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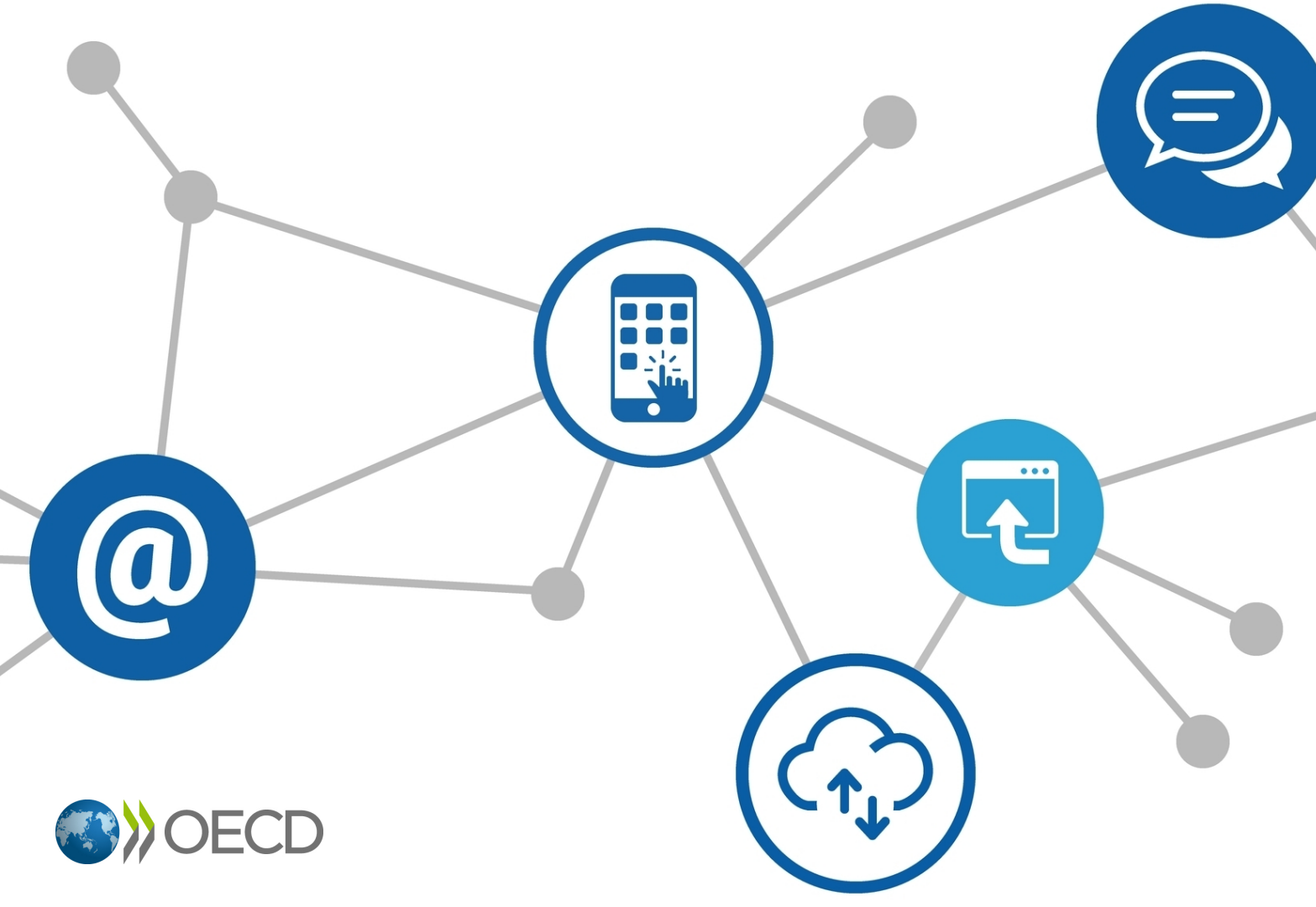
Private Sector Digitalisation in Central Asia

Background Note



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Introduction

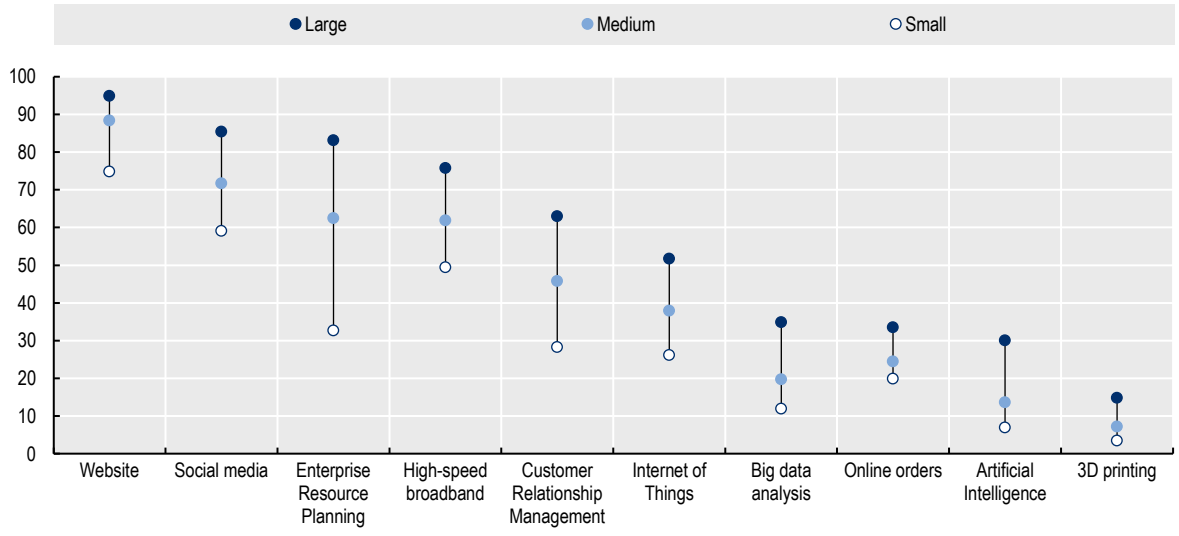
Small and Medium-sized Enterprises (SMEs) can play a critical role in helping economies adapt to major transformations, including digitalisation. Two global trends look particularly compelling: digitalisation (increased use of software across all domains) and greening (transition of production systems, practices and economies to more sustainable models). The present chapter focuses on the overview of digitalisation trends in the Central Asian private sector.

SMEs can benefit greatly from the uptake of digital tools, which can contribute to closing performance gaps with larger firms. Digitalisation can lower operation and/or transaction costs, reduce information asymmetries, unlock economies of scale, strengthen product differentiation, increase customer outreach and unlock positive network effects. In turn, this can help SMEs improve performance, spur innovation, enhance productivity, and better compete with larger firms on a more even footing (OECD, 2021[1]).

Digitalisation provides businesses with the opportunity to streamline their business processes and augment their innovative activities. Widely available and affordable cloud computing services enable SMEs to tap into various digital services without the need for large upfront and investments, which is especially beneficial for SMEs (OECD, 2019[2]). For example, ICT tools such as enterprise resource planning (ERP) and customer relations management (CRM) softwares provide the basis for generating and collating structural data that can be used for evidence-based decision making (Bianchini and Michalkova, 2019[3]). Furthermore, SMEs can engage in more sophisticated data analytics and use machine learning tools without technical knowledge through AI-powered cloud services (OECD, 2021[1]). The gap with larger firms is also very much dependent on the type of digital technology or application. The gap tends to be narrower for some, such as online orders, while it is typically more marked for digital technologies whose value added is more strictly related to scale, such as the use of ERP (Figure 1).

Figure 1. Digital technology gap between SMEs and large firms

OECD average of enterprises using respective digital technologies, 2021 or latest year available, percent



Source: OECD ICT Access and Usage by Businesses.

SMEs in non-ICT sectors are also poised to benefit from digitalisation of their business processes. When discussing digitalisation of SMEs, the focus is often on the start-ups in the Information and Communication Technology (ICT) sector that are bringing new digital technologies to the market. While their role is surely important for the digital transition, the uptake of software solutions by *non-ICT* SMEs across all other sectors of the economy can have an even stronger impact on aggregate productivity. For example, empirical research in ten OECD countries suggests that the use of online platforms favours an increase in productivity in hotels, restaurants, taxis and retail trade sectors, all characterised by an overwhelming presence of SMEs, with a significant increase in Multi-Factor Productivity (MFP) observed in across all four industries (Bailin Rivares et al., 2019[4]). In addition, online platforms also play an important role in levelling the playing field between small businesses and large enterprises (Costa et al., 2021[5]).

In general, observations on firm-level digitalisation indicate a strong association between digitalisation and productivity increase in businesses. Notwithstanding the complexity in disentangling the link between digital adoption and firm productivity, research by Gal et al. (2019[6]) suggests that sector-wide digitalisation has a positive impact on productivity growth of the average firm. Similarly, country case studies on firm-level evidence find productivity benefits from businesses' adoption of digital technologies and positive spill-over effects of digitalisation (Borowiecki et al., 2021[7]; Mosiashvili and Pareliussen, 2020[8]).

For developing economies, digitalisation can facilitate the formalisation of informal economic activities. Despite the challenges of measuring the exact size of the informal sector, estimates suggest the informal economy in Central Asian economies could generate between 30 and 50% of GDP (OECD, 2021[9]). Digital technologies can help small firms and workers transition to formality. For instance, on the government side, digitalising registration system for enterprises and workers can simplify administrative procedures, saving time and cost for the businesses and individuals (Chacaltana, Leung and Lee, 2018[10]). Box 1 illustrates a government programme in Mexico that, by supporting adoption of digital tools in small businesses to promote formalisation and increase productivity, also helped broaden the tax base. Digitalisation can also improve financial inclusion of SMEs in the informal sector. In addition to lower barriers to accessing finance, digitally recorded transactions and alternative data that businesses produce can be used to complement or substitute traditional financial data, which lenders can utilise to determine capacity and willingness of the businesses to repay loans (GPFI, 2018[11]).

Box 1. Concanaco Tablet Programme, Mexico

Confederation of National Chambers of Commerce, Services and Tourism of Mexico (Concanaco Servytur) joined forces with the National Committee for Productivity (CNP), the Tax Authority (SAT) and the National Institute for the Entrepreneur (INADEM) in 2014 to increase productivity and formalise economic activities of Mexican SMEs. Designed to formalise economic activities of micro- and small enterprises through provision of digital tools, recipients of the programme received an Android tablet that could function as a sales point terminal. Equipped with credit and debit card readers, entrepreneurs could accept card payments, record their sales and manage inventory of their goods using the tablets. The beneficiary entrepreneurs were also provided with on-site training related not only to the use of the tablet, but also on managing businesses. While the device costs around MXN 5 600 (approximately USD 350), the businesses only needed to cover one-seventh of the cost and were charged bank commission fee of 2.86% and VAT per transaction. In addition to the tablet, one year of the Internet connection was provided with businesses without charge.

Four years after the launch of the programme, in 2018, 15 086 micro- and small businesses benefited from the programme, including 2 000 young entrepreneurs. The programme contributed to increased tax base by formalising business activities, where about 90 percent of the beneficiaries made tax

declarations. Usage of the tablet also contributed to formalisation of the workforce, with SMEs registering their employees. An assessment of the programme indicates that more than 25 600 workers benefited from the programme, with 54.5 % being female workers.

Source: Chacaltana, Leung and Lee (2018[10]).

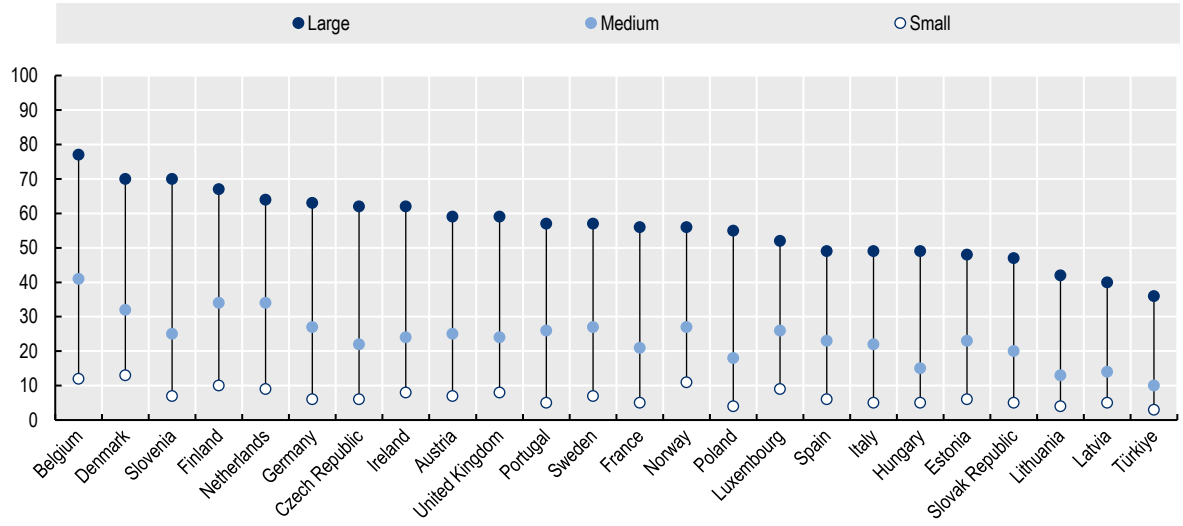
SMEs face important challenges in digitalising. Not all SMEs have the means and skills needed to undertake this transformation. The smaller the firm, the less likely it is to adopt new digital practices, with large differences across sectors. Key challenges for SME digitalisation include: a) limited access to digital infrastructure, b) lack of awareness and digital and/or management skills, c) insufficient financial resources, and d) difficulty in dealing with permits, data and privacy regulations. While all of the above challenges are common to SMEs across the globe, challenges related to broadband availability, internet penetration, and speed of connection are of particular importance in Central Asia, especially across the remote and rural areas. In countries with a deeply rooted nomadic culture, like Mongolia, the quality and speed of mobile connection is proving ever more important.

A fundamental barrier is related to the access to digital infrastructure, which includes mobile and fixed broadband. Differences in connectivity can be especially marked between metropolitan, rural or remote areas. In the case of OECD countries, in 2019 only 59% of rural households in Europe had access to "fast" fixed broadband (at least 30 Mbit/s), against 86% overall. Similarly, such availability in Canada was 67% for rural households against 93% overall, and in the United States was 78% in rural areas against 94% overall (OECD, 2021[12]). This gap in high-speed connectivity is also evident when looking at different regions in the same countries, for example between the regions with the capital or very large cities and more remote regions, as in Colombia (with a 18% difference between the region of Bogota and the region of Vichada) or Germany (20% difference between the region around Hamburg and the region of Mecklenburg; (OECD, 2021[13])). Such regional digital divides can also be seen across Central Asian countries. In Kazakhstan, for instance, median Internet speed in Almaty region is three times faster than that of Atyrau region (Ookla, 2022[14]).

Even when the connection to the internet is available, SMEs still need understanding, finance and time to integrate digital tools. Across OECD countries, many firms lack information and awareness, ICT skills among managers and employees, and capital to finance the transformation (Berlingieri et al., 2020[15]; Andrews, Nicoletti and Timiliotis, 2018[16]). As can be seen from Figure 2, a noticeable gap exists between large enterprises and SMEs in providing ICT trainings to their employees.

Figure 2. Enterprises providing training to develop/upgrade ICT skills of their personnel

As a percentage of enterprises with ten or more persons employed, 2020



Source: Eurostat (2022[17]), Digital economy and society.

In addition, challenges exist in relation to changing regulatory frameworks, digital security, and privacy (OECD, 2021[18]). SMEs generally have less capacity to deal with complex regulatory environments as they start acquiring and managing data. Utilising data necessitates capacity development to accurately assess exposure to cyberattacks and act accordingly to prevent potentially harmful spill over effects. This can have particularly negative effects when SMEs are part of complex supply chains, as they can be the "weak link" at the centre of the disruptions (OECD, 2021[18]).

SMEs incur additional costs to ensure compliance to such new digital security and privacy regulations. Given the possible lack of internal capacity, the most cost-efficient solution could be to hire external specialists and consultants for the work, although this may also entail dependency-related risks (OECD, 2021[18]). Furthermore, SMEs' reliance on external digital tool providers, and lack of interoperability among the services providers, may lead to technological lock-ins for SMEs, making it costly to switch to more competitive services.

Box 2. Data localisation policies in Central Asia

Some countries in Central Asia have introduced new regulations on data protection in recent years.

- Kazakhstan has enforced various data localisation laws since 2013, requiring organisations to store databases containing personal data as well as communications service information on facilities and equipment located within the national territory (Shyngyssov et al., 2019[20]). In 2020, it significantly extended data protection obligations for organisations with the "Law on Amendments and Additions to Some Legislative Acts of the Republic of Kazakhstan on the Regulation of Digital Technologies". In particular, the new "Amendment law" introduces new obligations for data operators, as well as further requirements for data collection, storage and processing. Data processing should be limited to the achievement of specific, predetermined, and legitimate purposes. The law also defines the role of the data protection authority, the Ministry of Digital Development, Innovations and Aerospace (MDAI), specifying its responsibilities and powers, including: developing and/or approving regulatory acts in the area of personal data and its protection, approving procedures for determination by owners and/or operators of a list of personal data required and sufficient to perform specific tasks, requiring an owner and/or operator to clarify, block or destroy false or illegally obtained personal data, and holding violators of the regulation accountable (Kahiani and Abdukhalykova, 2022[21]).
- The 2021 amendment of Uzbekistan's 2019 Law on Personal Data establishes that the personal data of its citizens must be processed in the country's territory and on databases registered in the State Register. However, once localised, the data may in theory be transferred abroad to countries with "adequate" data protection regulation. The law focuses explicitly on e-commerce "sellers", including specifically many retail SMEs, who have to store documents, messages and other information related to agreements in servers located in Uzbekistan. The seller/intermediary (platform) is responsible to ensure the safety of personal data of both buyers and other individuals that might become known in the exchange. In this context, the law also imposes on "data subjects" the obligation to provide their personal data in order to protect the foundations of the constitutional order, and for reasons related to "morality, health, rights and the legitimate interests" of citizens of Uzbekistan. While citizens also have the right to be informed, access, and rectify their personal data held by third parties, there is no specific right for data portability across different entities (Jurajonov, 2022[23]).
- In Turkmenistan, there are no specific data residency requirements, but the "Law on information on private life" from March 2017 does introduce some restrictions for cross-border transfer of personal data stored in the territory of Turkmenistan (Yuldashev and Turakhujaeva, 2022[24]).
- In Tajikistan, the "Law on Personal Data" was adopted in 2018. Other than setting definitions and rules related to consent and protection, it also includes measures related to cross-border data transfers. These are allowed, provided that the receiving country provides an adequate level of protection of a subject's personal data. If data are transferred to a third party, the law states that the subject must be notified (Khoshimov, 2022[25]).
- In Mongolia, a "Law on protection of personal data" was adopted in December 2021, to be enforced from January 2022. The law updates the previous "Law on Personal Secrets" from 1995. The law aims at protecting "data subjects" while providing clear legal framework for both public and private operators, based on the key principle of explicit consent to be given for the use of personal data. Consent must be given in full knowledge of the purpose of data collection, processing and use, as well as of the name of the data collector, duration of process and use of information, with limitations on the transfer to foreign entities regulated by the law. The law

does not include specific data localisation measures allowing for free data flows across borders (Bolormaa, 2022[26]).

- In Kyrgyzstan, the "Law on Personal Information" of 2008 was amended in 2021 by the "Law on Personal Data". The Law establishes the State Agency for Protection of Personal Data, which was established by a presidential decree in September 2021.(Personal Data Protection Agency under the Cabinet of Ministers of the Kyrgyz Republic, 2023[27]). The regulation, amended for the last time in March 2022, aims at protecting the rights of the citizens in matters of data privacy by developing a centralised approach to the issue on a state level and controlling its proper implementation. For this, the Agency can rely on a particular set of rights, enumerated in Article 5, which include analytical work, drafting of recommendations and co-operation and co-ordination with international and national public and private entities. The Law on Personal Data allows transferring of the data both within Kyrgyzstan and abroad – cross-border data transfers are to be carried out in accordance with international treaties between countries (Begaliev, 2022[29]).

The COVID-19 pandemic highlighted the importance of SME digitalisation and accelerated the uptake of digital tools and services by SMEs. Since the start of the crisis, digital tools have been instrumental for SMEs to continue their operations and to provide essential services during the crisis. As SMEs increasingly realise the benefits associated with the take up of these technologies, it is likely that many of them will continue utilising digital components in their business operations (OECD, 2021[18]). For example, digital tools allowing remote work and paper-less business operations, such as video-conferencing software and e-signature support, enabled business continuity and resilience during the pandemic. While flexible working arrangements were not widespread before COVID-19 (DeSilver, 2020[30]), the efficiency gains associated with these new practices have led many SMEs to integrate them permanently in their business models (OECD, 2021[1]). Digital marketing and remote sales (e.g. e-commerce, online bookings), have allowed many SMEs that were traditionally based on proximity and human contact to remain in business. The expansion of digital payment services during the pandemic also presents important cost-efficiency gains for SMEs, as the data they generate using digital payment platforms can help inform fintech credit providers of the creditworthiness of small businesses (ADB, 2022[31]).

In Central Asia, most governments integrated components on digitalisation in their policy responses to the crisis. In their response plans to the COVID-19 pandemic, the governments of Kazakhstan, Mongolia, Uzbekistan and Kyrgyzstan integrated components focusing on the digitalisation of the economy (alongside the actions for containment of the pandemic, macro-prudential management and fiscal measures). Governments have mostly focused on digitalising public services, as in Uzbekistan where the government took the opportunity to further digitalise customs and trade procedures and strengthen its online *one-stop-shop*, in Mongolia, with the accelerated development of the *e-Mongolia* platform, or in Kyrgyzstan with the Tunduk initiative to move more than 80 government services online (OECD, 2020[32]). All these initiatives have adirect impact on SMEs as users, and also create an indirect incentive to acquire both a basic level of digitalisation as well as formalisation, which are both required to access such services on e-government platforms.

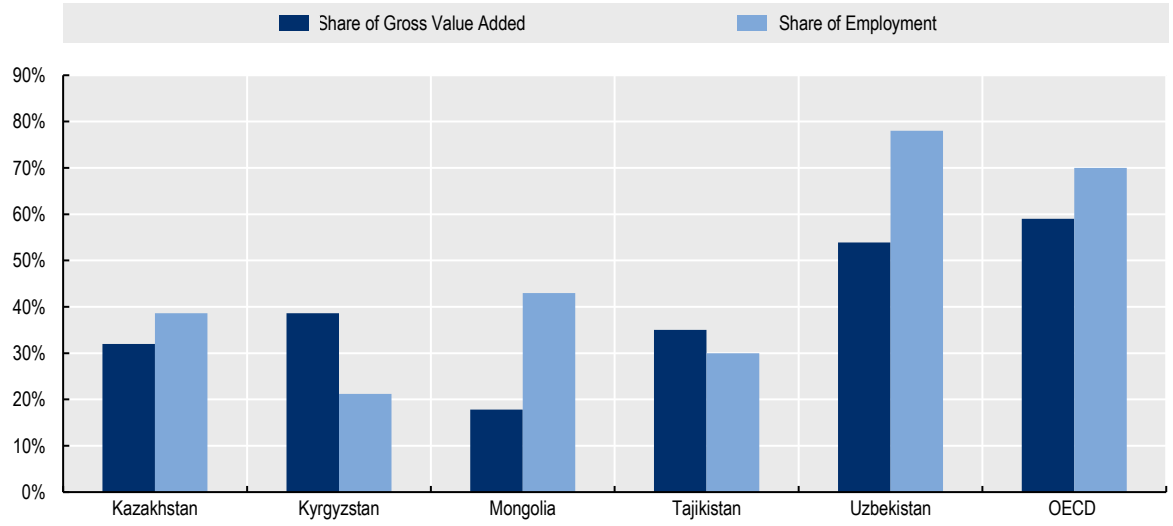
Access to high-speed broadband may allow SMEs to diversify their sources of finance beyond traditional banks by resorting to online lenders, for instance. According to the EBRD-World Bank Business Environment and Enterprise Performance Survey (EBRD, 2021[33]), micro-businesses with access to 4G networks have been found to be 18 percentage points less likely to be credit constrained than similar firms without access to 4G.

Assessment of private sector digitalisation in Central Asia

SMEs represent a substantial share of employment and gross value added in Central Asian economies. The world of SMEs is very heterogeneous, as they operate across many sectors and are of different sizes, from self-entrepreneurs to up to 249 employees. Figure 3 shows that across Central Asian economies the weight of SMEs is sizeable, ranging from 18% to 54% of value added and from 21% to 78% of employment. However, almost all countries are below the OECD average, where SMEs account for 59% of gross value added (GVA) and 70% of employment. Further development of the private sector in the region has been a key policy objective of Central Asian governments, with encouraging results across the region (OECD, 2018[34]). However, disruptions due to the COVID-19 crisis and Russia's war of aggression against Ukraine have hit SMEs hard (Box 3).

Figure 3. SMEs' share of Gross Value Added and employment

2022 or latest data available



Note: Data for Mongolia refer to 2017. Data for Turkmenistan not available.
Source: Kazakhstan (OECD, 2022[35]); Kyrgyzstan (National Statistical Committee of the Kyrgyz Republic, 2021[36]); Mongolia (Doojav et al., 2020[37]); Uzbekistan (State Statistic Committee of Uzbekistan, 2023[38]); Tajikistan (ADBI, 2019[39]); OECD (OECD, 2021[40]).

Box 3. Recent developments affecting SMEs in Central Asia region

The COVID-19 crisis had a severe impact on Central Asian economies and particularly on SMEs. The decline in domestic consumption induced by lockdowns in the region was particularly pronounced in high employment sectors, largely composed of SMEs, which experienced large drops in investment (OECD, 2021[41]). These included tourism, construction, manufacturing, transport and retail trade amongst others (UNDP, 2020[42]). In Kyrgyzstan for instance, the agriculture and retail trade sectors, which account for 22.3% and 19.5% of employment, experienced 15% and 34% declines in investment, respectively. This decline was even more sizable in the food and hospitality sector, where it fell by 73% (OECD, 2021[41]). Central Asian countries are highly dependent on external demand, and trade disruptions also affected the operations of SMEs and entrepreneurs in key exporting sectors. In Uzbekistan, the contribution of SMEs to service exports fell by 6.5 percentage points between 2019 and 2020 (State Statistic Committee of Uzbekistan, 2021[43]). Policy responses were diverse in the region, including containment, macroeconomic and fiscal measures to mitigate the effects of the crisis and digitalisation was a key component in most countries in the region, except for Tajikistan and Turkmenistan (OECD, 2020[32]). Supports for SMEs included support packages consisting of fiscal and tax measures as well as simplified administrative procedures and audit suspensions (OECD, 2020[32]).

Recently, additional developments took place in each country. Kyrgyzstan has established three one-stop-shops between November 2021 and April 2023, centralising and simplifying registration, licensing and tax procedures for entrepreneurs. In Tajikistan, representatives of the SMEs sector were involved in the discussions about the new Tax Code of the country, and a massive information campaign has been conducted to familiarise the private sector with the new legislation. Eventually, Uzbekistan progressed in streamlining SME-related legislation by launching the drafting of a new Entrepreneurship Code in 2022. The current project introduces, among other provisions, new classifications for businesses and reduces by half the required administrative checks in firms.

Source: OECD analysis, (OECD, 2023[46])

Digitalisation as an opportunity for key sectors of the economy

Agriculture is one of the sectors where the region's SMEs are concentrated (OECD, 2018[34]). It accounted for around 15% of employment in Kazakhstan and Kyrgyzstan, close to 25% in Uzbekistan and Turkmenistan, and 60% in Tajikistan in 2021 (International Labour Organisation, 2021[44]).

Businesses operating in key sectors such as agriculture can benefit from digitalisation. The region relies heavily on the export of primary products, including agricultural commodities (OECD, 2018[34]) and, while Central Asian countries were considerably affected by supply chain disruptions during the pandemic, as well as other logistics- and demand-related difficulties, the net value of agriculture is expected to grow 30% by 2030 compared to the base period average for 2018-20 (OECD/FAO, 2022[48]).

In the agricultural sector, the adoption of digital technologies can enhance the resilience of supply chains and increase the efficiency, transparency, and traceability of trading systems. For instance, the use of electronic certificates can lower the risk of trade fraud and reduce time for border procedures, and the use of Distributed Ledger Technologies (DLTs) can enhance the efficiency and transparency of food chains through input tracking (OECD/FAO, 2022[48]). (State Statistic Committee of Uzbekistan, 2023[38]).Further, data-driven decisions can be integrated in the agricultural production to increase its productivity, such as using sensory data for precision farming and automated operation of agricultural vehicles (McFadden et al., 2022[49]). In Uzbekistan, the government launched in December 2020 the "Smart Agriculture" strategy, as well as the "Action Plan for the implementation of the Smart Agriculture

technology development strategy in 2021-23", creating at the same time a dedicated department within the Ministry and the Centre for Digitalisation of the Agro-industry. The agency should then be responsible for the introduction of digital solutions in the sector to contribute to food security, water resource management, effective state support subsidies, and the introduction of modern IT and software products. One example is the "E-IJARA TANLOV" portal launched at the end of 2021 by the Centre, which will serve for the allocation of agricultural land, as well as the Geographic Information System based on the ArcGIS software and subsidies to support agricultural producers, and a registry of agricultural machinery. Another five projects were to be launched in 2022, including Agroplatform, an online marketplace open to all SMEs in the country for agricultural products, or the "Smart Campus" in Tashkent State Agrarian University to provide training and mentoring to interested entrepreneurs.

Digitalisation can also boost the performance of SMEs in the manufacturing sector. In 2021, the manufacturing sector represented between thirteen and twenty percent of value added across the region (while it represented 13% of GDP on average in OECD countries in 2020 (World Bank, 2021[50]). Enhancing the business environment for manufacturing SMEs is a key priority for Central Asian countries seeking to diversify their economies (OECD, 2018[34]). However, the manufacturing sectors of landlocked Central Asian economies have to rely on well-functioning and highly efficient supply chains in order to expand (Plekhanov and Chkoniya, 2020[51]). The evolution of manufacturing in what has been called "the fourth industrial revolution" relates to the integration of advanced digital technologies (e.g. Artificial Intelligence, 3D printing, Internet of Things) in production processes, which can have far-reaching consequences for productivity, employment, skills, income distribution, trade, well-being and the environment (OECD, 2017[52]). For example, Artificial Intelligence (AI) has multiple applications in the manufacturing sector, including supply chain management. Distribution scheduling can be optimised with the use of AI, to forecast variations in demand. Other AI applications in manufacturing include industrial research, product design, fabrication and assembly (Nolan, 2021[53]). In addition, the use of 3D printing enables the production of sophisticated items and can also help firms rapidly respond to changing supply conditions by providing rapid access to particular components in the event of temporary shortages, as was the case for medical components during the COVID-19 pandemic (Andrenelli and López González, 2021[54]).

Hybrid retail finally represents an unprecedented opportunity for SMEs in the retail sector to enhance their competitiveness and resilience to future negative shocks. Access to online marketplaces was critical during the pandemic, as sanitary restrictions required brick-and-mortar retail shops to shut down, and multichannel shopping is becoming increasingly common as retailers leverage their presence in digital channels (Accenture, 2020[55]). By doing so, SMEs in the retail sector can expand their reach and generate economies of scale. With businesses now able to access global e-commerce platforms directly, retail SMEs can enlarge their consumer base and connect with international consumers. Furthermore, by using digital tools and services, such as cloud computing, small businesses can improve the management of their inventories and improve their customer service. Business analytic tools also enable retail SMEs to better design their marketing strategies by facilitating the aggregation and better analysis of data from their online and offline stores (OECD, 2022[56]). As an example, in Kyrgyzstan the government introduced the law on "electronic commerce" in 2021, together with a reform to the Tax Code at the beginning of 2022 that simplifies taxation for online stores. The government also launched a "National Development Programme" to foster digitalisation of SMEs in the retail sector and of the country's economy, in cooperation with international partners (ITC, 2022[57]).

Despite the opportunities digitalisation offers the region, important barriers to uptake remain. These include broadband internet connectivity, insufficient private investment, insufficient digital skills and regulation, which are addressed in the following sections. In a region composed by landlocked countries with dispersed populations, the roll-out of ICT infrastructure in Central Asia is costly, with low levels of private investment. The limited deployment of Internet Exchange Points (IXPs) presents another issue, where Central Asian countries are significantly dependent on neighbouring countries for their access to international bandwidth, leading to high transit costs (Lovelock, 2015[58]).

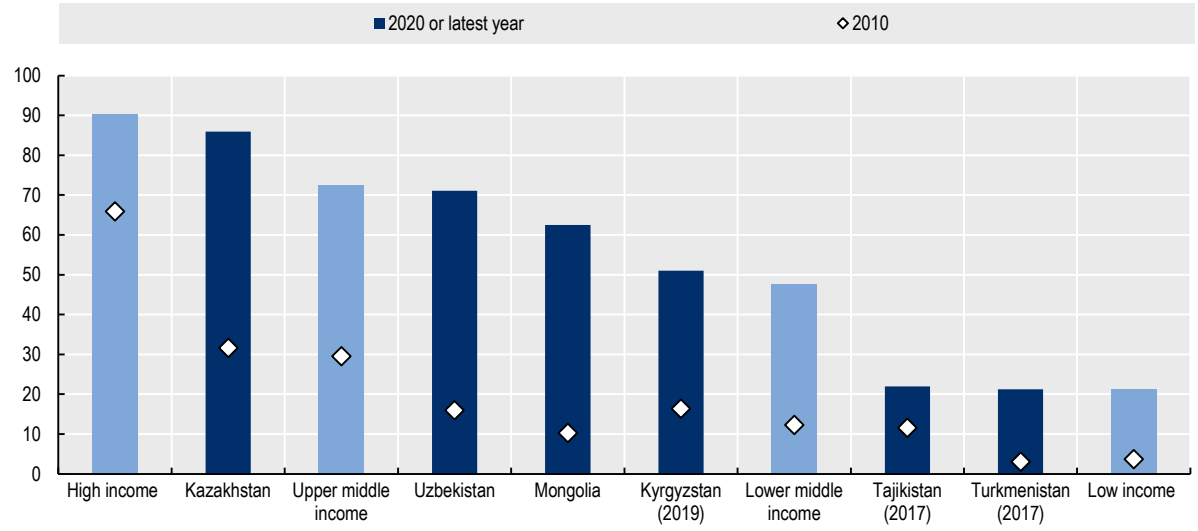
The following section examines the level of business digitalisation across Central Asia. Understanding the availability and adoption of both ICT infrastructure and digital technologies among businesses is crucial to provide evidence-based support for SME digitalisation. However, due to lack of common business digitalisation indicators available for international comparison, the section focuses on addressing accessibility and quality of the digital infrastructure available in the countries, as this can serve as a reliable proxy for digital adoption. These are complemented with additional evidence that can serve as proxies for understanding the digital maturity of the private sector in the region. The economy groups displayed in the figures are calculated based on the World Bank Country and Lending Groups classification. Among the Central Asian countries presented in the section, Kazakhstan and Turkmenistan are classified as upper middle-income economies and Kyrgyzstan, Mongolia, Tajikistan and Uzbekistan as lower middle-income economies.

Internet penetration

In general, broadband penetration in Central Asia is high relative to income levels. Combining access to both fixed and mobile broadband, 52.3% of the population in the region has access to the Internet, based on the latest data available between 2017 and 2020 (Figure 4). Kazakhstan (85.9%) leads the region, with internet diffusion higher than its peers in the upper middle-income group (72.4%), and close to that of the high-income group (90.2%). Similarly, the shares of internet users in Uzbekistan (71.1%), Mongolia (62.5%) and Kyrgyzstan (51%) are higher than the lower middle-income group average (47.6%). On the other hand, despite their recent improvements since the mid-2010s, Tajikistan (22.0%) and Turkmenistan (21.3%) fall behind their lower middle-income peers, which showed a group average of 32.5% in 2017.

Figure 4. Internet users per 100 inhabitants

2020 or latest data available, and 2010



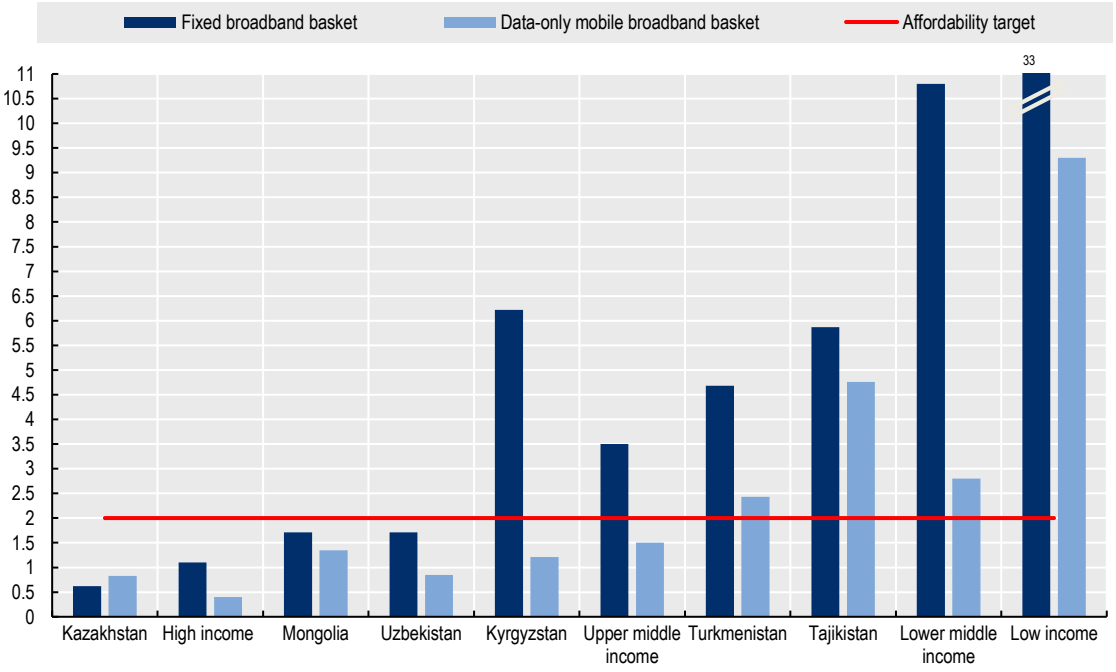
Note: Country data from 2020, unless stated otherwise. Income group average calculation based on countries with 2020 data available.
Source: World Telecommunication/ICT Indicators Database, 2021, International Telecommunication Union (ITU).

Broadband affordability

Digital infrastructure in the region is by and large affordable. Figure 5 presents the entry-level[1] fixed and mobile basket calculated as a share of gross national income (GNI) per capita. In the case of Kazakhstan, Mongolia, Uzbekistan and Kyrgyzstan, the cost of accessing both fixed and mobile broadband infrastructure is near or below the UN Broadband Commission's affordability target of 2% (ITU, 2022[59]). For Turkmenistan and Tajikistan, the relative level of fixed broadband basket is on par or lower than their respective income group average, but the mobile broadband basket is three percentage points higher than their peers. Interestingly, while the global price basket of mobile broadband tends to be lower than that of the fixed internet, it is at a similar level with the fixed internet basket in four of the six Central Asian countries.

Figure 5. Fixed and mobile broadband price basket

As a percentage of GNI per capita, 2022



Note: For fixed broadband, economies are benchmarked according to the price of an entry-level fixed broadband basket, defined as the cheapest fixed Internet subscription available domestically, with a minimum of 5 GB monthly data allowance and an advertised download speed of at least 256 Kbit/s. For mobile broadband, economies are benchmarked according to the price of an entry-level data-only basket, defined as the cheapest data-only mobile broadband subscription available domestically, with a 3G technology or above and a minimum monthly data allowance of 2 GB.
Source: ITU ICT Price Baskets, 2023.

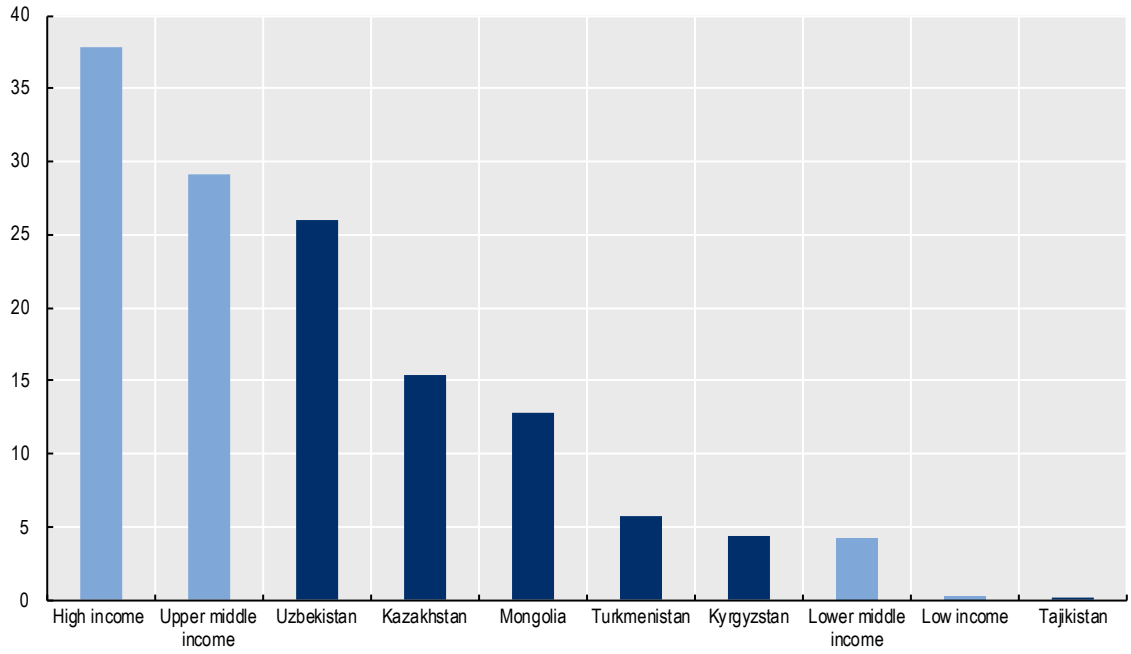
Despite the relatively affordable access to digital infrastructure in the region, the widespread use of mobile broadband suggests the actual price the users pay for their internet usage can be high. While fixed broadband subscriptions generally include unlimited access to the Internet at a fixed cost, users subscribed to mobile broadband are provided with pre-defined monthly data allowances or pay per usage

[1] Defined as the cheapest fixed Internet subscription available domestically, with a minimum of 5 GB monthly data allowance and an advertised download speed of at least 256 Kbit/s.

subscription. To illustrate, minimum data allowances for fixed and mobile price basket indicated in Figure 5 are 5GB and 2GB respectively. In the average upper middle-income country, 1GB from the fixed broadband price basket costs at least 0.93% of GNI, while the same unit of data consumption for mobile connection costs at least 1.79% of GNI, almost double the price of fixed internet per data usage. In other words, fixed internet tends to be cheaper per gigabyte of data usage than mobile, indicating that widely available fixed broadband is necessary to encourage the use of the Internet and uptake of digital technologies. In the case of fixed broadband connection in Central Asia, the numbers are on par or higher than their peer countries, with subscriptions per 100 inhabitants in Uzbekistan (14.4), Kazakhstan (14.0), Mongolia (9.4), and Kyrgyzstan (4.4) between upper middle-income (15.1) and lower middle-income (4.0) averages. In Turkmenistan (0.2) and Tajikistan (0.1), subscriptions are below the average of low-income countries (0.6) (Figure 6).

Figure 6. Fixed broadband penetration

Fixed broadband subscription per 100 inhabitants, 2022 or latest data available



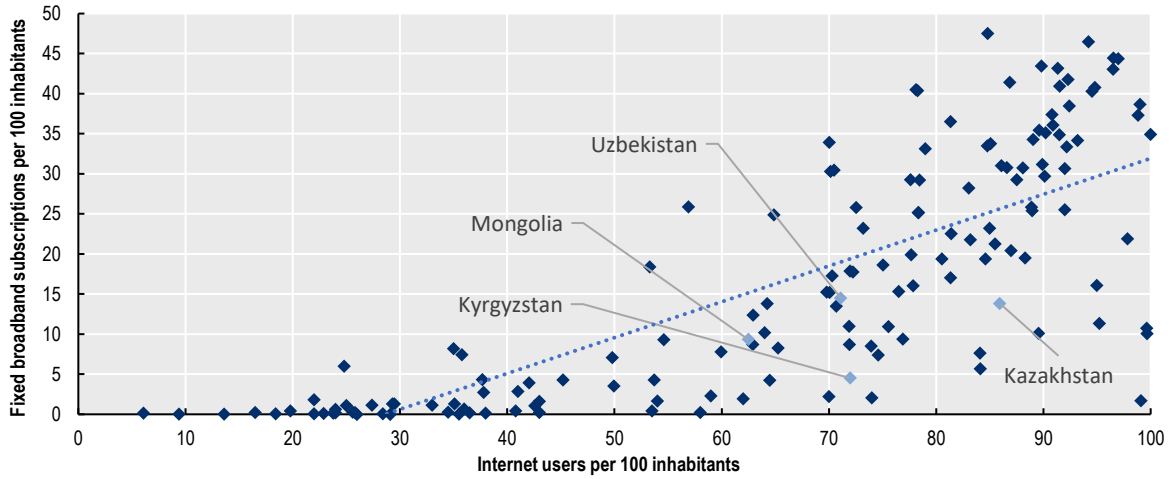
Note: The data for Kyrgyzstan, Mongolia and Tajikistan is for 2021.
Source: World Bank data: Fixed broadband subscriptions (per 100 people) - Upper middle income, Tajikistan, Kyrgyz Republic, Uzbekistan, Mongolia, High income, Low income, Kazakhstan, Turkmenistan | Data (worldbank.org) Data for Mongolia has been retrieved from (TheGlobalEconomy.com, 2021[60])

Fixed broadband use per internet user is rather low. If instead of looking at fixed broadband subscriptions in relation to the number of inhabitants, we look at the same metric in relation to the number of internet users, in Central Asian countries the shares are low compared to countries with similar levels of internet users per 100 inhabitants (Figure 7). In Kazakhstan, for example, there are 16.06 fixed broadband subscriptions per 100 internet users, while the upper middle-income average is 23.09. Similarly, despite relatively high internet penetration, the number of fixed broadband subscriptions in Kyrgyzstan is 6.25 per 100 Internet users, below the lower income average of 8.30. Low levels of fixed internet subscriptions compared to internet users indicate relatively large number of mobile broadband users in these countries who pay higher prices per data usage. On the other hand, Uzbekistan's figure for fixed broadband subscriptions per 100 Internet users is 20.37, higher than the lower income average. Coupled

with relatively low computer uptake across the region (ITU, 2022[61]), this indicates more prevalent uptake of mobile broadband in Central Asia. Mobile broadband users, including small business owners, could be paying more per unit of data connection compared to fixed broadband subscribers. Having limited data allowances could further put constraint on small businesses relying on mobile broadband from fully utilising the Internet, due to increased cost.

Figure 7. Internet penetration and fixed broadband subscriptions, 2020

Internet users per 100 inhabitants and fixed broadband subscriptions per 100 inhabitants



Note: Internet users per 100 inhabitants data for Tajikistan, and Turkmenistan for 2020 not available.
Source: ITU World Telecommunication/ICT Indicators Database (2021).

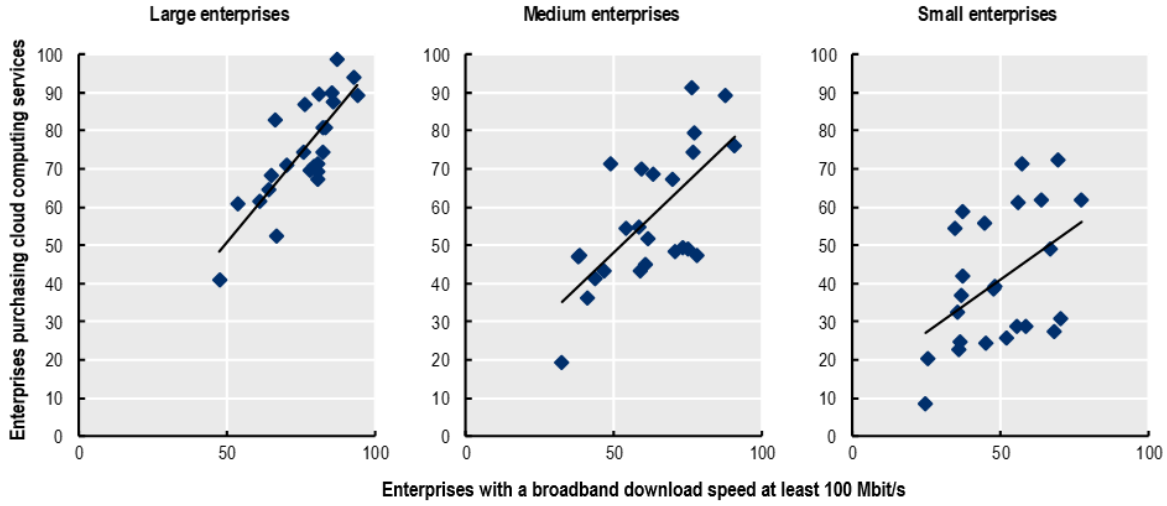
Connectivity speed

Not all connections are created equal. While widely available and affordable broadband connection contributes to lowering barriers to access, quality of broadband is an especially crucial factor that affects businesses' use of the Internet. The level of broadband quality, which can be measured in terms of reliability and speed of connection, differs between countries and within countries, between urban and rural areas. To illustrate, there are significant speed gaps of entry-level fixed broadband baskets among countries which has been increasing between 2021 and 2022 (ITU, 2022[59]). According to the affordability report from the ITU, median download speed for entry-level broadband basket in high-income countries reached 100 Mbit/s in 2022, while the global average sits at 16 Mbit/s.

For businesses, access to high-quality digital infrastructure is a pre-requisite for reaping the full benefits of digitalisation. Businesses' basic speed needs vary greatly and depend on the intensity of internet usage, as well as the number of devices connected. For example, a download speed of 2 Mbit/s is needed per device for checking emails and making voice calls online; for uploading and downloading large files or streaming High Definition (HD) videos, a minimum of 10 Mbit/s per device is advised (FCC, 2020[62]; Ookla, 2020[63]). In other words, having access to high-speed internet facilitates businesses' use of digital tools and services, as constant flow of data with low latency is needed to use the digital services effectively. Evidence from OECD economies suggests a strong correlation between access to high-speed internet and uptake of cloud computing services (Figure 8). Furthermore, the positive correlation can be seen across all business sizes, from small to large enterprises.

Figure 8. High-speed broadband and cloud computing adoption rate by firm size class

As an average percentage of enterprises with more than 10 employees in OECD economies, 2021

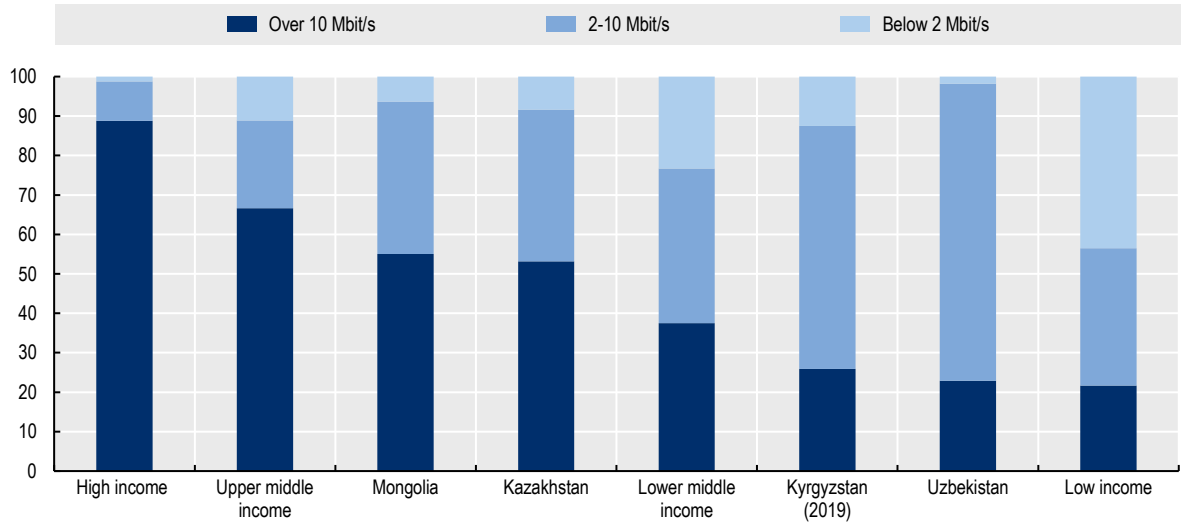


Note: Large enterprises employ 250 or more people. Medium-sized enterprises (50 to 249 employees), small enterprises (10 to 49 employees).
Source: OECD ICT Access and Usage by Business.

In Central Asia, the speed of both fixed and mobile broadband requires attention. As can be seen from Figure 9, the share of fixed broadband subscriptions above 2 Mbit/s speed in Kazakhstan is similar to the upper middle-income group average of 89.0%. However, the share with more than 10 Mbit/s connection is just 53%, lower than its peers (67%). Among the lower middle-income countries in the region, Mongolia has the highest share of 10+ Mbit/s of fixed broadband (55.0%), above the income group average (37%). The country also has a low share of connection below 2 Mbit/s, indicating availability of faster connection compared to countries with similar income levels. On the other hand, fixed broadband subscriptions in Kyrgyzstan and Uzbekistan are largely concentrated between 2-10 Mbit/s range, with the share of connection of more than 10 Mbit/s lower than their peers.

Figure 9. Speed of fixed broadband subscriptions

Speed of subscriptions, as a percentage of total fixed broadband subscriptions, 2020 or latest year available



Note: Speed information for Tajikistan and Turkmenistan not available.
Source: UN Open Sustainable Development Goals Data Hub. https://unstats-undesa.opendata.arcgis.com/.

In the case of mobile broadband, the speed is especially important, as it is more widely available and used than the fixed internet. According to Ookla's monthly basis statistics on global internet speed, in August 2022 mobile internet speed in Central Asia was generally on par or lower than countries with similar levels of GNI per capita (Figure 10). Average download speed of mobile broadband in Kazakhstan in the given period is 36.9 Mbit/s, which is below upper middle-income country average of 50.8 Mbit/s. Mobile broadband speed in Uzbekistan (28.6 Mbit/s) and Mongolia (26.7 Mbit/s) is on par with lower middle-income group average of 28.0 Mbit/s. In Tajikistan, although the country's mobile access is the most expensive in the region relative to GNI (Figure 5), median download speed is among the lowest internationally.

Data protection

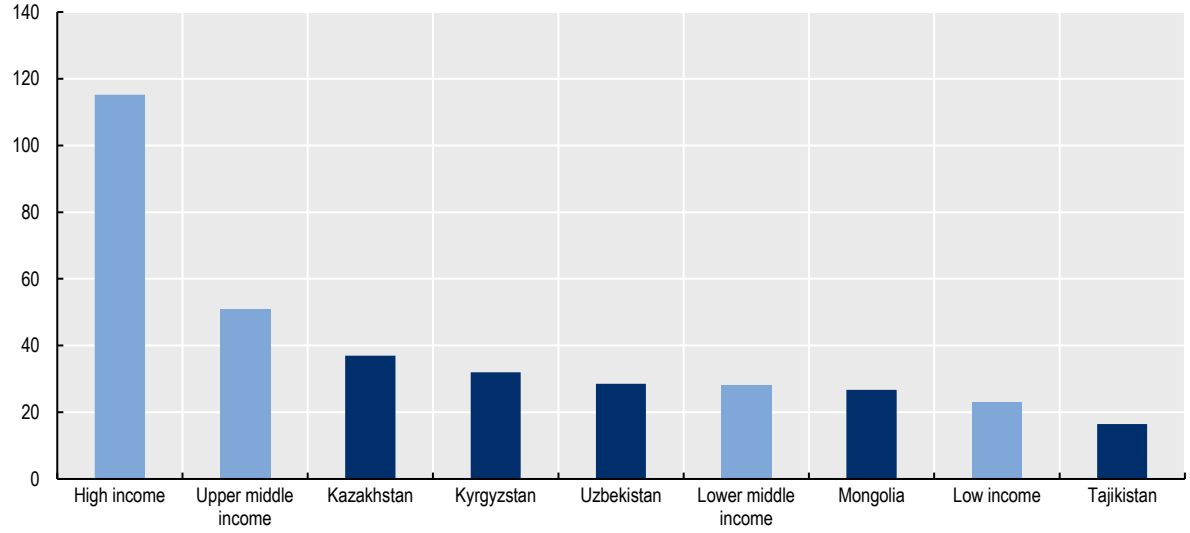
Most countries in Central Asia have introduced or updated data regulation and legislation during the past five years. Dedicated laws on personal data protection and regulation are usually based on consent of the data subject for collection, use and processing of its data, as well as on public interest for the authorities' access to such data. Some of them (e.g. Kazakhstan, Kyrgyzstan) also formally established a "Data Protection Authority" to oversee the development and enforcement of regulation. Others have introduced data localisation policies which require data to be stored in servers located in the country (i.e., Kazakhstan, Uzbekistan, Turkmenistan) – ensuring the possibility for the country's authorities to access such data in case of need. On the contrary, others (i.e. Kyrgyzstan, Mongolia, Tajikistan) do not have data localisation policies requirements (Box 2).

Data localisation rules can restrict SMEs' access to digital services offered by international companies, for example in social media or e-commerce, possibly affecting their costs and business opportunities. The impact depends on multiple factors: the nature of the business and its business model's reliance on data (e.g. usually companies in the ICT sector are more affected); whether the data localisation measures allow for free flows of data across borders or if they restrict it, and to what extent – as this might lead to a multiplication of costs not only of storage, but also of processing and handling of data, which might make it uneconomical to provide services in specific countries. The understanding of the

societal and economic effect of restrictions on data flows across borders due to data localisation policies is a complex issue, as many data localisation measures, including in Central Asia, aim at legitimate public policy objectives as access to data by relevant authorities and/or national/digital security (Lopez González, Casalini and Porras, 2022[19]).

Figure 10. Median mobile broadband download speed, August 2022

Mbit/s



Note: Results based on 140 countries where data is available. Data for Turkmenistan not available. Mobile broadband includes all types of cellular technologies, and do not include mobile Wi-Fi results.
Source: Speedtest Global Index, Ookla.

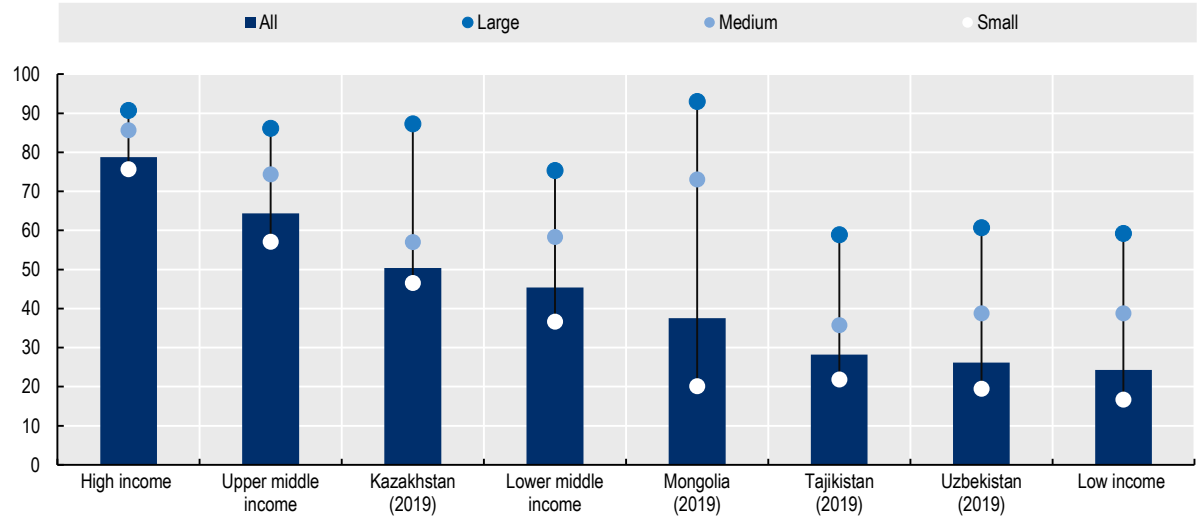
Business digital adoption

Despite widely accessible and affordable broadband available in the region, Central Asian businesses fall behind in digital adoption. A dearth of internationally comparable data on business digitalisation poses a challenge in understanding the status quo of businesses' digital adoption in developing countries. However, evidence from the World Bank's Enterprise Surveys suggests low level of basic digitalisation among the businesses located in Central Asia (Figure 11). Based on the latest survey rounds in each country from 2017 to 2021, the percentage of Central Asian businesses having their own website is lower than their peer group average. For instance, the gap between businesses in upper middle-income countries and Kazakh businesses is at 14 percentage points, and the gap between businesses in lower middle-income average and in Uzbekistan is 19.2 percentage points.

Furthermore, large digital adoption gaps can be observed within each country. A closer look at the use of business website shows a noticeable gap between large businesses and SMEs (Figure 11). The regional gap between large and small businesses is at 48.0%, which is higher than the gap in lower middle-income economies (38.6%). The widest adoption gap in the region can be found in Mongolia, where the difference between the share of large and small businesses having website reaches 72.9%. In Kazakhstan, website usage gap is at 40.8%, which is higher than upper middle-income average (29.0%). Considering that creating and maintaining a business website constitutes a basic-level digitalisation, it can be expected that uptake of more advanced types of digital tools and services, such as cloud computing and data analytics, would also be lower in the region. Further, as SMEs are responsible for a large share of economic activities in the region, low levels of SME digitalisation can signal an underexploited economic opportunity.

Figure 11. Percent of businesses having their own website

As a percentage of businesses with more than 5 employees



Note: Calculation based on the latest available country survey result between 2017 and 2021. Small businesses are between 5-19 employees, medium business between 20-99. Large businesses employ more than 100 persons. Data for Kyrgyzstan and Turkmenistan not available.
Source: World Bank Enterprise Surveys.

Central Asia government efforts to foster digitalisation

Digital transformation strategies in Central Asia

Governments in Central Asia have undertaken national digital transformation strategies. These include developing the Information and Communications Technology (ICT) infrastructure in the region, support for expanding broadband coverage, and encouraging the digitalisation of businesses. The section below presents some of the recent digital strategies or programmes pursued by the governments in Central Asia region. Table 1 below summarises the key support elements relevant for digitalisation of Small and Medium Enterprises present in the national strategies adopted by Central Asian countries.

Table 1. National digitalisation strategies for the private sector in Central Asia

Country	Name of strategy	Broadband access	High-speed broadband access	Upskilling and/or Reskilling of workforce	One-stop shop for businesses	Cybersecurity for businesses	SMEs-targeted	Digital finance for businesses	Digital payment services for businesses	E-commerce focus
Kazakhstan	Digital Kazakhstan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kyrgyzstan	Digital Kyrgyzstan 2019-2023	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Mongolia	Digital Nation Strategy	Yes	Yes	No	No	No	No	No	No	No
Tajikistan	Government Decree 642 from December 30, 2019	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Turkmenistan	Concept of Development of Digital Economy 2019-2025	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Uzbekistan	Digital Uzbekistan 2030 Strategy	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No

Note: Based on publicly available sources on the cited national digital strategies, government decrees or concepts. Policy elements mentioned are marked as “Yes”, otherwise “No”.
Sources: Kazakhstan (Government of the Republic of Kazakhstan, 2018[64]), Kyrgyzstan (Government of the Republic of Kyrgyzstan, 2019[65]), Mongolia (Ministry of Digital Development and Communications of Mongolia, 2021[66]), Tajikistan (Government of the Republic of Tajikistan, 2019[67]), Turkmenistan (Turkmenistan State News Agency, 2021[68]), Uzbekistan (Government of the Republic of Uzbekistan, 2020[69]).

In **Kazakhstan**, the government initiated the Digital Kazakhstan programme, a 5-year plan spanning from 2018 to 2022 inclusive. The digitalisation of the economy was highlighted as one of the key components of the programme. Extractive sectors, and manufacturing sector were the main focus industries for private sector digitalisation, whereby the adoption of technologies that can enhance productivity of the business entities in the designated sectors, such as 3D printing and Industrial Internet of Things (IoT), was encouraged. The programme also aimed to expand broadband coverage and mobile 4G communication by developing the information and communication infrastructure. In addition, through the programme, the government supported the development of e-commerce activities and encouraged the digitalisation of farming activities (Government of the Republic of Kazakhstan, 2018[64]).

Box 4. One-stop-shop for businesses in Kazakhstan

The Kazak government operates a one-stop-shop where SMEs can access a variety of administrative and fiscal services (OECD, Forthcoming[70]). The seamless integration of these administrative procedures is particularly relevant for generally resource-constrained SMEs, as these one-stop-shops allow them to more easily understand the regulatory environment and complete necessary administrative tasks in a more efficient and less time-consuming way (OECD, 2020[71]).

On Kazakhstan's e-government platform, companies can complete the online procedure to register or liquidate their business by submitting the necessary documents to a single government authority, considerably speeding up a process that previously took around 30 days. Another component of Kazakh e-government is the electronic licensing system where businesses can apply for about 500 types of entrepreneurial activities in the field of architecture, construction, industry, export-import amongst others. The application is then accepted and processed by the relevant state body. Similarly businesses can access the public procurement portal which enables the execution of procurement procedures and the conclusion of electronic contracts amongst others.

The portal additionally includes tax declaration services, including the payment and refund of taxes but also tax reporting and registration accounting. Further, businesses can find information regarding state support measures like guarantees for loans to SMEs and guidance about intellectual property.

Source: Electronic Government of the Republic of Kazakhstan (https://egov.kz/cms/en).

The Digital **Kyrgyzstan** 2019-2023 programme aims to create a sound foundation for national digital transformation. One of the main objectives is to improve digital connectivity infrastructure, by establishing regional backbone networks and expanding domestic fibre-optic networks. Furthermore, the programme aims to improve the level of digital literacy in the country through education. In terms of digital skills, the government provides trainings to equip individuals with digital skills as a means of supporting the dynamic development of the domestic IT sector (Government of the Republic of Kyrgyzstan, 2019[65]). The Kyrgyz government has additionally launched multiple initiatives to digitalise the public administration. In 2018, it launched the Unified Identification and Authentication System "Tunduk", easing legal and administrative obstacles for citizens and businesses alike (Plekhanov and Chkoniya, 2020[51]). The government's digitalisation effort was further accelerated during the COVID-19 pandemic, where more than 80 public services were offered online (OECD, 2020[32]).

Mongolia has defined its Digital Nation Strategy along six sub-objectives with a strong focus on the digitalisation of the public sector (Ministry of Digital Development and Communications of Mongolia, 2022[72]). In 2020, the "e-Mongolia" online portal and mobile app were launched to improve the accessibility and efficiency of government services. According to the Ministry of Economy and Development, the ICT sector is the fastest growing sector in the Mongolian economy and is particularly important due to its high

potential for economic growth (Oxford Business Group, 2015[73]). However, as a sparsely populated, land locked country, further developing the backbone digital infrastructure and broadband network represents another key pillar of the Strategy. Cyber-security, digital literacy, innovation and accelerating the development of the social and economic sectors through digitalisation are the remaining pillars of the strategy.

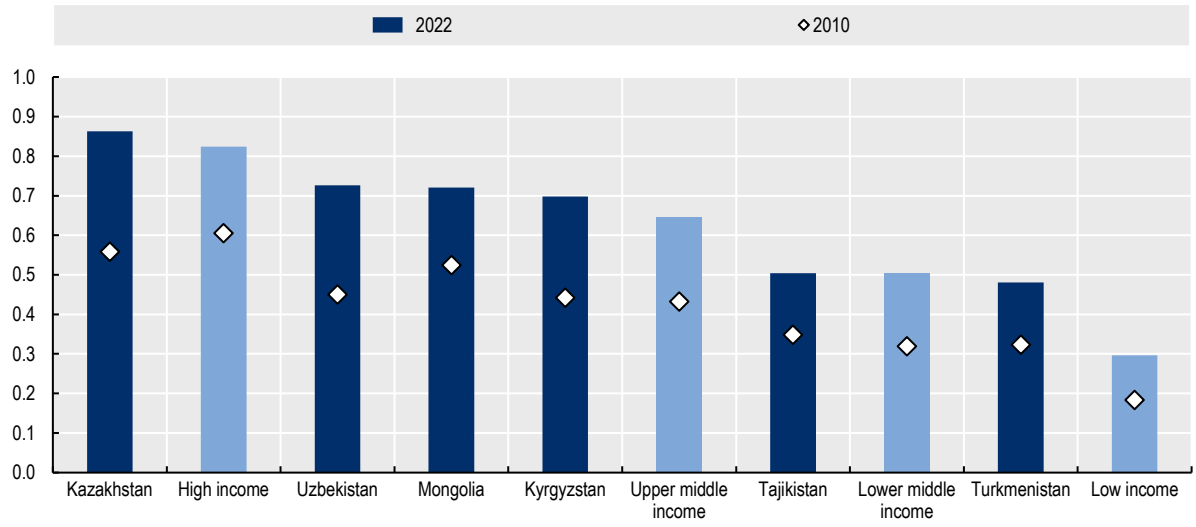
Tajikistan presented the Government Decree 642 from December 30, 2019, which outlines three stages for the digital transformation of the economy. The first stage of the programme focuses on adapting the regulatory framework, raising awareness, and providing digital skills trainings for qualified personnel. Developing the digital infrastructure and expanding broadband coverage are identified as key priorities over the medium term and a sectoral approach is considered in the long-term with a focus on extractive industries, energy, and agriculture (Government of the Republic of Tajikistan, 2019[67]). The government further intends to implement electronic and digital financial services (EDFS) to advance financial inclusion and to channel remittances flows into the established banking system (Mirzoev and Sobirzoda, 2019[74]). In parallel, Tajikistan is also part of regional programmes promoted by international organisations to create a regionally integrated digital infrastructure, that would increase access to more affordable internet connections through fixed network (now almost absent in the country, Figure 6) and improve the capacity of governments to deliver digital services to the businesses and population (World Bank, 2018[75]; World Bank, 2019[76]).

In 2018, the president of **Turkmenistan** signed the Concept of Development of Digital Economy 2019-2025, which sets a roadmap for digital transformation until 2025. In 2020, the Turkmen government signed a resolution to bolster the development of electronic document management systems (EDMS) and websites. In the same year, a project was issued to create an identification and authentication system to access state electronic resources through the governmental portal as well as electronic interaction system to facilitate interactions between government departments. The modernisation of the banking structure is one of the main priorities for the government with the adoption in 2020, with a contactless payment system by the State Commercial Bank “Halkbank” (Turkmenistan State News Agency, 2021[68]). In a similar effort, the government agency “Turkmenaragatnasyk” also offers trainings on digital skills to private and public sector specialists (Plekhanov and Chkoniya, 2020[51]).

In 2020, **Uzbekistan** adopted the Digital Uzbekistan 2030 Strategy, with a long-term vision for advancing digital transition in the country. One of the key pillars of the Strategy is expanding provision of high-speed internet coverage to underserved area, therefore, bridging the digital infrastructure gap across regions (Government of the Republic of Uzbekistan, 2020[69]). Fostering development of digital economy is another priority of the Strategy, with digitalisation of the financial services as one of the main enablers. The government has, for instance, introduced measures to develop the provision of Business Process Outsourcing (BPO) services in the fields of DLT or AI technologies by building on its digital infrastructure and further improving the digital skills of its population (UNDP, 2022[77]). Further, the Uzbek government seeks to bolster IT start-up ecosystem, with IT Parks playing a crucial role in providing supports on incubation and acceleration.

As can be seen, the digitalisation of government services constitutes an important element of national digital strategies all across the region. Central Asian countries have placed emphasis on creating government digital infrastructure and systems to provide accessible, efficient, and transparent public services for individuals and businesses. Consequently, noticeable improvements are observed in area of government digitalisation (Figure 12). Kazakhstan leads the region’s e-government efforts, with the government maintaining 28th place on the UN E-Government Development Index in 2022 and countries with lower rankings such as Tajikistan are renewing their efforts to render government services more accessible. In general, Central Asian governments are faring better than peer economies. In addition, some of the recent government digitalisation priorities in the region include establishing common standards for managing data across the government, integrating a single sign-on system for user authentication, and integrating digital payments in government services.

Figure 12. E-government Index



Source: UN E-Government Development Index (2022).

Such a whole-of-government approach to digital government can not only contribute to improving the business environment, it can also encourage business digitalisation. For instance, businesses can enjoy reduced administrative burdens and benefit from simplified regulatory process with the implementation of digital public services, which can further contribute to levelling the playing field for SMEs (OECD, 2019[2]; OECD, 2017[78]). Public procurement is another example of how governments can create opportunities for smaller businesses. Use of digital technologies in public procurement process can lower SMEs' barriers to access, allowing them improved access to markets and help them enhance their business capacities (OECD, 2018[79]). Furthermore, government digitalisation can also serve as a key lever for increased use of ICT among businesses (OECD, 2017[80]). As digital public services provide a timesaving and more transparent option, businesses are incentivised to interact digitally with the government, which could serve as an entry point for their own digitalisation. Box 5 shows how Central Asian countries' work to foster trade by digitalising their services and by helping SMEs embrace e-commerce. However, in "digital-by-default" approaches, risks of digital exclusion need to be managed, such as by continuing investing in digital literacy but also ensuring that non-digital options to access public services remain for those who lack digital capacity. Further, efforts for digital regional development and integration such as the alignment of regulatory frameworks could lead to the reduction of trade barriers in the region, allowing SMEs to participate in digital supply chains and expanding in this way their business possibilities (ADB, 2022[81]).

Box 5. Ready4Trade Central Asia

With the goal to help Central Asian countries strengthen intra-regional and international trade activities, Ready4Trade Central Asia was established in 2020 as a four-year project, with participation of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The European Commission and International Trade Centre provide resources and assistance to the countries, on six main areas, which are 1) Establishing trade facilitation portals, 2) Addressing obstacles to trade 3) Helping SMEs comply with cross-border requirements, 4) Supporting women in trade 5) Supporting SMEs engage in e-commerce, and 6) Developing e-commerce strategies.

Digitalisation comprises an important aspect in lowering barriers to trade, especially for small businesses, and in fostering cross-border trade activities, both in terms of public sector digitalisation and helping small businesses adopt digital practices. Participating governments set up Trade Facilitation Portals, which provide detailed information on cross-border trade formalities that businesses can consult, such as product-specific information needed for both importing and exporting. The project also aims to promote e-commerce activities in the region, by assisting countries in developing national strategies, and regulatory framework on e-commerce. Further, SME-targeted e-commerce measures are provided, through tailored coaching and advisory services for SMEs at all levels, from businesses interested in setting up their online presence to those that are seeking to improve their online sales.

Source: Ready4Trade Central Asia.

Policy recommendations on the way forward

Governments in Central Asia can do more to improve the quality of broadband infrastructure and foster the diffusion of digital technologies among the business population, especially to SMEs and entrepreneurs. As access to digital infrastructure is the basic step for businesses to go digital, national broadband policies can incorporate programmes aimed at fostering the uptake of digital infrastructure. Providing targeted financial incentives to help businesses invest in broadband connectivity can support the demand from small and medium businesses, once the supply of fast broadband connection is made available.

Dedicated legal frameworks and high-level strategies to support SME digitalisation can help the transition of SMEs in Central Asia to more digitalised business models. Some OECD countries have established such legal frameworks, to enable ministries and government agencies better deliver strategic approaches to SME digitalisation. For instance, Box 6 presents the example of Korea, which has enacted a legal framework to promote technology innovation, including digitalisation, in SMEs. Other success factors for a national digital transformation in countries with development paths comparable to Central Asia include whole-of-government approaches led by a central authority to ensure political feasibility, prioritising voices of those most likely to be disadvantaged by digital transformation and highlighting quick gains to strengthen the process, partnering with the private sector in delivering targeted policies to ensure reach and effectiveness, as well as e-government solutions and public procurement to provide direct and indirect incentives for the uptake of digital technologies by firms (OECD, 2021[82]).

Box 6. Act on the Promotion of Technology Innovation of Small and Medium Enterprises, Korea

As a part of the policy efforts to enhance competitiveness of Korean SMEs, the "Act on the Promotion of Technology Innovation of Small and Medium Enterprises" was enacted in 2001. The Act provides the legal basis for the government in both promoting technological innovation and providing adequate policy supports to SMEs. The Act designates the Ministry of SMEs and Startups as the government institution responsible for implementing SME innovation-related policies and grants the Minister the rights to formulate strategies regarding SME innovation and request relevant data from other government agencies.

Digitalisation is one of the categories explicitly included as technical innovation, and the Act mandates the Ministry's role in supporting the development of ICT infrastructure necessary for digitalising SMEs and for the diffusion of technologies among the small businesses. It further underlines the Ministry's responsibility in developing and disseminating digital standards of business systems targeted at SMEs. Introduction of the Act has led to creation of Korea Technology and Information Promotion Agency for SMEs (TIPA), a government agency dedicated to supporting SMEs' innovative activities and their digitalisation efforts. Based on the Act, TIPA also carries out policy research and evidence gathering, and conducts detailed annual surveys on SME digitalisation.

Source: Korea Legislation Research Institute, "Act on the Promotion of Technology Innovation of Small and Medium Enterprises".

Central Asian governments can also offer direct support to the uptake of digital technologies, through financial incentives or targeted initiatives (e.g., e-commerce). As discussed previously in the chapter, SMEs often have to operate with limited financial resources and understanding of the opportunities at hand. Governments can facilitate the digital transition by providing targeted financial incentives, such as dedicated vouchers, loans, or grants to be spent in either acquiring software, or hiring specialists and consultants to help re-imagine business processes and make them more digital. Box 7 presents the key aspects of Denmark's "digital enhancement of SMEs" programme, promoted as part of its "Strategy for Denmark's Digital Growth". This programme was later reinforced as part of the COVID-19 recovery measures with the so-called "SME Digitalisation and export programme".

Box 7. Denmark's digital enhancement of SMEs

The Danish government decided to include the support for the digitalisation of SMEs as one of the pillars of its "Strategy for Denmark's digital growth". This approach takes into account how SMEs' digitalisation can be thought in relations with other measures that are meant to impact the broader economy and society; other pillars included for example activities on "Digital Skills for all", on data management, on regulatory changes to facilitate the use of digital tools, and on strengthening cyber security practices by all enterprises.

Measures included the creation of a coordinated scheme called SME:Digital, focusing on two areas: SME digital transformation and e-commerce. In the first area, measures included grants for private consultancy to help SMEs identify digital opportunities for their businesses, "sparring"/mentoring programmes to connect less digitalised SMEs with other SMEs using more software more extensively, as well as strengthening digital skills of the business leaders to ensure they would be able to drive change within their organisation. In the area of e-commerce, the government proposed again grants to leverage specialised private consultants, guidance on how to navigate regulation regarding e-commerce in the European Single Market, as well as referral for additional support for promotion of

SME internationalisation using digital tools, in cooperation with the Ministry of Foreign Affairs. The budget initially allocated was of DKK 10 million for 2018, DKK 20 million in 2019 and DKK 25 million in 2020-2021.

Then when COVID-19 hit in 2020, the government dedicated additional resources to support the digitalisation of SMEs. The Danish government's recovery plan included DKK 65 million to be invested in a "SME Digitalisation and Exports programme" to be run by the Danish Business Agency (DBA). The initiative provides grants for co-financing purchases of software, as well as of consulting services to help integrate them in business operations (applicants served on a "first-come, first-served" basis). In the end in 2020 a total of 920 grants were given, exceeding the initial budget for a total of DKK 91 million. Given the high demand, the government decided to expand the programme.

Source: Denmark's Ministry of Industry, Business and Financial Affairs (2018), *Strategy for Denmark's digital growth*; *Denmark's COVID-19 recovery plan* (2020), https://fm.dk/nyheder/nyhedsarkiv/2021/april/dansk-genopretningsplan-skal-understoetteden-groenne-omstilling/; OECD (2021), *SME Digitalisation to Build Back Better*

Central Asian government could provide grants or loans to ensure that SMEs have the financial resources they need to integrate digital tools – which can also drive the formalisation of very small businesses. Providing direct financial incentives can help SMEs focus on the right investments. Also, it provides an incentive for very small businesses to formalise, as usually the basic requirement to receive a grant/loan is for the business to be officially registered – a feature of particular relevance in many Central Asian countries. As a concrete example, Canada launched in March 2022 its Digital Adoption Programme (Box 8), to help SMEs effectively assess their digital readiness and increase their online presence. Businesses need to be registered and have at least one employee to access the plan.

Box 8. Canada Digital Adoption Program (CDAP)

In March 2022, the Canadian Government launched the "Canada Digital Adoption Program". The program has a budget of CAD 4.1 billion, with CAD 1.4 billion invested in grants and advisory services to SMEs from the Government of Canada and the remaining CAD 2.6 billion in loans from the Business Development Bank of Canada (BDC) to help businesses cover the costs of integrating digital technologies in their business processes.

For smaller B2C businesses, including in services, the programme helps them adopt e-commerce technologies, with CAD 2 400 micro-grants for website development, search engine optimization, subscription fees for e-commerce platform, and social media advertising. The objective is to support up to 90 000 businesses. Moreover, the government helped to establish a network of service providers that could help businesses in their online operations, with a particular focus on creating employment opportunities for the young – supporting a total of 11 200 youth placements.

For SMEs that want to increase productivity, the "Boost your Business Technology" funding will be made available to up to 70 000 companies. This funding will be directed at the uptake of new software for CRM (Customer Relationship Management), ERP (Enterprise Resource Planning), network security software etc. The grant covers 90% of up to a maximum of CAD 15 000. The SMEs in the plan will have access also to a Digital Advisor Marketplace where to look for external consultants to help them in the transition. In addition, SMEs will also be able to apply for an interest-free loan of up to CAD 100 000 from the BDC.

Source: Government of Canada (2022), *Canada Digital Adoption Program*, https://ised-isde.canada.ca/site/canada-digital-adoption-program/en

It is crucial to help SMEs identify the best digital tools for their needs, and to develop or acquire the skills necessary to make the best use of them. Often before even considering the uptake of software to make operations more efficient, businesses need to be helped in understanding which specific software, among the many available, could actually facilitate their day-to-day operations. In the UK, the *Digital Boost* programme helps to match small businesses with a network of digital experts willing to offer 1:1 pro bono mentoring and directs them to training, webinars and courses to develop their digital skills.

Making SMEs ready for the new digital economy is an opportunity for Central Asian governments. Policies can play a pivotal role in allowing SMEs in Central Asia to benefit from the digital transition, in turn impacting productivity and employment of the business sector. But "one-size-fits-all" approaches to policy making in this area are not suggested; SMEs across sectors and sizes can leverage digital technologies, but they can do so according to their level of digital maturity and ambition. Box 9 suggests ten policy recommendations building on the data and policy experiences of OECD governments and beyond presented in this chapter.

Box 9. Policy recommendations for SME digitalisation in Central Asia

Facilitate access to digital infrastructure and services

- Ensure easier access to high-speed broadband infrastructure, both fixed and mobile, to SMEs across the country – with particular support for rural or remote areas.
- Strengthen coordination of public agencies at national, regional and local level to ensure that public support for SMEs digitalisation is coherent and comprehensive.
- Give access to clear, updated, and detailed information on national laws and regulations governing data access, management, and security, as well as digital international trade of goods and services (e.g., data protection and privacy, e-commerce).

Improve access to finance

- Provide targeted financial support to businesses to adopt digital tools and software (e.g., vouchers for uptake of software, grants to hire specialised consultants to help organisational change within the SMEs, interest-free loans for the acquisition of new technologies) – this can also have a positive effect on the formalisation of small businesses.
- Leverage e-government and public procurement to directly and indirectly incentivise the uptake of digital technologies by SMEs.
- Provide resources to increase ICT training of non-ICT staff within SMEs to reduce the gap with larger enterprises and facilitate skills development among SME employees.

Support the digital upskilling of employees and managers

- Help SMEs establish their online presence for e-commerce, helping to find experts and consultants to progress in website development, search engine optimisation, social media advertisement.
- Set up training programmes to enhance digital skills of entrepreneurs in SMEs to ensure they are aware of available opportunities and understand how to effectively drive change in their organisation.
- Organise "sparring" programmes involving SMEs at different levels of digitalisation, to allow more experienced entrepreneurs to share their knowledge with peers and facilitate their digital transition – possibly in cooperation with business associations and chambers of commerce.

- Promote the creation of a national network of digital experts and consultants to match SMEs with the right advisors to support them in their digital transition.

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