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DIGITAL TRANSFORMATION OF KAZAKHSTAN: TO WHAT EXTENT IS THE COUNTRY READY TO EMBRACE IT?

Abstract. Digital transformation is becoming a mainstream of world economic development providing benefits both to consumers and to businesses adapting to the technological change. Kazakhstan, among many other countries, is currently developing a digital economy strategy aimed at supporting sustainable economic growth and increasing productivity. This paper aims to add to the current debate on the priorities of digital economy in RK by benchmarking Kazakhstan ICT development with that in the EAEU countries and identifying some important preconditions for the digital transformation. Based on the analysis, the new digital economy strategy should be oriented at supporting three main priorities: reducing administrative barriers and creating economic incentives for business digitalization; developing ICT infrastructure with special attention to speed and quality of connection services; and investing in digital skills. These efforts should be complemented by a monitoring and evaluation framework including both core dimensions measured in the EAUE and sector-specific metrics of digital transformation. The digital adoption index is the highest when it comes to government agencies and organizations. The infrastructure (technical capacity) is developing, while the demand (availability and need) is not. The digital transformation process is basically hampered by group interests, unclear regulation, and preservation of the state monopoly. Provisions of the State Program for the Digital Kazakhstan adopted in 2017 clearly determine directions for the development of the telecommunications infrastructure. The tasks related to the application of technologies are thus vague, and performance indicators are narrowly sectoral. At the same time, the discourse on digital transformation goes beyond the traditional partnership between the state and the branch lobby.

Key words: Digital economy, Digital Space, Eurasian Economic Union (EAEU), business transformation.

Establishing the EAEU was a major achievement for its members after they had repeatedly endured two integration “false starts” in the 1990s and 2000s (namely, the 1995 Customs Union and the 2003 Common Economic Space idea; see below), but they still have many obstacles to clear.

The Union is already a functioning entity. This statement does not raise any particular objections, unless the bar is set too high, and when compared to the European Union, the regional integration benchmark, expectations are set too high. However, if the bar is set lower, with the EAEU placed alongside other regional integration projects with varying levels of depth and success — NAFTA, MERCOSUR, ASEAN, Cooperation Council for the Arab States of the Gulf (GCC), South African Customs Union (SACU) — then a more adequate framework for analyzing the relative standing of the EAEU becomes feasible.

We maintain that the EAEU is best viewed not as an exception to the general rules, but rather as a functioning regional integration bloc with its own successes and problems. The Eurasian Union has major achievements, but it also has deeply embedded limitations. It has taken 20 years to implement the integration idea, and there were several false starts along the way. During that time, the Commonwealth of Independent States defused many serious threats of disintegration. The Transport and Electric Power Industry Councils, which managed to ensure technological cohesion and preserve power systems, have played a special role. Still, for a number of objective reasons, as an organization, the CIS has only managed to secure a “civilized divorce”. The EAEU is a new reality of the post-Soviet space. Its successes and stumbling blocks should be realistically assessed. While the direct comparison to the European Union

can be misleading, it also makes more to access the EAEU on a somewhat smaller scale. In this regard, it is comparable to other general-purpose regional integration organizations, in particular customs unions or free trade areas —NAFTA, MERCOSUR, Cooperation Council for the Arab States of the Gulf, and the South African Customs Union.

On the one hand, the Eurasian Economic Union is not a perfect “success story” worthy of being quoted in textbooks. After an initial phase of rapid growth, it may have hit a short-term ceiling by 2016. Much time may be necessary to break through that ceiling. On the other hand, it has achieved much and is quite viable. Its founding treaty and its institutions are working. The same applies to the common labor market. There is some progress in the development of common technical regulations (a total of 36 such regulations have been finalized to date). Integration effects will be maximized by realizing existing plans in these areas and implementing some more specialized initiatives (pertaining to, for instance, infrastructure, industrial policy, the agricultural and industrial complex, labor market, a single pension space, and research and education cooperation).

The EAEU is best viewed as a functioning customs union with a rich additional agenda. It features its own successes and stumbling blocks. Its structural characteristics are actually not unique. The EAEU is a new reality for the investor community, too. A common market has been created in the territory of five states —a market that makes it possible to work from almost anywhere. Despite the existing imperfections in the Union's operating mechanics, it has already become a functioning common market with a relatively defined development roadmap.

The top priority is to complete the Digital Space of EAEU which will boost economic growth in regions and continue Digital Transformation of country-members.

The Eurasian trade and economic integration has gained the development after the collapse of the USSR. In 1991 the Commonwealth of Independent States (CIS) has been created: On December 8 between the Russian Federation, Republic of Belarus and the Republic of Ukraine the agreement has been signed. Further at the end of 1991 Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Moldova and Uzbekistan joined to CIS. Georgia became a member of CIS in December, 1993. Afterwards countries signed The Treaty on the Creation of an Economic Union of CIS. The Treaty defined the key purposes of trade and economic integration, in particular – creation of a unified market of commodities and services, the capitals and labor; an agreed tax, monetary and credit, currency and financial, trade, customs and tariff policy; harmonization of legislation of participating countries, in industry and trade sector.

The **Eurasian Economic Union (EAEU)** is an economic union of states located primarily in northern Eurasia. The Treaty aiming for the establishment of the EAEU was signed on 29 May 2014 by the leaders of Belarus, Kazakhstan and Russia, and came into force on 1 January 2015. Treaties aiming for Armenia's and Kyrgyzstan's accession to the Eurasian Economic Union were signed on 9 October and 23 December 2014, respectively. Armenia's accession treaty came into force on 2 January 2015. Kyrgyzstan's accession treaty came into effect on 6 August 2015. It participated in the EAEU from the day of its establishment as an acceding state.

In 1994, the President of Kazakhstan, Nursultan Nazarbayev, first suggested the idea of creating a "Eurasian Union" during a speech at Moscow State University. Numerous treaties were subsequently signed to establish the trading bloc gradually. Many politicians, philosophers and political scientists have since called for further integration towards a monetary, political, military and cultural union. However the member states decided to seek a purely economic union, having concerns about keeping their independence and sovereignty intact.

The Eurasian Economic Union has an integrated single market of 183 million people and a gross domestic product of over 4 trillion U.S. dollars (PPP). The EAEU introduces the free movement of goods, capital, services and people and provides for common policies in macroeconomic sphere, transport, industry and agriculture, energy, foreign trade and investment, customs, technical regulation, competition and antitrust regulation. Provisions for a single currency and greater integration are envisioned in future. The union operates through supranational and intergovernmental institutions.

In March 2016, the EEC Board issued the decree On Establishment of a Working Group to Develop Proposals Regarding the Creation of EAEU Digital Space. The working group comprising more than 250 experts held fourteen sessions. It designed a draft document on common approaches to the creation of EAEU digital space until 2030; draft strategic guidelines for the creation and development of the EAEU

digital space until 2025; and proposals regarding the creation of the EAEU digital space.

According to the expert, digital transformations are based on changes related to the introduction of information and communication technologies. The implementation of the agenda will be divided into four main areas:

- Digital transformation of economic sectors and cross sectoral transformation in the Union;
- Digital transformation of markets for goods and services, capital and labor;
- Digital transformation of management processes and integration processes in the Union;
- Development of digital infrastructure and ensuring the security of digital processes.

So, the first digital initiative of the Union, which the parties began to discuss, was the digital traceability of the movement of products, goods, services, assets in the EAEU area. In addition, the priority projects are the creation of digital transit corridors, the expansion of the "Single window" system in the territory of the Union, the electronic interaction of business with state bodies. In conclusion, expert noted that the share of breakthrough digital projects in the GDP of the Eurasian Union should be 11%.

The digital world is not static and continues to experience very rapid development. The widespread changes brought about by today's digital environment have significantly broadened the scale of digital security and privacy challenges, signaling the need for an evolution in how these risks are managed. Effective management of digital security and privacy risk is essential if countries are to realize the full economic and social benefits of the digital economy. Establishing higher levels of trust with users and customers may enable digital services to become more widely accepted and used by individuals and organizations. Governments play a key role in supporting conditions to build trust and complement private sector initiatives.

Trust is essential in situations where uncertainty and interdependence exist (Mayer, 1995), and the digital environment certainly encapsulates those factors. Today's digital economy relies on an intricate, hyper-connected information and communication technology (ICT) ecosystem based on the processing of large streams of data ("big data") enabled by sophisticated data analytics and the widespread use of mobile connectivity. These developments, combined with the emerging use of the Internet to connect computers and sensor-enabled everyday devices (the "Internet of Things"), add layers of complexity, volatility, and dependence on infrastructures and processes not fully within single jurisdictional and organizational control.

The result is that risk is a cross-boundary, cross-sector, and multi-stakeholder issue. What happens in a small business can affect a large business and all other actors within a value chain; what one actor (individual or group) does may affect many others. The converse is also true: organizations, whether functioning in the public or private sector, are doubtlessly benefitting from greater interconnectivity to drive innovation, and improve their efficiency and performance. The value chain ecosystem can also be used to raise the level of digital risk management across a range of organizations, for example by requiring a certain level of security risk management along a supply chain.

In today's world, digital technology plays an increasingly important role in the development of countries economy. Even today, more than 40% of the world population has access to the Internet, and almost every 7 out of 10 households has a mobile phone. Digital technologies have a number of advantages – simplification of the public and business access to public services, the acceleration of the information exchange, the emergence of new business opportunities, the creation of new digital products, etc. The main goal of the government program "Digital Kazakhstan" is the improvement of the competitiveness of Kazakhstan's economy and quality of life through the progressive development of the digital ecosystem. The implementation of the State Program "Digital Kazakhstan" will be held in four key areas: Creating a "Digital Silk Road". This is the development of the reliable, affordable, high-speed, secure digital infrastructure. Creating a "creative society". This is the development of competences and skills for the digital economy, the upgrading of digital literacy, training of ICT specialists for industries. Digital transformation in the economy branches. It is the widespread introduction of digital technology to enhance the competitiveness of various branches of the economy. Formation of "Proactive digital government". This is the improvement of electronic and mobile e-government systems, optimization of the public services supply sphere.

The Digital Kazakhstan program, part of the nation's effort to build and promote digital infrastructure nationwide, is expected to create 300,000 work places by 2022.

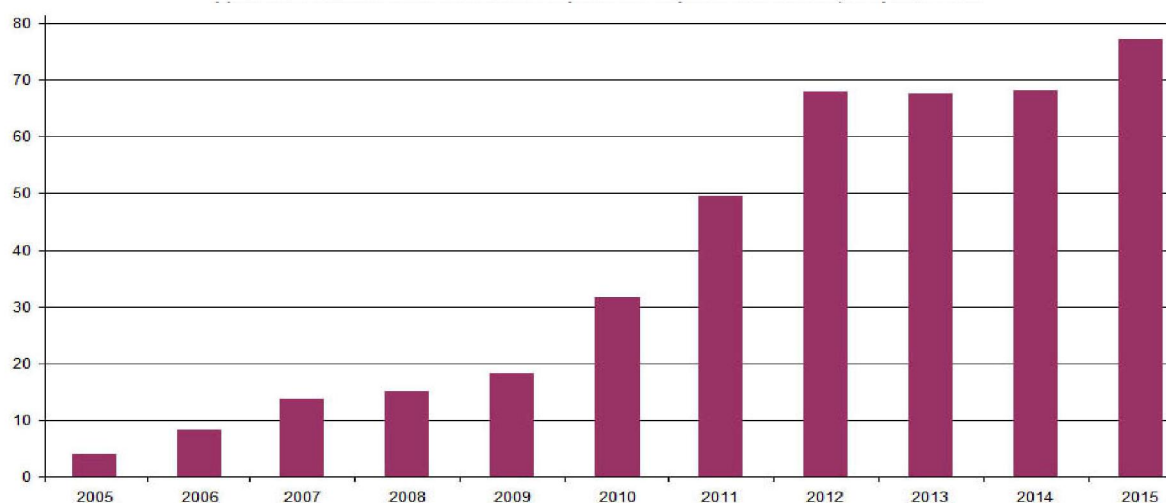
The fixed broadband market in Kazakhstan remains relatively underdeveloped, due to the dominance of the mobile broadband, which is in turn driven by the dominance of the mobile sector. Growth over the past few years has been relatively flat. Moderate growth is predicted over the next five years to 2022 as mobile broadband will continue to dominate the broadband segment. The number of fixed telephone lines in Kazakhstan is slowly declining due to the dominance of the mobile segment, in particular the mobile broadband segment.

In mid-2017 the Kazakh government announced it will launch its Digital Kazakhstan program between 2017 and 2021, which aims to strengthen the national digital infrastructure and drive economic growth and competitiveness. The scheme is intended to raise internet penetration by 2021 and see the ICT sector contributing significantly to annual GDP by that time.

International Internet bandwidth capacity increased dramatically between 2014 and 2015, almost doubling to 850,000 Mb/s. The market is predicted to continue to grow strongly over the next five years to 2022.

There are three mobile operators in the Kazakhstan market following the merger of Tele2 and Altel. The number one and two providers by market share, GSM-Kazakhstan (K'Cell) and Beeline dominate the mobile market. Kazakhstan has an extensive 4G network compared to a number of other Asian countries in the region. All of Kazakhstan's cellular operators had 4G LTE networks live in all regional capitals and most cities by 2017. Kazakhstan's mobile market remains highly competitive, but rather than a focus only on growth in subscribers the market is shifting to value-added. Further flat growth is also predicted over the next five years to 2022.

According to TNS Web Index, the Internet — the only one growing media channel in Kazakhstan which coverage twice more than the press. In July, 2015 the number of Internet users in RK has reached 3,47 million. That is 71% of the population of the country aged from 12 up to 54 years come into the network at least at least once a month.



Picture 1 - Dynamics of Internet users in 2005-2015, percentage

It is symptomatic that Kazakhstan is the one of the top among the EEU countries in the World Bank's digital adoption rating. This index is the highest when it comes to government agencies and organizations (Table 2).

Table 1 - World Bank's digital adoption index

	Armenia	Belarus	Kyrgyzstan	Kazakhstan	Russia
Digital adoption Index, total Points, <i>including</i>	0.67	0.52	0.49	0.63	0.71
Business	0.48	0.43	0.37	0.32	0.37
Individuals	0.82	0.76	0.60	0.73	0.62
Government	0.72	0.36	0.50	0.83	0.52

The business community is also striving for the removal of barriers to national and cross-border electronic commerce, particularly the harmonization of the digital market with the European Union and creation of a unified digital space of the Eurasian Economic Union. The first initiative is being implemented within the framework of the Eastern Partnership (HDM panel, EU4Digital), and the second one is based on the declaration on the formation of the digital space of the Eurasian Economic Union adopted in November 2016.

Strategic orientations of the formation and development of the EAEU digital space are systematic digital transformation of the economies of the Union countries; increase seamless economic processes and service environment as a result of their digitization; creation and launch of collaborative digital tools for expansion into global markets (digital assets); reducing the economic risks; qualitative growth in the number of jobs in the digital economy; significant growth in the digital inclusion of the population.

According to preliminary estimates, contribution of the digital economy of the Union countries in GDP growth should reach 20% per year. The effectiveness of economic processes thanks to the digital transformation of infrastructures and management systems should increase by the same value.

The resulting document implies digital modernization of mechanisms for governance and integration processes, the formation of the Union's digital market, the development of digital infrastructure and regulatory and legal support of the transformation process.

At the first phase of the implementation of strategic directions until 2018 it is envisaged to run key institutions for the development of the digital transformation of the Eurasian Union, make the necessary changes in the normative legal framework of the Union and Member States, and run key projects of digital transformation.

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«ҚАЗАҚСТАНҒЫ САНДЫҚ ЖАҢАРУЫ»: БІЗ БҰҒАН ШЫНЫМЕН ДАЙЫНБЫЗ БА?

Аннотация. Сандық форматқа көшу әлемде басты тенденция болып отыр, тұтынушыға да, өндірушіге де бұл құбылыстың басымдығы анық. Көп елдердің ішінен Қазақстан тұрақты экономикалық өсім мен өндірістің артуын қолдауға бағытталған сандық экономика стратегиясын жасауда. Аталған мақала сандық экономиканың жаңаруы мәселесіне арналған, сандық кеңістіктегі маңызды жағдайларды анықтай отыра Қазақстанның даму жағдайында АКТ тиімділігі қарастырылады. Талдау негізінде электронды экономиканың жаңа стратегиясы үш басты басымдықтың қолдауына бағытталған: әкімшілік кедергілерді қысқарту және сандық бизнес үрдістеріне ынталандыру, шапшаң және сапалы байланысқа басты назарға ұстап АКТ инфрақұрылымын дамыту, сандық дағдыны қаржыландыру. Алайда бұның бәріне ЕЭО органдары мен мемлекет тарапынан бақылау болу керек. Сандық Қазақстан мемлекеттік бағдарламасы экономика мен қоғам дамуының негізгі басымдықтарын анықтайды.

Тірек сөздер: Сандық экономика, Сандық Кеңістік, Евразиялық экономикалық одақ (ЕЭО), бизнестегі өзгеріс.

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‘ЦИФРОВОЕ ПРЕОБРАЗОВАНИЕ КАЗАХСТАНА’: МЫ ДЕЙСТВИТЕЛЬНО ГОТОВЫ К ЭТОМУ?

Аннотация. Переход на цифровой формат становится главной тенденцией в мире, преимущества данного перехода являются явными как для потребителя, так и производителя. Казахстан, среди многих других стран, в настоящее время разрабатывает стратегию цифровой экономики, нацеленную на поддержку устойчивого экономического роста и повышение производительности. Данная статья посвящена проблеме преобразования цифровой экономики, рассматривает эффективность ИКТ в условиях Казахстанского развития, определяя некоторые важные условия для преобразования цифрового пространства. На основе анализа новая стратегия электронной экономики должна быть ориентирована в поддержке трех главных приоритетов: сокращение административных барьеров и стимулирование цифровых бизнес-процессов; развитие инфраструктуры ИКТ с особым вниманием к скорости и качеству услуг по связи; и инвестирование в цифровые навыки. Однако применяя подобных усилий невозможно без должного контроля со стороны как государства, так и соответствующих органов ЕАЭС. Государственная программа Цифровой Казахстан определяет основные приоритеты в развитии экономики и общества.

Ключевые слова: Цифровая экономика, Цифровое Пространство, Евразийский экономический союз (ЕАЭС), изменение в бизнесе.