# The Transformation and Challenge of Human Resource Management in Public Sector Under Digital Economy

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**ABSTRACT**

Digital economy, as an emerging economic form, opens a new journey for China's economic and social development, and promotes the shift of the distribution space of human resource management in the public sector, the change of objects of action, the upgrade of information management, and the transformation and development of human demand. However, as far as human resource management in the public sector is concerned under the current digital economy, there are still some urgent problems, such as information security cannot be effectively guaranteed, public officials cannot be properly placed, and management system has not been scientifically established. At present, it is an important task for China's public sector to further improve the system construction, ensure information security, strengthen prediction and analysis, optimize personnel placement, learn from foreign experience, and improve the management system.

*Keywords: Digital economy, The public sector, Human Resource management*

## 1. INTRODUCTION

On May 22, 2020, the Government Work Report clearly stated that "Internet Plus" should be promoted comprehensively to create new advantages of the digital economy [1]. This is the third time that the digital economy has been included in the Government work report. As a representative of emerging technologies and advanced productive forces, it has become the general consensus of China to promote development by grasping the trend of the development of the digital economy, cultivating new growth drivers through informatization and driving new development with new growth drivers. At the 20th Meeting of the Council of Heads of State of the Shanghai Cooperation Organization (SCO), the 12th BRICS Summit, the 27th APEC Economic Leaders' Meeting and the 15th G20 Summit, China stressed the importance of developing the digital economy. According to the China Internet Development Report 2020, the digital economy in China will reach 35.1 trillion yuan in 2019, accounting for 36.2 percent of China's GDP. As can be seen from Figure 1 and Figure 2, the scale of digital economy in China is steadily increasing year by year, and the proportion of the scale of digital economy in China's GDP is also gradually increasing. From this, it can be seen that the digital economy has a profound impact on China's economic development. Relying on emerging technologies such as artificial intelligence, cloud computing, big data, blockchain, Internet of Things and 5G communication, digital economy has emerged as a new economic form with features such as rapid iteration, strong penetration and sustainability.

In the fifth meeting of the 19th the central committee of the communist party of China is to develop national economy and social development of "difference" plan
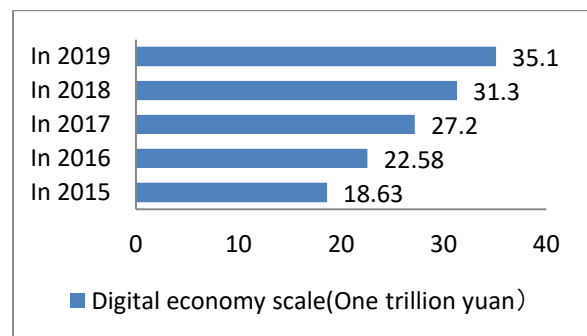


**Figure 1** The scale of China's digital economy.

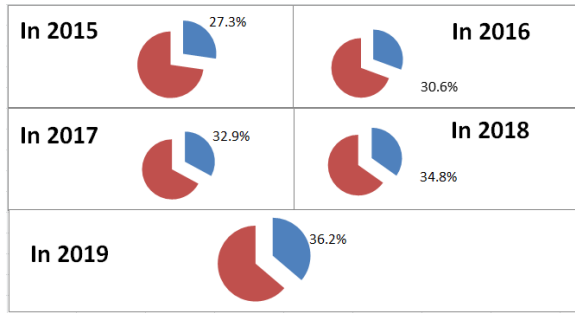| In 2015 | 27.3% |
| In 2016 | 30.6% |
| In 2017 | 32.9% |
| In 2018 | 34.8% |
| In 2019 | 36.2% |

**Figure 2**The digital economy as a share of GDP.

and 2035 vision of article 15 points out, accelerate the development of digital, to strengthen the construction of digital society, government and enhance the level of public service and social governance, digital intelligent. The construction of digital government has opened up a new way for the transformation and development of human resource management in the public sector. In essence, the digital economy not only rearranges and optimizes the human resource structure of the public sector, enhances the convenience of the masses, but also maintains social equity to a certain extent. In the implementation of digital enabling industry, more attention should be paid to enabling human resources. The traditional form of human resource management in the public sector has been transformed into a new mode of human resource management in the public sector in the new era, but there is still a gap between it and a new mode of management that meets the development requirements of the digital economy era. Therefore, it is still urgent to promote the transformation of human resource management in the public sector under the digital economy.

## 2. THE TRANSFORMATION OF HUMAN RESOURCE MANAGEMENT IN THE PUBLIC SECTOR UNDER THE DIGITAL ECONOMY

Human resource management in the public sector has produced a series of influences in the digital economy, which can be divided into four categories:

shift of distribution space, change of role objects, upgrade of information management, and transformation of human demand. As shown in Table 1 below, prior to integration with the digital economy, physical aggregation, person-to-person coordination, segmental management, and expertise requirements were presented. When combined with digital economy, virtual aggregation, man-machine cooperation, chain management and generalist need are presented. It can be seen that the digital economy has greatly improved in efficiency, efficiency, fairness, comprehensiveness and other aspects.

### 2.1. Shift of distribution space: shift from "physical aggregation" to "virtual aggregation"

In the context of digital economy, human resources in the public sector have shifted from the traditional aggregation of the same time and space to the aggregation of the same time and different Spaces. In the traditional economic era, China's civil servants carry out a single channel of real-time on-the-spot training through party schools and executive leadership colleges at all levels, with tangible human resources. Nowadays, based on emerging technologies, the training of civil servants is increasingly diversified and networked, forming a new pattern of education and training and presenting virtual agglomeration of human resources. Virtual agglomeration is a way to share resources, communicate with each other and work and learn together across space on the basis of various network platforms. On November 27, 2020, people club department organize this year's national people's window units unified online business skills and take ShuDeHua invigilation cross verifier and remote areas, field monitoring, the combination of digital economy is more advantageous to improve the convenience of the public sector human resources work, reduce the physical space aggregation of capital cost and time cost, at the same time, to a great extent, improve the efficiency of the public sector.

**Table 1.** Comparison of human resource management in public sector before and after digital economy

| | Past | Now |
|---|---|---|
| Distributed Spatial Shift | Physical polymerization | The virtual cluster |
| Action Object Change | Everyone is to coordinate | The man-machine cooperation |
| Information Management Upgrade | Sections of the management | Chain management |
| Manpower Demand Transformation | Specialist | Generalists |

## 2.2. Object change: change from "human coordination" to "man-machine cooperation"

Under the background of digital economy, the role of human resources in public sector has changed from "business operator" to "operation instructor", and from traditional "execution in front of the stage" to "decision-making behind the scenes". One of the development trends of digital economy is that everything is interconnected and fully interconnected, and the whole society is ubiquitous [2]. Take public hospitals as an example. In the traditional economic era, whether patients are queuing for registration or receiving inspection reports, all businesses are handled by hospital staff, with coordination between people as the main method. In today's digital economy, with the application of the Internet of things and artificial intelligence, patients can make online appointment and registration and pay fees, print the test report by themselves at the self-service terminal by virtue of their ID card or TWO-DIMENSIONAL code, and provide operation guidance to relevant hospital workers, mainly playing a role of auxiliary coordination. For hospital workers, the development of technology and the creation of strength is also based on sophisticated supporting equipment, medical staff and medical equipment pay equal attention to, the effectiveness of cooperation between the two is crucial. The trend of human-computer cooperation in the public sector under the digital economy puts forward higher requirements for the development and training of human resources to some extent.

## 2.3. Upgrade of information management: change from "segment management" to "chain management"

Under the background of digital economy, human resource information management in public sector has shifted from traditional decentralized management to systematic management. The flow of human resources in the public sector is like a Pandora's box. According to the Research of Katz curve and Cook curve theory, it is an effective way for organizations to achieve the best benefits and maximize the creativity of talents, timely change their jobs and environments, and carry out reasonable talent flow. But at the same time, human resources flow constantly, information management becomes more difficult. In the current era of digital economy, network data sharing, coordination and cooperation between various departments, and personnel file information of mobile personnel belonging to local human resources and social security departments can be published and checked on the website, which promotes the public sector to grasp human resource information from point to line, from independence to continuity, more complete and comprehensive, and more systematic management.

## 2.4. Transformation of manpower demand: from "specialist" to "generalist"

Under the background of digital economy, the demand for human resources in public sector has shifted from traditional professional and technical personnel to compound talents. The emphasis on specialized knowledge and skills is a typical feature of job classification. On the contrary, talents in the era of digital economy not only include technical elites in the traditional sense, such as engineers and data analysts who are skilled in computer technology, but more importantly, integrated talents who can combine data application with specific industries, so as to truly put digitalization into the real industry [3]. Due to the COVID-19 outbreak this year, which has accelerated the global economic transition to digitalization, the number of online education users in China has reached 381 million by June 2020, accounting for 40.5 percent of the total Internet population. In order to improve the effect of online education, the teachers urged themselves to learn more Internet operation knowledge and build the image of "anchor". In this special period, anchors who do not master the basic operation of computers will not be good teachers. Only by improving the comprehensive quality and involving in the knowledge of various industries can we effectively solve the practical problems of the public sector and contribute social value.

## 3. THE DILEMMA OF HUMAN RESOURCE MANAGEMENT IN THE PUBLIC SECTOR UNDER THE DIGITAL ECONOMY

### 3.1. Information security cannot be effectively guaranteed

There are hidden dangers in the network information security of human resource management in the public sector in China under the digital economy. In the era of digital economy, the information island has been transformed into a big data system, enabling the public sector to better perform its functions and provide high-quality public goods and services to the society. At the same time, the privacy of human resources cannot be effectively protected when the public sector collects and uses information. Important information such as identity information, work history, address and contact information has been developed for many times and handled by many people. In the process of sharing information, there is a risk of leakage at any time. From a technical point of view, computer malicious hackers fully unlock encryption programs and create viruses, becoming a time bomb to steal human resource information. There is still a long way to go to realize the dual pareto of data sharing and information protection balance [4].

### 3.2. Difficulty in settling public officials

Digital economy not only brings convenience to the public sector, but also has an impact on the problem of personnel placement. The rapid development of artificial intelligence gradually liberates the work of corresponding public officials, leaving them with no "work" to do. The impact of this technological advance is felt across the public sector. In the state-owned banks, the manual service window of the bank is gradually reduced and the multi-function self-service machine is increased. Take China Construction Bank as an example, in 2014, the number of branches was 14,709, an increase of 100 compared with the previous year, and the number of tellers was 112,751, a decrease of 2,851 compared with the previous year. In 2014, ICBC had 16,758 outlets, 128 fewer than that of the previous year, and 121,228 tellers, 12,024 fewer than that of the previous year. Under the catalysis of digital economy, the public sector in order to improve the efficiency, to strengthen the department responsibility, reduce operating costs, must keep up with the trend of The Times for different degree of reform, the result is directly lead to the flow of public sector hr even quit, these personnel placement will be harmful to the economic development of our country. Therefore, in the digital economy, in order to prevent the rise of the unemployment rate in China, it is of Paramount importance to properly settle the completely liberated human resources and mobilize the human resources of the public sector, which should not only protect their basic rights and interests but also avoid the arbitrary waste of social resources.

### 3.3. The management system has not been established scientifically

Under the digital economy, the scientific degree of human resource management system in the public sector needs to be improved. First of all, China's civil servant recruitment examination system is still not perfect. The civil servant recruitment examination adopts the form of written examination and interview. The line test in the written examination is all presented in the form of selection. The professional analytical ability of personnel cannot be accurately demonstrated. The interview mainly focuses on examiners' ability to cope with changes. The limitation of academic degree alone is far from enough to prove examiners' professional quality, let alone the ability of data analysis and application and comprehensive network operation. Secondly, the evaluation system of civil servants is still not perfect, and many evaluation indexes are not easy to be quantified. The human resources of the public sector are characterized by political nature and publicity, which has special requirements on the human resources assessment. It requires not only the job competence of personnel, but also their strong public responsibility and

dedication, and they should combine skills with responsibilities.

## 4. DEVELOPMENT STRATEGY OF HUMAN RESOURCE MANAGEMENT IN THE PUBLIC SECTOR UNDER THE DIGITAL ECONOMY

### 4.1. Improve system construction to ensure information security

Facing the information security problem under the digital economy. First of all, a new information platform can be built to make the operation of information break away from the constraints of hierarchical authority and realize the flow across levels and departments, so as to objectively reduce the possibility of the same information being repeatedly released and transmitted, make the flow of information more open, avoid the delay of information as far as possible, and realize the value-added of public information. Second, accelerate the optimization and upgrading of information networks, improve the energy efficiency and security management level of the public sector, and enhance the capability of network information security. Improving the controllable level of software and hardware products and emergency communication equipment for public departments to collect and store information resources [5] is conducive to improving the security protection system and the early warning mechanism of network information security incidents. Finally, improve the human resource information system of the public sector security risk evaluation mechanism and means, enhance the network infrastructure attack prevention and disaster backup recovery capability. We will improve safety management mechanisms and guide and standardize the safe development of new technologies and applications. We will strengthen the construction of an information protection system, build a comprehensive socialized governance system, and strive to create a safe, healthy and trustworthy network environment.

### 4.2. Strengthen prediction analysis and optimize personnel placement

Facing the problem of personnel placement, first of all, we can predict the supply and demand of human resources through the foresight of big data forecasting on the Internet. Through the big data platform, real-time dynamic information of posts can be collected centrally, and human resources prediction of public sectors can be made by using empirical judgment, statistical methods and prediction models [6], so that public employees can be employed quickly again even if they lose their jobs temporarily. This is a key part of human resources planning. At the same time, in the process of human resource placement in the public sector, more attention should be paid to fairness, and the digital economy

platform should be used to conduct personnel placement in a scientific and fair way. In this way, in the process of exercising public power, the problem of power abuse driven by interests of departments and individuals can be prevented. Finally, human resource development in the public sector should be fully considered in personnel placement. At present, the main body of civil servant training in China is party schools and cadre colleges at all levels, without introducing market competition mechanism and single training channels. The training of civil servants should be diversified, networked and socialized, so as to improve their own quality, make them have the ability to solve various emergent problems, become generalists suitable for many positions, and alleviate the troubles caused by personnel placement.

### 4.3. Learn from foreign experience and improve the management system

Human resource management should be comprehensive, comprehensive and innovative. Draw lessons from the British civil servant acquisition method, before the employment of the embodiment of analytical ability, mathematical ability, communicative ability and decision-making ability of the practical test. Based on the experience acquired by Singapore civil servants, pay attention to academic performance and conduct necessary psychological tests, including tests of basic qualities and potential abilities, to facilitate the placement of suitable jobs after recruitment. This requires that in the human resource management of our public sector, firstly, expand the way of talent acquisition. High-quality human resource acquisition is conducive to the acquisition of talents needed by the public sector, avoid the high cost caused by repeated recruitment, and maintain the stability of the human resource team in the public sector. Second, further construction of the teaching staff. We will send civil servants to the grass-roots units for temporary training in order to increase their theoretical knowledge and practical ability. Cultivating generalists with comprehensive qualities is conducive to the realization of the goals of the public sector. Third, strengthen human resource health management in the public sector. With the transformation of society and the profound changes of government functions, public officials have to face the workplace pressure brought by the institutional reform on the one hand, and the psychological pressure brought by the social and cultural shock on the other hand. The elimination of apathy, depression and other mental health problems can help improve interpersonal tension and better engage in the work of the public sector.

## 5. CONCLUSION

Trend of digital economy and public sector human resource management integration development, make the public sector human resource management from the traditional way, to the virtual cluster, man-machine cooperation, chain management, pay attention to a liberal and fair, for information security, personnel placement, the problem such as management system, with technical support, proactive planning countermeasures and experience for reference will gradually optimized solution. Taking digital economy as the background, promoting the spiraling development of human resource management in the public sector is conducive to improving public services, strengthening the construction of digital government, building a digital China, and actively participating in the formulation of international rules and standards in the digital field.

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