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Digital Development Challenges In Israel

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This is a short summary, for the full paper (in Hebrew) see https://www.idc.ac.il/he/research/aiep/pages/policy-papers.aspx.

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Aaron Institute for Economic Policy

In the name of Aaron Dovrat z"l

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Digital Development Challenges in Israel

During 2020 there has been a significant surge in the use of digital tools and services, and the understanding of their importance and necessity has been accentuated. This suggests that the COVID-19 pandemic might not only be an economic and health crisis, but also an opportunity for an extensive upgrade of digital services and infrastructure in Israel. However, examination of the data which indicates the level of factors of production in the Israeli economy shows that Israel is falling behind: the per capita availability of human capital in the Israeli Information and Communication Technology (ICT) sector is 42% of the corresponding level in the benchmark countries,[1] and this gap is projected to grow further since the level of investment in Israel is around a third of its level in the benchmark countries. Such an investment in digital services and infrastructure may have a positive impact on economic growth: a ten-percent increase in the availability of ICT capital in developed economies raises growth by 0.8 percentage points.

This paper is based on a comprehensive literature review which includes academic studies and professional reports, as well as some twenty in-depth interviews with managers in the public, government, and business sectors. It aims to map barriers and specific areas which require attention and improvement, and to offer policy recommendations to the Ministry of Digital Affairs.

Our conclusion is that this subject should be defined as a compass, with various actions to be carried out in all government offices and governmental agencies towards a comprehensive digital transformation. Digital transformation is a crucial mechanism for achieving increased productivity and enhanced growth, and a national plan of action for digital development is essential. This plan would set clear goals and priorities for implementation of the different steps, according to their impact on growth, while setting goals and investment measures which would make it possible to determine the effectiveness of the additional investment.

A systematic, laid-out government plan which outlines objectives, budget, and demonstrated success stories, as well as an executive-legislative plan advocating orderly, coordinated legislation efforts in regards to the selected subjects (digital signature, privacy protection, and so forth) – this is the framework which would promote, and propel the execution of, digital development processes in the following areas: (1) connectivity and access; (2) usage by

[1] Austria, Belgium, Denmark, Finland, Ireland, Sweden, and The Netherlands.

businesses, public sector, and individuals; (3) a legal and regulatory framework; (4) skills and human capital; and (5) network security.

The establishment and development of policy tools in these five areas would provide a comprehensive response and enable optimal utilization of the potential benefits offered by advancements in ICT-related fields.

1. Summary and conclusions

Over the past few months, there has been a significant surge in the use of digital tools and services, and the understanding of their importance and necessity has been accentuated. Daily life during the COVID-19 pandemic featured an ever-growing use of digital tools and services by individuals, businesses, and government authorities. Thus, it seems that the COVID-19 pandemic might not only be an economic and health crisis, but also an opportunity for an extensive upgrade of digital services and infrastructure in Israel. However, examination of the data which indicates the level of factors of production in the Israeli economy shows that Israel is falling behind: the per capita availability of human capital in the Israeli Information and Communication Technology (ICT) sector is 42% of the corresponding level in the benchmark countries.[2] The availability of ICT capital in Israel, which is 58% lower than that of the benchmark countries, increases the productivity gap by 3.2%, which is equivalent to 0.85 USD per hour of work, or about two percent of the GDP (around NIS 25 billion per year). While Israel features a large innovation sector, the innovative drive in the business sector is almost exclusively directed outwards, and not towards the advancement of the Israeli economy as a whole. Under the current trends, this gap is projected to grow, since **the level of investment in Israel is around a third of its level in the benchmark countries** (Eckstein et al., 2019).

Such an investment in digital services and infrastructure may have a positive impact on economic growth: a ten-percent increase in the availability of ICT capital in developed economies raises growth by 0.8 percentage points (Vu, 2005). Furthermore, research shows that the growth impact of ICT increases with time, as ongoing use of ICT engenders sustained innovation (Majeed and Ayub, 2018). It is not always clear how the type of investment (private/public) affects growth rate, however there are established advantages to government investment in ICT which advances the digitization and digital transformation of the public sector,[3] because it enhances the innovation levels of the economy as a whole, because the business sector updates its digital infrastructures to enable efficient interfacing with the public sector. The private investment complements the public one: government investment is dominant, since government actions (such as regulation which supports digital

[2] Austria, Belgium, Denmark, Finland, Ireland, Sweden, and The Netherlands.

[3] Digitization: the use of ICT to enhance existing processes. Digital transformation: the use of ICT as an integral part of developing, changing, and providing access to new services and organizational processes.

transformation, digital identification, digital tax system) affect the behavior of the private sector and its investment in digitization.

This paper is based on a comprehensive literature review which includes academic studies and professional reports, as well as around twenty in-depth interviews with managers in the public, government, and business sectors. Our aim is to map barriers and specific areas which require attention and improvement, and to offer policy recommendations to the Ministry of Digital Affairs.[4]

Our main conclusion is the need for a national plan of action for digital development, which would outline clear goals and priorities for implementation of the different steps, according to their impact on growth (for example, is it preferable to invest in services for businesses or in those aimed for citizens). Once the priorities are laid out, it would be necessary to measure investments and outcomes, and to evaluate progress according to the predetermined goals. Such an approach is essential in order to optimize and maximize the benefits of investment in digital development.

Israel could harness advancements in ICT-related fields more effectively through the establishment and development of policy tools in several areas:

1. connectivity and access;
2. usage by businesses, public sector, and individuals;
3. a legal and regulatory framework;
4. skills and human capital;
5. network security.

(1) Connectivity and Access

Currently, only 5-6 percent of households are connected to fiber infrastructure. The cost of laying optic fiber infrastructure throughout Israel is estimated at around NIS 3 billion for each telecom company, a fact which causes them to lay fibers only in regions where they are likely to return their investment. In order to boost the willingness of the capital markets to finance investments in optic fiber and G5 infrastructures, the regulator should provide certainty and clear decision-making processes regarding the realization of the broad objectives set by policy makers in relation to digital infrastructures. The government should also invest, or support investments made by the private sector, in case private investments are insufficient to cover

[4] Despite passing references to costs in some places, this paper does not focus on cost assessment for the proposed measures.

the construction of high-speed networks in a manner which meets public policy objectives, such as speed or coverage.

(2) Usage by Businesses, Public Sector, and Individuals

A policy aiming to promote the use of ICT by individuals and firms may include, for example, adequate training courses as well as advancement of digital government. The following are some of the issues which should be promoted:

- **Making services available online:** advancement of online services which would enable fast, secure data delivery, to better meet the needs of citizens and businesses. Digital procedures would create certainty, shorten processes, and make it possible to improve and streamline the work of the government and other public agencies. A mechanism should be established to offer businesses and individuals a "one-stop shop" for all the information and services provided by government offices and auxiliary units. Such a mechanism is expected to save time and reduce bureaucracy. Furthermore, it would make it possible to input data just once for the use of all the agencies involved in the procedure, with no need for intermediation or additional action on the side of the applicant. Steps in that direction have already been taken, and should be continued further while setting priorities which take into account the benefits and effects on business activity and the well-being of individuals.
- **Cloud services:** A Israeli cloud service with its servers located in Israel is an infrastructure where size is an advantage, hence it calls for government involvement in building it as well as setting usage prices. A Israeli cloud service is a key element in digital development, and further realization of its planned construction is highly imporant. Our recommendation is that the proposed cloud service will cover the full range of digital government services (including, for example, addressing the needs of local authorities), while emphasizing not only prices but also technical issues (such as availability zones which are connected through several Internet service providers, rather than a single provider), with the goal of guaranteeing a high-quality system working dependably over time. Another recommendation is to adjust and adapt working and development methods in government offices according to modern methodologies, in order to optimize the effective use of cloud services.
- **Creating a culture of data utilization in the public sector:** frameworks should be put in place to allow government offices to use and reuse an ever-growing volume of data

– such as statistical data, data relating to processes and outcomes, and so forth – for internal governmental processes as well as external ones. This would serve to increase transparency, improve the efficiency of enforcement, provide an incentive for involvement of the general public in policy decision processes, create value for the public, and shape the available services.

(3) A Legal and Regulatory Framework

It should be ensured that the legal and regulatory frameworks, in specific sectors and on the whole, accommodate the realization of digital opportunities. This should be attained through a review to be undertaken by the Ministry of Justice, in collaboration with the Ministry of Digital Affairs, examining all related procedures as well as rules and regulations, including assessment of the implications of new legislation on the digital needs of the government, as part of a process of regulatory impact assessment (e.g., the legal changes required for a shift to digital signatures, secure identification, and so on).

(4) Skills and Human Capital

Investment in human capital and in ICT training is necessary to improve digital skills and digital literacy among the general population. However, this topic is outside the scope of recommendations of this paper.

(5) Network Security

Expansion of digital services should be accompanied by investment in security issues (such as secure identification when logging into the website to receive services), and the business sector (primarily small-to-medium businesses) should also be encouraged to invest in this field, for example by developing risk management tools for the use of firms and businesses (digital risk insurance) and incentivizing businesses to adopt these tools in order to ensure the security of their users.

This overview of the various policy measures and of the issues which require attention highlights and accentuates the need for a national plan of action for digital development.