

This note aims at guiding a series of public-private dialogues (PPD) on the ICT sector in Libya (September 2022 – February 2023). It provides an initial assessment of the sector, including its potential for diversifying the Libyan economy, and key challenges facing sector growth, such as ICT costs and infrastructure, business environment and regulatory framework, and the digitalisation of public services. Participants are invited to share their views and perspectives on common challenges and priorities for the ICT sector. The conclusions will contribute to a policy reform roadmap for the sector. This note will also support the formation of a PPD platform in Libya that will involve both policymakers and private sector representatives.

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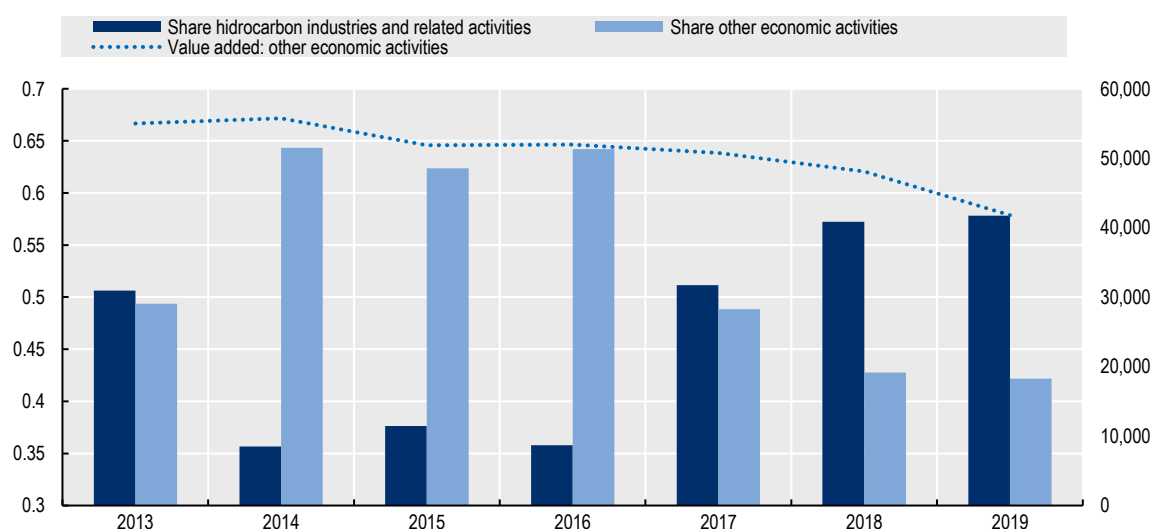
## Context of the current issues paper for Libya's ICT sector

The digital transformation can bring crosscutting benefits to citizens and businesses in Libya. The diffusion and adoption of technologies can increase firm productivity and spur innovation (Gierten et al., 2021<sup>[1]</sup>). The digitalization of public services can allow firms to conduct business and comply with regulations more easily (OECD, 2020<sup>[2]</sup>). A well-developed telecommunications network can enhance the performance of the private sector and contribute to the economic diversification of Libya. For these reasons, the ICT sector has been continuously identified as a priority sector for economic diversification based on the OECD's economic assessment of Libya's private sector.

On the private sector assessment of Libya conducted in 2016, the OECD stated that developing new productive sectors and with a potential to gain a comparative advantage could eventually contribute to the Libyan export basket. The report also stressed that sector driven value chain initiatives would increase productivity and promote integration of existing SMEs with multinational enterprises operating in the country (OECD, 2016<sup>[3]</sup>). More than five years after the report's launch, Libya's diversification objectives remain distant. While non-hydrocarbon related economic activities have continued its decline (Figure 1), the oil industry has started its gradual recovery (but not without socks) towards the historical potential values.

**Figure 1. While the hydrocarbon sector has recovered its pre-crisis weight, the non-hydrocarbon economic size has steadily decreased since 2013**

Left axis show % of Libya's GDP; Right axis show value added in millions of Libyan Dinar.

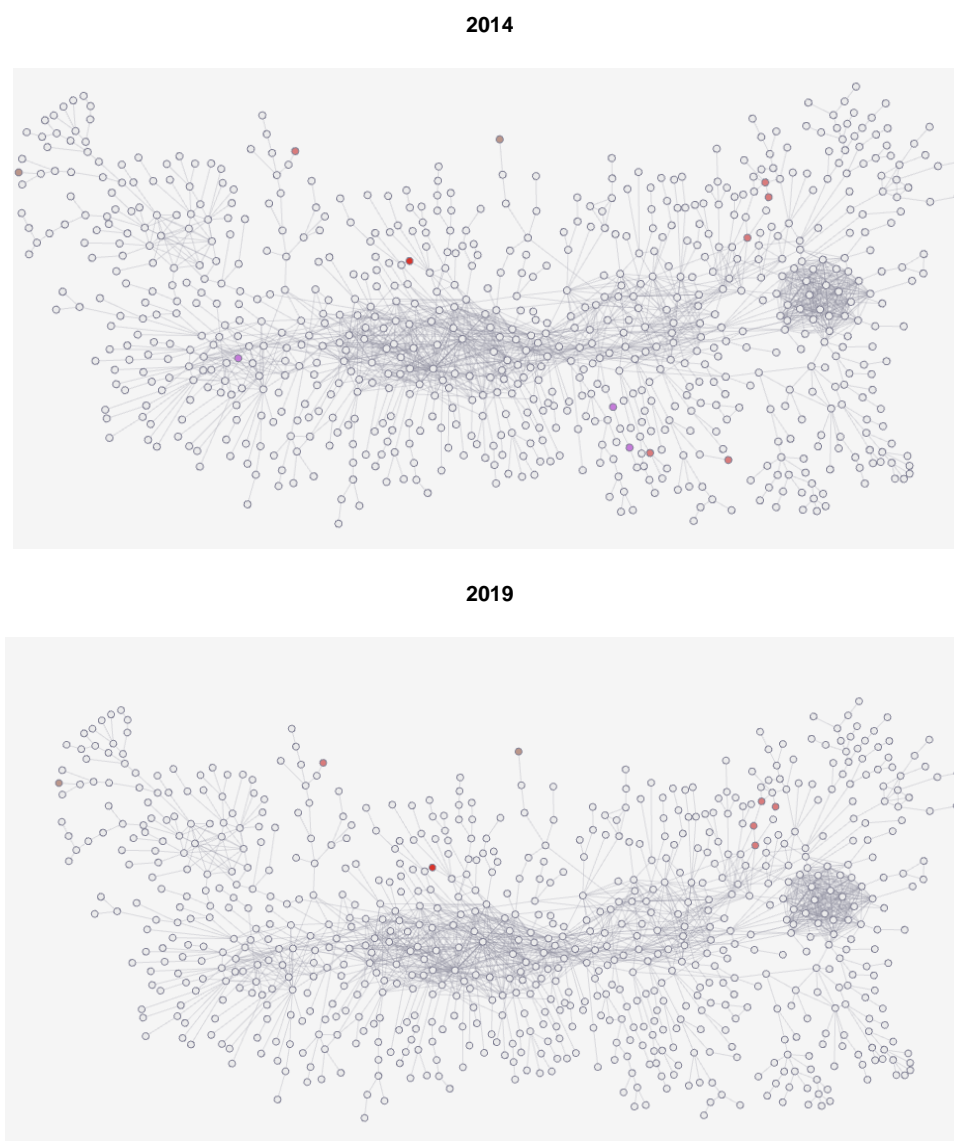


Source: OECD Staff calculations, Central Bank of Libya 4th Quarter Economic Bulletin, 2021

The decline of Libya's non-hydrocarbon economic activities can be observed in the composition of the country's exports basket, in particular, regarding the goods where Libya offers a comparative advantage with respect to other international competitors (RCA). Between 2014 and 2019, Libya's exports basket has lost a number of goods that no longer offer an advantage with respect to similar goods in the global market (Figure 2). Among them, Libya has lost advantage over more complex and more integrated products, mostly from the chemical industries. Libya's main exports with high RCAs remain oil, its derivatives, and gases (which in total account for 90% of the country's exports in 2019).

## Figure 2. Libya's exports have lost international competitiveness in the last five years

Libya product space. Highlighted nodes represent exported products with RCA above 1



Note: Each node is a product, and its size determined by its share of total country exports. The opacity of a node indicates the degree to which the product is produced with an RCA. The product space map gets denser towards the centre and is sparse at the periphery. Many products group naturally into highly connected communities of products as they require similar capabilities (e.g. knowledge and factor inputs). The distance between the products represents the ease of "jumping" to another product.

Source: The Atlas of Economic Complexity and UN Comtrade Database

### ***Internet and Communication Technologies***

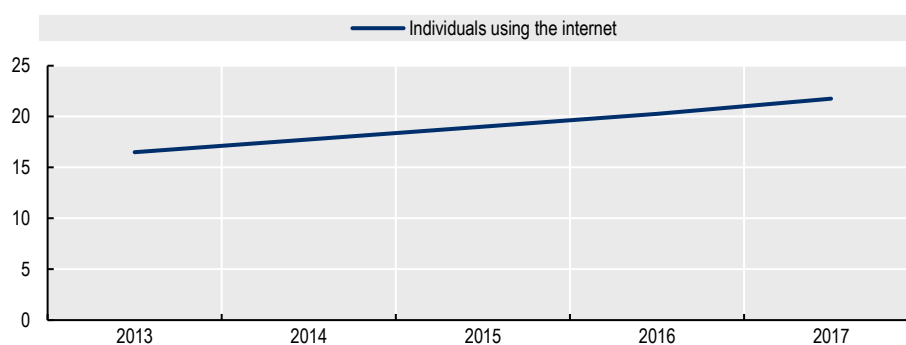
According to the International Telecommunication Union (ITU), 9 out of 10 Libyans had access to a mobile phone in 2017<sup>1</sup>. ITU's estimations for internet usage are however much lower, with approximately 21.8% of the country's population using the internet at least once in a period of three months, from any location

<sup>1</sup> International Telecommunication Union: [World Telecommunication/ICT Indicators Database](#)

(Figure 3). The ITU also estimates that only 5% has a fixed subscription to high-speed access to the internet.

**Figure 3. Internet usage in Libya**

% of population that accessed the internet at least once in three months

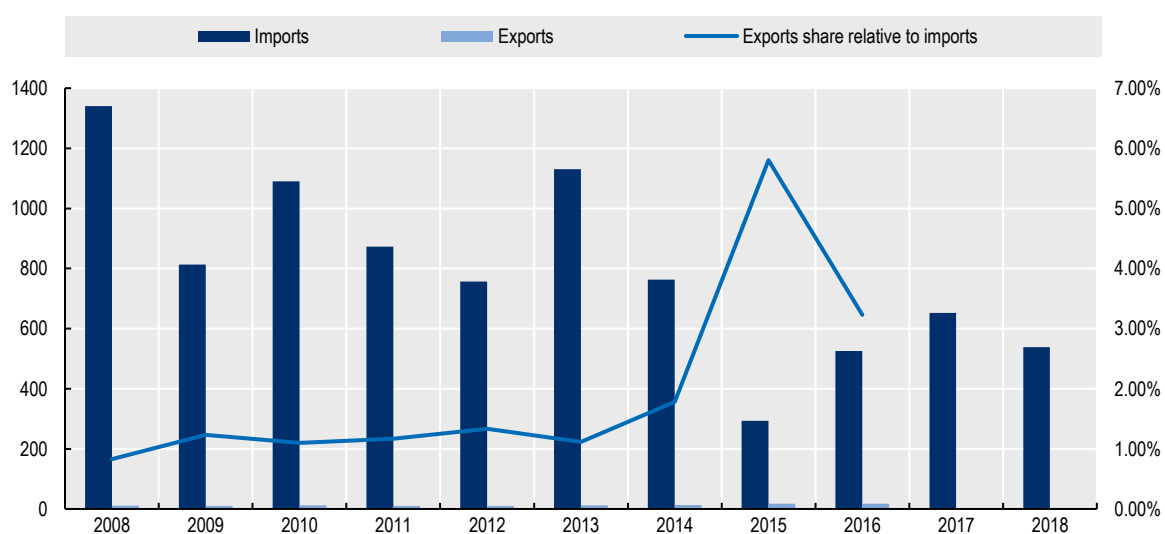


Source: International Telecommunication Union

In 2018, a survey conducted among Libya's youth showed that a majority of job seekers and employees, in particular at the private sector, gave particular importance at their computer and internet skills for being hired. Interviewees placed these skills among the top five necessary skills for developing their performance in their current positions or finding a better job (Abughaighis, 2018<sup>[4]</sup>). ICT services in Libya represented in 2016 (latest year of availability for ICT exports) USD 17 Million on services exported to partner countries, experiencing a 66% increase since 2010 (Figure 8). Although this report needs to expand data regarding Libya's historical maximum ICT market volume, the country's potential for its ICT industry can be grasped by considering the volumes of ICT services exported in the early 2000, with annual volumes surpassing USD 100 Million.

**Figure 4. Libya is eminently an ICT services importer but its exports have increased in value and share in the last decade**

Left axis show Millions of USD Dollars; Right axis show ICT exports share relative to imports



Source: IMF DOTS Data

In its 2016 economic assessment of Libya's private sector, the OECD selected ICT among crucial exports due to the substantial existing demand for basic ICT services. This is further emphasised by the expected high future demand of internet as it continues expanding, low entry barriers in some areas of this sector and potential to improve existing infrastructure (OECD, 2016<sup>[3]</sup>). In 2021, the UNDP's labour market assessment's models estimated that information & communication activities could grow circa 50% in a period of 3 years and see its contribution to employment generation increase by 20% (UNDP, 2021<sup>[5]</sup>). While employment generation estimation for this sector does not stand among the main economic activities (UNDP, 2021<sup>[5]</sup>), the sector should be considered an enabler of other economic activities, of high-end and entry level. Initiatives in support of ICT infrastructure investment, SMEs incentives to access the digital economy and digital skills development (OECD, 2020<sup>[6]</sup>) are fundamental in order to contribute to Libya's economic diversification and integration in higher complexity global value chains. This view is supported by the World Bank, which highlighted the sector's potential to attract young talent and foreign investors if properly supported (Rahman, 2020<sup>[7]</sup>).

## Key challenges facing the ICT sector in Libya

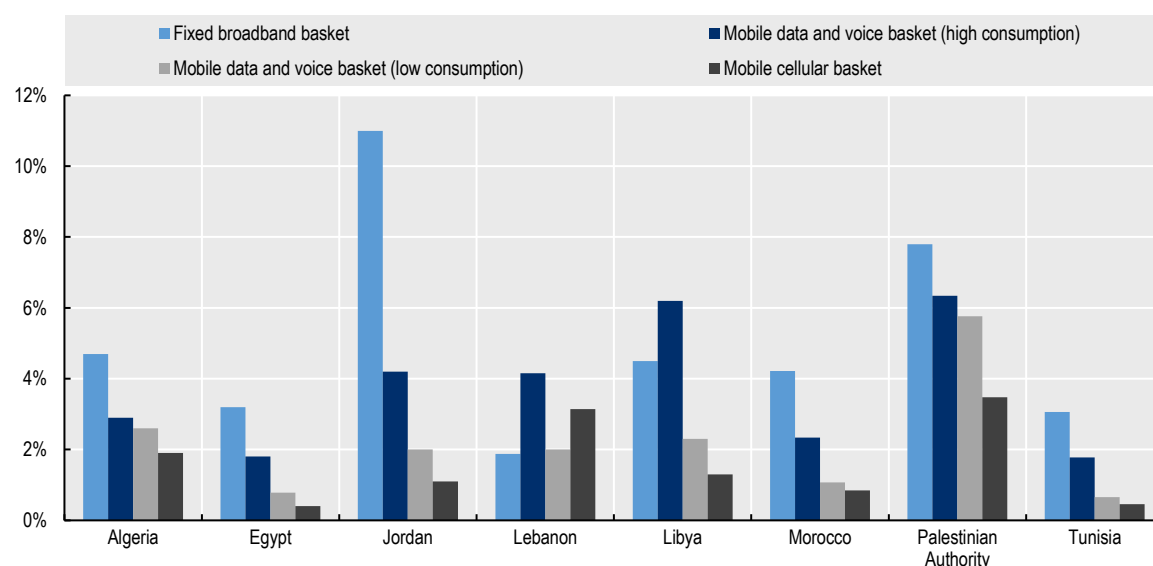
### Policy Priority 1: Improving ICT costs and infrastructure

#### I. Improve Affordability

Promoting affordability is crucial for Libya's digital transformation. In this respect, fixed broadband internet and mobile cellular remain costly in Libya in comparison to other Arab states (Figure 5). In 2021, fixed broadband internet equalled 4.5% of GNI per capita, compared to 3% in Egypt and Tunisia and 4.2% in Morocco. Similarly, mobile broadband equalled 6.2% of GNI per capita in 2021, the second highest cost in the region after the Palestinian Authority, which equalled 6.3% (International Telecom Union, 2021<sup>[9]</sup>).

Figure 5. ICT costs in Libya are high within the MENA region

Prices as % of GNI per capita (2021)



Source: International Telecommunication Union (2021<sup>[9]</sup>)

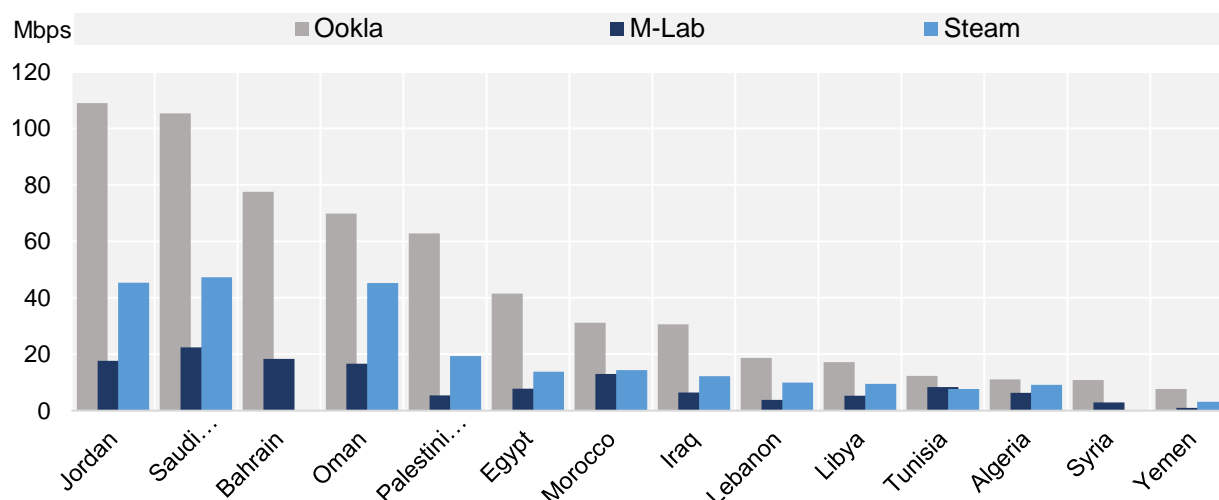
## II. Develop ICT infrastructure

Expansion of InfraTech involves increasing coverage of 4G, cloud services, fibre optics, IoT, among others. In Libya, population coverage by at least a 3G mobile network is significant at 98% in comparison to the MENA average of 93%. However, other estimates place 3G population coverage at 78% in comparison to 99% in Tunisia, Egypt and Morocco. 4G coverage remains limited at 40% in Libya in comparison to 99% in Morocco, 96% in Egypt, and 95% in Tunisia and Iraq (International Telecom Union, 2021<sup>[9]</sup>)

High-speed broadband is essential for firms to carry out data-intensive activities and adopt more advanced ICTs such as cloud computing and big-data analysis (Gierten et al., 2021<sup>[1]</sup>). While data is scarce on fixed broadband subscriptions in Libya, the average download speed in the country falls below others in the region. In 2022, Libya's fixed broadband download speed varied between 5.3 to 17.2 Mbps, compared to 17.7 to 109 Mbps in Jordan (Figure 6). The lack adequate high-speed broadband is a barrier to ICT adoption by the private sector.

**Figure 6. Fixed Broadband Speed in the MENA Region**

Average experienced download speed of fixed broadband connections (2022)



Note: Speedtest (Ookla) data are for July 2022; M-Lab (Worldwide Broadband Speed League) speeds were measured in a 12-month period to 30 June 2022; and Steam data are for September 2022.

Sources: Speedtest (Ookla) [<https://www.speedtest.net/global-index>], M-Lab (Worldwide broadband speed league) [<https://www.cable.co.uk/broadband/speed/worldwide-speed-league/>] and Steam [<https://store.steampowered.com/stats/content/>].

### Key questions

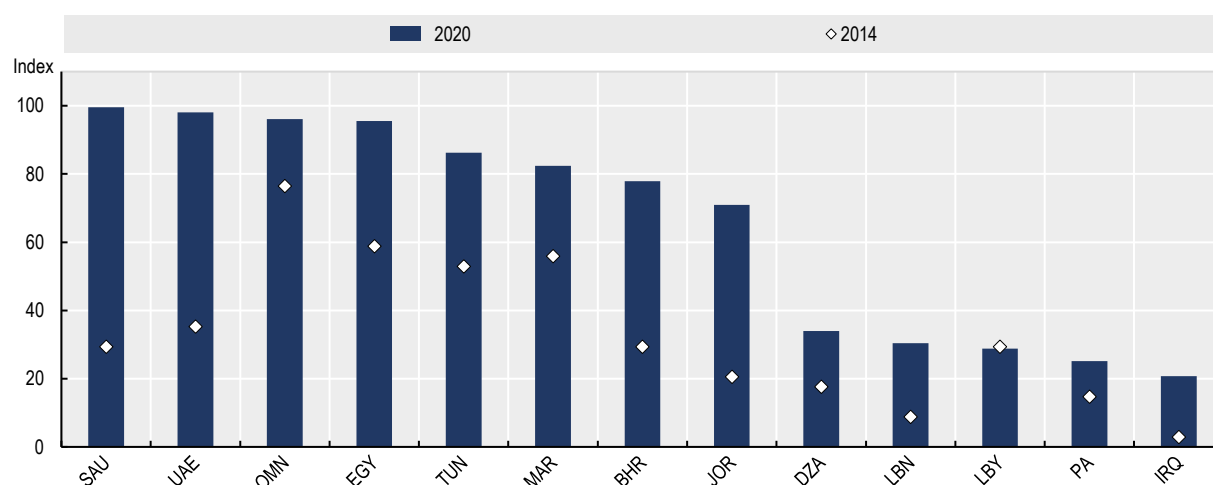
- What are the main obstacles for developing ICT infrastructure and how can they be addressed?
- What are the main challenges impacting the quality and delivery of ICT services in Libya?

## Policy Priority 2: Developing an effective business and regulatory environment

### I. Improve legal framework for digital services

Libya currently lacks a legal framework conducive for digital transformation such as regulations on data protection, online privacy, cybersecurity, online consumer protection, and electronic transactions or e-signatures. The absence of such a framework places Libya behind counterparts in the region in terms of cybersecurity standards (Figure 7), and creates confusion and legal uncertainty for firms, according to participants of the public-private dialogue. Participants also noted the absence of a digital security culture amongst businesses and citizens, requiring awareness raising and education efforts to disseminate a risk management culture and help meet the demand for cybersecurity skills. The establishment of a broad legal framework to govern the ICT sector will help expand e-commerce, incentive the establishment of private digital service providers, and improve the overall business environment.

Figure 7. Libya performs poorly in terms of cybersecurity in comparison to international standards



Note: The Global Cybersecurity Index (GCI) is computed on the basis of the following pillars: legal (legal institutions and frameworks dealing with cybersecurity and cybercrime); technical (technical institutions and frameworks dealing with cybersecurity); organisational (policy coordination institutions and strategies for cybersecurity development at the national level); capacity building (existence of research and development, education and training programmes, and certified professionals and public sector agencies fostering capacity building) and co-operation (refers to partnerships, co-operative frameworks and information-sharing networks).

Source: ITU (2022), Global Cybersecurity Index, <https://www.itu.int/epublications/publication/D-STR-GCI.01-2021-HTM-E>

### II. Boosting firm adoption of basic and advanced ICT

The adoption of basic and advanced ICTs<sup>2</sup> by firms enhances productivity, spurs innovation, and increases the capacity for simulation, decision-making, prototyping and automation. Governments can enable firms to benefit from ICTs through technology extension programmes, training and upskilling, and provision of low-cost access facilities and tax reductions (Kergroach, 2021<sup>[10]</sup>). Regional representation of these measures include Jordan, which has incorporated the provision of digital skills and the expansion of digital sector into a National Digital Transformation Strategy (Box 1).

In Libya, participants of the public-private dialogue noted a number of determinants discouraging digital uptake by firms, including lack of exposure to foreign markets and expertise, regulatory uncertainty and diminished trust in regulatory authorities, inadequate skills and training systems, and high costs associated

<sup>2</sup> The adoption of ICTs by firms ranges from early generation broadband and websites to more advanced ICTs that enable collection and use of large amounts of data (Gierten et al., 2021<sup>[11]</sup>)

with ICT adoption. In addition, private and public sector representatives stressed the need for a supportive network organisation or union to facilitate partnerships and exchange of expertise within each sector.

### **Box. 1 Jordan's National Digital Transformation Strategy & Implementation Plan (2021-2025)**

Jordan's current *National Digital Transformation Strategy and Implementation Plan (2021-2025)* aims to facilitate digital government services, increase connectivity, and create at least 50,000 direct jobs. To improve the business environment, Jordan incorporated the following components to its *Strategy*:

- Youth, technology, and jobs: Jordan will establish an independent legal entity to assess supply and demand for digital skills; establish national professional standards; contract with training service providers; and disseminate online training material. Jordan will also establish working facilities in local communities and digitalise government services for citizens and businesses.
- Innovation and partnership with the private sector: The Jordanian government is creating a legislative framework to regulate the entrepreneurship sector, expand entrepreneurial companies and improve their access to regional and international markets.

Sources: (Jordan Ministry of Digital Economy and Entrepreneurship, 2021<sup>[11]</sup>)

### **Key questions**

- To what extent do current regulations (e.g. data protection, data privacy, and cybersecurity) enable businesses to adopt basic and advanced ICTs (e.g. cloud computing and e-commerce)?
- What policies are needed to enhance the competitiveness of Libyan ICT MSMEs and start-ups, to enhance competition and innovation in the sector?

### **Policy Priority 3: Digitalise Public Services**

#### *1. Improve government-to-business services through digital and interactive platforms*

The digitalisation of public services allows firms to conduct business more easily and increases compliance with regulations (OECD, 2020<sup>[2]</sup>). In 2020, Libya ranked 186 out of 190 on ease of doing business which reflects the process of business incorporation, such as getting a building permit or paying taxes (World Bank, 2020<sup>[12]</sup>). In 2016, Libya lacked a national electronic company registry, requiring businesses to register in Tripoli when regional one-stop shops suspended their operations (OECD, 2016<sup>[3]</sup>). As such, identifying public services and processes, which could be re-engineered and re-designed into digital, would allow firms and in particular MSMEs to access information more easily while decreasing the price of formalization. Digitalizing public services and setting up "one-stop-shops" for businesses involves a strong partnership with the private sector, by consulting their needs and challenges and assessing their user perspective (OECD, 2020<sup>[2]</sup>).



### Key questions

- To what extent are informational and transactional services for businesses, such as starting a business and conducting regular business operations, available online?
- What steps need to be taken towards establishing e-governance (e.g. establishing a digital identity, ensuring transparency)?

## OECD policy frameworks and tools can support Libya's efforts to improve the competitiveness and attractiveness of its ICT sector

Over the years, the OECD has developed a number of policy tools on investment and the digital economy that can help Libya improve the competitiveness of its ICT sector.

- Since 2017, the **OECD Going Digital Initiative** has supported policy makers in the quest to better understand digital transformation and the effects of digital technologies on economies and societies, in an effort to shape a positive digital future. The project has benefitted from the expertise of almost every policy and measurement community at the OECD, the International Transport Forum and the International Energy Agency. Targeted policy advice in particular areas – labour markets, trade, finance, tax, consumer policy, SMEs, agriculture, health, public governance, competition, the environment – is complemented by analysis that brings together all of these distinct policy areas into a coherent whole (OECD, 2019<sup>[13]</sup>).
- Today, the **Going Digital Toolkit** helps countries navigate these changes and the trade-offs that policy makers need to make by mapping a core set of indicators to each of the seven policy dimensions of the Going Digital Integrated Policy Framework. It allows users to interactively explore these data to assess a country's state of digital development. The Toolkit also contains OECD policy guidance and insights related to each of the policy dimensions to help governments design and implement policies that are fit for the digital age (OECD, 2022<sup>[14]</sup>).
- The **OECD Guidelines on Multinational Enterprises** contain key recommendations addressed by governments to MNEs operating in or from adhering countries. The Guidelines recognise that MNEs have a responsibility to ensure that their international business operations contribute positively to innovation capacities of the national and local context that they serve. To this end, they recommend practices permitting the transfer and rapid diffusion of technologies and know-how, including by performing science and technology development work, by employing local workforce, and by granting licenses for the use of intellectual property rights and technologies under reasonable conditions (OECD, 2011<sup>[15]</sup>).
- Other OECD tools touch upon different domains that can contribute to the flourishing of the digital economy and the ICT sector through various channels. These include the **Digital Government Policy Framework (DGPF)**, a policy instrument to help governments identify key determinants for effective design and implementation of strategic approaches to transition towards e-governance (OECD, 2020<sup>[16]</sup>), as well as the **OECD-WTO-IMF Handbook on Measuring Digital Trade**, which represents an essential tool to define, estimate and share good practices on the measuring of digital trade (OECD, World Trade Organization, International Monetary Fund, 2019<sup>[17]</sup>).

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