

## DIGITAL SOLUTIONS FOR RETAIL CUSTOMERS

### Smart tariff



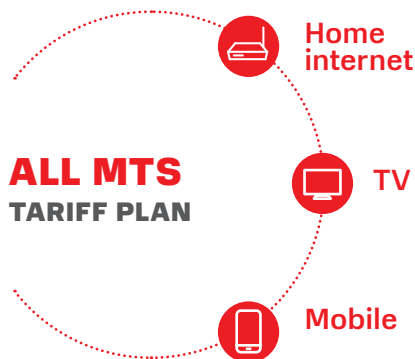
MTS leverages global experience of developing digital services to tailor offerings that are relevant to various customer segments. In December 2019, MTS for the first time provided its customers with the option of making up their own tariff plan based on artificial intelligence (AI) algorithms. An AI engine analyzes a month's worth of data on a customer's service usage pattern and tailors a plan that takes into account the customer's specific needs and optimizes their mobile and data spend.

### Converged services



**Launching converged services is part of MTS's ecosystem development program.**

Combining the benefits of fixed and mobile communications, MTS developed the All MTS tariff plan that bundles three types of telecoms services:



## 51 regions of Russia

the geography of our converged services

The Company is the only operator in Russia that provides access to satellite TV on top of the standard service range (telephony, internet, cable TV and IPTV). As of the end of 2019, the geography of our converged services covered 51 regions of Russia. Any existing mobile and fixed-line services can be added optionally to the All MTS bundle:

- > Thematic/premium TV packages
- > High-speed home internet
- > Rewinding and recording in interactive TV
- > Protection of children from inappropriate content in the interactive package
- > MTS mobile service discounts
- > Using the mobile account as a single account to pay for all services





## UltraHD resolution in the cable network

MTS was the first among terrestrial cable pay-TV operators to launch a 4K UltraHD channel in its DVB-C cable network and on a satellite platform. MTS provides more than 180 digital-quality TV channels, including more than 40 HD channels and four UltraHD channels. Digital TV penetration in 2019 remained at 90%. The starter package includes some 140 channels, including more than 20 HD channels and one UltraHD channel. It is the largest starter package in the regional markets, which is also included in all bundled offers with broadband access and telephony. As part of its fixed network upgrade and development investment program, the Company plans to develop high-speed broadband services in its regions of operation, with speeds of up to 500 Mbit/s in 2020–2023.

**>180** digital quality  
TV channels

**>40** HD TV channels

**4** UltraHD (4K)  
TV channels

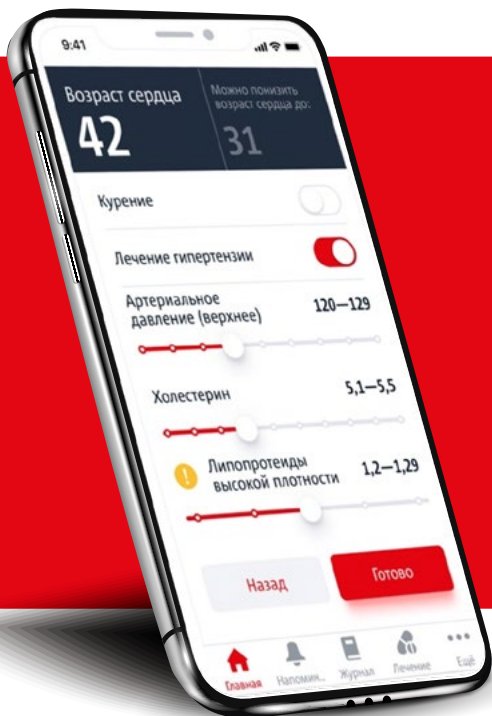
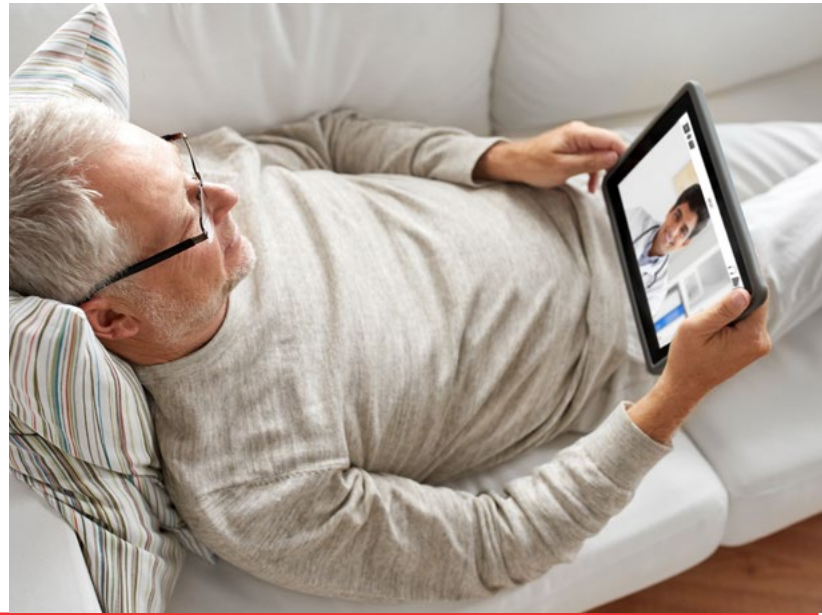
In 2019, MTS continued to develop its new TV platform which enhances traditional TV experience with interactive components.

## The SmartMed telemedicine service



The launch of our SmartMed service was a milestone development for the telemedicine space. The app allows patients to consult medical specialists from the MEDSI chain of clinics from anywhere through video call or chat. All necessary medical documents (the electronic medical record, history of seeking medical advice, prescriptions and lab test results) are stored in the secure #CloudMTS cloud and can be accessed from a smartphone anytime.

## The MTS 120/80 application



In 2019, MTS developed the MTS 120/80 heart care app in collaboration with the National Medical Research Center for Cardiology of the Russian Ministry of Health. The app makes it possible to calculate the health age of the heart, functions as a medication reminder and can set up an online consultation with a cardiologist or any other medical specialist through the SmartMed telemedicine service.

As the user enters daily blood pressure readings, the application builds a graph that presents the data in a visual form. The application alerts the user if their blood pressure becomes abnormal.

**1300** users  
of the MTS 120/80 heart care  
application in its first month

## Smart Home



Towards the end of 2019, MTS commenced a project to develop a smart speaker with a virtual assistant named Marvin. The speaker can read news, play music or audiobooks, control Smart Home devices and give answers to user questions. The device was in beta testing as at the end of 2019.



## 5G networks

**An innovation landmark of 2019 was MTS launching the rollout of the new 5G mobile communications standard on the Company's infrastructure. The standard will enable multiple new products and services to benefit our customers.**

In 2019, MTS together with Moscow's Department of Information Technology launched a 5G network pilot area at VDNKh. The purpose of the trial network is to test Smart City solutions aimed at improving safety and security, developing the transport system and municipal service management

systems, and designing smart city products based on augmented and virtual reality. MTS is involved in the activities of ANO Digital Economy's Center of Excellence aimed at developing secure 5G networks in Russia.



## 4G in the Moscow Metro

More than two million people use the MTS network in the metro daily. The average weekly mobile data usage by metro passengers is 360 TB, with the total data usage growing fivefold and LTE traffic by almost eight times from the beginning of 2019. MTS was the first operator to start developing a 4G network in the Moscow Metro in 2015.

With the construction of the 4G network completed across all tunnels and stations of the Moscow Metro, peak data speeds can now reach 200 Mbit/s due to inter-band carrier aggregation in the 1,800 MHz and 800 MHz bands. Average data rates in regular passenger traffic is about 35 Mbit/s, enough to use messengers, browse social media or check e-mail, play online games and watch streaming video without frame freezes, all as the train travels through the tunnel. These services account for over 70% of total mobile data usage by metro passengers. Customers can also use VoLTE technology, enabling voice calls.

**>2 million subscribers**  
using MTS's underground 4G network  
in the Moscow Metro every day

**200 Mbit/s**  
data speed within the Moscow Metro  
after the construction of the 4G  
network is completed



For more information  
on the technology see  
our corporate website