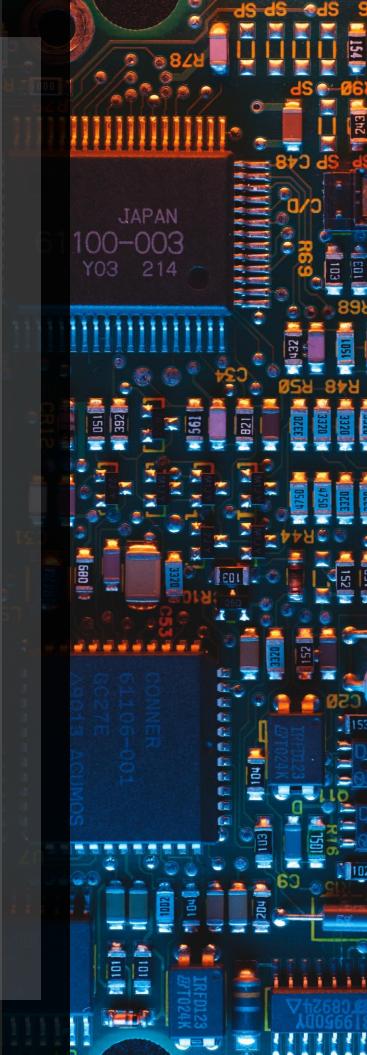


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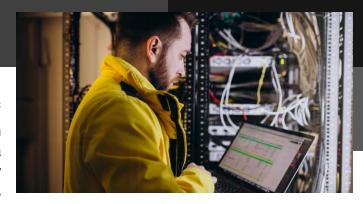
Executive Summary

The Central Asian countries have a high potential to become leaders in the field of digitalization. Over the past few years, there has been a very active discussion, at forums of different scales as well as among high-ranking government officials, about how countries need to develop regional cooperation in order to maximize their full potential, since digitalization has become an integral part of economic development. Countries that pay less attention to the development of the digital economy lag behind the rest of the world having weaker growth rates, thereby falling into a relative poverty trap.

An article from Asian Development Bank mentions that digitalization can serve as an impetus for regional cooperation in Central Asia:

- 1. **Healthcare** When the pandemic made face-to-face meetings difficult, patients could consult with their doctors using telemedicine.
- Training and education The pandemic has pushed entrepreneurs to develop online learning tools, and the readership of e-books and magazines available in digital libraries has also increased.
- Agriculture To share best practices, Azerbaijan has offered training for digital leaders and managers on implementing changes in other countries of the Central Asian Regional Economic Cooperation.
- 4. Finance Georgia offered to share its experience of solutions for Small and Medium-sized enterprises in the field of e-commerce. The Georgian Innovation and Technology Agency (GITA) also offered to help create a regional ecosystem of innovations and startups, as well as organize training and networking for startups throughout the region. Kazakhstan and the Kyrgyz Republic also offered to host a regional hub for startups within the framework of the Central Asian Regional Economic Cooperation, and the Information Technology Park of Uzbekistan offered to organize joint incubation, acceleration of development and training for startups.

The Cushman & Wakefield team of Kazakhstan and Georgia jointly began to study this market in order to have a more detailed picture of how digitalization is developing in the CIS countries.



4 countries were considered: Kazakhstan, Georgia, Armenia and Uzbekistan. In future publications, the list of countries may be replenished. The initial summary of this industry includes Data and Call Centers.



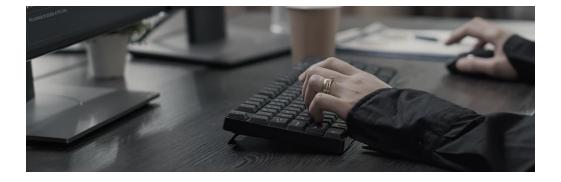
Data Centers

The development of the Internet, the growth of data volume, the introduction of new methods of analytics and artificial intelligence contribute to the growth of demand for data center services. The largest investments are attracted by hyperscale data centers — large sites of technology giants. In addition, there is growing interest in micro-data centers — small data centers located near data sources.

Data centers are specialized facilities designed for the placement and operation of productive computing equipment with Internet connection, as well as uninterrupted power supply, cooling system and various security systems. They equip data centers with modern efficient engineering systems, the level of which is confirmed by a certificate — this is the key to stable functioning.

Data Centre Classifications

Tier I	Tier II	Tier III	Tier IV
Basic	Redundant	Concurrently	Fault
Capacity	Capacity	Maintainable	Tolerant



Why data centers are important to businesses?

All information must be stored somewhere, so for businesses using a data center is a reduction in data storage costs, as they move from their own server systems to third-party data storage. Companies need data centers to perform their operations in order to have fast and secure access to data, as failure will lead to the loss of customers, and they arrived. Many companies also move their professional applications to data centers in order to minimize the cost of operating their own server. The importance of data centers in the modern world has increased tenfold due to the growing demand for information trading, which is an expensive resource today.



Kazakhstan Data Centers

State of the market

Kazakhstan still occupies less than 1% of the global data center market. There are all the components for the development of data centers in Kazakhstan: telecom operators and the existing infrastructure for the exchange of information in the public sphere and the private sector.

In the period from 2013 to 2015, 14 data centers were put into operation within the framework of the project "Creation of an Internet server platform for providing hosting services to state bodies of the Republic of Kazakhstan". The project is implemented by JSC "National Information Technologies" within the framework of the state program "Information Kazakhstan – 2020". JSC "NIT" is the largest company in the information technology market of Kazakhstan and is also the operator of the information and communication infrastructure of the "electronic government" of the Republic of Kazakhstan (EGOV), has been present on the market for 22 years and is represented in 17 regions.

The following companies remain infrastructure leaders:

- JSC Kazteleport (Halyk)
- JSC National Information Technologies (NIT)
- JSC Kazakhtelecom
- JSC Transtelecom

Commercial data centers are mainly concentrated in two cities – Almaty and Nur-Sultan, and the needs for "cloud" services in the regions of the republic are covered worse. Transtelecom JSC decided to rectify the situation by launching a network of seven data centers into commercial operation. The data centers were built by the company at its own expense and correspond, according to the company, to a fault tolerance level of 99.982%.

Operator	Data Center	Town	Туре	TIER
Halyk-KazTeleport	"Khan Tengri"	Almaty	Colocation	Tier 3
Transtelecom	Transtelecom	Nur-Sultan	Colocation	Tier 3
Kazakhtelecom	Kazakhtelecom	Pavlodar	Colocation	Tier 3
JSC "NIT"	JSC "NIT"	Petropavlosk	Colocation	Tier 3

Kazakhtelecom also has a large number of customers of its data centers, most of them belong to the TIER 2 and 3 level and offer Colocation and Cloud Services. In total, there are 15 data centers located in the regional centers of Kazakhstan.

KazTeleport has been present on the market for more than 20 years, it is a subsidiary of Halyk Bank JSC, a major info-communication and cloud provider in Kazakhstan. Offers IT infrastructure for business: from renting communication channels to cloud services.

Georgia Data Centers

State of the market

Data centres started to appear in the Georgian market since 2012, and the following years have seen the new companies registering in the country. Presently the number of data centres in Georgia is not extensive, but most of them are concentrated in the capital city Tbilisi.

The following companies remain infrastructure leaders:

- WORLDBUS
- Cloud9
- NewTelco
- Datacenter
- Bitfury

WORLDBUS offers a vast range of IT services for businesses and technophiles in particular. Their services include cPanel shared hosting, virtual datacenters, virtual private server (VPS), dedicated server, domain registration and storage solutions. Cloud9 also offers a wide range of services, including VPS, VDS, Dedicated Server, Domains, Linux Shared Hosting, Windows Shared Hosting, DevOps, and Colocation. Cloud9 is an Internet Exchange Point (IXP) operator, providing cost-efficient cross connection to any carrier. NewTelco was established by the German company in 2012 as a first carrier neutral data centre and colocation in Tbilisi, offering VPoP (Virtual Point of Presence), LMR (Local Meetme Room), GMR (Global Meetme Room) and other technical services. All three companies use independent power stations and back up power source for stable power supply and are built according to TIER 3 standards. Meanwhile, Datacenter is a relatively small-scale local service provider operating in Georgia since 2016, specializing in Colocation and VPS services.

Operator	Town	Interconnection	Interconnection capacity	TIER
WORLDBUS	Tbilisi	Carrier neutral	180 Gbps	Tier 3
Cloud9	Tbilisi	Carrier neutral	250 Gbps	Tier 3
NewTelco	Tbilisi	Carrier neutral		Tier 3
Datacenter	Tbilisi			
Bitfury	Tbilisi			

Differently from other data centres, Bitfury is located in Tbilisi Free Industrial Zone and develops Blockchain Technology, while ensuring security and stability on the bitcoin blockchain through their state-of-the-art data centers. A 40 MW Tbilisi data center was opened in 2015 and utilizes the newest proprietary immersion cooling technology.

Armenia Data Centers

State of the market

The ICT sector in Armenia has been steadily growing over the past decade. The Enterprise Incubator Foundation, a technology business incubator and information technology development agency based in Yerevan, reports that the total revenue of the industry, consisting of the software and services sector, as well as the Internet service providers sector, has reached 922.3 million.

In 2018, the Armenian government instructed ECOS to create and manage a free economic zone to support the development of high technologies and the blockchain industry in the country. As a result, a new ECOS data center with a capacity of 60 MW was launched with affordable and stable electricity from high-voltage networks, which gives almost 100% uninterrupted operation of electricity.

The infrastructure at the site includes a data processing center, a service center and a warehouse of equipment and spare parts. Seven shipping containers make up the data processing center, which houses about 250 mining modules. Located in the center of the country, the ECOS cryptocurrency investment platform is becoming an innovation center that uses attractive financial advantages and direct access to energy. According to the managing partner of the company, the integrated product is designed to serve both institutional and retail customers from any part of the world.

The following companies remain infrastructure leaders:

- Ameriabank
- ECOS

Ameriabank is the leader of the Armenian banking market, with a share of about 20%. The Bank is the legal successor of the Yerevan branch of the Caucasian Commercial Bank, operating in Yerevan since 1910. Today, the bank employs more than 800 people, Ameriabank provides a full package of corporate, investment and retail banking services.

Туре	Operator	Town	TIER
Owner Occupier Colocation	Ameriabank	Yerevan	Tier 2 3
Owner Occupier Colocation	ECOS	Hrazdan	Tier 3

The development and transformation of the banking business has revealed the need to create its own data center. Together with experts from Softline, a data center was built that effectively supports the functioning of computing equipment and meets the Tier 3 reliability level, which is determined by the methodology of the international organization Uptime Institute. The total area of the data center is just over 100 square meters. Ameriabank's data center has received an extremely expensive structured cabling system, which has a reserve for further growth. Four Schneider Electric uninterruptible power supplies are responsible for the energy security of the data center. The experts of the Softline team were able to fulfill all the requirements of the customer and create a reliable and technologically advanced data center that ensures the stable operation of the bank's services.

Uzbekistan Data Centers

State of the market

Finding a place in a high–quality reliable commercial data center in Uzbekistan now is not an easy task. The most important problem is energy supply. There are a lot of infrastructure providers in the country, but, as a rule, they offer exclusively vps (virtual private server) — separate servers with limited functionality for basic tasks. Uzbek companies prefer to place their IT equipment and services on their own sites, the level of which has grown significantly over the past five years. But this approach contradicts the global trend, according to which more and more customers choose a service model and use the services of commercial data centers.

The following companies remain infrastructure leaders:

- Uzcloud
- Airnet
- Comnet
- Uzinfocom

Uzcloud - The largest data processing center in Uzbekistan with a wide range of services ranging from Colocation and web hosting to cloud storage. Participates in the project to support the development of the digital state, providing the organization of government video calls on its technical platform.

Airnet.uz - provide virtual hosting services, reselling, VDS and dedicated server rentals, domain registration, and are also members of the TAS-IX zone. The equipment is located in a high-tech and reliable TIER-2 level Data Center in Tashkent.

Comnet - the data center has its own optical channels to the main TAS-IX traffic exchange point with the possibility of docking at speeds up to 10 Gbit/sec. The company has been on the market since 2003, has a wide range of additional services (IP TV, SIP telephony, hosting, virtual colocation server, static IPv4 address).

Uzinfocom datacenter is a technical platform for hosting information and communication infrastructure. Equipped with uninterruptible power supplies that ensure the operation of all systems and services. Currently, the data center hosts the websites of government agencies. Servers, equipment of the ZiyoNET Network, including the portal, servers of the National Information Search System are located in the Uzinfocom, servers of electronic payment systems.

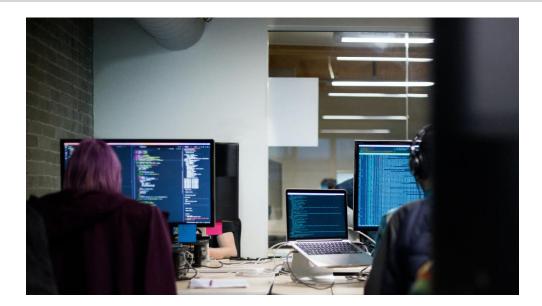
Туре	Operator	Town	TIER
Owner Occupier Colocation	Uzcloud	Tashkent	Tier 3
Owner Occupier Colocation	Airnet	Tashkent	Tier 2 3
Owner Occupier Colocation	Comnet	Tashkent	Tier 2 3
Owner Occupier Colocation	Uzinfocom	Tashkent	Tier 3



Call Centers

You will be surprised when you find out that the first telephone companies with call processing functions appeared more than 70 years ago. The first call centers appeared with the development of telephone communication, and today they are used in all spheres of activity, from government to commercial structures. Call centers allow you to expand the customer base and maintain contact with regular customers, analyze appeals, promote the brand.

Call-center is a division of a company or a separate organization that provides services for processing incoming and outgoing customer calls. In fact, it is a link in the sales funnel that provides feedback to the buyer of the brand's products. In addition, the expanded version of the call center also provides services for conducting opinion polls, various votes, promotions and consumer support.



Why call centers are important to businesses?

The purpose is to promote the services of the customer company by expanding the customer base by consulting about the goods and services of potential buyers. Investing in such a center will allow you to take a stable position in the market, while forming a clear base of regular customers. Call centers also perform a wide range of tasks, the importance of which is very important for customer interaction:

- increase conversion to sales, increase the company's profit;
- attract new customers, help keep regular ones;
- improve the quality of service, work on brand awareness and audience loyalty.



Kazakhstan Call Centers

State of the market

The demand for call center services is caused by the desire of customers to expand the reach of the potential audience and provide uninterrupted feedback to customers. The choice of an outsourcing call center depends on the specifics and scale of the company. Retail usually uses a mixed model – its own center and a third-party one.

The growth driver of the market will be the development of e-commerce and the need for companies to establish stronger ties with consumers. In Kazakhstan, the market of call centers is well developed, companies offer their clients a wide range of services: organization of a hotline, outgoing calls, search for new customers, updating databases, SMS-mailings, marketing research. Most of the head offices of the companies are located mainly in the city of Almaty, at the same time new companies are also appearing in the city of Nur-Sultan.

The following companies remain infrastructure leaders:

- 7LINE
- KazNetCom
- MM Contact
- Aspan

7Line is a well–established company in the market, and has a large number of customers among banks, travel agencies, online stores and service centers. In addition to the usual range of services, call centers also provide assistance in creating scripts for sales and can act as a secret buyer.

KazNetCom - the advantages of this company include the presence of a virtual office, a night operator, online reporting, a backup call center, 5 service languages, integration with CRM systems.

MM-contact outsourcing contact center is a multidisciplinary call center. You can learn more about our services and get acquainted with the price list by contacting the company's specialists. They work with many large companies in the field of IT, design, education, banking. The main services offered are mystery shopper, lead generation, backup call center, personal manager to increase sales.

Aspan is a round-the-clock system for providing telephone contacts on behalf of the Customer with his Clients, on the market since 1994. There is also extensive experience with large Kazakhstani and global companies.

Over the past couple of years, the load on call centers has increased significantly. Managers had to adjust the rules of work, introduce innovations in the field of customer service in order not to lose customers. In the future, there will be a tendency to actively use the services of commercial call centers of large companies working with mass consumers.

Georgia Call Centers

State of the market

The call center market and associated call center workforce have shown remarkable strides over the past few decades in Georgia, associated with substantial increase of the outsourcing industry. Even though most call centres are based in Tbilisi, the industry is slowly expanding and entering other regions of the country too. Major, market leader call centres support interaction with clients, using all possible communication channels, ranging from phone, SMS to social media, while smaller operators have more limited services lines.

The following companies remain infrastructure leaders:

- Information Center 118 08
- Sales Partner K Call
- Majorel
- Contact Call Telemarketing

Call center 118 08 belongs to 08 Group, an award-winning multidimensional information company founded in 2008, owning and managing immensive information database that includes numerous records about native companies and more. They also offer call center outsourcing service, E-mail and SMS marketing, market research services and telemarketing.

Sales Partner Group is an outsourcing company which operates K Call centre - a first 24/7 outsourcing contact centre in Georgia since 2016. Their wide range of services encompass answering and providing detailed information on inbound calls, recording and analyzing each call, providing outbound calls, offering auto dialer, lead generation and database management, telemarketing, quality monitoring, CRM and customer satisfaction surveys.

Meanwhile Majorel is the largest company in the sector, operating in Georgia since 2016 and running 4 offices in 3 cities. It provides support to customers from the travel, e-Commerce, IT, digital media and automotive industries.

Compared to other major call centres, Contact Call – Telemarketing is a relatively small company, whose services include selling desired products or services, finding potential customers, scheduling business meetings, sending e-mails and advertising of desired products or services. Notably, their service envisages only telephone conversation service.

Operator	Town	Employees	Projects	Clients
Information Center 118 08	Tbilisi	>50	>2000	>600
Sales Partner - K Call	Tbilisi			
Majorel	Tbilisi, Kutaisi, Batumi	>2000		>500
Contact Call - Telemarketing	Tbilisi	<10		

Armenia and Uzbekistan Call Centers

Armenia

The following companies remain infrastructure leaders:

Nairi Call

Nairi Call - is the largest call center, represented in 11 cities of Armenia and has a large staff of more than 400 employees, as well as many modern call centers provide a wide range of services in addition to the usual customer calls.

Teleyan – an international call center. The company was founded in 2012, works with small and large enterprises around the world, specializes in inbound/outbound call center services and web-design. The advantage is the ability to work around the clock, since it is important for customers to have access to communication at any time convenient for them, call center agents undergo individual training.

Uzbekistan

The following companies remain infrastructure leaders:

- Nasvyazi
- Fledex

Nasvyazi - the outsourcing call center has been operating in the Uzbek market since 2010 and has extensive experience in telemarketing in the domestic market. In addition to working in the domestic market, there are projects in cooperation with Russian companies to provide information and advisory services.

Fledex - provides the service of creating a call center both on outsourcing and for private companies. It has all software and hardware (servers, computers, telephone headsets, as well as telecommunication equipment) organized for automation, control and accounting of telephone calls.

The advantage of the call center is the automatically distribute ability to calls (Automatic Call Distribution, ACD), it solves the problem of connecting a subscriber with the most qualified agent, and also ensures an distribution of the load between agents. The company can also help with the selection of suitable equipment so that all the necessary parameters and specifications are met.



Definitions

To assess the effectiveness of data centers, a Tier certification system has been developed from the Uptime Institute organization.

- *Tier 1* The weakest level, basic reliability. This certificate is outdated, it was last used 50 years ago.
- **Tier 2** There is still a need to stop the system during inspections or repairs. This certificate imposes small requirements on the cooling and power supply system.
- **Tier 3** At this level, the data center does not need to install systems for repair or maintenance, all necessary components are reserved, there are two power distribution channels, but only one is constantly used.
- **Tier 4** The highest level of reliability of the data center. The latest redundancy scheme is used, respectively, each engineering system has a duplicate of the main node and backup.

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