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THE DEVELOPMENT OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES SECTOR IN THE REPUBLIC OF MOLDOVA

Abstract. The development of the ICT sector has a significant positive impact on the labor productivity of the economy, the efficiency of public administration and the citizenorientation of public services. At the microeconomic level, this translates into increased competitiveness, higher profits, better wages and a broader tax base. Making public administration more efficient reduces social costs and improves operational management, while public services become more accessible and efficient, including advanced technologies in education and health, a better managed public transport system and efficient e-services. These improvements lead to higher living standards, better educational outcomes and improved social conditions. More well-paid jobs help to reduce migration rates and improve the country's demographic profile.

Key words: ict sector, companies, productivity, market share, market share, sales revenues, consumers / users.

Introduction. The development of the ICT sector has a positive influence on labor productivity throughout the economy, increases the efficiency of public administration and makes public services more citizen-oriented. At the micro level, increased labor productivity means increased competitiveness, higher profits, better paid employees and a wider tax base. More efficient public administration leads to lower social costs, better management and operational control. At the same time, public services are becoming more citizen-oriented, meaning advanced educational and health protection technologies, improved management of the public transportation system, a better social protection system, efficient e-services and, last but not least, increased citizen participation in public life [2].

In turn, these positive effects will materialize in higher living standards, higher educational attainment and improved social status. One of the most important effects is an increase in the number of available and well-paid jobs. This will be reflected in lower migration rates and, in the long term, it will improve the country's demographic profile and reduce social pressure on the public budget.

Research methodology. The improvement of social indicators will have a positive effect on the ICT sector, with society providing skilled labor and creating demand for ICT products. It is clear that government and the education system have a crucial role to play in setting this «virtuous circle» in motion. The main actions expected from the authorities are [3]:

- 1) Equal treatment of all market players;

- 2) Effective regulation of the telecom market to allow for healthy competition;
- 3) Transparency of public procurement procedures;
- 4) A clear, simple and predictable legal climate;
- 5) Education policy that would meet the expectations of the ICT sector;
- 6) Effective protection of intellectual property rights.

In turn, the education system has a role no less important than government interventions.

For the ICT sector to realize its full potential, educational institutions should:

- Increase enrollment rates in higher education to reach the level of enrollment in studies specific to countries in the region;
- Institutionalize aptitude testing of students enrolled in ICT-related faculties;
- Adjust the training and research curriculum to the needs of the market.

Research results. The analysis of the development of the electronic communications market for the third quarter of 2023, at the national level, in terms of competitive dynamics and efficiency induced by the services of fixed telephony, mobile telephony, fixed and mobile Internet, cable TV, according to the key indicators, the following developments are revealed:

Mobile telephony

- At the national level, the total number of active and passive prepaid mobile users/SIM cards increased by 4.2 % and amounted to about 5.3 million users, while the number of active SIM cards, respectively, recorded a modest increase of 0.5 %, compared to Q3 2022, and amounted to 4.2 million users/SIM cards.

- Mobile voice traffic increased insignificantly by 0.4 %, compared to Q2 2023, while being down 3.0 % compared to the same period in 2022. SMS traffic decreased by 1.8 %, amid increased use of instant messaging apps and social networks. Overall, the average voice traffic performed by a user was 3 hours and 56 minutes/month, or 16 SMS/month.

- The penetration rate of mobile penetration per 100 inhabitants amounted to 168.5 %, up 4.2 percentage points from Q3 2022.

- The total revenue recorded on the retail market from the provision of mobile telephony services (voice/sms/data) by the three mobile telephony providers S. A. «Orange Moldova», S. A. «Moldcell» and S. A. «Moldtelecom», recorded an increase of 6.5 %, compared to the second quarter of 2023 and an increase of 5.4 % compared to the same period of the previous year, reaching 816.5 million lei.

- The average monthly revenue per mobile user (ARPU) in the quarter of reference was up compared to the same period of the previous year, the average value of this indicator increased by 7.2 % and amounted to 65.8 lei.

Fixed and mobile Internet

➤ According to the statistical data collected by ANRCETI, in the third quarter of 2023, the number of fixed Internet subscribers reached 825.2 thousand, increasing by about 36.1 thousand (+4.6 %), compared to the third quarter of 2022.

➤ At the national level, the penetration rate of fixed Internet access services per 100 inhabitants increased by 2 p. p. to 32.8 % and the penetration rate per 100 households reached 71.5 %, up by 4.5 p. p., compared to the same period of the previous year.

➤ Of all fixed Internet subscribers, 90.6 % are connected via FTTx, 8.3 % via xDSL, 0.7 % via coaxial cable (DOCSIS) and 0.4 % via other technologies.

➤ 48.8 % of the total number of subscribers opt for connections above 100 Mbps, 38.8 % of subscribers use fixed Internet with speeds between 30–100 Mbps, 11.3 % of subscribers use connections between 10–30 Mbps. Those using connections with speeds up to 10 Mbps made up 1.1 %.

➤ The number of applicants who chose fixed Internet services with speeds above 100 Mbps increased by 29.4 % compared to the third quarter of 2022 and amounted to about 402.8 thousand, the number of those who prefer speeds between 30–100 Mbps decreased by 11.0 % compared to the same period of the previous year and amounted to 320 thousand.

➤ In terms of the number of subscribers to fixed broadband Internet access services, compared to the same quarter of the previous year, «Moldtelecom» S. A. lost 1.5 p. p. on the market, with a share of 52.8 %, followed by S. R. R. L. «Starnet Soluții» with a market share of 22.3 % (–0.2 p. p.), respectively S. A. «Orange Moldova» reached a market share of 11.4 % (+1.7 p. p.), while the other providers held a market share of 13.5 % (–0.1 p. p.).

➤ The number of active mobile internet users increased by 108.3 thousand, or 3.7 %, compared to the corresponding period of 2022, reaching just over 3.0 million, of which about 2.4 million users, which constitutes 78.9 %, have access to 4G technology, the number of which increased, compared to the third quarter of 2022, by about 99.1 thousand (+4.3 %).

➤ Out of the total number of mobile Internet users, 2.9 mil. use the services via mobile phones / smartphones, while about 115.7 thousand make connections via modem/card/USB devices.

➤ The average monthly traffic (AUPU) of mobile Internet consumed via mobile phone increased by 29.2 % in Q1 2023 to reach 8.6 GB per user/month, and a user accessing dedicated mobile Internet generated an average monthly traffic (AUPU) of 35.8 GB, up 4.8 % compared to the same period of the previous year.

➤ The penetration rate of mobile Internet access services per 100 inhabitants increased by 6.6 percentage points to 120.6 % compared to Q3 2022.

➤ At the end of the third quarter of 2023, the number of users, who benefited from M2M services, increased by 36.9 %, compared to the same period of the previous year, and accumulated 121.1 thousand users, respectively, the income from the provision of M2M services increased by 8.3%, compared to the same period of the previous year, and amounted to about 5.1 million lei [6].

In the third quarter of 2023, the total volume of sales made by the three mobile telephony providers S. A. «Orange Moldova», S. A. «Moldcell» and S. A. «Moldtelecom», recorded an increase of 5.4 % compared to the third quarter of 2022 and reached 816.5 million lei.

All three mobile telephony providers recorded an increase in its revenues from the provision of mobile telephony services in the reporting quarter. Thus, the revenues of S. A. «Moldtelecom» registered an increase of 15.2 % and amounted to approximately 73.2 million lei, while the revenues of S. A. «Moldcell» increased by 5.8 % an amounted to about 248.9 million lei, while the revenues of S. A. «Orange Moldova» increased by 3.9 % and amounted to 494.5 million lei, compared to the third quarter of 2022 [6].

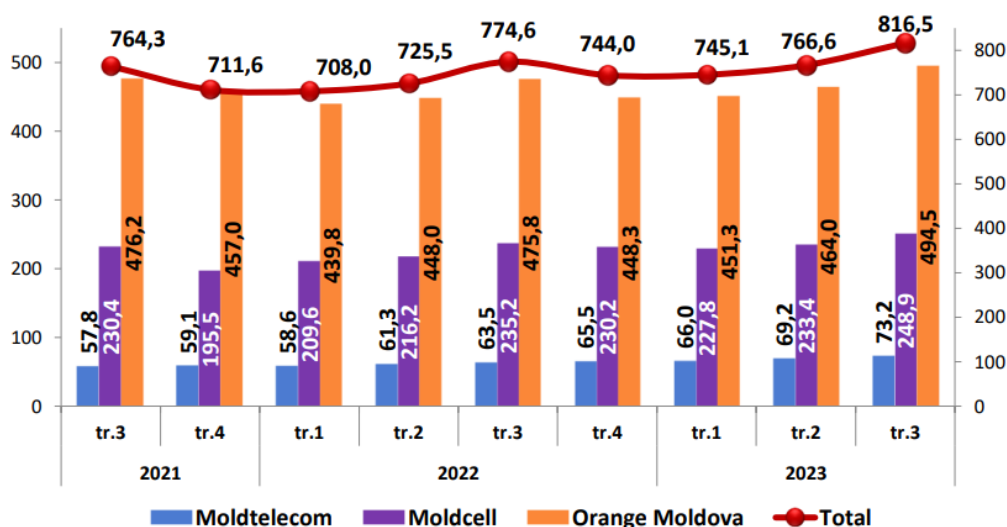


Figure 1.1. Revenue evolution of telecommunication companies in the Republic of Moldova

Source: [6]

The largest share in the mobile market, based on the total number of users, is held, as in previous periods, by S. A. «Orange Moldova» – about 50 %, respectively S. A. «Moldcell» has a share of 35 %, and S. A. «Moldtelecom» – 15 %.

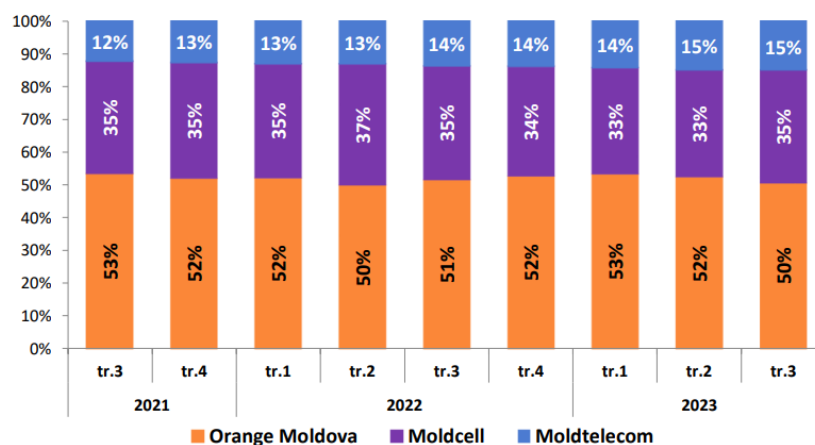


Figure 1.2 Evolution of market shares of mobile providers in the Republic of Moldova

Source: [6]

At the end of the reporting period, of the approximately 5.3 million mobile users, 80 % constituted active users and 20 % made up passive users. Compared to the same period of the previous year, the customer base of S. A. «Moldtelecom» increased by 91.2 thousand (+13.1 %) and amounted to about 785.4 thousand, the customer base of S. A. «Moldcell» increased by 61.8 thousand (+3.5 %) and amounted to 1 838.1 thousand, and the number of users of S. A. «Orange Moldova» increased by 62.8 thousand (+2.4 %) and amounted to 2 673.3 thousand [33].

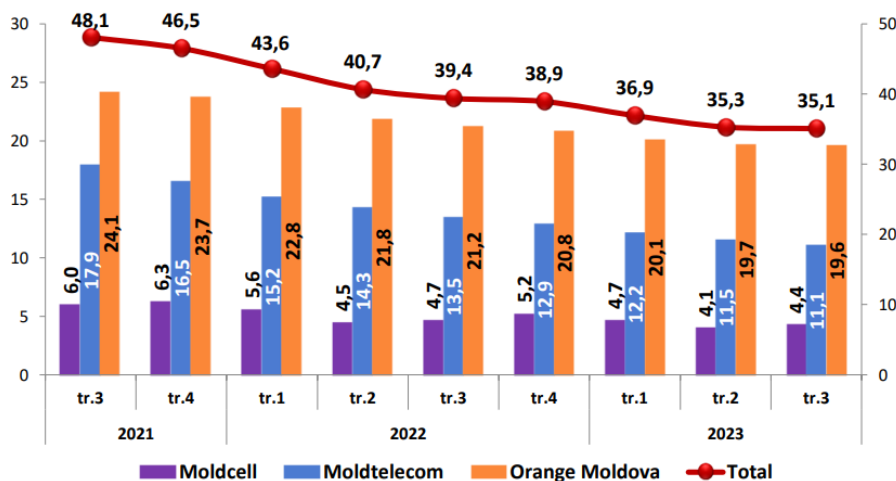


Figure 1.3. Revenues from the sale of mobile internet services

Source: [6]

In the analyzed period, the total volume of revenues from the sale of dedicated mobile Internet access services amounted to about 35.1 million lei, down by 10.9 % compared to the same period of the previous year. S. A. «Orange Moldova» received revenues in the amount of 19.6 million lei (–7.6 %), S. A. «Moldcell» – about 4.4 million lei (–7.2 %), and S. A. «Moldtelecom» – in the amount of 11.1 million lei (–17.5 %).

As of 30.09.2023, based on turnover, S. A. «Orange Moldova» holds a share of about 56 % of the market of dedicated mobile Internet access services, S. A.«Moldtelecom» – a market share of about 32 %, and S. A. «Moldcell» – 12 % [6].

In the third quarter of 2023, the number of subscribers to the fixed Internet access service increased by about 36.1 thousand (+4.6 %), compared to the third quarter of 2022 and totaled 825.2 thousand subscribers. Respectively, the number of users of mobile Internet access service increased by 108.3 thousand (+3.7 %) and amounted to just over 3 thousand users, compared to the same period of the previous year. Compared to the third quarter of 2022, the penetration rate of fixed Internet access services per 100 inhabitants made up 32.8 % (up 2 p. p.) and the penetration rate per 100 households reached 71.5 %, up 4.5 p. p., compared to the same period of the previous year. Respectively, the penetration rate of mobile internet access services per 100 inhabitants reached 120.6 %, up 6.6 p. p. compared to Q3 2022 [6].

Conclusions. The ICT sector in Moldova has a significant and positive impact on the economy and public administration, leading to an increase in labor productivity, making public services more efficient and citizen-oriented. At the microeconomic level, this development contributes to increased competitiveness, profitability, higher wage levels and a wider tax base. Moreover, efficient public administration translates into lower social costs and better management, and advanced and efficient public services increase citizens' participation in public life. These positive effects have major implications for living standards, educational outcomes and the social situation, reducing migration rates and improving the demographic profile. In the long term, they will contribute to reducing social pressure on the public budget. The crucial role of government and the education system is evident in the development of the ICT sector. Actions needed from the authorities include ensuring equal treatment for all market players, effective regulation of the telecommunications market, transparency in public procurement, a predictable and simple tax climate, appropriate education policies and protection of intellectual property rights. The education system needs to improve higher education enrollment rates, test students' aptitudes and adjust the curriculum to market requirements. Analysis of the electronic communications market for the third quarter of 2023 shows an increase in the use of both fixed and mobile internet and mobile services. The number of users of mobile telephony and mobile internet has increased, revenues from these services are also increasing. Fixed and mobile internet penetration has increased, as has the number of high-speed internet users. These developments underline the positive trend and the potential for continued growth of the ICT sector in Moldova strengthens its position in the market, but also contributes to building a more equitable and sustainable society in the Republic of Moldova.

References

1. Ayres R. Statistical Measures of Unsustainability. *R&D Working Paper*. № 95/84/EPS. Fontainebleau: INSEAD, 1995. 16 p.
2. Barone M. J., Miyazaki A. D., Taylor K. A. The influence of cause-related marketing on consumer choice: does one good turn deserve another? *Journal of the Academy of Marketing Science*. 2000. № 28. P. 248–262.
3. Brown T. J., Dacin P. A. The company and the product: corporate associations and consumer product responses. *Journal of Marketing*. 1997. № 61(1). P. 68–84.
4. Cassel G., McCabe J. The Theory of Social Economy. 2 vols. London: T.F. Unwin, 1923. Vol. 1. 364 p.
5. Center for Corporate citizenship (Boston College, Carroll school of management). URL: <http://www.bccccc.net/index.cfm?fuseaction=Page.viewPage&pageId=567&parentID=473>
6. Anuar statistic dezvoltarea comunicațiilor electronice în republica moldova în anul 2022, Disponibil. URL: [Anuar.statistic_anul2022.pdf \(anrceti.md\)](#)

