

## Public Administration 4.0: pros and cons

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### Abstract

The public sector of Kazakhstan aims to improve the quality of life of the population through the use of digital technologies. It is necessary to create conditions for the transition of the economy to a new development trajectory. The scope of the research covers a wide range of issues. Considering the capabilities of government agencies, the principal objective of the paper is to analyze the ways of employing and regulation of new technologies and adapting to them. The suggestion of professionalizing the public administration by recognizing people and their attitude to work is an invaluable resource for changing the culture of public administration.

The paper aims to analyze the human and processes resources of public administration through political, economic, societal, and technological needs of the state.

While addressing the challenges of public sector in Kazakhstan, the principal conclusions of research will be in developing of ways to benefit from public administration 4.0. In order to increase the attractiveness of public administration as an employer and the general image of public administration, it is necessary to purposefully and sustainably contribute to the development of public administration 4.0.

### Points for practitioners

The state bodies currently are integrated with one another through the e-government. They address the needs of citizens, business community and other organizations by offering digital public services and access to open data within the policy of open government portals. In addition, the e-government allows exchanging documents within the state agencies. However, the government strives to build even more open and innovative digital government. It is a top priority of the current administration that believes that digitalization will bring an economic growth and facilitates communications with the public. The paper provides an analysis of digitalization reforms and provides recommendations aiming at helping the government at all levels.

**Keywords:** public administration, digital government, digitalization, public sector, public services.

### I. Introduction

Achievement of qualitatively new positive transformations in public administration is currently the first and foremost essential task for policymakers in Kazakhstan. Needless to say, the Constitution of the Republic of Kazakhstan is a foundation for ensuring state stability, consistent management of state bodies, development of political system, progressive and dynamic implementation of radical political, legal and socio-economic reforms, overcoming social contradictions and conflicts. Kazakhstan has been gradually entering the orbit of new geopolitical challenges:

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the escalation of the confrontation between the West and Russia, the phased introduction of new packages of economic sanctions against the main economic partner of our country, the proximity of conflict zones and growing regionalism, criticism and revision of key supra-country institutions of regulation and development. These circumstances require the mobilization of the resources to overcome the global instability and external challenges.

The public sector of Kazakhstan has always been a driver of the country's development. Therefore, the response to external challenges must also come from and be formulated by the state apparatus. Focusing resources, accelerating the deadlines for completing tasks, increasing trust and loyalty of the population, reducing social tension and consolidating society - all these are the conditions for maintaining Kazakhstan's positions in the face of new challenges.

The challenges of modernizing the public administration of the Republic of Kazakhstan have been reflected in a number of strategic documents of the country such as the Strategy "Kazakhstan-2050", the National Development Plan until 2025 and the state program "Digital Kazakhstan" and others.

In such turbulent conditions, the role and importance of the state increases. The competitiveness of the national economy and a well-being of society depend on the level of its compliance with the current and future challenges. Changing formats of public administration in Kazakhstan generally reflect global trends. The government needs to carry out comprehensive systemic reforms on a regular basis towards a digital transformation. In this paper we will first look at what has changed for public administration of Kazakhstan in different periods. We also look in more depth at the reforms of digital Kazakhstan, how these reforms can be improved and what policy challenges they can face from the digital transformation. Finally, we highlight the core principles and analytical framework of public administration 4.0.

## **II. Research methodology**

The methodology of the paper is the analysis of primary and secondary sources on digitalization of Kazakhstan. In this paper, a historical approach and assessment technique of digital transformation are proposed to develop public administration 4.0. The assessment techniques are based on the state program "Digital Kazakhstan" in five main directions: digitalization of economic sectors, transition to a digital state, implementation of the Digital Silk Road, development of human capital and creation of innovation ecosystem. The digital transformation assessment interacts with the core principles and the analytical framework of public administration 4.0. This framework is optimized with regard to impact on the country's development.

## **III. Overview of the public administration development of Kazakhstan**

Kazakhstan gained its independence from the Soviet Union (USSR) in 1991. Before 1991 it was an autonomous country within the USSR and the government was managed by the communist party. During the ruling of the communist party there were three Kazakh constitutions: 1) 1926 Constitution of the Kazakh Autonomous Socialist Soviet Republic; 2) 1937 Constitution of the Kazakh Soviet Socialist Republic, and 3) 1978 Constitution of the Kazakh Soviet Socialist Republic. It is necessary to state from the onset of the soviet regime that the defense function was conceived as the primary function of public administration and civil service. According to article 29 of the 1978 Constitution, the defense of the socialist homeland was one of the most important functions of the government and of the entire people. Following its substitution by the 1993 Constitution of Kazakhstan, the national defense function became the responsibility of the armed forces. Therefore, it happened nearly recently when the government started to prioritize digitalization and e-services.

The development of public administration of Kazakhstan has four main stages:

**The first stage (1991 – 1997 years)** characterized by the institutionalization of public administration. This period is the time of the formation of independent Kazakhstan, when the basic model of public administration was introduced. It was the time when the structural reforms of the state administration system were launched.

**The second stage (1997 – 2007 years)** can be determined as a period of a welfare state. The government mainly focused on the protection and development of the economic and social well-being of citizens. This time is characterized by the application of the core principles such as the "economy first, then politics" and the welfare state.

During this stage of development, the government formed two types of civil servants: political civil servants and administrative civil servants. This was first introduced by the Law of the Republic of Kazakhstan “On Civil Service” dated 23 July 1999. The political civil servants are subject to activities associated with policymaking and implementation of political goals and objectives. They are appointed and dismissed by the President. The administrative civil servants are subject to a permanent professional service. They are divided into two corps: 1) corps “A” – administrative civil service positions at the management level appointed by an official (official body) or the President; 2) corps “B” – administrative civil service positions not included in the corps “A”, where applicants must go through a competitive hiring process before being appointed to a vacant position. The hiring process of the corps “B” includes a test, an evaluation of the individual’s competencies and an interview.

**The third stage (2007-2017 years)** is the period when the strategy "Kazakhstan-2050" and the Strategic Development Plan until 2020 were adopted. Those Strategic documents aimed at joining Kazakhstan in the top 30 developed countries of the world. The government intensified the digitalization of the country and the construction of new infrastructure (transport, housing, energy, social, etc.). The national holdings for the management of state assets have been formed and a new concept of the civil service model was adopted. In addition, the state bodies started to use a five-year strategic plans, introduced the system of annual performance assessment of the state bodies and the system of the state audit. Furthermore, during the third stage the number of government programs has been reduced, the open government initiative was launched and the formation of a compact and professional government apparatus was introduced. As part of this stage, the civil service of Kazakhstan has started the transition to a career model of the civil service. The decentralization of public administration continued by transferring some functions to lower levels and to private sector.

**The fourth stage (2017-2020 years)** is the period when constitutional reforms were carried out to redistribute powers between the branches of the government. The Parliament strengthened its control over the government.

**The fifth stage (2020-present)** is associated with deeper changes in the public administration system by solving the problems of the lack of proper communication with the public, the effectiveness of strategic planning and approaches to reforms, the functions of the state apparatus that are not oriented towards the needs of the population and business, the administrative nature of public services, the uncompetitive public service, ineffective quasi-public sector, undeveloped local self-government, the excessive regulations and low level of citizen’s trust in the judicial and law enforcement systems.

In order to ensure the well-being of each citizen and the further development of the Republic of Kazakhstan, the "National priorities of the Republic of Kazakhstan until 2025" were approved by the Decree of the President of the Republic of Kazakhstan. The national priorities determine the vectors of state development and the basic principles at medium-term distances, which are reflected in the plans, programs and documents of the implementation level within the framework of the strategy "Kazakhstan-2050". There are three main directions: the well-being of citizens, the quality of institutions and a strong economy.

The well-being of citizens is one of the key areas, since we all felt the impact of the pandemic. The state support is important in providing an affordable medicine, education and a fair social policy. The key indicators in this area are the re-equipment of medical funds, the accessible internet in the regions, and increase in annual income for the population.

The quality of institutions is also an important area. An efficient state apparatus is a priority, first of all, for the civil service, public services, and the quasi-public sector. In this regard, the basis for these changes is the 2021 Concept for the development of public administration in Kazakhstan until 2030, and the success of this direction will directly affect the effectiveness of other reforms.

Building a diversified and strong economy is the continuation of the earlier reforms. The backbone for the development of a non-resource growth model will be the trade and economic diplomacy of the country established over the decades of independence.

#### **IV. Digital Kazakhstan**

Globalization, bringing countries and regions closer together, creates at the same time areas of high responsibility. The growth of cooperation, the borrowing of experience and technologies will intensify communication and cooperation in various fields. In turn, the trends of convergence increase the responsibility of public administration in preserving independent progressive development, national and cultural identity, ensuring security while enhancing cross-border communications, environmental sustainability in the joint development of natural resources and a number of other issues.

The development of civil society is facilitated by the ongoing consistent measures to increase the openness and transparency of the civil service. The role of social media is growing, the influence of activists is expanding, which, in turn, increases the importance of communication strategies and technologies in public service.

Advances in technology open up access to unprecedented new forms of production of goods, communications and services. Big data, industrial automation and virtual services, contributing to the acceleration of economic development and improving the quality of life, at the same time, raise issues of public administration in the development and assimilation of new technologies, including digital technologies and information security, as an important basis for the country's sustainable development. In the context of a profound transformation of public administration practice under the influence of information technologies, the governments of many countries are beginning to experience pressure from both citizens, who demand an improvement in the quality of public services, and from businesses seeking to build mutually beneficial relations with the state.

The growth of uncertainty inevitably accompanies new trends in the development of society. Traditional jobs are diminishing due to automation, rising urbanization and aging societies are driving up social and health spending. The pace of technological and social change is quite high, and this increases the uncertainty in business, labor resources and income, which in the absence of a strategic vision and a realistic assessment of acceptable risks can contribute to social tension in society.

The spread of the coronavirus and the measures introduced to handle it have brought some issues in public administration efficiency. The pandemic as a catalyst for the transformation of the work has contributed to the rapid implementation of reforms in public administration through the digitalization of administrative operations.

It should be noted that at the beginning of the lockdown the government struggled to meet the expectations of citizens to offer high standard digital services and establish better digital communication with the public. Thus, one of the challenges facing by public administration is the ability to develop new and timely responses to very rapidly changing economic, technological and public health conditions and the need to ensure the resilience to future systemic threats.

On December 12, 2017, the government adopted the state program “Digital Kazakhstan” for the period of 2018-2022. According to the Program the digitalization of the government will be implemented in five main directions: digitalization of economic sectors, transition to a digital state, implementation of the Digital Silk Road, development of human capital and creation of innovation ecosystem. The government’s transition to public administration 4.0 will be assessed based on each direction.

### ***1. Digitalization of Economic Sectors***

The creation of digital government is significant to the development of modern economy. The impact of digitalization is huge in providing public services, interaction with citizens and businesses, replacing labor-intensive and costly processes and making decisions based on big data and analytics.

Since 2005 the government of Kazakhstan started creating an “electronic government”. In 2013 the government adopted the State Program “Information Kazakhstan-2020”. The Program contributed to the transition to the information society, increase of administrative efficiency and availability of information infrastructure.<sup>4</sup>

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<sup>4</sup> Postanovlenie Pravitel'stva Respubliki Kazahstan ot 12 dekabrya 2017 goda № 827 Ob utverzhdenii Gosudarstvennoj programmy "Cifrovoj Kazahstan" (Decree of the Government of the Republic of Kazakhstan dated 12 December 2017 On the State Program “Digital Kazakhstan”).

In 2017 the administration announced the Third Modernization with a focus on digitalization and using digital tools to drive industries forward. As of July 2017, the government converted more than 740 services into electronic form and introduced 83 mobile public services.<sup>5</sup>

The government of Kazakhstan has started the digital transformation journey by introducing the e-government. It put most of the public services online. However, the growth of digital technologies and emergence of new digital tools increased the expectations of citizens. The government should be open and accessible with good quality digital public services. Achieving these goals in the Republic of Kazakhstan means that the public administration system must transform from reactive to proactive management, from satisfaction with the present to questioning about the future. This requires changes in attitudes, values and culture.

The Kazakhstan National Development Plan until 2025 determines that it is necessary to achieve a high-quality and sustainable economic recovery, leading to an increase in the well-being of people at the level of the countries of the Organization for Economic Cooperation and Development. In this case, an important benchmark will be the UN Sustainable Development Goals.

Within the framework of the state program "Digital Kazakhstan", the transition to a digital state is being carried out, based on the transformation of the functions of the state as an infrastructure for providing services to the population and business, anticipating its needs.

The modernization of the public administration system is also carried out within the framework of the Plan of the Nation "100 Concrete Steps to Implement the Five Institutional Reforms". According to the Plan, a constitutional reform was carried out to redistribute powers between the branches of state power. The role of the Parliament and its control over the government has been strengthened. A "compact government" is being formed, accountable to citizens. Some functions and services have been transferred to lower levels or to private sector.

Public Administration 4.0 should replace Public Administration 3.0. There are conditions in Kazakhstan to digitalize economic sectors and automate public sector workflows as well as to deal with policy issues of structural changes. The government should also ensure the digitalization of private sector and establishment of new digitally effective business models.

## **2. *Transition to a digital state***

A digital state should have a digital legislation and regulation in data privacy, cybersecurity, information technologies, consumer protection and others. Most of the problems of the digital state are regulated in the Civil Code of Kazakhstan dated 27 December 1994. In addition, there are programs and concepts such as the 2017 state program "Digital Kazakhstan" and the 2017 Cybersecurity Concept "Cyber Shield of Kazakhstan" and the law on personal data protection dated 21 May 2013. There was an amendment in 2020 which put into responsibility the Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan as an authorized state body in the sphere of personal data protection.

Over the past few years cloud services have been increasingly used in providing public services. Compared to other countries Kazakhstan does not have a specific law on cloud computing, but they are regulated by the Law "On information" dated 24 November 2015.

Although risk averseness exits with many new technologies, there is a need for government to support innovations. The government's role in the employment of technology is clear. It should support directly or indirectly the use of digital tools that lead innovations for public goods. However, in terms of the government's role in the regulation of new technologies the answer is not simple. The government is responsible to stimulate the development of technological infrastructure and to regulate the process of social assessment of new technologies in order to encourage innovations from the private sector.<sup>6</sup> Thus, the core function of the government in the regulation of new

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<sup>5</sup> Ibid.

<sup>6</sup> Emerging Technologies: Consequences for Economic Growth, Structural Change and Employment, Symposium 1981, ed. Herbert Giersch (Tubingen, 1982) p. 341.

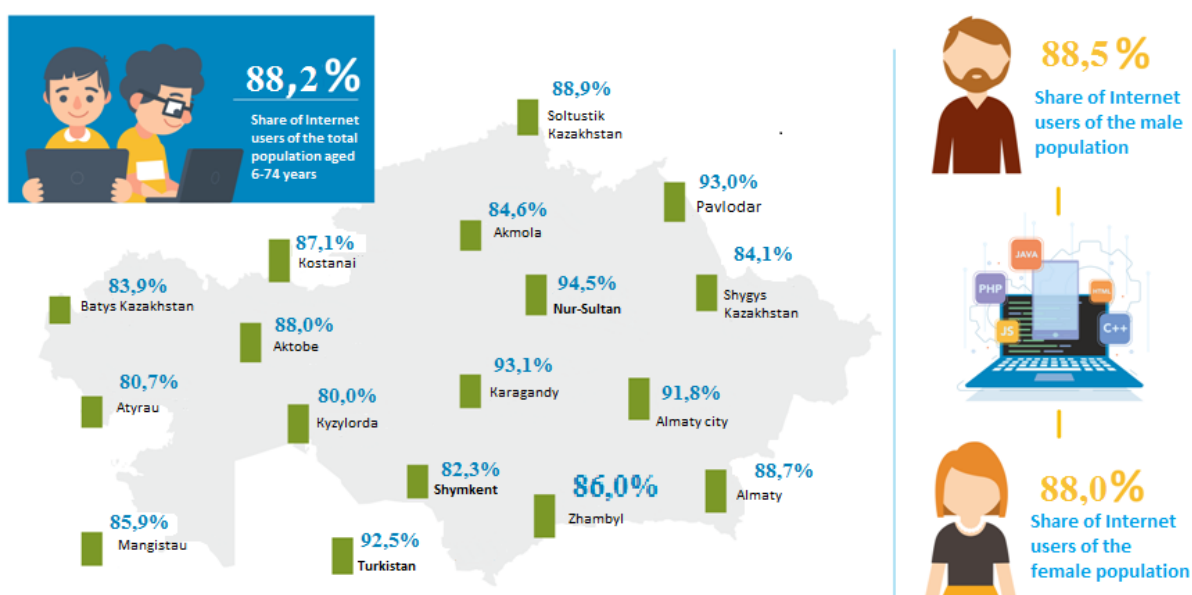
technologies is to constantly assess their impacts. In addition, the government must encourage the stimulation and finance innovation in the field of government functions and public services.<sup>7</sup>

### 3. *Implementation of the Digital Silk Road*

The Digital Silk Road provides a high-speed and secure access to the internet and mobile coverage throughout the country. Availability, stability and security of data transfer are the technological basis for the development of all industries of the economy and improvement of the quality of life. The main task remains the development of digital infrastructure in rural areas with a broadband internet connection. The internet users of Kazakhstan have been increasing year by year. The share of internet users of the total population aged 6-74 years amounted to 88, 2%, of which most are mobile internet users.<sup>8</sup>

*Picture 1. Internet users throughout Kazakhstan*

**Share of Internet users of the total population aged 6-74 years, by sex**

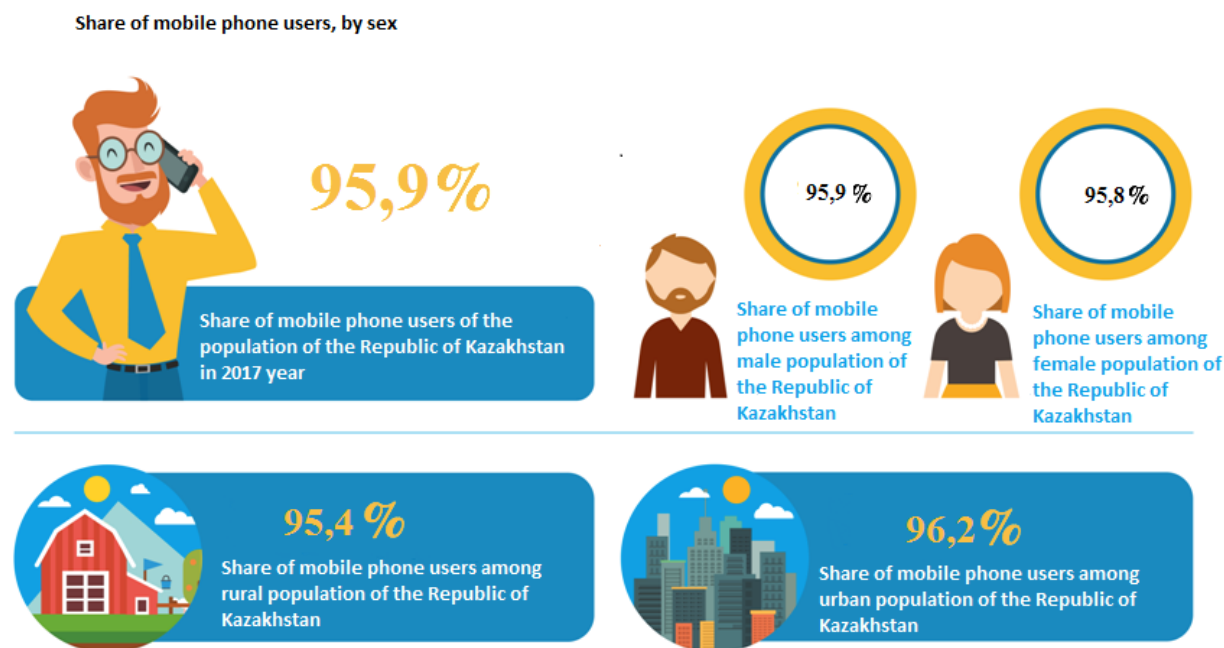


Source: Agency for Strategic planning and reforms of the Republic of Kazakhstan Bureau of National Statistics

<sup>7</sup> Ibid.

<sup>8</sup> Agency for Strategic planning and reforms of the Republic of Kazakhstan Bureau of National Statistics, [https://gender.stat.gov.kz/page/frontend/detail?id=103&slug=674&cat\\_id=11&lang=ru](https://gender.stat.gov.kz/page/frontend/detail?id=103&slug=674&cat_id=11&lang=ru), accessed 14 April 2022.

Picture 2. Mobile phone users in Kazakhstan



Source: Agency for Strategic planning and reforms of the Republic of Kazakhstan Bureau of National Statistics

While providing the high-speed digital infrastructure to the population, the government should strengthen cybersecurity and management across the public administration and operations. Considering the fact of 2019 when there was a major personal data leak of 11 million people, there is a need to adopt additional protocols and scenarios to ensure security from any risks of cyber threats.<sup>9</sup> Another priority is to provide cloud services as a way to improve public services. It is efficient in terms of public services, cost saving and offers a high performance of digital governments.

#### 4. Development of human capital

The development of human capital is significant in building a digital government. There are government operations that cannot be substituted by digital technologies. Thus, it is important for the government to focus on hiring innovative and creative individuals and train them for digital skills.

In February 2021 the new Concept for the development of public administration in the Republic of Kazakhstan until 2030: building a "human-centered" model - "People First" approved by the Decree of the President of the Republic of Kazakhstan. The concept envisages improving the interaction of citizens with the state, increasing the efficiency of strategic planning, the quality of the civil service personnel, the efficiency of the quasi-public sector, optimization of the state apparatus and the transition to a proactive format for the provision of public services, the development of local self-government, the improvement of regulatory and anti-corruption policies, as well as the transformation of judicial and law enforcement systems.

The government of Kazakhstan maintains a central database, called GOV.KZ, which lists every job opening for administrative civil service positions. These announcements provide applicants with information about job qualifications, duties, salary, duty location, necessary documents and the date of interview. The key requirements for

<sup>9</sup> Forbes, CARKA zayavil ob utechke personal'nyh dannyh 11 mln kazahstancsev [TSARKA announced the leakage of personal data of 11 million Kazakhstanis], 4 July 2019 (in Russian) [https://forbes.kz/process/internet/tsarka\\_zayavil\\_ob\\_utechke\\_personalnyih\\_dannyih\\_11\\_mln\\_kazahstantsev/](https://forbes.kz/process/internet/tsarka_zayavil_ob_utechke_personalnyih_dannyih_11_mln_kazahstantsev/)

the civil service include Kazakhstan's citizenship, absence of a previous charge, medical or physical standards, and education and qualification requirements. The qualification requirements may vary based on the types of civil service positions. For instance, the qualification requirements for the administrative civil service positions in the corps "B" must be approved by the authorized body, whereas the special qualification requirements for the administrative civil service positions in the corps "A" must be approved by the President. Pursuant to the new amendment to the Law on the Civil Service certain political civil servants may be subject to qualification requirements defined by the President. However, for the transition to the public administration 4.0, the government must ensure a fair competition and recruitment and selection based on the possession of digital skills.

### **5. *Creation of innovation ecosystem***

The innovation ecosystem starts with prioritizing the needs of citizens. There is a strong criticism towards the government's role in addressing critical public needs. Today it is necessary to rethink and regulate the mechanism of assessment needs of the population in order to prove the effectiveness of certain measures of state policies before their implementation throughout the country. The practice of participatory democracy involves citizens in participation in public debate processes.

An innovation ecosystem must also consider favourable conditions for the development of technological entrepreneurship with stable ties among private sector, civil society, academia and the citizens. However, in the creation of innovation ecosystem the government agencies should not measure their performance solely on the basis of results. It is not the results themselves that are important, but the quality of the processes that lead to these results. Achieving results may not guarantee that success will repeat itself. However, mastering the process of its implementation may guarantee the achievement of results again and again in the future. The quality of the process does not mean simply maintaining existing rules and regulations, because it can lead to thoughtless execution, bureaucracy and the lack of feedback. The process quality means constantly thinking about better mechanisms of how to incorporate feedback from citizens and private sector to encourage their open participation.

Governments looking for the future are already prioritizing innovation initiatives and dynamic regulation that will work more closely with the private sector to help them get out of debt and achieve high profit margins. Prompt execution, monitoring and control of results - these are the three main principles of the work of any state organization in modern conditions.

## **V. *Contribution to Public Administration 4.0***

For the effective implementation of public administration 4.0, it is necessary to follow such principles as:

### **1. *From performance to potential***

The success of any organization depends on how well it mobilizes its human resources: it uses creativity, maintains interest, enhances commitment, and optimizes results. Such success is based on what opportunities are provided to civil servants to develop their abilities, demonstrate their potential, and realize themselves. Success also depends on assigning the best people to positions of responsibility so that they can then create the conditions for others to contribute. The public service must evaluate candidates in terms of how far they can go in performing challenging jobs.

### **2. *From results to processes***

It is necessary to raise awareness of the digital transformation process. The qualitative processes may lead to effective results. The traditional process of vertical decision-making should be revised. The more regulative and control functions are present in a vertical structure where decisions are made from top to bottom. In a horizontal structure, decisions should be made across all departments by joining up their knowledge and sharing expertise. Therefore, more strategic and implementing functions are needed to the government to receive a better quality of information during the digital transformation process.

### **3. *From coordinating action to coordinating vision***

It is necessary to introduce protocols, documents and plans for uncertain scenarios against cyber threats, disasters and pandemic. This would make the performers more sensitive to changes, which allow them to react more



quickly and be prepared to any risks. The civil servants must ensure qualitative performance and control over the effective implementation of protocols and scenarios. As a result of this management, the government must assess the practice of the protocols or scenarios implemented.

4. *From the smallest to the largest*

Decentralization of budgeting is based on the idea that those closest to the public are in a better position to use the resources effectively. The role of local government as part of the unified system of executive bodies is to ensure the implementation of the state policy along with the interests and development needs of the relevant territory. To optimize the resources, the critical question is: “This is the amount we have at our disposal. What can we do from this?” This approach allows us to prioritize and stimulate creativity and innovation, as opposed to the previous approach of: “This is what we want to do. This is the amount we need”.

5. *From management to leadership*

Public administration must move from being a mere service provider and regulator to being a catalyst for change. Public administration should become a guide to the future leading society and business. It would require a participation of diverse groups such as the government agencies, private sector, civil society, media and academia.

Table 1. Analytical framework of public administration 4.0

PUBLIC ADMINISTRATION 4.0			
The government’s digital transformation problems	Recommendations	Outcome	Impact
Lack of awareness about the digital transformation opportunities  Lack of specific legislations and regulations on digital state transformation  Lack of capacity to build a digital government	Develop a mechanism for public needs assessment	Improved digital public service	Active participation of citizens, private sector, civil society and academia in building a digital government
	Perform the government’s digital transformation capacity gap	Better digital communications with the public	
	Determine new approaches to the formation of public functions	Enhanced administrative operations	Digitally inclusive society
	Reduce the functions by transferring to private sector	Improved public service image	Sustainable economic growth  Develop a sense of autonomy and self-confidence of citizens
	Reform the management of subordinate organizations	Enhanced capacity to implement the digital strategies	
	Make decisions based on data and create a complete open data		
	Develop guidelines for government agencies on the selection of data		

	sources, collection and analysis of information		
	Exclude the practice of information requests among the government agencies		

## VI. Implementation Issues

The public administration 4.0 presupposes the economic feasibility of the decisions, the introduction of "blockchain responsibility" (political officials are assigned project roles with personal responsibility for failure to achieve the goals and results), and close interagency cooperation. All activities of the state apparatus are carried out according to the formula "Needs / Objectives + Functions + Resources = Results".

With this approach, the activities of structural divisions of the government agencies and organizations that are not directly involved in the implementation of projects will be aimed at ensuring the "current" functionality. It is also proposed to abolish the current assessment of effectiveness of the government agencies. Instead, it was proposed to assess the effectiveness and efficiency of the goals and results of the programs, primarily based on the control of projects by the "earned value method".

The transition to public administration 4.0 can be carried out in two stages. At the first stage, it is required to complete the formation of the necessary digital infrastructure and regulation (specific legislations on digital tools, cloud computing, training of civil servants to digital skills, a unified information platform etc.). The Administration of the President and the Minister of National Economy, who are drivers of government performance and reforms, should actively be involved in the transformation process. In addition, the Ministry of Digital Development, Innovations and Aerospace Industry should contribute to the transition with its specialized expertise. At the second stage, the Ministries of Finance, National Economy, Digital Development, researchers and NGOs should be involved in data driven assessment to produce a high-quality outcome.

## VII. Conclusion

The future development of public administration 4.0 in Kazakhstan will depend on the success of the implementation of certain policies on digital transformation. However, there are significant difficulties in its implementation. The government strives to ensure a well-being of all members of the society and meet the needs of citizens, private sector, civil society and others. Economic and social developments have been closely related to the government's actions to create conditions for innovation and development. The government needs to use metrics and indicators that could be scaled up and re-use to assess and compare the progress in digital government implementation. There are policy challenges for the government in digitalization for the next years such as development of human capital, automation of public sector workflows, digital government performance survey, cybersecurity that need to be addressed, implemented and assessed.

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