

## LOOKING INTO THE FUTURE

### CURRENT TRENDS IN THE TELECOMMUNICATIONS SECTOR

The COVID-19 pandemic, despite all the drama of its consequences, gave a powerful impetus to the development of services related to remote work, remote learning and interaction with government authorities via the Internet. However, a more important and interesting effect occurred in the mass perception as a result of this forced “digitalization” with many people having to master new tools: employees – to be able to communicate with colleagues via video conferences, teachers – to conduct online lessons, and children – to connect on time and send homework through the appropriate systems. Telecom plays an obvious fundamental, infrastructural role in solving all these problems. And although these digital services often work “on top” of operators’ networks, nevertheless, the obvious need for high-quality communication and the willingness to pay for it (from both individuals and companies) has increased due to the social and economic shifts caused by the pandemic.

The relatively painless, accelerated as a result of the pandemic, completion of the online transition could not have happened without a complete “smartphone-zation”: most people already have a smartphone in their hands both in Russia and globally. This allowed to switch to a new “intensive” mode of mobility: smartphones are already used more often both for the consumption of traditional content (music, video, communication on social networks) and for practical needs (banking and other financial services, online shopping, training) than traditional “big screens” (PCs, laptops, TVs), at least among young people and in developed markets. The pandemic has also accelerated this process, making people spend more time with their mobile phones. This phenomenon has clear advantages for mobile operators, but at the same time imposes increased requirements for the quality and coverage of mobile BBA networks.

A global response of mobile operators to the continuing exponential growth in data demand is a deployment of next generation (5G) networks in new frequency bands. In 2020, 5G coverage exceeded 1 billion people globally, according to some estimates; the 5G consumer equipment ecosystem continues to grow rapidly in terms of both

diversity and functionality. In general, 5G penetration (in terms of networks and subscribers) is developing at a faster pace than it was with LTE a decade ago: it can be expected that popularity of 5G in the world will catch up with LTE on the horizon of five to seven years. Although the introduction of 5G in Russia has been essentially placed on hold due to an unresolved issue with the frequency resource, we hope that it will catch up at a high pace after its launch in a few years.

An additional leap in the Internet availability can be provided by satellite operators. This is due to the efforts of such pioneer companies as Starlink and OneWeb (in terms of creating low-orbit BBA systems) and the growth in capabilities of “large” satellites in geostationary orbit (due to the active development of the “high” Ka-band). Smaller startups developing niche products also present interest, e.g., global IoT systems based on ultra-small super-cheap devices or satellites for direct communication with phones/smartphones at standard frequencies are not less interesting. Overall, it is unlikely that the actions of old and new satellite players pose significant risks to traditional mobile and fixed-line operators; their service rather provides new opportunities and complements the product of “land” operators, whereas a wider Internet coverage is beneficial for everyone.

We shall also note a trend of the increasing influence of politics on the development of the industry. Thus, attempts to limit the development of Huawei as a global technology giant undertaken by the United States and a general use of technology as a tool of influence make many countries and major operators think about reducing the risks associated with dependence on key vendors and countries. In practical terms, it may be an increasing interest in the development of the Open RAN direction in relation to all generations and elements of cellular networks, as well as, for example, attempts to cultivate alternative developers of network radio equipment, which takes place in Russia.

## DEVELOPMENT FORECAST FOR THE RUSSIAN MARKET IN 2021 AND MEDIUM-TERM PROSPECTS

### Macroeconomics

The recovery of Russian economy began in the second half of last year and is likely to continue in 2021. Although the current forecasts do not imply an acceleration in economic growth compared to the pre-COVID dynamics, removing most of the restrictions will be enough to return to normal business dynamics to satisfy the interests of the telecom business, as well as related digital industries.

Certain concerns can be raised by such processes as accelerating inflation, continuing stagnation of the economy, ruble volatility, and a number of other macroeconomic problems Russia is facing. Nevertheless, other factors – in particular, a certain closed nature and comparative self-sufficiency of Russia in the field of digital services, a rather large domestic market and the government's efforts to protect it play an inciting role for the development of new directions by domestic companies.

### Telecom (basic business)

#### Mobile telecommunications

The Russian mobile communications market is saturated and, as before, there are no fundamental prerequisites for its growth by more than a few percent per year. 5G launch in Russia, apparently delayed until 2024, is unlikely to give a significant boost to revenues, although the emergence of new breakthrough services based on this new generation, capable of providing a general impetus to the demand for services of mobile operators, cannot be completely ruled out on the horizon of three to five years. At the same time, a later launch of 5G has certain advantages for all companies in the industry: by the time of the launch, an ecosystem of 5G consumer equipment will be developed; penetration among subscribers of devices ready to work in 5G networks will be quite high; most smartphones on the market will have all advanced features (SA, DSS, CA in 5G, Vo5G); there will be a reduction in the cost of subscriber and network equipment. Thus, for the next few years, Russian mobile operators do not need to increase costs for a high-priced deployment of 5G networks and the promotion of relevant services, which is a positive trend in terms of short-term financial performance.

In terms of other short-term current effects caused by the impact of the pandemic in 2020, the most affected segment of international roaming should

be noted, and here we have no reason to expect a full recovery of this income type in 2021, given rather slow lifting of restrictions in most countries. It is possible that in the future, starting from 2022, we will see a fairly rapid recovery growth of tourism to the levels of the “old normality”, which will return the corresponding revenue to the operators.

Two trends are worth noting among the changes in technology that will have a significant impact on the mobile business over the next few years. The first is the refarming of 3G frequencies (2100 MHz band) for the needs of LTE networks, which has actually begun, giving an additional safety margin to Russian operators before they receive 5G frequencies in addition to its certain nominal value. The second is the beginning of eSIM practical introduction in Russia, which actually began only last year, albeit in small scopes. Although a widespread adoption of this technology is still limited by regulatory requirements for registration of SIM cards and the accompanying inconvenience for subscribers, it will further allow to reduce the “physical” market for connections, including a reduction of clearly oversized mobile store networks.

#### Fixed BBA market

The market for home broadband Internet access has also almost exhausted the possibilities for further growth: in large cities, the penetration rate of the service reaches 90%, and a growth in the total number of connections is only due to the commissioning of new housing. Nevertheless, from the point of view of the largest players, there is still a potential for consolidation through the purchase or displacement of local city or regional providers, although the total scale of the remaining independent players is already quite small.

Additional opportunities in this market for the largest players are associated not with the growth of the market itself, but with the possibility of creating bundled (converged) offers of mobile, fixed-line communications, as well as TV and online cinemas: an outflow among converged consumers is significantly lower than among those consuming one single service. Probably, all major operators will step up their efforts in this direction, although practical actions will be (geographically) local because all players have only a fragmented fixed telephony coverage, except for Rostelecom.

<sup>1</sup> SA — Stand Alone, independent 5G operation mode (without reliance on the core of the LTE network); DSS - Dynamic Spectrum Sharing, dynamic reallocation of the frequency resource between LTE and 5G; CA - Carrier Aggregation, simultaneous use of multiple bands; Vo5G - Voice over 5G, voice calls over 5G network.

Launch of 5G can theoretically provide a certain dynamics to the market in the medium term. New generation networks (in case of obtaining a sufficient amount of frequency resource) can serve as a basis to develop the FWA (Fixed Wireless Access) service that would be cost efficient, for example, in small and medium-sized cities, large villages, cottage settlements. A number of countries already have the experience of successful development of this service based on millimeter-range 5G networks.

### **B2B/B2G market**

On the one hand, in terms of dynamics, the corporate market is of the greatest interest - the growth rates are higher here than in the consumer segments. On the other hand, B2B markets are more fragmented both in terms of product diversity and in terms of company types, sizes and demands. Many fast-growing services (for example, cloud data processing, virtual PBX, video analytics) are located at the intersection of telecom and IT, and in the latter, telecom operators are traditionally less competent than narrowly specialized companies. At the same time, many operators both in the world and in Russia are striving to enter new niches for themselves, including creating their own platforms and solutions for various sectors of the economy and smart cities. Due to the presence of the basic infrastructure and contact with customers established through the sale of traditional communication services, operators have the opportunity to create competitive complex products for business and regional and city authorities - for example, based on IoT solutions, cloud infrastructure, as well as Private LTE / 5G-ready -networks..

### **MEDIA/TV**

The market of "traditional" home TV (cable/IPTV, satellite TV) and BBA does not have a significant growth potential: the BBA service can be sold to subscribers not yet covered but there are not many of them left. However, a more important reason for the stagnation of growth is a shift in the focus of consumers from linear TV channels to a selective consumption of content (films, TV series), and this is where OTT online cinemas take over. This is concentration area of the main growth and the main competition, the latter not limited to the "physical" networks of a particular operator and intensifying due to the entry of both telecom operators and players from other segments into this segment. At the same time, the competition is escalating not only within the framework of a battle for the end consumer, but also in terms of obtaining rights to high-quality content. A natural result of the latter is that many online cinemas independently (or in partnership) started to order filming of their own

exclusive TV series, feature films, documentaries and entertainment programs. The ultimate goal of the efforts, at least for some of the players in this market, is not to make money outright but to strengthen the respective ecosystems.

### **Financial services**

Digital financial services have received a powerful impetus due to the restrictive measures of the pandemic: their popularity has grown among all age groups and not just among young people. The quality of Internet and mobile banking applications is growing for all major players; all major banks are striving to improve the quality, at least to eliminate obvious weaknesses and shortcomings in the functionality. The government is also doing its utmost to promote a growth in popularity of "cashless" and online reality, from direct calls to use bank cards for payments to the development of a new transfer system (Faster Payments System, FPS).

The industry keeps looking for new niches for further growth and attracting customers, in addition to the general "digitalization" of existing financial products. Examples of this kind of services are investment (brokerage) services, virtual bank cards, creation of specialized quasi-banks ("neobanks") for certain segments of consumers. New ideas and solutions are searched both within banks and through the development of startups. The role of the latter in innovative activity is likely to increase in the industry.

Nevertheless, the industry as a whole is highly dependent – and will depend – on the macroeconomic environment and regulatory conditions. For example, some segments can get a powerful boost due to actions of the Central Bank and the government (as it happened with mortgage lending last year), while others can shrink and even cause losses due to a decrease in people's income (POS lending).

