and localities actively prepare conditions to meet the requirements of this revolution.

Secondly, IR4.0 contributes to promoting the application of modern technological achievements to improve the management efficiency of the state administration. IR4.0 is based on the strong development of information technology, mainly social networking technology, mobile, big data, Internet of things, analytics and cloud computing. This creates favorable conditions for state administrative agencies to promote the application of technological achievements to improve management efficiency.

The application of the achievements of IR 4.0 to improve the management efficiency of administrative agencies is also the goal of the e-Government that we are developing according to Resolution 36a/NQ-CP. The implementation of the goals of e-Government in our country also has many advantages with the advantage of relatively good and cheap Internet infrastructure while high-configuration, low-priced mobile devices are becoming popular. As well as the development encouragement of the Government, Vietnam has great potential to develop SMAC technology. Another favorable factor is that Vietnam has important partners who are large and experienced technology corporations such as Microsoft in the process of consulting, building and developing SMAC in general and cloud computing in Vietnam.

Thirdly, IR 4.0 facilitates the development of a democratic and transparent administration. The achievements of IR 4.0, especially achievements in information and communication technology development, will create favorable conditions to ensure democracy and transparency in most activities of the state apparatus. Digital infrastructure technology and equipment enable two-way interaction between citizens and government. For example, in the development of institutions and policies, most draft legal documents need to get comments from the people. People can contribute ideas and critique drafts of institutions and policies in many different ways, especially through the Internet, which is very convenient. In the organization of policy and law enforcement, citizens can participate in monitoring the implementation through the openness, transparency and accountability.
mechanism for the activities of state administrative agencies. The implementation of this mechanism is very convenient and effective thanks to the Internet and communication.

Many places have applied modern electronic and information technology facilities to improve the quality of public services, such as granting business registration certificates, investment licenses, motorbike registrations, identity cards people...; organize bidding for public expenditure projects; Reviewing to eliminate unnecessary administrative procedures, licenses also cause troubles for people to access public administrative services, shorten service delivery time,... especially mergers of applications administrative positions in the direction of lean, for example downsizing the payroll at state administrative agencies and merging a number of administrative agencies at the Ministry of Industry and Trade.

Along with the development of society, the function of providing public services from the state agency has become more and more important. In a market economy, the provision of public services to satisfy people's needs is not only undertaken by the State, but is gradually socialized with the participation of other economic sectors under the control of the State. In principle, the State is not required to directly provide public services but is responsible for ensuring that such services are actually provided.

**Challenges of the Industrial Revolution 4.0 on state administrative reform**

In addition to the advantages, IR 4.0 poses many challenges to the development of the administration, in which there are some key challenges as follows:

**Firstly,** the challenge in building and perfecting the system of institutions and development policies of the state administrative. A modern administrative system must first have a synchronous system of institutions and policies, suitable for the development of society. IR 4.0 has a direct impact on changing production and business methods, disrupting the traditional labor market; at the same time, changing the management method of state agencies and posing many social problems that need to be solved. If the legislators and policy makers do not properly realize the impact of this revolution and actively and proactively build and perfect a system of appropriate institutions and policies, we will face challenges and negative impacts such as: technological and economic lagging behind; surplus of skilled and low-skilled labor causes disruption to the traditional labor market, affecting the country's socio-economic situation; loss of safety, information security, copyright infringement; shortage of highly qualified human resources. Therefore, in the coming time, there are many institutions and policies that need to be developed and perfected before the impact of IR 4.0, in which basically institutions and policies on science and technology development; on education, training and human resource development; on social security, job creation; network security,...

**Secondly,** the challenge in promoting the application of new technological achievements to improve the operational efficiency of state administrative agencies. If managers do not have appropriate orientations and solutions in promoting the application of modern technology to the activities of state administrative agencies, the administrative activities will become stagnant and inefficient. For example, the core of Industry 4.0 is the development of information technology, so promoting the application of information technology to build e-government at all levels of government remains a key task. Currently, we are implementing Resolution 36a/NQ-CP on building e-Government, initially achieved certain results, but also faced many difficulties and challenges to achieve. comprehensive reform of 3 groups of online public service indexes (OSI), telecommunications infrastructure and human resources (HCI). Currently, the level of online public service provision by administrative agencies is still at a low level (out of a total of 104 thousand public services provided online, 96,500 services are provided at the online levels 1 and 2; only 6,600 services at level 3; 900 services at level 4) (Government, 2015). Besides, telecommunications and information technology infrastructure is still limited; Information technology human resources in administrative agencies are insufficient in number and weak in expertise; other difficulties and challenges in terms of security, safety assurance, information security, and network security. Thus, there are still many problems, requiring ministries, branches and localities to organize research and learn about the 4th Industrial Revolution in order to adjust and supplement plans, programs, schemes and projects about applying information technology, building e-Government in order to take advantage of opportunities brought by IR 4.0.

**Thirdly,** the challenge in building and improving the qualifications and capacity of civil servants in the administration. IR4.0 creates favorable conditions for promoting the application of many modern technological achievements to management activities, especially IT and robotics, then many types of jobs in state administrative agencies can be achieved. performed by computers and robots. In order to ensure the effective operation of the administrative system, it is necessary to build a team of highly professional civil servants with a reasonable structure, especially to improve qualifications and capacity to ensure good use of public services. Modern technology to solve problems. However, the reality of the contingent of civil servants in our country currently has many shortcomings, the number of civil servants in the administrative apparatus is still very large, the structure is not reasonable; The qualifications and capacity of many civil servants have not yet met the job requirements, especially the lack of skills in applying modern technologies. Therefore, continuing to promote the downsizing of the staff, training and fostering to improve the qualifications and capacity of the civil servants...
in the administration to meet the development requirements of IR 4.0 is one of the important tasks, but at the same time a huge challenge today.

**Fourthly**, the challenge in solving social problems of the administration. With a platform integrating many modern technologies, IR 4.0 will affect most areas of social life, especially in the field of production and business, which will bring higher productivity and efficiency. However, it also has the potential to disrupt the balance of the labor market. As robots and automation come to the throne, the number of redundant workers increases, unemployment in society increases significantly, especially for low-skilled workers. On the other hand, the gap between rich and poor will widen between those who provide financial and intellectual capital (inventors, shareholders and investors) and those who depend on labor (laborers and employees). Along with that is the increasing challenge of problems of social evils, social security and order, etc. Therefore, it is required that managers and policy makers need to research and have policies suitable for human resource training and development, job creation, social security and social order assurance.

**Fifthly**, the challenge of changing to adapt to the development of society. IR 4.0 creates a huge change in all areas of social life. According to many experts, IR 4.0 is developing at an exponential rather than a linear speed. Klaus Schwab (German), President of the Davos World Economic Forum, who introduced the concept of IR 4.0, affirmed: “We are moving towards a technological and industrial revolution that makes fundamental changes lifestyle, working style and communication method. In terms of scope, scale and complexity, this shift is unlike anything humans have ever experienced.” In the face of drastic changes in society due to the impact of IR 4.0, the administrative system must also change to meet the requirements of social management. The ability to adapt to the change and development of society is also one of the important requirements of modern administration.

**Some solutions to make good use of the Industrial Revolution 4.0 on state administrative reform**

**Firstly**, it is necessary to thoroughly understand the awareness among all cadres and civil servants of the administration, especially the leadership team, about the impacts of the Fourth Industrial Revolution on the state administration. From there, make specific action plans; each cadre, civil servant and each agency and unit in the administrative apparatus need to have specific initiatives and solutions to reform and perfect the organization and operation of the agency and unit to meet development requirements development of IR 4.0.

**Secondly**, it is necessary to actively improve the institutional system of the administration, create a legal corridor for the development of industries and fields to meet the development requirements of IR 4.0. First of all, it is necessary to quickly improve the legal environment for the development of the science and technology market in the direction of integration, to build a legal environment for the development of new business lines in Vietnam, which is being formed since IR 4. The State needs to create favorable conditions for businesses to access, participate in and apply advanced technologies. At the same time, it is necessary to soon complete the system of institutions and policies on education, training and development of social human resources; policies on job creation, social security,...

**Thirdly**, promote the application of modern technological achievements to the management activities of state administrative agencies. In particular, it is necessary to promote the application of IT achievements in building e-Government in order to achieve the goals of e-Government according to Resolution 36a/NQ-CP, to better meet management requirements in the context of e-Government.

Strongly implement the construction and development of e-Government and digital government in order to apply scientific and technological advances to innovate working methods, improve management capacity, operate smoothly and efficiently, effectiveness and efficiency of administrative agencies at all levels, creating a driving force to promote national digital transformation in a comprehensive way to develop the digital economy and digital society. In particular, the National Public Service Portal must be the most important starting point of the State Administrative Reform Program for the period 2021-2030, ensuring that by 2023, all public administrative services will be integrated to the National Public Service Portal.

**Fourthly**, build a contingent of administrative civil servants with an appropriate structure; renovating recruitment and training to improve the qualifications and capacity of civil servants, ensuring that civil servants can apply many modern technological achievements of the Fourth Industrial Revolution on management and administration.

**Fifthly**, all levels and sectors need to quickly review and develop strategies, planning and action plans to prepare conditions and implement from now on the integration, cooperation, and bringing Vietnam into the group the leading country in proactively welcoming IR 4.0 effectively, avoiding being further lagged behind in this revolution.

**Conclusion**

Administrative reform is considered by many countries around the world as an indispensable requirement, a breakthrough in order to promote growth, improve the competitiveness of the economy, promote democracy and contribute to improving the quality of life, people's lives. In Vietnam, in the process of international integration, it has taken advantage of the achievements of IR 4.0, actively contributing to the state administrative reform towards modernity, contributing to socio-economic development in the process of economic integration.
international import; confidence of the business community and society increased. However, IR 4.0 also poses many challenges to administrative reform in Vietnam, requiring synchronous implementation of solutions. Therefore, the synchronous implementation of solutions will contribute to state administrative reform in a streamlined, fair and modern manner, contributing to socio-economic development.

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References
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