

ICT Sector



in Moldova

Policy White Book

2021 Edition



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FOREWORD

The ICT Sector of Moldova White Book is the mid-term public policy advocacy roadmap for the period of 2021-2025, developed by the ICT Association of Moldova (ATIC), **with the support of USAID and Government of Sweden.**

The scope of the 2021 White Book is to analyze the ICT sector public policy priorities in the area of Information Technology, Digital Industries and Electronic Communications of Moldova, to identify regulatory constraints, and to propose the intervention areas, in line with the updated ATIC mission statement as a *“leading business association and community of actors who make digital transformation work for and by the local industry, to export its products and skills to support internal growth and international recognition of Moldova as a technological destination”*.

Throughout fifteen years of its activity, the Moldovan Association of ICT Companies has proved its key role in consolidating the sector in the country, proactively representing the united voice of the industry, and being one of the main enablers of a dynamic ICT sector development direction for Moldova.

The public advocacy function of the Association is supported by its five dedicated committees: Legal, Fiscal, Fintech, HR & Education, and Hardware. ATIC’s committees attract the most valuable local and international expertise of its members and provide an efficient platform for identifying the best-fitted and compromise solutions, exchange of best practices and experience, supporting agile interaction with ATIC stakeholders and with envisaged authorities. ATIC committees are the working bodies which elaborate the positioning papers and consultative opinions regarding the ongoing drafting process of the regulatory acts referring to the ICT sector, such as electronic communications and informatization legislation, digital transformation, emerging technologies, electronic services, data protection, digitalization of the economy, human capital development, labor legislation, intellectual property rights, taxation/fiscal incentives, business environment, etc.

Association’s representatives participate regularly in various collaborative working bodies, such as the Economic Council to the Prime minister, the Economic Council to the President, the State Chancellery’s WG on the regulation of the entrepreneurial activities, the Parliamentary platform for consultations with the civil society, the Ministry of Economy commission on evaluation the activity of the Moldova IT Park, the Startup Visa Committee. In this regard, the Association also organizes various public debates on legal acts and policies, public thematic events, promotion campaigns, etc.

This research was developed following a complex process of consultations and interviews organized with various representatives of the ICT Industry and stakeholders, authorities, and development partners. It is a result of horizontal analysis of the existing policy framework, gaps and constraints, aligned with the international best practices in the area.

The ICT industry as a whole, and ATIC in particular, have a strong cooperation tradition with the Ministry of Economy, the Ministry of Infrastructure and Regional Development, the Ministry of Finance, the Ministry of Labor and Social Protection, the E-Governance Agency, the Public Services Agency, the Moldova IT Park Administration, the Personal Data Protection Center, the National Bank of Moldova, the Labor Inspection, the State Fiscal Service, and other public institutions.

The ICT sector is continuously supported by the US Agency for International Development, Government of Sweden, **EU Delegation to Moldova, UN Development Programme, World Bank, European Bank for Reconstruction and Development, German International Cooperation Agency, Liechtenstein Development Service, and other international stakeholders**, whose mandates cover the Digital/Technological transformation of the country, modernization of the economy, and improvement of the business environment.

With this diverse network of partnerships, the ICT industry and ATIC constantly improve their public policy advocacy agenda, keeping it updated, focusing on current needs of the sector and of the Moldova Digital Transformation process.

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EXECUTIVE SUMMARY

1. For over a decade, Moldova's ICT industry has been experiencing a dynamic growth, thanks to high market demand, competition and consolidated effort. It annually generates about **7%** of the country's GDP, approaching a total value of revenues of about **MDL 15 billion** or USD 900 million.

About 5 years ago, the electronic communications market in Moldova has experienced a period of agile competition and growth, positioning the country in top destinations with high-speed Internet, accessibility, and recently – with availability of **Gigabit Internet**.

But during the 2015-2020, the engine of the ICT industry growth in Moldova became the IT sector, which increased **fourfold**, outpacing the telecoms. A dedicated policy and legislative framework for the Information Technology and Digital Industries has played a central role in its outstanding and dynamic evolution.

The number of ICT companies has exceeded two thousand, while the number of employees reached 24 thousand, registering about 140% growth for both indicators. The number of employees in the industry is about **2% of the available labor force** in the country, which is about two times lower than the EU average of 4.2%, discouraging further exponential growth.

The volume of the ICT industry exports doubled in 5 years, when this evolution is attributed particularly to the IT share of export, which increased from MDL 1 billion to 4.6 billion – by **460%**.

2. The Government sees the **ICT sector as a priority** for the country, both as a productive sector and as an enabler for economic and social development. The focus on the ICT sector is determined by its potential to provide the necessary means for Moldova to compete on regional and global markets and provide high value-added, sustainable employment.

The National Strategy for the Development of the Information Society "Digital Moldova 2020", approved in 2013, was instrumental in advancing the ICT sector to its current state in all four priority areas: (i) digital infrastructure and access; (ii) digital content and public electronic services; (iii) digital literacy; (iv) trust and security in cyberspace.

It proves that a consolidated effort may keep the ICT industry of Moldova competitive and implement modern digital technologies in various sectors of the country. This effort was an investment in an emerging area which brought a considerable benefit for the entire society and further determination in this regard may bring Moldova to the next level of digital transformation, suggesting that the ICT community in Moldova should opt for a **new visionary policy framework as a key objective**.

The COVID-19 pandemic and its consequences have prompted the Government to focus even more on the implementation of the Digital Economy and eCommerce Roadmap addressing remote interaction and promoting digital services to business.

Nevertheless, a larger-scale policy is needed, as well as the activation of new facilitators and resources must be envisaged in the next "digital strategy", to leverage the process and to engage new economic sectors and social groups in the digital transformation of the country, since digital transformation is not only a technological effort, but, crucially, it is about changing mindsets.

3. Key factors for the next generation policies to address in the above four areas should include:

Digital infrastructure and access

The need for investments in electronic communications has been increasingly growing in recent years and the UN DESA e-Government Index attests that the existing telecommunications infrastructure deployment in the country is below the Eastern Europe subregion average. The

reduction of investments in the sectors needs to be closely addressed by the Government, especially in areas like consumption and competition.

Enforcement of the law on access to properties, facilitation of the authorization procedures for networks building, improvement of the institutional regulatory framework, revision of the consumer protection legislation concerning the free replacement of electronic products, legal guarantees of conformity, technical expertise of household appliances, revision of the industry-specific fiscal and regulatory taxes and fees – all these are key points amongst the measures targeting the development of digital infrastructure. Measurable KPIs in this regard should be aligned with the current regional objectives: deployment of 5G networks by 2025, broadband in every house and public facility, Gigabit Internet.

Digital content and public electronic services

Thanks to the "Digital Moldova 2020 Strategy" and the implementation efforts on the Government side, which put in motion many other players in the public and private sectors, the authorities became the champions of the transformation process, triggering a wider scale digitalization in the society.

Nonetheless, many government institutions still require a physical presence at their offices for requests of public services and information. In the digital age, a business-conductive environment entails a "digital by default" principle in all applicable legislation for public services, a digital identity and smart solutions for everybody.

Freedom of the Internet and Intellectual Property Rights are the two content-related areas in great need of better legislation. In the first case, amendments are due to clarify the circumstances for online "illegal" or "fraudulent" content blocking and ensure that citizens' rights and freedoms are preserved. In the latter case, transparent, fair, and non-discriminatory mechanisms for private copying payments must be ensured.

Digital literacy

The measures implemented in this area have moderately contributed to the transformation of the educational system and general digital literacy. Nevertheless, without a systemic approach and in absence of a consolidated vision/strategy for the digital transformation of the educational sector, the progress is slow and does not meet expectations.

The number of students in ICT-related specializations represents only about 5% of the total number of students enrolled in higher education. This is a far cry from the real needs of the national economy and immediate measures are necessary to be undertaken, including, but not limited to, the permanent updating of the curricula for all stages of education and dedicated attention to STEM education in schools.

Lifelong training programs and support for digital inclusion at every stage, including vulnerable groups and people with specific needs, as well as personnel retraining, are essential elements for a people-centric digital transformation.

Trust and security in cyberspace

The foundations of a national cyber security system have been laid at the level of central public administration and in some sectors such as telecom and financial, but there is still a lack of a dedicated structure at the national level responsible for coordinating activities in the field,

exercising the functions of a single reporting center of cyber security incidents, surveillance and certification of protection systems to be implemented by essential service providers

There is a strong need to enhance the Cybersecurity legal and institutional framework in line with the EU practices.

4. The **next "digital strategy"** needs to extend the Government's focus beyond the four areas of the "Digital Moldova 2020" to ensure digital innovation and the development of a resilient digital economy, targeting a correlation with the EU's "2030 Digital Compass".

It needs to further advance the development of the IT Park regime to offer more predictability and durability and to address residents' needs in improved access to funding, the attraction of qualified IT professionals and investors from abroad, and better social security for their employees.

Top priority measures for the next "digital strategy", in the short run, stem from the vital necessity of facilitating remote work, digitalization of public services and e-commerce, telemedicine, in a world hit by the ongoing COVID-19 pandemic. These measures should accelerate the transition to a paperless and cashless economy through:

- Developing procedures to guarantee unconditional acceptance of eDocuments and eSignatures, to allow for remote and automatic update of the eSignatures and/or extend their validity (ex. up to 5 years);
- Approval of a new Data Protection legislation in line with General Data Protection Regulation (GDPR) and clear transition of the regulations, providing effective mechanisms for collecting and processing personal data;
- Recognition of electronic signatures/certificates issued by qualified authorities from the EU (and other countries via bilateral agreements);
- Approval & implementation of mechanisms and guidelines for Distant Customer Identification or e-KYC;
- Supporting the development of alternative electronic payment systems in cooperation with the local FinTech community and in line with the best international practices;
- Progress in double taxation avoidance with key partner countries.

The ICT industry of Moldova and ATIC's role is to advocate and to provide further support and expertise **to make Moldova a recognized performer in the adoption of digital transformation, from a supply-side and a demand-side perspective.**

3

MOLDOVA IT&C INDUSTRY STATUS AND EVOLUTIONS

3.1 The industry's dynamic by subsectors

The overall revenues of the ICT sector in the Republic of Moldova at the end of 2020 has reached MDL 14.7 billion (USD 860 million), according to the Ministry of Economy and National Bureau of Statistics data, which is collected based on Classification of the Activities in National Economy (CAEM), following the EU methodology.

The growth engine of the ICT sector in the last five years became the Information Technology sector, which comprises the following codes in the CAEM2010: software editing (code 61), information technology services (code 62), and information technology products and support (code 63). This sector increased almost 4 times between 2015 and 2020 – from MDL 2.15 billion (USD 110 million) to MDL 7.38 billion (USD 430 million).

At the same time, the Electronic Communications sector (code 61 in CAEM) stabilized at nearly MDL 6.73 billion of revenues in 2020 or USD 390 million, compared to MDL 7.48 billion in 2016, when the sales revenues of the EC sectors reached its historic maximum in MDL, but converted in USD consisted of 375 million.

Figure 1. IT&C revenues during 2015-2020 (Source: Ministry of Economy)

The rest of about MDL 360 million revenues of the ICT sector are attributed, according to the applied methodology, to the Computers, electronics, and optical products manufacture (code 26 in CAEM) and to the Repair of computers and communications equipment (code 95.1 in CAEM).

Aggregated data below shows the dynamics of the ICT sector of Moldova by sub-sectors, in the period of 2015-2020:

CAEM code	Activity description	ICT sales (thousands, MDL)	ICT sales (thousands, MDL)	ICT sales (thousands, MDL)	ICT sales (thousands, MDL)	ICT sales (thousands, MDL)	ICT sales (thousands, MDL)
		2015	2016	2017	2018	2019	2020
26	Computers, electronics, and optical products manufacture	186,818	93,109	94,028	469,378	537,654	459,381
58.2	Software editing	303,204	206,184	218,063	316,230	417,437	556,240
61	Electronic communications	5,645,048	7,480,409	7,142,216	6,869,706	6,878,716	6,732,120
62	IT services	1,207,718	1,494,205	2,534,293	3,093,623	4,213,834	4,899,099
63	IT products and support	639,503	750,600	1,477,152	2,055,556	1,986,772	1,920,583
95.1	Repair of computers and communications equipment	169,222	170,027	175,996	208,905	264,205	172,955
	TOTAL IT&C	8,151,513	10,194,534	11,641,748	13,013,398	14,298,618	14,740,378
	* IT Industry -aggregation of CAEM codes 58.2; 62; 63	2,150,425	2,450,989	4,229,508	5,465,409	6,618,043	7,375,922

Figure 2. IT&C sector evolution by subsectors during 2015-2020 (Source: Ministry of Economy)

The Information Technology and Communications industry has been generating constantly, for more than a decade, about 7% of National GDP, even if this indicator itself has doubled in the same period. Nevertheless, the structure of ICT share in GDP evolved continuously during 2015-2020, being driven by the IT sector growth.

	2015	2016	2017	2018	2019	2020
National GDP	121,850,900	158,689,307	176,777,076	190,016,336	210,351,000	206,378,470
IT&C in GDP (%)	6.68%	6.42%	6.58%	6.84%	6.79%	7.14%
IT in GDP (%)	1.76%	1.54%	2.39%	2.88%	3.15%	3.57%

Figure 3. IT&C sector evolution in GDP during 2015-2020 (Source: Ministry of Economy)

Comparing the GDP share of the IT sector in 2020 of about 3.6% with the 0.8% in 2013, when the IT sector was only declared as a policy priority, the dynamic is remarkable. The growth in the IT industry has been driven by Moldova's advantages as an outsourcing destination for the IT services, based on cost, location and skills, as well as on a facilitated fiscal and administrative regime for the Virtual Moldova IT Park residents.

The stabilization/stagnation in sales revenue for the Electronic Communications sector reflects the changes in consumer behavior, especially in favor of data consumption versus voice services, as well as the reduction of the investments in the sector.

This is a global trend, when App economy will deepen the process of relocating incomes to new market players, and telecommunication operators will need more attention, even support from authorities, in enforcing their capacities as the electronic communications infrastructure is the foundation for a modern digital society and driver of economic growth.

3.2 ICT companies and employees

The dynamics of companies' numbers by sub-sectors also reflects this trend, revealing that the Electronic Communication market is consolidating with a decrease of about 100 companies in the last five years, preserving almost the same level of revenues.

At the same time, the number of IT companies registered an increase of about 700 companies, with a constant revenue growth evolving from 2.15 billion MDL in 2015 to 7.38 billion MDL in 2020.

Figure 4. The number of IT and Telecommunications companies during the 2015-2020 period (Source: Ministry of Economy)

The IT and Electronic Communication sectors of Moldova employ about 24 thousand professionals, which is about 1% of the total population of Moldova of 2.6 million. It has evolved proportionally to the growth of the sub-sectors.

Activity description (CAEM- 2010)	Com- pa- nies	Com- pa- nies	Com- pa- nies	Com- pa- nies	Com- pa- nies	Com- pa- nies	Em- ploy- ees	Em- ploy- ees	Em- ploy- ees	Em- ploy- ees	Em- ploy- ees	Em- ploy- ees
	2015	2016	2017	2018	2019	2020	2015	2016	2017	2018	2019	2020
Computers, electronics, and optical products manufacture	14	12	12	31	27	31	120	110	102	883	836	822
Software editing	131	139	144	176	170	162	634	657	668	967	1215	1132
Electronic communications	384	370	364	344	315	292	6940	6704	6275	6078	5858	5940
IT services	775	867	992	1122	1236	1265	6438	6759	7811	8718	10303	10726
IT products and support	183	180	210	231	281	349	2287	4059	4977	5306	5217	5846
Repair of computers and communication equipment	198	205	222	231	244	248	484	462	507	531	597	535
TOTAL IT&C	1685	1773	1944	2135	2273	2347	16903	18751	20340	22483	24026	25001
IT Industry (aggregation of 58.2; 62; 63 codes)	1089	1186	1346	1529	1687	1776	9359	11475	13456	14991	16735	17704

Figure 6. The number of ICT companies and employees by sub-sectors (source: Ministry of Economy):

Activity description (CAEM-2010)	Reported gross remuneration fund (thousands MDL)	Reported gross remuneration fund (thousands MDL)	Average salaries (MDL)	Average salaries (MDL)
	2018	2019	2018	2019
Computers, electronics, and optical products manufacture	75,965	84,883	7,169	8,461
Repair of computers and communications equipment	19,189	21,148	3,012	2,951
Electronic communications	820,628	857,681	11,251	12,200
Software editing	190,438	238,949	16,411	16,388
IT services	1,549,439	2,340,761	14,811	18,932
IT products and support	731,941	810,878	11,496	12,952
IT Industry (aggregation of 58.2; 62; 63 codes)	2,471,818	3,390,588		
TOTAL IT&C	3,663,410	4,666,871		

Figure 7. The salary fund and average wages by sub-sectors in the ICT (source: Ministry of Economy):

The contribution to National GDP of those 24 thousand ICT professionals, which constitute 1% of total population, is 7.45%, revealing the highest level of productivity in the industry per national economy. From another perspective, this is about 2% of the available labor force in the country of about 900 thousand, which is more than two times lower than the EU average of 4.2% of ICT professionals.

The number of IT professionals only is below the real need of the market, even comparing to the countries in the region. This is a factor of major constraints for the industry's further growth and competitiveness. Moldova has only about 18 thousand of IT engineers from about 2.6 million of total population, which is about 0.7%.

For instance, Romania reached 220 thousand of IT engineers from about 20 million of total population in 2020 and Belarus reached 100 thousand of IT engineers from about 10 million of total population, which is about 1% in both cases.

Application of a special fiscal and administrative regime for the IT industry since 2018 has contributed to a large-scale formalization of the sector and a higher level of qualified personnel retention within the country. Also, the high market demand for more and more skilled professionals and growing salaries confirms the potential of the IT industry in Moldova.

But further positive evolutions in the sector are directly interlinked with a set of dedicated policies in support of career orientation, tech education and adopting digital innovation. The internal ICT labor market and educational system as they are today have reached their limits and cannot support the same growth rate of the sector.

3.3 IT&C export evolution

The ICT sector was mainly focused on telecommunications and hardware sales on internal market up to 2015. The global market demand and the applied supportive measures changed the general structure of the Moldovan ICT sector exports.

When the share of Electronic Communication services and products was almost stable at about MDL 1 billion (USD 60 million) annually, the exports share of Information Technologies products and services reached about 40-50% growth rate annually during 2015-2020. It evolved from about MDL 1 billion in 2015 (USD 60 million), to about MDL 4.64 billion in 2020 (USD 260 million).

Figure 8. ICT exports evolution during the 2015-2020 period (Source: Ministry of Economy)

	2015	2016	2017	2018	2019	2020
IT&C exports: (USD million)	165	148	170	223	255	304
(MDL million)	2,830	2,546	2,925	3,837	4,385	5,636
IT exports: (USD million)	59	64	99	148	198	259
(MDL million)	1,015	1,097	1,710	2,539	3,407	4,637
IT&C investments (MDL million)	1,310	1,440	1,743	1,784	2,579	1,963

Figure 9. IT&C sector exports and investments during 2015-2020 (Source: Ministry of Economy)

3.4 Moldova IT Park impact

Moldova IT Park was launched on 1 January 2018, under the special Law no.77/2016 on IT parks. During its three years of operation, Moldova IT Park has achieved an unprecedented positive impact on the IT industry development in Moldova, as well as on the structure of its economy and exports. Despite the difficulties faced by the entire economy in 2020, the results of Moldova IT Park continued to exceed expectations and forecasts.

Positive developments showed an increase in number of residents, thus the number of active residents as of 31 December 2020 constituted 658 companies, of which newly created companies after its launch – 328, companies with foreign capital – 145, and with local capital – 513. In August 2021 the total number of active residents of the Moldova IT Park reached 850 companies. As of December 1st, 2021, the number of active residents constituted 930 companies, of which newly created – 554, companies with foreign capital – 171, and with local capital – 759.

The revenues achieved by the 658 companies during 2020 reached the value of 4.99 billion lei (USD 290 million). Of the total number of companies, 2/3 recorded in 2020 higher revenues than planned.

Compared to previous years, the number of countries from which the share capital of resident companies originates is growing, resulting in a total of 34 countries. At the same time, the number of companies with foreign capital has increased from 97 companies in 2018 to 145 companies in 2020, which is also important for diversifying the destination market, offering the possibility of introducing new technologies, and stimulating the exchange of professional expertise.

The external market remains a priority for the provision of IT services for IT Park residents. The volume of exported sales increased by 149% in 2020 compared to the first year of activity of the Park. Sales generated by exports constitute 80% of the total volume generated by residents, and those generated by deliveries on the local market – 20%.

The trend of distribution of income by the main activity types allowed and practiced in the Park is diverse, and 50% of the total income is generated from software development (code 62.01). However, new types of activity based on tech are also evolving positively.

At the end of 2020, the number of employees of the Park's residents reached 12.024 persons, representing an increase of 24% compared to 2019. Of the total number, 88.8% are employees directly involved in the IT business. At the same time, the sector is open to attracting new specialists in the field and offers one of the highest remunerations in Moldova. The strong trends seen in wage and job growth demonstrate the ability of local IT companies to invest in workforce development.

The three years of Moldova IT Park's operation have shown a significant positive impact on the country's economy, which was reflected in the increase in wages, export, and retention of qualified labor force. This platform also provides stable employment for the country's citizens. More than 2/3 of the Moldovan IT workforce is enrolled in the Park and has indicated a steady salary growth of near 30% since the Park's operation. This, of course, has a significant impact on migration, keeping the youth in the country and fostering greater participation in the formal economy.

The Moldova IT Park model is recognized as one of the best offers to the IT sector and to digital industries, strongly backed by business and development partners communities. It keeps Moldova competitive at the regional level and one of the main goals of the industry is to preserve and further develop this model.

3.5 Overview

The ICT sector is topping the list of country's priorities, both as a productive sector and as an enabler for economic and social development. An advanced ICT sector is crucial to an innovative and efficient economy, as well as for a higher quality of life. The ICT industry evolutions in the last five years confirmed that the necessary measures were taken in time.

1. The Ministry of Economy (successor of the Ministry of ICT since 2017) has developed and implemented three main consecutive strategic policy documents – Digital Moldova 2020 Strategy for the development of digital society (approved in 2013), Moldova ICT Industry Competitiveness Strategy (approved in 2015), and Moldova IT Industry Competitiveness and Digital Innovation Ecosystem (approved in 2018) that caters to the needs of the ICT industry as a productive sector.

The ICT industry competitiveness boosting documents focused on realistic expectations of the sector, which obtained a dedicated policy framework due to its high potential, impact on other sectors and responsiveness to the regulatory measures. The main emphasis of this effort is the IT competitive human capital, IT competitive business environment, ICT-based innovation, and promotion of the ICT investments and exports.

Further use of this set of instruments is vital and policy framework needs continuous development.

2. Applied policies, especially the simplification of the administrative burden and reduction of taxation level by half, had a necessary initial effect. But it revealed that the sector faces a big shortage of skilled labor force to address the needs of the growing market. Following the launch of the Moldova IT Park, the number of companies becoming part of this community is growing, which determines a huge demand for the IT specialists to get into this business, as well a high pressure on salaries. The educational system of Moldova is overwhelmed and does not fully meet the industry needs due to under-investment, its robustness and the enormous brain drain.

There is a high need in closing the skills gap, diminishing the shortage of trained people, supporting creative and entrepreneurial thinking, reform the ICT educational services, as well as support IT startup business development from a very early stage. Higher interaction with the private sector could contribute to the educational system improvement in ICT and digital innovation areas.

3. 2020 has turned into a crucial year for all industries and the entire society, leaving many entrepreneurs and employees without jobs or stuck in front of changes that they have never expected. The COVID-19 pandemic has raised the need for digital solutions, remote work, reduction of staff, keeping the critical level of sales, and preventing loss of clients. ICT has been among the sectors that have impacted the development of the other ones by connecting IT with non-IT and bringing hope to new businesses, by starting eCommerce, implementing digital education or better organizing their work.

Impacted by these consequences, in 2020 the authorities have focused on implementing an intermediary policy framework – the Digital Economy and eCommerce Roadmap, generated with the support of business associations and donors' community. It addressed remote interaction and promoting digital services to business, enhancing electronic commerce, electronic payments, customs procedures for online exports, and stimulation of postal and courier services markets, supporting and attracting national and international e-payments and e-commerce platforms to the country. This effort led to the development and promotion of a few very comprehensive legislative initiatives covering digitalization.

Moreover, following the growing demand for the development of the digital agenda, the recently appointed Government has reconfirmed digitalization as a priority for the country and included as an absolute first for Moldova the position of Deputy Prime Minister for Digitalization in the new Cabinet.

Lessons learned during the pandemic and political crisis validated the thesis that Digital Transformation process is inevitable and necessary social and the political preconditions for this objective are in place.

4. The focus on ICT and innovation is determined by its potential to provide necessary means for Moldova to compete on regional and global markets, generate new sources of export revenues and provide high value-added, sustainable, well-remunerated employment. It can also contribute to reducing regional social and economic development imbalances, strengthening the social cohesion all-over Moldova, contributing to national policies upgrade and alignments with EU best practices, Association Agreement provisions, and the latest EU evolutions in the field of Digital Innovation and Information Society development.

4

POLICY FRAMEWORK ASSESSMENT

The internal policy framework governing the development of the Information Technology and Electronic Communications sectors in the last 7 years was the National Strategy for the Development of the Information Society “Digital Moldova 2020”, approved by the Government Decision no.857 of 31.10.2013.

The Strategy was a cross-sectoral umbrella document on digitization policies of the Republic of Moldova functioning up to the end of 2020. Following the core objectives of the Digital Moldova 2020 Strategy, a series of sub-sectoral policies and programs in this field was developed and implemented.

The Strategy itself was a result of a strong collaborative process engaging local IT&C industry and development partners in a profound analysis of constraints to the sector’s development, providing action lines and solutions, as seen from the 2012 perspective. The Strategy’s success was in focusing the Government’s and stakeholders’ efforts on core components of Digital Society development: (i) digital infrastructure and access; (ii) digital content and public electronic services; (iii) digital literacy; (iv) trust and security in cyberspace.

A detailed report on the implementation of the “Digital Moldova 2020” Strategy was systematized within a final Evaluation Report of the Ministry of Economy and Infrastructure. In this part of the study, we will only highlight the main achievements and lessons learned, to prepare the ground for the next Information Society development or Digital Transformation of the Society process.

4.1 Infrastructure and digital access

The aims of the developed regulatory and policy framework were to promote a competitive market, increase connectivity, and provide users with access to new generation fixed and mobile broadband networks at competitive prices. At the same time, the Government showed restraint from direct investments or subsidies in boosting access to networks, as many other national governments did, leaving the market and private companies to fill the gap.

Necessary sectoral policies and legislation were in place, following internal needs and regional/international best practices, covering competitiveness, allocated resources, and technological evolution, mainly inspired from the EU legislation and practice. The development of the institutional and regulatory framework was in line with the International Telecommunications Union and European Union practices, following the international commitments and EU/Moldova Association Agreement.

Some very impactful policies referring to the sectoral policy documents targeting Infrastructure and Access need close attention. The first in this line is the *Radiofrequency spectrum management program for 2013-2020* approved by GD 116/2013. The Program focused on efficient use of the scarce resources offering the necessary predictability to the sector and bringing policy innovations like technological neutrality, notification regime, and re-farming of few critical radio spectrum resources.

The Radio Frequencies Program declared the following priorities of the authorities:

- further development of the electronic communications industry
- limited radio spectrum resources allocation to facilitate efficient use and deployment of the broadband mobile public networks
- regulatory predictability in the process of managing the radio spectrum resources
- promotion of competition and investments in radiocommunication infrastructure
- stimulating innovations and introducing the technological neutrality principle
- ensuring uniform access to land mobile telephony services and reducing the digital divide between urban and rural areas
- synchronization of the validity term of the existing licenses
- implementation of the general authorization regime
- ensuring competition and continuity of the activity of the existing electronic communications networks provider
- transparent and non-discriminatory conditions
- eliminating fragmentation and facilitation re-farming of the frequency bands

The Radio Frequencies Program impact:

- enhanced competition on the market of mobile electronic communications
- allocation of the necessary spectrum resources
- improved quality of services at competitive prices
- deployment of advanced 4G technologies
- implemented technological neutrality offering to operators the possibility to effectively invest in network development and to provide advanced quality services
- innovations and private investments in network development
- mobile broadband access available at the rate of 99% of the territory and population in 2G networks (GSM, CDMA), 99.9% of the territory and population in 3G networks, and coverage of 96% of the territory and 98% of the population with 4G networks
- transparency and publicly available data on quality of services at https://anrceti.md/files/filefield/Anuar%20statistic%202019_22aprilie_2020.pdf
- capitalization of the frequency bands in line with European/regional practice
- implementation of the general authorization regime
- re-farming of the fragmented radio

frequency bands

Another impactful public policy in electronic communications sector was the *Program on the transition from analog terrestrial to digital terrestrial television* approved by GD 240/2015. This initiative was in line with the international practice aiming to facilitate the transition to new technologies in data transmission and freeing the valuable radiofrequency resources for new generation electronic services.

The Digital Terrestrial Broadcasting Program declared the following priorities:

- capitalization of the “digital dividend” frequencies for the implementation of the advanced broadband radio access technologies (mobile high-speed Internet)
- implementation of digital terrestrial television and uniform access to digital television at national and regional/local levels
- diversification of domestic TV production programs and services, wider public access to digital television and multimedia service

The Digital Terrestrial Broadcasting Program impact:

- release of a significant portion of the radio spectrum – “digital dividend” for new mobile communications services
- availability of three national multiplex networks that can broadcast, free to air, up to 45 digital TV channels in DVB-T2 format. Two of them have been already created: multiplex A is fully functional and has the capacity of coverage with digital TV signals of 90% of the population. Multiplex B has a coverage of over 60% of the population and a series of local/ regional multiplexes (up to 21) are prepared to be launched
- the gap between rural and urban areas in terms of population’s access to digital TV services was substantially reduced, socially vulnerable families were allocated free digital TV receivers, local audiovisual content producers gained access to new capacities

The *Broadband Development Program 2018-2020* was approved by Government Decision 629/2018 aiming to boost network access. Even if the program was targeting the elimination of constraints to further network access development, without a substantial financial and regulatory stimulus from the Governments it had a lower-than-expected impact and many remote areas have difficulties accessing quality services at competitive prices. Another observation is that users’ rights

protection is enforced in line with the EU regulatory framework and practice, unlike the protection of electronic communications networks and Internet services providers.

The Program declared as priorities the improvement of the regulatory framework to facilitate the deployment of the modern broadband infrastructure and services to ensure the availability of access in all localities of the country, especially the harmonization with the EU Access Directive to improve access to the property and shared use of public electronic communications network infrastructure.

The Broadband Program 2020 outcomes:

- establishing the mechanism for measuring, evaluating, and publishing data on quality parameters of publicly available electronic communications services
- enforcing the internal legal framework for consumer protection and guaranteeing the right of access to the Internet
- harmonizing the Radio Frequency Assignment Table in line with the regional/EU agreements and practice
- extensive gap analysis of Law 28/2016 on access to the property, with the World Bank and EU4Digital support, to ensure its compliance with the provisions of Directive 2014/61/EU of May 15, 2014, on measures to reduce the cost of installing high-speed electronic communications
- networks. A wide range of necessary legislative amendments was elaborated but the procedures are still not initiated
- a WB Study on the simplification of the procedure for authorizing the construction/installation of elements of public electronic communications networks and the infrastructure elements associated with these networks was elaborated
- WB Recommendation on uninterrupted electricity provision of base stations of mobile electronic communications networks was elaborated
- transparency of the conditions of access to public property to develop electronic communications networks was made public https://www.anrceti.md/conditii_acces
- broadband Internet access penetration reached 70% of the households and broadband Internet access penetration at mobile points reached 87.9% <https://>

anrceti.md/files/filefield/Raport_CE_trim_III_2020.pdf

- a new Radio Spectrum Management Program 2021-2025 was approved by GD 987/2020

A special chapter of the legislation improvements in the field of electronic communications was interlinked with the process of EU/Moldova Association Agreement provisions implementation. The process was oriented to strengthen the market competition and improve regulatory mechanisms in line with:

- Directive No 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) as amended by Directive No 2009/140/EC of the European Parliament and of the Council of 25 November 2009
- Directive No 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorization/harmonization of electronic communications networks and services (Authorization Directive), as amended by Directive No 2009/140/EC of
- Directive No 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive), as amended by Directive No 2009/140/EC of the European Parliament and of the Council of 25 November 2009
- Directive No 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service

- Directive), as amended by Directive No 2009/136/EC of the European Parliament and of the Council of 25 November 2009 (including the number portability and the single European Emergency Call number 112)
- Commission Directive No 2002/77/EC of 16 September 2002 on competition in the markets for electronic communications networks and services
 - Directive No 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications) as amended by Directive No 2009/136/EC of the European Parliament and of the Council of 25 November 2009
 - Decision No 676/2002/EC of the European Parliament and of the Council of March 7, 2002, on a regulatory framework for radio spectrum policy in

the European Community

- Commission Decision No 2008/294/EC of 7 April 2008 on harmonized conditions of spectrum use for the operation of mobile communication services on aircraft
- Directive No 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity
- Directive No 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce)
- Directive No 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information
- Directive No 1999/93/EC of the

European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures

In conclusion, **the network access and electronic communications infrastructure policy and regulatory framework** were developed progressively during the last 5-7 years, in line with the international trends and progress. The evolution of the market was mostly determined by the competition and technological transformation, but changes in the consumers' preferences also determined investments in new capacities. Due to these factors, Moldova's indicators in various ratings of access to networks and average data transfer speed positioned the country in the leading positions, including the latest measurements regarding the accessibility of the Gigabit Internet and territory/population coverage rates.

According to Speedtest Global Index, which provides a monthly comparison of Internet speed data for a benchmark of 100 countries around the world, the Republic of Moldova is ranked 58th in terms of mobile broadband speed, with the download speed of 38 Mbps compared to the global average of 48 Mbps, and ranked 38th in terms of fixed broadband speed, with the download speed of 106 Mbps – higher than the global average of 98 Mbps.

UN DESA e-Government Index attests considerable access to the internet and IT devices in the Republic of Moldova, but the existing telecommunications infrastructure deployment in the country is below the Eastern Europe subregion average, meaning that further effort in this regard is needed to keep the country competitive.

Market demand and available content is the key element in the process of network development. So far, the capacities of 4G and terrestrial fiber networks are not fully used. Access to mobile Internet networks in 4G is accessible on 98% of the territory, as well as the points of presence of fiber optic backbone network (PoP) is at the same level, leaving to the potential beneficiaries to

choose/request. To compare, neighboring Ukraine issued the 4G licenses in 2020 – six years later than Moldova. Availability of networks and financial affordability are not the only priorities. High complexity content and usage of high-speed Internet in various areas of economy and social life will stimulate telecom providers to invest more in network development.

The indicators of telecommunication sales volumes declined three years in a row, being at nearly MDL 6.7 billion in 2020, compared to MDL 7.5 billion in 2017, reflecting changes in consumer behavior, as well as the decline of investments in the sector. The consumer's migration from Voice & SMS services to Data consumption, reducing the ARPU (average revenue per user) and the structure of operators' incomes is a natural process. **App economy will deepen the process of relocating incomes to new market players and telecom operators need more support and attention from authorities in consolidating their capacities, as the electronic communications infrastructure is the foundation for a modern digital society.**

The decline of sales in the Telecom sector must be closely addressed at the next stage of Digital Society development in Moldova. Some areas need immediate intervention, like the quality and complexity of data consumption, as well as the competition. Information Society Services and Digital Economy are two strategic areas where changes are essential. Wide use of regulatory instruments and attracting investments to boost operators' engagement is also necessary. Other stimulative measures must be considered by the authorities, to support operators in providing high-speed Internet at accessible prices in most disadvantaged areas and public facilities.

Stimulation of the electronic communications market and further development of the telecommunications infrastructure needs constant attention, application of modern policies and the fifth-generation regulation, due to its crucial importance for re-technologization and digital transformation of the entire economy and society.

4.2. Digital content and e-services

Digital Moldova 2020 Strategy and subsequent programs paid special attention to the eGovernance agenda and IT Industry in Moldova. In the first case, the Government had to play a proactive role and lead the process of digital transformation of the society. As for the IT Industry, its evolution in every country is determinant for the evolution in Information Society development, so in this case, the Government had to focus on the competitive environment and attraction of Moldova as an IT destination.

A strategic move in 2011 was the adoption of the *Strategic Program for technological modernization of the Governance* by GD 710. It engaged the public institutions in a process of transformation which started from the capacity development and creation of the eGovernment Center. The eTransformation Program highlighted a few priorities: modernization of public services; facilitation of the access of citizens and companies to digital services; interoperability framework; creation of the common technological platforms.

As a result, the following common Governmental platforms were created: *MCloud, MConnect, MSign, MPass, MPay, MPower, MDelivery, MNotify, MLog*, Public services portal, Open data portal, Citizen's portal, and Entrepreneur's portal.

The eGovernance Center evolved into a key institution – Agency for Electronic Governance with a special focus on the further development of technological platforms, interoperability, and reengineering/digitalization of public services.

The Information Technology Industry Competitiveness Strategy 2015-2021 was approved by Government Decision no. 254/2015, being the first policy document aiming to boost

the Moldova IT sector's competitiveness. It declared as main objectives:

- proper business environment, and economic incentives to stimulate the development of the IT business and

- promotion of the digital innovation
- streamlining procedures for opening and managing IT businesses
- creation of IT parks with the special tax regime and other incentives for residents
- services, and innovation in the IT sector
- international markets and partnerships, by attracting foreign IT companies to the country
- promoting export of local IT companies' products and services
- promoting Moldova as a favorable and competitive export-oriented regional IT center.
- excellence in IT education, promotion of IT as a career, increasing the funding of IT specialties from universities and colleges, improving the IT curriculum
- development of the internal digital market,

The implementation of the IT Competitiveness policy faced a huge administrative resistance, but the targeted objectives were achieved earlier than planned, opening the road for its second edition in 2018. In the first stage the main

achievements were:

- creation of the ICT Excellence Center Tekwill, offering large and unique opportunities for the development of IT skills, launching, and growing a tech company, promotion of digital innovation and new technologies
- adoption and implementation of Law 77/2016 on IT parks with a flat 7% tax and simplified administrative regime
- launched the Moldova IT Park gathering now more than 930 companies
- development of simplified procedures for entry visas and abolishing of working permits on the territory of the Republic of Moldova for the IT engineers and investors
- IT exports increased eight times from US\$ 33 million to US\$ 260 million between 2010-2020.

The Strategy objectives were declared achieved in early 2018 and the second edition of the Strategy was developed and approved – the *Information Technology Industry and the Ecosystem for Digital Innovation Development Strategy for 2018-2023* (GD 904/2018). In the updated Strategic Plan, the following objectives have been set: further enhancement of the IT industry competitiveness, market diversifications, stimulating internal adoption of digital innovation in various sectors of the economy and society, supporting startups and tech entrepreneurship, development of a competitive human capital in the field of ICT, quantitative and qualitative growth of the IT and digital innovation sector.

At this stage, the guaranteed fiscal regime was extended up to 2026, the creation of the Digital Innovation and Tech Startups Fund was approved by the Parliament, the IT offer of the country is on top of its export promotion programs, Digital Economy, and eCommerce is a top priority of the Government. The IT industry recorded a significant increase in revenue of about MDL 7.3 billion in 2020, the share of the IT industry in GDP increased up to 3.6% of GDP, the number of IT companies has exceeded 1,770, and the number of employees in the sector over the last 3 years has increased from 11,475 to 17,700 highly qualified engineers.

Many other players and achievements in the private sector such as banking, telecom, retail, utilities, etc. have a high rate of digital innovation absorption, using the existing infrastructure elements and services developed by authorities, also benefiting from a strong local IT industry ready to deliver and to support.

In conclusion of Digital content and e-services priorities, we can state that the range and scale of the implemented activities revealed a deep transformation process on the Government and the IT Industry side, which put in motion many other players in the public and private sectors. In return for its proactive policies in the ICT sector, the entire economy of the country benefited, Digital industries registered a dynamic development, formalization of the economic activity, attraction of foreign investments, and a high rate of qualified personnel retention in the country.

4.3. Digital literacy, e-skills, and digital inclusion

At this stage of its digital transformation path, Moldova faces huge constraints due to the insufficiency of qualified human resources, a moderate level of digital literacy, and digital inclusion. Even though our country succeeded to captivate the attention of foreign investors in the field of ICT, the lack of available and highly skilled personnel retained the following positive development.

This set of objectives of the Digital Moldova 2020 Strategy registered a slower dynamic due to the existing constraints in the educational system itself – aging and lack of qualified personnel, system inertia, insufficient fundings, etc. *Education development Strategy Education-2020 and the Digital Literacy Program for Teachers* were the most noticeable subprograms launched by the Ministry of Education.

Declared areas of intervention were access to qualitative education; modernization of the equipment of the educational institutions; digital skills and digital education; effectiveness and efficiency of the school management through information technologies.

At the systemic level, just a few of the objectives were achieved as mandatory Digital Education module for primary school at the national level, improvement and implementation of the educational standards for digital skills, Education Management Information System and Concept approved by GD 601/2020, update of the Informatics Curriculum for the compulsory general education, moderate signs of progress on implementation of the Ministry of Education Action Plan on computerization of the general education, mainly with the support of donors and local authorities for robotics kits, teachers training, digital laboratories, digital manufacturing equipment (3D printers), multimedia classes, etc.

Some key achievements have been registered with external support, such as the implementation of the *Novateca* Program for public libraries' digitalization supported by the Foundation of Bill and Melinda Gates. During this five-year program, public libraries were transformed into vibrant digitized community platforms to provide universal access to technology and to offer basic training for the population in the use of ICT and public electronic services. *Novateca* has expanded its network of over 1,070 modernized public libraries, fully equipped with computers and free Internet access all over the country. Under the 5 years program, over 1,500 librarians were trained in the field of PC use and the creation of new library services. Also, during this period, support was provided for the organization of different public awareness events. Now, *Novateca* delivers over 350 modern services in various fields for about 400,000 users. Structure of training by fields: digital inclusion - 28%, education - 22%, communication - 20%, culture and recreation - 14%, health - 10%, e-government - 5%, economic growth - 2%.

Another considerable contribution to the ICT educational initiatives was the creation in partnership with the Technical University of the ICT Centre of Excellence Tekwill, launched in March 2017. Tekwill implemented over 150 various programs in support of digital literacy and digital innovation proliferation for different social groups and professionals, delivered over 50,000 hours of training, with over 11 thousand beneficiaries, and assisted over 200 new tech companies/startups. Currently, the Tekwill model is rapidly expanding in regions on university platforms in Cahul, Comrat, and Balti. The Tekwill in Every School Program is extending its physical and content presence outside Chisinau, in regions.

The National Center for Digital Innovation in Education *Clasa Viitorului* was launched in April 2019. The Center offers modern training spaces, where teachers can experience new technologies, new scenarios of the educational process, using transformative technologies, programming, robotics, IoT, etc., as well as access to state-of-the-art equipment. The scope of the Center, which is created on premises of the Pedagogical University, is to provide necessary educational platform to train teachers, contributing to transformation of the educational system of the country.

Digital literacy, e-skills and digital inclusion set as priorities of the Digital Moldova 2020 Strategy did not have sufficient institutional support and project implementation capacities. As a result, this line of activity had a modest contribution to the transformation of the educational system and therefore,

a reduced impact on digital transformation of the society. Despite a significant effort in Electronic Governance and Digital industries development, the general digital transformation of the society and further absorption of the digital innovation in various areas of economy and society remains at a modest level comparing to the EU and Eastern European countries. A systemic approach and a consolidated national digital transformation vision with special focus on digital education and inclusion is necessary.

4.4 Trust and security in cyberspace

The Digital Moldova 2020 Strategy set trust and security in cyberspace as a priority. The subsequent *National Cyber Security Program* approved by GD 811/2015 and the *Action Plan on promoting Internet safety of children and adolescents* approved by GD 212/2017, focused on the secure processing, storage and access of data; security and integrity of electronic communications networks and services; development of prevention and urgent response capacities at national level; preventing and combating cybercrime; strengthening cyber defense capabilities; cybersecurity literacy and education; international cooperation and interaction in the spheres related to cyber security; reducing illegal Internet content and addressing the negative impact of the dangerous online content and activities; promoting a safer digital environment for children and adolescents.

As a result, the *Mandatory Minimum Cyber Security Requirements* were elaborated and approved by Government Decision 201/2017; Immediate measures to ensure cyber security at the government level were approved by Government Decision 482/2020 and Government Center for Response to Cyber Security Incidents (CERT-gov) was created; www.siguronline.md portal was created to offer updated useful information on safer Internet and possibility to report cases of abuse; introduction in the school Curriculum of classes on the correct and safe use of the Internet; online child protection modules have been introduced in all higher education institutions with pedagogical specialties; the methodical instructions for investigating online sexual offenses against children have been developed and applied in the investigation process; thematic training was organized for judges and prosecutors on the methods and tactics of investigating and prosecuting crimes committed using information technology.

Considering the insufficiency of those measures, a trans-sectoral Information Security Strategy for 2019-2024 was approved by Parliament Decision no. 257/2018. The creation of a national cyber security management system is essential for the further digital evolution of Moldova. Creation and consolidation of the institutional framework, as well as of the necessary regulatory framework is on the agenda.

ICT policy and regulatory framework need a constant update in line with the transformative processes at the global and regional levels. The Digital Moldova 2020 Strategy and subsequent set of sub-sectoral implementation programs followed the Electronic Moldova 2005-2010 Strategy, developing new capacities and responding to the needs and expectations of the entire society at that time. Its acceptance by the engaged stakeholders and public institutions as a framework policy document contributed to structural reforms and updates.

Lessons learned and created capacities must contribute to the next generation policy framework for the Digital Society developments in the Republic of Moldova. The need for a new digital transformation vision, considerable human and financial resources, as well as strong leadership, is evident.

Also, a strong engagement of the Industry, Associate sector, and Development partners is necessary to elaborate a new digital transformation vision, implement programs, attract investments, capacities consolidation, etc.

The ICT Association of Moldova was from its very beginning at the forefront of this process and its contribution at the next stage is mandatory.

5

**IDENTIFIED
WHITE SPOTS
IN THE KEY
AREAS OF
INTERVENTIONS**

The ICT sector's role in advancing the regulatory and policy frameworks in the field of Information Society/Digital Society development is to level-up the sector's voice, to provide the necessary sectoral expertise and to enable the transformative processes.

Auspiciously and rightfully so, the Action Plan of the newly appointed Government (August 2021), includes, as a key priority, the modernization and digitalization in various areas of social and economic sectors. The ICT Industry and stakeholders acknowledge this as an opportunity to intensify advocacy ambitions and efforts.

As a result of the ICT industry, policy and legal framework assessment, the **white spots** were identified in following key areas of intervention:

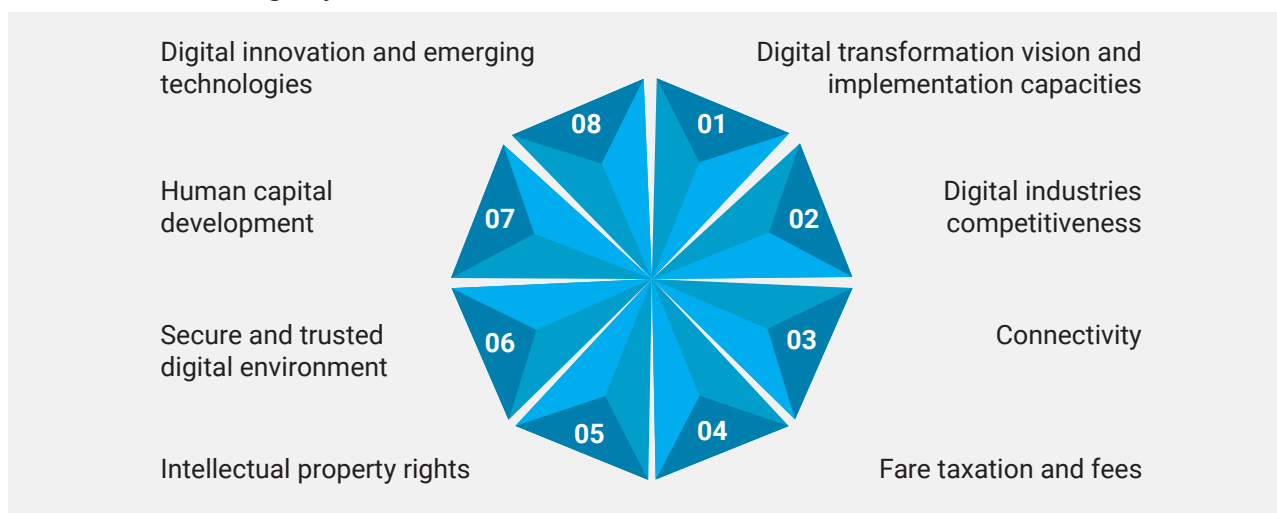


Figure 10. IT&C sector key areas of intervention

5.1 Digital Transformation Vision and Implementation Capacities

Digital Transformation strategic policy and institutional framework is essential to achieving further progressive evolution of the digital society in Moldova in line with the global and regional priorities, especially in line with the EU priorities for digital transformation.

The role of digital industries in Moldova's transformative process is fundamental and the Government's role is to consolidate the vision and to engage the capacities. The Association of ICT Companies is a leading organization to advocate and support the process of digital transformation and further integration of the Republic of Moldova into the regional and global digital economy.

	Objectives	Specific activities and stakeholders
1.	<p>National Digital Transformation Governance and Vision</p> <p>Rationale: There is a strong need to enhance governance mechanisms and implementation framework for the country's Digital Transformation.</p> <p>There is a clear need for the increased coordination of the national digital transformation strategy, with clear roles, responsibilities, and implementation structures.</p> <p>Digital transformation is not only a technological effort but crucially, it is about changing mindsets. Besides, no strategy can be implemented without strong leadership driving implementation.</p> <p>Furthermore, it must be recognized that digital transformation is a continuous process of changing society, business processes, and technological solutions to new realities. The National Digital Strategy shall comprise an action plan on digital literacy, e-skills and digital inclusion among many other vital transformation processes. All elements must be implemented in a systematic manner, and a coordination process in the context of the pandemic crisis could be transformed into a remarkable opportunity.</p>	<ul style="list-style-type: none"> ■ Develop Moldova Digital Transformation Vision/ Strategy ■ Consolidate the institutional framework and project implementation capacities <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, Ministry of Infrastructure, Electronic Governance Agency, Development partners community, other similar organizations</p>
2.	<p>Integration into European/international digital transformation process</p> <p>Rationale: The EU Moldova Association Agreement, as well as the Deep & Comprehensive Free Trade Agreement encourage Moldova to harmonize its policy and regulatory framework with the European Union. It offers local innovative industries the possibility to find their niche and recognition in larger and advanced markets.</p> <p>But the basic conditions for initiating and growing a business, or for accessing investments for a digital startup are far too inferior. Adoption of technological innovation indicators lag behind the EU and regional level.</p> <p>Regulatory framework harmonization is selective and imposes strict rules on companies without providing the same level of protection and support, especially in the area of Electronic communications, or Fintech.</p> <p>Fees and taxes are not balanced with guarantees and stimulative norms, discouraging new entrants and investments, impacting the quality and costs of the services/products.</p>	<ul style="list-style-type: none"> ■ Integral harmonization of national legislation in digital transformation, infrastructure, and innovation with the EU regulation (GDPR, access to networks, protection of infrastructure, etc.) ■ Wide transfer of best practices and of supporting innovation instruments (innovation regulatory hubs, funding instruments, supporting programs, etc.) <p>Stakeholders: Ministry of Economy, Ministry of Infrastructure, Ministry of Finance, regulatory agencies, development partners, other similar organizations</p>

5.2 Digital Industries Competitiveness

The existence of a competitive and well-developed IT sector is the main catalyst of digital transformation and of the adoption of innovative technologies in various economic sectors. A proactive policy framework brought tangible results for the IT industry of Moldova in a very short period and this process needs an extension.

The qualitative growth of the IT sector, development of local innovative industries, and a higher rate of digital technologies adoption are the next objectives to be achieved and there are some key priorities in this regard.

	Objectives	Specific activities and stakeholders
1.	<p>Further development of the IT Park model</p> <p>Rationale: In almost four years of its activity, the Moldova IT Park became a national and regional success, being launched on January 1, 2018, under the special IT Parks Law no.77/2016. The applied model impacted positively the evolution of the IT industry in the country, generating an exponential growth of the sector itself, changing the structure of the country's exports, and contributing to a higher level of IT professionals' retention in Moldova. Despite the difficulties faced by the global economy in the 2020 pandemic year, Moldova IT Park results continued to exceed expectations and forecasts.</p> <p>Nevertheless, the timeframe for the offered fiscal guarantees is a topic of major concern for strategic investors and for local IT entrepreneurs and employees.</p> <p>ATIC, as one of the main supporters and stakeholders of the Moldova IT Park, advocates for its further development and consolidation, aiming to preserve the achieved level of competitiveness of the Moldova IT industry at the regional level and for the necessary predictability for investors.</p> <p>Complementary programs to support tech businesses incubation and access to financing of the IT startups must be extended and supported by the Government.</p> <p>The IT visa potential must be fully exploited, as this initiative could greatly facilitate the consolidation of the IT business in Moldova by ensuring the transfer of necessary expertise, best practices, and investments.</p>	<ul style="list-style-type: none"> ■ Define a clear development strategy for the IT Park regime to substantiate, amongst other attributes, the state guarantee for its functioning ■ Improve the IT Park legislation and extend the facilitation regime to other digital industries ■ Update the Moldova IT Park objectives ■ Ensure concordance between the real social contribution and level of social protection of the IT Park resident employees <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, Moldova Investment Agency, development partners, other similar organizations</p>

<p>2.</p>	<p>Access to digital innovation supporting funds</p> <p>Rationale: The absence of the local investment funds or of the Government programs that would support the financing of the digital innovation and the validation of the digital innovative solutions developed locally is a huge constraint that needs to be addressed immediately.</p> <p>Financial supporting mechanisms and tools to promote digital innovation and technological start-ups in various sectors of the national economy are indispensable instruments in every technological-friendly environment. Moldova has declared its commitment to further support the innovative sector share in its economy, adopting a new Strategic framework and Law no. 142/2020 in this regard.</p> <p>The expected results can be achieved only if the advanced technologies are supported by the Government or private sector at the initial stage. Similar instruments are necessary to encourage the adoption of digital innovation by SMEs in various economic verticals, leading to modernization of the entire economy. Traditional financing instruments are less accessible for tech startups or software companies with limited guaranteed assets, before they succeed to attract investors.</p> <p>Elimination of barriers and creation of the necessary conditions to facilitate peer-to-peer lending, crowdfunding, venture funding and angel investment by improving the regulatory and competitive environment must be addressed.</p>	<ul style="list-style-type: none"> ■ Approve secondary legislation to Law no. 142/2020 and create the Digital Innovation and Technological Start-ups Support Fund/Program ■ Support various funding instruments and programs contributing to public, private, and donors' resources attraction ■ Develop and implement crowdfunding legislation ■ Analyze and eliminate constraints to the development of the venture funding, including administrative barriers to companies' registration, changes in shareholders structure, etc. <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, National Committee for Financial Markets, development partners, other similar organizations</p>
<p>3.</p>	<p>Attraction of foreign qualified IT professionals and investors in tech companies</p> <p>Rationale: Enforcing the IT Visa legislation with dedicated supporting programs is required. In a modern competition for skills and innovation, governments implement supporting packages and promote their offers abroad for both – individuals and companies. This practice is mostly efficient in relation to technological startups, which prefer to migrate in more favorable jurisdictions with a variety of supporting mechanisms.</p> <p>Moreover, eliminating the administrative barriers in attracting foreign qualified IT personnel only for the IT Park resident companies is not a sufficient measure. Extension of the program and of the legislation for highly qualified personnel and investors in tech companies for non-IT Park resident companies is one of the unexplored reserves to support the ICT industry in Moldova to grow.</p> <p>According to article 3 of Law no. 200/2010 on foreigners in the Republic of Moldova, the exceptions for long-stay visas are made only for the foreigners employed or investing in the IT Park resident company. For other IT companies which decided not to join the IT Park or are not eligible, hiring foreigners in general conditions is a difficult administrative procedure.</p>	<ul style="list-style-type: none"> ■ Promote and capitalize the "IT visa" initiative potential, stimulate and attract digital nomads ■ Develop Government supported programs to attract qualified foreign personnel in the IT sector of Moldova ■ Adjust article 3 of Law no. 200/2010 on foreigners in the Republic of Moldova to extend its coverage to non-IT park residents. <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Interior, Ministry of Economy, Moldova Investment Agency, development partners, other similar organizations.</p>

4.	<p>Social benefits for the employees of IT Park residents</p> <p>Rationale: The individual's insured monthly income is still at the level of 68%, even the salaries and individual real contributions to the National Social Insurance Fund increased up to 88% of the average monthly salary in the economy forecasted for the current year. This is a discouraging disproportion for young IT professionals, especially women.</p> <p>On another side, the offered personal tax exemptions are not maintained for the individuals employed/resigned in/from a resident company of the Moldova IT Park during the year. According to article 377 of the Fiscal Code, no exemptions and other deductions related to salary payments paid by residents of parks for information technology may be granted, according to art. 33-36. Exemptions not used in this case cannot be transferred.</p> <p>One of the acceptable scenarios is to preserve exemptions and other deductions related to salary payments paid by individuals before or after employment in an IT park resident company. This is not a critical situation for most of the IT park residents' employees but could contribute to the formalization of the employment of freelancers or of short-term employees hired for certain short-term projects.</p>	<ul style="list-style-type: none"> ■ Adjust article 16 of Law 77/2016 on IT Parks provisions to align the level of social protection of resident's employees with their actual social contribution ■ Adjust article 377 of the Fiscal Code on personal tax exemptions ■ Advocate for a voluntary contribution to the Social Insurance house option <p>Stakeholders: Ministry of Economy, Ministry of Finance</p>
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5.3 Connectivity

Resilient ICT infrastructure is the key element for the digital transformation of the country. Access to networks is the cornerstone for the economic evolution and technological innovation in the digital age. Lack of adequate approach and of supporting policies undermine investment and modernization capacities of the telecom industry, which directly impact connectivity and quality of services.

	Objectives	Specific activities and stakeholders
1.	<p>Functional legislation on access to properties to facilitate installation and operation of telecommunication networks</p> <p>Rationale: Recognizing the role of the electronic communications sector in ensuring technological progress, economic development, ensuring the social and economic inclusion of the population, access to education and public services, including good governance, the EU adopted Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks. Consultations are currently underway to amend this Directive, which will further facilitate the development of communication infrastructures in order to achieve development objectives.</p>	<ul style="list-style-type: none"> ■ Ensure proper implementation mechanisms of Law 28/2016 on access to properties and shared use of electronic communications infrastructure ■ Further harmonization of Law 28/2016 with the EU regulation in this field <p>Stakeholders: Ministry of Infrastructure, National Regulatory Agency in ICT, Development</p>

	<p>Similarly, the Republic of Moldova adopted in 2016 the Law on access to the property and shared use of infrastructure, which imposes obligations on owners or managers of buildings and land to offer suppliers the possibility to install and operate respective networks on these properties, for a fee that would cover only the direct damages caused by the respective works, without charging rents for the use of these properties. Based on this law, the Government also approved the methodology for calculating the tariffs for the right of access to properties.</p> <p>Unfortunately, a large part of the public authorities and public property managers directly or indirectly refuse to apply the legislation in this field, denying access to properties for the installation of new infrastructure or requesting the dismantling of the existing communication infrastructure, or establishing prohibitive financial conditions (exorbitant rents or access charges). The regulatory instruments are not properly applied, and it results in higher costs for the networks.</p> <p>The extensive consultations with the EU counterparts, World Bank, and local community, resulted in a Gap Analysis developed and presented in November 2020, by the WB expertise, to identify constraints and non-compliance of Law 28/2016 with the EU Framework Directives on Electronic Communications. Given the considerable gaps identified, it was agreed that the Ministry of Economy and Infrastructure, in cooperation with local stakeholders will elaborate comprehensive amendments to the Law 28/2016 and will launch the legal proceedings in this regard.</p>	
<p>2.</p>	<p>Simplification of the authorization procedures for the network building</p> <p>Rationale: The building of electronic communications networks is subject to regulation in the field of construction works, requiring compliance with certain standard procedures for the authorization in construction, stipulated by Law no. 163/2010. The existing regulatory mechanisms make it very difficult and time-consuming to coordinate and authorize the development of the communication infrastructure, creating a non-competitive environment on the electronic communications market, especially on the market of fixed Internet and broadcasting services, dominated by the state-owned operators.</p> <p>The operators are facing unfair interpretation of Law no. 163/2010, as refusal of local authorities to issue permissive acts for construction. This kind of decision is usually based on:</p> <ul style="list-style-type: none"> ■ the request for permissive acts should be made not by the operator building the infrastructure, but by the owner/manager of the building in/on which the infrastructure is built 	<ul style="list-style-type: none"> ■ Amendments to Law no. 163/2010 on authorization of construction works in order to: <ul style="list-style-type: none"> i. Establish a simplified procedure for the authorization of works for the construction of electronic communications networks

- the operator must submit the notarized agreement of each co-owner of the residential block/multistorey building for the installation of the network in the respective block/building
- the local authority does not have an approved urban plan
- the obligation to consult and agree with the inhabitants of the locality for the extension of the Internet and TV network of the operator.

These obstacles deprive residents, enterprises, and organizations in the locality of several advantages, such as increasing competition between operators, diversifying service offers, reducing prices, increasing internet speed, increasing the quality of services, creating a modern communication infrastructure, increasing productivity, and attracting investments in the locality.

Other issues in this regard refer to:

- Lack of a register of urban networks, which would allow the protection of infrastructure already built
- Carrying out construction or rehabilitation works of urban infrastructure, without considering the need to build electronic communications networks underground or to relocate them by other methods
- The sanitary rules regarding the construction of mobile telephone stations, which are several times tougher than the rules applied in EU regarding the electromagnetic emission norms, as well as the existence of multiple unjustified restrictions on the location and the way of placing the stations, including the conditioning of the issuance of the sanitary permit for the construction of the station by obtaining the agreement of the inhabitants
- Authorization and construction of new multi-story blocks, without considering the previously built mobile communication stations
- Application of standard requirements and procedures for the approval of construction works, including for the construction of small cells (microcell).

It should be noted that according to art. 37 of the Law no. 28/2016, the Government, within 6 months from the entry into force of this law, had to ensure the simplification of the procedure for authorizing the construction (installation) of the elements of public electronic communications networks and the infrastructure elements associated with these networks. Solving this problem would facilitate the achievement of the objectives set out in several government programs, including on broadband development.

Without progress in this regard, it would be difficult to achieve the objectives set by the Radio Spectrum Management Program for the years 2021-2025, to improve networks and to implement new generation 5G services.

ii. Eliminate inappropriate or excessive requirements (such as the notary agreement from all the co-owners of the apartment building, submitting the application and issuing the permissive documents only to the owner of the building, elaborating the urban plan as a precondition for issuing permissive documents for the construction of infrastructure, obtaining the inhabitants' agreement for the extension of the network in the locality, etc.)

iii. Create a register of urban networks and approve updated sanitary rules on construction of mobile telephony stations in accordance with the advanced international legislation and practice (The International Commission on Non-Ionizing Radiation Protection (ICNIRP), Guidelines For Limiting Exposure To Electromagnetic Fields (100 kHz to 300 GHz), March 2020).

- Analysis of constraints and improvement of the Urbanism and Constructions Code

Stakeholders: Ministry of Infrastructure, National Regulatory Agency in ICT, Development partners, Business community

3.

Improvement of the institutional framework in the field of electronic communications

Rationale: The Regulatory Agency for Electronic Communications and Information Technology (ANRCETI) has the statute of the independent regulatory entity, but except the rule, this is not accountable to the Parliament or to the Government.

The only attributes of the Government in this regard are the provisions of the art. 8 (7); art. 9 (1.d.) and art. 11 (3), limited to approval of the Agency internal regulation in strict conformity with the Law 241/2007 on electronic communications; to coordinate the fixed telephony tariffs for the dominant operator on the market; and to appoint the ANRCETI Board members.

The Agency is totally independent in its decisions as well as in approving the budget, working plans, and annual reports of activity, its attributions being explicitly preserved by Law 241/2007 on electronic communications.

The recent recommendations of the International Telecommunication Union and of the EU4Digital note the need to strengthen the independence of ANRCETI, as well as of its responsibility, to ensure good governance and promote rational regulation through collaboration with public authorities and the private sector.

One of the proposals is to consider merging the Regulatory Agency in IT&C with the National Service for Radio Frequency Management, which might contribute to administrative costs reduction by a combination of the regulatory tax with the payments for the electromagnetic compatibility.

This proposal must be carefully examined, as currently the Service for Radio Frequency Management is providing a series of services that are not transferable to the Regulatory Agency, such as certification of the electronic equipment, networks design, projects, and calculations. Also, other costs, like existing salaries, have to be considered in order to not admit the increase of the regulatory fees and to ensure the feasibility of the restructured institution.

- Adjustment of the Law no. 241/2007 on electronic communications and strengthening regulatory independence by transferring of the ANRCETI under the parliamentary control and appointment of the ANRCETI Board members by the Parliament
- Strengthening regulatory accountability of ANRCETI - budgetary, organizational, planning and reporting activities
- Analyze and improve the existing institutional framework

Stakeholders: Ministry of Infrastructure, development partners, the business community

4.

Increase regulatory predictability and collaboration with the private sector

Rationale: The predictability of the regulatory framework is one of the mainstays of thriving digital markets. Policy uncertainty, on one hand, or an excessive regulatory burden on the other leads to lower investments and economic growth. Therefore, regulatory predictability is especially important for market players aligning their business plans with regulatory requirements. Delays in providing certainty – on policy, legislation, and regulations – reduce the ability of businesses to plan, comply with legal requirements and invest for the long term.

Increased regulatory predictability at the level of ANRCETI would send a positive signal for investment in new technologies, services, and business models. Having a mid-term strategy or roadmap and action plan for the regulator as announced in ANRCETI's priorities, would go a long way to encouraging market players to roll out mid-and long-term market strategies. In addition, regular discussions with a wide range of market players would be particularly useful to identify regulatory or legal framework gaps, understand their challenges and find optimal solutions.

The ability to successfully collaborate is a key marker of a next-generation (G5) regulator, and existing collaboration and consultation mechanisms in place do not always deliver the expected results. To remedy this, stakeholder engagement vehicles – such as public hearings, high-level roundtables and expert workshops, hackathons, etc. – could be considered as a step forward in more engaged collaboration between the Regulatory Agency and the private sector.

The ease of infrastructure development could be a valuable indicator of collaborative regulation. E.g., Law on infrastructure sharing exists, but implementation struggles due to various reasons – local authorities and infrastructure owners engaging in polarized discussions rather than collaboration, enforcement mechanisms lacking efficiency and unproductive dispute resolution, and finally, an unsatisfactory level of trust between authorities and market players.

Digital transformation is not only a technological effort. It is about changing mindsets as well, therefore, learning and training aspects to build capacity become crucial. Strengthening the capacity of the Regulatory Agency and policymakers to understand, and be equipped to deal with the challenges emerging from digitalization is an essential part of the journey towards transformation. Regulatory expertise needs to be developed continuously to integrate new technologies, competencies and skills.

- Reviewing the action plan process of ANRCETI to increase regulatory predictability
- Improve public-private dialogue and implement collaborative tools on regulatory framework development
- Enhance regulatory expertise and institutional capacity building

Stakeholders: Ministry of Infrastructure, National Regulatory Agency in ICT, development partners, the business community

5.	<p>Transparentize the regional and bilateral negotiations on roaming tariffs</p> <p>Rationale: Moldova maintains intense commercial, tourism, cultural and humanitarian links, mainly with the European Union countries, including Romania, as well as with Ukraine and Russia. Implementing an agreement on the reduction of roaming charges is a rather complicated task because it requires the conclusion of bilateral agreements with each of the mobile operators in the participating states.</p> <p>Thus, we believe that the efforts of the authorities should be focused on reducing roaming charges, firstly, with neighboring countries and, subsequently, with the European Union.</p>	<ul style="list-style-type: none"> ■ Transparent negotiations or roaming charges, as a priority with Romania and Ukraine ■ Prepare the ground for further consultations with the European Union on roaming charges ■ Create clear and transparent decision-making process on implementation of roaming agreements <p>Stakeholders: Ministry of Infrastructure, Ministry of Foreign Affairs and European Integration, National Regulatory Agency in ICT, development partners, the business community</p>
6.	<p>Rules on Electromagnetic Fields (EMF)</p> <p>Rationale: EMF rules adopted in the Republic of Moldova are considered excessively strict, compared to those applied in the region.</p> <p>The Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) is based on the current research, being seen as a reference for the updating process of the internal regulation in this regard.</p> <p>The Telecommunication industry is evolving very fast and new emerging technologies enter the market imposing the necessity of permanent update and refresh of the restrictive rules.</p>	<ul style="list-style-type: none"> ■ Update the Rules on electromagnetic fields, in line with the existing EU practices <p>Stakeholders: Ministry of Health, Ministry of Infrastructure and Regional Development, National Regulatory Agency in ICT, Business community</p>
7.	<p>Electronic communications networks protection</p> <p>Rationale: Protection of operational public electronic communications networks is not at the same level with the protection of other utility networks in Moldova. Authorization of public renovation projects and of real estate developments is approved without analyzing the potential impact on electronic communication networks. It leads to requirements to dismantle sites and networks by operators at their own costs.</p>	<ul style="list-style-type: none"> ■ Protection of the telecommunication networks at a similar level with other utility networks <p>Stakeholders: Ministry of Infrastructure, National Regulatory Agency in ICT, Business community</p>

8.	Advertising and teleshopping regulations	<ul style="list-style-type: none"> ■ Liberalization of advertising and teleshopping regulations for cable network operators <p>Stakeholders: Ministry of Infrastructure, Ministry of Economy, Business community</p>
<p>Rationale: Regulations imposing on cable network operators (CNO) the obligation to exclude advertising and teleshopping from retransmitted foreign audiovisual media services is a controversial subject. Currently the law is a subject of constitutional review at the Constitutional Court.</p>		

5.4 Fare taxation and fees

Fare competition and balanced taxation are essential for preserving investors' interest to the ICT sector of Moldova, but especially in the telecommunications market. Telecom market revenues in 2020 declined to 6.7 billion MDL, which is about 3.3% of GDP (compared to 7% in 2014), nevertheless, telecom companies were in 2020 among the largest taxpayers and employers, investing about one billion MDL in development and providing the critical infrastructure element for the entire economy.

	Objectives	Specific activities and stakeholders
2.	<p>Portability fee</p> <p>Rationale: According to the Technical and Commercial Conditions for the implementation and realization of number portability in Moldova, approved by ANRCETI in 2013, all telephone service providers are obliged to pay a portability fee for the creation of the centralized database in the amount of €920,000, as well as an additional fee of €0.0308 per month for each phone number assigned by license to the provider. This fee is paid to the private company “NP Base” S.R.L., designated as the administrator of the database.</p> <p>Holding a total of about 8 million numbers, million annually, heavy costs which are considered unjustified from an economic and from a legal point of view. As a result of these costs, the retail charges applied to end-users are considerably more expensive.</p> <p>The contract with the company “NP Base” S.R.L. expires on 30.06.2023, and ANRCETI is obliged to organize, in due time, a new tender for the selection of an administrator of portability after the expiry of the current agreement. The provisions of the current Agreement between BDC and ANRCETI contain ambiguous provisions (in particular, on the right to use the license for the current BDC) and do not provide certainty regarding the future carrying out of the portability process. Also, there is no clarity in relation to the license transfer to ANRCETI. Thus, why this process must be transparently monitored.</p>	<ul style="list-style-type: none"> ■ Development by mid-2022 of the Portability Plan for the next stage (after the expiration of current contractual obligations); ■ Transparency in organizing the tender for the selection of the new administrator of the portability database after the expiry of the current agreement (30.06.2023) <p>Stakeholders: Ministry of Infrastructure, National Regulatory Agency in ICT, the business community</p>

3.	<p>Adjustment of the industry-specific charges</p> <p>Rationale: Licenses fees for spectrum use and recurrent spectrum management fees need an analysis and update considering the current costs and best practices from the region.</p> <p>Anticipating the 5G spectrum auctioning preparation, the Telecom industry of Moldova advocates for an extended validity period of the licenses for the use of radio frequencies (e.g., from 15 to 25 years), in order to offer predictability and stability to the market. In the same line, the industry opts for reducing the license and radio spectrum usage fees by establishing a transparent calculation formula, according to the EU practices. For new allocations of the radio spectrum for 5G technologies, there is a need for updating the reserved prices decision, based on updated benchmarks, closer to the auction period.</p> <p>Conversion into the national currency of the administrative fees for the use of the frequency spectrum. Currently, the fees for the use of frequencies are set in Euro, although the services on the market are provided to consumers in the national currency and the investments in the mobile telephony infrastructure are exclusively in foreign currency. This puts at risk business predictability, exposes suppliers to currency fluctuations, and directly affects the economic capabilities of suppliers.</p> <p>There is a need for reconsideration of different anachronistic taxes as the fee for financing the information system of normative documents in constructions, in the amount of 0.5% on the value of investments in networks, applied to telecommunications operators.</p> <p>In the same manner, other uncontrolled taxes may appear in different normative acts and local decisions. The application of a transparent and non-discriminatory taxation regime is mandatory in order to preserve the investment capacity of the Telecom operators and improve access to networks.</p>	<ul style="list-style-type: none"> ■ Periodic analysis and adjustment of the industry-specific fees and taxes in line with the regional practice and updated benchmarks <p>Stakeholders: Ministry of Infrastructure, National Regulatory Agency in ICT, Ministry of Finance</p>
4.	<p>Double Taxation Treaties</p> <p>Rationale: Moldova has signed 50 treaties for the avoidance of double taxation that may provide for a more favorable tax regime with the countersigning countries. Provisions of tax treaties in force prevail over the provisions of the Moldovan domestic legislation, except cases where the domestic norms provide for more favorable tax rates (i.e., in such circumstances, the domestic rates apply). The ICT sector, however, asserts that the number of treaties should be extended as much as possible, and negotiations should continue with other countries - destinations of Moldovan ICT services and products.</p>	<ul style="list-style-type: none"> ■ Continuous negotiations of the new treaties for the avoidance of double taxation with countries of destinations for local ICT products and services ■ Ratification of treaties for the avoidance of double taxation with the USA, France, and other commercial partner countries

	<p>Of particular interest to the industry are the treaties with the United States of America and with the French Republic. Though tax treaties with the two countries were signed a long time ago, to replace, by succession, the treaties with the former Soviet Union, were not ratified by all signing parties. As the ratification process has incepted with France, of major relevance for the ICT sector remains the treaty with the United States of America.</p> <p>Another problem is the issuance of confirmative certificates regarding the paid in Moldova taxes, by envisaged authorities. Reticence and bureaucracy in issuing these certificates causes additional costs for local companies or administrative burden, which need to be addressed.</p>	<p>Stakeholders: Ministry of Economy, Ministry of Foreign Affairs and European Integration</p>
<p>5.</p>	<p>Digitalization and optimization of fiscal and statistical reporting</p> <p>Rationale: The fiscal and statistical reporting procedures need to be unified, simplified and digitized to reduce the companies' efforts with their compilation and submission. This is a horizontal issue affecting all businesses in Moldova, consuming too many resources and time in the digital age.</p> <p>There is a necessity to eliminate not only the hard copy submission but also to rethink its periodicity (e.g., EI-7 quarterly and annually, EI-8 quarterly and annually, 1-RE monthly, 1-PE annually, 1-BE annually), much of the same information needs to be presented to different institutions.</p> <p>For example, though the information on indicators regarding employees, remuneration, social benefits, holidays, the volume of deliveries is submitted in tax reports and is available on www.servicii.fisc.md portal, companies still need to submit the same data to the National Bureau of Statistics.</p> <p>Additionally, many indicators (e.g., data on personnel, revenue, turnover, cost of goods sold, expenses, depreciation of fixed assets, remuneration, inventories, social and medical insurance contributions) are repeated in various reports to the same institution.</p>	<ul style="list-style-type: none"> ■ Digital submission of fiscal and statistical reports, forms unification and data cumulation to avoid several reporting during the fiscal year ■ Abolish submission of statistical reports with 0.00 (zero) value ■ Eliminate the practice of modifications to the list of statistical reports within the running year <p>Stakeholders: Ministry of Economy, Ministry of Finance, National Bureau of Statistics, Ministry of Internal Affairs, Ministry of Labor</p>
<p>6.</p>	<p>VAT refund for certain operations of IT companies</p> <p>Rationale: IT companies create content and market it through Google Play, Apple, etc. Those applications, as well as other related/additional services, are bought on those platforms by its consumers, and the Internet platforms periodically transfer to local IT companies' certain amounts, based on a monthly financial/sales report, which is an electronic document that is generated in the user's account on the Apple Store, Google Play, etc., based on de-facto downloads/sales.</p>	<ul style="list-style-type: none"> ■ Amend art. 32, para. 2, let. a) of Government Decision no. 93/2013, in order to accept various forms of contracts confirmations ■ Revision and simplification of the VAT refund procedures for the service provided by non-resident individuals

<p>6.</p>	<p>Companies accept online the terms and conditions announced by the Internet platforms by pressing the agree button. This Agreement is an electronic agreement/contract concluded between the parties according to the general civil regulations, is downloadable from the user's account, but it does not contain the identification data and signature (wet stamps) of the Apple Store or of the Google Play, as well as the identification data of the Moldova resident company. As a result, companies in Moldova cannot refund VAT according to art. 101(5) of the Fiscal Code, because the State Tax Service does not accept the contract and the financial report mentioned above following the art. 32, p. 2 of the Regulation on the refund of value-added tax (Government Decision 93/2013), due to the absence of handwritten or electronic signature on these 2 documents by the issuing operator.</p> <p>Therefore, it is imperative to adjust the internal regulation to allow companies from Moldova to sell their products on international platforms, where their power to negotiate and, respectively, to sign contracts, in the form requested by the Moldovan State Tax Service, is impossible.</p>	<p>Stakeholders: Ministry of Finance, Ministry of Economy</p>
<p>7.</p>	<p>Conductive framework</p> <p>Simplified taxation. Tax procedures are quite heavy and involve high risks of sanctions. It is an issue primarily for small businesses and businesses involving simple activities. Those businesses need to be identified and simplified tax mechanisms applied.</p> <p>Reduced local fees. The abolition of certain local fees for e-commerce platform operators, at least for the period of launching the business or its maturation, would stimulate new operators and contribute to the scaling up of this economic sector. On the other hand, a flat local tax, such as the one of 10 thousand lei annually in Chisinau for e-commerce platform operators, discourages entrepreneurs and favors the grey market.</p>	<ul style="list-style-type: none"> ■ Develop a simplified fiscal mechanism for business activities dealing with electronic payments exclusively ■ Initiating a dialogue with the local authorities to reduce or eliminate the local fees for eCommerce platform operators <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, Ministry of Finance, Development partners, Business community</p>

5.5 Intellectual property protection

Intellectual property rights are an indispensable part of the modern digital society, where developed technologies and content needs proper protection. Legal framework and institutional capacities in the field of IPR need constant improvement, also due to growing cybersecurity risks for creators and consumers.

	Objectives	Specific activities and stakeholders
1.	<p>Remuneration for private copying</p> <p>Rationale: According to the Law no. 139/2010 on copyright and related rights, importers of “equipment (audio, video, hard discs, etc.) and media supports (for sound and/or video recordings, printing, audio cassettes, laserdiscs, compact discs, etc.) that can be used to make such reproductions” are obliged to pay a fee of at least 3% of the revenues obtained from the sale of such equipment, to cover the potential damage caused to the authors by the buyers of such equipment and media by making private copies of the works protected by copyright. The collection and distribution of this tax to authors is ensured by the collective management organizations of copyright and related rights (OGCs). This regulation creates several problems:</p> <ol style="list-style-type: none"> 4. The absence of an exhaustive list of the equipment for which the fee is paid and of a ceiling for the fee, generates excessive charges. 5. The minimum rate of the tax is noticeably higher than the rates applied in the region and in the EU, and it does not consider the potential damage caused by the equipment, which must be decisive in determining the amount of the tax. 6. The control acts of the Intellectual Property Agency show that most of the amounts collected by the Copyright Organizations are allocated/consumed by the OGCs in a non-transparent manner and in various forms, but not distributed properly to the copyrights’ holders. <p>The new law must set limits for the fees that can be charged by the OGC for distributing these incomes to the copyrights’ holders. According to the preliminary estimates, the number of payments that would be collected in this way would reach about 20 million lei (1 million EUR) annually.</p>	<ul style="list-style-type: none"> ■ Amending Law no. 139/2010, based on Economic Council proposals, offering fair ceilings and non-discriminatory mechanism for collected payments ■ Approval by the Government of the secondary legislation and of the list of devices for which the remuneration is applied ■ Harmonization of the internal legislation with the Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs <p>Stakeholders: Ministry of Infrastructure, National Regulatory Agency in ICT, the business community</p>

5.6 Secure and trusted digital environment

Users' rights protection online evolves rapidly facing new technological challenges. Digital transformation opens unlimited opportunities but at the same time exposes consumers and operators to a series of new emerging risks. Proper measures are necessary to create the required trustiness and safeness.

	Objectives	Specific activities and stakeholders
1.	<p>Update legislation in the field of personal data protection</p> <p>Rationale: In 2018, the Parliament adopted in the first reading the draft of the new Law on personal data protection and the draft Law on the National Center for Personal Data Protection.</p> <p>The declared objective was to harmonize the internal legislation with the EU General Data Protection Regulation (GDPR). But the draft laws contain many essential deviations from the Community's regulatory framework in this field. It was, also, drafted without proper consideration of the recommendations and expertise of the European Union expert mission, of the private sector, and even without a positive opinion of the Government.</p> <p>A particular concern arouses the establishment of excessive controlling mechanisms and requirements, the lack of sufficient procedural guarantees against the misuse of power, as well as the inadequately high sanctions established by law (with reference to the number of sanctions set out in the GDPR, it targeted the American giants of the so-called GAFA group, which operates on a global scale with turnovers of billions of dollars).</p> <p>As acknowledged by the EU experts working in the Twinning project for the Data Protection Centre, these legislative initiatives correspond to the GDPR in a proportion of only 70%.</p> <p>The business community sent to the Parliament an updated list of objections and proposals to the drafts approved in the first reading. It requested proper examination of all these proposals on the Parliamentary platform and approval of the draft laws to align Moldova with the regional practice and level of protection of both - users and services providers.</p> <p>The fragmentary transposition of regulatory norms is dangerous and keeps Moldova further outside the common European area of personal data protection.</p> <p>From another side, the legal framework implementation capacity of the Center is a topic of high concern. The Center has no capacity to respond to the companies requests even up to two years.</p>	<ul style="list-style-type: none"> ■ Approval of the new Data Protection legislation in line with the EU General Data Protection Regulation, providing the necessary transitional period and balanced protective measures ■ National Center for Personal Data Protection capacities consolidation <p>Stakeholders: specialized Parliamentary Committee, Ministry of Justice, Development partners, Business community</p>

<p>2.</p>	<p>Technical expertise of electronic equipment</p> <p>Rationale: Revision of the Law no. 105/2003 on consumer protection is necessary, especially regarding the free replacement of electronic products, the legal guarantee of conformity, and the technical expertise of household appliances.</p> <p>Interventions are necessary for the parts referring to:</p> <ul style="list-style-type: none"> ■ The technical expertise to be carried out inclusively, by the service centers authorized by the manufacturer ■ Limiting the consumer's right to a replacement free of charge. This condition is to be applied only if such a product is in stock and is to be applicable only for a period, since even more than half a year such product may no longer be produced. ■ Reduction of the warranty term. For the most part, the manufacturing plant offers a term of 1 year. The current legislation establishes 2 years. 	<ul style="list-style-type: none"> ■ Updating Law no. 105/2003 on consumer protection <p>Stakeholders: Ministry of Economy, Business community</p>
<p>3.</p>	<p>Online content blocking</p> <p>Rationale: Over the past few years, calls on communication service providers by authorities to block access to “illegal” or “fraudulent” content online are intensifying, in the absence of necessary regulations that would guarantee the citizens’ fundamental rights. Any measure to block access to any online content conflicts with the citizens’ rights and freedoms and therefore must be approved by law.</p> <p>The current legal framework does not provide legal mechanisms that would ensure the freedom of the Internet.</p> <p>In 2020 the Parliament adopted without public consultations controversial legislative amendments, which do not clarify explicitly conditions in which private person or public authority can request limiting access to web resources, at which stage of the criminal or administrative proceedings such a measure may be ordered, under what conditions, and for what term such a measure may be ordered, by which legal act such a measure is ordered if such a measure must be authorized in advance by a Court of law, what is the way of appealing such a measure, etc.</p>	<ul style="list-style-type: none"> ■ Amendments to the legislation to clarify the circumstances of online content blocking <p>Stakeholders: Ministry of Justice, Development partners, Business community</p>

The application of the measure to block access to certain content from the Internet under these changes creates a dangerous precedent. These amendments may serve as a basis for blocking the access to web pages, which are claimed to contribute to the commission of any violation of the legislation in force, at the request of any official from law enforcement bodies or civil servants with control functions, without any prior judicial control. It also allows the blocking of IP addresses, which, as a rule, host other web pages to which there are no objections. This way, the web pages of business competitors, inconvenient media, or political opponents can be blocked.

In the opinion of the European Court of Human Rights, restrictions such as internet blocking orders are not necessarily incompatible with the Convention as a principle. However, a legal framework is needed, ensuring both strict control over the scope of the prohibitions and effective judicial review in order to prevent any abuse of powers. Thus, it is tremendously necessary to initiate appropriate amendments to the legislation, which would allow the providers of Internet access services to apply the measures requested by the law enforcement bodies respecting the principle of legality.

5.7 Human capital development

One of the basic components in the growth of the IT&C sector, other digital industries and for the proliferation of digital innovation is the human capital development. The Republic of Moldova faces a multitude of challenges in this regard, making a systemic approach in the educational field and employees' rights unavoidable.

	Objectives	Specific activities and stakeholders
1.	<p>ICT Education</p> <p>Rationale: ICT sector faces a big shortage of skilled professionals to address the growing market needs. In 2020 more than 25,000 individuals were employed in the IT&C sector and their number is insufficient. As a result of multiple initiatives in support of the sector and after launching the Moldova IT Park, where more than 850 companies are members, the industry growth indicators are impressive for Moldova. New companies are created and enter the market, highlighting even more acute need for qualified personnel.</p> <p>Demand for ICT professionals is now greater than ever. There is a high need in closing the skills gap, diminishing the shortage of trained people, supporting creative and entrepreneurial thinking, reform ICT educational services, as well as support the tech startups' development from a very early stage.</p>	<ul style="list-style-type: none"> ■ Increase the allocation of budgetary places in universities at ICT and related to digital innovation specialties ■ Permanent update of the curricula for all stages of education, dedicated attention to STEM education ■ Exclusion of the obligation to hold PHD degree for university professors and attraction of industry practitioners to universities

	<p>The IT Industry is affected heavily by enormous brain drain overall, and the education system in Moldova suffers from the under-investment, lacking agility to market demand at the same time. In this context, cooperation of specialized universities with the private sector and development partners is one of the major sources of their sustainability.</p> <p>The professions of the future are undoubtedly linked to the digital innovation and ICT sector. But the universities of Moldova prepare only about 5% of the enrolled higher education students in the area of ICT engineering. This is not corresponding to the real needs of the national economy and immediate measures are necessary to be undertaken.</p> <p>The problem is generated at the earlier stages of education. Improvement of the quality of STEM education in schools is of tremendous importance and there is a strong need to make it more attractive to young people, offering them a chance for a real and well-paid job.</p> <p>On the other hand, the quality of graduates' training is under the required level, and universities need more practitioners to perform courses.</p> <p>The emerging technologies are putting permanent pressure on the existing labor force imposing a need for continuous re-qualification.</p>	<ul style="list-style-type: none"> ■ Develop re-qualification programs adapted to the changing needs of the economy and of the labor market ■ Create and adapt curriculum needs to the market requirements, including systematic approach on continuously adapting and developing new University Programs in fields such as Management(Product Managers, Project Managers), Data Analysis and Statistics (Business Analytics, Big Data) etc. <p>Stakeholders: Ministry of Education and Research, Ministry of Labor and Social Protection, Ministry of Economy, development partners, the business community</p>
<p>2.</p>	<p>Lifelong digital skills development</p> <p>Rationale: Human capacity building to empower citizens and strengthen employability is essential for the gigabit society. A people-centric digital transformation is essential to ensure all members of society, including vulnerable groups with specific needs are connected meaningfully to take advantage of ICTs by enabling digital skills development.</p> <p>Most advanced countries implement Digital Education and Financial Inclusion Policies (DEFIP). This instrument should cover essential issues connected with digital and financial literacy. The promotion of digital tools and financial inclusion is also extremely necessary for a competitive and formal economy, empowering women and youth.</p>	<ul style="list-style-type: none"> ■ Develop training programs to provide lifelong training and support digital inclusion at every stage <p>Stakeholders: Ministry of Education and research, Ministry of Labor and Social Protection, development partners, the business community</p>
<p>3.</p>	<p>Labor legislation adaptation to digital age</p> <p>Rationale: There are numerous complaints from companies regarding the excessive regulation of labor relations in the Republic of Moldova and the need for liberalization. Aligning the Moldova labor laws to European practices, by modernizing and adapting them to the modern realities of the digital and market economy, striving for a better balance between the rights and obligations of employers and employees is a pressing necessity.</p>	<ul style="list-style-type: none"> ■ Adapting the legislative framework for labor relations to the digital age <p>Stakeholders: Ministry of Labor and Social Protection, the business community</p>

The flexibility of labor relations remains to be particularly important in the context of the latest economic developments at the global level, pandemic crisis effects, and the need for more remote interaction between Employer-Employee-Customers.

The following components must be addressed quickly:

- Teleworking including both of Moldovans abroad and of foreign citizens in the Republic of Moldova;
- Ensuring usage of electronic documentation in labor relations;
- Updating the regulations on delegation of employees, method of payment of advances for trips abroad and of the limits on travel/internal transport costs (from/to work);
- Simplification of procedures for annual leave, including (i) cancellation of the obligation to plan the annual leave; (ii) exclusion of the obligation to pay the leave allowance before the employee leaves; (iii) substitution of the calculations based on '28 calendar days' with '20 working days' to prevent manipulations on either part;
- Modification of the calculation formula for the average salary in the economy in the process of calculating the holiday allowances;
- Instruments for voluntary contributions to the National Social Insurance House for various professionals and for the third parties.

5.8 Digital innovation & Emerging technologies

Policymakers face a challenging task of balancing privacy, competition and innovation to, simultaneously, ensure fairness and maximize economic wellbeing, through businesses' competitiveness in emerging digital technologies. Promoting digital innovation in various economic verticals is an indispensable action at the current stage of economic development, but not all levers accessible in this regard are fully mobilized, such as the potential of the local IT industry, SMEs and companies with exporting potential.

	Objectives	Specific activities and stakeholders
1.	<p>Digital Economy and eCommerce</p> <p>Rationale: Economic benefits accumulate when ICTs are used to transform all sectors, therefore business is very important to be included as a pillar when it comes to achieving digital transformation.</p> <p>The digitalization of the economy, the development of e-commerce in general and particularly – the reduction of cash transactions, would directly contribute to the economic development of the Republic of Moldova.</p>	<ul style="list-style-type: none"> ■ Constantly update and promote the Digital Economy and eCommerce Roadmap as a tool for enabling innovation and modernizing society ■ Update and ensure cross-references between the Law on eCommerce (284/2004) and other related laws

	<p>E-commerce development in the Republic of Moldova, however, is hindered by an incomplete and ill-defined legal framework and by resultant bureaucratic procedures, which raise the cost for e-commerce transactions to prohibitive levels.</p> <p>The main constraints in this regard relate to procedures that require paper-based confirmatory documents. There are also other restraints such as the requirement to use Cash and Control Equipment (CCE), the high costs of implementing payment modules and the impossibility of making instant payments.</p>	<ul style="list-style-type: none"> ■ Support the development of alternative electronic payment systems, encourage and consult the local Fintech community as one of the main eCommerce tools ■ Developing a series of eCommerce business models and analyzing the bank offers for electronic payment services, including fees, commissions and other conditions applied <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, Development partners, Business community</p>
<p>2.</p>	<p>eSignature & eDocument</p> <p>Rationale: Even though the legal framework is in place (Law no. 91/2014), in many cases the electronically signed documents are not accepted by legal entities – the subject of private and public law. In many cases, in-person presence is required to complete, sign, and receive documents. Thus, the enormous potential for rationalizing digital interaction between public authorities, legal entities and individuals is not used.</p> <p>The development of many services, such as the financial services provided by banks, non-bank lending organizations as well as public institutions, is stalled by the lack of minimum provisions for remote customer identification (“Know Your Customer” or KYC procedures), without the need for the physical presence of individuals, a practice widely spread in other countries.</p> <p>Economic relations between local economic agents and from other countries could also be facilitated provided the recognition of foreign electronic signatures.</p>	<ul style="list-style-type: none"> ■ Develop and promote measures to guarantee unconditional acceptance of the eDocument and eSignature ■ Extended validity of the eSignature for up to 5 years ■ Automatic and remote update of the eSignatures ■ Recognition of electronic signatures/certificates issued by qualified authorities from the EU (and other countries via bilateral agreements) <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, Security and Intelligence Service, Development partners, Business community</p>

3.	<p>eKYC</p> <p>Rationale: eKYC process is the digital and remote transposition of the traditional KYC process, significantly reducing the time and cost required for its completion. Current technologies, benefiting from the advancements in multi-factor biometrics and artificial intelligence, allow for a very secure digital on-boarding and identity verification with high levels of safety and reliability, compliant with regulations for anti-money laundering, terrorist financing or electronic identification standards and trust services.</p> <p>The provision of a clear framework for remote KYC may offer a significant boost to the development of the digital economy.</p>	<ul style="list-style-type: none"> ■ Approval & implementation of Guidelines for Distant Customer Identification <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, Security and Intelligence Service, Development partners, Business community</p>
4.	<p>Electronic Public Services</p> <p>Rationale: Non-digitized public services negatively influence the competitiveness of Moldovan businesses, especially of the micro-sized, by increasing labor, logistics and other costs.</p> <p>Many government institutions require the physical visit of businesses to their offices for requests of public services and information. Entrepreneurs, oftentimes, are in the position of “postal workers” who deliver sets of documents with information about themselves to different institutions, although the information is available in government-owned databases.</p> <p>In a business-conductive environment, regardless of the circumstances, the relationship between the private sector and the state should be possible in a virtual space to reduce, as much as possible, transportation and paper waste.</p> <p>The business community of Moldova is orienting to EU 2030 Digital Compass targets:</p> <ul style="list-style-type: none"> ■ 100% online provision of key public services available for citizens and businesses ■ 100% of citizens have access to medical records (EHR) ■ 80% of citizens will use a digital ID solution 	<ul style="list-style-type: none"> ■ Insert into all applicable legislation the “digital by default” principle for public services to businesses ■ Support Government’s effort to digitalize electronic public services <p>Stakeholders: Deputy Prime minister for digitalization, Ministry of Economy, Development partners, Business community</p>

SMEs digitization

Rationale: EU targets over 90% of European SMEs reach at least a basic level of digital intensity by 2030 through various support programs and engagement of European Digital Innovation Hubs and industrial clusters

The Digital Intensity Index (DII) measures the use of different digital technologies at the enterprise level. The DII score (0-12) of an enterprise is determined by how many of the selected digital technologies it uses. A basic level of digital intensity corresponds to a situation where an enterprise scores 4 or more.

One of the key areas for eCommerce is marketing. The most important tools ensuring success are the brand and digital marketing, these are a significant part of the marketplace/eCommerce efforts and budget. Moldovan companies report a severe lack of competence for digital marketing on the local labor market.

The interconnection between the local IT Industry and SMEs in various economic sectors would have an important positive effect, if training is provided at the initial stage, grants are awarded, cross-sectoral cooperation and digital innovation are stimulated.

- Support digitization of SMEs through access to information, training, and financial support
- Support the development of an advanced digital marketing capacity building program

Stakeholder: Deputy Prime minister for digitalization, Ministry of Economy, ODIMM, Ministry of Education and Research, Development partners, Business community

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ENDNOTES

The 2021 ICT White Book maps out a clear path for the Industry's public policy advocacy agenda for the next three years. This clear set of goals must be brought to consideration of the policymakers and regulators.

High priority and special attention need to be rendered to the 'stumbling blocks' in the way of developing e-commerce and the digitalization of the economy, to allow for the unconditional acceptance of the e-document and e-signature, instant payment systems, remote identification of customers (eKYC), effective personal data protection and "digital by default" for public services.

Industry will seek, in all its regulatory and policy endeavors, the increased competitiveness of Moldova's digital industries through streamlined, cost-effective procedures of the public sector, as well as prioritized, stimulative public spending.

The ICT community must continue to be an avid promoter for digital innovation and widespread adoption of digital technologies in all aspects of the economic and social life, especially in areas that have become increasingly important for citizens, such as digitally enabled health solutions, digitally enabled green solutions and smart farming, to name just a few.

The involvement and commitment of the stakeholders from both the public and private sectors are crucial to achieving a successful digital transformation. Hence, regular, and productive communication with interested parties will remain a top priority in this regard.

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