



MAKEDONSKI TELEKOM AD – SKOPJE

Address: Kej 13 Noemvri 6, 1000 Skopje, R. North Macedonia

ANNUAL REPORT
on the Operations of Makedonski Telekom AD - Skopje in 2021

This Annual Report on Operation refers to Makedonski Telekom AD - Skopje (hereinafter referred to as: "MKT").

After a heavily affected economy by the Covid-19 outbreak in 2020, the recovery already visible in 2021 resulted in open borders and an increased mobility during the summer season.

The revenue in 2021 compared to 2020 is higher, mostly driven by the mobile service revenue, as well as broadband and TV revenues, following a continuing expansion of the customer base. The fixed revenues are higher, driven by the higher revenues from fixed services (broadband, TV and data) and TV content resale (no further sports TV content exclusivity on the market), partially offset by the lower interconnection revenues. In the mobile segment, the positive trend is coming from post-paid and prepaid services followed by a higher subscriber base and a higher ARPU per subscriber. To sustain the positive performance recorded in 2021, MKT intends to further leverage the integrated offers by creating additional value ("more 4 more" approach) and ensure the growth the service revenue, strengthen the position in ICT market as a result of an accelerated demand for digitization, continue with the penetration of the next generation networks, and keep the market position as a premium provider.

At the end of 2021, MKT had 224 thousand voice access fixed lines, marking a 1.3% increase from the end of 2020. The number of total broadband (BB) subscribers increased to 197 thousand at the end of 2021, marking a 3.2% year-over-year increase. The number of IPTV customers at the end of 2021 reached 146 thousand customers, marking a 2.4% increase from the end of 2020. The number of Fibre to the Home (FTTH) customers reached 86 thousand at the end of 2021, marking a 16.6% increase from the end of 2020.

MKT had 1,215 thousand mobile subscribers at the end of 2021, or a 10% increase compared to 2020. The mobile market penetration in the Republic of North Macedonia is 107%. As a result of the market saturation, MKT continuously focuses on retaining the customers in order to protect the market share.

MKT registered a customer base growth in all three focus segments – post-paid, BB internet and TV customers, thus keeping the position of the largest TV operator in North Macedonia (in terms of TV customer base).

MKT has built a substantial advantage on the market in terms of FMC penetration. MAGENTA 1 continued to be MKT's main product, offered both in the consumer and in the business segment. The positive value generation from converged households, simplification of the product propositions and the digital customer experience were the main guiding directions in 2021.

Starting from 1st July, WB6 regulation for RLAH (Roam Like at Home) between 6 Balkan countries was introduced, offering a possibility to post-paid customers to use a part of the national internet data bundle & voice minutes included in the package for communication in roaming, without an additional charge.

MKT has demonstrated to society its continuous work in the spirit of the slogan "We won't stop until everyone is connected" by providing the best connectivity and customer experience, and helping to transform and digitize the public sector with more "Smart City" projects & digital solutions. The customer support is shifting towards digital channels, especially via the

Telekom App and "My Telekom" on the corporate web site.

Strategic focuses for MKT are transformation and digitalization with having Agile setup in its projects. Also, MKT continues to meet the increased demand for connectivity through its network and aims to keep the business sustainability and the major revenue streams in a very complex telecommunications environment. MKT is working on providing a simplified and digital customer journey, a superior digital service and taking an active role in society to drive digitization and allow every citizen to enjoy its benefits.

Despite the challenges of a dynamic market and the increasing competition, MKT managed to maintain the position of number 1 telco brand in Macedonia, as confirmed by regular customer perception researches in 2021.

Board of directors' remuneration

Presented below are the available remuneration data about the Board of directors (BoD) members of MKT, related to the applicable period of 2021*.

a) Data about the remunerations in MKT and in other companies if the respective member is also a member of the management bodies of other companies (salary, salary remunerations, remunerations for membership, bonus, insurances and other rights)

| Name and surname (applicable period) | Company where the member is a member of the managing body | Salary | Salary remuneration | Remunerations for membership | Bonus | Insurances | Other rights |
|--------------------------------------|---|--|--|--|--|--|--|
| Zoran Kitanov | Makedonski TelekomAD – Skopje (Non-Executive member and President of the Board of Directors) | 0 | 0 | MKD 372,000 (net) | 0 | 0 | None |
| Sadula Duraki | Makedonski Telekom AD –Skopje (Non-Executive member and Vice President of the Board of Directors) | 0 | 0 | MKD 93,000 (net) | 0 | 0 | None |
| Andreas Maierhofer | Makedonski Telekom AD -Skopje (Non-Executive member of the Board of Directors) | 0 | 0 | 0 | 0 | 0 | None |
| | T-Mobile Poland (President of the Management Board of T-Mobile Polska) | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations |
| Karoly Schweininger | Makedonski Telekom AD -Skopje (Non-Executive member of the Board of Directors) | 0 | 0 | 0 | 0 | 0 | None |
| Lubor Zatko | Makedonski Telekom AD -Skopje (Non-Executive member of the Board of Directors) | 0 | 0 | 0 | 0 | 0 | None |
| | Magyar Telekom Nyrt. | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements |

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| Borce Siljanoski | Makedonski Telekom AD - Skopje (Non-Executive member of the Board of Directors) | 0 | 0 | 0 | 0 | 0 | None |
| | Magenta Telecom Austria | 0 | 0 | 0 | 0 | 0 | None |
| Vladimir Ivanovski | Makedonski Telekom AD - Skopje (Non-Executive member of the Board of Directors) | 0 | 0 | 0 | 0 | 0 | None |
| | T-Systems Magyarország Zrt. | This info may not be disclosed | This info may not be disclosed | This info may not be disclosed | This info may not be disclosed | This info may not be disclosed | This info may not be disclosed |
| Nina Angelovska | Makedonski Telekom AD - Skopje (Non-Executive member of the Board of Directors with) | 0 | 0 | MKD 62,000 (net) | 0 | 0 | None |
| | Macedonian E-Commerce Association (President of the Management Board) | MKD 45,000 (net) Jan-April 2021 MKD 62,000 (net) May-November 2021 | 0 | MKD 9,000 (net) October 2021; MKD 84,939 (net) December 2021 | 0 | 0 | None |
| Bardul Nasuf | Makedonski Telekom AD - Skopje (Non-Executive member of the Board of Directors with) | 0 | 0 | MKD 62,000 (net) | 0 | 0 | None |
| Peter Veil | Makedonski Telekom AD - Skopje (Independent member of the Board of Directors) | 0 | 0 | 0 | 0 | 0 | None |
| Martin Renner | Makedonski Telekom AD - Skopje (Independent member of the Board of Directors) | 0 | 0 | 0 | 0 | 0 | None |
| | Slovak Telekom, a.s. | 0 | 0 | 0 | 0 | 0 | None |
| Shkodrane Darlishta | Makedonski Telekom AD - Skopje (Independent member of the Board of Directors) | 0 | 0 | MKD 62,000 (net) | 0 | 0 | None |
| Akjif Mediu | Makedonski Telekom AD - Skopje (Independent member of the Board of Directors) | 0 | 0 | MKD 62,000 (net) | 0 | 0 | None |

b) Data about the employment if the member has established a labour relation with other employers (name of employer, activity, salary amount, salary remunerations, bonus, insurances and other rights).

| Name and surname (applicable period) | Name of the employer | Activity of the employer | Salary amount | Salary remunerations | Bonus | Insurances | Other rights |
|--------------------------------------|----------------------|--------------------------|---------------|----------------------|-------|------------|--------------|
| Nikola Ljushev | None | None | None | None | None | None | None |
| Zoran Kitanov | KIEM dooel Skopje | Wholesale trade | MKD 30,000 | None | None | None | None |

| | | | | | | | |
|---------------------|--|--|--|--|--|--|--|
| Sadula Duraki | None | None | None | None | None | None | None |
| Andreas Maierhofer | T-Mobile Poland | Telecommunications | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations | This may not be disclosed due to applicable requirements in the parts of the remunerations |
| Karoly Schweininger | Magyar Telekom Nyrt. | Telecommunications | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements |
| Lubor Zatko | Magyar Telekom Nyrt. | Telecommunications | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements |
| Borce Siljanoski | Deutsche Telekom AG | Telecommunications | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements |
| Vladimir Ivanovski | Magyar Telekom Nyrt. | Telecommunications | This info may not be disclosed | This info may not be disclosed | This info may not be disclosed | This info may not be disclosed | This info may not be disclosed |
| Nina Angelovska | University of Tourism and Management | Education | MKD 20,000 December 2021 | None | None | None | None |
| Bardul Nasufi | Municipality of Struga | Head of Department | MKD 41,718 | None | None | None | None |
| Peter Veil | Deutsche Telekom AG | Telecommunications | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements |
| Martin Renner | Deutsche Telekom AG | Telecommunications | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements | This may not be disclosed due to applicable requirements |
| Shkodrane Darlishta | Public Institution in the field of healthcare for the needs of the Public Health Institutions, University Clinics, Institute and Emergency Ward-Skopje | The activity of the Public Institution in the field of health is the performance of the activities in accordance with Article 2 of the Decision on establishment of a Public Institution in the field of health for the needs of PHI UK, Institute and Emergency Center Skopje | MKD 40,820 | None | None | None | None |

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|-------------|------|--------------------------------|------|------|------|------|------|
| | | (Official Gazette of RM 83/08) | | | | | |
| Akjif Mediu | None | None | None | None | None | None | None |

* Data for remuneration and membership in a management body in other companies and data for employment are presented in scope, layout and content as given by the respective member of the BoD and MKT has not made any verification of the accuracy and completeness of the data.

In addition, the compensation of the key management of MKT, including taxation charges and contributions, is presented below:

| | |
|---|---------|
| <i>In thousands of denars</i> | 2021 |
| Short-term employee benefits (including taxation) | 74,482 |
| Contributions to the state pension system on short-term employee benefits | 11,501 |
| Other state contributions on short-term employee benefits | 4,458 |
| Termination benefits | 5,160 |
| Long-term incentive programs | 35,806 |
| Other payments | 2,045 |
| Total | 133,452 |

Further details on MKT's financial performance, the operating and accounting policies, as well as other relevant disclosures, including details about the investigation into certain consultancy contracts, are given in the MKT financial statements for the year ended 31 December 2021.

Transaction with an Interested Party

There is no transaction with an interested party in 2021.

Statement on the Application of the Corporate Governance Code

MKT is a company listed on the official market of the Macedonian Stock Exchange AD Skopje, in the sub-segment "mandatory listing" (hereinafter referred to as: "Macedonian Stock Exchange").

In view of the fact that pursuant to the Listing Rules of the Macedonian Stock Exchange, available on the website of the Macedonian Stock Exchange, the application of the Code of Corporate Governance of the Joint Stock Companies Listed on the Macedonian Stock Exchange, adopted in October 2021 (hereinafter referred to as the: "Code") was postponed, in 2021 MKT did not apply the Code in its operation and it continued to base its corporate governance on principles that guarantee the rights and the interests of the shareholders and provide a high level of transparency of the ownership structure, division of responsibilities, regular and efficient control and audit, compliance with the laws, ethical standards and practices, independence and objectivity.

For the purpose of adequate compliance with Article 384-a of the Law on Trade Companies, MKT hereby makes this statement whereby it confirms that it applies the principles of good corporate governance in accordance with the obligations defined in the Law on Trade Companies.

The corporate governance, as well as the ethical and business behaviour of the management and the employees in MKT, are guaranteed with internal acts that are adopted by the Board of Directors (BoD) of MKT, as follows:

1. Manual for the MKT Corporate Compliance Program;
2. Financial Code of Ethics of MKT;
3. Directive of MKT on the introduction of fraud prevention principles;
4. Directive of MKT on the compliance with the anti-corruption principles;
5. Code of Conduct of MKT

These internal acts set high requirements and standards for the ethical and business behaviour of the managers and th

employees of the Company, including the members of the BoD.

Regulation and Pricing

The Law on Electronic Communications - "LEC" of North Macedonia was enacted in March 2014 as primary legislation, followed by rulebooks adopted as secondary legislation in order to ensure alignment with the EU Framework Directives 2009.

On 19 December 2014, amendments of the LEC were enacted. One of the most important changes is implemented in Article 75-a, which regulates the prices of international roaming. In accordance with this Article, the Agency for Electronic Communications ("the Agency") has the right, with a Decision, to determine the maximum prices for the services which are offered to the roaming users from countries with which the Republic of North Macedonia has concluded agreements on the reduction of the prices of roaming services in public mobile communications networks.

In March 2019, Article 75-a was changed in order to enable the extension of the RLAH regulation. On 5 April 2019, six Western Balkan countries signed an agreement aimed at gradually abolishing the retail roaming surcharges by 1 July 2021. The Western Balkan regional roaming rules were inspired by the EU Roaming Regulation. In particular, the agreement includes the "Roam Like at Home" principle: from 1 July 2021, the roaming services within the region should be provided at domestic retail prices without surcharges for international roaming. The agreement applies only on the territories of the Western Balkan countries and has no impact on the users in the European Union. The Western Balkan countries comprise Albania, Bosna and Hercegovina, Kosovo, North Macedonia, Montenegro and Serbia.

In July 2019, the LEC was changed once again, and Article 29-a was added in order to enable the financing of the Operational-Technical Agency. With this regulation, the Agency is obliged to transfer part of its funds to finance the activity of the Operational -Technical Agency, as follows:

- 50% of the total revenue generated by the Agency for the preceding calendar year from the annual fees paid by the operators for market surveillance, set out in the Agency's annual performance report for the previous calendar year, adopted by the Commission of the Agency, and
- 10% of the total revenue generated by the Agency for the previous calendar year from the revenues from the annual fees for radio frequency utilization by the holders of authorizations for radiofrequency utilization, set out in the Agency's annual report for the previous calendar year, adopted by the Commission of the Agency.

The Agency is obliged to pay the amounts to the Operational-Technical Agency no later than April 15 of the current year.

New articles 71-a 71-b, 71-c, 71-d and 71-e were added requiring the establishment of a National Broadband Competence Office as an expert and advisory body to support the investment in Broadband Networks.

In April 2021, amendments of LEC were enacted with new articles, from 166-a to 166-d, concerning the security of electronic communication networks and control and monitoring by the relevant institutions. A new rulebook is expected to be enacted in order to be able to implement the LEC provisions.

From 1 January 2022, MKT was once again designated as a Universal Service (US) provider for a period of 5 years, for fixed telephony services and Internet of 12 Mbit/s, and providing service for disabled end-users.

In April 2019, the Ministry of Information Society and Administration issued the National Broadband Strategy which sets the following targets:

- By the end of 2023, at least one major city should be covered with 5G signal;
- By the end of 2025, the regional highways and state highways defined by the Agency should be covered by a continuous 5G signal;
- By the end of 2027, all urban areas will be covered by a continuous 5G signal;
- By the end of 2029, everyone will have access to 5G internet with a minimum internet speed of 100 Mbps;
- By the end of 2029, at least 50% of the total number of subscriber agreements of households across the whole

- country should have internet access of at least 100 Mbps;
- By the end of 2029, all households will have affordable access to a network that provides download speeds of at least 100 Mbps with the possibility of upgrading to a gigabit speed;
- By the end of 2029, all public institutions (schools, universities, research centres and other educational institutions, health institutions, ministries, courts, local governments and other public authorities and bodies) should have symmetric access to the Internet of at least 1Gb/s.

Regulation of Fixed Line Business

MKT is a significant market power (SMP) operator on the wholesale markets of fixed telephony networks and services, including the market of access to the networks for data transmission and leased lines. MKT, as an SMP operator, has the obligation to enable its subscribers to access publicly available telephone services of any interconnected operator with an officially signed interconnection contract.

In 2017, both relevant retail markets for fixed telephony - 1. Access to the public telephone network at a fixed location and 2. Publicly available telephone services at a fixed location - were deregulated. Consequently, MKT is no longer an SMP and it has no ex-ante regulations for the retail fixed services.

According to the bylaws, MKT has an obligation to publish reference offers for the wholesale products for interconnection, Unbundling Local Loop (ULL), Local Bit-Stream Access (BSA), Reference Access Offer for providing access to physical infrastructure and use of specific network facilities and wholesale terminating segments of leased lines.

The Rulebook on the emergency number E 112 was enacted on 27 October 2015 (Official Gazette No. 184/2015). Service is expected to start in 2022.

Regulated Wholesale Prices

In May 2017, the Agency adopted a Decision for the designation of MKT as an SMP operator on wholesale markets, local and central access on a fixed location, relevant markets, 3a and 3b. With the same market analysis, A1 Macedonia (formerly known as one.Vip) was designated as an SMP operator for the first time, with the same regulatory obligations as MKT. A1 Macedonia is obliged to offer wholesale broadband services on DOCSIS technology.

In the middle of 2019, the NRA implemented ERT testing (margin squeeze methodology) to the NGA based broadband wholesale services supplied by the two dominant operators (MKT and A1 Macedonia). The developed ERT model will test the economic replicability of the retail bundles including broadband services with access speed higher than 30 Mb/s.

Regulation of the Mobile Business

MKT has radiofrequency usage rights for the following radiofrequencies for public mobile communications systems:

- 2 x 12.5 MHz in the 900 MHz band, validity period: 8 September 2008 – 8 September 2028 (20 years)
- 2 x 10 MHz in the 1800 MHz band, validity period: 9 June 2009 – 9 June 2029 (20 years)
- 2 x 15 MHz 2100 MHz band, validity period: 17 December 2008 – 17 December 2028 (20 years)
- 2 x 15 MHz 2100 MHz band, license validity until 2028, new
- 2 x 10 MHz in the 800 MHz band, validity period: 1 December 2013 – 30 November 2033 (20 years)
- 2 x 15 MHz in the 1800 MHz band, validity period: 1 December 2013 – 30 November 2033 (20 years)

The competitor A1 Macedonia has frequency usage rights for the following radiofrequencies for public mobile communications systems:

- 2 x 12.5 MHz in the 900 MHz band
- 2 x 10 MHz in the 2100 MHz band
- 2x 10 MHz in the 2100 MHz band, new
- 2 x 10 MHz in the 800 MHz band
- 2 x 15 MHz in the 1800 MHz band

- 2 x 10 MHz in the 800 MHz band
- 2 x 15 MHz in the 1800 MHz band

The duration of two licences positioned in the lower parts of the bands previously owned by A1 Macedonia was until 2017, 10 MHz from 900 MHz band and 10 MHz from 1800 MHz band, and they expired on 23 March 2017. Based on a request from A1 for licence prolongation, the Agency adopted Resolution No. 0804-974 dated 2 November 2016 not to prolong these two licences. Their resolution was based on the efficient and effective spectrum usage and the necessity for realising radiofrequencies for the entrance of a third mobile operator on the market in order to foster competition. At the moment, these radiofrequencies are not allocated and they are not available for sale to the existing operators. 2 x 15 MHz in the 2100 MHz band is prolonged until 2028.

The retail services provided by the mobile network operators in the Republic of North Macedonia currently are not subject to ex-ante price regulation.

MKT is an SMP Operator on the wholesale market for voice call termination services in mobile communications networks, whereby several obligations are imposed: interconnection and access, non-discrimination in interconnection and access, accounting separation and price control and cost accounting.

In 2020, the Agency conducted new market analyses on the relevant market for mobile access and origination. The regulatory remedies imposed by the Agency are as follows: joint dominance of A1 Macedonia and MKT, the same remedies for both operators, mobile access obligation for all MVNO hybrid types (including Reseller), a cost based price for Full MVNO and retail minus (-35%) for the Reseller, an obligation for access to MMS services and mobile data based on technology neutrality (including 4G access). In December 2021, the Agency approved new decreased wholesale prices for mobile data and SMS for MVNO.

An auction procedure concluded in August 2013 awarded the whole 790 – 862 MHz band together with the unassigned spectrum in the 1740 – 1880 MHz band for Long Term Evolution (LTE) technology in a public tender. Each of the 3 Macedonian mobile operators acquired an LTE radiofrequency license of 2x10 MHz (in the 790 – 862 MHz band) and 2x15 MHz (in the 1740 – 1880 MHz band). Each license was acquired for a one-off fee of EUR 10.3 million (MKD 634,011 thousand). MKT will retain the license for 20 years, until 30 November 2033, with an extension option for up to 20 years in accordance with the LEC.

A 5G auction procedure for acquisition of 3.x GHz and 700 MHz is expected to be finished by the end of 2022.

Competition

The competition in the telecommunications business is well-developed in all segments. Two main integrated players that offer a full portfolio of fixed and mobile services shape the telecommunications market in North Macedonia: MKT and A1 (subsidiary of Telekom Austria Group).

A1 Macedonia, as an integrated operator, offers various services - mobile and fixed voice, mobile and fixed broadband Internet and TV. The main focus is on mobile post-paid, bundled fix as well as bundled convergent offers. They introduced broadband internet for home use over 4G routers in 2017 and they have been continuously increasing their fixed BB base over the previous period.

There are three MVNOs on the mobile market with very low market shares.

The fixed market is fragmented, with more than 50 providers of TV and BB services, most of them with a regional coverage.

Telekabel is the biggest cable provider among around 30 active cable operators, with a strong presence in the regions where MKT has a low market share. They entered the mobile business in 2019, as a MVNO on MKT's network, offering post-paid services. By offering all fixed and mobile services, they became the third fully integrated player on the market.

Telekom Srbija (TS) entered the market in Q4 2021 under the regional brand Mtel, initially starting with satellite TV. They

announced mobile operations to follow later, in Q2 2022.

The product portfolio of all operators is driven by bundle products. The cable operators are bundling their TV offer with Internet and fixed voice services. The fixed voice service of the cable operators is usually perceived as a value-added service. As the overall market is price sensitive, the price perception plays a major role in the customers' choice and thus the cable operators' offers are seen as more competitive than MKT's.

As at 31 December 2021, MKT has an estimated retail fixed voice market share of 63%, a retail fixed broadband Internet market share of 46% and a TV market share of 34% (source: internal best estimates for market development based on the official Telekom Austria report Q2 2021 and the AEC Q2 2021 report). In the mobile market, the market share of MKT was estimated to 49% (source: internal best estimates based on the official Telekom Austria report Q2 2021 and the AEC Q3 2021 short report).*

*All market shares are based on the product logic of Telekom Austria, reporting WiFi routers in mobile.

Marketing and Sales

2021, the year of the "new normal" remained challenging in terms of organizing the operations by combining physical presence as well as a remote work model. Under such conditions, MKT managed to provide a stable and reliable telecommunication service for its clients, and continue the growth of the customer base in all focus segments (Post-paid base, Broadband base and Convergent customer base).

Digital Customer Experience & Digital Transformation

In 2021, MKT continued moving along the same road paved in 2020, which pushes for further development and enrichment of the own digital channels, typically offering superior customer experience, better benefits and faster activation, whether in terms of tariff migration, contract prolongation or activation of an additional package/extra benefits for the end customer.

New Telecom Online Store

In 2021, in the new Telekom online store, the integration with the company Address Register, as well as with the Credit Check System, was completed, whereby from now on the company will be able to do system checks and thus ensure optimization and a higher level of automation of the online shopping process. The new Telekom online store also provided the opportunity to purchase all prepaid cards, which expands the possibilities for transactions through this channel. All company efforts are aimed at providing the users with more options available through this channel and an even better digital experience.

In Q1 2021, MKT introduced a fully digital process of prepaid to post-paid migration via the Telekom App which allows the customers to change their existing prepaid tariff to post-paid.

Later in 2021, MKT was the first on the market to introduce its eSIM service, allowing a complete replacement of the physical SIM card and making possible for the users with compatible smartphones to finish the entire process of ordering and activating a prepaid service online.

As the traveling in/out of North Macedonia recovered in spring 2021, roaming promotions became more relevant for the consumers. MKT offered a couple of roaming promotions dedicated to following the European football championship in June 2021. Starting from 1st July, the WB6 regulation for RLAH (Roam Like at Home) between 6 Balkan countries was introduced, offering a possibility to post-paid customers to use a part of the national internet data bundle & voice minutes included in the package for communication in roaming, without an additional charge. At the same time, MKT also offered a promotion of other internet roaming packages that cover countries outside of WB6.

In September 2021, MKT had a big celebration campaign to mark the achievement of covering more than 100K households with the Magenta 1 product, which incorporated increased mobile data bundle and other promotional elements.

TV content also had an improvement in September 2021 with the addition of new Arena Sport Premium channels, thus strengthening its position as a provider with the widest variety of sports content.

By the end of 2021, MKT continued the growth of its base and maintained its leading position on the market in term of the number of BB & TV users.

The end of 2021 was celebrated with the introduction of the first unlimited mobile data plans on the Macedonian market by MKT.

Business Customers

In the business segment, Telekom proceeded with activities aimed at turning the Covid 19 crisis into an accelerator of its growth story - Digital Transformation of Society and Businesses.

While maintaining its strong position in the digitization of society and the businesses, MKT B2B played a significant role helping the businesses to transform, consolidate and successfully run the business in the prolonged coronavirus pandemic times. The close partnership with the customers resulted in ending 2021 as a winning year, for both sides, thus paving the path to a future growth.

MKT B2B continued its full support in bridging the crisis, further leveraging the power of its broadband internet to all fixed and mobile customers, offering higher speeds and unlimited mobile data.

A special focus was put on brining the digital tools and services closer to the customers through continuous campaigns and dedicated propositions, thus raising the awareness of the digital way of working as an efficient method for overcoming the constrains placed by the coronavirus pandemic. As a result, the digital service portfolio had a significant customer growth, especially in Office 365, security and online services.

Magenta 1 Business remained MKT's key proposition in the B2B segment, upgraded with new Cloud services and providing more benefits for more value.

The lifting of the movement restrictions and the ability to travel abroad had a positive impact on the usage of roaming services in the B2B segment. To support and stimulate it, several new benefits were introduced for the B2B customers. The most significant one was the introduction of Roam Like Home benefit from 1st July, enabling voice and data roaming in six Balkan countries, bundled within the standard tariff models without an additional fee. The commercially available roaming package was also enriched with doubling the bundles data for the same price level, thus providing greater customer value.

Aiming to be a leading force in the Digitalization of Society, MKT implemented several smart city projects among which the most significant is the one for the capital – the City of Skopje. MKT as the main integrator made a huge contribution in the successful execution of national census conducted in Q3 2021.

2021 was marked as a year of introducing innovative technologies in the highly saturated data services market, which comprised the on-boarding of several customers on SDWAN solutions, while establishing MKT as the first and the only SDWAN provider.

Promoting the digital channels and self-service tools continued to be one of the highest priorities in 2021 for the B2B segment. Various activities led to an improved Digital Customer Journey and an increased Telekom App penetration, reaching 50% of the customer base by the end of the year. Increasing the B2B customers' satisfaction was another goal reached in 2021, accomplished via switching customers from traditional to new, digital channels, which reduced the calls to the B2B Contact Centre by 17% in comparison to the previous year, thus achieving a two-digit reduction second year in a row. This was clearly reflected in an increase of the TRIM index by an additional 13-point difference compared to the main competitor and maintaining the number one position in B2B DT EU.

The Most Popular Telco Brand in Macedonia

2021 was the year in which the “new normal” become the “only normal”.

In terms of brand and marketing, this initiated a process of redefinition: it became more urgent than ever to re-hone our position by removing any excess, and to grow into the most desired telco provider, the best digital partner for the future, and the company that cares for society and the environment in which it operates.

We are committed not to stop until everyone has access to the opportunities for personal, commercial and collective improvement that connected technology has now made possible.

Despite the challenges of a dynamic market and increasing competition, we managed to maintain the position of the number 1 telco brand in Macedonia, as confirmed by the regular customer perception researches in 2021.

The shifts in the digital media landscape brought about by the pandemic in 2020, remained strong during 2021: this channel newly discovered by a large segment of the Macedonian population meant better optimization and converting more digital communication, to the satisfaction of both the customers and the business.

In business, we focused on bringing the concept of digitization closer to the smallest businesses and home offices. In addition, we continued reinforcing the position of the best digital partner for everybody in our society – from cities to one-person businesses.

Best Quality Service

MKT remains dedicated to providing the best quality service, which requires significant investments in the network infrastructure. The widening of the FTTH and VDSL coverage continued in 2021 and, combined with services via mobile network (4G cubes) in specific regions, MKT managed to satisfy a large majority of the demand for Internet, countrywide. In 2021, the FTTH coverage reached more than 240K access points in the country. In mobile communication, MKT completed most of the preparations for the introduction of 5G that is expected to happen in Q1 2022. In 2021, MKT continued its practice of regularly conducting nationally representative market researches, via independent agencies, in order to check the customer experience and perception about the telecommunication network quality, which confirms our leading position in both the mobile and the fixed network, perceived as such by the most important stakeholder – the end users.

In 2021, according to our regular customer satisfaction surveys, MKT managed to remain the number one operator in customer satisfaction in mobile, fixed and convergent services, continuing the trend from the previous years.

A simple and easy customer journey in an omnichannel approach remained an imperative for 2021 as well. To achieve this, the different customer segments were addressed via the most appropriate sales channels. The Point of Sales (PoS) (own and partners') are continuously modernized following the latest trends to provide the best customer experience, where the customers can explore products and services offered with the support from our sales agents in choosing the best offer for their household. In the course of the year, we opened a new flagship store in the biggest shopping mall in the country. Push sales channels like Door to Door (D2D) and telesales remained in the focus with a significant contribution to the overall sales results. We are adamant about providing efficient and 24x7 customer support. We provide support for the customers' inquiries (either for information or for problem resolution) via different channels. Traditional support for calls is still dominant, but it is shifting to digital and written channels, including live chats on the web, social media (Facebook, Tweeter) and the Telekom App - it is all aimed at being closer to our customers on channels preferred by them. In 2021, we introduced chatbot possibilities, in order to ensure a faster and automated response. The customers are also able to conduct self-diagnostics and troubleshooting for their services.

Last year, MKT implemented a new, state-of-the-art tool for collecting feedback from our customers – with a view to understand what is their opinion about the quality of our services, the products that they use and the brand in general, with the main purpose of a continuous improvement in all directions.

Research and Development

MKT continues with its determination and its work to be an innovation and technology leader on the market. Among the main focuses, as a continuation from the previous years, are the projects in the area of the Smart City. MKT has won 1 Smart Light reconstruction project for medium-sized municipality and, at the end of the year, we are finishing the implementation

of the contract for the Capital of North Macedonia, Skopje, with smart lighting, parking, air quality, citizen engagement, water metering and mayors' dashboard. In view of the fact that we are expecting several tender procedures to be opened, MKT has the possibility of winning further contracts with municipalities at the start of 2022. From the perspective of society digitalization, support activities for e-health and e-education strategy preparation are underway.

Meeting the demand for automation, metering and remote control of the street lighting in our cities, we designed, developed and tested Smart Energy Metering IoT node and Smart Lighting IoT node - IoT devices for management and control of street lighting cabinets and fixtures with LTE/NB-IoT/EDGE connectivity to Smart IoT platform hosted on the public or private Cloud. In the upcoming period, we will continue with the development of advanced functionalities, a customer-friendly field test and implementation of a pilot commercial project.

The implementation of Narrowband for Internet of Things (NB-IoT) is continuous process. At the moment, we have 5.000+ devices connected, and we are planning an increase up to 20,000 for 2022.

In addition to the business development activities mentioned above, in 2021 we put the focus on the development of the projects and products for digitization and smart working for the business segment, which we believe are growing market potentials in the forthcoming years, expected to be driven by the advantages of the efficiency of ICT in the daily workflows systems and networks, as well as by the transparency and accountability of such solutions. We have organized several webinars for the vertical market segments (manufacturing, construction, retail and financial sector) in order to help our customers find the most suitable products in the process of digital transformation.

Under the motto - INNOVATION SYNERGIES – WIN WITH A PARTNER, we continuing on our strategic technology partnerships-Cisco Gold, as well as the Microsoft and VMware partnership.

We started offering SAP Business One exclusively on our market, completely localized in Macedonian language, covering all business processes in an organization. These partnerships are confirmations of MKT's competences in the areas of enterprise networks, Cloud, collaborations, network securities, and data centre technologies. Such competences are deemed to be crucial assets on which we can leverage further in our ICT business development activities.

Moreover, by collaborating with our partners, MKT established a (web-based) integrated communication and data management system for documents and workflows – DX Office. By using DX Office, the customers will digitize and automate the existing work processes and documents in order to have a digital office where they will gain speed, control and easier operation. The process of cloudification has been finished successfully as the system is hosted on our own virtual private servers.

Driven by the impact of COVID 19 and the increased need for remote work while maintaining the efficiency, MKT started offering exclusively the Time Tracking service on our market. It is a useful tool for modernizing the work environment and increasing the efficiency by smoothly organizing the time and work tasks of the employees.

The competitive pressure in conjunction with the saturated Telco market, the COVID 19 challenges, the complexity of the business environment with multiple and more sophisticated customer segments, multiple vendors and complex service offerings, the fast changes in the technology with new technology paradigm targeting one universal IP network and Cloud-based service delivery platform, as well as changes in the regulations, are only part of the challenges that MKT will face in the next few years.

In order to keep a sustainable business and major revenue streams in a very complex telecommunication environment, as well as proactively influence the market trends with new business opportunities, MKT is aiming to keep its technology leadership position and ensure growth through service improvement and innovation by a continuous development of its infrastructure.

In order to maintain a sustainable business and revenue streams despite the coronavirus crises, MKT continued its massive expansion into fixed and mobile communications in 2021.

Telekom's fixed network has proven to be a strong backbone. Home office and home schooling have led to an increase in the usage for telephony and data. The network was able to handle this volume at all times without any problems. Data throughput in the fixed network increased by approx. 17 percent and mobile voice traffic increased by approx. 31 percent.

In terms of fixed-network expansion, the focus was on fibre optics. The fast connection for households and businesses and the rollout strategy of the recent years have paid off in terms of working and learning from home. At the end of 2021, there were more than 246,900 FTTH accesses passed, which means that around 35.3% of flats already have the option of booking a fibre-optic connection. Regarding the VDSL rollout, there are more than 204,000 VDSL CO accesses passed and 27,920 VDSL FTTC accesses passed in the fixed network. Deployment of Hybrid Access and LTE box solutions were used where fixed BB is unavailable or with a low quality, thus improving the customer experience through higher QoS. At the end of 2021, the number of LTE box users was 9,932 and there were more than 3,728 hybrid users.

During the second half of 2021 Cu2F pilot, part of the approved project was completed. The main goals that were achieved during the pilot phase were:

- establishing the processes for migration of the customers, regardless of the customer segment
- combining the existing activities related to infrastructure retirement
- identifying the technical and customer-related obstacles for migration and addressing those issues for a solution.

During 2021, much of the development activities in mobile communications were devoted to further RAN and MW modernization for the introduction of the 5G technology. The rollout phase of the project started in August 2021 and, by the middle of 2022, the majority of the population in the urban areas will be able to use 5G services. The LTE network also continued to grow in 2021 and it now covers 99.9% of the population outdoors. More than 99% of the total sites provided LTE services, 68.4% of all BTSs are connected via optic. The data volume via 4G is also increasing month by month during the coronavirus crisis. In order to provide a more efficient spectrum usage and optimization of the complex 4RATs (2G/3G/4G/5G) mobile network, activities for the retirement of 3G technology were boosted during 2021. The whole project is planned to be completed till the end of 2022, which will result in the implementation of a new NT production model based on virtualized, cloudified and disaggregated RAN.

In the core domain, the emphasis was placed on the voice network modernization. The project for the migration of native IMS platform towards new vIMS nodes was successfully completed. In the mobile switching network, the MSS and UDC nodes were upgraded. No major issues during the coronavirus crisis period were noticed. The introduction of VoLTE Roaming is in progress as well. The growth of BB access and the continuous traffic increase were supported with the further development of the IP core and transport network as a cornerstone for all services. A capacity extension of the transport network was performed in order to cope with the increased traffic demand. In the ePC domain, the PCRF node has been upgraded and virtualized.

In order to improve the quality of the IPTV service and to maintain the position of #1 TV provider on the Macedonian market, the TV Strategy document was prepared based on which further development of the IPTV and OTT platforms are planned. The Head End modernization project started and, at the end of year, a total of 100 TV channels are offered in HD quality over 2.5 MBps. The implementation of the nPVR feature is in progress. The start of the deployment of the new Cloud IPTV/OTT integrated platform is planned for 2022. The project for the replacement of the existing messaging services is in progress and it is planned to be completed in Q1 2022. The MMS service is already in production on the new platform. The complete migration of SMS, USSD and IP-SMGW services is planned for Q1 2022.

Information Technology

After the significant IT transformation executed in 2020, in 2021, MKT fully operationalized the new Agile setup, driving Agile projects currently and up-skilling most of the IT employees.

- The main objective, successfully executed, was taking a step forward in the execution & implementing improvements of the new concept for the IT Operating Model - outsourcing of the legacy systems (Billing, CRM and Infrastructure domains) and in-house development for the execution of the main company focus - digitization and building EIRA
- Increase of Agile driven projects to six in 2021, with an ambition for a further increase in 2022
- Upskilling of the employees in the dedicated cross-functional team, unifying IT, business and operation knowledge for an improved and flexible delivery
- Big steps forward in building EIRA
- Set-up of a Digital Enablement Platform, implementing a “proof of concept” for the further development of Data

Lakes

- The new manner of work and the new culture made it possible for MKT to become a more competitive employer, mainly in the IT area

Further activities are ongoing and they will continue more intensively, which will ensure the fulfilment of the plan and enable the realization of the strategic focuses.

Nikola Ljushev

Chief Executive Officer
Makedonski Telekom AD – Skopje

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