Digital Skills for Private Sector Competitiveness in Uzbekistan

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Foreword

The Government of Uzbekistan has recognised the importance of digitalisation in modernising the economy and promoting the well-being of citizens. The *Digital Uzbekistan 2030* strategy, adopted in October 2020, has set the course for the development of five priority areas in the country: digital infrastructure, digital economy, e-government, the national IT sector and IT education. The strategy has already contributed significantly to the development of e-government services and improved access to digital infrastructure across the country. However, limited public-sector understanding of the digital skills needs of the private sector and SMES' low digital uptake reduce the effectiveness of the government's digital transformation agenda.

For SMEs in particular, digitalisation has the potential to help overcome size-related barriers, spur growth and foster innovation. Yet their digital transition can be particularly challenging due to lack of resources and lack of familiarity with the potential benefits of digitalisation. Addressing gaps within the institutional framework and government support in place to assist firms in their digital journey could therefore increase Uzbekistan's economic potential. This is especially relevant now, as the country aims to foster the growth of a national IT sector and become an attractive location for business-process outsourcing. Improving digital framework conditions in the country could also encourage the relocation of foreign IT companies and professionals, which in turn could foster innovation and competitiveness.

An OECD-led public-private Working Group, co-chaired by the Strategic Reforms Agency (former Strategic Development Agency) of Uzbekistan, was created at the beginning of 2022 to help support the analytical work of the OECD and design relevant policy recommendations for the digital upskilling of firms in Uzbekistan. It has brought together representatives of government, public and non-governmental institutions, business associations, and the private sector.

This peer review note assesses the institutional framework in place, evaluates private-sector awareness of support available to firms that wish to digitalise (including tools and incentives in place to foster their digital uptake), and develops recommendations for further progress. The note was developed in consultation with the government, members of the Working Group, private companies, and development partners, and it has benefitted from the contributions of experts from Estonia, Korea, and the OECD Secretariat. The note will be discussed in the OECD Eurasia Competitiveness Roundtable, following which it will be revised for publication.

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Abbreviations and acronyms

ADB	Asian Development Bank
BPO	Business Process Outsourcing
CERR	Centre for Economic Research and Reform
CIS	Commonwealth of Independent States
CRM	Customer Relationship Management
DECA	Digital Ecosystem Country Assessment
EBRD	European Bank for Reconstruction and Development
ECP	Eurasia Competitiveness Programme
EU	European Union
FDI	Foreign Direct Investment
FOB	Free On Board
G2B	Government to Business
GDP	Gross Domestic Product
GNI	Gross National Income
ICT	Information and Communication Technology
IMF	International Monetary Fund
IP	Intellectual Property
IT	Information Technology
ITU	International Telecommunication Union
KPI	Key Performance Indicator
MDT	Ministry of Digital Technologies
MOOC	Massive Open Online Course
MSME	Micro, Small and Medium Sized Enterprise
MSS	Ministry of SMEs and Start-Ups
NDS	National Digital Strategy
OECD	Organisation for Economic Co-operation and Development
OSS	One-Stop-Shop
PPD	Public-Private Dialogue
PPP	Purchasing Power Parity
SME	Small and Medium Sized Enterprise
SOE	State-Owned Enterprise
STEM	Science, Technology, Engineering and Mathematics
UAE	United Arab Emirates
UN	United Nations
UNDP	United Nations Development Programme

USAID	United States Agency for International Development
UZS	Uzbek Som (currency)
WG	Working Group

Executive summary

This OECD peer review seeks to support the government in fostering the private sector's digital transformation, with a specific focus on the provision of digital skills. Three overarching dimensions of digital upskilling are examined within the report: the institutional framework; firms' awareness of digitalisation and required competences; and digital upskilling support for firms.

The COVID-19 pandemic has highlighted the necessity of an inclusive digitalisation strategy to foster private sector growth

Uzbekistan embarked on an ambitious reform agenda in late 2016, aimed at liberalising the economy, promoting inclusive prosperity and furthering Uzbekistan's integration into the international economy. While the country has already achieved substantial progress in its transition, deeper structural reforms are needed to reduce the dominance of state-owned enterprises (SOEs) in the economy and foster private sector development.

Recognising the importance of digitalisation as part of this transition, the government in 2020 adopted the *Digital Uzbekistan 2030* strategy, which aims to integrate digital technologies in public services, infrastructure, the economy and education. While access to broadband infrastructure and e-government services had already markedly improved in Uzbekistan prior to the COVID-19 pandemic, the pandemic reinforced the need to accelerate the country's digital transformation, as businesses, the government and society rapidly moved online. Nevertheless, the aftermath of the pandemic has revealed that the private sector has not yet fully harnessed the opportunities arising from the government's digital strategy, as it still lacks the institutional framework, awareness and skills to do so.

Augmenting digital skills can foster SME productivity and growth in Uzbekistan

While digitalisation can contribute to private-sector development, government support is needed for SMEs to overcome barriers to digitalisation, such as lack of information and awareness, lack of digital skills, and insufficient resources. In particular, the lack of digital skills, among both managers and employees, appears a significant challenge to most SMEs.

This report presents an analysis of the elements in the legal and policy framework that hold back the digital upskilling of businesses in Uzbekistan. Based on recent OECD work, it assesses challenges and develops recommendations to support the digital uptake of the private sector in three areas:

- the institutional framework to support the acquisition of digital skills by the private sector;
- private-sector awareness of the benefits associated with going digital; and
- the public services and incentives needed to promote firms' digital upskilling.

Developing a supportive institutional framework helps resolve skills mismatches on the labour market

The entry into force of the decree on the *Digital Uzbekistan 2030* in 2020 formalised a digital strategy with a range of government actors involved to develop and introduce information and communication technologies in the economy. However, the institutional framework in place to implement the strategy does not capture the private sector's digital needs, with relevant stakeholders such as the Ministry of Public Education currently missing, as well as mandates and roles that sometimes overlap between agencies. Moreover, SMEs' digital upskilling is not subject to concrete, quantified objectives.

Clearly defining mandates and integrating additional public and private actors would serve to clarify the institutional set-up and ensure the involvement of stakeholders who could add relevant inputs into the strategy. In particular, involving industry representatives would make it easier to uncover the types and levels of digital skills required by different sectors and the skills gaps that exist, while collaborating more closely with the private sector and educational stakeholders could ensure that future labour market needs are met.

Data collection and greater awareness of digitalisation benefits could improve the effectiveness of government support

Uzbek firms' digital adoption has been increasing in recent years but remains lower than regional peers. Digital skills, in particular, seem to lag, suggesting that businesses are not aware of the most suitable tools required for their operations. This could be explained by the fact that there are few data available on firms' digital literacy, reducing the effectiveness of initiatives to address private sector's needs. Lack of data also hampers opportunities to forecast the evolving needs of the labour market.

Improving communication on training already available, as well as providing digital skills assessments tools, would allow firms to identify suitable digital solutions and better inform their decision to invest in skills development. At the same time, the government should consider collecting data on private sector trends in digitalisation to anticipate labour market trends and adapt policy-making accordingly. The private sector should be involved in, and informed of, these various initiatives to ensure that policies address concrete needs.

Developing one-stop-shops and expanding incentives can help address remaining barriers to digitalisation

The government has been fostering firms' digital upskilling through the provision of e-government services and the introduction of dedicated financial incentives, while focusing in particular on the development of national IT and BPO sectors. Yet the current digital tool provision remains scattered across agencies, making it difficult for SMEs to be aware of the services on offer, while incentives to digitalise are largely limited to the two prioritised sectors. OECD interviews also found that regulatory barriers pertaining to personal data protection discourage firms from investing in their digital transformation.

Developing a digital one-stop-shop would allow firms to access digital skills support and tools in a centralised location. Existing financial and non-financial incentives to upskill could be expanded and applied to more sectors to reduce the costs associated with SMEs' digital investments. When designing such incentives, policy-makers should also be mindful of the digital gender divide to ensure the digital transformation stays inclusive. In parallel, efforts to equip civil servants with digital skills should be pursued to ensure the public sector keeps abreast with technological developments and can provide adequate support to firms. Finally, addressing regulatory barriers in the personal data protection sphere will help alleviate firms' concerns when investing in their digital transformation.

1 Setting the scene

Digitalisation presents an opportunity for Uzbekistan to continue and complement its reforms to enlarge the private sector and render the economy more competitive. While the government recognises these benefits, digital uptake and skills are low. Addressing the lack of digital competencies is a significant barrier for Uzbekistan to enjoy the opportunities offered by digitalisation.

Introduction

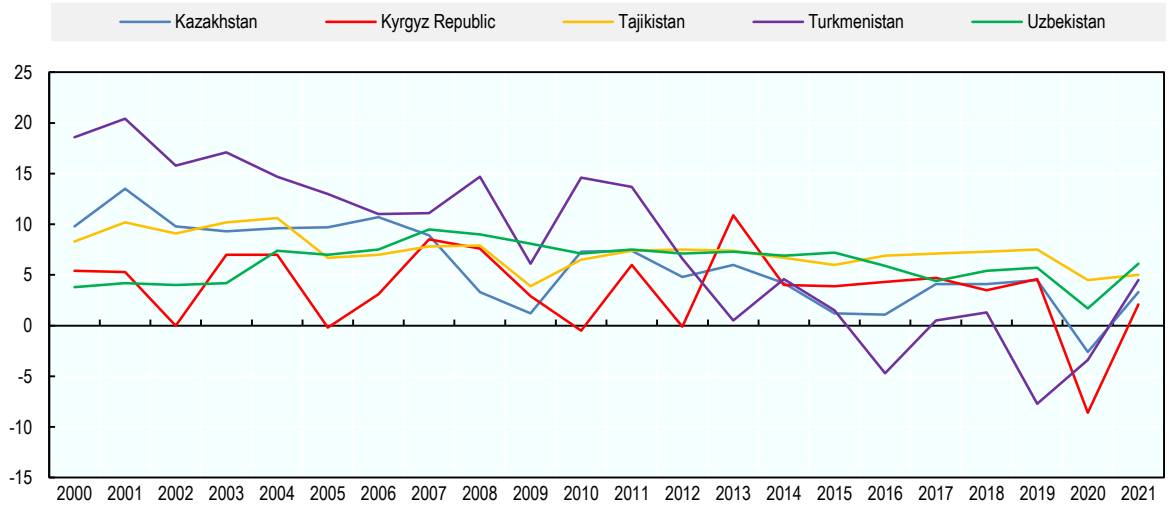
Since 2019, the government of Uzbekistan has launched commendable efforts to support the economy's digital transformation. These initiatives fit within the wider range of reforms undertaken since 2017 and serve to increase the resilience of the economy. While the country has made significant progress in terms of internet access, quality and affordability, the digital uptake among firms remains low. In particular, the lack of digital skills is a limiting factor affecting the digital transformation of firms. This is due to gaps in the institutional framework to support the digital uptake among SMEs, a lack of awareness among firms regarding the benefits offered by their digital transformation, and limited digital skills among employees and employers. This peer-review note sets short-, medium-, and long-term policy recommendations for each of these dimensions.

Uzbekistan has been reforming its economy to boost productivity and develop the private sector

Continued reforms have supported strong economic growth, even during the pandemic

Uzbekistan achieved considerable progress in transforming its economy and society since it set off on a path of wide-ranging reforms in 2017, enjoying continued high economic growth in the ensuing years (Figure 1.1). Associated measures addressed market inefficiencies and SME competitiveness, price liberalisation, the removal of regulations on businesses and trade, and increased transparency (OECD, 2022[1]) (World Bank, 2022[2]). Uzbekistan weathered the COVID-19 pandemic relatively well (OECD, 2022[1]), as improvements to the legal and operational environment for businesses have increased the contribution of the private sector to gross domestic product (GDP), reduced barriers to trade, and enhanced foreign direct investment (FDI) (World Bank, 2022[3]). It was one of the few countries across the world to avoid recession in 2020, even if growth was lower than previous years. 2021 showed a strong rebound, with a growth rate of 6.1% (IMF, 2022[4]). Despite risks to growth with the fallout from Russia's invasion of Ukraine, growth in 2022 is expected to reach 5.3% in 2022 (World Bank, 2022[5]).

Figure 1.1. Real GDP growth (annual % change)



Source: (IMF, 2022[4])

However, the private sector remains underdeveloped

The pandemic has exacerbated structural weaknesses in relation to Uzbekistan's reliance on revenues from commodities and the persistently large presence of the state in the economy. Despite recent reforms to diversify production, exports and employment, and a broader industrial base than those of its Central Asian neighbours, Uzbekistan remains dependent on natural resource exports and therefore vulnerable to external supply and demand shocks and volatile prices. Primary sources, gold and low value-added goods, such as energy, oil and chemical products, and metals represented about 65% of total exports in 2020, and 56% in 2021 (The State Committee of the Republic of Uzbekistan on Statistics, 2022[6]). Gold alone accounted for 34.5% of good exports in 2016 to 2020. Despite recent reforms (Lex-UZ, 2021[7]), small and medium enterprises (SMEs) remain below potential within the economy. The comparative advantage areas are dominated by state-owned enterprises (SOEs), which are shielded from private-sector competition. The state directs investments to SOEs in high-growth but less highly job-creating activities. As a result, Uzbekistan's rate of new firm creation is among the lowest compared with regional and income-level peers, SMEs remain disproportionately small, and unemployment is relatively high (World Bank, 2022[2]).

The same holds true for SME exports: although the government has been implementing reforms to foster exports, the internationalisation opportunities of Uzbek SMEs are not fully realised (OECD, 2021[8]). As a consequence, SMEs remain restrained in their growth potential. Institutional barriers, regulatory compliance, limited financial skills, low digitalisation, constrained access to finance, and insufficient human capital prevent them from becoming more productive and competitive (World Bank, 2022[2]). This impedes SMEs' ability to create diversified and higher value-added jobs, such as in the ICT sector, where employees earn, on average, 64-83% more than the average nominal accrued wages in the country (The State Committee of the Republic of Uzbekistan on Statistics, 2022[9]). SMEs have also been the hardest hit by the pandemic and remain vulnerable in the recovery phase; their share in GDP dropped from 56.0% in 2019 to 54.9% in 2021, and their shares in total exports and imports from 27.0% to 22.3% and 61.6% to 48.7%, respectively (The State Committee of the Republic of Uzbekistan on Statistics, 2022[10]).

The development of the digital economy provides an opportunity to support private-sector competitiveness and diversification

Digitalisation can support diversification and resilience

Digital technologies represent an opportunity for firms of all sizes to increase productivity and competitiveness, lower prices and provide better-quality goods and services. However, their adoption and integration into business processes require firms to undergo a deep transformation, involving major cultural changes. The digital transition can be particularly challenging for SMEs, as they are often unaware of the benefits digitalisation can bring and their resources, both financial and human, are limited compared to those of larger firms.

Technology uptake requires a mind-set and skills that many SMEs lack, in both OECD and Partner countries. In particular, the evidence suggests that business uptake of digital tools is associated with employees' ICT skills (Box 1.1). However, SMEs in general experience digital knowledge gaps, with lower digital literacy levels in the workforce. Acquisition and basic usage of digital technology are the first steps of digital adoption, which also demand strategic decisions for effectively integrating the technology within the business model and processes (OECD, 2021[11]).

Box 1.1. What are digital skills?

Digital skills are lacking among adults in many OECD countries, as on average 26% of them do not possess any digital skills at all. Fostering those skills from the beginning of formal education and following through with lifelong learning opportunities can play a vital role in preparing societies for the digital transformation. Importantly, addressing gender gaps in so-called "STEM" studies (science, technology, engineering and mathematics) would also help, as women account for less than 20% of entrants into tertiary-level computer science programmes in OECD countries.

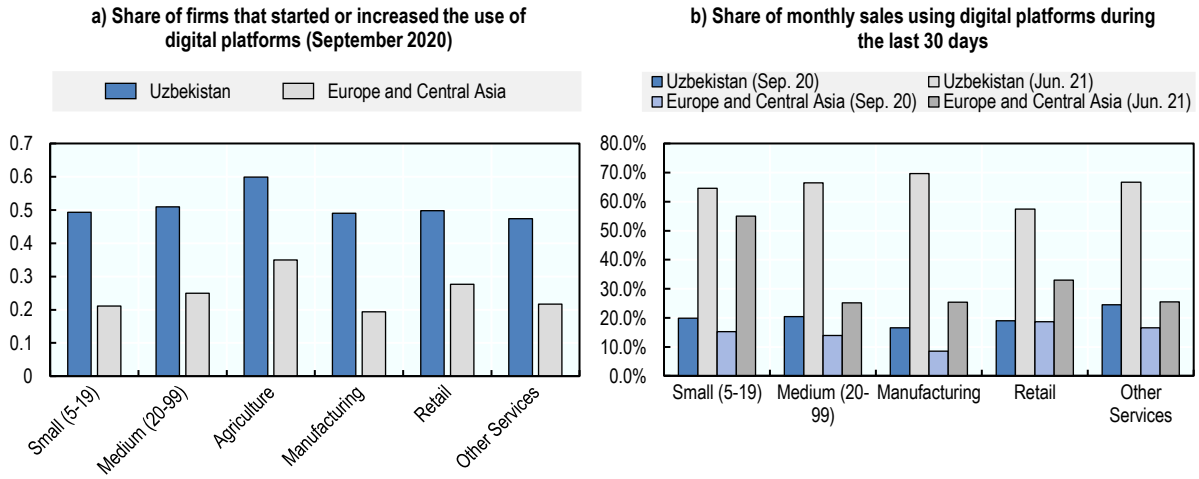
To design policies that bridge the digital divide and prepare for the digital transformation, policy makers should understand which types of skills help people get the most out of digital technologies, enable their diffusion and increase their impact on productivity. In this regard, four main categories emerge:

- **foundation skills** such as literacy and numeracy, enabling the development and acquisition of higher order cognitive skills needed for the digital economy, which help individuals navigate through an environment of fast and ever-changing technologies, as well as increasingly long working lives;
- **generic digital skills** for all workers, related to the use of digital technologies for professional purposes such as accessing information online or using software;
- **advanced digital skills** for digital specialists (e.g., skills needed for the production of IT products and services such as programming, developing applications, managing networks); and
- **complementary skills** to work in a digitalised environment, including cognitive skills, interpersonal skills (information processing, self-direction, problem solving, communication), as well as managerial and organisational skills.

Source: (OECD, 2021[12])

Since Uzbekistan is a double-landlocked country, digitalisation offers particularly important opportunities to overcome geographic challenges. In 2020, the country adopted a comprehensive National Digital Strategy (NDS), which recognises the benefits of digitalisation and the ways it could support other long-term development priorities. The COVID-19 pandemic provided a new impetus for the digitalisation of both the state and the economy. Uzbekistan had the second-highest share of firms reporting that they started or increased their use of digital platforms (51.2%) among 79 economies analysed in 2021 (Figure 1.2) (World Bank, 2022[2]).The share of monthly sales using digital platforms – already above the regional average – further increased (Figure 1.2). Uzbekistan can build upon the digital solutions already implemented before, and expanded during, the pandemic to build a coherent approach to digitalisation which supports all other reform dimensions. Russia's invasion of Ukraine led hundreds of thousands of Russians and Belarusians to leave their home countries (EUAA, 2022[13]). Many of those who left are active in IT, frequently looking for Russian-speaking host countries. This has provided an opportunity for Uzbekistan to benefit from their expertise and catalyse knowledge transfer. To attract IT specialists, the government recently introduced a relocation programme providing attractive benefits, including a 3-year IT visa and both financial and non-financial incentives (IT-VISA, 2022[14]).

Figure 1.2. Use of digital platforms during COVID-19



Note: Panel A - Question asked was "Has this establishment started using or increased the use of internet, online social media, specialised apps, or digital platforms in response to COVID-19 outbreak?" No micro firms included. Agricultural data is available only for the Kyrgyz Republic (August), Tajikistan (August), and Türkiye (June) in addition to Uzbekistan (September) .
Panel B - Question asked was "What is the share of sales of this establishment using external digital platforms, apps, or own website during the last 30 days?" No micro firms included. Agricultural data removed from graph due to limited availability: only Türkiye (June, 4.67%) and Uzbekistan (September, 67.22%) have data for 2021.
Source: (World Bank, 2021[15]) (World Bank, 2022[16])

Private-sector digitalisation can support other dimensions of the reform agenda

Looking to the future, digitalisation can also help address the four major challenges identified by Uzbekistan and the EU to support long-term growth and regional integration (EEAS, 2019[17]). A coherent approach to digitalisation can underpin all its reform dimensions:

- Trade policies will require harmonised rules with multilateral trade systems and simplified customs procedures and co-operation. Digitalisation can reduce international trade costs, facilitate the co-ordination of global value chains, diffuse ideas and technologies, and connect a greater number of businesses and consumers.
- Digital technologies can pose a challenge due to their fast-paced development, often moving ahead of regulatory frameworks. Continued improvements to the legal environment for business and investment are needed to further simplify and enforce regulatory frameworks, as well as to ease the daily operations of SMEs. E-government and digitalisation of public services help mitigate digital challenges and improve the operating environment of the private sector.
- Uzbekistan needs to start transitioning to a greener growth model, mobilising private investment to enhance lower-carbon energy generation, more energy-efficient agricultural and industrial production, and better water and waste management. The digital transition will also contribute to green objectives, with synergies to create a smart, circular economy, for instance.

Across all these dimensions, additional investment into digital infrastructure, interoperable and harmonised IT systems, and digital upskilling programmes will be important.

The government recognises the importance of digitalisation for economic growth

Uzbekistan has been investing heavily in its technology ecosystem in recent years, driving the creation and delivery of IT products and services, internet access, and mobile communications (Kutbitdinov and Ismailov, 2021[18]). The government has simultaneously been working to expand digital

access, especially to rural areas: USD 2.5bn in digital infrastructure investment was announced in early 2021 and the share of households with access to the internet had already increased markedly in 2019 (OECD, 2022[1]; The Tashkent Times, 2021[19]). The National Digital Strategy (NDS), "Digital Uzbekistan-2030", approved by a presidential decree in October 2020 and under the Ministry of Digital Technologies (MDT), aims for the active development of the digital economy, as well as the widespread introduction of modern information and communication technologies (Box 1.2). The plan to implement the strategy for 2020-22 encompassed four overarching tasks centring on the development of e-government, digital industry, digital education, and digital infrastructure development. Priority areas for IT education include digital skills for all population strata, within public administration, and within educational institutions. Further implementation plans will be updated every two years.

Box 1.2. Digital Uzbekistan-2030

Digital Uzbekistan-2030 aims to actively develop Uzbekistan's digital economy. Special attention is given to public administration, education, healthcare and agriculture. The road map for the implementation of the *Digital Uzbekistan 2030* strategy for 2020-2022 incorporates these dimensions, with individual actions, objectives, and targets set out for each of them. From 2023, the NDS will be implemented on the basis of two-year programmes approved by the Cabinet of Ministers.

These programs are based on the results achieved, target indicators, and the development of digital technologies for each preceding and upcoming period. The dimensions to develop during the 2020-2022 period with example initiatives are the:

- development of **electronic government**:
  - E-ID cards for employees of state bodies
  - An open data portal for procurement, registration, and statistics
  - E-payment systems for all mandatory payments
- development of **digital industry**:
  - Technopark residency status and benefits for firms in IT training, software, hardware, robotics, Internet export services, data storage, data processing, etc.
  - Digital transformation of commercial banks
- development of **digital education**:
  - Compensate up to 50% of the cost of obtaining international IT certificates in high-demand areas for individuals
  - Open digital training centres in each district and city
  - Gradually open more than 200 specialised schools providing training in computer science and IT subjects
- development of **digital infrastructure**:
  - Connect every settlement to the Internet with a data transfer speed of at least 10 Mbit/s
  - Provide high-speed Internet access to all popular tourist destinations

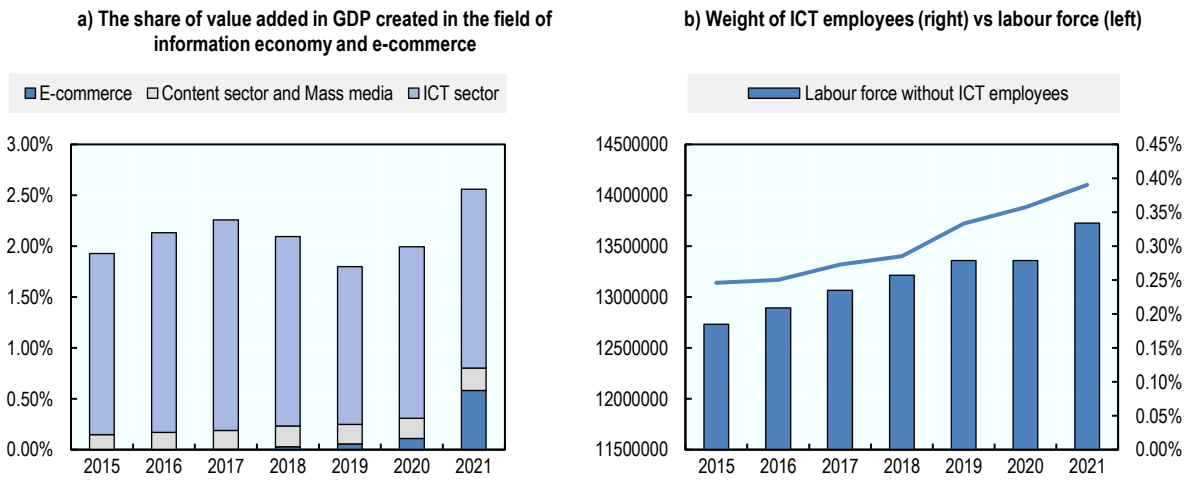
At the time of writing, the implementation of over half of the 400 priority projects had begun.

Source: OECD analysis, (Lex-UZ, 2020[20])

Digital technologies have spread rapidly in recent years and found new applications in many spheres, including education, communications, industry, and government, though the digital sector's overall size remains limited. If the share of the digital economy in GDP remains very low, at about 2% in 2020, compared to 3.9% in Kazakhstan and 8% in Korea (though the digital economy is not defined for the latter two), it is an expanding sector with steadily increasing employment since 2016, including a rise of 6% in 2020, when the labour force participation as a whole shrank by 1% (Figure 1.3) (The State Committee of the Republic of Uzbekistan on Statistics, 2022[9]) (Jurayevich and Bulturbayevich, 2020[21]) (The State Committee of the Republic of Uzbekistan on Statistics, 2022[10]). The government has set an ambitious target for the sector, aiming to triple the share of ICT services in GDP by 2023, bringing ICT exports to 300M USD (Lex-UZ, 2020[22]).

In addition, Uzbekistan has made significant progress with respect to internet access, quality and affordability: 2G or higher coverage already reached 98% of the population in 2015, while recent improvements to the mobile network mean that 90% of the population had access to 3G (54.9% had access to 4G) in 2020, compared to 47% in 2015 (ITU, 2021[23]). Internet access also became cheaper, as prepaid mobile tariffs decreased from 3.94% of monthly Gross National Income (GNI) per capita in 2017 to 1.84% in 2021, while fixed broadband costs declined from 3.04% to 2.13% during the same period[1]. Nevertheless, gaps in internet speed, bandwidth, and user costs continue to constrain growth in many sectors (World Bank, 2022[2]). Uzbekistan still needs to make significant progress if the government is to achieve its stated goals, including high-quality and inexpensive internet and mobile communications, and to reduce the digital divide between cities and villages in particular.

Figure 1.3. Size of the digital economy



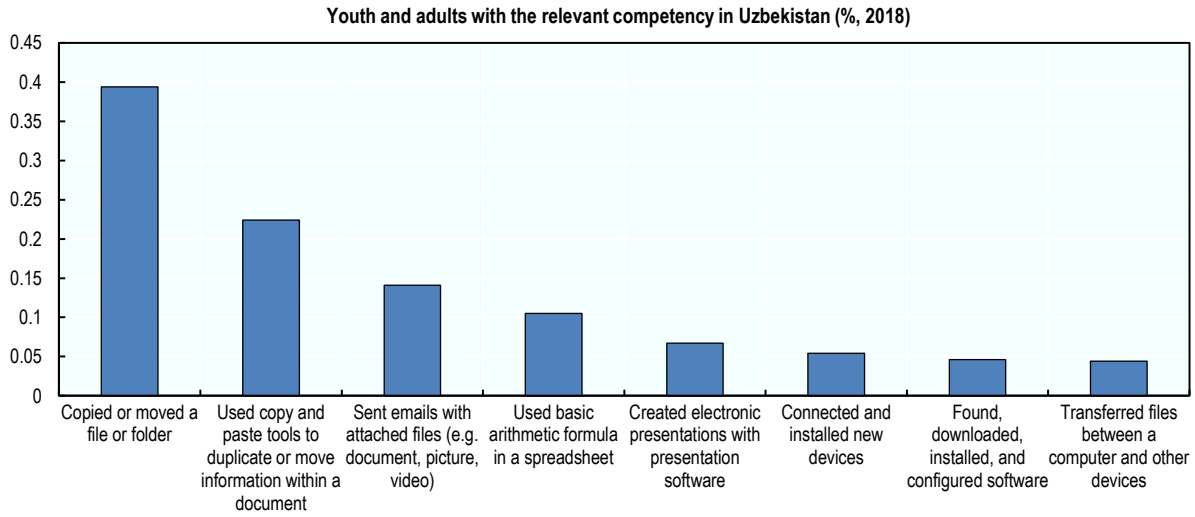
Source: (The State Committee of the Republic of Uzbekistan on Statistics, 2022[24])

Even so, the digital uptake of the private sector remains slow, in particular in relation to digital skills

Uzbek SMEs seem to lag behind larger firms in their adoption of digital technologies: adoption remains to a large extent confined to basic services. Only 26% of formal private firms in Uzbekistan reported that they have their own websites, compared to a Europe and Central Asia average of 63% (World Bank, 2022[2]). This suggests that the private sector has been unable to harness the opportunities arising from increased digitalisation to raise demand and productivity. This trend seems to be largely correlated with persistently low levels of digital skills in the population, with only 20% of the population having basic ICT skills, and 7% standard ICT skills in 2018[2]. This compared to 43% and 32%, respectively, in OECD

countries (in 2015) and 24.3% and 27.5% in Kazakhstan (in 2020) (ITU, 2021[23]). The relatively low level of digital literacy in Uzbekistan suggests that businesses are not necessarily aware of the most suitable digital tools and skills required for their activity. Yet World Bank data indicate that the adoption of existing knowledge embedded in foreign technology is higher in Uzbekistan than the average for the Europe and Central Asia region: 20.8% of private manufacturers report using licensed foreign technology against 16.5% for the region on average (World Bank, 2022[2]). With the right incentives and training in place, there is a potential for further technology adoption by Uzbek firms.

Figure 1.4. Digital competencies in Uzbekistan



Source: (UNECE, 2018[25])

Addressing private-sector digital skills gaps can enhance productivity, increase competitiveness and promote inclusion

Improved awareness and provision of digital skills to businesses can support the digital transformation of firms

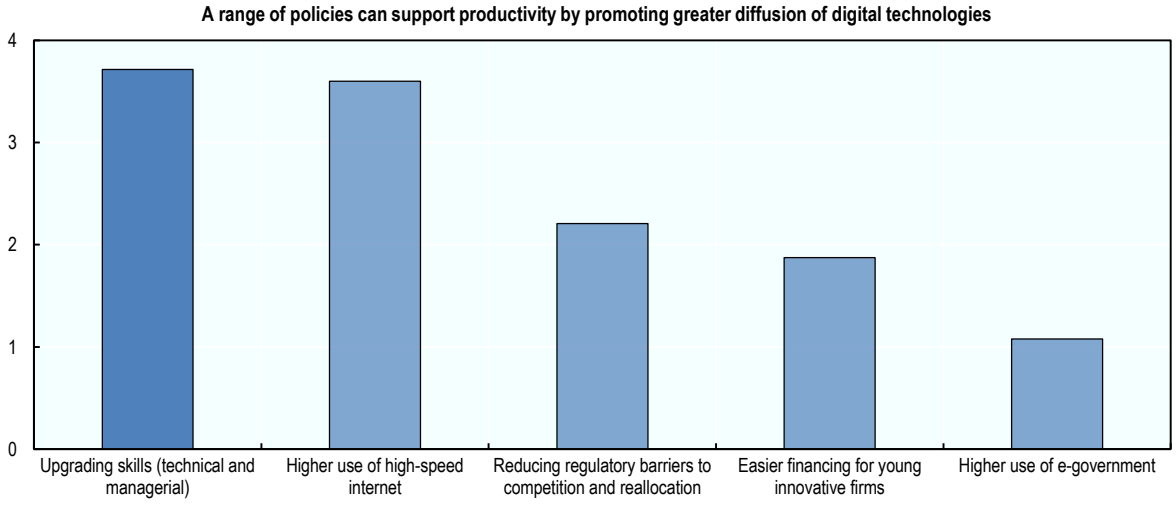
This OECD peer-review aims to support the government in fostering the private sector's digital transformation in an inclusive manner, with a specific focus on the provision of digital skills. The focus on digital skills responds to a request from Uzbekistan's government, as they seem to be particularly lacking among Uzbek firms, and augmenting them will enable job creation and the absorption of a fast-growing labour force. Compared with its CIS peers, Uzbekistan achieves the lowest score when it comes to firms' ICT usage and skills (Dutta and Lanvin, 2019[26]). In addition, data show that Uzbek firms invest less in skill development than their regional peers: only 17% of Uzbek firms offered formal training to their employees, against 33% in the Europe and Central Asia region in 2019 (World Bank, 2019[27]). This figure dropped to 13% for small firms in Uzbekistan. Smaller firms in particular struggle to train and retain existing employees and managers or attract new ones (OECD, 2021[28]), showing the need to focus on both digital upskilling and smaller and medium-sized firms specifically. In addition, an inclusive digital transformation also requires attention to the issue of gender equality, as Uzbek women and girls are disadvantaged at home when financial choices are made about access to the internet, digital literacy and skills-improvement programmes (USAID, 2022[29]), and IT and tech are stereotyped as areas of interest to men.

Three main dimensions related to upskilling are examined in the analysis: (i) the institutional framework in place to support the digital uptake of firms, (ii) firms' awareness of business support services for digital skills, and (iii) the development of the digital skills toolbox offer for firms. In collaboration with the government, the private sector, and other international organisations, this report identifies barriers to progress on these dimensions and further areas for reform (see below) and offers policy recommendations to address gaps in firms' digital literacy and usage. Dialogue between the OECD, the Government of Uzbekistan, the private sector, and international partners was held through working group meetings and consultations, during which recommendations were supplemented by relevant case studies from OECD and Partner countries. This report and its recommendations will be peer reviewed in the OECD Eurasia Competitiveness Roundtable, following which they will be revised for final publication.

Barrier 1: The institutional and policy framework could be more supportive of SMEs' digital uptake

Smaller firms tend to be more reliant on the broader business environment and the quality of public services than their larger counterparts. They are disproportionately affected by frequent policy changes and gaps in the implementation of reforms (OECD, 2021[30]), while they also tend to be less aware of support programmes that they could access at low or no cost to support their digital transformation. Governments therefore have a central role to play to ensure the adequacy of policy implementation, co-ordinate actors in the digital ecosystem, and facilitate firms' access to a reliable network of certified digital support services (OECD, 2021[12]; OECD, 2021[11]). Over recent years, Uzbekistan's policies have promoted an inclusive digital transformation by ensuring that the framework conditions are in place. Framework conditions involve a range of priorities, chief among which are upgrading digital skills by enhancing initial education and training systems (Figure 1.5). However, despite its importance, digital upskilling of the private sector is not a fully integrated part of Uzbekistan's National Digital Strategy. There are no objectives or targets in place to upskill within the private sector at large or within specific industries crucial to economic growth. Digital skills initiatives for the population at large and for the public administration do exist, but they are not co-ordinated in a structured manner, nor do they involve all relevant stakeholders. This reduces awareness of existing services, limits uptake of tools, increases inefficiencies through duplication of efforts, and reduces upskilling effectiveness as geographic and sectoral target groups are left out.

Figure 1.5. Productivity factors



Note: Effect on multifactor productivity of the average EU firm of closing half of the gap with best-performing EU countries in a range of structural and policy areas, after 3 years
Source: (OECD, 2019[31])

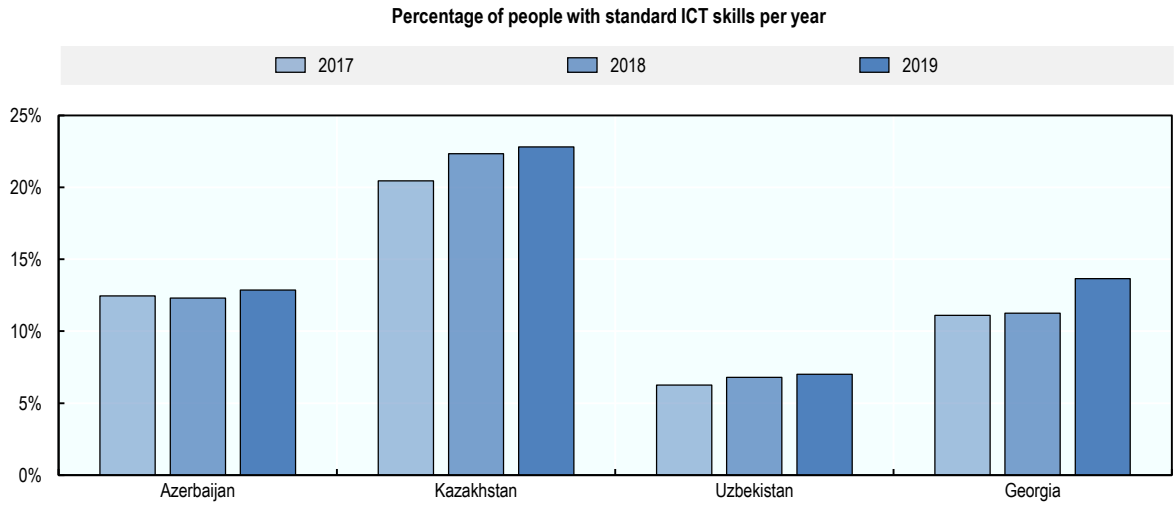
Barrier 2: Uzbek SMEs lack knowledge of the opportunities offered by the digital transformation

Smaller firms in Uzbekistan lack information, remain mostly unaware of the benefits of digitalisation, and lack the digital skills to grow their business. SMEs typically face greater difficulties in attracting and retaining skilled employees. They tend to lack the capacity and networks to identify and access talent, and offer fewer training opportunities due to constrained internal resources to organise such initiatives. Smaller firms are often unaware that enhanced digital skills can provide productivity boosts and act as a way to upskill and retain employees. The government – usually through SME agencies or Chambers of Commerce – can support firms in acquiring the relevant digital skills through the provision of dedicated trainings and digital self-assessment tools, ensuring the quality of both, and raising awareness of the opportunities provided by digitalisation (OECD, 2021[12]) (OECD, 2021[28]). Although Uzbekistan has made efforts to digitalise its economy, policy attention and measures have not addressed the specific needs of the private sector. The country is behind regional peers on digital skills (ITU, 2021[23]). Firms seem unaware of the potential benefits offered by digitalisation, making it difficult to exploit existing upskilling initiatives or conduct and take trainings themselves. Managers and entrepreneurs often lack the skills to understand the digital maturity of their businesses, nor do they possess the means to pursue digitalisation opportunities.

Barrier 3: Uzbek SMEs lack digital and complementary skills

ICT use and knowledge benefits both employees and firms, though digital skills shortages reduce the overall benefits of digitalisation. Firms experiencing shortages tend to be less profitable and lack resources to hire scarce skilled workers (Sorbe et al., 2019[32]). In contrast, employees tend to benefit from higher wages when using ICT skills (OECD, 2015[33]), and upgrading skills offers among the highest returns in terms of firm productivity (OECD, 2019[31]). It is vital for individual firms and the economy at large that employees are sufficiently skilled in digital and complementary competencies, though evidence points to Uzbek firms underinvesting in such training. The *Digital Uzbekistan 2030* strategy sets objectives to upgrade the level of digital infrastructure and public sector skills by 2030. Digital infrastructure is improving, but a rural-urban divide exists, which aggravates digital inequality within the country. On skills, the strategy plans for the provision of targeted trainings on digital topics to young people and civil servants. E-government helps individuals and firms digitalise by compelling public administration to move online, though not all services are available and not everyone knows how to use them. Firms receive only limited incentives to digitalise unless they incorporate and become IT Park residents. The advantages bestowed by this residency, such as tax benefits and training opportunities, put smaller firms and sole proprietors who are not members or outside the IT sector at a disadvantage. The trainings offered by the government online target all SMEs, though their breadth and depth may be insufficient to deliver the necessary skills improvements, coming from a relatively low base (ITU, 2021[23]) (USAID, 2022[29]).

Figure 1.6. Individuals with standard ICT skills



Source: (ITU, 2021[23])

References

Broadband Commission (2018), *Achieving the 2025 Advocacy Targets*, https://www.broadbandcommission.org/advocacy-targets. [34]

Dutta, S. and B. Lanvin (2019), *Network Readiness Around the World: Focus on Taiwan and Uzbekistan*, Portulans Institute, https://networkreadinessindex.org/wp-content/uploads/2020/04/Uzbekistan.pdf. [26]

EEAS (2019), *Central Asia: Council adopts a new EU strategy for the region*, https://www.consilium.europa.eu/en/press/press-releases/2019/06/17/central-asia-council-adopts-a-new-eu-strategy-for-the-region/ (accessed on 14 April 2022). [17]

EUAA (2022), *Russia as a Country of Origin*, https://euaa.europa.eu/sites/default/files/publications/2022-06/2022_06_CIR_Russia_Origin_EN.pdf. [13]

IMF (2022), *IMF Data (database)*, https://data.imf.org/regular.aspx?key=60564262 (accessed on 9 March 2022). [4]

ITU (2021), *World Telecommunication/ICT Indicators Database 2021 (database)*, https://www.itu.int/hub/publication/d-ind-wtid-ol-2021/ (accessed on 16 June 2022). [23]

IT-VISA (2022), *IT Visa in Uzbekistan - relocation program*, https://itvisa.uz/en (accessed on 20 June 2022). [14]

Jurayevich, M. and M. Bulturbayevich (2020), "The Impact of the Digital Economy on Economic Growth", *International Journal of Business, Law, and Education*, Vol. 01/01, pp. 4-7, https://ijble.com/index.php/journal/article/download/2/4. [21]

Kutbitdinov, Y. and B. Ismailov (2021), *Development of the digital economy in Uzbekistan*, https://review.uz/en/post/obzor-centra-ekonomicheskix-issledovaniy-i-reform-razvitie-cifrovoy-ekonomiki-v-uzbekistane-za-chetre-goda (accessed on 9 March 2022). [18]

Lex-UZ (2021), *On approval of the strategy for managing and reforming of state-owned enterprises for 2021-2025*, https://lex.uz/en/docs/5351244 (accessed on 4 April 2022). [7]

Lex-UZ (2020), *About measures for widespread introduction of digital economy and the electronic government*, https://lex.uz/docs/4800661 (accessed on 15 March 2022). [22]

Lex-UZ (2020), *Approval of the Digital Uzbekistan 2030 Strategy and measures of its effective implementation (ОБ УТВЕРЖДЕНИИ СТРАТЕГИИ «ЦИФРОВОЙ УЗБЕКИСТАН-2030» И МЕРАХ ПО ЕЕ ЭФФЕКТИВНОЙ РЕАЛИЗАЦИИ*, https://lex.uz/ru/docs/5031048 (accessed on 6 September 2022). [20]

OECD (2022), *Boosting SME Internationalisation in Uzbekistan through Better Export Promotion Policies in Uzbekistan*, OECD Publishing, Paris, https://www.oecd.org/eurasia/competitiveness-programme/central-asia/Uzbekistan_Peer_review_note_dec2017_final.pdf. [1]

OECD (2021), *Beyond COVID-19: Advancing Digital Business Transformation in the Eastern Partner Countries*, OECD Publishing, Paris, https://www.oecd.org/eurasia/digitalisation.htm. [12]

OECD (2021), *Improving the Legal Environment for Business and Investment in Central Asia*, OECD Publishing, Paris, https://www.oecd.org/eurasia/Improving-LEB-CA-ENG%2020%20April.pdf. [30]

OECD (2021), *Monitoring Review Uzbekistan*, OECD Publishing, Paris, https://www.oecd.org/eurasia/Monitoring_Review_Uzbekistan_ENG.pdf. [8]

OECD (2021), "SME digitalisation to "Build Back Better": Digital for SMEs (D4SME) policy paper", *OECD SME and Entrepreneurship Papers*, No. 31, OECD Publishing, Paris, https://doi.org/10.1787/50193089-en. [11]

OECD (2021), *The Digital Transformation of SMEs*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://doi.org/10.1787/bdb9256a-en. [28]

OECD (2019), *Digitalisation and productivity: A story of complementarities*, OECD Publishing, Paris, https://www.oecd.org/economy/growth/digitalisation-productivity-and-inclusiveness/. [31]

OECD (2015), *Does having digital skills really pay off?*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/does-having-digital-skills-really-pay-off_5js023r0wj9v.pdf. [33]

Sorbe, S. et al. (2019), "Digital Dividend: Policies to Harness the Productivity Potential of Digital Technologies", *OECD Economic Policy Papers* 26, https://doi.org/10.1787/273176bc-en. [32]

The State Committee of the Republic of Uzbekistan on Statistics (2022), *Digital Economy (database)*, https://stat.uz/en/official-statistics/tsifrovaya-ekonomika-eng (accessed on 16 March 2022). [9]

The State Committee of the Republic of Uzbekistan on Statistics (2022), *Labor Market (database)*, https://stat.uz/en/official-statistics/labor-market (accessed on 11 March 2022). [24]

The State Committee of the Republic of Uzbekistan on Statistics (2022), *Merchandise Trade (database)*, https://stat.uz/en/official-statistics/merchandise-trade (accessed on 22 March 2022). [6]

The State Committee of the Republic of Uzbekistan on Statistics (2022), *Small Business and Entrepreneurship (database)*, https://stat.uz/en/official-statistics/small-business-and-entrepreneurship (accessed on 16 March 2022). [10]

The Tashkent Times (2021), *US$ 2.5 billion to be drawn for development of digital infrastructure, says Abdulla Aripov*, https://tashkenttimes.uz/national/6362-us-2-5-billion-to-be-drawn-for-development-of-digital-infrastructure-says-abdulla-aripov (accessed on 21 June 2022). [19]

UNECE (2018), *Dashboard for SDGs*, https://w3.unece.org/SDG/en/Home. [25]

USAID (2022), *Digital Ecosystem Assessment - Uzbekistan*, https://www.usaid.gov/sites/default/files/2022-05/USAID_UzbekistanDECA.pdf. [29]

World Bank (2022), *Boosting private sector development in Uzbekistan*, https://blogs.worldbank.org/europeandcentralasia/boosting-private-sector-development-uzbekistan (accessed on 7 March 2022). [3]

World Bank (2022), *COVID-19 Business Pulse Survey Dashboard (database)*, https://www.worldbank.org/en/data/interactive/2021/01/19/covid-19-business-pulse-survey-dashboard (accessed on 15 June 2022). [16]

World Bank (2022), *The World Bank in Uzbekistan*, https://www.worldbank.org/en/country/uzbekistan/overview#economy (accessed on 14 March 2022). [5]

World Bank (2022), *Toward a Prosperous and Inclusive Future : The Second Systematic Country Diagnostic for Uzbekistan*, World Bank Group, https://documents1.worldbank.org/curated/en/933471650320792872/pdf/Toward-a-Prosperous-and-Inclusive-Future-The-Second-Systematic-Country-Diagnostic-for-Uzbekistan.pdf. [2]

World Bank (2021), *Firm Recovery during COVID-19 - Six Stylized Facts*, https://documents1.worldbank.org/curated/en/862851634563353449/pdf/Firm-Recovery-during-COVID-19-Six-Stylized-Facts.pdf. [15]

World Bank (2019), *World Bank Enterprise Surveys*, http://www.enterprisesurveys.org (accessed on 20 July 2022). [27]

Notes

[1] The UN Broadband Commission for Sustainable Development's affordability target for entry-level broadband services is less than 2% of monthly GNI per capita (Broadband Commission, 2018[34])

[2] According to the ITU, basic skills are relatively simple tasks such as moving a file or folder, or sending an e-mail with an attachment, while standard skills include working with spreadsheets, creating electronic presentations or installing and configuring software.

2 Develop a supportive institutional framework for the digital uptake of firms

Digital skills are one of the foundations of the digital economy, along with connective infrastructure and market regulations. In Uzbekistan, the digital skills of the private sector are not part of the National Digital Strategy's (NDS) objectives. Spelling out digital upskilling objectives for the private sector, clarifying agencies' mandates and involving relevant stakeholders in the NDS could serve to support the digital transformation of SMEs in Uzbekistan.

Challenge 1.1: The current institutional set-up falls short of meeting the private sector's needs

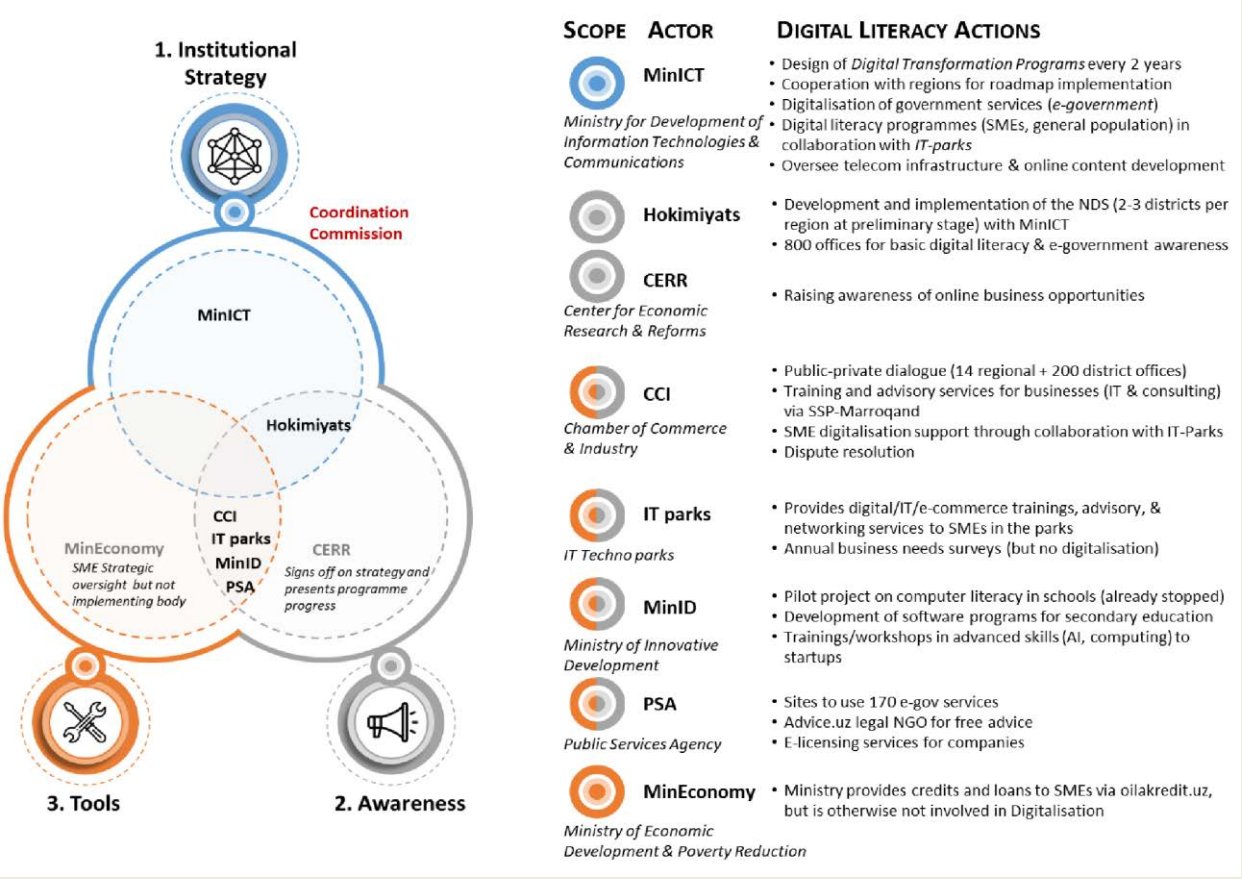
The mandates and roles of agencies and ministries for the private sector are not clearly defined and sometimes overlap

The wide-ranging impacts of the digital transformation on people, firms and governments raise challenges for policymakers as they develop and implement policies in response. Like other cross-cutting policy issues, digital transformation policies are relevant in many domains, which calls for a co-ordinated approach to policy-making. National Digital Strategies (NDS) have emerged in many countries as a crucial tool to address these challenges and to achieve policy co-ordination and coherence. Prominent overarching goals include making the country a digital front-runner, stimulating digital innovation, spurring productivity and growth, and enhancing well-being, including by bridging digital divides and increasing social inclusion. A comprehensive NDS enhances the awareness of, and attention to, digital policy issues across the government; facilitates the engagement of the multiple stakeholders required for broad-based support; and fosters co-ordination in strategy development and implementation.

In Uzbekistan, the lead ministry in charge of the NDS is the Ministry of Digital Technologies (MDT). This is in accordance with the Ministry-level strategic co-ordination of digital transformation policies (Box 2.2). However, the development, co-ordination, and implementation of the strategy with respect to digital skills is shared among various government entities and industries. This government-wide and within-sector fragmentation increases the costs of policy making and stretches already burdened administrative capacity. Private-sector stakeholders indicated that the MDT and Ministry of Higher Education, Science and Innovation's roles and tasks were not clear to them. In addition, there is no dedicated SME agency in Uzbekistan, though the government recently drafted an entrepreneurship code and launched a working group to plan the creation of an SME strategy. The Agency for Working Mahallabay[1] and the Development of Entrepreneurship, nominally an SME agency, focuses on bringing accountability to the regional and municipal levels of government rather than co-ordinating and collaborating with the private sector on SME development.

The co-ordination commission is tasked with ensuring the timely implementation of projects, roadmaps, and measures foreseen in the NDS, though OECD fact-finding interviews indicate that it mainly tracks the progress of the NDS rather than co-ordinating its implementation. The MDT, the leading NDS ministry, does not implement all aspects of the strategy: it is mainly responsible for the institutional design of the strategy, but it does not play a role in raising firms' awareness and only partially provides digital tools (Box 2.1). It uses its offices throughout Uzbekistan as a lever to provide basic digital literacy and e-government awareness to individuals and SMEs who need it, but it does not develop tools itself. The regional and city-level *hokimiyats*[2] help develop and implement the NDS on the regional level in a pilot format, where a few districts are selected for the initial stages before region-wide rollout, but they provide limited inputs to the lead ministry. The Chamber of Commerce and Industry, which represents the private sector's interests, was consulted in the drafting of the digital strategy but is not involved in implementing it. of the Ministry of Preschool and School Education and the Ministry of Employment and Poverty Reduction are not mentioned as implementing or monitoring ministries for the private sector. Educational institutions are responsible for implementation through general schooling, dedicated computer classes, and IT and STEM courses and degrees. However, their high level of fragmentation and the duplication in education and skills development reduce positive outcomes because separate institutions are responsible for (pre)school-level learning, tertiary education, education quality and testing, qualifications, and labour market development (World Bank, 2018[1]). In particular, it is unclear why education policy is dispersed across two separate ministries.

Box 2.1. Stakeholder mapping of agencies involved in the NDS

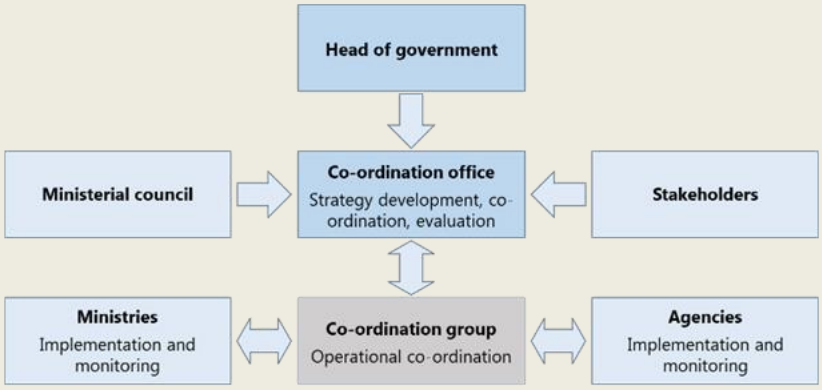


Source: OECD analysis

Box 2.2. Two approaches to the governance of National Digital Strategies can be observed in OECD countries

A strategic co-ordination office under the president or the prime minister drafts the strategy and involves key ministries and stakeholders in the process. This office may lead strategic co-ordination, or it may be delegated to the centre of government, with focal points within each implementing ministry and agency. These stakeholders also monitor implementation and report to the co ordinating office. Please see Figure 2.1.

Figure 2.1. High-level strategic co-ordination of digital transformation policies



A lead ministry is in charge of strategy design and strategic co-ordination. Such a method is most effective if the lead ministry's portfolio is dedicated to digital affairs. Strategy development involves a range of stakeholders, typically under a ministerial council hosted by the ministry and sometimes chaired by the prime minister. Focal points across implementing ministries and agencies ensure operational co-ordination, monitor implementation and report to the lead ministry and/or the ministerial council. The latter ensures strategy evaluation. The lead ministry, in case its portfolio encompasses digital affairs, ensures monitoring and evaluation.

Figure 2.2. Ministry-level strategic co-ordination of digital transformation policies

Source: (OECD, 2019[2]).

Several relevant stakeholders are not sufficiently involved in the NDS

The MDT and other government stakeholders are involved in the NDS. The Ministry of Higher Education, Science and Innovation, the Republican Council for Science and Technology, the Innovative Development Support Fund, the ICT Development Fund and the Ministry of Investments, Industry and Trade are all involved in contributing inputs to the NDS. The State Inspectorate Uzkomnazorat and the Advisor to the Prime Minister – the Head of the Department for the Development of IT Technologies, Telecommunications and Innovation are involved in monitoring implementation, along with the MDT. The Agency for Working Mahallabay and the Development of Entrepreneurship and the *hokimiyats* provide input into the regional NDS development.

However, private-sector stakeholders are involved to a limited extent, and this involvement is limited to non-systematic public-private dialogue. There is no mechanism in place to integrate into the NDS the issues raised and decisions taken as a result of this dialogue. Private firms are represented chiefly through the Chamber of Commerce and Industry of Uzbekistan, though some roundtables involving the MDT, as well as firms and entrepreneurs, were previously held. The Chamber of Commerce and Industry conducts frequent surveys, but digitalisation and private sector digital skills needs are not assessed. The Chamber's surveys are limited to members and likely do not entirely reflect the needs of sole proprietors and SMEs, which are not part of the Chamber's network. The Ministry of Public Education, whose role in digital skills development is essential, and which consults to an extent the private sector to identify skills gaps in the education system, is not involved in NDS implementation for the private sector.

In addition, there does not seem to be a digital SME coalition spearheaded by one ministry. Several government agencies, such as the Agency for Working Mahallabay and the Development of Entrepreneurship and the MDT are involved in supporting SME digital development. Both public and private structures, such as large industrial actors, public-private intermediaries such as the IT Parks, and educational institutions, provide a range of educational services to SMEs and the wider population to advance their digital skills (Table 2.1). However, there is no single co-ordinating body to enhance co-operation and promote the exchange of best practices among actors who contribute to improving the labour force's access to relevant skills. Upskilling efforts are scattered among different entities, which do not co-ordinate closely. This can result in a duplication of upskilling initiatives and is not user-friendly.

Table 2.1. Current ecosystem supporting the diffusion of digital skills among the population

	Public	Private
Primary	IT Park Centre for Innovation, Technology and Strategy Government digital learning platform Maktab UNICEF Giga Initiative on connectivity	Khan Academy
Secondary	One Million Coders Network of specialised schools with in-depth IT study Centre for Innovation, Technology and Strategy Centre of Digital Skills for Women and Youth in Uzbekistan	Khan Academy, Coursera
Tertiary (University)	INHA University Amity University TUIT University Westminster University IT Park University Centre for Innovation, Technology and Strategy Centre of Digital Skills for Women and Youth in Uzbekistan IT Academy	Team University TIUE NAPA Astrum Academy TOO ETÜ Tashkent University Coursera, Code.org, Udacity, Khan Academy

	Public	Private
Lifelong learning	IT Centres Public services agencies Chamber of Commerce and Industry of Uzbekistan Centre for Innovation, Technology and Strategy Tumaris.Tech Centre of Digital Skills for Women and Youth in Uzbekistan	Corporate trainings Personal development trainings Coursera, Code.org, Udacity, Khan Academy

Source: (USAID, 2022[3]), OECD fact-finding interviews

Recommendation 1.1: The institutional framework could be further clarified and could integrate additional relevant stakeholders

Include relevant public and private stakeholders in the NDS and clarify their roles and mandates

The government could further clarify mandates and integrate stakeholders for the design and implementation of the NDS, under the leadership of the MDT. For digital skills to be an integral part of the NDS, more stakeholders need to be involved. The Ministry of PreSchool and School Education and the Ministry of Employment and Poverty Reduction are likely appropriate ministries to include in the design and implementation of the NDS. In addition, systemic public-private dialogue with the private sector and academia should be initiated, creating a mechanism to integrate their feedback into the NDS. This should be adapted to each sector's needs and account for the existing and forecasted skills gaps. The mandates of government entities involved should be clarified and expanded to incorporate a digital skills component. This should include specifying how the entities will collaborate to design and implement the NDS and their responsibilities to raise awareness, diffuse relevant knowledge, and create tools to upskill Uzbekistan's labour market. Better co-ordination, a clearer allocation of tasks and a wider involvement of public and private stakeholders engaged in the NDS would contribute to increasing the effectiveness of the NDS in the most economically important sectors of the economy such as agriculture, energy, manufacturing, and the growing BPO and e-commerce industries.

Collaboration between the private sector and educational stakeholders could support digital literacy through the education system, lifelong learning opportunities and the ability to measure and forecast such skills. Administrators, teachers and professors could contribute to digital skill strategies and frameworks to reduce the skills mismatch. Educational institutions play an important role in digitalisation, as the right curriculum prepares a generation with the necessary soft and hard skills for personal and professional development. On the other hand, the private sector can help provide digital devices and tools to schools and universities. Collaboration can thus help adapt technologies to the needs of the population and adapt curricula to enhance the uptake of digital technology (Box 2.3). Representatives of the economically important and growing private sector industries could be useful stakeholders to provide inputs to the government. The latter can work with education and training providers, as well as Massive Open Online Course (MOOC) platforms, to harmonise and recognise local and international skills certifications. Uzbek-language training initiatives such as the launch of the Uzbek version of the Khan Academy educational platform or co-operation with Coursera could be pursued with other international education providers.

Box 2.3. Denmark's institutional framework to address private sector digital skills needs

Denmark launched the Technology Pact to improve its institutional framework to support the private sector's digital uptake and bridge current and future STEM recruitment gaps. The Pact incorporates the Education, Labour, and Economy Ministries, 17 representatives from government, business, educational institutions and research organisations, and has the Danish Foundation for Entrepreneurship run the Secretariat. It aims to ensure that STEM competencies are taught through lifelong learning initiatives and projects to meet Danish companies' recruitment needs and promote STEM education among young generations.

With an inclusive approach, the Technology Pact assessed Denmark's needs and gaps in the coming period. It observed that Denmark will be short of more than 10,000 workers with STEM competencies in less than 10 years. As a result, it quantified targets to fulfil its stated objectives:

1. More people should be interested in STEM subjects:
   - 1M people must have participated in the Technology Pact's efforts in 2020 (objective achieved); and
   - 350 companies should be involved in the Technology Pact in 2020 (objective achieved).
2. More people must be educated in STEM subjects:
   - 20% more Danes must complete a STEM education in 10 years; and
   - 20% more Danes must complete a STEM vocational training in 10 years.
3. The workforce must be upskilled:
   - The STEM competencies of the workforce must be among Europe's highest; and
   - No significant recruitment challenges of STEM workers should be met in 10 years.

Source: (Teknologipagten, 2022[4]), *OECD analysis*

The government could also expand its partnerships with international tech firms and key domestic players to further support the acquisition of digital skills. Large firms such as Microsoft, Google, Amazon, and Alibaba offer platforms where smaller companies operate (OECD, 2021[5]). Partnerships can be established with such platforms to incentivise them to provide practical digitalisation training to SMEs, including advice on how best to leverage the digital services they offer. This is a win-win for both SMEs, which expand their reach and sales opportunities, and the platforms, which can increase use, availability and the offer of their services (Box 2.4). Initiatives are already underway, such as the Coursera Workforce Recovery Initiative, which was launched in 2020 in Uzbekistan to help the government provide unemployed workers with free access to 3 800 online courses. This public-private partnership's goal was to help impacted workers develop the knowledge and skills to become re-employed (Coursera, 2020[6]). National commercial banks and financial industry associations also appear as important stakeholders to enhance the financial skills of SME owners and managers, as OECD interviews revealed that the banking sector is one of the most digitalised sectors in Uzbekistan, making these players crucial stakeholders in upskilling citizens and firms (OECD, 2018[7]). The government should engage these best-in-class digital players to both provide input to the NDS and develop tools to respond to private-sector digital needs.

Box 2.4. An example of public-private co-operation to support firms' digital skills acquisition – Kazakhstan's first e-commerce online school

Kazakhstan's Ministry of Trade and Integration and the international financial services firm MasterCard launched an online platform that aims to help SMEs go digital and expand their business through e-commerce skills training. Partners of the platform include reKassa, a free mobile app for sole proprietorships and limited liability partnerships, as well as Astana Hub, Kazakhstan's largest IT technopark. The platform is free of charge, and provides online training in the following 7 areas:

- Website creation (branding structure, domain connection to site, CRM, online payments, website statistics, etc.);
- Target launch (target audience, creation of Facebook page and link to Instagram page, launch of targeted advertising, UTM tagging, etc.);
- Advertising contextualisation (Search Engine Optimisation, Wordstat, Google trends, Yandex metrics, Google My Business, Google AdWords);
- Sales funnel set-up (sales funnels, newsletter, Telegram channel as a ''warmer'' to buy, Instagram for business);
- Marketplace use (Olx, Market, Satu);
- Protection against hacking (why cybersecurity is important, cyber hygiene, data protection).

Upon completion of the training, companies receive a certificate from JumysBar and MasterCard and have the option to participate in a contest to join an accelerator. The ten best SMEs selected to join the accelerator can benefit from in-depth mentoring. At the end of the accelerator programme, these SMEs are invited to an offline Demo Day, where they have the opportunity to pitch their businesses to investors.

Source: (Mastercard & Jumysbar, 2022[8])

Co-ordinate the nascent ecosystem supporting private-sector digitalisation

The government could nurture the emerging ecosystem supporting the digital transformation of the private sector and harmonise existing initiatives. The relevant agency could co-ordinate all levels of digital upskilling: recognising the skill gaps in the market, developing initiatives to address it, and to raising awareness. By co-ordinating the entire ecosystem, it could support the one-stop-shop principle for digital skills, reducing duplication of online training portals, training centres, and training materials. An SME portal with clear information on the various initiatives in place would allow for greater clarity. In addition, enhanced co-ordination would help equip SME managers and employees with relevant skills that enable them to assess their businesses' shortcomings, to navigate the tools and technologies available, and choose the best digital solutions to improve their businesses. A set of specific measures targeted towards digital skills development can also be taken into account by relying on local ecosystems and communities. SME agencies are not the sole actors supporting SME development: both public and private structures can provide a range of services or education to SMEs seeking to advance their digital skills. Key partners in industry (banking, telecommunications, digital multinationals, larger firms, and other more digitally advanced SMEs), intermediaries (IT Parks and their regional clusters, digital innovation hubs, sectoral associations, chambers of commerce and industry), education providers (primary, secondary, tertiary and continuous learning facilities) and the public sector can enhance their co-operation to help SMEs to access relevant skills and promote the exchange of best practices (Table 2.1). In Uzbekistan, the Chamber of

Commerce appears to be particularly suited to the role of harmonising digital skills initiatives considering its close collaboration with both the private sector and IT Parks and its advocacy role with the government.

In order to better leverage these structures and maximise their impact, Uzbek policy makers could consider better co-ordinating the existing network to avoid duplication of initiatives and inefficient use of resources. The MDT should be able to identify and share any successful initiatives on digital skills provision from the public and private sector and from educational institutions. The Chamber of Commerce and Industry with a renewed mandate could monitor and keep abreast of the initiatives available for SMEs in the ecosystem on one platform as well as facilitate joint activities, peer-learning and general knowledge spill-overs. The SME agency could also perform this function, though it is less suited in its current format to do so. In either case, the dedicated agency would deal with SMEs specifically, but would have access to and knowledge of what is going on in terms of digital literacy education. The MDT, the Chamber of Commerce and Industry, or even the SME agency could lead such an ecosystem, map the players and initiatives; co-ordinate trainings; provide funding for ecosystems to finance expert exchanges; and develop public-private collaboration (Box 2.5). The entity could further develop mechanisms for knowledge exchange between international tech companies, domestic private and public sector firms, and government officials, such as business forums, industry fairs, cross-cutting conferences etc, to build awareness of industry needs and possibilities to address them.

Box 2.5. Small and Medium Business Development Agency of Azerbaijan

Azerbaijan's Small and Medium Business Development Agency (SMBDA) is a public legal entity under the supervision of the Ministry of Economy. It provides non-financial SME support mostly through the network of SME Development Centres across the country, which are tasked with providing training and consultancy support for SMEs.

- The Centres' objective is to improve management practices, foster SME financial, managerial, and digital skills and provide targeted advisory and consulting services depending on the SME's needs.
- SMEs can join the network of private and public sector entities, enter public-private partnerships, or take advantage of lifelong learning opportunities.
- While the SMBDA does not provide a targeted programme supporting the adoption of digital solutions by SMEs from non-ICT sectors, digitalisation is embedded into the existing training and consulting support programmes.

Source: (Government of Azerbaijan, 2022[9]).

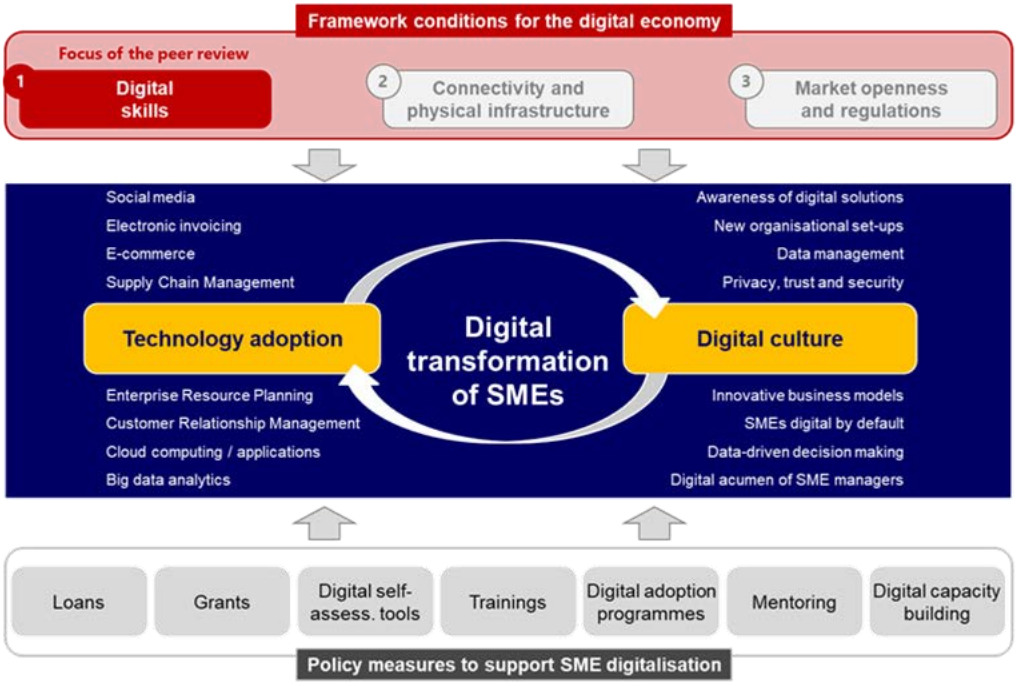
Challenge 1.2: The NDS and its roadmaps do not specifically recognise or address firms' digital skills uptake

Digital skills of the private sector do not appear to be an integral component of the NDS

A successful NDS requires a comprehensive digital skills component for SMEs (OECD, 2022[10]) to promote the use of digital technologies by businesses and ensure that all workers can adapt to and excel in the digital economy through the use of ICT and other technologies. Such strategies most commonly target SMEs and also account for varying levels of skills, to ensure that people in low-skill occupations can also benefit from the opportunities brought about by digitalisation (OECD, 2017[11]). Enhancing digital skills, in turn, requires public and private sector inputs to create the institutional strategy, to raise awareness

among civil servants and SME employees and managers on the benefits of digitalisation, and to develop and provide tools to increase digital literacy.

Figure 2.3. Digital skills framework conditions to support the digital transformation of SMEs



Source: OECD analysis

Whilst Uzbekistan seeks to improve digital literacy and digital technology uptake among the public administration and general population, the government has not set targets and objectives to improve the digital literacy of the private sector specifically. A holistic strategy to co-ordinate the public, private, and population-wide digital training is lacking, resulting in an overall siloed approach without objectives and tangible targets for digital literacy improvements within the private sector. Without an integral digital literacy component or a national digital competencies framework such as Switzerland's DigiComp (DigiComp, 2022[12]), a country cannot fully realise its digital transformation potential. Uzbekistan would need to conduct a baseline assessment of the private sector to determine progress made. Without such visibility, digital literacy will remain on the side-lines for the private and public sector. While governors and many public employees will benefit from the current NDS, private sector employees, managers, and non-included public employees will lack full information on the use and benefits. Without a competencies framework or component for the private sector, it could prove hard to agree on baselines for measurement and associated indicators, as well as how to best adapt policies and programmes to private sector needs.

Box 2.6. Denmark - Digital Growth Strategy 2025

The *Digital Growth Strategy 2025* is a joint vision of the Danish government, in collaboration with various industries and sectors, trade associations, and social partners. The objective of the Danish strategy is to contribute to the digital transformation processes on a national level, and support the development of a highly-skilled talent pool. The strategy contains 6 pillars and 38 concrete initiatives, which aim to secure and enhance Denmark's position as a leading country in the EU in the digital transformation and digital skills areas.

Digital skills objectives

- Working towards improving the digital skills of children, and in general from an early age, through testing a new subject on technology in primary and lower secondary education classes.
- Bridging the skills mismatch and offer relevant training and skills to support individuals' development in today and tomorrow's labour market. Activities launched within this context aim to increase employment levels and satisfaction, and encourage the development of more digital talents in the STEM (Science, Technology, Engineering, and Mathematics) field.
- Improving access to skills trainings and programmes for SMEs and enabling them to exploit the commercial potential of new and emerging technologies.
- The target audience are those in education, in the labour force, and ICT professionals and other digital experts.

Foreseen activities

- A Technology Pact for skills to enable a technological and digital future (see also Box 2.3).
- A test programme to improve technological understanding in primary and lower secondary education.
- The creation of a centre for the application of IT in teaching in vocational education, to offer a greater focus on digital skills in final examinations for vocational education.
- A proposal for a digital strategy for higher education, with an action plan to attract more graduates to higher education programmes in STEM.
- Promoting increased use of satellite-based data in higher education.

Source: (European Commission, 2021[13]); (Invest in Denmark, 2018[14])

Digital skills objectives are not sector-specific

OECD countries tend to implement policies related to the development of specific digital tools focused on specific sectors. Given the diversity of industries in which the private sector operates, targeted sectoral policies allow to account for cross-industry and geographical differences in digitalisation adoption (OECD, 2021[15]). Upgrading productivity in a large population of small businesses across important and growing sectors, but also including traditional segments and the informal economy, can help governments achieve both economic growth and social inclusion objectives (OECD, 2017[16]). Digital skills are required for a growing number of jobs, including in traditionally manual sectors like agriculture and construction. As digital applications and technologies are making inroads, a corresponding need arises for a certain level of digital literacy (ITU, 2020[17]). While a sufficient supply of a digitally skilled cohort is necessary at a national level, skills demand can differ significantly from industry to industry, as can the

identified skill gaps and required policies to address future digital skills requirements (see the chapter below) (ITU, 2020[17]).

The Uzbek NDS focuses on a limited number of sectors and does not encompass important segments of the economy. The NDS is segmented into sectors, with roadmaps for the digitalisation of agriculture, healthcare, public administration and education. Energy and tourism are priority sectors within the NDS, but are not included in the skills section of the strategy**.** The NDS foresees the introduction of a digital literacy assessment to discover the types and levels of digital skills required civil servants, but it is unclear whether this will be available for private sector firms with a segmentation by sectors, nor if it will be able to identify the skills gaps that exist between individuals and labour market needs.

Limited awareness of the benefits of digitalisation for the private sector may be caused by a lack of data on private sector needs

Scarce data and measurement hinder the efficient development of digital skills in Uzbekistan. OECD interviews with officials indicate that there has been no systematic assessment performed to collect data on the private sector's digital skills needs. The Chamber of Commerce and Industry conducts surveys on SME needs, but digitalisation questions are not part of the questionnaire. The MDT has expressed its intention to survey businesses on the level of digitalisation in Tashkent, Samarkand, and Bukhara, but has not yet done so at the time of writing. In general, the data collection and management could be improved – labour market and educational data are not collected systematically, nor is there a gender component. The lack of public-private dialogue limits the government's visibility on the digital skills gaps within the overall labour market and specific industries. Unless the authorities have an accurate understanding of the gaps, it is difficult for initiatives to raise awareness and reach the target sectors to achieve the desired results.

An incomplete understanding of SMEs' digital needs hampers future labour market forecasting

Uzbekistan's digital skills development is also hampered by a lack of forecasting. Market need forecasting and anticipation exercises can help policymakers estimate the evolving needs of the labour market. In function of these identified needs, governments can more effectively and efficiently implement policies to enhance digital upskilling and ensure a better match between employee skills and firm requirements. Information on future jobs requires skills needs anticipation surveys. Without such surveys, governments risk suboptimal investment in education initiatives and skills mismatches in the labour market. Astrum IT Academy for instance recently reported an oversupply of Java stack developers on the labour market, which has resulted in several education institutions closing their Java courses. Uzbekistan does not implement regular national-level quantitative nor qualitative digital skills forecasting. The OECD did not identify one-off or systematic labour force surveys to analyse skills provision of the workforce compared to labour demand. The government does not seem to systematically integrate qualitative mechanisms involving sectoral or educational experts to assess labour force needs either. Rather, ad-hoc initiatives have been undertaken to identify skills needs, mostly in the public sector. The University of Westminster in Tashkent for instance opened a master's degree programme in business intelligence and analytics following a skills needs survey it conducted among certain governmental agencies. Overall skills intelligence, and industry and education institutional involvement in the definition of skills and labour force needs can be strengthened. With accurate forecasts of future labour market needs, the government and other stakeholders can adapt educational policies to anticipate future demand. To do so, a systematic approach to measuring and forecasting digital skills is required, as Estonia does on a rolling basis (Box 2.7).

Box 2.7. Estonia's approach to anticipating and monitoring labour and skills demand

OSKA, the Estonian anticipation and monitoring system for labour and skills demand, analyses the needs for labour and skills necessary for the country's economic development over the next ten years. It aims to examine all five to six OSKA sectors each year, covering the entire economy every five years. This continues in five-year cycles with a forecast horizon of five to ten years. OSKA sets up sectoral expert panels consisting of employers, educational institutions and policy makers, who oversee and validate the survey results collected by OSKA from statistical quantitative data, as well as from qualitative personal interviews and group discussions. The relevant sectoral expert panels also keep an eye on the implementation of recommendations made on the basis of the conclusions of the survey.

Quantitative analysis builds on data from relevant registers and surveys as well as on the forecasts of labour requirements prepared by the Ministry of Economic Affairs and Communications. Further information on employment, skills and qualifications is collected from personal interviews with sectoral experts and from group discussions. The interviews examine future economic trends and the resulting changes in the needs for workers, skills, education and training in each sector, and provide input with suggestions for improving qualifications. Sectoral expert panels also assess labour requirements in quantitative terms and training capacities broken down by key professions.

An OSKA general report on changes in labour requirements, labour market developments and the trends influencing them over the next 10 years is prepared annually. The implementation of OSKA is overseen by the Co-ordination Council, which annually submits an overview of the state of play regarding labour market and skills and its proposals to the Government through the Ministry of Economic Affairs and Communications. Estonia's ICT OSKA sector analysis was one of the industry analyses completed in 2021. A short overview of its main findings can be found at https://oska.kutsekoda.ee/en/field/information-and-communication-technology/.

Source: (OECD, 2021[18]) (OSKA, 2022[19]).

Recommendation 1.2: Ensure the next segment of the NDS identifies and accounts for private sector digital skills needs

The NDS should incorporate a dedicated objective on the development of the private sector's digital skills in general and by sector

The NDS should place a stronger emphasis on promoting ICT generic and specialist skills to ensure that everyone can engage in, and benefit from, the digital economy and adapt rapidly to new occupation and skills needs, education and training systems. This should incorporate ICT-complementary skills too, including foundational skills, digital literacy, higher-order critical thinking skills, and social and emotional skills. Greater efforts are needed to raise the skills of those adults and segments of society with weak literacy, numeracy and digital skills to enable them to fully participate in the digital economy and society (OECD, 2017[11]). This should encompass explicit objectives on improving digital skills, including private sector-specific, quantitative targets and key performance indicators (KPIs) such as the number of trainings conducted by firms in a specific sector or the percentage of employees with basic or standard digital skills.

The government should break down targets by sectors involving industry representatives and academia to set these objectives. Digital maturity levels as well as the business case to adopt specific digital technologies will vary across sectors; for these reasons, it is necessary to develop objectives and

collect segmented information on digital needs by sector of activity. Uzbekistan should develop a monitoring and evaluation mechanism to evaluate and adapt policies depending on their impact. This also involves conducting a baseline assessment of the digital skills per sector against which policies can be benchmarked (see the chapter below). The assessment can assist in prioritising sectors. Industry roundtables, focus groups or subject matter expert interviews can be carried out with strategic stakeholders, such as major industry leaders, sector skills councils, sector bodies, policy stakeholders and leaders from universities and technical schools to discover the types and levels of digital skills required by different sectors and the skills gaps that exist. Both traditionally important sectors and emerging high-growth sectors should be included, based on a sector's share of GDP, share of employment, or growth potential (ITU, 2020[17]). Once objectives are set out per sector, the government can implement a series of initiatives to upskill the labour force for the private sector especially (OECD, n.d.[20]). Targeting individuals considering their employment status could also be considered (upskilling programmes can be provided to unemployed individuals, and reskilling programmes proposed for employed ones).

Better data collection will ensure better targeting of private sector needs in future segments of the NDS

Accurate and up-to-date data on the skills of the labour force could better inform the next segment of the NDS and foster the efficient development of digital skills in the broader population. To ensure that future digitalisation programmes efficiently support the digital uptake of firms, data needs to be collected regarding skills development. The government should consider performing a skills assessment of its labour force and extract insights to make informed policy decisions on the type of support needed. This requires commitment from policymakers and a clear co-ordinating authority, expert engagement, stakeholders' training and available financial and human resources to implement nationwide surveys (OECD, 2021[18]). Data collection and skills assessment would also make it possible to forecast the digital skills needs of the future. This could provide the opportunity for Uzbekistan to perform a systemic skills assessment of its workforce (Box 2.8). Forecasting could then feed into informed investment in education initiatives and contribute to addressing the skills mismatch on the labour market. A mixture of analogue and digital tools can be useful in collecting such information, to account for the relatively limited uptake of digital technology among certain types of firms. Data collection can further feed into the selection of priority sectors to integrate in the NDS.

The lack of gender-disaggregated data is another roadblock to inclusive policy. The move towards data-driven, innovative, and digital government, also accelerated by the COVID-19 crisis, offers a window of opportunity to expand the availability of reliable and timely data on gender equality. Uzbekistan will need to anticipate the risks that new technologies pose to gender equality, such as the transfer of existing gender biases from the analogue to the digital world and the emergence of new digital divides. It will need to ensure the effective collection and use of gender-sensitive data and to improve the quality of gender impact assessments, stakeholder engagement tools, and accountability and transparency mechanisms (OECD, 2022[21]).

Box 2.8. France's training and vocational skills surveys

France's annual labour force survey aims to observe both structural and cyclical situation of the labour market. Since 1982, it structurally assesses the usual sociodemographic characteristics (gender, age, education), the activity status (employed, unemployed, not economically active), the employment status for those who work (employee/ self-employed, private-sector/public sector, i.e. state and local authorities), the occupation, employer's industry, monthly wage received, working hours (full or part-time, part-time percentage, professional mobility, initial training and continuing training.

The survey incorporates numerous changes of questionnaire and concept to comply with the International Labour Office and of Eurostat guidelines and improve the sampling methodology and non-response processing, collection methods, and computerisation of data processing. The systematic and continuous evaluation over time enables accurate assessment of the current labour market situation, future developments, and the forecasted labour and skill demand and supply gaps, despite occasional changes in methodology.

Source: (INSEE, 2022[22]) (Goux and Maurin, 2019[23])

Challenge 1.3: Regulatory barriers may also deter firms from investing in digital tools and competencies

Regulatory gaps also need to be addressed in order to stimulate investment in digitalisation. According to an upcoming OECD survey assessing the business climate in Uzbekistan, data security was the second topic in IT infrastructure after the speed and quality of internet quoted by respondents as an area which can be improved to help firms digitalise more effectively. The 2021 amendment of the personal data law was frequently mentioned during interviews, as it strengthened the liability for breaching the law and now requires data residency, meaning that owners or operators of personal data must ensure the collection, treatment and storage of Uzbek citizens' data only through technical means located in Uzbekistan (Lex-UZ, 2021[24]). Uzbekistan's regulation pertaining to personal data protection and the use of modern cloud technologies is stricter than that of its Central Asian peers, as violations of personal data law can result in criminal charges. OECD interviews revealed that at least some multinational corporations opted not to enter the Uzbek market due to uncertainties surrounding existing laws, some of which remain incomplete.

Recommendation 1.3: Address legal barriers in the field of personal data protection

The government may therefore consider clarifying the new provision of the law on personal data protection. The latest version of the law requires firms to store data in Uzbekistan and in a selected list of countries, but the list of eligible countries has not been published yet, creating uncertainty for firms. Data being an important source of insights for business operations and development, clarifying such a requirement would reduce legal uncertainty for firms. In addition, efforts could be pursued to develop competitive and secure local data storage capacity, as Uzbekistan only recently opened its first data storage and processing centre in Tashkent region. Finally, while companies are encouraged to make use of online services, there still seems to be a requirement to keep hard copies of documents in case of potential inspections. A gradual move from paper requirements would reduce duplication of efforts and encourage domestic firms to move online.

References

Coursera (2020), *Helping governments respond to the unemployment crisis caused by the coronavirus*, https://blog.coursera.org/helping-governments-respond-to-the-unemployment-crisis-caused-by-covid-19/ (accessed on 12 July 2022). [6]

DigiComp (2022), *Digital Competence. Made of People.*, https://www.digicomp.ch/en (accessed on 15 September 2022). [12]

European Commission (2021), *Denmark - Digital Growth Strategy 2025*, https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/denmark-digital-growth-strategy-2025 (accessed on 7 June 2022). [13]

Goux and E. Maurin (2019), *Forty Years of Change in Labour Supply and Demand by Skill Level – Technical Progress, Labour Costs and Social Change*, https://www.insee.fr/en/statistiques/fichier/4253146/510_511_512_Goux_Maurin_EN.pdf. [23]

Government of Azerbaijan (2022), *SME development centers*, https://smb.gov.az/en/nav/sme-development-centers (accessed on 9 June 2022). [9]

INSEE (2022), *Labour force survey*, https://www.insee.fr/en/metadonnees/source/serie/s1223 (accessed on 15 July 2022). [22]

Invest in Denmark (2018), *The Danish Government Presents 'Digital Growth Strategy'*, https://investindk.com/insights/the-danish-government-presents-digital-growth-strategy (accessed on 13 July 2022). [14]

ITU (2020), *Digital Skills Assessment Guidebook*, https://academy.itu.int/sites/default/files/media2/file/D-PHCB-CAP_BLD.04-2020-PDF-E_02%20June%202020.pdf. [17]

Lex-UZ (2021), *National base of legal information of the Republic of Uzbekistan (ЎЗБЕКИСТОН РЕСПУБЛИКАСИ ҚОНУНЧИЛИК МАЪЛУМОТЛАРИ МИЛЛИЙ БАЗАСИ)*, https://lex.uz/pdfs/5701571 (accessed on 8 July 2022). [24]

Mastercard & Jumysbar (2022), *First Free School in Kazakhstan (ПЕРВАЯ В КАЗАХСТАНЕ БЕСПЛАТНАЯ ШКОЛА)*, https://jumysbar.kz/ecommerce (accessed on 13 July 2022). [8]

OECD (2022), *Assessing National Digital Strategies and their Governance*, OECD Publishing, https://doi.org/10.1787/baffceca-en. [10]

OECD (2022), *Report on the implementation of the OECD gender recommendations*, OECD Publishing, https://www.oecd.org/mcm/Implementation-OECD-Gender-Recommendations.pdf. [21]

OECD (2021), *Beyond COVID-19: Advancing Digital Business Transformation in the Eastern Partner Countries*, OECD Publishing, https://www.oecd.org/eurasia/digitalisation.htm. [18]

OECD (2021), *Improving the legal environment for business and investment in Central Asia: supporting private sector-driven COVID-19 recovery*, OECD Publishing, https://www.oecd.org/eurasia/Improving-LEB-CA-ENG%2020%20April.pdf. [5]

OECD (2021), *The Digital Transformation of SMEs*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, https://doi.org/10.1787/bdb9256a-en. [15]

OECD (2019), *Going Digital: Shaping Policies, Improving Lives*, OECD Publishing, https://doi.org/10.1787/9789264312012-en. [2]

OECD (2018), *G20/OECD Effective Approaches for Implementing the G20/OECD High-Level Principles on SME Financing*, OECD Publishing, https://www.oecd.org/g20/Effective-Approaches-for-Implementing-HL-Principles-on-SME-Financing-OECD.pdf. [7]

OECD (2017), *Enhancing the contributions of SMEs in a global and digitalised economy*, OECD Publishing, https://www.oecd.org/industry/C-MIN-2017-8-EN.pdf. [16]

OECD (2017), *Key Issues for Digital Transformation in the G20*, OECD Publishing, https://www.oecd.org/g20/key-issues-for-digital-transformation-in-the-g20.pdf. [11]

OECD (n.d.), *OECD Digital Economy Papers*, OECD Publishing, Paris, https://doi.org/10.1787/20716826. [20]

OSKA (2022), *What is OSKA?*, https://oska.kutsekoda.ee/en/ (accessed on 16 June 2022). [19]

Teknologipagten (2022), *Teknologipagten*, https://www.teknologipagten.dk/ (accessed on 13 July 2022). [4]

USAID (2022), *Digital Ecosystem Assessment - Uzbekistan*, https://www.usaid.gov/digital-development/uzbekistan-digital-ecosystem-country-assessment. [3]

World Bank (2018), *Uzbekistan Education Sector Analysis*, https://documents.worldbank.org/en/publication/documents-reports/documentdetail/379211551844192053/uzbekistan-education-sector-analysis. [1]

Notes

[1] The word “mahalla” refers broadly to a neighbourhood or local community. Mahalla are residential community associations that were once common throughout the Islamic world but are now relatively uncommon outside Uzbekistan. Promoting it as a "traditional institution," the Uzbek government has embraced mahalla as a "fundamental unit" of society, and it is expected to play a role in, inter alia, reducing poverty and solving employment problems.

[2] The word “hokimiyat” refers to a city or district-level administration in Uzbekistan.

3 Raise firms' awareness of the importance of digital and complementary skills

Adoption of digital tools remains below potential among private firms and could be due to an insufficient level of digital and complementary skills. Assessing firms' digital literacy and raising their awareness of available support to upskill could better guide their investments in the digital transformation.

Challenge 2.1: Firms seem unsure of how to embark on their digital journey

Beyond basic digital tool use, firms seem unaware of the path forward to integrate digital technologies

The ongoing digital transformation of Uzbek firms has been spearheaded by the banking and financial services sector (USAID, 2022[1])**, yet firms in this area remain primarily state-owned, while** private firms' adoption of digital tools has been increasing but is still low. World Bank data found for instance, that only a quarter of the latter have their own websites (World Bank, 2022[2]). When firms do use digital tools, it is far from clear that these tools are exploited to their full potential. OECD interviews found that internet users tend to use their smartphones or create a hotspot for their laptops, which limits digital tool performance, as the internet connection is less stable than with a subscription for a landline connection. In absence of available data on the private sector use of digital tools in Uzbekistan, anecdotal evidence shows that a significant share of Uzbek SMEs rely on social media such as Telegram, Instagram or Facebook to find and communicate with suppliers, customers and employees, promote products, and take and place orders, among others. Private firms' digital transition can start with the adoption of basic functions such as administration or marketing, where the digital gap between small and large firms is smaller (OECD, 2021[3]). OECD fact-finding interviews also found that private firms have only recently been investing in digitalisation, starting with enterprise resource planning (ERP) and digitalising distribution and procurement, before moving to more advanced functions, such as upgrading to customer relationship management (CRM) tools.

Adoption seems impeded by a lack of knowledge. An EBRD study of women-led MSMEs in Uzbekistan found that basic digital tools, such as office software, web presence and social media were used, but study respondents were eager to learn more about how to use these tools to their full potential. When these firms wished to find the resources required to grow digitally, they reported having limited options for advice and indicated turning to YouTube and Google as sources to address their digitalisation questions (EBRD, 2021[4]). OECD interviews also found that companies increasingly rely on international software tools such as Google Workspace, Microsoft 365 or SAP, or Russian ones such as 1c.ru, but tend to underestimate the added value of digital tools and favour cost effectiveness and little or no commitment when acquiring such tools. On the other hand, OECD interviews revealed that when businesses do take the leap and decide to invest in digitalisation, they often see such investments as a silver bullet and acquire costly digital tools without planning the integration of these tools into business models and processes, which often results in mixed results and lower-than-expected returns on investment.

Box 3.1. Ireland's Skillnet, a platform providing innovative learning opportunities for and with Irish businesses

Skillnet Ireland is the single business support agency of the Government of Ireland dedicated to workforce development. Its mission is to facilitate increased participation in enterprise training and workforce learning in Ireland, through the provision of nationwide, subsidised training to Irish businesses. It also provides career development advice, funding, and access to business networks. It trains over 21,000 businesses and 81,000 workers through its 73 business networks each year. The agency's recent focus has been on providing digital skills to the Irish private sector.

Technology Ireland Digital Skillnet, a business network part of Skillnet, offers hundreds of programmes to the technology sector on digital transformation. The TechLEARN programme in particular offers access to e-learning platforms for firms willing to enable their staff to learn new tech skills while on the job, keeping pace with recent technological developments. Technology Ireland Digital Skillnet funds up to 70% of the training costs. Platform advisors are available to demonstrate the programme's latest features and provide expertise. Some of the courses currently available include data engineering, system administration, hardware, and programming.

The platform operates under a cost-sharing model of state grants and membership revenue from business contributions. A key success factor of the agency has been its co-operation with the private sector to design its programmes and the support it has gained from national employer and employee bodies for the relevance of its offering for the industry. This approach enables cohesive enterprise networking and the ability to respond to ever-changing skills needs. The agency has also been active in fostering industry – academia collaboration for the development of new programmes in higher education to address skills gaps.

Source: (Skillnet Ireland, 2022[5])

Recommendation 2.1: Promote skills assessment and development tools for SMEs and raise awareness of available support

Systematic digital skills assessments are needed to inform investment in skills development

As the level of digital maturity can significantly vary across firms, even those operating in the same industry, businesses need to assess their own digital maturity to identify the most suitable digital solutions for their situation and formulate informed investment decisions (Interreg Europe, 2021[6])**.** Digital self-assessment tools can help (European Commission, 2021[7]). The self-assessment should provide a targeted digital plan outlining the steps required to advance from one level of digital maturity to the next (Box 3.2). It can help managers adapt the firm's strategy and understand which processes can be improved, which digital tools to adopt and which skills should be developed among the workforce. A website hosting the self-assessment can be the most convenient and accessible option for firms. The tool should investigate the different areas of operations and business functions common across sectors (e.g., production, marketing, human resources, accounting, CRM, and logistics), as well as those that are sector-specific. Based on the outcome of the self-assessment, contact points and first recommendations for specific digital solutions and training can be provided. The latter can be a subset of generic steps included in relevant sector-specific digital plans. Uzbek policy makers may consider providing such a tool that would

be accessible on the responsible entity's website, such as the Chamber of Commerce and Industry or a revamped SME agency responsible for digital upskilling as outlined above.

Box 3.2. Singapore's SMEs Go Digital Initiative – Digital self-readiness tool

Established in 2017 by the Infocomm Media Development Authority (IMDA), the *SMEs Go Digital* initiative aims to help SMEs use digital technologies and build a stronger digital culture. Among the digital solutions the initiative offers, the Chief Technology Officer (CTO)-as-a-service tool enables firms to assess their digital readiness, explore digital solutions and request digital advisory and project management services. Firms which do not know where to start can check their digital readiness by taking a 5-minute test. The test results adapt recommendations based on the firm's sector, its number of years in operation, staff size and annual sales turnover. The firm respondent has to answer the following questions:

- Does the business have any digital strategy in place?
- Are there any digital experts in the organisation?
- Are any digital solutions used in the organisation?
- Are customer and business data used to create value?
- Are there cybersecurity measures in place in the organisation?

Upon completion of the test, the platform suggests common solutions adopted by other companies in the same industry. The respondent can watch video testimonials of firms operating in the same industry which obtained a high digital readiness score and explain how digitalisation transformed their business.

Firms which have a better understanding of their digital needs can look for solutions tailored to their business and sector on the website, which provides vendors' contact details, indicative prices and the option to browse and compare similar solutions.

Source: (IMDA, 2022[8])

Undertake awareness-raising campaigns with private sector support to inform the latter about opportunities available to upskill

Extensive consultations with private sector representatives, including the IT sector, can serve as a basis for the development of awareness campaigns concerning the importance of digital skills acquisition for the private sector. The authorities could promote the development of a shared vision that describes the different options of digital skills learning and its benefits to employees and managers. Such a vision should be designed by all ministries involved in private-sector development, digitalisation, education and adult learning. It could also raise awareness of digital skills learning opportunities among firms through campaigns and events. Campaigns should be targeted to sector-specific events, specific groups (such as small firms or women), or both. Expert webinars and success stories featuring business owners could also be presented to encourage the development of a digital culture and illustrate the practical implications of digital solutions (OECD, 2021[9]). The campaigns could take place through traditional media, open days, exhibitions, and presentations of educational programmes. Television and radio broadcasts, as well as active support of *mahallas*, will be necessary to raise awareness among non-digital SMEs. Each channel should include specified objectives and associated targets in terms of reach, activities, participation, etc. Initiatives could be launched immediately, though ideally they would also build upon the baseline assessment and market needs forecasting and anticipation to help prepare Uzbekistan

for the future. Raising awareness about education opportunities for women and girls in particular is important and must be integrated in this approach (OECD, 2018[10]).

Supporting the public sector's digital upskilling will also ensure that the incentives developed can meet the private sector's needs

Support to the private sector will be more effective if government employees themselves grasp the breadth and depth of the digital transformation needed by firms. In 2020, the President acknowledged that most departments were still far from the introduction of digital technologies, and that many managers were equally far removed from digital technologies and thus failed to properly engage their employees in the digital transformation of the firm (gazeta.uz, 2020[11]). The government should therefore address deficiencies in digital literacy in the public sector and pursue efforts to train civil servants in the sphere of ICT, as Uzbekistan currently lacks qualified government employees with ICT skills (ADB, 2021[12]). The resolution of the Cabinet of Ministers on ''additional measures for further training and skills of employees of state and economic management'' foresees the assessment of government employees' ICT skills and qualifications and support in certification activities. However, civil servants have been unable to acquire digital skills due to a lack of training programmes and resources (USAID, 2022[1]) (Shin, Ho and Pak, 2020[13]). Civil servants in close interaction with the private sector (Chamber of Commerce, SME agency, etc.) could be given priority to receive such training.

Challenge 2.2: Complementary skills are found to be generally inadequate

Investment in overall skills development also appears critical, as the benefits of digitalisation are lessened by skills shortages in managerial or digital-related technical skills. This is especially the case for less productive firms, which often lack resources and attractiveness to hire skilled workers (Sorbe et al., 2019[14]). The diffusion of ICT in the workplace not only raises the demand for ICT specialist and generic skills, but also that of ICT-complementary skills. These skills are not necessarily linked to the ability to use ICTs but have become needed to operate in environments shaped by ICTs. For instance, the greater amount of information delivered thanks to technologies requires better capability to plan in advance and adjust skills. Flatter work organisations enabled by ICTs, characterised by more team work and less top-down management, require more co-operation and stronger leadership (OECD, 2016[15]).

In Uzbekistan, the level of general skills remains inadequate to cater for private sector growth and the transition to a market economy (World Bank, 2022[16]). Private sector firms report difficulties in finding high-skilled workers, and nearly three out of four firms report inadequate skills as a significant hurdle to business development (World Bank, 2022[2]). MSMEs, in particular, are the most affected by the lack of appropriate skills. An ADB survey of employers showed that 20% of firms interviewed were unable to invest, and another 23% experienced reduced business turnover because of a shortage of skills, (ADB, 2022[17]). The skills mismatch needs addressing, especially in a context of SOE privatisation, where SOE workers will need to acquire new skills and qualifications to adapt to different skills requirements on the labour market (Box 3.1) (World Bank, 2022[2]).

Recommendation 2.2: Promote investments to enhance inter-personal, managerial, and organisational skills

Digital skills alone are not sufficient to navigate the transition to the digital world of work and thrive in it. The development of a wider set of strong cognitive and analytical skills is required to make the best use of latest innovations. In addition, supporting efforts to reskill and upskill can simultaneously augment both technology innovation and workers' ability to use that technology (Harvard Business Review, 2020[18]).

The government could therefore consider promoting investments in a broader, complementary set of skills, such as inter-personal as well as managerial and organisational skills through the provision of targeted training programmes (OECD, n.d.[19]). Inter-personal skills include information processing, problem solving, and communication methods. Efforts should focus on training and upskilling company founders and high-level managers, as change is more likely to take place if decision-makers are convinced of the benefits of digital adoption (Harvard Business Review, 2020[18]). In realising this, managers will prioritise training their existing employees and recruiting new ones with the relevant knowledge and skills.

References

ADB (2022), *Skills Development for a Modern Economy Project - Economic Analysis*, https://www.adb.org/sites/default/files/linked-documents/51012-003-ea.pdf (accessed on 2022). [17]

ADB (2021), *ADBI Working Paper Series - Challenges and Opportunities of Digital Transformation in the Public Sector in Transition Economies: the Case of Uzbekistan*, https://www.adb.org/publications/challenges-opportunities-digital-transformation-uzbekistan. [12]

EBRD (2021), *Uzbekistan: stepping up for women. Baseline assessment of WSMEs on digitalisation*, https://www.ipcgmbh.com/projects/2758. [4]

European Commission (2021), *OECD - Education & Skills Online Assessment*, https://digital-skills-jobs.europa.eu/en/inspiration/resources/oecd-education-skills-online-assessment (accessed on 13 July 2022). [7]

gazeta.uz (2020), *2020 - The Year of Science, Education and the Digital Economy (2020-й — Год развития науки, просвещения и цифровой экономики)*, https://www.gazeta.uz/ru/2020/01/24/year/ (accessed on 6 July 2022). [11]

Harvard Business Review (2020), *Digital Transformation Is About Talent, Not Technology*, https://hbr.org/2020/05/digital-transformation-is-about-talent-not-technology (accessed on 16 September 2022). [18]

IMDA (2022), *Makes Going Digital Simple for SMEs*, https://www.imda.gov.sg/programme-listing/smes-go-digital (accessed on 13 July 2022). [8]

Interreg Europe (2021), *Digital maturity self-assessment tool*, https://www.interregeurope.eu/good-practices/digital-maturity-self-assessment-tool (accessed on 13 July 2022). [6]

OECD (2021), *Beyond COVID-19: Advancing Digital Business Transformation in the Eastern Partner Countries*, OECD Publishing, https://www.oecd.org/eurasia/digitalisation.htm. [9]

OECD (2021), *The Digital Transformation of SMEs*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, https://doi.org/10.1787/bdb9256a-en. [3]

OECD (2018), *Bridging the digital gender divide - include, upskill, innovate*, OECD Publishing, https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf. [10]

OECD (2016), "New Skills for the Digital Economy: Measuring the demand and supply of ICT skills at work", *OECD Digital Economy Papers*, No. 258, OECD Publishing, Paris, https://doi.org/10.1787/5jlwnkm2fc9x-en. [15]

OECD (n.d.), *OECD Digital Economy Papers*, OECD Publishing, Paris, https://doi.org/10.1787/20716826. [19]

Shin, Ho and Pak (2020), *Digital Transformation through e-Government Innovation in Uzbekistan*, https://ieeexplore.ieee.org/document/9061507. [13]

Skillnet Ireland (2022), *Skillnet Ireland*, https://www.skillnetireland.ie/about/ (accessed on 13 July 2022). [5]

Sorbe, S. et al. (2019), “Digital Dividend: Policies to Harness the Productivity Potential of Digital Technologies”, *OECD Economic Policy Papers* 26, https://doi.org/10.1787/273176bc-en. [14]

USAID (2022), *Digital Ecosystem Assessment - Uzbekistan*, https://www.usaid.gov/sites/default/files/documents/USAID_UzbekistanDECA.pdf. [1]

World Bank (2022), *Boosting private sector development in Uzbekistan*, https://blogs.worldbank.org/europeandcentralasia/boosting-private-sector-development-uzbekistan (accessed on 6 July 2022). [16]

World Bank (2022), *Uzbekistan - The Second Systematic Country Diagnostic*, https://documents1.worldbank.org/curated/en/933471650320792872/pdf/Toward-a-Prosperous-and-Inclusive-Future-The-Second-Systematic-Country-Diagnostic-for-Uzbekistan.pdf. [2]

4 Expand existing support and address the gender digital divide

The government has striven to support SMEs in their digital transformation through the increased provision of e-government services, the introduction of financial and non-financial incentives for firms to go digital, and a countrywide initiative to support the development of a national IT and BPO sector. However, limited support and the gender digital divide may prevent firms from realising the full potential of digitalisation. Expanding existing digital incentives, as well as addressing societal barriers, could serve to accelerate the digital transformation of the private sector.

Challenge 3.1: Public support for the acquisition of digital tools by the private sector remains fragmented and limited in scope

E-government services provision remains scattered

The government has improved the provision of digital public services and substantially phased out paper-based interactions with the private sector. Some 56% of government services are reportedly available online (E-Government Project Management Center, 2022[1]). An upcoming OECD survey assessing the business climate in Uzbekistan found that 78% of respondents considered the digitalisation of public services at least somehow useful. Uzbekistan moved up 18 places in the UN E-Government Development Index (EGDI) between 2020 and 2022, to rank 69th out of 193 countries (UN Department of Economic and Social Affairs, 2022[2]). An increased use of e-government services can contribute to developing firms' digital skills, as the latter must learn how to use digital solutions to fulfil regulatory obligations (OECD, 2014[3]). In that sense, the steady strides made by Uzbekistan before and during the pandemic to digitalise public services may have contributed to the digital upskilling of the private sector. Such services include business registration, licensing, VAT payment and access to finance for SMEs. The government also oversaw the expansion of the partially automated online justice system "e-sud", which was originally launched in 2014. It helped eliminate reliance on paperwork and reduced inefficient bureaucracy (UNDP, 2020[4]).

However, the provision of such services seems to lack co-ordination. Whilst the Cabinet of Ministers is in charge of the implementation of e-government services, ministries report that agencies could benefit from more efficient co-ordination and supervision (ADB, 2021[5]). The e-Government Project Management Centre was established in 2020 and given a broad mandate to lead and drive a "whole-of-government" approach to the digital government transformation of government services (USAID, 2022[6]). It is the only body responsible for developing and proposing e-government projects as well as identifying funding, but some observers fear that it suffers from insufficient capacity to handle these functions (ADB, 2021[5]). The lack of consistent, co-ordinated leadership across government bodies to help break through institutional cultures has hampered progress. Data and information sharing between ministries is based on bilateral agreements rather than on an umbrella government policy. Many civil servants have little understanding of the benefits or need for digital reforms (USAID, 2022[6]).

As a result, government agencies have developed parallel, fragmented initiatives:

- My.gov.uz is presented as the main, single portal of interactive public services for citizens and businesses.
- The Chamber of Commerce and Industry provides a range of free services, such as legal and judicial advice, certification and export advisory, etc. Paid services include support with accounting, taxation and business planning tasks. The Chamber of Commerce and Industry also provides IT services. However, these are rather basic, as the services currently offered include copying documents, preparation of electronic forms, scanning, lamination, and saving documents on memory sticks.
- Online-mahalla.uz assists businesses in receiving soft loans for a specified range of activities in the agricultural sector and provides vocational training grants and subsidies for unemployed people, returning migrants, women from low-income families and young individuals.
- B-advice.uz, another online platform, provides practical information on opening and doing a business.
- Birdarcha.uz provides a similar if not identical type of service to b-advice.uz, with information on business registration and taxation.
- License.gov.uz allows companies to apply for licencing.

The actual use of related government websites seems to be relatively low. For instance, OECD fact-finding interviews find that b-advice.uz, a site providing business advice for firms in Uzbek, English and Russian,

registered 6,700 visits over two years, compared to the 411,203 active SMEs registered at the end of 2020 (ADB, 2021[7]). Possible reasons for low use are scattered website locations and functionalities, lack of a single-entry point, and an unclear service offer. This makes it difficult for SMEs to be aware of the relevant services and forms a barrier to increase the use of the digital services provided, as SMEs are usually time- or knowledge-constrained and may not be able to navigate the myriad training opportunities and support available. Increasing the awareness and motivation of employees and managers will depend on progress in developing a consolidated platform to provide comprehensive information on learning opportunities, access to career guidance, and information on skills in high demand.

Digital support is strongest in the IT and BPO sectors

Digital tool provision has been increasing but has largely been limited to the IT and business process outsourcing (BPO) sectors. The government has been focusing efforts on developing a national IT sector supported by IT Parks. Since their inception in 2019, the IT Parks have become key actors in the development of the IT sector. They provide resident companies in the IT sector access to infrastructure and modern laboratories, IT education, software development, start-up ecosystem incubator and accelerator programmes. They also support international firms wishing to outsource IT services (BPO) to Uzbekistan, develop IT skills of the wider population through various initiatives, including the One Million Uzbek Coders[1], and co-ordinate university partnerships. As of June 2022, they hosted 718 resident firms across the country. Yet, access to IT Parks is limited to companies in the IT sector. The IT Parks launched the IT centres to act as learning centres where the wider population can study IT and IT-related topics at subsidised prices. OECD fact-finding interviews further indicate that there are 800 offices under the *hokimiyats* chiefly in rural areas used to increase awareness and usage of e-government services which can also be consulted by firms. These offices are particularly useful to self-employed individuals with no employees and unincorporated entrepreneurs, who constitute the vast majority of Uzbek SMEs, but they propose only basic skills and knowledge trainings. The online learning platform “educat.uz” was launched in 2021 by the Chamber of Commerce and Industry and offers 30 modules building on skills of all types, some of which focus on standard digital skills. While digital literacy is thereby part of the scope, the offering needs to be significantly expanded. There is an on-going initiative to recruit consultants to further expand the functioning and offer of the learning platform in 2022.

Recommendation 3.1: The government could expand support to a wider range of sectors through a one-stop-shop

The government has the capacity to expand its reach to SMEs outside of the IT sector as well as broaden the type and complexity of digital literacy capacity-building services it currently offers through the Chamber of Commerce and Industry. The MDT could consider identifying an implementing agency – the Chamber of Commerce and Industry or the SME or national enterprise support agency and give it a strong mandate to act as a digital one stop shop (OSS) for businesses willing to develop their digital skills (Box 4.1). Such an OSS would aggregate information from the different agencies providing support to the private sector, including the provision of digital skills training. It could implement the once-only principle, where firms only have to request the information once for it to be shared across government agencies. Additionally, such an initiative could improve the co-ordination of the various agencies involved in delivering government-to-business (G2B) services. In developing and implementing a digital transformation strategy, the agency could in particular:

- support the assessment of firms’ degree of digital maturity, including online courses and self-assessments;
- develop sector-specific digital plans outlining a ‘’digitalisation roadmap’’ from elementary digital skills to digital maturity;

- provide tailored training services matching guidelines from sector-specific digital plans and the outcomes of the digital self-assessment;
- facilitate access to a reliable network of certified consultants and advisors; and
- leverage the expertise and co-ordinate relevant stakeholders' (government, social partners, education providers, private firms, NGOs) activities related to digital skills development.

Consideration should be given to the provision of training content in local languages, namely in Uzbek, Tajik and Karakalpak across the country. Attention should be paid to incorporate the gender dimension through the provision of initiatives targeted at women. In addition, to resolve misalignment between expectations and results, the SME agency or related actors could guide SMEs towards ''innovation agents''. Once they have provided support and information on available tools to SMEs, SME agencies can redirect firms to such agents which provide more specialised consulting services on digital transformation topics and can address more specific needs. This would ensure the best solution for each firm's needs. For instance, Singapore's *SMEs Go Digital Initative* provides access to a shared pool of digital consultants appointed by IMDA with services covering digital needs analysis, cybersecurity risk advisory, project management services, etc. Experience from Latvia shows that the most effective results to raise SMEs' awareness of the opportunities offered by digitalisation were obtained when firms were provided with personal, customised support. Experts should explain to them how available digital tools can help solve some of their challenges, and which public financing is available to support the acquisition of such tools.

Box 4.1. The EU Digital Skills and Jobs Platform – A one stop shop aimed at bridging the digital skills gap

The EU Digital Skills and Job Platform is a component of the Digital Europe Programme, which aims to make the European Union more competitive in the global digital economy through digital capacity-building and the promotion of a widespread use of digital technologies across the EU member states.

Enforcing the digital skills pillar of the programme, the platform aims to boost citizens' and organisations' digital competencies. The platform provides:

- Insights into EU and national initiatives and actions in digital skills and jobs
- Training opportunities and career development support
- Good practices, expert advice, resources and tools
- Data, research-based facts and figures
- Funding opportunities and financial instruments
- Interactive community spaces
- News, opinions and events

Content and opportunities provided relate to the area of digital skills and jobs across all levels, from basic to advanced. A collaborative space is available for community members to network and interact.

Source: (European Commission, 2022[8])

Challenge 3.2: Incentives to invest in digital upskilling fall short of their intended targets

Existing financial and non-financial incentives to boost firms' digital uptake are limited

Various financial incentives have been introduced across OECD countries to develop firms' skills and reduce SMEs' gap in adoption, such as direct and indirect financial support to help firms cover the costs of accessing digital tools. Korea, for instance, provides financial support for SMEs to access cloud services. In Germany, Denmark, and Slovenia, financial incentives support firms in augmenting their digital skills (OECD, 2020[9]). In Uzbekistan, the government has already introduced some financial incentives, such as soft loan programmes for SMEs and partial training reimbursement upon successful completion of training, where 70% of the costs spent are covered by the government up to a limit of UZS 1 million (EUR 91.05). Residents of IT Parks can benefit from tax breaks (Table 4.1), as well as customs exemptions for the import of equipment or software not produced in Uzbekistan. However, such support is available only to firms in the IT sector that are IT Park residents.

Table 4.1. Incentives offered to IT Park residents across Uzbekistan

	Personal income tax	Other taxes	Unified social payment contribution	Custom payments on imported goods and services
Non-resident	12%	5-10%	15-25%	Yes
IT Park resident	7.5%	0%	0%	No

Source: Tashkent IT Park, OECD fact-finding interviews (2022)

Recommendation 3.2: Expand financial and regulatory incentives for firms to invest in their digital skills development

Financial incentives can be further developed and expanded to other sectors

Beyond IT park incentives, the government could introduce additional financial incentives to stimulate private investment in digital technologies and capabilities, and offer those incentives to a wider range of sectors. Direct financial support includes partial or full training reimbursement, grants, vouchers or soft loans to help targeted SMEs cover the costs of accessing digital tools such as cloud services, big data, digital consultancy services, digital skills. Indirect financial incentives include training costs deductible from profits, accelerated depreciation schemes and tax credits to stimulate private investment in digital technologies, broader tax support for R&D investments, and allowing an extra-amortisation on the purchase of certain eligible tangible assets and human resources (OECD, 2021[10]). Further tailored support could be considered for rural SMEs, which unlike large firms in rural areas, cannot access training centres and may face prohibitive costs when engaging with training providers based in urban areas.

Regulatory incentives can also reduce the costs associated with investments in training

Introducing training leave legislation could help address barriers for employees lacking time to engage in skills development. To encourage the uptake of training leave, the Uzbek government could offer compensatory mechanisms for learners and employers, in line with several OECD countries, by paying workers while on their training leave (OECD, 2018[11]). Recognising and signalling skills acquired by workers on these trainings would also help firms recruit individuals with the right skills and incentivise people to invest in their skills development.

Attracting foreign talent with digital skills allows cross-pollination and can further support local firms in their digital upskilling. According to the Westminster International University in Tashkent, 68% of surveyed firms highlighted IT and computer skills as one of their key criteria in hiring new employees. Yet OECD fact-finding interviews found that there is a shortage in IT skills and relevant experience on the labour market. Some 47% of the 2020 Start-up Ecosystem Review respondents reported the lack of qualified IT specialists as a key challenge for start-up development (USAID, 2022[6]). A recent programme introduced by the government, which aims to attract foreign IT specialists, provides an opportunity for local firms to benefit from these specialists' expertise. The relocation programme offers attractive benefits such as a 3-year IT visa, a streamlined procedure to apply for residency, tax and customs breaks, an expedited process to open a bank account and support to find accommodation and an office space (IT-VISA, 2022[12]). However, it does not provide actual jobs, and OECD interviews indicate that few expect these specialists to stay longer than a few months at most, due to the mismatch in salary expectations and employment offers on the Uzbek job market.

Challenge 3.3: The gender digital divide does not spare Uzbekistan and may hamper firms' digital literacy to take off

The gender digital divide has been identified as a barrier to an inclusive digital transformation

The digital transformation provides new opportunities for women's economic empowerment and can contribute to gender equality. However, hurdles to access, affordability, lack of education as well as biases and socio-cultural norms limit women's and girls' ability to benefit from the opportunities offered by the digital transformation (OECD, 2018[13]). With 90% of jobs worldwide having a digital component (UNESCAP, 2018[14]), digital literacy is seen as an essential skill for employability and a driver of higher earnings and better economic opportunities. However in Uzbekistan, digital divides along gender lines are significant, as women and girls are disadvantaged compared to their male peers when financial choices must be made about access to the internet, digital literacy and skills-improvement programmes (USAID, 2022[6]). IT and tech are stereotyped as men's interests: women represent less than 10% of students in IT-related university programmes, 22% of students in technical universities, 2% of start-up founders, 12% of IT entrepreneurs in the IT Park, and 13% of applications for IT Park start-up programmes (USAID, 2022[6]). A recent World Bank study found that women are discriminated against in male-dominated occupations[2]. The study also revealed that a large share of job postings contains gender preferences (World Bank, 2021[15]), which negatively affect both women and men. Such gender stereotypes may perpetuate occupational segregation, prevent efficient talent allocation and can contribute to women staying in less remunerative job occupations.

Box 4.2. EBRD's *Stepping up for Women* programme in Uzbekistan

In 2021, the EBRD rolled out a digital-by-design advisory product suite in Uzbekistan under the Women in Business (WiB) programme. The product suite aims to support the development and deployment of digital tools that flexibly deliver advisory services, training and mentoring for women-led SMEs (WSMEs), help them introduce digital solutions to make their businesses more competitive, support their digital transformation and the development of early stage and start-up digital businesses owned by women in Uzbekistan.

The baseline assessment conducted within the framework of this programme found, among others, that:

- WSMEs actively use digital devices (smartphone, desktop, and laptop) for their business. Tools used differed by sector, not gender.
- While most WSMEs in the study use basic digital tools such as social media, web presence and office software, they indicated their need for support in learning how to use these tools to their full potential to i.e. find customers, build a brand online, directly sell to customers, improve online promotion and analyse performance. Digital skills are self-taught on YouTube and Google.
- WSMEs expressed their desire to develop their business skills on non-digital topics as well, such as in HR management, business expansion and business communication.
- WSMEs voiced their need for support systems, visible role models and support in developing soft skills such as confidence, leadership and business communication. WSMEs are not part of strong business networks they can rely on to access resources they need to grow, such as investors, partners or mentors. At the same time, they need to navigate strong cultural norms and perceptions that they do not belong in business.

Source: (EBRD, 2021[16])

Recommendation 3.3: Further explore and address societal barriers hindering the digital uptake of the private sector

Consider gender-sensitive policies when designing digital skills programmes

A range of policy measures can be considered by the government to support the equitable participation of women in the digital economy. These include reviewing digital strategies to ensure they include a gender component, developing metrics that capture gender-disaggregated data, increasing female participation in STEM education, scholarships, awareness raising, direct financial support, community building, etc. (OECD, 2018[13]). The government should pursue and expand its initiatives to promote digital uptake among women, in particular, such as the Gap IT Club recently launched with the IT Park to increase women's IT literacy and provide them with training and employment opportunities in that field, or the Tumaris Tech project also developed by the IT Park focusing on women start-ups. Showcasing success stories of Uzbek women in IT can serve to inspire and encourage other women to pursue an IT-related career. When women and girls are included in support programmes, attention should be paid to ensure that they are not confined to developing lower-paying skills such as data entry or graphic design and away from more remunerative digital skills such as coding or IT systems management (USAID, 2022[6]).

References

ADB (2021), *ADBI Working Paper Series - Challenges and Opportunities of Digital Transformation in the Public Sector in Transition Economies: the Case of Uzbekistan*, https://www.adb.org/publications/challenges-opportunities-digital-transformation-uzbekistan. [5]

ADB (2021), *Small and Medium-Sized Enterprises Development Program (Subprogram 1): Report and Recommendation of the President*, https://www.adb.org/projects/documents/uzb-42007-020-rrp. [7]

EBRD (2021), *Uzbekistan: stepping up for women. Baseline assessment of WSMEs on digitalisation*, https://www.ipcgmbh.com/projects/2758. [16]

E-Government Project Management Center (2022), *About the center*, https://e-gov.uz/en (accessed on 23 May 2022). [1]

European Commission (2022), *Welcome to the Digital Skills and Jobs Platform*, https://digital-skills-jobs.europa.eu/en (accessed on 15 July 2022). [8]

IT-VISA (2022), *IT Visa in Uzbekistan - Relocation program*, https://itvisa.uz/en (accessed on 20 June 2022). [12]

OECD (2021), *Improving the Legal Environment for Business and Investment in Central Asia*, OECD Publishing, https://www.oecd.org/eurasia/Improving-LEB-CA-ENG%2020%20April.pdf. [10]

OECD (2018), *Bridging the Digital Gender Divide - Include, Upskill, Innovate*, OECD Publishing, https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf. [13]

OECD (2018), *Skills Strategy Implementation Guidance for Portugal: Strengthening the Adult-Learning System*, OECD Publishing, https://doi.org/10.1787/9789264298705-en. [11]

OECD (2014), *Recommendation of the Council on Digital Government Strategies*, OECD Publishing, https://www.oecd.org/gov/digital-government/Recommendation-digital-government-strategies.pdf. [3]

Paris (ed.) (2020), *OECD Digital Economy Outlook 2020*, OECD Publishing, https://doi.org/10.1787/bb167041-en. [9]

UN Department of Economic and Social Affairs (2022), "E-Government Survey 2022", *The Future of Digital Government*, https://desapublications.un.org/sites/default/files/publications/2022-09/Report%20without%20annexes.pdf (accessed on 29 September 2022). [2]

UNDP (2020), *E-SUD rises to the COVID-19 challenge*, https://www.undp.org/uzbekistan/blog/e-sud-rises-covid-19-challenge (accessed on 21 June 2022). [4]

UNESCAP (2018), *E-Government Survey 2018 - Gearing E-Government to Support Transformation towards Sustainable and Resilient Societies*, https://www.unescap.org/sites/default/d8files/knowledge-products/E-Government%20Survey%202018_FINAL.pdf (accessed on 19 September 2022). [14]

USAID (2022), *Digital Ecosystem Assessment - Uzbekistan*, https://www.usaid.gov/digital-development/uzbekistan-digital-ecosystem-country-assessment. [6]

World Bank (2021), *Gender Discrimination in Hiring - Evidence from an Audit Experiment in Uzbekistan*, https://openknowledge.worldbank.org/handle/10986/36311. [15]

Notes

[1] The One Million Uzbek Coders is a joint project between Uzbekistan and the UAE which aims to teach the population programming and digital skills in four areas: data analytics, Android development, front-end development, and full-stack development. As of June 2022, 2.5 million students had reportedly registered to the programme across Uzbekistan, and 1.5 million of them had received participation certificates.

[2] The results for the IT sector show a substantial difference in callback rates but were not statistically significant, though OECD interviews support the World Bank report's findings that IT sector positions are considered male dominated.

5 Next steps

A summary of recommendations made throughout the report as well as a suggested timeline are provided to support the Government of Uzbekistan with the implementation of reforms to support the digital upskilling of firms.

Conclusions

The OECD recommends that the Government of Uzbekistan first prioritises improved data collection of the needs of the private sector for the type of digital skills. This collection together with systematic digital skills assessments will provide the foundation on which to adapt and improve public policy. Next, Uzbekistan can identify existing digital upskilling initiatives and gather them in a one-stop-shop. Awareness raising campaigns and outreach efforts to the private sector can maximise the uptake of these programs.

Moving forward, the National Digital Strategy should then incorporate objectives for the private sector to develop digital skills by industry based on identified needs. The NDS design, implementation and revision should integrate all relevant stakeholders in a co-ordinated way, including the public sector, educational institutions, the domestic private sector, and multinational corporations. Incentives for the private sector to upskill on both digital and complementary dimensions should be introduced.

With a comprehensive upskilling system in place, the government should take care to integrate gender-sensitive policies in all its incentives. It can expand its efforts to develop financial, regulatory, and legal incentives to enlarge the uptake of digital upskilling initiatives among firms.

Table 5.1. Overview of recommendations and suggested implementation timeline

Proposed stage 1		
Short term (<1 year)	**Medium term (1-3 years)**	**Long term (>3 years)**
• Assess private sector digital needs and opportunities through industry consultations and data collection • Conduct baseline assessment of the private sector's digital skills • Consult private and educational sectors to understand awareness needs and focus	• Have a single coordinating body responsible for the identification, implementation, and co-ordination of digital upskilling initiatives • Expand use of channels to raise awareness • Develop mechanism to guide SMEs to appropriate actors and resources	• Define an agency acting as the one-stop-shop for SME digitalisation • Develop digital self-assessment tools for firms to evaluate their digital literacy • Provide information and raise awareness of benefits of digitalisation and available tools in a systemic manner • Develop a one-stop-shop integrating all available public support on digital and complementary upskilling
Proposed stage 2		
Short term (<1 year)	**Medium term (1-3 years)**	**Long term (>3 years)**
• Include a digital skills component of the private sector in the NDS • Clarify and reorganise NDS mandates, stakeholders, budgets and targets in a coordinated manner • Integrate objectives related to the dissemination of knowledge on the benefits of digitalisation in the NDS, including a gender dimension • Introduce sector-specific digital roadmaps with objectives, KPIs and targets within the NDS	• Facilitate ecosystem co-ordination (public, private, academic) • Develop mechanism to integrate private-public dialogue in NDS • Leverage international experience for a digital skills coalition • Monitor and assess the impact of NDS on private sector digitalisation uptake based on quantitative and qualitative KPIs	• Adapt educational priorities to individual and labour market needs • Expand sector-specific tools, trainings and seminars to equip firms with digital and complementary skills

Proposed stage 3		
Short term (<1 year)	**Medium term (1-3 years)**	**Long term (>3 years)**
• Collect gender-disaggregated data • Offer incentives to attend trainings • Raise opportunities for women in the ICT sphere	• Enlarge existing financial and regulatory incentives to promote firms' investment in digital upskilling	• Ensure civil servants are aware of and have the opportunity to systematically attend digital trainings • Improve co-ordination of public service provision

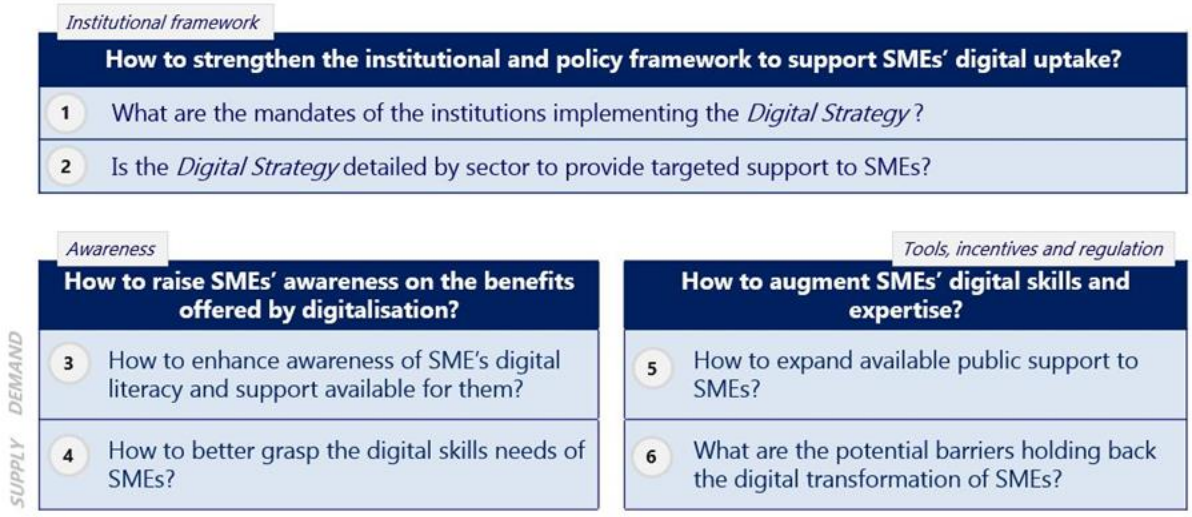
Annex A. Methodology

Overview of the OECD monitoring framework

In the framework of the Central Asia Competitiveness IV Project co-financed by the European Union, the OECD ECP and the government of Uzbekistan established an OECD-led Public-Private Working Group, co-chaired by the Strategic Development Agency of Uzbekistan to review framework conditions for the digital upskilling of the private sector in Uzbekistan. The Working Group (WG) brought together representatives from the government of Uzbekistan, business associations, and other development partners. The OECD ECP, with contributions from international experts and peer reviewers from OECD member countries, carried out analysis, data collection and consultations with stakeholders in Uzbekistan to assess and develop recommendations for institutions and tools needed to support the digital upskilling of firms in Uzbekistan following the "Digital Uzbekistan 2030" strategy.

The note built on the extensive corpus of OECD work on digitalisation and SMEs, and developed a country-specific assessment framework for Uzbekistan, integrating three main dimensions: (i) the institutional framework in place to support Uzbek firms' digital uptake, (ii) the awareness of business support services for digital skills, and (iii) the tools and incentives in place to support firms in their digital transformation. For each dimension, the OECD assessed the current state, identified challenges and priority areas for policy action, and discussed possible drivers for implementation.

Figure A A.1. Analytical framework for the peer-review on the digital skills for private sector competitiveness in Uzbekistan



Source: OECD analysis

The peer-review exercise relied on a continuous dialogue between the OECD, the government of Uzbekistan, the private sector, and international partners, including through working group meetings

(Table A A.1) and several bilateral consultations in 2022. In particular, the OECD used a series of questionnaires, data requests and collection, analysis of existing surveys and interviews, to collect data and information.

Table A A.1. List of OECD public-private working group meetings

Agenda of meetings	Key participants	Date
First WG: Launch event and discussion of methodology, initial findings and priorities	Strategic Reforms Agency, Ministry of Investments and Foreign Trade, Ministry for Development of Information Technologies and Communications, Agency for Mahallabay Work and Entrepreneurship Development, Public Services Agency, Ministry of Innovative Development, Digital Economy Research Centre under the Ministry for Development of Information Technologies and Communications, E-Government, Projects Management Centre, Centre for Economic Research and Reform, Chamber of Commerce and Industry, Business Ombudsman's Office, IT Park, World Bank, EBRD, UNDP	16 February 2022
Second WG: Discussion of preliminary findings		11 May 2022
Third WG: Discussion of final assessment and draft recommendations		14 September 2022

The assessment framework is the central tool for the OECD peer-review, and to suggest recommendations based on measurable policy actions each of the three dimensions of the framework has been broken down into several measurable policy dimensions.

For each policy dimension, data was collected using desk research, questionnaires (see below) and interviews were held with key stakeholders from the public and private sector in Uzbekistan (Table A A.2) as well as with actors from the development community, the international business sector, and key institutions in OECD countries. Complementing the interviews, detailed questionnaires and data requests were sent to the Ministry of Economic Development and Poverty Reduction, the Agency for Makhallabay Work and Entrepreneurship Development, the Public Services Agency, the Business Ombudsman's Office, the Ministry of Innovative Development, the Chamber of Commerce and Industry, the Centre for Economic Research and Reforms, the Ministry for Development of Information Technologies and Communications, the Innovation, Technology and Strategy Centre and the Tashkent IT Park.

Table A A.2. Selected list of interviews conducted by the OECD during the 2022 peer-review

Institution	Date
Ministry of Economic Development and Poverty Reduction	17 March 2022
Agency for Mahallabay Work and Entrepreneurship Development	17 March 2022
Public Services Agency	17 March 2022
Business Ombudsman's Office	17 March 2022
Ministry of Innovative Development	18 March 2022
Chamber of Commerce and Industry	18 March 2022
Centre for Economic Research and Reforms	18 March 2022
Ministry for Development of Information Technologies and Communications	18 March 2022
Innovation, Technology and Strategy Centre	30 May 2022
Tashkent IT Park	23 June 2022

This report will be peer reviewed and endorsed during the OECD Eurasia Competitiveness Roundtable in March 2023, a policy network that brings together high-level representatives and technical experts from Eurasia countries, OECD members and partner organisations.

OECD questionnaire addressed to the Ministry of Investments and Foreign Trade to support the peer-review on the digital skills for the private sector in Uzbekistan

Box A A.1. Background

The OECD, with the financial support of the European Union, has launched a peer review on digital skills for private sector competitiveness in Uzbekistan.

The review will support the government in translating its Digital Strategy into a supportive institutional framework to overcome knowledge, skills, and legal adoption barriers of digital technologies by its private sector. Three main dimensions will be considered: (i) a supportive institutional and policy framework, (ii) firm's awareness of their digital skills needs, and (iii) the provision of tools for firms to acquire the latter. The OECD will assess and develop recommendations for institutions and policies needed to support the digital transformation of Uzbek firms.

A draft version of the peer-review note will be discussed at Ministerial level during the OECD Eurasia Competitiveness Roundtable at OECD Eurasia Week in Autumn 2022, and the final report launched by the end of the year.

Box A A.2. Glossary

Digital Strategy

A national policy or agenda across several Ministries to develop a country's digital economy and society.

Policy or sector-specific strategy

A course or principle of action adopted or proposed by the government or the legislature. This includes sector-specific strategies such as digital security strategy, IoT strategy, etc.

Policy instruments

Direct financial support (e.g., grants, vouchers, etc.)

Indirect financial support (e.g., tax relief, preferential loans, etc.)

Non-financial support (e.g., training, information sharing, counselling, business incubators, etc.)

Regulations and statutory guidance (e.g., authorities, standards setting, education curricula, etc.)

Objective

A high-level goal (e.g., to increase broadband connectivity).

Target

A quantitative objective over a well-defined period (e.g., to connect 90% of the population to broadband by 2025)

Institutional and policy framework on digitalisation for businesses

1. Does your country have a **National Digital Strategy** (NDS)?
   - Key policy objectives
   - Details on budget and time frame
   - Previous NDS (if any) and results?

2. Is the **NDS**:
   - A standalone strategy
   - Part of a broader national strategy (e.g., innovation strategy).
   - The digital economy objectives and planned policy actions are scattered across multiple policy documents (e.g., SME development strategy, ICT strategy, broader economic development strategy)
3. What are the **main policy objectives** of your NDS? (Please consider all relevant strategies when identifying digitalisation priorities and planned policy actions).

   Please rank priority from 1 (low) to 10 (high), and provide details on the ensuing policy actions.
   - Develop telecommunication infrastructure
   - Enhance internet governance
   - Promote digital uptake by individuals
   - Promote digital uptake by businesses
   - Enhance digital government

- Foster innovation in digital technologies
- Develop skills for digital transformation
- Enhance data governance
- Improve digital security
- Enhance consumer protection online
- Other not mentioned

4. Does the NDS include **sector-specific digital plans**? If yes, which ones?
5. Are there **other national strategies promoting digital skills for businesses**?
6. Does your country's NDS set **targets**?
   - Please provide details on the targets / indicators / baseline / current state
7. Which **institutions, actors, mechanisms** are responsible for the following:
   - Lead the development of NDS
   - Contribute inputs to NDS
   - Co-ordinate implementation of NDS
   - Implement NDS
   - Monitor implementation of NDS
   - Evaluate NDS
8. How do you ensure **co-ordination among different bodies for the development and implementation** of the NDS?
9. Is there a **budget** associated with your NDS?
   - Yes / No
   - Please provide details on the budget (planned, allocated, or spent, as applicable) and time frame
10. Does your country have a **strategy for enhancing digital government**?
11. Do you **monitor** the uptake of digital government services and, if yes, what are the results?

12. What are the leading initiatives to **promote digital government services for businesses**?
13. Could you provide us an overview of the **current institutional landscape** (names and mandates of responsible ministries and agencies) regarding digital skills and services to SMEs? In particular:
    - Could you detail the mandate and work plan, in particular pertaining to digitalisation of businesses and SMEs, of the **Agency for Mahallabay Work and Entrepreneurship development** (former Agency for Development of Small Business and Entrepreneurship)?
    - What are the main differences with the mandate and work of the former Agency for Development of Small Business and Entrepreneurship?
    - What is the role and mandate of the Ministry for development of information technologies and communications? Does it also work on digital skills topics in relation to businesses and SMEs?
14. What is the role of the **Co-ordination Commission** for the implementation of the NDS?
    - Does the Commission work with other agencies and ministries?
    - Can you please detail the functioning and objectives of the **regional roadmaps for digital transformation**?
    - Is the Agency for Mahallabay Work and Entrepreneurship development (former Agency for Development of Small Business and Entrepreneurship) included in the **implementation plan of the NDS**?

15. What is the role and co-operation with the **Chamber of Commerce and Industry and other business associations**?
    - Has the private sector been consulted during the development of the *Digital Uzbekistan 2030 Strategy* (NDS)?
    - Does the implementation plan of the NDS include formal **public-private dialogue** (**PPD) mechanisms?**
    - Are there formal **PPD mechanisms** on digital topics for businesses, for example with the Chamber of commerce and Industry?
16. Has the SME Law established an **SME definition**?
17. Will SME digitalisation be part of the draft **SME Strategy**?
18. Does a **dedicated digital skills facility** (e.g., digital or innovation hubs, academia, etc.) exist?

Digital skills for businesses under the recovery package

19. Did your country adopt digital government solutions to improve services to businesses in response to the Covid-19 pandemic? If yes:
    - Could you provide us with an updated overview of all support measures taken during the COVID-19 pandemic to support business (and especially SMEs) move their activities online?
    - Could you detail us (if any) the measures that were planned/implemented to support companies going digital under the 2020-2021 recovery plan? What is the foreseen timeline? Which agencies/ Ministries will be in charge of planning and implementation?

Business' awareness of support services for digital skills

20. What are the main **government initiatives** to promote digital skills:
    - In the general population **through the education system** (e.g., from early childhood onwards for basic digital skills, until higher education/university for ICT/STEM programmes)
    - In the general population through lifelong learning initiatives (e.g., non-formal learning, training courses to upgrade digital skills)
    - Among SME managers / entrepreneurs (e.g., through awareness raising campaigns, networking/mentoring, but especially trainings to develop digital managerial acumen, organisational changes, digital mind-set etc.)
    - Among employees of SMEs (e.g., practical trainings on the use of digital technologies in the firm – government-subsidised trainings)
21. Are these initiatives reflected in **national policy documents**?
22. What are the main **non-governmental initiatives/tools/institutions** to promote digital skills? (e.g., availability of competence centres, innovation hubs showcasing the use of digital technologies and offering digital skills trainings, clusters etc.)
23. Can you share with us, if any, the results of surveys of business use and assessment of public service centres (PSC)?
24. Do PSC provide **digital business development services**? If yes, which ones, and under which form?
25. Do PSC **work with public and private business advisory service providers** in the regions where they are established (e.g., to facilitate a network of business support services)?

Use of digital technologies by businesses

26. Does your country have in place policies to promote the use of digital technologies by businesses (e.g., ICT goods, software, cloud computing, Artificial Intelligence, big data, e-commerce, etc.)?
    - Yes/No
    - Please provide details on the policies:
        - Description
        - Objectives
        - Implementing/ responsible body
        - Is this policy linked to other policies, strategies or agenda?
    - Which of the policy instruments below apply to the policy described above?
        - Direct financial support (e.g., vouchers for the purchase of ICT goods or services, grants for ICT-related R&D, etc.)
        - Indirect financial support (e.g., tax incentives on ICT investment, loans at a preferential rate, etc.)
        - Nonfinancial support (e.g., training on digital technologies, business information, counselling, trade shows, etc.)
        - Regulations and statutory guidance (e.g., e-invoice standards, e-payment regulations, data authority, etc.)

Digital skills toolbox for firms

27. What are the main government initiatives / programmes promoting SME digitalisation in your country?
    - Name of the initiative
    - Launch year
    - Objectives
    - Main activities
    - Impact

28. Does the Agency for Mahallabay Work and Entrepreneurship development, or another agency:
    - Offer digital skills training programmes to entrepreneurs and SME employees? Do quality labels and/or certification mechanisms for such trainings exist?
    - Offer digital maturity assessment tools to businesses?
    - Offer advisory services on digital skills to businesses? (If yes, please see “On advisory and training services for SMEs” section below)
    - Provide financial support (grants, vouchers, subsidised loan programmes, etc.) for digitalisation (e.g., trainings, digital equipment, etc.)?
    - Conduct regular consultations and surveys on the digital skills needs of the private sector?
    - Monitor the ecosystem for the digital transformation of businesses?
29. What is the role and co-operation with the **Chamber of Commerce and Industry and other business associations**? Does it identify businesses’ digital skills needs?
30. Does an **easily accessible public database** gathering the work of all relevant public institutions engaged in business digitalisation? If not, what are the **key online resources for businesses considering going digital** in Uzbekistan?

31. Are there other initiatives led by non-government actors to promote digitalisation of SMEs? (incubators, accelerators, clusters, centres of competence, innovation centres). Please provide detail on the following:
    - Name of the initiative
    - Launch year
    - Objectives
    - Main activities
    - Impact

On advisory and training services for SMEs (if any)

32. Is the staff of the agency providing directly advisory and training services on digital skills to businesses, or are they outsourced to private advisors?
    - How is the advisory staff in dedicated agencies hired and trained?
33. Has a network/ observatory of advisory services on digital skills for businesses been set-up to provide advice and tailored training services at the request of individual companies in specific sectors?
    - If yes, who is in charge of the network?
    - Is it free of charge?
34. How many SMEs/ firms have benefitted from advisory and training services on digital skills over the past years?
35. Does a programme of advertising and outreach regarding the advisory and training services on digital skills offered by the relevant agencies exist? (e.g., a "single window" (online/offline) for SMEs).

Digital Skills for Private Sector Competitiveness in Uzbekistan

Since 2019, digital transformation has been a clear policy priority in Uzbekistan. While the country has made significant progress in terms of Internet access, quality and affordability, digital uptake among firms remains low. This lack of digital skills seems to be a limiting factor affecting the digital transformation of business.

Based on recent OECD work on digitalisation, this report examines what is holding back the digital upskilling of businesses in Uzbekistan. It suggests three sets of policy actions: (1) developing a supportive institutional framework for the digital uptake of firms; (2) raising firms' awareness of the importance of acquiring digital and complementary skills; and (3) expanding existing support to digitalise while addressing the gender digital divide.

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