Mongolian Economy

MAY 2024 SPECIAL EDITION

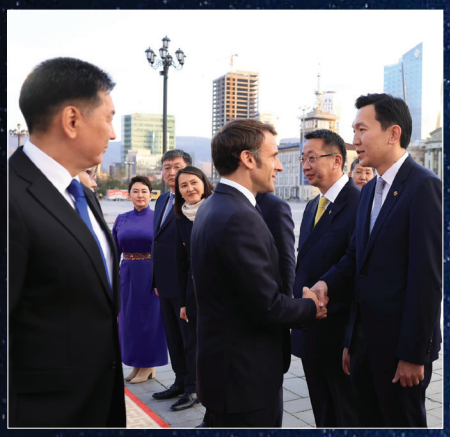
Minister

N.Uchral: The transformation into a digital nation is now a reality, not just a distant dream

Best practice

Estonian Model and Mongolian localization

DECLARING INDEPENDENCE IN SPACE



e mongolia 4.0

Using A.I the government digital service platfrom
E-Mongolia provides tailored services to citizens

ekids

E-KIDS FEATURE PROVIDES THE FOLLOWING BENEFITS TO KIDS BELOW THE AGE OF 16:

01
Location sharing for supervision-Able to toggle home, school buttons

02
Free educational contents for school aged kids

03
Emergency phone calls for protection

04
Child protection in the digital world contents

05
E-kids community for content sharing - Schools, study groups and so on

06
Kids related event schedules and vouchers

Content

Notes from the Editor-in-Chief **05**
Mongolia continues to strive to fulfill its dreams

Main article **06**
Mongolia is advancing in step with global trends

Minister **08**
N.Uchral: The transformation into a digital nation is now a reality, not just a distant dream

Best practice **17**
Estonian Model and Mongolian localization

E-government **19**
Digitization of Public Services - A Corruption Free Future

Partnership **21**
Chinggis Sat: Pioneering the nation's reach beyond Earth

Satellite **23**
Declaring independence in space

Digital Economy **25**
The visit that brought American technology closer

Starlink **28**
A new internet gateway

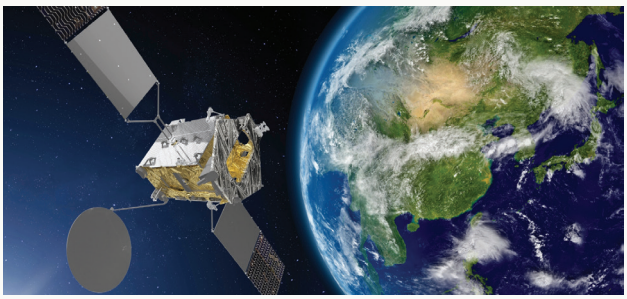
Silicon Valley **31**
Mongolian companies storm Silicon Valley

Artificial intelligence **34**
A tangible partnership in the artificial intelligence field

Rapid change **36**
Strengthening human resources through cooperation with South Korea

Cybersecurity **37**
Ch.Zolbayar: Mongolia is expected to improve its cyber security index

News **39**
The Kazakhstan First Vice Minister paid a visit to Mongolia



Mongolian Economy

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Mongolia continues to strive to fulfill its dreams

Mongolians have a dream of declaring their independence in space, and we are working hard to fulfill that dream. Imagine discovering a place called "Chinggis" in the vastness of space. Mongolia has a long-term plan to launch a satellite. What once seemed like a distant thought is now becoming a reality. "We are paying special attention to the launch of the national satellite in 2027," said the Minister of Digital Development and Communications N.Uchral. Recently, he traveled to Silicon Valley in the United States with representatives of national IT companies to explore opportunities. To Mongolians, Silicon Valley has always seemed like a distant dream, but now it feels much closer. This progress fills us with pride. As journalists, our goal is to highlight positive developments and accomplishments, rather than focusing on negativity.

Editor-in-Chief
D.Bekhbayar

The Ministry of Digital Development and Communications has been working rapidly and effectively. It aims to drive development through technology. In the current landscape, policies and laws are being shaped with the active participation of this ministry. This is evidenced by the fact that Parliament has amended 109 laws.

Consider another achievement: according to the United Nations' "E-Government Development Index,'' Mongolia ranked 92nd out of 193 countries in 2018 and 2020. By 2022, it had advanced 18 places to rank 74th. At the high-level meeting of world governments, the Government of Mongolia received the Global Government Excellence Award and the Open Government Partnership Award. "This is not a grade we set for ourselves. It is an assessment received from the world," said Minister N.Uchral proudly. The Ministry of Digital Development and Communications played a pivotal role in earning this recognition, which reflects the government's transparency, elimination of bureaucracy, technological progress, and rapid transition to an e-government. Mongolia has collaborated with Estonia, and now other countries are interested in Mongolia's digitalization efforts and are seeking cooperation. This is progress.

Today, all 21 provinces and 330 soums of Mongolia are connected to the high-speed internet network. This means that people from any part of our vast country can benefit from information technology. In Ulaanbaatar, 85.3 percent of citizens are connected to the internet, while 67.6 percent of citizens in other areas are also connected to the internet. As of 2023, studies show that Mongolians are using approximately 4 million smart devices daily, although this count includes duplicate users. This clearly indicates that the information technology and communication sector is the fastest-growing sector in Mongolia, striving to keep pace with global developments.

The Ministry of Digital Development and Communications has achieved significant milestones. If we were to detail all the work done, volumes of books would emerge. However, "Mongolian Economy" magazine focuses on the international cooperation of the Ministry of Digital Development and Communications in this special issue. While preparing this issue, we really felt new developments, information, perspectives, and emotions of the IT sector.

We are pleased to bring you this new issue, featuring articles and interviews on Mongolia's national satellite, space exploration, artificial intelligence, Silicon Valley, Starlink, cybersecurity, digital development, and digitization. ■

Main article

Mongolia is advancing in step with global trends

Space, artificial intelligence, and new technologies have become key topics at important conferences and summits. These sectors have become a "hot trend" globally. Mongolia is determined not to be left behind. The Ministry of Digital Development and Communications has made significant progress in a short time to keep pace with global advancements. Notably, the Ministry has actively developed international relations over the past two years. Alongside strengthening traditional ties with its two neighbors, the Ministry is collaborating with Japan and Britain to enhance cybersecurity. Active and effective cooperation with South Korea, Estonia, Singapore, Kazakhstan, the USA, and France in space science, satellites, e-economy, and e-governance development is also noteworthy. Additionally, the first memorandum of understanding on artificial intelligence cooperation was signed with the United Arab Emirates in February 2024. Countries such as Germany and Colombia have shown interest in learning from Mongolia's e-transition experience and exchanging expertise.

In recent years, the Ministry of Digital Development and Communications has begun collaborating with various countries to exchange experiences, notably with Estonia. Estonia, with a population of 1.3 million—similar to Ulaanbaatar—shares a history of socialism and a comparable public service culture with Mongolia. Consequently, Estonia's e-governance model has been studied and steps have been taken to adapt it to Mongolia. In collaboration with Estonia's E-Governance Academy, a consulting service agreement was signed to introduce world-class e-governance and public service best practices. Mongolia has adopted the "E-ESTONIA" system and is working on public-private partnerships for all e-transition projects. The development of the "E-Mongolia" system allows citizens to access public services transparently, quickly, and without bureaucracy or delays.

High-speed internet will be accessible for all of Mongolia

The Ministry also initiated a set of laws to support e-development, which were discussed and approved by Parliament, paving the way for significant progress. These laws include the Law on Public Information Transparency, the Law on Cyber Security, the Law on the Protection of Personal Information, the Law on Digital Signatures, and the Law on Virtual Asset Service Providers. The integrated public service system, E-Mongolia 1.0, launched in 2020, now offers access to over 1,200 services from the palm of your hand or mobile phone, anywhere in the world.

An example of recent cooperation with other countries includes the participation of N.Uchral, Minister of Digital Development and Communications, in the Asia-Pacific Digital Ministerial Conference on November 9-10, 2022. At the conference, he met with Lee Jong-ho, the Minister of Science and ICT of South Korea, and agreed on establishing a cooperation document. The meeting resulted in an agreement to cooperate in two main areas: strengthening the human resources of the industry and improving citizens' e-education. South Korea is one of the ▶

leading countries in terms of human resources in the technology sector.

The most recent foreign cooperation involves the visit of Kanysh Tuleushin, the First Vice Minister of Digital Development, Innovation, and Aerospace Industry of Kazakhstan, to Mongolia from April 29 to May 2, 2024, at the invitation of N. Uchral. During the visit, the two countries discussed the possibility of expanding cooperation in e-governance, information technology, and space technology. A memorandum of understanding on cooperation in communication and technology was signed between Mongolia's Regulatory Agency of Government Digital Services and Kazakhstan's "National Information Technology" JSC during the meeting.

Mongolia can leverage space technology

"Mongolia should launch a national satellite to strengthen national security and establish independence in the communications sector, following the example of other countries. This will lead to significant advancements in communication," emphasized N.Uchral, Minister of Digital Development and Communications, in an interview. While Mongolia launched its first small satellite in 2017, it now aims to have its first national satellite. Specifically, in November 2023, a memorandum of understanding was signed with the French company Thales Alenia Space to develop the "Chinggis Sat" national satellite.

Launching a satellite will yield invaluable benefits that cannot be quantified in monetary terms, such as ensuring the independent and reliable communication and internet networks, meeting the security and communication needs of Mongolia, reducing the digital divide, and thereby improving the quality of life. The direct impact on people's lives will be the ability to connect to the internet from any part of the vast country. Internet and mobile network access stations can be set up regardless of whether an area is connected to the fiber optic network. This will make it possible to provide high-speed internet to the entire country of Mongolia. Therefore, the goal is to launch the national satellite in 2027.

The visit has already yielded tangible results, with the signing of 34 agreements

Mongolia joins the Starlink network

Under the leadership of N.Uchral, Minister of Digital Development and Communications, Mongolia has commenced collaborative efforts with the United States, our third neighbor in the field of digital economy. From February 25th to March 1st, he paid an official visit to the USA. The delegation which accompanied him comprised of representatives from a total of 50 Mongolian companies in various sectors including tourism, information technology, and the financial industry. This collaboration between the two countries has been hailed as significant, as it aims to foster cooperation in areas such as digital transformation, cyber security, and innovation.

The visit has already yielded tangible results, with the signing of 34 agreements. These agreements cover a wide range of areas including enhancing the utilization of big data, capacity building in cybersecurity, and exploring opportunities for collaboration in emerging technologies like the Mars exploration project. The involvement of Mongolian experts in the Mars exploration project and the potential partnership with companies like Starlink are particularly noteworthy. It is worth mentioning that on the first day of March, Starlink tweeted, "Starlink's high-speed internet is now available in Mongolia," a statement that was later confirmed by Elon Musk on his personal Twitter account. As a result of these collaborations, Mongolia has become the fourth country in Asia to be connected to Starlink's satellite network.

Today, Mongolia must embrace the digital transition. "Countries worldwide are generating revenue from space. A vast country like ours can capitalize on airspace opportunities, driving economic growth into household livelihoods. Mongolia is open to global technology sector investors who are specialized in space industry. This presents an opportunity for us to attract foreign direct investment," remarked Minister N.Uchral.

To support these efforts, the ministry is registering domestic and foreign software manufacturers in the IT virtual zone, offering tax incentives and non-tax support to start-ups, and creating opportunities to enhance investment. ■

Minister

N.Uchral: The transformation into a digital nation is now a reality, not just a distant dream

Mongolian Economy interviewed N.Uchral, Minister of Digital Development and Communications.

-In recent years, our nation has been diligently pursuing the ambition of transitioning into an "digital nation," culminating in the establishment of the Ministry of Digital Development and Communications. Now, the question arises: What exactly constitutes a "Digital nation"?

-Mongolia is a global country in the digital age. Technology has become an inseparable facet, common application, and habit of humanity`s daily life. We find ourselves amidst an epoch where digital technology and artificial intelligence permeate both social and economic

realms, catalyzing advancements that streamline labor, augment productivity, and enhance overall efficiency.

Nations globally are embracing technological progress, strategically incorporating it into their development agendas and operational frameworks. Technology now serves as the primary driver of progress, a transformative force unlocking the doors to development. Within Mongolia's overarching development strategy, a swift transition from paper-based processes to electronic systems is underway, bringing technology-driven public services directly to citizens. Embracing technology not only safeguards human rights but also fosters the establishment of a transparent and inclusive society. Moreover, technology emerges as a potent weapon against corruption, poised to dismantle bureaucratic barriers as automated systems assume governance roles, eclipsing human intervention.

Every Mongolian has been liberated from the shackles of 109 bureaucratic hurdles

These elements collectively embody the essence, principles, and outcomes of a "Digital Nation." Essentially, it denotes a country that leverages technological advancements in tandem with its development agenda to foster a citizen-centric, accessible, inclusive, and transparent society, offering equitable opportunities and engagement. To qualify as a "digital nation," proactive integration of technology into governance is imperative, complemented by robust political stewardship and sound governance practices. Moreover, the active engagement and involvement of every Mongolian citizen is pivotal in realizing the vision of an electronic nation.

-Could you both further discuss the Government and the Ministry of Digital Development and Communications' initiatives and actions concerning the advancement of e-governance development?

-"Indeed. At the moment, 21 provinces and 330 districts across Mongolia are seamlessly integrated into a high-speed Internet network. This means that the benefits of information technology are accessible from any corner of our expansive nation. Notably, 85.3 percent of Ulaanbaatar residents and 67.6 percent of rural citizens are now connected to the Internet. Moreover, a recent study indicates a significant surge, Mongolians are using approximately 4 million smart devices daily as of 2023.

The Ministry of Digital Development and Communications is poised to enhance telecommunications infrastructure, optimize public service delivery, bolster cybersecurity measures, enhance public information networks, foster e-economic growth, advance digital literacy, and fortify human capital development, space science, and technology. With a steadfast commitment to progress, the ministry is dedicated to advancing development objectives. To accelerate the evolution of e-governance, information technology, and communication sectors, creating an enabling legal framework stands as a paramount priority. The pace of digital transition hinges on dismantling the regulatory barriers of paper-based bureaucracy.

In our efforts to expedite this transition, we've spearheaded legislative initiatives aimed at supporting digital development, all of which have received parliamentary approval. These laws encompass a spectrum of vital areas, including transparency of public information, cyber security, protection of personal data, digital signatures, and regulation of virtual asset service providers. Consequently, cumbersome processes requiring physical presence and paper documentation at government offices have been eliminated for citizens and legal entities alike. Notably, in 2023, Parliament endorsed a draft law amending 109 out of over 430 existing laws in Mongolia, further facilitating the transition towards electronic governance.

Every Mongolian has been liberated from the shackles of 109 bureaucratic hurdles. 166 "KHURDAN" service points have been established nationwide, ensuring accessibility of public services to elderly and disabled citizens from any location. "E-Mongolia" and "KHURDAN" service points represent innovative solutions aimed at dismantling bureaucratic barriers, which often serve as breeding grounds for corruption. These initiatives aim to foster a government that is more attuned to citizen needs and provides services with greater ease.

Transparency and citizen engagement are pillars of a healthy society; hence, initiatives like shilen.gov.mn, launched under the anti-corruption operation "Shilen," underscore Mongolia's commitment to openness and accountability. Furthermore, Mongolia places significant emphasis on supporting

the private sector, entrepreneurs, and wealth creators in driving the electronic transition forward, exemplified by the creation of digital platforms such as "E-Business" and "Mindgolia."

"E-Mongolia 4.0" is a sophisticated platform leveraging artificial intelligence to safeguard citizens' interests

-What additional services does the recently unveiled "E-Mongolia 4.0" version provide, and what are its cutting-edge features and advantages?

-On May 7, 2024, we unveiled the updated "E-Mongolia 4.0" to the public, showcasing its evolution into a cutting-edge smart platform powered by artificial intelligence. Notable enhancements include the integration of all vehicle, movable, and immovable property and enterprise ownership information into a dedicated section within the Unified State Service System interface. Moreover, the new version offers bundled services tailored to citizens' needs, facilitating processes such as loan applications, visa requests, and document orders. Accessibility has been further enhanced through voice-activated search capabilities driven by artificial intelligence. Additionally, citizens now receive timely updates on road tolls,vehicle, and driver fines, as well as alerts on floods or gas leaks, courtesy of a sophisticated smart notification delivery system.

As part of the ongoing digitization of healthcare services, "E-Mongolia 4.0" has introduced a range of health services. Personally, having experienced these advancements firsthand, I feel compelled to advocate for the integration of electronic technology in the healthcare sector. From appointment scheduling to managing medical records and accessing diagnostic test results, all processes have transitioned from paper-based to electronic formats.

We unveiled the updated "E-Mongolia 4.0", showcasing its evolution into a cutting-edge smart platform powered by artificial intelligence

The Ministry of Digital Development and Communications has actively pursued the expansion of external relations of the sector

-Where does Mongolia stand globally in terms of digital development and digital transition? Could you shed some light on the industry's international cooperation?

-In 2018 and 2020, Mongolia was ranked 92nd out of 193 countries in the "E-Government Development Index," a biennial assessment conducted by the United Nations. However, in 2022, it made significant strides, ascending to the 74th position, marking an impressive advancement of 18 places. This achievement garnered international recognition, including accolades from the Open Government Partnership and the prestigious "Global Government Excellence Award" bestowed by the World Government Summit.

While this progress is commendable, it underscores the global assessment of our nation's performance rather than solely our internal aspirations. It reflects a collective effort encompassing legislative frameworks, information technology infrastructure, sector-wide productivity, active citizen engagement, and concerted endeavors by both Parliament and the Government.

Over the past two years, the Ministry of Digital Development and Communications has actively pursued the expansion of external relations of the sector. In addition to nurturing longstanding ties with our neighboring nations, we have collaborated with Japan and Great Britain to bolster cyber security measures. Furthermore, we have fostered robust and effective partnerships with South Korea, Estonia, Singapore, Kazakhstan, as well as the United States and France, focusing on e-governance development and the digitalization of government services, including advancements in space science, satellite technology, and the e-economy. Notably, in February 2024, we marked a significant milestone by signing the memorandum of understanding for cooperation in artificial intelligence with the United Arab Emirates. Looking ahead, countries such as Germany and Colombia have expressed keen interest in learning from Mongolia's experiences in e-transition and exploring opportunities for knowledge exchange.

In the coming years, we will build upon our current achievements in international cooperation, with a particular emphasis on the planned launch of our national satellite in 2027. Additionally, we are prioritizing active collaboration with foreign nations and international organizations to advance artificial intelligence, bolster the IT industry, attract foreign investment, and promote the efficient growth of the electronic economy.

-At the start of the year, you visited the United States as minister of the sector. Could you outline the primary objectives and outcomes of this visit?

-I made a working visit to the United States from January 25 to February 3, 2024. This visit held particular significance as it followed the official visit of Prime Minister L.Oyun-Erdene to the country in August 2023, at the invitation of US Vice President K.Harris.

Throughout the visit, a series of 34 meetings took place with representatives from both the American government and private sectors, fostering discussions on collaborative ventures in space exploration, electronic commerce, and artificial intelligence. Notably, "KHURDAN" service points were established in Washington and San Francisco, positioned in areas with significant Mongolian diaspora presence.

Additionally, I had the opportunity to meet with Mongolian professionals working in Silicon Valley and participate in the inauguration of the Silkroad Innovation Hub, which now proudly showcases the endeavors of eight leading companies of Mongolia's IT sector. It is my firm belief that Mongolian ingenuity will thrive in the heart of Silicon Valley.

Furthermore, fruitful exchanges and agreements were reached with our American counterparts on various fronts, including leveraging big data, ongoing capacity-building initiatives involving Mongolian scientists and experts in Mars exploration, and the official launch of Starlink services in Mongolia, all of which are now being implemented.

Our goal is to launch the national satellite by 2027

-Could you please offer comprehensive updates regarding the status of the 'Chinggis Sat' satellite project? Additionally, what is the projected timeline for the completion of this project?

-The 'National Communication Satellite Project" holds immense significance in ensuring reliable communication coverage across the vast territories of Mongolia. In today's digital age, no nation should be devoid of connectivity, particularly in times of crisis when individuals may require urgent assistance or find themselves displaced by natural disasters. Access to essential services such as emergency care, healthcare, and education should be available to every citizen, regardless of their location within the country. Given the nomadic lifestyle of herders, who must traverse vast distances each spring and winter, laying fiber optic cables is impractical. Furthermore, erecting and maintaining antennas atop every mountain peak is logistically challenging. The national satellite serves as a beacon of space independence, ensuring uninterrupted communication while fostering connections with neighboring nations.

During President U. Khurelsukh's visit to France in October 2023, a "Memorandum of Understanding'' was inked to collaborate with the French company "Thales Aleina Space" in satellite construction and utilization. Our objective is to launch the national satellite by 2027.

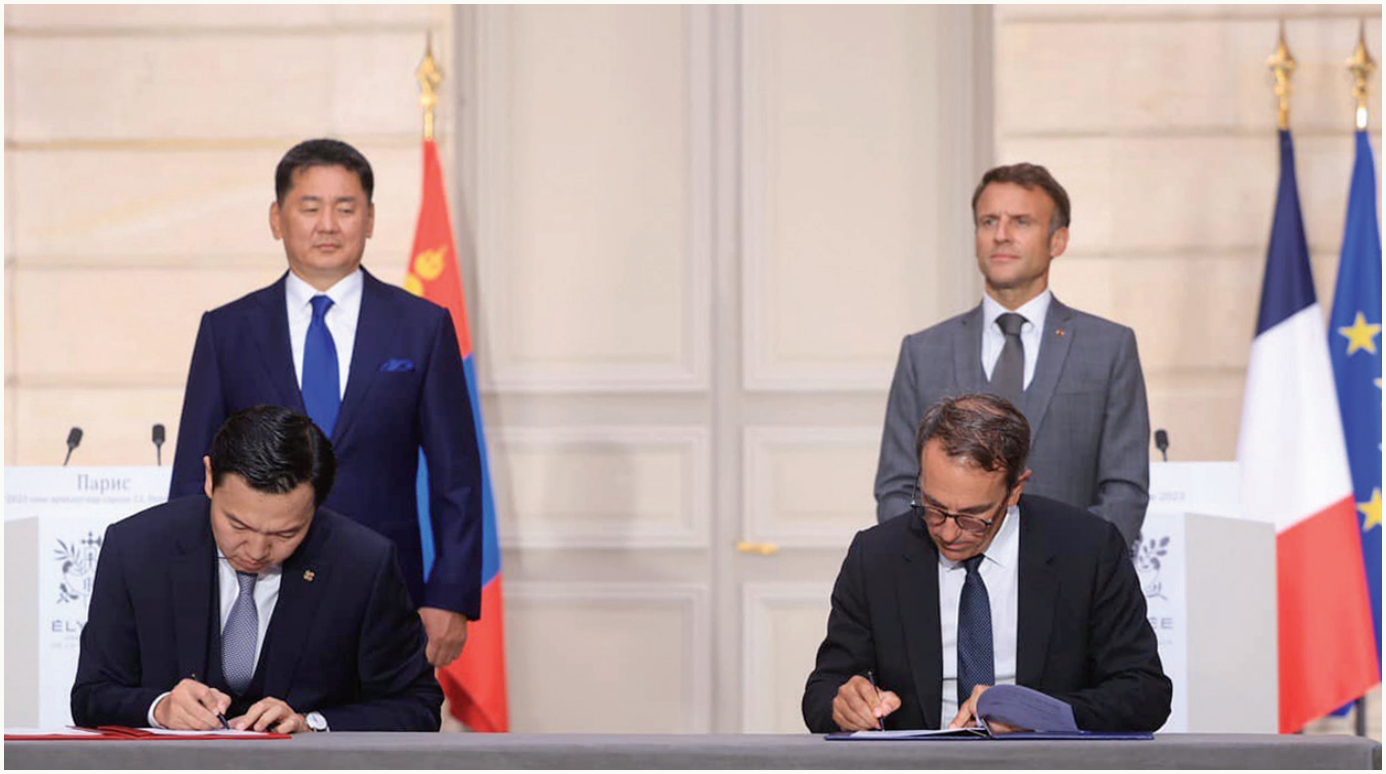
-In our journey towards digital transformation and achieving electronic nation status, safeguarding information privacy and ensuring cybersecurity are paramount concerns. How effectively are we protecting our data, government secrets, and preventing risks and cyber attacks?

-The downside of technological advancement in information technology is the prevalence of cyber attacks. Every nation and individual is susceptible to threats in the cyber realm. To address this challenge, we have established a Cyber Security Council tasked with providing unified management, coordination, and implementation of cybersecurity measures.

The Cyber Security Council, led by the Prime Minister of Mongolia, includes members such as the Minister of Digital Development and Communications, as well as the Director of the General Intelligence Agency. Mongolia boasts a robust legal framework for cybersecurity, supported by a comprehensive system and organizational structure, alongside a pool of specialized experts.

The "Common Rules of Cybersecurity" was

Mongolia boasts a robust legal framework for cybersecurity, supported by a comprehensive system and organization-al structure, alongside a pool of special-ized experts



We need to prioritize the efficient utilization of big data and the capabilities of artificial intelligence

approved as per Government Resolution No.224, on June 7, 2023. This resolution empowers state-owned entities, legal entities, and critical information infrastructure organizations to safeguard their information systems and networks. It enables them to detect cyber threats and breaches, respond effectively to cyberattacks, and implement proactive measures to prevent and mitigate risks within their respective organizations.

Over 760 trainees from government agencies and information technology entities are currently undergoing specialized training on critical information infrastructure. Collaboratively, the Ministry of Digital Development and Communications and the Cyber Security Military Command of the General Staff of the Armed Forces have enrolled 80 servicemen from seven organizations in the 'ITACTIC' joint command training.

-What are the next steps the Ministry of Digital Development and Communications is planning to implement?

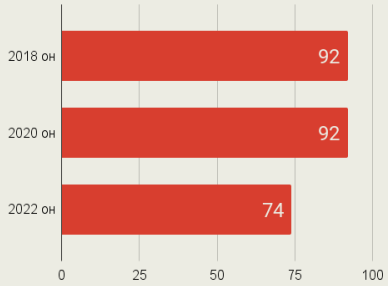
-Given Mongolia's active laws to foster information technology development, draft legislation has been prepared and submitted. Initially, legal frameworks are being crafted to facilitate the integration and endorsement of technologies within public services, as well as the advancement of artificial intelligence production. Our efforts extend to registering both domestic and foreign software manufacturers in the IT virtual zone, extending tax and non-tax incentives to startups, and enhancing investment prospects.

We need to prioritize the efficient utilization of big data and the capabilities of artificial intelligence to enhance policy development and decision-making within the government. Moving forward, there is a proposal to integrate artificial intelligence into sectors such as health, education, environment, tourism, and agriculture. Throughout this process, our commitment lies in ensuring that technology serves the greater public good, upholds stringent data protection protocols, and respects individuals' rights to privacy and non-discrimination. ■

Info

DIGITAL TRANSFORMATION EGDI INDEX
EGDI (193 countries)

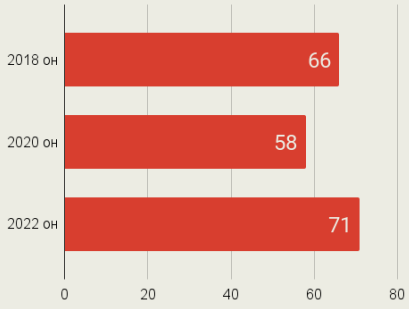
46/143
4G access



Source: Ministry of Digital Development and Communications

DIGITAL ECOSYSTEM
Global Innovation Index (132 countries)

Mongolian start-up ecosystem 73/100 in 2022 year



Source: Ministry of Digital Development and Communications

DIGITAL ECONOMY
EGDI (193 countries)

0.24
IT sector in GDP

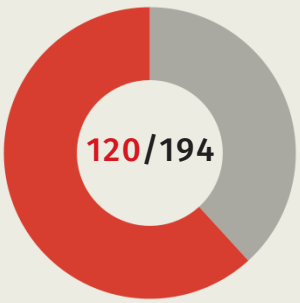
$37.7 million
IT income rate at ICT sector in GDP (2022 year)

ICT sector turnover 1.7 trillion which is equal to 3.2% of GDP in 2022

Source: Ministry of Digital Development and Communications

Global Cybersecurity Index

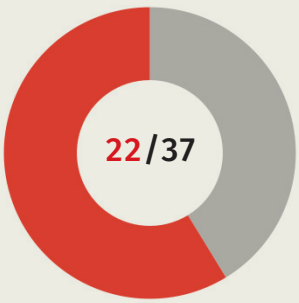
ITU Global cybersecurity index report 2020



Source: Ministry of Digital Development and Communications

Global Cybersecurity Index

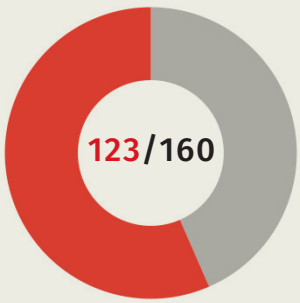
ITU Global cybersecurity /Asia-Pacific regional/ index report 2020



Source: Ministry of Digital Development and Communications

Global Cybersecurity Index

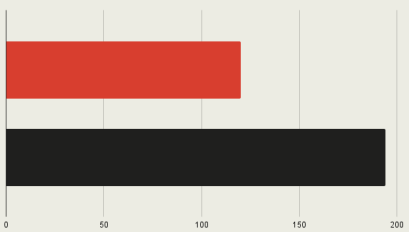
Estonian e-Governance Academy 'National cyber security index' report 2021



Source: Ministry of Digital Development and Communications

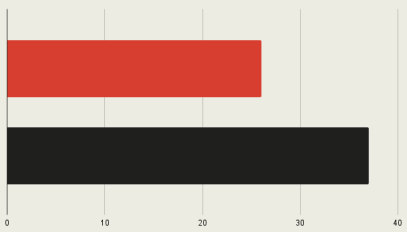
WORLD

120/194



REGIONAL

22/37



LEGAL ENVIRONMENT

1999 Law on Radio Waves	**1995** Law on Communications	**2003** Law on Post
2011 Law on Electronic Signature	**2019** Law on Broadcasting	**2021** Law on Cyber security
2021 Law on Protection of personal information	**2021** Law on Public Information Transparency	**2023** Law amendments to support Digital transformation 109 laws

Source: Ministry of Digital Development and Communications

POLICY, IMPLEMENTATION

Enhancing ICT backbone network	Developing government service digitalization	Providing cyber security	Promoting space science, satellite technology
Improving public information platform and infrastructure	Promoting digital economy	Increasing digital skills	ICT capacity building

Source: Ministry of Digital Development and Communications

Best practice

Estonian Model and Mongolian localization

Digital transformation stands as a key strategy in combating corruption. The advancement of e-governance is seen as a potent antidote to the bureaucratic conditions fostering corruption and bribery. Estonia has been a pioneer in implementing this concept since 1996, yielding remarkable results. In 1988, Estonia was ranked 26th in Transparency International's Corruption Perceptions Index. However, by 2019, it climbed to 18th place with 74 points, and by 2023, it further advanced to the 13th position. The successful adoption of e-governance in Estonia has significantly reduced bureaucratic hurdles and corruption, positioning it on par with developed nations worldwide. Estonia also ranks 31st out of 193 countries in the Human Development Index.

Mart Laar, Estonia's first Prime Minister following its independence from the USSR in 1991, outlined "Digital Transition" as the cornerstone of its development policy. Serving as Prime Minister from 1992 to 1994 and from 1999 to 2002, Laar reflected on his decision to embark on digitization: "I was 32 years old at the time, young and audacious. I was unaware of the limits, which is why I pursued the seemingly impossible."

While Estonia's decision to become a digital nation was made in a single day, the journey towards this goal has been ongoing. The Estonian government has progressively transitioned into a digital society, starting with public services, then extending it to social services and the business environment. Presently, all government services, and social services, including school registration and hospital appointments, are accessible online, nurturing a new generation with a digital mindset.

Despite encountering mistakes and significant hurdles along the way, Estonia's digitization process has been characterized by consistent progress. The quality of its public services now surpasses

While Estonia's decision to become a digital nation was made in a single day, the journey towards this goal has been ongoing

that of Germany and the United States, with many European Union countries adopting Estonia's e-governance model. Estonia has thus become a global benchmark for digitalization.

The Estonian Government operates as an "E-Cabinet," conducting paperless meetings where ministers can access relevant materials electronically and submit proposals remotely. Since 2002, every citizen possesses an "ID Card," consolidating documents like driver's licenses and health records into a single digital format usable across various service points. Additionally, each citizen has an official email address, fostering transparent communication with the government.

Export from Estonia

Estonia, with a population of 1.3 million—comparable to that of Ulaanbaatar—shares a history of following a socialist system and has a similar public service culture to Mongolia. This makes Estonia's e-governance model an ideal reference for Mongolia.

Mongolia's journey towards digital government and digital transition has been gradual. Successive ▶

governments have been working on digitization, improving infrastructure, and adopting international best practices. Mongolia's long-term development policy, "Vision-2050," and the government's 2020-2024 action program include a phased approach to digitizing public services. In this context, a consulting service agreement was signed with Estonia's E-Governance Academy to introduce world-class e-governance practices.

In 2019, a delegation led by then-Prime Minister L. Oyun-Erdene and N. Uchral, then chairman of the Parliament's standing committee on e-policy, visited Estonia. Reflecting on the visit, the Minister of Digital Development and Communications N. Uchral stated, "This was a visit in search of solutions, not just knowledge. We clearly saw our mistakes. Our ministries and agencies develop separate, non-communicating systems, mistakenly thinking they achieved digitization with costly, non-integrated, and insignificant solutions."

As a result of the visit, Mongolia adopted the "E-Estonia" system and began collaborating on digital transformation projects through public-private partnerships. Consequently, the "E-Mongolia" system was developed and officially launched on October 1, 2020. Initially offering 100 electronic services, it now provides over 1,000 public services, allowing citizens to access government services transparently, quickly, and without bureaucratic delays.

With guidance from Estonia, Mongolia's parliament approved four laws to support digital development, reformed the KHUR and DAN systems, and implemented the integrated government service system "E-Mongolia." The latest version, 3.0, offers more than 1,000 public services. As a result, Mongolia improved its ranking by 18 places, now standing at 74th in the global index.

The primary goal of "E-Government" is to digitize government services, making them more efficient and reducing corruption, addressing long-standing criticisms of time-consuming and bureaucratic processes.

As cooperation with Estonia deepened, a delegation led by Member of Parliament and Minister of Digital Development and Communications N.Uchral attended the "E-Tallinn Conference 2023" and the "Open Government Partnership" Global Summit in September last year. Approximately 1,550 delegates from over 100 countries participated in the summit, engaging in high-level roundtable meetings, thematic and open discussions, seminars, and award ceremonies. During the conference, N.Uchral delivered a speech on "Trends, Challenges, and Innovation: New Frontiers of Digital Governance."

Additionally, the international organization "Open Government Partnership" presented the "Open Government Award" to the Government of Mongolia, recognizing its efforts in e-government and anti-corruption initiatives.

Mongolia improved its ranking by 18 places, now standing at 74th in the global index

Future partnership

The Speaker of Estonia's parliament, Lauri Hussar, stated that Estonia will continue to promote digital development, enhance the legal environment to keep pace with technological advances, share best practices, and support the development of government policies on electronic identification systems, cybersecurity, public-private partnerships, and artificial intelligence.

In response, Mongolia proposed expanding cooperation in information technology, e-government, and cybersecurity to improve bilateral relations and establish an intergovernmental cooperation commission.

One of the key agreements made during the visit was to form a working group to amend 120 laws to facilitate the digital transition. Also, it was agreed to conduct online training for the staff of the National Archives of Mongolia.

Mongolia will renew its memorandum of understanding established in 2019 and 2022 with Estonia's E-Government Academy, continuing to cooperate on the digitization of the Permit Service, the National Identity Access System, and the E-Resident program.

Thus, Estonia has become a clear example for Mongolia on how to develop through digital advancement, the internet, and software. ■

E-government

Digitization of Public Services - A Corruption Free Future

It can be said that in 2018, the establishment of parliament's temporary committee on Digital policy marked the beginning of the intensification of digital transition. In 2020, the Parliament expanded this ad hoc committee into a standing committee on Digital innovation policy. In 2021, this committee, along with the standing committees on the Economy, Legal Affairs, and Security and Foreign Policy, jointly enacted several key laws: the Law on Public Information Transparency, the Law on Protection of Personal Information, the Law on Electronic Signatures, and the Law on Cyber Security.

The Law on Public Information Transparency ensures citizens' right to know by mandating the transparency and openness of 68 types of information across five key areas. Consequently, the government designated 2023-2024 as the Years of Fighting Corruption, launching the five "Ш" operations.

With the establishment of "KHURDAN" service points, citizens can now access government services quickly and conveniently at locations near their homes

Government agencies disclosed their information on the shilen.gov.mn website, mandating all responsible organizations to make their information public. An updated version of the shilen.gov.mn website facilitates more comprehensive information uploads. Unlike the previous version, the new version allows for dynamic updates of timely information and corresponding ratings.

Moving forward, under the Law on Public Information Transparency, the Ministry of Digital Development and Communications and the Regulatory agency of Government digital services will jointly oversee the management and evaluation of government agency's transparency on information disclosure. This collaborative effort ensures clear ownership and accountability. However, current legal regulations feature part-time councils tasked with organizing, evaluating, and making recommendations, ▶

leading to potential operational weaknesses. Complaints arise from delays in evaluating and updating information, often attributed to irregular activities by part-time councils.

To ensure equitable access to public services, Regulatory agency of Government digital services established KHURDAN service points for government digital services, providing streamlined access to citizens. Digitalization efforts encompass 785 services from 56 agencies, with 478 services from 43 entities integrated into the system, offering operator-assisted services to citizens. With 1.7 million registered users on the E-Mongolia platform, efforts are underway to cater to the approximately 800,000 citizens who don`t have access to smartphones, internet, or printing devices through KHURDAN service points.

In collaboration with the private sector, the government facilitates electronic service delivery through private kiosk machines, marked as KHURDAN service points, enhancing service accessibility. Plans include establishing 24/7 self-service KHURDAN service points in all capital districts and deploying mobile KHURDAN service points in densely populated areas. KHURDAN represents the unified concept of the main information exchange system KHUR and the identity login system DAN.

A few years ago, people had to visit the state registry office for inquiries. The introduction of kiosks marked some progress, but accessibility remained an issue. However, with the establishment of "KHURDAN" service points, citizens can now access government services quickly and conveniently at locations near their homes.

Currently, the E-Mongolia platform hosts 1,190 services from 86 organizations, focusing on digitizing frequently used services. Additionally, local government services digitization efforts are underway in 21 provinces, streamlining administrative processes and reducing costs for both citizens and the government.

E-government services are very important. First of all, they save money for both the government and citizens. For citizens, these services reduce three main costs. First, fuel costs, including those for private cars, taxis, and buses. Second, the cost of paperwork associated with obtaining government services. Third, valuable personal time, which, although not a direct expense, is significant. Research estimates that citizens spend at least two to three hours to access government services.

E-Mongolia platform hosts 1,190 services from 86 organizations, focusing on digitizing frequently used services.

Last year, E-Mongolia released version 3.0 to make the platform easier to use. The oldest person to register on the platform is 99 years old. The most common complaint from users is login issues. Critics point out that after creating a number, it must be sent from a registered phone number and then approved. While this process is challenging for some citizens, it is necessary to ensure the security of their information.

The Regulatory Agency of Government Digital Services and the "E-Mongolia Academy" are collaborating to digitize government services step by step. Currently, seven services in the health sector are being digitized. The "E-Mongolia Academy" prioritizes digitizing the most useful services first, rather than trying to digitize all services. For example, although the Ministry of Road And Transportation's sea boat license can be issued electronically, it is not yet implemented in practice.

Digitalization offers dual benefits: increasing productivity and reducing costs. Consequently, 109 laws were amended to support the digital transition. These amendments stipulate that the first document created, whether electronic or paper, shall prevail in court decisions, significantly advancing the digital transition.

Eighty-five percent of citizens access government services via their mobile phones, and 75 percent of adults use the E-Mongolia platform. The remaining 25 percent are elderly or reside in remote communities. Intensive digital skills training has begun in both the capital and local areas, with over 40,000 citizens participating. Future training will target general education teachers, employees, high school students, individuals with special needs, and government employees.

Previously, government agencies maintained separate registration databases. Now, a unified state registration database has been established, significantly reducing discrepancies and errors as other organizations base their databases on this central register.

In an era of widespread misinformation, the "E-Mongolia Academy" recommends using official information channels. Most government institutions and decision-makers provide information through their websites and Facebook pages. It is crucial for citizens to obtain information from these reliable sources. ■

Partnership

Chinggis Sat: Pioneering the nation's reach beyond Earth

More than 800 years ago, William de Rubruck, arrived in Kharkhorum, the capital of Great Mongolia on the orders of King Louis IX of France, likely would never have imagined the expansion of relations between the two countries into the vastness of space. In 1289 and 1305, Arghun of the Il Khanate established relations with Prince Philip of France, following in the footsteps of the priest, the first Frenchman to visit the burgeoning Mongolian Empire. In 1254, French architect William Bouchier crafted the famed silver tree in Kharkhorum, a testament to the special history of Mongolian-French relations. Documents and scriptures documenting this history endure.

Since then, relations between the two countries, long forgotten in the annals of history, have greatly intensified over the last 30 years. Notably, the French company "Thales Alenia Space" will develop Mongolia`s national satellite “Chinggis Sat", launching it into the 113.6°E orbital slot officially reserved for Mongolia by the International Telecommunication Union. On October 13, 2023, the Minister of Digital Development and Communications N. Uchral and French company's CEO Herve Derrey signed a "Memorandum of Understanding" outlining the development and preparation of a contract for the satellite production and usage.

The French company "Thales Alenia Space" will construct a national satellite “Chingis Sat"

With this milestone, the generational aspiration for a national satellite and the bolstering of communication independence become a reality. During the signing ceremony, the Minister stated, "This project is an important next step towards Mongolia’s digital transformation and development of a digital economy. It will transform the way people living across our vast country access the internet and support access to the vital services they need. We are pleased to have a partner with the expertise and capabilities of Thales Alena Space, and look forward to working with them on a project that will deliver significant benefits to all Mongolians.”

Herve Derrey, CEO of Thales Alenia Space, remarked, "It is a privilege for Thales Alenia Space to have been selected by the Ministry of Digital Development and Communications of Mongolia for providing its national satellite. We believe the project will be a key asset to bridge the digital divide, a strong vector of economic growth as well as a precious tool for sovereignty. We are also thrilled to embark into this long-term cooperation with Mongolia and support the country develop its space capabilities and services for the benefit of all its citizens”.

As part of this project, tenders were announced last year for consulting services to determine the technical conditions and requirements of the digital communication satellite to be used in the geostationary orbit 113.6E position, as well as for ▶

consulting services on technical measurement and basic research at the location of the communication satellite ground station.

The significance of Mongolia having "Chinggis Sat" is immense. Citizens across our vast territory will be able to access high-speed internet services from anywhere in the country. This will enhance natural disaster prevention, search and rescue operations, communication security, and sectors like information technology, agriculture, tourism, and mining will also benefit. Additionally, Mongolia currently spends about $12 million annually to lease commercial satellites. Redirecting these funds towards owning a satellite is both economically and nationally advantageous.

The government views this initiative as an advanced method to provide internet and communications to every citizen, recognizing the impracticality of building cellular antennas in remote areas or laying fiber optic cables to every town and household. Furthermore, the strategic relations between Mongolia and France have entered a new phase, emphasizing the importance of expanding and diversifying bilateral cooperation beyond traditional areas such as culture, nuclear energy, agriculture, renewable energy, and mining.

Citizens across our vast territory will be able to access high-speed internet services from anywhere

Regarding the "Chinggis Sat" satellite, Thales Alenia Space stated, "We are proud to develop a high-performance Ku Band satellite named after the national hero of Mongolia, Genghis Khan. The satellite will facilitate telemedicine, e-education, e-government services, and support various sectors of the economy by providing high-speed internet services to rural and remote areas of Mongolia lacking communication networks." ■

Introduction to Thales Alenia Space

Drawing on over 40 years of experience, the company has been delivering cost-effective solutions for communications, positioning, earth observation, environmental management, exploration, science, and orbit. Specifically, Thales Alenia Space is internationally recognized for its expertise in creating satellites for communication, positioning, Earth observation, resource utilization, and solar system analysis, in collaboration with both public and private sector partners.

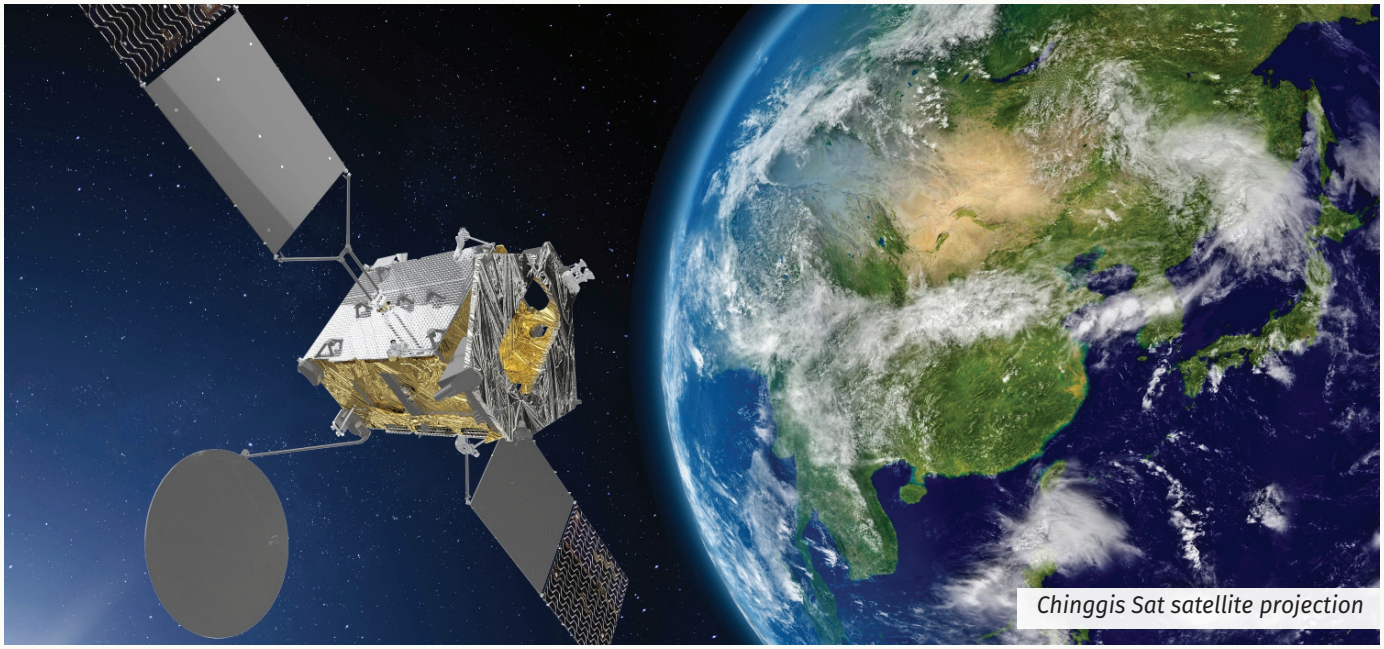
The company was jointly established by Thales (67 percent) and Leonardo (33 percent). As of 2022, Thales Alenia Space reported an income of 2.2 billion euros and operates in 14 locations across 10 countries, employing approximately 8,500 individuals. In April, the company signed contracts with the European Space Agency to deliver an observation station to Mars and to launch a radar-based observation satellite.

In the previous year, Thales Alenia Space successfully launched several key projects, including AMAZONAS-NEXUS and SATRIA, aimed at enhancing communication networks in the Americas and Indonesia, respectively. Additionally, the company launched the MEOLUT Next satellites

for land, sea, and air observation, as well as to support search and rescue operations. These achievements highlight Thales Alenia Space's dedication to innovation and excellence in space technology.

Satellite

Declaring independence in space



Chinggis Sat satellite projection

According to data from the Orbiting Now website, there are currently 9,494 active satellites in Earth orbit. In recent years, the number of satellites of the state, private companies, and research institutes going to space has been increasing rapidly. This trend is expected to continue, with estimates suggesting around 60,000 satellites will be operational by 2030, according to research from the University of Plymouth, the University of Texas at Austin, and the Zoological Society of London.

The drive to explore space is fueled by humanity's recognition that the space economy (encompassing human activities in orbit or on other celestial bodies) will profoundly alter our way of life and work. Mongolia exemplifies this pursuit, having embarked on its space journey by launching its first satellite in 2017 and now endeavoring to establish its first national satellite. In November 2023, the Government of Mongolia signed a memorandum of understanding with the French company "Thales Alenia Space" to build the fully digital national satellite "Chinggis Sat."

The satellite named after the great king is of special importance to national security

Since the historic launch of Sputnik 1 in 1957, the space economy has predominantly thrived on satellite services, including communications, data collection, and earth observation. Presently, communication satellites comprise the majority of active satellites, approximately 3,000, followed by earth observation (1,052), technology (383), positioning (154), and science (108) satellites. Communication satellites, essential for businesses seeking a competitive edge, enable the monitoring of remote warehouses, instant credit card transactions, international video calls, and more. Consumers rely on satellite technology for online navigation, in-flight connectivity, and phone calls in remote areas. Additionally, television viewers should thank satellites for broadcasting their favorite TV programs. ▶

▶ The "Chinggis Sat" communication satellite offers numerous advantages beyond above mentioned applications. “Its launch aims to achieve significant social and economic impacts, including enhancing communication and internet network reliability, meeting people's security and communication needs, bridging the digital divide, and ultimately improving quality of life” said the Ministry of Digital Development and Communications. Additionally, the 3.5-ton satellite, named after the legendary king, holds particular importance for national security. By establishing its information and communication system linking Earth and space, Mongolia aims to enhance information and cyber security while reducing dependence on neighboring countries.

The information and communication sector represents a critical strategic area for any country, and independent management and organization of infrastructure provide a competitive advantage. A national satellite serves as vital infrastructure, ensuring independence and bolstering national security—a driving force behind nations' aspirations to assert their autonomy in space.

How communication satellites could impact the mining and agriculture sectors, which are vital to our country's economy. In the case of the agricultural sector, satellite sensors collect information on weather conditions, images, data, and patterns on the magnitude of electromagnetic waves. According to McKinsey's annual Digital Farmer Survey, in the USA, 29 percent of farmers and 45 percent of vegetable and fruit farmers use such data.

Satellites also support the vital activities of the mining industry. Good connectivity allows mine workers to solve problems remotely from company headquarters, increasing productivity. Satellite data can also help identify where waste is being generated, track transportation along the supply chain, and locate mineral-rich deposits.

In addition, the digital infrastructure of e-government will be improved, intensifying the e-transition in all sectors. Communication of special functions of the state, such as defense, border protection, armed forces and emergency management, will be improved. This will reduce the loss of human life and property due to disasters and accidents.

Number of active satellites

1958	2
1970	162
1980	318
1990	464
2000	769
2010	997
2020	3256
2024	9494

Source: Statista.com

The direct impact of the satellite on the daily lives of citizens is the ability to connect to the Internet in any part of the country. Internet and mobile network access stations can be set up regardless of whether an area or settlement is connected to the fiber optic network. In this way, it will be possible to provide high-speed Internet to the entire country of Mongolia.

However, it is unreasonable to assume that all the above opportunities will be achieved by launching a satellite. Many countries have not been able to take advantage of their national satellites. Therefore, it is important to master space technology. We need to focus on mastering new technologies and developing our science and technology.

Humanity's development in the near future is becoming dependent on space. Mongolia has no choice but to develop its space industry.

"The time has come for us to move beyond space communication policy and focus on space technology. It is important for us to use our vast territory and airspace in cooperation with technologically advanced countries to establish scientific research and testing bases and develop our future engineers together with them," according to Ch. Zolbayar, head of the Cyber Security Council.

The "Chinggis Sat" satellite is one of the real signs that Mongolia is not lagging behind in space industry. ■

Chinggis Sat satellite

The Chinggis Sat is a communications satellite positioned 36,000 km above Earth. It will boast a robust communication system capable of handling vast amounts of data and supporting multiple services simultaneously.

On average, the satellite is expected to operate for over 15 years, with the potential for extended operation. This cutting-edge satellite weighs a total of 3.5 tons and features digital technology processors and high throughput (HTS) capabilities.

While the initial investment cost of the satellite is relatively high, it proves efficient when considering its 15-year lifespan. Moreover, the satellite project encompasses various complex tasks, including satellite construction, launch, insurance, as well as the establishment of satellite control centers and ground transmission stations.

Digital Economy

The visit that brought American technology closer

With the advent of the digital age, people's lifestyles are increasingly becoming digital. New habits and routines are emerging daily, accelerating and transforming our daily lives. Concurrently, the global economy is rapidly digitizing. However, our country's exports have remained undiversified over the past 20 years, relying heavily on a limited range of products. Economists stress the importance of diversifying the economy, enhancing foreign trade openness, and expanding export opportunities through the transition to a digital economy. The digital shift presents numerous economic benefits, such as facilitating trade, reducing enterprise operating costs, simplifying business processes, and enabling products to reach consumer platforms more effectively.

A $30 million fund to be established, aiming to support start-ups

Member of Parliament and Minister of Digital Development and Communications, N. Uchral, has initiated cooperation with the United States in the digital economy sector. He made a working visit to the U.S. from January 25 to February 1, 2024. Over 50 executives and managers from Mongolian telecommunications, information technology, and aerospace companies participated in the visit, which marked a collaborative effort between the public and private sector. During the visit, 34 meetings were held with representatives from both the U.S. government and private sector, focusing on diversifying relations in space science, the digital economy, and artificial intelligence.

Mongolian businesses in the Silicon

Valley ecosystem

The United States emphasized diversifying and utilizing international payment platforms

The United States emphasized that diversifying and utilizing international payment platforms such as Apple Pay, PayPal, and Stripe are pivotal for fostering Mongolia's economic autonomy. The Minister of Digital Development and Communications, N. Uchral, met with Nick Gammon, Vice President of Government Relations at Apple, and agreed to introduce Apple Pay in Mongolia by June 2024. Additionally, in meetings with Michael Nunes, Vice President of Government Relations, and Todd Wade, Vice President of Product Development at Visa Inc., they agreed to support the introduction of card-based international payment tools, including PayPal, in Mongolia.

While in San Francisco, N.Uchral officially began integrating data from eight leading Mongolian IT companies into the "Silk Road Innovation Center," part of a joint initiative with Central Asian countries. This marks the start of growing Mongolian IT companies within the Silicon Valley ecosystem. The center is establishing a $30 million fund aimed at strengthening Central Asian start-up businesses valued at $1 billion.

During this visit, the Information Technology Park of Mongolia signed a memorandum of cooperation with the Silk Road Innovation Center in Silicon Valley, creating a stable channel for future IT start-ups to grow in Silicon Valley. Additionally, it was agreed to prepare for the implementation of the "Google for Startups" accelerator program in Mongolia and to organize meetings and conferences at Google's center in Singapore within the first half of 2024.

Moreover, the delegates met with major venture funds such as NVIDIA Ventures, DX Ventures, Network Venture Capital, and Ven Elite, as well as accelerator programs like Plug and Play and Mind the Bridge, to attract investments and explore the potential for introducing Mongolian start-ups' products and services to the international market.

Meetings were held with Mongolian citizens working in Silicon Valley companies to increase digital economy turnover, localize technological innovations, and internationalize start-ups. It was also decided to establish a Digital Economy Policy Council under the Minister of Digital Development and Communications. Approximately 350 Mongolians currently work at the main offices of leading technology companies in Silicon Valley. The establishment of this council aims to define the policy regarding the international competitiveness of Mongolia's information technology industry, and create opportunities for these specialists to contribute to the country's development.

Additionally, during the meeting with a Google

representative, the parties reaffirmed their agreement to train 1,500 Mongolian experts, including those in artificial intelligence. They also discussed establishing a digital skills center in Mongolia and sharing regional expertise. In a separate meeting with representatives from the University of San Francisco, an agreement was reached to implement a 2+2-year bachelor's program to prepare human resources in big data analysis and information technology.

Mongolian researchers to participate in the Mars exploration project

The United States has extended an invitation to our country to join the Artemis Accord, an international cooperation initiative aimed at promoting peaceful research and activities in space. NASA, the space research organization, has announced its ongoing program to enhance the utilization of space-based big data and expand its capabilities. Moreover, it has proposed the involvement of Mongolian scientists and experts in the Mars exploration studies. At the meeting between Minister N.Uchral and SpaceX Vice President Tom Ochinero, an agreement was reached to commence preparations for tripartite cooperation with SpaceX to launch a national satellite in 2027.

Additionally, they engaged with representatives from Stanford University's Human-Centered Artificial Intelligence Research Institute and the E&Y Emerging Technologies Lab, discussing the best practices in artificial intelligence development, utilization, and policy framework establishment. On top of that, by judiciously harnessing the frameworks delineated by

institutions such as Ernst & Young, the Massachusetts Institute of Technology (MIT), the Boston Global Forum, and the collaborative initiative with the World Bank, namely the Prosperity Alliance, our efforts were further strengthened. Utilizing the insights gained from the pioneering artificial intelligence research project conducted at the E&Y Emerging Technologies Lab, our nation's policy directives about artificial intelligence were made clear, with a particular focus on environmental sustainability. It has been decided to offer opportunities for Mongolian scientists to engage in scientific research at the Research Institute of Human-Centered Artificial Intelligence, participate in policy environment consultation meetings with the Asia Foundation, and facilitate human resources empowerment initiatives. They also engaged in discussions with the leadership of NVIDIA, a global leader in supercomputer production essential for artificial intelligence development, regarding the advancement of Mongolian artificial intelligence and necessary equipment.

The visit by N.Uchral, Minister of Digital Development and Communications, to the United States was aimed at advancing the agreements established by the Prime Minister of Mongolia, L.Oyun-Erdene, during his official visit to the country. It is imperative to foster relations between Mongolia and the United States, enhance cooperation in digital governance, digital shift, information and communication technologies, and cybersecurity, and establish effective collaboration for entrepreneurs, startups, and young professionals of Mongolia's information technology sector. ■

During the meeting with a Google representative, the parties reaffirmed their agreement to train 1,500 Mongolian experts, including those in artificial intelligence

Starlink

A new internet gateway

Billionaire Elon Musk launched the ambitious Starlink project with a vision to blanket the vast expanse of space with satellites, ultimately delivering high-speed internet connectivity to every corner of the globe. In remote regions like dense forests, desolate steppes, vast deserts, or the open sea, accessing the internet can be challenging or even impossible due to lack of connectivity. The Starlink project embarks on a mission to redefine the boundaries of possibility, envisaging a future where space-based internet becomes an integral part of our daily lives.

With internet users worldwide growing at a steady rate of 3–4 percent annually, projections suggest that within the next 12–15 years, global connectivity will become ubiquitous, encompassing every individual on the planet. Billionaire Elon Musk, however, is catalyzing this timeline with his ambitious "Starlink" project, offering humanity the unprecedented opportunity to access the internet even from the most remote and challenging locations such as the Sahara Desert, Mount Everest, and the Amazon jungle.

The project was initiated in 2015 and in February 2018 two TINTIN test satellites were successfully launched. Following that milestone, in May 2019, Starlink achieved another significant breakthrough by deploying its inaugural batch of 60 satellites.

Since then, as of March 2024, a total of 5,504 Starlink satellites have been launched into Earth's orbit. However, according to astronomer Jonathan McDowell's reporte, 5,442 of these satellites are currently operational.

Each Starlink satellite weighs 260 kg, and thanks to its compact design, Falcon-9 rockets have the capability to launch 60 of them into orbit simultaneously. The satellites consist of solar panels, four phased-array antennas, and ion engines fueled by krypton gas.

Essentially, with Starlink, you have the freedom to access high-speed Internet via satellite by effortlessly pointing your Starlink device skyward, anytime and anywhere you desire.

The majority of internet services rely on a solitary geostationary satellite stationed approximately 35,786 kilometers above the Earth's surface. Hence, the latency, or data transmission time, between the user and the satellite is significantly elevated. Contrastingly, Starlink satellites orbit much closer to Earth, at a mere 550 kilometers above its surface, resulting in significantly reduced latency. Put simply, Starlink operates using low-orbit satellites. A satellite in low Earth orbit travels in proximity to the planet's surface, enabling faster data transmission compared to satellites at higher altitudes. Starlink calculations indicate that launching and operationalizing a total of 12,000 satellites will necessitate an investment of approximately 10 billion US dollars. As of today, satellite internet services have been rolled out in over 60 countries worldwide.

5442 "Starlink" satellites are operational in Earth's orbit

Exploring Low-Orbit Technology

The Internet stands as the cornerstone of our nation's infrastructure, especially crucial given our expansive territory and dispersed population. In Mongolia, there are 335 soums and settlements, with 324 of them are linked to fiber-optic cables. This means that 80 percent of households have access to the internet. Approximately 400 remote bags (subdivisions within soums) remain without access to 4G services, despite being connected to the fiber optic network. However, there are 11 soums currently without access to the fiber-optic cable network. This represents three percent of the total population. However, in a more granular view, 20 percent of households across the country remain unconnected to the internet. Research indicates that 27 percent of individuals reside in areas where internet services is not accessible. In today's world, the widespread accessibility and utilization of the internet significantly impact a nation's competitiveness, economic strength, educational accessibility, and overall quality of life. Deploying a fiber-optic cable network across every corner of Mongolia proves to be a costly endeavor. Compounded by the limited market capacity, recouping such investments becomes challenging. Hence, given our expansive geographical landscape, embracing low-orbit satellite technology presents a promising ▶

opportunity to enhance our nation's internet accessibility.

With the advent of low-orbit satellite-based Internet services, we have the opportunity to extend internet access to the remaining 20% of the population without connectivity via fiber optic cables.

Moreover, the 'E-Nation' initiative spearheaded by the Ministry of Digital Development and Communications (MDDC) underscores the critical need for nationwide digital infrastructure. This encompasses extending internet networks to rural, remote, mining, and tourism areas, with particular emphasis on leveraging services like 'Starlink' for optimal coverage.

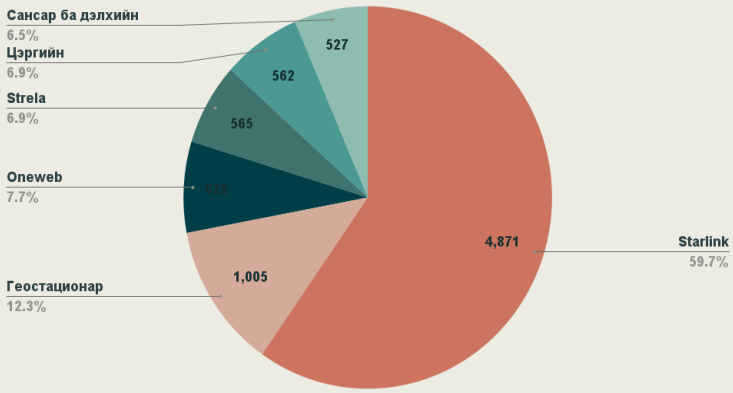
On April 11, 2022, the Ministry of Digital Development and Communications gave its official approval to the "Guidelines for the Use of Low-Orbit Satellite Networks". This paved the way for low-orbit satellite internet service providers like "SpaceX" and "OneWeb" to commence operations in Mongolia. On May 13th, SpaceX's official website highlighted Mongolia in blue on the roster of countries slated to offer services in the near future.

In July 2023, the Communication Regulatory Commission of Mongolia granted a special license to "Starlink Service Mongolia," authorizing the provision of telecommunications services and the utilization of radio frequencies and bands.

Earlier this year, in February, the Minister of Digital Development and Communications N.Uchral embarked on a visit to the United States, which included a pivotal stop at SpaceX's headquarters. During this visit, he met with Tom Ochinero, the vice president of the company, and unveiled exciting news: the launch of "Starlink" service in Mongolia, will be announced in February 26, 2024, in Barcelona, Spain at the Mobile World Congress.

March 1st marked a significant milestone for Starlink as the company announced the launch of its services in Mongolia via its official Twitter page, a message reiterated by Elon Musk on his personal Twitter account. Consequently, Mongolia now stands as the fourth Asian nation to join the expanding Starlink network. Given the market size and population density, establishing its headquarters in Mongolia might not allow Starlink to cover its costs. Hence, it adopts a strategy of collaboration with the nation's internet providers. In this scenario, Gmobile, the national operator, will serve as the official parter for Starlink in Mongolia. Businesses associated with Starlink can acquire devices from Gmobile at no extra cost, backed by the manufacturer's warranty.

The number of satellites in Earth's orbit and their operators



We're actively exploring opportunites to lower service fees and equipment costs

The Ministry of Digital Development and Communications announced its intention to address the issue of high consumer equipment prices. They are actively seeking avenues to offer discounts, lower service fees, and foster shared service usage among consumers through collaboration with international development agencies.

Numerous companies have ventured into low orbit. Among them, prominent players like Starlink lead the charge, while others such as Telstra from Canada and Oneweb from England have also joined the celestial fray, deploying satellites to facilitate this revolutionary form of internet connectivity. Partnering with 'Telecom Mongolia,' the English company 'One Web' has launched low-orbit Internet services. In our interconnected world, collaborating closely with organizations driving technological advancement is paramount to progress and innovation. ■

Silicon Valley

Mongolian companies storm Silicon Valley

The ascent of new technologies, spearheaded by artificial intelligence, is gaining momentum on a global scale. The catalysts propelling the Fourth Industrial Revolution encompass entirely novel technologies and innovations, fundamentally reshaping the dynamics of human labor and existence while also altering the global power equilibrium. Computers and robots have evolved into indispensable entities comparable to humans in their capabilities. The advent of virtual assistants proficient in executing a myriad of tasks not only enhances the convenience and comfort of our daily lives but also presents a plethora of new challenges that demand innovative solutions.

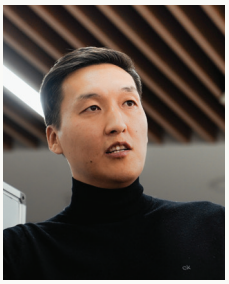
Presently, an opportune moment has arisen for Mongolian youth, who stand among the forefront of global intellectual prowess and possess the potential to garner international acclaim for their technological innovations. In Mongolia, a burgeoning landscape of technology companies has emerged, captivating observers with their innovative products and services. This year, ten of these companies are set to make a substantial impact in Silicon Valley.

As part of his official visit to the United States, the Minister of Digital Development and Communications N. Uchral, along with representatives from the Mongolian private sector, hosted events in Washington, San Francisco, and Los Angeles. These events were held at the "Silk Road Innovation Hub," attracting around 100 guests. Companies such as "Teso Investment," "Gund Investment," ICT Group, "ONDO," "Fibo Global," "Intelmind," "Gerege Systems," "Chimege Systems," "Mezorn," "Hi Pay," and "Tech Pack" have entered the Silicon Valley ecosystem, marking their first steps towards the international market.

Silicon Valley, the birthplace of many of the world's leading technology companies, generates $600 billion in annual revenue and attracts $105 billion in investment. Companies like AND Global and Fibo Cloud are successfully operating in the international market, exporting their intellectual innovations. In the forthcoming years, our technology companies will forge partnerships with startup enterprises across eight Central Asian nations, poised to attract an estimated $30 million in investment in the first year. Given that 65 percent of our population is under the age of 35, boasting considerable intellectual prowess and knowledge, our country presents vast opportunities and rich data resources to excel in this domain. We diligently considered the insights shared by representatives from technology enterprises that have successfully immersed themselves in the Silicon Valley ecosystem, subsequently embarking on strategic initiatives to expand into the global marketplace.

Our technology companies to attract an estimated $30 million in investment

O.Zolbayar: Propelling Mongolian technological excellence onto the global stage



(Founder and CEO of "Mizorn" LLC)

Since 2009, "Mizorn" LLC has steadfastly engaged in business operations centered around software development and technology integration. At present, the company boasts a team of approximately 50 skilled engineers, overseeing the development of around 30 projects and the successful launch of 10 proprietary technology-based products in both domestic and international markets. Our products and services enjoy recurring usage by a user base exceeding two million individuals on a daily basis. Our company is at the forefront of introducing technological advancements in key sectors such as transportation, logistics, education, and media. Remaining abreast of technological developments, we increasingly leverage artificial intelligence and blockchain technologies within our suite of products and services. ▶

Initiating our international market entry in early 2014, we became proud members of the Silk Road Innovation Hub, a collective of Central Asian countries situated within Silicon Valley. In this manner, we're integrating ourselves into the vibrant community nestled at the heart of Silicon Valley, engaging in continual information exchange, forging connections with investors, and accessing firsthand training and guidance. If need be, the Silicon Valley HUB offers the capability to work, host events, and convene meetings with investors. Through this strategic merger, a portal to the burgeoning Central Asian market swings wide open, offering a platform for the country's talented youth to synergize and forge entrepreneurial partnerships. "Mizorn" LLC has dedicated years of meticulous preparation to deliver exceptional products and services to a global audience. Continuously enhancing the expertise of its engineers and workforce, while diligently embracing and harnessing the latest technological advancements, ensures a commitment to excellence that resonates throughout its offerings. As we celebrate our 15th anniversary milestone, we embark on an exciting journey of international expansion, poised to establish a prominent presence in the bustling global technology landscape. Over the next five years, our unwavering confidence drives us to channel our efforts towards crafting innovative technology products that will captivate millions worldwide, propelling Mongolian technological excellence onto the global stage.

J.Bat-Ireedui: Opportunity to attract investment and partnership has increased

(CEO of "Gund Investment" holding)

Gund Investment LLC, a forward-thinking investment firm, specializes in funding innovative small, medium, and start-up enterprises. At present, boasting a diverse portfolio, the company functions as a holding entity with over 20 subsidiaries and affiliates. Our investments span across key sectors including education, information technology, insurance, non-banking financial services, food production, tourism, hospitality, and sports management, among others. The holding strategically fosters sustainable development through the application of systems engineering methodologies in its business operations, thereby generating societal value. We engage in extensive collaboration with foreign investment funds and organizations across various domains, extending beyond business ventures to encompass initiatives such as human resource development, experiential learning, and the integration of novel international business methodologies.

Since its inception in 2016, Gund Investment Holding has been dedicated to enhancing the competitiveness of Mongolian start-ups on the global stage while actively pursuing foreign investment opportunities. In January of last year, our visit to the United States led us to join the prestigious "Silkroad Innovation Hub" in Silicon Valley. This visit not only unlocked fresh avenues for collaboration with top-tier global start-ups but also facilitated partnerships with burgeoning enterprises from Central Asia. As the global center of finance, the United States will give opportunities for attracting investment but also enhances prospects for fostering fruitful collaborations.

S. Badral: Creating a virtual Mongolian persona

(Founder and CEO of "Chimege Systems" LLC)

"Chimege Systems" LLC pioneers the advancement of translating Mongolian speech to text and vice versa using artificial intelligence. Last April, the unveiling of "Egune," our pioneering artificial intelligence model, marked a watershed moment. "Egune" stands as a marvel of cognitive prowess, boasting the remarkable abilities of comprehension, reasoning, and articulate communication. The potential for tenfold improvement awaits on the horizon.

Through the concerted endeavors of Bolorsoft, Chimege Systems, and Egune, we stand on the verge of creating a virtual Mongolian persona. In our metaphorical human construct, 'Chimege' takes on

the role of the mouth and ears, 'Egune' functions as the brain, and 'Bolorsoft' serves as the eyes, forming a symbiotic relationship of technological prowess. We are proud to announce our achievement in elevating Mongolia to new technological heights. Through our innovations, we have forged a unique national model. Without national artificial intelligence infrastructure, a nation's sovereignty faces a precarious future.

Last January, our company joined the Silkroad Innovation Hub. The United States is not our target market. Our primary focus is the Central Asian market. Succeeding in such a vast market poses its challenges, but we're waiting a little bit. We're exploring market entry from Mongolia to Kazakhstan and Uzbekistan. Our future ambitions are to target market entry in India, Iran, and Arabia. We have future plans for entry into the European and American markets. Stepping into Central Asia marks our initial foray into new territories. Anticipate our expansion into the European and American markets within the next five years. T op of Form

Unfortunately, our efforts didn't yield the profit and the investment has yet to be recovered. It's worth noting that we attracted investment of 3.4 million US dollars from "ICT Group" JSC. This year marks our commitment to achieving financial equilibrium by balancing our income and expenditures. With millions of dollars in revenue anticipated, our sights are set on bolstering future income streams.

G. Hulan: Our focus lies on launching the public cloud services in Uzbekistan

(CEO of "Fibo Global" LLC)

Established in 2018, "Fibo Global" specializes in cloud infrastructure solutions. We've launched public cloud services in both Mongolia and Kazakhstan. In addition, we've introduced Gov Cloud services in Mongolia, prioritizing their seamless and dependable operation every day. At the 2023 ICT EXPO event, we inked a memorandum with the Silkroad Innovation Hub, facilitating the entry of Mongolian tech companies and startups into Silicon Valley. Becoming part of the Silkroad Innovation Hub enables us to spotlight the ingenuity of Mongolian youth on a global scale, attract substantial investment, and diversify Mongolian market.

This year, our focus lies on launching the public cloud services in Uzbekistan. Furthermore, as artificial intelligence becomes increasingly integrated into the technological landscape, it signifies not merely a change or innovation but rather a profound evolution. In cloud computing, data analytics, machine learning, and data creation, high-performance infrastructure, specifically GPU cloud solutions, is rapidly becoming indispensable, driven by a growing demand for their capabilities. Henceforth, our endeavor is to pioneer the integration of GPU cloud technology, a secure, dependable, and high-efficiency cloud solution, within Mongolia's educational system.

B. Manduul: new strategic investment opportunities will be created

(CEO of "Ondo" LLC)

"ONDO" company is the pioneer in introducing O-RAN communication infrastructure to the region.

Our goal is to propel the industrial sector's digital transformation by leveraging 5G networks and amalgamating ground and space infrastructure to forge a robust Internet of Things (IoT) platform.

We believe that operating in Silicon Valley will introduce our solution to the international market and create new strategic investment opportunities.

Artificial intelligence

A tangible partnership in the artificial intelligence field

The two ministers signed a Memorandum of Cooperation in the field of artificial intelligence (2024.02.14, Dubai, UAE)

Artificial intelligence and the United Arab Emirates. Connecting the world's largest oil exporter with cutting-edge technology which attracts the world`s superpowers might seem improbable, yet it is a reality. More interestingly, our country has signed a memorandum of cooperation with the UAE in the field of artificial intelligence.

The development of artificial intelligence is a strategic goal for the UAE government. The country aims to reduce dependence on oil exports, diversify the economy, and enhance the quality of life for its citizens.

Let's provide an example. Last year, at an AI research lab on the outskirts of Abu Dhabi, a team of 25 computer scientists developed deep learning algorithms and trained them using 4,000 powerful chips. The artificial intelligence system, which incurred millions of dollars in development costs, was funded by the Advanced Technology Research Council (ATRC) of the country's government. Despite the substantial government investment, ATRC Secretary General Faisal Al Bannai decided to offer the model for free, not to recoup costs, but to use soft power to elevate the reputation of his country.

It was deemed more crucial to enhance the nation's standing. Artificial intelligence Falcon, named after the country's national bird, generated a significant buzz when unveiled to the public last year. Some experts dub it the world's premier open-source Large Language Model (LLM), favoring it over similar products from Meta and Google. The Falcon project marked the UAE's inaugural venture into the realm of artificial intelligence. While the United States and China are the leaders in this domain, the UAE, demonstrated that despite its modest size, it boasts ample opportunity. In 2017, the country, with a population of only 10 million, appointed the world's first Minister of Artificial Intelligence.

Project Falcon not only showcased the UAE's AI capabilities but also underscored a crucial point: if superpower technology is to shape the future, it must be developed by the world's wealthiest and most influential nations. In this regard, the UAE holds a distinct advantage. With ample resources to procure high-end computers, hardware, software, and top-tier professionals, coupled with natural resources like oil, natural gas, and solar power, the UAE is primed for AI advancement.

Managing several of the world's largest sovereign wealth funds, totaling approximately $1.5 trillion, the UAE has dedicated proceeds to developing wealth-creating industries, positioning itself as an ideal partner for companies seeking to compete and innovate in AI. Additionally, the country could emerge as a key player in the development of computer chips for training powerful AI systems. In February, OpenAI CEO Sam Altman met with investors seeking up to $7 trillion to build an AI chipmaker that could compete with market leader Nvidia. Prospective investors included Sheik Tahnoun bin Zayed Al Nahyan, who controls Abu Dhabi's main sovereign wealth fund and is a brother of the UAE President.

Omar Al-Olama, the Minister of Artificial Intelligence, is a key figure leading the advancement ▶

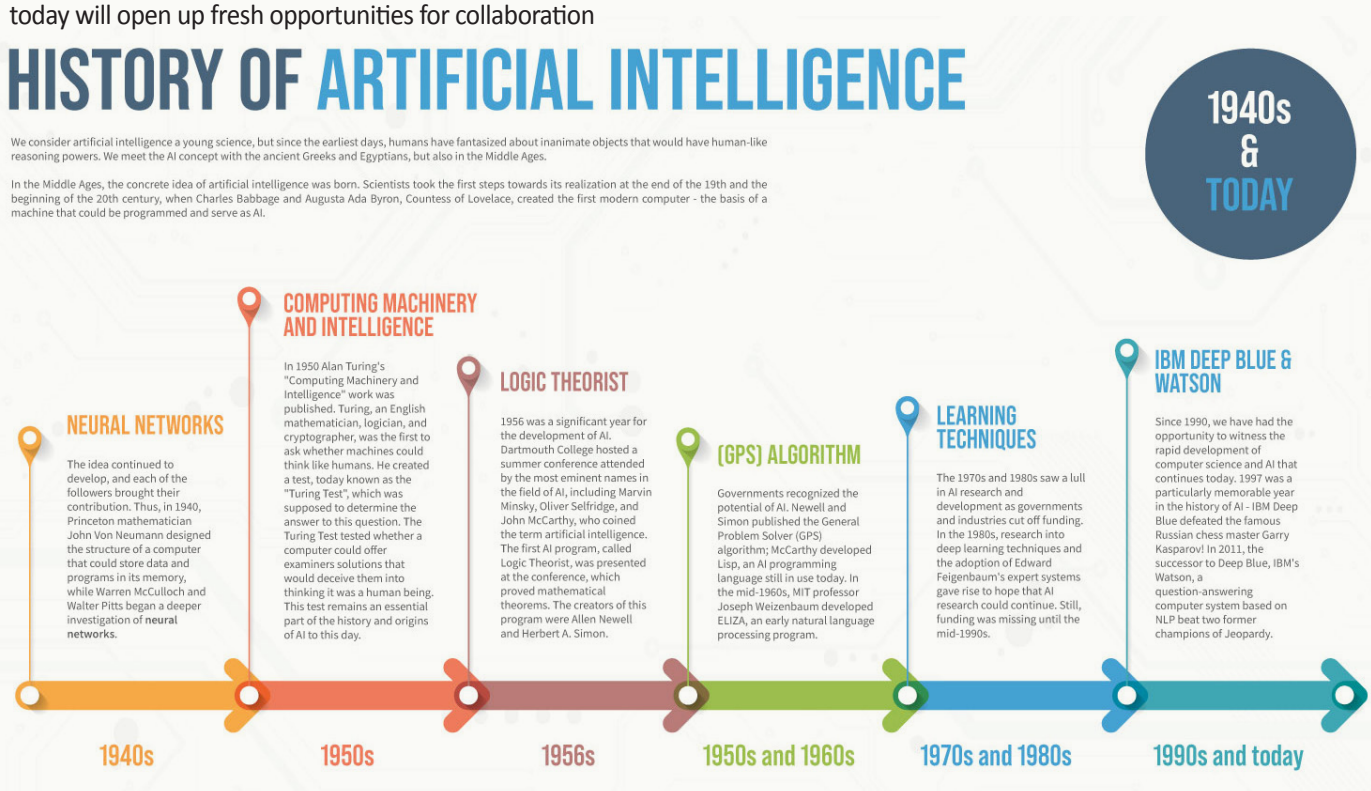
of artificial intelligence, the digital economy, and space-related initiatives in the UAE. He highlights the pivotal role of artificial intelligence in enhancing citizens' quality of life by reducing traffic congestion, enhancing medical capabilities, streamlining bureaucracy, and even providing AI-guided tours for tourists. In an interview with Time magazine, Al-Olama emphasized that artificial intelligence presents an opportunity for the UAE to bolster its economic prowess and emerge as a major global player in specific sectors by 2031.

Appointed as minister at the young age of 27 in 2017, Al-Olama has been instrumental in positioning the UAE as a leading force in artificial intelligence. He maintains cordial relationships with international politicians, diplomats, and businessmen, holding the position of vice president of the World Government Summit. Notably, he engaged in discussions with N.Uchral, the Minister of Digital Development and Communications, during a regular meeting in Dubai from February 12-14. Furthermore, during the state visit of President U.Khurelsukh to the UAE in November 2023, both sides convened a meeting and affirmed their commitment to collaborate in the field of artificial intelligence. “The new partnership both our countries are announcing today will open up fresh opportunities for collaboration and unlock the huge potential of AI technology – to the benefit of people in both our countries. I look forward to continuing to work with my counterparts in the UAE to move forward on this exciting agenda” according to N.Uchral.

Additionally, the Government of Mongolia was honoured with the “Global Government Excellence Award" at the World Government Summit in Dubai. This esteemed award recognizes governments that have successfully implemented e-transition initiatives based on new technologies and innovations, showcasing exemplary practices. Mongolia's efforts to enhance government services, simplify processes, increase transparency, and promote accessibility through the “Digital Nation - E-Mongolia” initiative have gained international acclaim as a model of excellence.

Mongolia, in the heart of Asia, and the UAE, in the Middle East, recognize the importance of keeping pace with global development, accelerating their progress, ensuring economic and national security, and improving the lives of their citizens. The ambitions and collaborative efforts between these two nations will shape their future success as they diligently pursue their shared objectives. ■

Our country has signed a memo-randum of cooperation with the UAE in the field of artificial intelligence



Rapid change

Strengthening human resources through cooperation with South Korea

In a momentous step towards digital advancement, Mongolia's Minister of Digital Development and Communications, N.Uchral, met with South Korea's Minister of Science and ICT, Lee Jong-ho. This strategic meeting unfolded amidst the Asia-Pacific Region Digital Ministerial Conference on November 9-10, 2022, where both ministers pledged to forge operational frameworks aimed at fostering bilateral collaboration.

Central to the discussions were two pivotal areas: human resources development and e-education. Acknowledging South Korea's global eminence in technological expertise, Mongolia and South Korea jointly inaugurated the "E-skills Training Center" in Mongolia's Information Technology Park. Fundamentally revamped with generous support from South Korea, this cutting-edge facility seeks to elevate e-education standards for Mongolian citizens and public servants. Making full use of domestic resources is crucial because training specialists abroad is expensive.

Minister N.Uchral's participation in the Ministerial Conference on "Artificial Intelligence - Digital Technology and Democracy" in Seoul, by invitation from the Minister of Foreign Affairs Cho Tae-yul (March 18-19, 2024), further solidified the collaborative bond. During the visit, he met with South Korea's Minister of Science and ICT, Lee Jong-ho and Mongolia's Ministry of Digital Development and Communication and South Korea's Ministry of Science, Information, and Communication Technology inked a "Memorandum of Understanding on cooperation in the field of information and communication"

At the conference, N.Uchral delivered an address on "Artificial Intelligence - Digital Technology and Accessible Society," and introduced Mongolia's digital development policy, underscoring how technological strides can foster a citizen-centric, transparent, and inclusive society. The presentation captivated attendees, with representatives expressing a keen interest in studying Mongolia's experiences.

High-level strategic cooperation between the two countries is crucial for advancing cooperation in this field. As a result, projects and programs can progress rapidly. In Asia, Japan and Korea lead in technological progress. For Mongolia, planning and collaboration are essential to achieving significant progress over the next 5-10 years. It is important to note that upcoming projects and programs with South Korea in information and communication are currently in the research and planning stages. ■

Cybersecurity

Ch.Zolbayar: Mongolia is expected to improve its cyber security index

Cyber attacks have intensified in recent years. On this topic, we talked to Ch.Zolbayar, the head of the Cyber Security Council.

- Could you kindly provide a brief overview of Mongolia's cybersecurity index as we commence the interview?

-In the 2020 "World Cyber Security Index" study by the International Telecommunication Union, Mongolia held the 120th position among 194 countries. This comprehensive index evaluates nations based on 20 indicators across five critical areas: legality, technology, organization, capacity, and cooperation, through 82 detailed questionnaires.

Four years have elapsed since this evaluation, during which Mongolia has undergone substantial changes in its cyber landscape. In the past assessment, Mongolia fell short of meeting crucial index criteria, lacking both legal frameworks and dedicated organizations to combat cyber threats at the national level.

However, recent developments indicate a significant shift. With increased awareness and concerted efforts, Mongolia is poised to climb several spots in this year's updated report, reflecting advancements in cybersecurity infrastructure and practices. This anticipated improvement underscores the country's commitment to bolstering its cyber resilience and aligning with global standards.

-In our country, we've established a system and legal framework aimed at ensuring cyber security for citizens, legal entities, and government organizations, to a certain extent. However, a critical consideration is the level of engagement citizens have in ensuring their cyber security. How proactive are individuals in safeguarding their digital lives?

-In 2022, a comprehensive survey, conducted in collaboration with the Ministry of Digital Development and Communications and the National Statistics Office, reached 9,144 citizens from 6,500 households. The findings revealed a concerning lack of proactive measures among respondents to enhance their cyber security. Merely 22.3 percent, or roughly one in five individuals, had taken any actions to bolster their cyber security within the preceding three months. A mere 15.8 percent verified the reliability of online information, while only 10.5 percent implemented measures to safeguard their devices and accounts. Shockingly, this implies that nine out of ten electronic accounts remain unlocked or unsecured—presenting vulnerabilities akin to a fragile paper shield fluttering in the winds of the cyber world rather than a fortified castle.

We have merely a fragile paper shield not a castle in the cyber world.

This low level of cyber security consciousness among Mongolians has been exacerbated by a surge in cybercrime. Reported incidents ballooned from a mere 15 cases in 2019 to a staggering 8,910 cases by 2023, resulting in damages amounting to 87.5 billion MNT, with approximately 90% attributed to online fraud. Without effective restraints in the online sphere and a shift towards judicious use of innovative technologies, the prevalence and impact of borderless cybercrime are poised to escalate unchecked.

However, recent initiatives spearheaded by the Cybercrime Department of the National Police Agency offer hope. Since November of the previous year, they have been swiftly responding to reports of cybercrime, promptly freezing accounts associated with suspicious transactions. This proactive approach has yielded tangible results. Since the onset of 2024, total of 553 cases resulting in a loss of 3.2 billion MNT were reported. Notably, in 306 of these cases, representing 68.8 percent, transactions totaling 2,580,296,717 MNT were intercepted and frozen. This strategy mirrors preventing theft by apprehending culprits in the act rather than after ▶

the damage is done—a paradigm shift towards mitigating losses before they escalate.

-In recent years, Mongolia has undergone a significant digital transformation, with a considerable amount of citizens' information transitioning to online platforms. As a result, the imperative to ensure the confidentiality and security of this data has become increasingly urgent.

-Indeed, Mongolia has recognized the critical importance of information security within the broader scope of national security, as outlined in both the Law on National Security and the "Concept of National Security of Mongolia." Moreover, recent legislative enactments such as the Law on Protection of Personal Information and Law on Public Information Transparency, which took effect on May 1, 2022, provide a legal framework for the collection, processing, usage, and security of personal data. Additionally, the Law on Cyber Security formalizes regulations aimed at safeguarding the integrity, confidentiality, and accessibility of information in cyberspace.

In the online world, it's important for people to click after careful consideration, rather than impulsively

Chapter 26 of Mongolia's Criminal Code defines various cyber offenses, including the creation, preparation, sale, use, or distribution of illegal cyber attacks and attack software and hardware, underscoring the seriousness with which cyber security is treated within the legal system.

Despite these legislative strides, the effectiveness of Mongolia's cyber security measures hinges significantly on the capacity of its cyber defense centers and the quality of enforcement. However, it's crucial to recognize that ensuring cyber security cannot be solely reliant on government institutions and professionals. Individual citizens play a pivotal role in protecting themselves online. Without the necessary knowledge and understanding, even the most robust cyber defense systems may fall short.

An apt analogy underscores this point: just as leaving one's door open and posting personal secrets on a bulletin board invites vulnerability, failing to exercise caution and awareness online can expose individuals to cyber threats. Therefore, a paramount objective and challenge lies in cultivating a culture of cyber literacy and enlightenment, empowering every citizen to become a fortress in the digital realm, making informed decisions, and clicking after thoughtful consideration.

-What are the information security requirements for organizations with critical information infrastructure?

-Organizations with critical information infrastructure are mandated by law to establish internal protocols and designate dedicated units and officials to oversee the cyber security. They must ensure the uninterrupted, reliable operation of their information systems and infrastructure, including devising contingency plans for cyber attacks or system failures. Compliance entails meeting 15 specific requirements, such as conducting annual cyber security risk assessments and biennial data security audits.

-How are your office and the Ministry of Digital Development and Communications developing cooperation with other countries to ensure cyber security?

-Given the borderless nature of cyber threats, external collaboration is paramount for bolstering cyber security. Our partnerships extend to various international entities, including Japan's International Cooperation Agency (JICA), the Organization for Security and Co-operation in Europe, and specialized cyber security bodies such as Japan's JPCERT and India's CERT-In. We also engage with industry leaders like the Thales Group and GMO Internet Group. Japan, in particular, offers valuable insights and experiences tailored to our context, facilitating expedited progress.

-Please introduce the project implemented in cooperation with Japan in the direction of human resources development.

-The "Cyber Security Human Resources Development Project," which is being implemented between 2022 and 2026 in collaboration with the Ministry of Digital Development and Communications and JICA's Mongolian representative office, aims to enhance cyber security expertise. This initiative involves training cyber security instructors to improve coordination among the public, private, and educational sectors. Additionally, it entails designing education programs for students, professionals, and government employees. Notably, 267 Cyber Security Council employees have already undergone cyber security training, with approximately 50 of them serving as project-trained instructors. This endeavor has led to a noticeable decline in potential cyber threats within critical infrastructure organizations, reflecting the effectiveness of our cybersecurity professionals. However, there remains a pressing need to enhance cyber security awareness among citizens and employees.

-What innovations (such as the use of artificial intelligence) in the field of cyber security are implemented internationally?

-Internationally, artificial intelligence (AI) is increasingly leveraged across various cybersecurity domains, including breach detection, automated response mechanisms, and risk prediction. AI's capacity to analyze vast data sets in real time and continuously learn enhances its ability to detect and respond to cyber threats efficiently. By leveraging historical data to anticipate future risks and adapting to evolving attack techniques, AI significantly reduces the time required to identify and mitigate cyber-attacks. ■

News

The Kazakhstan First Vice Minister paid a visit to Mongolia

At the invitation of N.Uchral, the Minister of Digital Development and Communications, a delegation led by First Vice Minister Tuleushin Kanysh of Digital Development, Innovation, and Space Industry of the Republic of Kazakhstan embarked on a productive visit to Mongolia from April 29th to May 2nd.

The delegates included representatives from the Ministry of Digital Development, Innovation, and Space Industry, the Ministry of Justice, "National Information Technology" JSC, the independent cluster fund "Innovation Technology Park," as well as officials from the private sector including “AG TECH”, “Belka AI”, “Bowman Med Kazakhstan”. In total, 13 delegates from organizations participated in the visit.

As part of the visit, both nations engaged in fruitful discussions regarding the potential for enhancing collaboration across various sectors, including e-governance, information technology, and space technology. A significant outcome of the discussions was the establishment of a "Memorandum of Understanding on cooperation in the field of communication and technology" between the Regulatory Agency of Governmental Digital Services, representing the government, and the "National Information Technology" JSC of the Republic of Kazakhstan.

Under the Memorandum,

-Enhance collaboration and offer consultancy services aimed at improving the quality and accessibility of government e-services while optimizing operational efficiency.

-Promote the exchange of advanced technological knowledge, facilitate training programs, and initiate capacity-building efforts to enhance e-skills.

-Ensure the formulation and effective implementation of development policies in the information and communication technology sector.

-Streamline and efficiently manage information infrastructure operations.

As part of the visit, various activities were arranged, including "B2B" meetings aimed at fostering collaboration and sharing expertise in the digital industry between the two nations. Additionally, opportunities were provided to learn about the "KHUR" and "DAN" systems, as well as one-stop service centers.

The representatives visited offices of "ONDO" LLC and "ICT Group" LLC, familiarizing themselves with the technological solutions and products they've developed.

In particular, the delegates toured the "Information Technology Park," gaining insight into the organization's initiatives and start-up ventures engaged in the incubator program. The session also facilitated individual meetings with both state-owned and private companies from the Republic of Kazakhstan operating in the information technology ecosystem. Discussions centered around exploring potential avenues for collaboration. The representatives additionally visited the offices of "ONDO" LLC and "ICT Group" LLC, familiarizing themselves with the innovative technological solutions and products they have developed.

Subsequently, parties reached an agreement to devise and execute a comprehensive cooperation plan between Mongolia and the Republic of Kazakhstan. This plan will focus on enhancing e-governance, advancing information technology, improving the quality and accessibility of government e-services, and incorporating best practices. ■