MOBILE TELESYSTEMS PJSC Form 20-F April 19, 2019

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# UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

## Form 20-F

o Registration Statement pursuant to Section 12(b) or (g) of the Securities Exchange Act of 1934

or

ý Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2018

or

o Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

or

o Shell company report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of event requiring this shell company report

Commission file number 333-12032

# MOBILE TELESYSTEMS PUBLIC JOINT STOCK COMPANY

(Exact name of Registrant as specified in its charter)

Not Applicable

(Translation of Registrant's name into English)

## RUSSIAN FEDERATION

(Jurisdiction of incorporation or organization)

#### 4 Marksistskaya Street, Moscow 109147 Russian Federation

(Address of Principal Executive Offices)

Polina V. Ugryumova
Director, Investor Relations
Mobile TeleSystems PJSC
5 Vorontsovskaya Street, bldg. 2, 109147 Moscow Russian Federation
Phone: +7 495 223 20 25, E-mail: ir@mts.ru

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class
AMERICAN DEPOSITARY SHARES,
EACH REPRESENTING 2 SHARES OF COMMON STOCK
COMMON STOCK, PAR VALUE 0.10 RUSSIAN RUBLES PER

Name of Each Exchange on which Registered

NEW YORK STOCK EXCHANGE

NEW YORK STOCK EXCHANGE(1)

Securities registered or to be registered pursuant to Section 12(g) of the Act:

#### NONE

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

## NONE (Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report 1,129,245,695 ordinary shares, par value 0.10 Russian rubles each and 391,398,362 American Depositary Shares as of December 31, 2018.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. o Yes ý No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. o Yes  $\checkmark$  No

Note Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ý Yes o No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes: ý No: o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated Accelerated Non-accelerated Emerging growth filer ý Filer o filer o company o

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o

The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP o Other o

International Financial Reporting Standards as issued

by

the International Accounting Standards Board ý

If "Other" has been checked in response to the previous question indicate by check mark which financial statement item the registrant has elected to follow. o Item 17 o Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). o Yes ý No

(1)
Listed, not for trading or quotation purposes, but only in connection with the registration of ADSs pursuant to the requirements of the Securities and Exchange Commission.

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Unless otherwise indicated or unless the context requires otherwise, references in this document to (i) "MTS," "the Group," "we," "us," or "our" refer to Mobile TeleSystems Public Joint Stock Company and its subsidiaries; (ii) "Vodafone Ukraine" and "VF Ukraine" are to Private Joint Stock Company "Vodafone Ukraine" (formerly PJSC MTS Ukraine); (iii) "Uzdunrobita" is to our former subsidiary in Uzbekistan, which was deconsolidated in 2013; (iv) "MTS-Turkmenistan" our Turkmenistan subsidiary and "BCTI" are to Barash Communication Technologies, Inc., our former Turkmenistan subsidiary; (v) "Comstar" or "Comstar-UTS" are to COMSTAR United TeleSystems, our former fixed line subsidiary, which was merged into MTS PJSC in 2011; (vi) "MGTS" is to Public Joint Stock Company Moscow City Telephone Network, our Moscow public switched telephone network ("PSTN") fixed line subsidiary; and (vii) "MTS-Armenia," "K-Telecom" or "VivaCell-MTS" are to our Armenian subsidiary; and (viii) "MTS Bank" is to MTS Bank PJSC, our subsidiary which provides banking services; (ix) "UMS" is to Universal Mobile Systems LLC, our former subsidiary in Uzbekistan which was deconsolidated in 2016; (x) NVision our subsidiaries which provides integration services and (xi) "Sistema" is to Sistema Public Joint Stock Financial Corporation, our majority shareholder. We refer to Mobile TeleSystems LLC, our 49% owned equity investee in Belarus, as "MTS Belarus." We refer to MTS Bank PJSC, our subsidiary as "MTS Bank." As MTS Belarus is an equity investee, our revenues and subscriber data do not include MTS Belarus.

In this document, references to "U.S. dollars," "dollars," "\$" or "USD" are to the lawful currency of the United States, "Russian rubles," "rubles" or "RUB" are to the lawful currency of the Russian Federation, "hryvnias" are to the lawful currency of Ukraine, "soms" are to the lawful currency of Uzbekistan, "manats" are to the lawful currency of Turkmenistan, "dram" are to the lawful currency of Armenia and "€," "euro" or "EUR" are to the lawful currency of the member states of the European Union that adopted a single currency in accordance with the Treaty of Rome establishing the European Economic Community, as amended by the treaty on the European Union, signed at Maastricht on February 7, 1992. References in this document to "shares" or "ordinary shares" refers to our ordinary shares, "ADSs" refers to our American depositary shares, each of which represents two ordinary shares, and "ADRs" refers to the American depositary receipts that evidence our ADSs. Prior to May 3, 2010, each ADS represented five ordinary shares of our common stock. "CIS" refers to the Commonwealth of Independent States. "CBR" refers to the Central Bank of Russia.

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The following tables show, for the periods indicated, certain information regarding the exchange rate between the ruble and the U.S. dollar, based on data published by the CBR. These rates may differ from the actual rates used in preparation of our financial statements and other financial information provided herein.

	Rubles per U.S. dollar			
Years ended December 31,	High	Low	Average(1)	Period End
2014	67.79	32.66	39.34	56.26
2015	72.88	49.18	60.96	72.88
2016	83.59	60.27	67.03	60.66
2017	60.75	55.85	58.35	57.60
2018	69.97	55.67	62.71	69.47

(1) The average of the exchange rates on the last business day of each full month during the relevant period.

Rubles per U.S. dollar		
High Low		
63.49	62.10	
68.53	62.35	
69.97	65.59	
66.97	65.22	
68.00	65.58	
69.52	66.24	
69.47	65.92	
66.70	65.26	
66.08	63.74	
	U.S. de High 63.49 68.53 69.97 66.97 68.00 69.52 69.47 66.70	

Source: CBR.

The exchange rate between the ruble and the U.S. dollar quoted by the CBR for April 18, 2019 was 63.95 rubles per U.S. dollar.

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#### CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

Matters discussed in this document may constitute forward-looking statements within the meaning of Section 27A of the U.S. Securities Act of 1933 (the "U.S. Securities Act"), and Section 21E of the U.S. Securities Exchange Act of 1934 (the "U.S. Exchange Act"). The Private Securities Litigation Reform Act of 1995 provides safe harbor protections for forward-looking statements in order to encourage companies to provide prospective information about their businesses. Forward-looking statements include statements concerning plans, objectives, goals, strategies, risks and their assessment, future events or performance, and underlying assumptions and other statements, which are other than statements of historical facts.

MTS desires to take advantage of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and is including this cautionary statement in connection with this safe harbor legislation and other relevant law. This document and any other written or oral statements made by us or on our behalf may include forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. The words "believe," "expect," "anticipate," "intend," "estimate," "forecast," "project," "predict," "plan," "may," "should," "could" and similar expressions identify forward-looking statements. Forward-looking statements appear in a number of places including, without limitation, "Item 3. Key Information D. Risk Factors," "Item 4. Organizational Structure B. Business Overview," "Item 5. Operating and Financial Review and Prospects," and "Item 11. Quantitative and Qualitative Disclosures about Market Risk" and include statements regarding:

our strategies, future plans, economic outlook, industry trends and potential for future growth;
our liquidity, capital resources and capital expenditures;
our payment of dividends;
our capital structure, including our indebtedness amounts;
our ability to generate sufficient cash flow to meet our debt service obligations;
our ability to achieve the anticipated levels of profitability;
our ability to timely develop and introduce new products and services;
our ability to obtain and maintain interconnect agreements;
our ability to secure the necessary spectrum and network infrastructure equipment;
our ability to meet license requirements and to obtain and maintain licenses and regulatory approvals;
our ability to maintain adequate customer care and to manage our churn rate; and
our ability to manage our rapid growth and train additional personnel.

The forward-looking statements in this document are based upon various assumptions, many of which are based, in turn, upon further assumptions, including without limitation, management's examination of historical operating trends, data contained in our records and other data available from third parties. Although we believe that these assumptions were reasonable when made, because these assumptions are inherently subject to significant uncertainties and contingencies which are difficult or impossible to predict and are beyond our control, we cannot assure you that we will achieve or accomplish these expectations, beliefs or projections. In addition to these important factors and matters

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discussed elsewhere herein, important factors that, in our view, could cause actual results to differ materially from those discussed in the forward-looking statements include:

growth in demand for our services;
changes in consumer preferences or demand for our products;
availability of external financing on commercially acceptable terms;
the developments of our markets;
the highly competitive nature of our industry and changes to our business resulting from increased competition;
the impact of regulatory initiatives;
the rapid technological changes in our industry;
cost and synergy of our recent acquisitions;
the acceptance of new products and services by customers;
the condition of the economies of Russia, Ukraine and certain other countries of the CIS;
risks relating to legislation, regulation and taxation in Russia, Ukraine and certain other CIS countries, including laws, regulations, decrees and decisions governing each of the telecommunications industries in the countries where we operate, currency and exchange controls relating to entities in Russia, Ukraine and other countries where we operate and taxation legislation relating to entities in Russia, Ukraine and other countries where we operate, and their official interpretation by governmental and other regulatory bodies and by the courts of Russia, Ukraine and the CIS;
political stability in Russia, Ukraine and certain other CIS countries; and
the impact of general business and global economic conditions and other important factors described herein and from time to time in the reports filed by us with the U.S. Securities and Exchange Commission (the "SEC").

All future written and verbal forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. New risks and uncertainties arise from time to time, and it is impossible for us to predict these events or how they may affect us. Readers are cautioned not to place undue reliance on these forward-looking statements. Except to the extent required by law, neither we, nor any of our respective agents, employees or advisors intends or has any duty or obligation to supplement, amend, update or revise any of the forward-looking statements contained or incorporated by reference in this document.

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#### PART I

## Item 1. Identity of Directors, Senior Management and Advisors

Not applicable.

## Item 2. Offer Statistics and Expected Timetable

Not applicable.

## Item 3. Key Information

#### A. Selected Financial Data

On January 1, 2018 we adopted three new IFRS standards IFRS 9, "Financial Instruments," IFRS 15, "Revenue from Contracts with Customers," and IFRS 16 "Leases." Prior period comparatives were not restated. The effects of new standards on our retained earnings are presented in Note 2 to our consolidated financial statements.

Our results of operations for the financial year ended December 31, 2018 are affected by acquisition of controlling stake in MTS Bank. In 2018, we increased effective ownership share in MTS Bank from 26.6% to 55.4% and obtained control over the entity. Consideration paid to our shareholder Sistema for additional share in MTS Bank amounted to RUB 8,273 million. The acquisition was accounted for as a transaction with entities under common control directly in equity.

The selected financial data should be read in conjunction with our audited consolidated financial statements, included elsewhere in this document, "Item 3. Key Information D. Risk Factors" and "Item 5. Operating and Financial Review and Prospects." Certain industry and operating data are also provided below.

	Years Ended December 31,				
	2018		2016 aillions of Russia and per share an	,	2014
		industry and	operating data a	nd ratios	
Consolidated statements of profit or loss data:					
Services revenue	410,890	390,761	386,486	386,159	381,143
Sales of goods	69,403	52,150	49,206	40,480	29,535
Total operating revenues	480,293	442,911	435,692	426,639	410,678
Operating expenses:		,		.,	
Cost of services	112,401	123,779	130,158	126,805	119,053
Cost of goods	63,869	45,623	45,574	36,555	25,445
Selling, general and administrative expenses	87,946	95,186	94,046	87,340	88,095
Depreciation and amortization	104,588	79,912	81,582	77,843	74,734
Operating share of the profit of associates	(3,799)	(3,210)	(3,115)	(3,456)	(3,459)
Provision for investment in distressed Ukrainian banks				1,698	5,138
Impairment of non-current assets	149	3,775		3,516	
Other expenses/ (income) <sup>(1)</sup>	(1,046)	1,746	(222)	2,415	1,814
Operating profit	116,185	96,100	87,669	93,923	99,858
Finance income	(5,981)	(5,548)	(5,273)	(8,368)	(4,519)
Finance costs	38,165	26,064	27,136	26,422	17,252
Currency exchange loss/(gain)	3,594	(1,301)	(3,241)	6,154	17,926
Non-operating share of the loss of associates	909	436	1,287	3,780	6,537
Change in fair value of financial instruments	(5,384)	(110)	(166)	(1,014)	95
Other expenses/(income), net	1,031	992	317	(54)	937

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Profit before tax	83,851	75,567	67,609	67,003	61,630
Income tax expense	16,969	18,977	15,138	13,931	15,909
Profit for the period from continuing operations	66,882	56,590	52,471	53,072	45,721
(Income)/Loss from discontinued operations, net of tax	59,050		4,021	5,668	(5,775)
Profit for the period	7,832	56,590	48,450	47,404	51,496
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	Years Ended December 31,				
	2018		2016 millions of Russia re and per share a	,	2014
		industry and			
Attributable to:					
Owners of the company	6,848	56,042	48,474	49,489	51,306
Non-controlling interests	984	548	(24)	(2,085)	190
Dividends declared <sup>(2)</sup>	51,958	51,958	51,958	52,011	51,247
Earnings per share, basic, RUB	3.65	28.68	24.37	24.88	25.80
Earnings per share, diluted, RUB	3.65	28.66	24.35	24.87	25.78
Earnings per share from continuing operations, basic, RUB	35.17	28.68	26.06	26.31	22.67
Earnings per share from continuing operations, diluted, RUB	35.13	28.66	26.04	26.29	22.66
Earnings per share from discontinued operations, basic, RUB	(31.52)		(1.69)	(1.43)	3.13
Earnings per share from discontinued operations, basic and					
diluted, RUB	(31.48)		(1.69)	(1.42)	3.13
Annual Dividends declared per share, RUB	26.00	26.00	25.99	25.17	24.80
Semi annual Dividends declared per share, RUB	2.6	10.4	11.99	5.61	6.20
Number of common shares outstanding	1,920,799,197	1,912,042,419	1,986,899,529	1,988,892,399	1,988,912,130
Weighted average number of common shares outstanding basic	1,873,562,676	1,953,778,999	1,989,281,930	1,988,728,000	1,988,757,022
Weighted average number of common shares					
outstanding diluted	1,875,720,966	1,955,558,196	1,990,693,983	1,990,195,552	1,989,977,971
Consolidated statement of cash flows data:					
Cash provided by operating activities	154,390	144,640	130,565	144,088	158,979
Cash used in investing activities	(78,389)	(81,510)	(57,302)	(145,356)	(105,008)
(of which capital expenditures) <sup>(3)</sup>	(99,568)	(76,431)	(86,149)	(106,537)	(91,929)
Cash used in financing activities	(25,924)	(50,445)	(83,038)	(27,595)	(33,212)
Consolidated statement of financial position (end of					
period):					
Cash, cash equivalents and short-term investments	131,938	81,343	27,127	83,304	71,352
Property, plant and equipment, net	278,620	263,470	272,841	302,662	299,023
Right-of-use assets	149,007				
Total assets	915,993	551,070	544,470	653,378	599,304
Total debt (long-term and short-term) <sup>(4)</sup>	368,135	291,713	273,274	334,073	280,570
Total shareholders' equity	77,565	124,205	143,948	168,371	178,622
Common stock less treasury stock	(44,608)	(22,444)	(548)	(24,261)	(24,257)
Financial ratios (end of period):					
Total debt/total capitalization <sup>(5)</sup>	82.5%	70.1%	65.4%	66.4%	61.1%
Mobile industry and operating data: (6)					
Mobile penetration in Russia (end of period)	179%	179%	179%	176%	168%
Mobile penetration in Ukraine (end of period)	127%	131%	136%	134%	136%
Mobile subscribers in Russia (end of period, thousands) <sup>(7)</sup>	78,011	78,291	80,032	77,277	74,562
Mobile subscribers in Ukraine (end of period, thousands) <sup>(7)</sup>	19,655	20,805	20,856	20,431	20,221
Overall market share in Russia (end of period)	31%	31%	31%	31%	31%
Overall market share in Ukraine (end of period)	37%	36%	36%	35%	34%

<sup>(1)

&</sup>quot;Operating expenses" consist mainly of allowance for doubtful accounts, gain/losses on disposal of property, plant and equipment and intangible assets as well as any gain/losses resulting from stock-taking.

(4)

Dividends declared in each of the years ended December 31, 2018, 2017, 2016, 2015 and 2014 consisted of dividends in respect of the prior fiscal year (*i.e.*, in respect of each of the years ended December 31, 2017, 2016, 2015 and 2014, respectively) and semiannual dividends in respect of the current fiscal year (RUB 5,196 million, RUB 20,783 million, RUB 23,961 million, RUB 11,592 million and RUB 12,812 million, respectively). Amounts include dividends on treasury shares RUB 3,022 million, RUB 1,319 million, RUB 220 RUB, 435 million and RUB 1,996 million, in respect of the years ended December 31, 2018, 2017, 2016, 2015 and 2014, respectively. At a meeting held on April 10, 2019, the Board recommended that an annual general meeting of shareholders approve annual dividends of RUB 19.98 per ordinary MTS share (RUB 39.96 per ADS), or a total of approximately RUB 39.93 billion, based on the full-year 2018 financial results.

<sup>(3)</sup> Capital expenditures include purchases of property, plant and equipment and intangible assets.

Includes notes payable, bank loans and other debt. Prior period balances were restated to exclude capital lease obligations.

- (5)

  Calculated as book value of total debt divided by the sum of the book values of total shareholders' equity and total debt at the end of the relevant period.

  See footnote 4 above for the definition of "total debt."
- (6)
  Source: AC&M-Consulting and GSMA Intelligence. Operating data is presented for mobile operations only. None of this data is derived from our audited consolidated financial statements. Mobile penetration and overall market share in Ukraine for the financial year 2018 are presented based on our own estimates.

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(7)

We define a subscriber as an organization or individual, whose SIM-card shows traffic-generating activity or accrues a balance for services rendered or is replenished of topped off over the course of any three-month period, inclusive within the reporting period, and was not blocked at the end of the period.

#### B. Capitalization and Indebtedness

Not applicable.

#### C. Reasons for the Offer and Use of Proceeds

Not applicable.

#### D. Risk Factors

An investment in our securities involves a certain degree of risk. You should carefully consider the following information about these risks, together with other information contained in this document, before you decide to buy our securities. If any of the following risks actually occur, our business, prospects, financial condition or results of operations could be materially adversely affected. In that case, the value of our securities could also decline and you could lose all or part of your investment. In addition, please read "Cautionary Statement Regarding Forward-Looking Statements" where we describe additional uncertainties associated with our business and the forward looking statements included in this document.

#### Risks Relating to Business Operations in Emerging Markets

Emerging markets such as the Russian Federation, Ukraine and other CIS countries are subject to greater risks than more developed markets, including significant legal, economic, social, regulatory, tax and political risks.

Investors in emerging markets such as the Russian Federation, Armenia, Ukraine, Belarus and other CIS countries should be aware that these markets are subject to greater risk than more developed markets, including in some cases, significant legal, economic, social, regulatory, tax and political risks. Investors should also note that emerging economies such as the economies of the Russian Federation, Ukraine and other CIS countries are subject to rapid change and that the information set out herein may become outdated relatively quickly.

When conducting business in different CIS countries, we may face risks similar to those (and sometime even more substantial) we have in Russia and Ukraine.

There is a number of risks associated with investing in emerging markets, including the following:

instability of emerging markets (for more information, see "Risks Relating to Economic Risks in Our Countries of Operation" and "Legal Risks and Uncertainties");

high volatility of national currencies (for more information, see " Risks Relating to our Financial Condition");

possible geopolitical disputes (for more information, see " Political and Social Risks"); and

possible liquidity constraints (for more information, see "Risks Relating to Economic Risks in Our Countries of Operation" and "Risks Relating to our Financial Condition").

Accordingly, investors should exercise particular care in evaluating the risks involved and must decide for themselves whether, in light of those risks, their investment is appropriate. Generally, investment in emerging markets is suitable for sophisticated investors who fully

appreciate the significance of the risks involved and investors are urged to consult with their own legal and financial advisors before making an investment in our securities.

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## **Risks Relating to Our Business**

The telecommunications services market is characterized by rapid technological change, which could render our services obsolete or non-competitive and result in the loss of our market share and a decrease in our revenues.

The telecommunications industry is subject to rapid and significant changes in technology and is characterized by the continuous introduction of new products and services. The mobile telecommunications industry in Russia is also experiencing significant technological change, as evidenced by the introduction in recent years of new standards for radio telecommunications, such as Wi-Fi, Worldwide Inter-operability for Microwave Access ("Wi-Max"), Enhanced Data Rates for Global Evolution ("EDGE"), Universal Mobile Telecommunications System ("UMTS"), and Long Term Evolution ("LTE"), as well as ongoing improvements in the capacity and quality of communications, shorter development cycles for new products and enhancements and changes in customer requirements and preferences. Such continuing technological advances make it difficult to predict the extent of the future competition we may face and it is possible that existing, proposed or as yet undeveloped technologies will become dominant in the future and render the technologies we use less profitable or even obsolete. New products and services that are more commercially effective than our products and services may also be developed. Furthermore, we may not be successful in responding in a timely and cost-effective way to keep up with these developments. Changing our products or services in response to market demand may require the adoption of new technologies that could render many of the technologies that we are currently implementing less competitive or obsolete. To respond successfully to technological advances and emerging industry standards, we may require substantial capital expenditure and access to related or enabling technologies in order to integrate the new technology with our existing technology.

We face increasing competition in the markets where we operate, which may result in reduced operating margins and loss of market share, as well as different pricing, service or marketing policies.

The wireless telecommunications services markets in which we operate are highly competitive, particularly in Russia and Ukraine. Competition is generally based on price, product functionality, range of service offerings and customer service.

Generally, increased levels of competition, including from the potential entry of new mobile operators, government-backed operators, mobile virtual network operators and alternative fixed line operators in the markets where we operate, as well as the strengthening of existing operators, increased use of Internet protocol telephony and other services, provided via the internet, may adversely affect our ability to keep the level of revenue which we receive from our operations on the telecom market. This in turn could result in reduced operating margins and a loss of market share, as well as necessitating different pricing, service or marketing policies, which may have a material adverse effect on our business, financial condition and results of our operations.

#### Competition in the Russian market

Our principal wireless competitors in Russia are Public Joint Stock Company "Vimpel-Communications" ("VimpelCom"), Public Joint Stock Company MegaFon ("MegaFon"), as well as the federal cellular operator established in 2014 by the combination of Tele2 Russia and the mobile assets of Public Joint Stock Company Long-Distance and International Telecommunications "Rostelecom" ("Rostelecom"). We also face competition from several regional operators.

In addition, we face competition in the fixed line telecommunications business, in particular from Rostelecom. Mass media reported that Rostelecom was determined by the Governmental Decree to be the only provider of Internet services for state and commercial medical institutions. It was also reported that Rostelecom may be the only provider of telecommunications services except mobile

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communications services for federal state institutions. Implementation of these Decrees requirements could have a material adverse effect on our business and results of operations.

See also " If we cannot interconnect cost-effectively with other telecommunications operators, we may be unable to provide services at competitive prices, which may diminish our market share and result in a loss of revenues and margins" below.

Competition in the foreign markets of our operation

The Association Agreement with the European Union signed by Ukraine, which came into force on September 1, 2017, may adversely affect our business, financial condition and results of operations due to a possible increase in competition. The implementation of the Association Agreement requires the harmonization of Ukrainian legislation and the adoption of certain EU regulations on telecommunications services. In this regard, no assurance can be given as to the exact nature of the intended changes, their potential implementation and possible impact on our business.

In Ukraine, competition in the markets within which we operate has been affected by the launch of 4G/LTE services. The competitive situation in Ukraine may be further affected by (i) the planned introduction of a mobile number portability service ("MNP"); (ii) the possible emergence of new and development of existing virtual mobile network operators in the market; (iii) the regulator's plans to reduce tariffs for international roaming; and (iv) interconnect fees for termination of international traffic.

In Belarus, our associate, MTS Belarus, faces increasing competition and aggressive pricing from Best CJSC, a subsidiary of System Capital Management and Turkcell Iletisim Hizmetleri A.S. ("Turkcell"), which operates in Belarus under the "life:)" brand. Additionally, in 2011, the government of Belarus announced its intention to hold a public tender to privatize a 51% stake in MTS Belarus with an opening price of approximately USD 1 billion. The public tender was scheduled to be held on December 23, 2011 but was cancelled due to a lack of bidders. The latest attempt to find an investor for the 51% stake in MTS Belarus took place in February 2014. However, it was unsuccessful for the same reason. A date for the next tender has not yet been specified. The terms of the share disposal have not yet been determined, although it may be conducted either through a public tender or by entering into a direct contract with a prospective purchaser. If we are unable to acquire this ownership interest at a commercially reasonable price, or if it is acquired by one of our competitors, it may impact our competitive position and results of operations in Belarus.

We also face competition in Armenia. On July 22, 2015, Orange announced its decision to leave the Armenian market and 100% of Orange Armenia's shares were sold to an Armenian internet service provider, Ucom. The transaction was approved by the Public Services Regulatory Commission of the Republic of Armenia on August 20, 2015.

We are subject to anti-corruption laws in the jurisdictions in which we operate, including anti-corruption laws of Russia and the US Foreign Corrupt Practices Act (the "FCPA"), and we may be subject to the UK Bribery Act 2010 (the "UK Bribery Act"). Our failure to comply therewith could result in penalties which could harm our reputation and have a material adverse effect on our business, financial condition and results of operations.

We are subject to the FCPA, which generally prohibits companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or keeping business and/or other benefits, along with various other anti-corruption laws. We may also be subject to the UK Bribery Act. The UK Bribery Act is broader in scope than the FCPA in that it directly addresses commercial bribery in addition to bribery of public officials and it does not recognize certain exceptions, notably facilitation payments that are permitted by the FCPA.

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We operate primarily in Russia and other countries of the former Soviet Union, many of which pose elevated risks of corruption violations. We and certain of our subsidiaries are in frequent contact with persons who may be considered "foreign public officials" under the FCPA and UK Bribery Act, and therefore, are subject to an increased risk of potential FCPA and UK Bribery Act violations. If we are not in compliance with the FCPA, the UK Bribery Act and other laws governing the conduct of business with government entities (including local laws), we may be subject to criminal and civil penalties and other remedial measures, which could have an adverse impact on our business, results of operations, financial condition and liquidity.

As disclosed in our public filings, in March 2014, we received requests for the provision of information from the United States Securities and Exchange Commission and the United States Department of Justice relating to an investigation of the Group's former subsidiary in Uzbekistan. See also Note 34 to our audited consolidated financial statements. In March 2019, the Group reached a resolution with the SEC and the United States Department of Justice ("**DOJ**") relating to the previously disclosed investigation of our former subsidiary in Uzbekistan.

We consented to the entry of an administrative cease-and-desist order (the "Order") by the SEC.

The United States District Court for the Southern District of New York approved a deferred prosecution agreement ("DPA") entered by the Group and a plea agreement entered into by our subsidiary in Uzbekistan. Under the agreements with the DOJ, we agreed to pay a total criminal penalty of USD 850 million (RUR 59.1 billion as of December 31, 2018) to the United States. We provided a provision of USD 850 million (RUB 55.8 billion as of the date of accrual), which was recognized as a part of discontinued operations in the consolidated statements of profit or loss for the year ended December 31, 2018.

See also "We have incurred and are continuing to incur costs and related management oversight obligations in connection with our obligations under the DPA and the SEC Order" and "Item 8. Financial Information A. Consolidated Statements and Other Financial Information 7. Litigation Uzbekistan."

We have incurred and are continuing to incur costs and related management oversight obligations in connection with our obligations under the DPA and the SEC Order.

We are subject to a DPA with the DOJ and the SEC Order. See "Item 8. Financial Information A. Consolidated Statements and Other Financial Information 7. Litigation Uzbekistan" and Notes 10 and 34 to our audited consolidated financial statements included elsewhere in this Annual Report on Form 20-F. In conjunction with the DPA and pursuant to the SEC Order, we are required to retain, at our own expense, an independent compliance monitor. The independent compliance monitor is in the process of being appointed. Pursuant to the DPA and the SEC Order, the monitorship will continue for a period of three years from the date of appointment and the term of the monitorship may be terminated early or extended depending on certain circumstances, as ultimately determined and approved by the DOJ and the SEC. The monitor will assess and monitor our compliance with the terms of the DPA and the SEC Order as well as review and evaluate the effectiveness of our policies, procedures, practices, internal accounting controls, record keeping and financial reporting as they relate to our current and ongoing compliance with the anti-bribery, books and records and internal accounting controls provisions of the FCPA and other applicable anti-corruption laws, and make recommendations reasonably designed to improve the effectiveness of our internal accounting controls and FCPA corporate compliance. See also "We are subject to anti-corruption laws in the jurisdictions in which we operate, including anti-corruption laws of Russia and the US Foreign Corrupt Practices Act (the "FCPA"), and we may be subject to the UK Bribery Act. Our failure to comply therewith could result in penalties which could harm our reputation and have a material adverse effect on our business, financial condition and results of operations."

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We have incurred significant costs in connection with the disposition of the matters covered in the DPA and SEC orders, including retention of legal counsel and other advisors and other costs related to the investigations undertaken in connection with these matters. We currently cannot estimate the additional costs that we are likely to incur in connection with compliance with the DPA and the SEC Order, including the ongoing obligations relating to the monitorship, our obligations to cooperate with the agencies regarding their investigations of other parties, and the costs of implementing the changes, if any, to our internal controls, policies and procedures required by the monitor. However, such costs could be significant. See also "We could be subject to criminal prosecution or civil sanction if we breach the DPA and the SEC Order, and we may face other potentially negative consequences relating to the investigations by, and agreements with, the DOJ and SEC and other authorities, including additional investigations and litigation."

We could be subject to criminal prosecution or civil sanction if we breach the DPA and the SEC Order, and we may face other potentially negative consequences relating to the investigations by, and agreements with, the DOJ and SEC and other authorities, including additional investigations and litigation.

Failure to comply with the terms of the DPA, whether such failure relates to alleged improper payments, internal controls failures, or other non-compliance, could result in criminal prosecution by the DOJ, including for the matters addressed in the DPA. Under such circumstance, the DOJ would be permitted to rely upon the admissions and the waiver of certain defenses we made in the DPA. Similarly, breach of the SEC Order could result in additional penalties against the Company.

Criminal prosecution by the DOJ as a result of a breach of the DPA or penalties imposed as a result of noncompliance with the SEC Order could subject us to penalties and other costs and could have a material adverse effect on our business, financial condition, results of operations, cash flows or prospects.

We may also face other potentially negative consequences relating to the investigations by, and agreements with, the DOJ, SEC, and other authorities. None of the DPA and the SEC Order prevents these or any other authorities from carrying out certain additional investigations with respect to the facts not covered in the agreements or in other jurisdictions, or prevents authorities in other jurisdictions from carrying out investigations related or unrelated to the matters which being investigated. Additionally, on March 19, 2019, a proposed class action complaint, captioned *Salim v. Mobile TeleSystems PJSC et al.*, case number 1:19-cv-01589, was filed in the United States District Court for the Eastern District of New York against us and certain of our managers. The complaint was filed by an individual securities holder on behalf of himself and all similarly situated securities holders and alleges violations of Sections 10(b) and 20(a) and Rule 10b-5 of the Exchange Act with respect to certain public disclosures made by us regarding our former business in Uzbekistan and investigations carried out by the SEC and DOJ related thereto. The complaint further alleged that such disclosure omissions led to a decline in the market value of our securities resulting in losses and damages to the plaintiff and other securities holders. The plaintiff seeks damages in an unspecified amount, prejudgment and post-judgment interest and attorneys' fees, expert fees and other costs and other and further relief.

Any collateral investigations, litigation or other government or third party actions resulting from these, or other, matters could have a material adverse effect on our business, financial condition, results of operations, cash flows or prospects. In addition, any ongoing media and governmental interest in the investigations, the agreements and claims could impact the perception of us and result in reputational harm.

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## The controlling shareholder has a possibility to determine certain decisions of our governing bodies.

Sistema, which is a public company, owns a controlling stake in MTS. According to the applicable Russian legislation, Sistema has a possibility to exercise its controlling rights, which may become decisive during consideration of a number of issues by our General Meeting of Shareholders, including, but not limited to (i) making decisions on the issues, requiring simple majority of votes our shareholders participating at the General Meeting, for example, in case of making decisions on dividends payment or approval of the our annual reports; (ii) appointment of the majority or dismissal of all members of our Board of Directors members and other matters. Thus, Sistema can take actions that may conflict with the interests of other security holders. Furthermore, our international, credit, investment and other ratings, which determine, *inter alia*, peculiarities of our operations, terms of raising debt financing and our other activity can be affected by our controlling shareholder's activity and (or) its ratings. See also "Risks Relating to our Financial Condition A change in control could have a material adverse effect on our financial condition and results of operations."

Controlling shareholder as well as other our shareholders has a right to receive dividends at the amount proportionate to the number of our shares belonging to a respective shareholder. For information about dividends see "Item 5" Operating and Financial Review and Prospects B. Liquidity and Capital Resources Capital Requirements." The indentures relating to our outstanding notes and other debt do not restrict our ability to pay dividends. As a result of paying dividends, our reliance on external sources of financing may increase, our credit rating may decrease, and our cash flow and ability to repay our debt obligations, or make capital expenditure, investments and acquisitions could be materially adversely affected.

Failure to effectively implement our geographic expansion strategy as well as difficulties with operational management of the acquired businesses could hamper our continued growth and profitability.

Our continued growth depends, in part, on our ability to identify attractive opportunities in markets that will grow and on our ability to manage the operations of acquired or newly established businesses. Our acquisitions may occur in countries that represent new operating environments for us and, in many instances, may be located a great distance from our corporate headquarters in Russia. We therefore may have less control over their activities. We may also face uncertainties with respect to the operational and financial needs of those businesses and may, in the course of our acquisitions, incur additional debt to finance the acquisitions and/or take on substantial existing debt of the acquired companies. In addition, it is possible that the countries into which we may expand will be emerging markets and, as with countries of our current presence, subject to greater political, economic, social and legal risks than more developed markets.

For example, see "Legal Risks and Uncertainties The inability of MTS-Turkmenistan to sustain its operations in Turkmenistan on commercially acceptable terms or at all may adversely affect our business, financial condition and results of operations" and "The inability of our subsidiaries in the countries in which we are present to maintain control over their operations and assets may adversely affect our business, financial condition and results of operations." Our failure to identify attractive opportunities for expansion into new markets and to manage the operations of acquired or newly established businesses in these markets could hamper our continued growth and profitability, and have a material adverse effect on our financial condition, results of operations and prospects.

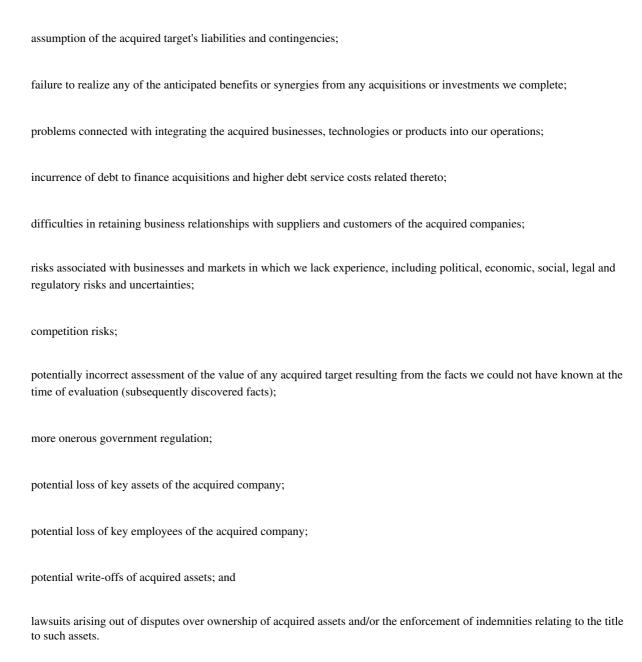
#### Acquisitions and mergers may pose significant risks to our business.

We have expanded our business through a number of acquisitions. We will continue to evaluate opportunities to acquire, invest in or merge with other existing operators or license holders in the CIS and in growing markets outside the CIS, as well as other complementary businesses. In 2015, our acquisition focus covered regional mobile operators, as well as one of the largest system integrators and

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complex IT solutions providers in Russia, NVG JSC ("NVision Group"). In 2016, we acquired 100% of shares in SMARTS Yoshkar-Ola JSC ("Smarts-Yoshkar-Ola") and participated in MTS Bank's additional share issuance. In 2017 and 2018, our acquisitions focused on various segments, including communication and software development companies, providers of cloud services, as well as management investment and other non-telecom companies.

These and other business combinations entail a number of risks that could materially and adversely affect our business, financial condition, results of operations and prospects, including the following:



See also "Legal Risks and Uncertainties The inability of our subsidiaries in the countries in which we are present to maintain control over their operations and assets may adversely affect our business, financial condition and results of operations" and "Risks Relating to our Financial Condition We may be adversely affected by the current economic environment."

In addition, companies that we acquire may not have internal policies, including accounting policies and internal control procedures that are compatible, compliant or easily integrated with ours.

If any of our future business combinations is structured as a merger with another company, or we merge with or absorb a company subsequent to its acquisition by us, such a merger would be considered a corporate reorganization under Russian law. This would entitle our creditors to file a claim seeking to accelerate their claims or terminate the respective obligations and seek damages. The creditors would need to prove in court that we will not perform our obligations in due course and the amount of damages suffered. Secured creditors would also be required to prove that the security provided by our shareholders, any third parties or us is not sufficient to secure our obligations. Creditors whose claims are secured by pledges do not have the right to claim additional security.

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As of December 31, 2017, we held a 26.61% stake in MTS Bank. In 2018, we acquired a 28.63% stake in MTS Bank from Sistema for RUB 8.27 billion, thus increasing our effective ownership in MTS Bank to 55.4%. In February 2019, we acquired a 39.48% stake in MTS Bank for RUB 11.4 billion, as a result of which our effective ownership in MTS Bank reached 94.97%. The increase of our share in MTS Bank is in line with our strategy to diversify the business, achieve synergies and develop innovative financial services.

In September 2016, we entered into a purchase agreement to acquire 100% of shares in Smarts-Yoshkar-Ola for RUB 13 million.

On July 27, 2017, we acquired 100% of the shares of Bashkortostan Cellular Communication OJSC in order to gain access to the frequency resource in the range of 2100 MHz in the territory of the Republic of Bashkortostan. On September 29, 2017, we acquired 30% in the share capital of Sistema-Capital Management Company LLC, one of the largest management companies in Russia in terms of collective investment volume. In October 2017, we acquired a 50.82% stake in Oblachny Retail LLC (operating under LiteBox trademark), a Russian retail software developer. In December 2017, we entered the gaming market through the acquisition of Praliss Enterprises, which manages the Gambit Esports team.

In September 2018, we acquired 100% in the share capital of Avantage LLC for RUB 8.9 billion (including net debt) from a group of private investors. Avantage LLC owns the Avantage data processing center project in Lytkarino, Moscow region, one of the largest data centers in Russia by number of racks.

In September 2018, we acquired a 13.7% stake in Youdo Web Technologies Limited (Cyprus), the owner of YouDo, one of the largest Russian online service providers matching freelance labor demand and supply for everyday and business tasks for USD 12 million.

In December 2018, we acquired 100% in the share capital of IT-Grad 1 Cloud LLC, one of the largest cloud providers on the Russian Infrastructure-as-a-Service market. The company, which holds all IT-Grad group's cloud assets, was bought through our Dutch subsidiary Vostok Mobile B.V. from a group of private investors for a total of RUB 2,491 million, including net debt.

These acquisitions have allowed us to diversify our business. However, additional risks relating to acquired companies' liabilities and non-achievement of initial financial and operational targets may arise in connection with these acquisitions. See also Note 5 to our audited consolidated financial statements.

We may also be involved in various litigation to protect our title or other rights related to acquired businesses and incur loss.

In addition, a merger or any corporate reorganization or business combination that constitutes a "major transaction" under Russian law would trigger the right of our shareholders who abstain from voting on or vote against such reorganization or transaction to sell, and our obligation to buy, their shares in an amount representing up to 10% of our net assets as calculated under Russian Accounting Standards. See "Legal Risks and Uncertainties Shareholder rights provisions under Russian law could impose additional obligations and costs on us, which could have a material adverse effect on our business, financial condition, results of operations and prospects."

If we cannot successfully develop our network or integrate the acquired companies, we will be unable to expand our subscriber base and maintain our profitability.

Our ability to increase our subscriber base depends upon the success of our network expansion.

We have expended considerable amounts of resources to enable both organic expansion and expansion through acquisitions, and we plan to continue to do so. Limited information regarding the

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markets into which we have or are considering expanding, through either acquisitions or new licenses, complicates accurate forecasts of future revenues from those regions, increasing the risk that we may overestimate these revenues. In addition, we may not be able to integrate previous or future acquisitions successfully or operate them profitably. Any difficulties encountered in the transition and integration process and in the operation of acquired companies could have a material adverse effect on our results of operations.

The build-out of our network is also subject to risks and uncertainties, which could delay the introduction of services in some areas and increase the cost of network construction, including difficulties in obtaining base station sites on commercially attractive terms. Further, telecommunications equipment used in Russia, Ukraine and other CIS countries is subject to governmental certification and periodic renewals of the same. We are also required to obtain permits and governmental certification for the operation of telecommunications equipment and/or permission for the import and export of certain network equipment, which can result in procurement delays and slower network development. The failure of any equipment we use to receive timely certification or re-certification, as applicable, could hinder our expansion plans. See also "Risks Relating to our Financial Condition If we are unable to obtain adequate capital, we may have to limit our operations substantially, which could have a material adverse effect on our business, financial condition, results of operations and prospects."

For example, the import and export of products containing cryptographic hardware is subject to special documentation requirements and approvals. As telecommunications networks comprise various components with cryptographic hardware, we must comply with these requirements in order to import such components. Moreover, where imported equipment does not contain cryptographic hardware, the federal customs service requires manufacturers to provide written confirmation regarding the absence of such hardware. The range of goods requiring the provision of such "certificates of conformance" by suppliers and manufactures prior to their import into Russia has also been expanded to cover most of our key network components, and imported radioelectronic equipment is required to be licensed by the Russian Ministry of Industry and Trade. Similar requirements regarding the import of hardware exist in Ukraine.

Our inability to develop additional sources of revenue and competitive services could have a material adverse effect on our business, financial condition, results of operations and prospects.

Until recently, customer growth has been our principal source of revenue growth. Currently, however, increasing competition, market saturation and technological development lead to the increased importance of data services in the markets in which we operate. As a result, data services became the key driver of our revenue growth and we will therefore need to continue to develop new competitive services, including value-added, 3G, LTE, and others, and to consider vertical integration opportunities through the development or acquisition of dealers in order to provide us with sources of revenue in addition to standard voice services. Our inability to develop additional sources of revenue could have a material adverse effect on our business, financial condition, results of operations and prospects.

## The failure to launch and develop distribution network in Ukraine could have a material adverse effect on our business.

VF Ukraine is in the process of developing a distribution network in Ukraine. The retail business of telecommunications operators is sensitive to changes in the economic environment, state regulation and economic policies and can be affected by the national currency exchange rate volatility. An economic downturn or an increased national currency exchange rate volatility may significantly increase price competition and thereby hinder our subscriber growth rate, which could lead to loss of revenues and retail margin. The inability to develop and sustain a distribution network in Ukraine, could have a material adverse effect on our business, financial condition, results of operations and prospects.

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## Changes in the governmental regulation of SMP operators in Ukraine could adversely affect our results of operations.

The interconnect fees charged by us and our competitors for terminating calls connecting to any of our respective networks are subject to regulation by the National Commission for the State Regulation of Communications and Informatization (the "NCCIR"). See "Item 4 Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Regulation in Ukraine Interconnect Arrangements and Telephone Numbering Capacity" for additional information.

A qualification as an SMP has been assessed with reference to the market as defined by the NCCIR According to the Telecommunications Law, an operator qualifies as an SMP in a particular market if its share of gross revenue from the provision of services during the last 12 months exceeded 25% of the total gross revenue of all telecommunications operators for the same services during the same period. The legislation separates fixed and mobile telecommunications networks and the regulation of those networks by the NCCIR. The NCCIR has a right to set different rates for different types of networks. Accordingly, rates for traffic termination on fixed-line networks might be higher than on the network of VF Ukraine. Different rates could lead to a decrease in our revenue share in Ukraine and an increase in costs.

In the fourth quarter of 2016, a new draft law "On Electronic Communications" was registered in the Verkhovna Rada of Ukraine. The draft law provides for, *inter alia*, introduction of a "virtual operator" concept, tougher regulation of SMP operators, submission of tariffs in certain electronic communications services markets for approval by the national regulator, mandatory registration of subscribers by providers of electronic communications services (this implies provision of individuals' personal data to communication services providers in case contracts are concluded in other than written form), mutual use of operators' infrastructure, as well as financing of radio frequency monitoring within radio frequency ranges set for public use to be paid for out of the state budget. The draft law is still under consideration. Some of the initiatives mentioned above have been also included in the draft law of Ukraine "On State Administration and Regulation in the Sphere of Electronic Communications." In addition, a draft resolution related to the segregation of powers between the NCCIR and the central executive communications authority was registered. The draft law "On Electronic Communications" introduced a power for the central executive communications authority to control and freely access networks and regulations relating to networks operation terms during wartime and/or emergencies. If this law or any other law containing similar provisions is adopted and comes into force, this may influence our revenues and could have an adverse effect on our business, financial condition and results of operations.

The majority of international mobile operators have recently increased fees for interconnecting to their networks for VF Ukraine. A further raise of interconnect fees is likely to result in an increase in costs. In addition, interconnect fees for SMP operators for rendering international roaming may become subject to further governmental regulation.

To comply with the Presidential Decree No. 146/2017 "On Measures Aimed at Introduction of a Visa-free Regime with the European Union," the NCCIR approved an action plan for abolishing roaming charges on the territory of the European Union. According to this plan, tariffs reduction is planned in 2019 and 2020 for the countries specified in this plan.

In September 2017, the European Parliament preliminary approved a possibility of abolition of roaming charges between the European Union and the members of the Eastern Partnership. A decrease in such tariffs may have an adverse effect on our revenue from international roaming charges.

Additionally, in February 2019, a new procedure for the telecommunications market analysis and identification of SMP operators entered into force, which had been previously developed by the

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NCCIR. It describes a procedure for analysing markets to identify SMP companies and implementing by the NCCIR the preliminary regulation of these companies in accordance with the Association Agreement signed by Ukraine and the European Union. In accordance with the Association Agreement, it is planned to, *inter alia*, increase a number of telecommunications markets (to up to 17) where the NCCIR will be responsible for regulating the activities of SMP operators. The procedure might lead to an increased level of regulation of SMP operators and the reconsideration of current procedure for identifying SMP operators in markets of traffic transfer and traffic termination services.

The adoption of new procedures, an increased regulation of international tariffs for subscribers and fees for traffic transfer, in addition to an increase in international interconnect fees by the members of the European Union may negatively affect revenues of VF Ukraine.

See also "Legal Risks and Uncertainties Changes in Ukrainian telecommunications legislation have caused uncertainty in relation to the regulation of the Ukrainian telecommunications industry and may adversely affect our business, financial condition and results of operations."

If we cannot interconnect cost-effectively with other telecommunications operators, we may be unable to provide services at competitive prices, which may diminish our market share and result in a loss of revenues and margins.

Our ability to provide commercially viable services depends on our ability to continue to interconnect cost-effectively with zonal, intercity and international fixed-line and mobile operators in Russia, Ukraine and other countries in which we operate. Interconnect fees are established by agreements with network operators and vary depending on the network used, the nature of the call and the call destination. In Ukraine, the connection fees for the SMP operators' networks and interconnect fees for the termination of traffic on such networks are established and regulated by the NCCIR.

Since October 1, 2015, the NCCIR has several times substantially lowered interconnect fees for the termination of traffic on SMP operators' networks. According to the latest decision of the NCCIR dated October 9, 2018, the new lowered rates for termination of traffic on the networks of SMP operators at national level became effective on January 1, 2019. In case fees for the termination of traffic on the networks of SMP operators (including at international level) are further reduced in the future, it may adversely affect VF Ukraine's revenues.

Although Russian legislation requires that operators of public switched telephone networks that are deemed to be "substantial position operators" cannot refuse to provide interconnect services or discriminate against one operator over another, we believe that, in practice, some operators attempt to impede wireless operators by delaying interconnect applications and establishing technical conditions for interconnecting that can be met only by certain operators.

Any difficulties or delays in interconnecting cost-effectively with other networks could hinder our ability to provide services at competitive prices, or at all, causing us to lose our market share and revenues, which would have a material adverse effect on our business and results of operations. See also " If we or any of our mobile network operator subsidiaries operating in Russia are identified as an operator occupying a "substantial position," the regulator may reduce our interconnect tariffs which, in turn, may have a material adverse effect on our financial condition and results of operations."

In addition, as part of the restructuring of Svyazinvest, a fourth national mobile operator in Russia was established by the combination of "Tele2 Russia" and the mobile assets of Rostelecom in 2014, which started its operations in 2015 under the "Tele2" brand. As Svyazinvest controlled regional fixed-line operators in all regions of Russia (other than Moscow), a mobile operator established as part of the Svyazinvest group (mobile assets were consolidated into LLC "T2 RTK Holding") may receive preferential terms for interconnecting with these operators, which would allow it greater flexibility in

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setting tariffs and could put us at a competitive disadvantage. See also "We face increasing competition in the markets where we operate, which may result in reduced operating margins and loss of market share, as well as different pricing, service or marketing policies."

We may not realize the benefits we expect to receive from our investments in 3G and 4G wireless services and Internet of Things (IoT) technologies, which could have a material adverse effect on our business and results of operations.

In May 2007, the Federal Service for Supervision in the Area of Communications and Mass Media awarded MegaFon, VimpelCom and us a license to provide 3G services in the Russian Federation. In July 2012, these three companies and Rostelecom were awarded licenses to provide 4G services.

Following the integration of Rostelecom's mobile assets and Tele2 Russia in 2014, Tele2 Russia got control over licenses to provide 3G and 4G services. The 3G license allows us to provide mobile radiotelephone services using the International Mobile Telecommunications-2000 ("IMT-2000/UMTS") standard. The 4G license allows us to provide services using the LTE standard. The 4G wireless services provide faster, higher quality data transfer and streaming capabilities, as compared to 2G and 3G, and may pose additional competition for 3G providers. In December 2017, the State Commission for Radio Frequencies issued a decision allowing the use of frequency bands previously allocated for LTE mobile communications for NB-IoT technology. Historically, mobile operators that developed 3G and 4G networks experienced various difficulties and challenges, including a limited supply of compatible handsets, limited international roaming capabilities, as well as various 3G and 4G software and network related problems. We may experience similar problems or encounter new difficulties when developing our 3G and 4G networks (including NB-IoT) and may be unable to fully resolve them. For example, we cannot be certain that:

we will be able to build-out our 4G and NB-IoT network in a timely manner or within the time frame stipulated by the license terms;

our 3G and 4G networks and services (including NB-IoT) will deliver the quality and level of service that our customers demand or expect;

we will be able to provide all contemplated 3G and 4G services (including NB-IoT) at reasonable prices and within a reasonable timeframe:

manufacturers and content providers will develop and offer new marketable products and services for our 3G and 4G networks (including NB-IoT) on a timely basis;

demand for our 4G services (including NB-IoT) will not be lower than expected;

our 3G and 4G networks will be commercially viable in all of the locations we are required to operate pursuant to our 3G and 4G licenses;

our competitors will not offer similar services at lower prices; and

changes in governmental policies, rules, regulations or practices will not affect our network rollout or our business operations.

See also " If we cannot successfully develop our network or integrate the acquired companies, we will be unable to expand our subscriber base and maintain our profitability."

In addition, Russian military authorities also use frequencies in the 3G and 4G spectrum, which may limit the availability of 3G and 4G frequencies for commercial use in certain areas. During the construction of our 3G and 4G networks, there is also a risk that the frequencies assigned to us for commercial use may overlap with those used by the Russian military authorities. For example, conflicts over the availability of frequency reserved for military use in Moscow caused delay in the commercial launch of 3G services by all 3G license-holders in Moscow,

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frequencies were cleared for commercial use in 2009. If a similar conflict were to occur, it could cause problems or delays in the development and operation of our 3G and 4G networks in Russia.

Potential competition from other 3G and 4G providers, together with any problems relating to the rollout of our 3G and 4G networks and provision of 3G and 4G services in the future, could materially adversely affect our business, financial condition and results of operations.

In December 2013, July 2014 and in July 2017, the State Commission for Radio Frequencies introduced several modifications to the conditions of using the frequency band for mobile radio communication networks. These changes resulted in the implementation of the principle of technological neutrality for frequency bands 900 MHz (UMTS and LTE), 1800 MHz (LTE) and 2100 MHz (LTE), and included the imposition of certain additional obligations on network operators. Pursuant to these modifications, in case of using frequencies on the terms of technological neutrality principle, we are, *inter alia*, obliged to provide network coverage to settlements with lower subscriber numbers, where the commercial rationale for doing so may otherwise be limited. Such changes lead to additional costs for the construction of our 3G and 4G wireless networks and may therefore adversely affect our business, financial condition and results of operations.

If we are unable to successfully develop and/or deploy 4G wireless services in the countries in which we operate, or if any operators in those markets obtain a significant technological and/or commercial advantage over us in 4G wireless services, it may have a material adverse effect on our business and results of operations in the long term.

The next step in the development of telecommunications in the countries where we operate is the evolution of 4G/LTE mobile telecommunication technology. The cost of 4G/LTE network deployment and quality of services (including data speed and quality of radio coverage) depends on the band and the width of frequency range given to an operator.

In September 2011, the Russian government announced its intention to auction frequencies for LTE use on a national level in 2012. Additionally, outside of the auction process, the State Commission for Radio Frequencies granted Scartel (operating the "Yota" retail brand) a paired range of LTE frequencies (2x30 MHz) in the 2.5-2.7 GHz band for use in the entire territory of Russia in exchange for the 4G frequencies held by Scartel for Wi-Max technology with a total bandwidth of 70MHz. Four sets of frequencies in the 791-862 MHz band were planned to be sold during the auction in 2012, after which the successful bidders would receive frequencies in the 2.5-2.7 GHz band. The remaining frequencies, 40 MHz of the 2.5-2.7 GHz band, were allocated evenly during the auction among four major market participants (VimpelCom, MegaFon, Rostelecom and us).

Initially, it was planned that all operators would receive equal access to the Scartel infrastructure, which would allow each operator to reduce its 4G/LTE network development costs. In March 2011, MTS, MegaFon, VimpelCom and Rostelecom signed a non-binding memorandum of understanding with Scartel, according to which MTS, MegaFon, VimpelCom and Rostelecom were to receive access to Scartel's 4G network infrastructure (which was yet to be built) and were to receive options to purchase shares in Scartel in 2014 at a price determined by an independent appraisal. MTS considered the preliminary value assessment of Scartel to be unduly high.

In July 2012, Alisher Usmanov and Scartel shareholders (Telconet Capital and Rostechnologyi) formed a telecommunications holding company, Garsdale. In exchange for an 82% stake in Garsdale, AF Telecom, which is controlled by Alisher Usmanov, contributed 50% of MegaFon's shares into Garsdale's share capital. Rostechnologyi and Telconet Capital, which held 25.1% and 74.9% stakes in Scartel, respectively, contributed 100% of Scartel shares into Garsdale's share capital, in return for which they received an 18% stake in Garsdale, which was split equally between Rostechnologyi and Telconet Capital. On July 12, 2012, the Federal Service for Supervision of Communications, Information Technology and Mass Media (the "Roskomnadzor") awarded each of MTS, MegaFon,

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VimpelCom and Rostelecom a license to provide 4G services using LTE and its subsequent modifications in the frequency range of 791-862 MHz.

On October 1, 2013, MegaFon acquired Maxiten Co Limited, which had acquired 100% of shares in Scartel and Yota Ltd. from Garsdale. The transaction was approved by a general shareholders' meeting of MegaFon and by the Federal Antimonopoly Service (the "FAS"). At present, MegaFon holds a 4G/LTE network through Scartel as well as controlling the continuous spectrum of frequencies 2-40 MHz in the band of LTE FDD 2600 MHz. As a result of this transaction, MegaFon obtained a competitive advantage in terms of LTE network development costs and may also obtain an advantage in LTE network performance. In addition, as a result of this deal, MegaFon consolidated the financial and operational indicators of Scartel/Yota, which increased its formal market share in the mobile communications market.

Two tenders for 4G/LTE licenses were held in Ukraine in 2018 (for frequencies in 2600 MHz and 1800 MHz frequency bands). According to the Plan for the Use of Radio Frequency Resource of Ukraine, the commercial use of the 1800 MHz band has been allowed since July 1, 2018. In January 2019, the NCCIR announced the successful implementation of the first part of the license terms by all three licensees (Kyivstar PrJCS, VF Ukraine, Lifecell LLC), which implied the provision of network coverage to 90% of population in regional centers of Ukraine within 12 months since obtaining the licenses.

At the same time, the implementation of the "Eliminating digital inequality" program aimed at increasing the penetration of internet access in small settlements is among key priorities for the NCCIR. The regulator announced the initiative regarding refarming the 900 MHz spectrum band under the aforementioned program, with the subsequent issuance of 4G licenses in this frequency band.

According to the regulator, the cost of licenses in the 900 MHz band will depend on the willingness of operators to undertake obligations with respect to a wide coverage of settlements. Thus, significant investments may be required from operators to further develop communication networks in small settlements. In addition, the current distribution of the 900 MHz spectrum among operators can create a market advantage in the implementation of the fourth generation of mobile communications for those market participants who obtain a wider bandwidth.

Significant material resources for the introduction of such technologies may be required, which could have a material adverse effect on our business and results of operations. Furthermore, the limited number of available frequencies may prevent us from realizing the full benefits we expect to receive from the development of a 4G network, because our network capacity would be constrained and our ability to expand limited. Moreover, if we cannot develop a commercially viable 4G network, and one of our competitors does, that competitor would have an advantage over us, which in turn may have a material adverse effect on our business.

Service disruptions on our networks could lead to a loss of subscribers, damage to our reputation, violations of the terms of our licenses and subscriber contracts and penalties.

We are able to deliver services only to the extent that our information communication infrastructure and data processed therein is protected from unlawful actions, including hacker and targeted attacks, technical malfunctions, power failures and natural disasters. Any system failure, accident or security breach that causes interruptions in our operations could impair our ability to provide services to our customers and materially adversely affect our reputation, business and results of operations.

In addition, to the extent that any disruption or security breach results in a loss of or damage to customers' personal data or applications, or inappropriate disclosure of confidential information, we

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may incur liability as a result, including costs to remedy the damage caused by these disruptions or security breaches.

While we maintain back-up systems for our telecommunications equipment, network management, operations and maintenance systems, these systems may not ensure recovery in the event of a network failure. In particular, in the event of extensive software and/or hardware failures, significant disruptions to our systems could occur, leading to our inability to provide services. The quality of our services in roaming (including roaming between networks) also depends, *inter alia*, on the network quality of our roaming partners which is out of our control. Disruptions in our provision of services could lead to a loss of subscribers, damage to our reputation, violations of the terms of our licenses and subscriber contracts and penalties.

Our computer and communications hardware is protected through technical and software safeguards. However, it is still vulnerable to fire, storm, flood, loss of power, telecommunications failures, interconnect failures, physical or software break-ins, viruses and similar events. Although our computer and communications hardware is insured against fire, storm and flood, we do not have business interruption insurance to protect us in the event of a catastrophe, even though such an event could have a material adverse effect on our business.

Failure to fulfill the terms of our licenses could result in their suspension or termination, which could have a material adverse effect on our business and results of operations.

Each of our mobile licenses requires service to be offered by a specific date and some contain further requirements as to territorial coverage to be reached by specified dates.

In addition, all of our mobile licenses require us to comply with various telecommunications regulations relating to the use of radio frequencies and numbering capacity allocated to us, network construction, interconnect rules and technical requirements relating to compliance with law enforcement authorities' requests, among others. If we fail to comply with the requirements of Russian, Ukrainian or other applicable legislation or meet any terms of our licenses, our licenses and other authorizations necessary for our operations may be suspended or terminated, which could significantly limit our operations. In addition to the impact on our operations, the suspension or loss of certain licenses could also constitute an event of default under certain of our debt obligations and cause certain of our debt to be accelerated. A suspension or termination of our licenses or other necessary governmental authorizations could therefore have a material adverse effect on our business and results of operations.

For example, in February 2015, MTS Ukraine won the bid for the use of the 1950-1965/2140-2155 MHz frequency bands in a tender allocating 3G licenses. On March 24, 2015, MTS Ukraine paid the full amount and received the UMTS license that is valid for a period of 15 years. According to the tender terms, all regional centers of Ukraine were covered with 3G communication (within the bands granted to the successful bidder) within 18 months from the date of the license issuance, all settlements with a population of over 10,000 have to be covered with 3G communication within the period of six years.

Our inability to comply with the license conditions may negatively affect our business. Additional investment may also be required for the conversion of radio frequencies and the deployment of 3G services. Either of the foregoing may have a material adverse effect on our business, financial condition, results of operations and prospects.

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Failure to renew our licenses, or receive renewed or new licenses with similar terms to our existing licenses, could have a material adverse effect on our business and results of operations.

Our telecommunications licenses have their expiration dates in various years. For a list of the telecommunications licenses held by us, see "Item 4. Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Licenses."

These licenses may be renewed upon application to the relevant governmental authorities. Government officials in Russia and the other countries in which we operate consider the compliance with license requirements and the conditions of using the allocated frequency range when deciding whether to renew a license.

Additionally, new mandatory conditions, which relate to the need for further development of the communication network in order to provide licensed communication services for potential users of the communication service in sparsely populated residential areas, may be introduced when deciding whether to renew a license. These new conditions will require additional investment. Moreover, we may be subject to penalties or our licenses may be suspended or terminated for non-compliance with any such new license requirements. The suspension or loss of certain licenses could significantly limit our operations and cause certain of our debt to be accelerated.

For example, in 2013 NCCIR refused to renew MTS Ukraine license to construct and maintain telecommunication networks that had been granted in 2010. As a result, MTS Ukraine and NCCIR were involved in litigation. In 2015 MTS Ukraine received an equivalent license for the term of 15 years, however it was technologically neutral. Furthermore, NCCIR cancelled the foregoing license of VF Ukraine that had been granted in 2010 in the view of the change of the legal entity name from MTS Ukraine to VF Ukraine. This decision had no material impact on the operational activities of VF Ukraine since the company used its main telecommunication license granted in 2015. Receiving a new license involves additional costs in comparison with the renewal of the current one. Failure to renew our telecommunications licenses, or receive renewed or new licenses with similar terms to existing licenses, could significantly limit our operations, which could have a material adverse effect on our business, financial condition and results of operations.

With effect from January 1, 2018, the licensing of certain activities in the telecommunications sector has been canceled in accordance with the Law of Ukraine "On Licensing of Certain Types of Economic Activity." The NCCIR has to prepare the relevant amendments to the Law of Ukraine "On Telecommunications" and the licensing of telecommunication activities must be terminated after adoption of those amendments. However, to date, the NCCIR continues to exercise powers of the licensing body in telecommunications sphere referring to requirements of the Law of Ukraine "On Telecommunications."

Until March 2014, telecommunications operators carried out activities and received licenses in Crimea in compliance with Ukrainian legislation. However, following the referendum in Crimea on March 16, 2014 where a vote in favor of Crimea joining the Russian Federation was declared and the subsequent developments in the region, certain countries recognized Crimean secession whereas others did not, which means that our licensing status in Crimea and ability to receive continuous cash flow has been uncertain. In addition, due to technical issues that have curtailed our ability to provide telecommunications services to our customers, we suspended our operations in Crimea on August 6, 2014. In October 2014, MTS Ukraine sold its base stations, network infrastructure, IT and telecom equipment and certain other assets located in Crimea through an open tender procedure.

See also "Political and Social Risks Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations" and "A deterioration in relations between Russia and other former Soviet republics as well as other politically related disagreements and allegations between Russia and other countries and

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sanctions imposed as a result thereof, could materially adversely affect our business, financial condition, results of operations, prospects and the value of our shares and ADSs."

If frequencies currently assigned to us are revoked, or if we fail to obtain renewals of our frequency allocations, our network capacity will be constrained and our ability to expand limited, resulting in a loss of market share and revenues.

There is a limited radio frequency spectrum available for wireless operators in each of the regions in which we operate or hold licenses to operate. We are dependent on access to adequate spectrum allocation in each market in which we operate in order to maintain and expand our subscriber base. If frequencies are not allocated to us in the future in the required quantities, with the geographic span and for time periods that would allow us to provide wireless services on a commercially feasible basis throughout all of our license areas, our business, financial condition, results of operations and prospects may be materially adversely affected.

According to the decision of the State Commission for Radio Frequencies No. 13-22-01 dated December 11, 2013, the terms of radio frequency bands usage by radio electronic facilities for mobile communication were supplemented with a requirement to provide the settlements of over 1,000 people with communication services within seven years (depending on the used frequency range and radio technology). If we are not able to fulfill these requirements, our authorizations for the use of radio frequency spectrum might be either terminated or not prolonged in extrajudicial procedure.

A loss of allocated spectrum, which is not replaced by other adequate allocations, could also have a substantial adverse impact on our network capacity. In addition, frequency allocations are often issued for periods that are shorter than the terms of the licenses, and such allocations may not be renewed in a timely manner, or at all. If our frequencies are revoked, or if we are unable to renew our frequency allocations, our network capacity would be constrained and our ability to expand limited, resulting in a loss of market share and revenues.

#### An increase in the fees for frequency spectrum usage could have a negative effect on our financial results.

The Russian and the CIS legislation requires us to make payments for frequency spectrum usage. A number of projects implemented by MTS in 2016 - 2018, as well as a number of normative acts previously adopted by the Ministry of Communications, resulted in expansion of the range of frequencies that have to be paid for.

The fees for frequency spectrum usage are calculated based on the total frequency band allocated to each operator in each region with such frequency spectrum usage determined with reference to the decision of the State Commission for Radio Frequencies, frequency allocation decisions or to the license conditions.

Fees are directly calculated according to the "Methodology of calculation of a single fee and annual fee for the use of the radio spectrum of the Russian Federation" approved by the order of the Ministry of Communications dated June 30, 2011 No. 164. The rates and coefficients of the aforementioned Methodology are subject to revision at least once every two years.

For example, in December 2017 the State Duma approved the Law on federal budget for 2018 and the planned period of 2019 and 2020, which resulted in the increase in rent payments for the radio spectrum usage both in the third quarter of 2018 and in the fourth quarter of 2018. In 2019 the rates turned back to the level of the beginning of 2018. Any increase in payments for the radio spectrum will likely increase our costs and may adversely affect our results of operations.

With effect from January 1, 2015, the fee for radio spectrum usage in Ukraine was transformed into a rent payment. When adopting a state budget for 2016, the Verkhovna Rada introduced a number

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of amendments to the Tax Code of Ukraine, including the increase in rent payment for radio spectrum usage by 13.35% commencing January 1, 2016

The amount of rent payments in 2017 increased insignificantly as compared to the previous years.

In 2018, a draft law providing for revision of rent payments in line with the consumer price index starting from January 1, 2019, was registered with the Verkhovna Rada of Ukraine. However it was rejected and rent payments remained unchanged.

Any significant increase in the fees payable for the frequency channels that we use or additional frequency channels that we need in Russia or the CIS could have a negative effect on our financial results.

If we are unable to maintain our favorable brand image, we may be unable to attract new subscribers and retain existing subscribers, which may lead to a loss of market share and revenues.

Developing and maintaining awareness of our brands is critical to informing and educating the public about our current and future services and is an important element in attracting new subscribers.

We believe that the importance of brand recognition is increasing as our markets become more competitive. Successful promotion of our brands will depend largely on the effectiveness of our marketing efforts and on our ability to provide reliable and useful products and services at competitive prices. Brand promotion activities may not yield increased operating revenues and, even if they do, such operating revenues may not offset the operating expenses we incur in building our brands.

Furthermore, our ability to attract new subscribers and retain existing subscribers depends, in part, on our ability to maintain what we believe to be our favorable brand image. Negative publicity or rumors regarding our company, our shareholders and affiliates or our services could negatively affect our brand image, which could lead to a loss of market share and revenues. Failure to successfully and efficiently promote and maintain our brands may limit our ability to attract new subscribers and retain our existing subscribers and materially adversely affect our business and results of operations.

#### MTS Bank's business entails regulatory and operational risks.

MTS Bank's operations are subject to regulation by various government and banking authorities in connection with obtaining and renewing various licenses and permits, as well as with ongoing compliance with existing laws and regulations and with the terms and conditions of MTS Bank's licenses and permits. MTS Bank has the required license in connection with its banking activities issued by the CBR.

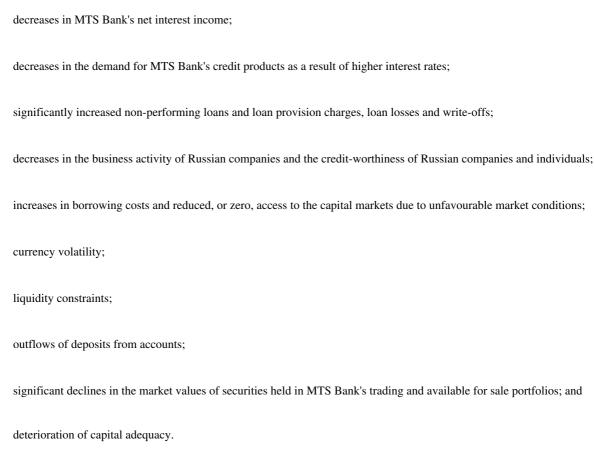
Requirements imposed by regulators, including capital adequacy requirements, which are designed to ensure the integrity of the financial markets and to protect customers and other third parties with whom MTS Bank deals, may limit MTS Bank's activities, including its lending, and may increase MTS Bank's costs of doing business, or require MTS Bank to seek additional capital in order to maintain CBR capital adequacy requirements or different varieties of funding to satisfy the CBR's liquidity requirements. The CBR may also amend the capital adequacy requirements and increase the capital adequacy ratios applicable to Russian banks at any time and, in such circumstances, MTS Bank may be forced to seek additional capital or alternative sources of financing to comply with these requirements. Such additional capital or alternative sources of financing may not be available or may only be available on commercially unacceptable terms.

If MTS Bank's capital position were to decline below the minimum statutorily required levels of capital adequacy, its banking licenses could be suspended or revoked and it could encounter difficulties in continuing to operate its business and obtaining funding, which could materially adversely affect its business, financial condition, results of operations and prospects. MTS Bank's capital adequacy level

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may decrease organically with the growth of business or the payment of dividends. In addition, any breach of regulatory requirements in the Russian Federation could expose MTS Bank to potential liability and other sanctions, including the loss of general banking license. If the CBR were to suspend or revoke MTS Bank's general banking license, then this would render MTS Bank unable to perform any banking operations and/or would lead to winding-up of its business.

Uncertainty in the international financial markets, further tightening in credit conditions and contraction of the global economy and markets in which MTS Bank operates, has adversely impacted, and could adversely impact, should the market conditions continue to worsen, MTS Bank's business and operating results due to:



Any of the factors discussed in the preceding paragraphs could adversely affect the financial condition of MTS Bank and its customers and may result, among other things, in a reduction in MTS Bank's capital adequacy ratios and profits, pressure on credit risk concentration levels, an increase in exchange rate risk and losses, higher funding costs, a change in the strategy of MTS Bank or curtailment of some business operations due to increased risks. Moreover, any of these factors may cause a decrease in customer funds, a reduction in the demand for loans, foreign currency, investment and other banking transaction services that customers carry out with MTS Bank, as well as a general deterioration in the quality of MTS Bank's loan book and/or a reduction in the market values of securities or other assets held on MTS Bank's balance sheet, leading to possible defaults of such loans and/or the need for increased loan provisions. Should any of this take place, this could materially adversely affect our business, financial condition and results of operations.

Failure to monitor, manage and prevent MTS Bank's operational and technological risks, could have a material adverse effect on our business, financial condition and results of operations.

MTS Bank is exposed to technological risks as banking business requires the development of sufficient communication channels and software, the creation of large automated systems and considerable computer capacity located throughout the Russian Federation. MTS Bank invests considerable time and money in order to upgrade its technologies in a timely manner, centralise its information systems, create appropriate reserves and duplicate capacities, develop internal audit functions and control the operation of its hardware and software, however MTS Bank's IT systems are significantly less developed in certain respects than those of banks in more developed countries. The

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lack of immediately available consolidated financial and operating data may hinder the ability of MTS Bank's management to make decisions, to react promptly to changes in market conditions and to detect fraud and non-compliance with internal procedures. In addition, insufficient integration of the IT system increases MTS Bank's operational risks and the costs of further business development.

MTS Bank's ability to operate its business depends on its ability to protect the computer systems and databases which MTS Bank operates and uses from the intrusion of third parties who may attempt to gain access to MTS Bank's computer systems, networks or databases through the Internet or otherwise. In addition, MTS Bank is exposed to risk of fraud by employees or outsiders, mismanagement, unauthorised transactions by employees and operational errors, including clerical or record keeping errors or errors resulting from faulty computer or telecommunications systems. Given MTS Bank's high volume of transactions, errors may be repeated or compounded before they are discovered or rectified. In addition, a number of transactions at MTS Bank are processed manually, which may further increase the risk that human error or employee tampering or manipulation will result in losses that are difficult to detect. There can be no assurance that MTS Bank will be able at all times to successfully monitor, prevent and manage its operational and technological risks in the future. Any failure to do so could materially adversely affect our business, financial condition and results of operations.

MTS is a part of the Sistema group and may potentially enter into agreements with other members of the group (i.e. related parties transactions) on terms, which are different from those that would be obtainable on an open market.

We have purchased interests in the following companies from Sistema: Stream, Nvision Group, NVision Software solutions LLC and MTS Bank. We have entered into agreements with other companies within the Sistema group for the provision of advertising services ("Maxima Advertising" JSC), supply of switching and network equipment ("SITRONICS SMART TECHNOLOGIES" LLC), medical services, license agreements ("Medsi Group" JSC), agreements on providing access to the infrastructure for installation of communication equipment (Bashkirenergo LLC, Business Nedvizhimost JSC), leasing of non-residential real-estate (SITRONICS JSC, Inturavtoservis PJSC) and other services. According to the applicable Russian legislation and notwithstanding certain control procedures in respect of related parties transactions (including mandatory procedures with respect to consideration of related parties transactions with the companies within the Sistema by the Audit Committee), such transactions with the companies within the Sistema group may potentially be concluded on terms, which are different from those that would be obtainable on an open market. See "Item 7 Major Shareholders and Related Party Transactions B. Related Party Transactions."

In the event that our past or future interested party transactions are successfully challenged, our business, financial condition, results of operations and prospects could be materially adversely affected.

We own less than 100% of the equity interests in some of our subsidiaries. In addition, certain of our wholly owned subsidiaries have had other shareholders in the past. We and our subsidiaries in the past have entered into, and continue to enter into, transactions that may be considered to be "interested party transactions" for the purposes of Russian law, requiring in some cases consent or approval by disinterested directors, disinterested independent directors, disinterested shareholders or owners of voting shares, depending on the nature of the transaction and parties involved. The provisions of Russian law No. 208 "On Joint-Stock Companies" dated December 26, 1995, as amended (the "Joint Stock Companies Law") relating to "interested party transactions" have been amended and may be subject to different interpretations taking into account, *inter alia*, the lack of court practice in respect of the new amendments. As a result, it is possible that our and our subsidiaries' interpretation and application of these provisions could be subject to challenge. Any such challenge, if successful,

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could result in the invalidation of transactions, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

In the event that our minority shareholders or the minority shareholders of our subsidiaries do not consent to or approve certain transactions or other matters requiring their consent or approval we could be limited in our operational flexibility, and our business, financial condition, results of operations and prospects could be materially adversely affected.

Russian law requires a three-quarters majority vote of the holders of voting stock present at a shareholders' meeting to consent to or approve certain transactions and other matters, including, for example, charter amendments, major transactions involving assets in excess of 50% of the total assets of the company, purchase of offered shares by the company and certain share issuances. In addition, a 95% or a unanimous vote is required to approve certain matters, for example, certain charter amendments regarding shareholders' rights. A majority of disinterested shareholders participating in the voting is required to consent to or approve an "interested party transaction" in certain cases. In the event that our minority shareholders or minority shareholders of our subsidiaries do not consent to or approve such transactions or other matters requiring their consent or approval, we could be limited in our operational flexibility, and our business, financial condition, results of operations and prospects could be materially adversely affected.

Our competitive position and future prospects depend on our senior managers and other key personnel and our inability to attract, retain and motivate qualified key personnel could have a material adverse effect on our business, financial condition and results of operations.

Our ability to maintain our competitive position and to implement our business strategy is dependent to a large degree on the services of our senior management team and other key personnel.

Moreover, competition in Russia and in the other countries where we operate for personnel with relevant expertise is intense due to the relatively small number of qualified individuals. As a result, we attempt to structure our compensation packages in a manner consistent with the evolving standards of the labor markets in these countries. We are not insured against the detrimental effects to our business resulting from the loss or dismissal of our key personnel. In addition, it is not common practice in Russia and the other countries where we operate to purchase key-man insurance policies, and we do not carry such policies for our senior management and other key personnel. The loss or decline in services of members of our senior management team or an inability to attract, retain and motivate qualified key personnel could have a material adverse effect on our business, financial condition and results of operations.

The entry of mobile virtual network operators into the Russian mobile communications market could increase competition and subscriber churn, resulting in a possible loss of our market share and decreased revenue.

On December 29, 2008, the Ministry of Communications and Mass Media adopted an order establishing the requirements for mobile virtual network operators ("MVNOs"). MVNOs are companies that provide mobile communications services but do not own the radio frequencies and, in some cases, the network infrastructure required to do so. According to the order, MVNOs in Russia must be licensed, and their use of frequencies and infrastructure and rendering of services is to be done pursuant to agreements entered into between MVNOs and existing frequency holders. However, existing frequency holders are under no obligation to enter into such agreements with the MVNOs.

By introducing this regime, the Ministry aims to increase competition in the Russian mobile services market, which is currently dominated by MTS, VimpelCom and MegaFon. The existing frequency holders, including us, may receive revenues from MVNOs for the use of our frequencies and network infrastructure. However, in the event we lose either subscribers to MVNOs that lease their

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frequencies and infrastructure from other operators or MVNOs that lease their frequencies and infrastructure from us, we will be deprived of the revenue streams from both the subscribers and the MVNOs. The MVNOs may also establish aggressive tariffs, which could result in increased subscriber churn and/or driving down the tariffs of all mobile operators.

For example, Skartel (under the "Yota" brand), MGTS, Rostelecom, Tinkoff Bank operate as MVNOs in the Russian mobile communications market.

It is currently unclear how the emergence of new MVNOs in the market or any of the foregoing trends might affect market competition and subscriber churn, but this could have a material adverse effect on our business, financial condition, results of operations and prospects.

A finding by the FAS that we have acted in contravention of antimonopoly legislation could have a material adverse effect on our business, financial condition and results of operations.

Our businesses have grown substantially through the acquisition and formation of companies, many of which required the prior approval of, or subsequent notification to, the FAS or its predecessor agencies.

In part, relevant legislation in certain cases restricts the acquisition or formation of companies by groups of companies or individuals acting in concert without such prior the FAS approval. While we believe that we have complied with the applicable legislation for our acquisitions and formation of new companies, this legislation is sometimes vague and subject to varying interpretations. If the FAS were to conclude that our acquisition or formation of a new company was done in contravention of applicable legislation, or find our actions insufficient to rectify past violations of antimonopoly laws, or issue new warnings and requests in the future, it could impose administrative sanctions and require the divestiture of such company or other assets, which could have a material adverse effect on our business, financial condition and results of operations.

In recent years, the FAS has been investigating mobile operators, including MTS, for suspected violations of antimonopoly laws. For example, see "Item 8 Financial Information A. Consolidated Statements and Other Financial Information 7. Litigation Antimonopoly Proceedings" and " Changes to the rules and regulations involving roaming charges in Russia may adversely affect our financial condition and results of operations."

If the FAS finds that we have violated or otherwise acted in contravention of antimonopoly legislation, this could have a material adverse effect on our business, financial condition, results of operations and prospects.

A finding by the AMC that we have acted in contravention of antimonopoly legislation could have a material adverse effect on our business, financial condition and results of operations.

Under Ukrainian legislation, a company that is found to have acted in contravention of antimonopoly legislation may be subject to fines and claims from the Antimonopoly Committee of Ukraine (the "AMC"). The AMC may investigate us from time to time and, should such investigations identify any violations, impose penalties (including fines).

Based on the complaint filed by Astelit LLC concerning illegal establishment of regional tariffs, in April 2016, the AMC initiated proceedings relating to a violation of legislation on the protection of economic competition. On October 3, 2018, the AMC issued a decision on termination of the case without any sanctions with respect to VF Ukraine. Lifcell (Astelit) LLC applied to the court for the cancellation of this AMC decision. The case is currently under consideration.

In July 2016, the AMC sent requests to the big three operators asking to provide it with information on the establishment of settlement rates for international roaming and interconnect fees with foreign telecommunications operators.

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In August 2016, the AMC began an investigation in relation to antimonopoly restrictions that affect content services market. The case is currently under consideration.

Following complaints from citizens, the AMC is investigating the case on possible violation of legislation on protection against unfair competition, relating to pricing of service packages for 4 weeks (28 days) by the big-three (VF Ukraine, Kyivstar PrJSC and Lifecell LLC).

Based on the complaint filed by Lifecell LLC, in April 2017, the AMC initiated proceedings relating to a violation of legislation on the protection of economic competition (the legitimate use of "The leader of 3G speed" slogan in advertisement). On December 11, 2018, the AMC recommended that the slogan should be removed by VF Ukraine. The recommendations have been implemented; the case is expected to be closed in the second quarter of 2019.

If we are found by the AMC to have violated antimonopoly legislation in the above or any other matters, we may be subject to fines, which may have a material adverse effect on our business, financial condition and results of operations. In addition, we may be required to adjust our current marketing practices. See also "Changes in the governmental regulation of SMP operators in Ukraine could adversely affect our results of operations" and "Item 4 Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Regulation in Ukraine Competition" for additional information.

If we are found to have a dominant position in the markets where we operate and are determined to have abused this position, the FAS may be entitled to regulate our subscriber tariffs and impose certain restrictions on our operations.

Under Russian legislation, a company controlling over 35% of a market may be found by the FAS to hold a dominant position in such market. In case of collective dominance of legal entities and in certain instances provided by law, a company could be also categorized by the FAS as dominant even if its share of the corresponding market is less than 35%. Current Russian legislation does not clearly define "market" in terms of the types of services or the geographic area. In 2016, as a result of certain amendments to the Federal Law No. 135 "On the Protection of Competition," the register of business entities having more than 35% of a certain commodity market or otherwise occupying a dominant position in the markets in which they operate, which previously listed MTS as occupying a dominant position in certain markets, was repealed. At the same time, the FAS continues to conduct market analysis in order to identify entities holding a dominant position in the markets in which they operate.

Companies recognized as natural monopolies are also considered to have a dominant position in their respective markets. One of our subsidiaries, MGTS, was categorized as a natural monopoly in the Moscow telecommunications market. As a result, MGTS' tariffs are now subject to regulation by the FAS. In addition, as a natural monopoly, MGTS is obliged to comply with the rules of non-discriminatory third party access to its infrastructure. See also "MGTS is subject to extensive regulation of tariffs, and these tariffs may not fully compensate us for the cost of providing required services."

In the event that we are found in the future to have a dominant position in the markets where we operate and are either determined to have abused the dominant position or found to have committed concerted actions in the market and/or concluded anti-competitive agreements, the FAS will have a right to impose certain restrictions on our operations in such markets. See "Item 4 Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Regulation in the Russian Federation Competition, Interconnect and Pricing" for additional information.

If we are found to have violated antimonopoly legislation, an order requiring us to transfer any illegally obtained revenue to the federal budget may be issued in relation to such violations.

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According to the Code of Administrative Offences of the Russian Federation, we may be subject to either fixed penalty fine or fine based on total turnover in the market where the violation is conducted, depending on the nature of violation of antimonopoly legislation. The level of fine ranges from 3% to 15% of revenue in the market where the violation is conducted for cartel agreements and from 1% to 15% of revenue for other violations (with 8% being the base level of the fine for all types of violations). If we or any of our subsidiaries were found by the competition authority to be business entities occupying a dominant market position, the competition authority would have a power to impose certain restrictions on our or our subsidiaries' businesses. In particular, the authorities may impose on us tariffs at levels that could be competitively disadvantageous. If we or any of our subsidiaries were found by the FAS to be business entities occupying a dominant market position with a market share exceeding 70% and determined to abuse such dominant position, the Russian government would have a right to determine the rules of non-discriminatory access to goods or services offered by us. Additionally, geographic restrictions on our expansion could reduce our subscriber base and prevent us from fully implementing our business strategy, which may materially adversely affect our business, financial condition, results of operations and prospects.

If we or any of our mobile network operator subsidiaries operating in Russia are identified as an operator occupying a "substantial position," the regulator may reduce our interconnect tariffs which, in turn, may have a material adverse effect on our financial condition and results of operations.

In addition to the regulation of dominant operators by the FAS, the Federal Law on Communications provides for the special regulation of telecommunications operators occupying a "substantial position" (*i.e.*, operators which, together with their affiliates, have 25% or more of installed capacity or capacity to carry out transmission of not less than 25% of traffic in a geographically defined zone within the Russian Federation). These regulations provide for governmental regulation of the key terms of such operators' interconnect agreements, including the interconnect tariffs. In addition, such operators are required to develop standard key terms of interconnect agreements and publish them as a public offer made to all operators who intend to interconnect to the networks of those operators. Refusal of such operators to conduct an interconnect agreement is prohibited, except in cases where such agreement would contradict the terms of their license or other regulatory acts in respect of the unified communications network in the Russian Federation.

For additional information, see "Item 4 Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Regulation in the Russian Federation."

At present, the foregoing regulations apply only to fixed-line operators in Russia, including our fixed-line business. Draft legislation was introduced in 2008 that would extend the law to apply to mobile operators. Although the proposed law was not adopted, the risk that similar legislation will be proposed and adopted in the future remains. If any legislation that extends the foregoing regulations to mobile operators is adopted, and we and any of our mobile network operator subsidiaries operating in Russia are identified as operators occupying a "substantial position," regulators may reduce our interconnect tariffs which, in turn, may have a material adverse effect on our revenues, financial condition and results of operations.

In addition, MGTS is categorized as fixed-line operator occupying a substantial position in the Moscow telecommunications market and its interconnect tariffs are therefore subject to state regulation. In February 2013, Comstar-UTS was removed from the list of "substantial operators" in Moscow and MTS was not included therein. There is however a possibility that we could be categorized as fixed-line operator occupying a "substantial position" in Moscow due to our affiliation with MGTS and because of our integration with Comstar-UTS. As a result of the state regulation of the relevant interconnect rates, we, as "substantial operators," may be unable to increase these in line with economic developments or any increases of our relevant costs, resulting in a material adverse effect on

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our financial condition and results of operations. See also " MGTS is subject to extensive regulation of tariffs, and these tariffs may not fully compensate us for the cost of providing required services."

MGTS is subject to extensive regulation of tariffs, and these tariffs may not fully compensate us for the cost of providing required services.

In addition to holding a "substantial position" in the Moscow telecommunications market, MGTS is included in the register of natural monopolies in the telecommunications market. Consequently, tariffs for basic services rendered to public switched telephone networks subscribers (fees for providing access to a local telecommunications network, monthly fees for granting subscriber line in a constant use and monthly fees for providing a local telephone connection) are subject to regulation.

Although MGTS is permitted to petition the FAS for increases in tariffs based on such criteria as inflation, increased costs and the need for network investments, it is possible that future requested increases may not be granted or that the FAS may not adequately take such factors into account in setting tariffs. If the permissible tariffs applicable to MGTS do not adequately compensate MGTS for the costs of providing services, our business and results of operations could be materially adversely affected. See also " If we or any of our mobile network operator subsidiaries operating in Russia are identified as an operator occupying a "substantial position," the regulator may reduce our interconnect tariffs which, in turn, may have a material adverse effect on our financial condition and results of operations."

Changes to the rules and regulations involving roaming charges in Russia may adversely affect our financial condition and results of operations.

In 2017, a draft law was submitted for consideration to the State Duma, which was intended to cancel international roaming charges between Russia and Belarus and is currently under consideration. In case the aforementioned law is adopted, any revision of roaming charges may lead to a reduction in our revenues.

Moreover, on September 2018, the Board of sectoral ministries of communications of the Russian Federation and the Republic of Belarus approved a Roadmap aimed at reducing roaming charges between two countries. In December 2018, the Russian party drafted a new project of the Roadmap aimed at cancellation of international roaming in the territory of the Union State in 2019. The implementation of this initiative may adversely affect our revenues from roaming charges in Belarus and increase our expenditure incurred in connection with the provision of these services.

In July 2017, the FAS sent a warning to mobile operators, in which it demanded to cancel intra-network roaming. In March 2018, the FAS opened an antimonopoly case against VimpelCom, MTS and MegaFon (in connection with the non-fulfilment of the warning). In August 2018, the FAS found MTS, VimpelCom and MegaFon to have violated the antimonopoly legislation. In December 2018, the FAS imposed a fine in the amount of RUB 737,500 on each of MTS, VimpelCom and MegaFon. As of September 30, 2018 MTS changed charging principles for communication services outside "home" region for all subscribers. Such changes to the charging principles for communication services will lead to a reduction of income of MTS and other mobile carriers in Russia.

In August 2017, the FAS opened an antimonopoly case against VimpelCom, MTS, MegaFon and T2 Mobile LLC on the grounds of establishing and maintenance of monopolistically high prices for communication services in national roaming and inter-operator roaming agreements. On February 22, 2018 the FAS rendered a decision and found MTS responsible for establishing monopolistically high prices for subscribers for communication services in national roaming. VimpelCom, MegaFon and T2 Mobile were also found guilty for establishing monopolistically high prices for subscribers for communication services in national roaming. In September 2018, following the examination of the case, the FAS imposed administrative fines in respect of each of the operators. The case related to inter-

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operator roaming agreements against MTS was canceled due to the fact that there had been no violation. See also " A finding by the FAS that we have acted in contravention of antimonopoly legislation could have a material adverse effect on our business, financial condition and results of operations."

On December 27, 2018, the Federal Law No. 527 was adopted, under which the intra-network roaming is cancelled, and MTS is obliged to provide subscribers with communication services on its network under the same conditions, regardless of whether a subscriber is in or outside the bounds of his "home network" when moving across the country. In addition, this law excludes the possibility of charging subscribers for incoming calls in intra-network and national roaming. The law will come into force on June 1, 2019, and its practical implementation may lead to revenue losses.

Any material fines imposed on us or changes to the roaming charges may adversely affect our financial condition and result of operations.

Compliance with the new regulations on IMEI numbers may present us with technical difficulties and may lead to the expenditure of significant resources.

A draft law that enables each mobile communications subscriber to register a user terminal under certain conditions on an International Mobile Equipment Identity ("IMEI") numbers database of the Ukrainian State Center of Radio Frequencies, primarily to prevent their unlawful use, was previously proposed in Ukraine. Aimed at discouraging theft, the draft law required operators to suspend or block the traffic transmission of the terminal upon the application of a subscriber (within a 3-month period after the first registration of a subscriber in the network). In July 2015, the draft law was withdrawn from consideration.

Additionally, the Cabinet of Ministers of Ukraine adopted the decision "On Introduction of Amendments to the Regulation of the Cabinet of Ministers of Ukraine "On Introduction of Rules Relating to Rendering and Using Telecommunications Services," which, *inter alia*, cancels a requirement to block IMEI numbers of terminal equipment not included in the database of the Ukrainian State Center of Radio Frequencies ("USCRF"). A similar draft law was submitted for consideration to the Russian State Duma in 2012 but was rejected.

If similar initiatives are proposed in the future, we may be required to develop a system to monitor IMEI numbers and may need to establish and maintain a database of IMEI numbers, which would necessitate the expenditure of significant technical and financial resources.

The accession of Russia to the World Trade Organization (the "WTO") may lead to legislative and business changes.

On August 22, 2012, the Russian Federation became a member of the WTO. This may lead to potentially significant changes in Russian legislation including, among others, regulation of foreign investments in Russian companies, competition laws, telecommunications laws, changes in the taxation system and customs regulations in Russia. In addition, the implementation of the WTO rules may lead to increased competition in the markets where we operate. During the period of 2012 to 2018, Russia adopted certain changes to its legislation related to the accession to the WTO, for example, regarding intellectual property laws, tax legislation; however, it is still unclear if, and when, all necessary legislative changes related to the WTO accession will take place. If further new legislation is implemented in Russia as a result of its accession to the WTO, this could have a material adverse effect on our financial condition and results of operations.

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We may be required to make significant investments beyond those that are currently planned to preserve our competitive advantage in response to the rapid evolution of fixed network technology.

One of our subsidiaries, MGTS, has devised a number of projects aimed at developing communications networks and expanding availability of telecommunications services for customers. The likely shortage of free cash flow during the current economic downturn could halt such investment programs for the development of new products and services, and possibly lead to a decrease in the number of projects and cutbacks in development programs in the New Moscow and Moscow regions.

The company completed its project on construction of broadband optical networks employing the Gigabit-capable Passive Optical Network ("GPON") technology with a direct connection of subscribers to an optical network. The applied part of the GPON project's progress is the creation of a digital platform of IMS core, which enables MGTS to render a larger range of services, including services for the B2G segment. See "Item 4 Information on Our Company A. History and Development Capital Expenditure" for further information.

MGTS attracts contractors for the construction and upgrade of its network. Due to the currently unfavorable market conditions, some of MGTS' contractors may face a lack of own current assets and/or external finance sources which may lead to the contractor's inability to fulfill contract obligations or, in some cases, lead to bankruptcy. This may negatively affect the terms of MGTS projects' implementation and lead to higher costs. If MGTS is not able to expand and upgrade its network infrastructure in a timely manner and offer new services, or if it is required to make significant investments beyond those that are currently planned, our business, financial condition, results of operations and prospects could be materially adversely affected.

### Our intellectual property rights are costly and difficult to protect.

We regard our copyrights, trademarks, patents and similar intellectual property rights, including our rights to certain domain names, as essential to our continued success. We rely upon legislation on intellectual property, trade secret protection laws, as well as confidentiality and/or license agreements or contracts with our employees, customers, partners and others, to protect our proprietary rights. Nonetheless, intellectual property rights are particularly difficult to protect in the markets where we operate. In these markets, the regulatory agencies responsible for the protection of intellectual property rights are inadequately funded, legislation is underdeveloped, piracy and infringement are commonplace, and enforcement of court decisions is problematic.

Litigation may be necessary to enforce our intellectual property rights, to determine the validity and scope of rights of others, or to defend against claims of infringement. Any such litigation may result in substantial costs and diversion of resources and, if decided unfavorably to us, could have a material adverse effect on our business. We also may incur substantial acquisition or settlement costs to the extent that it would strengthen or expand our intellectual property rights or limit our exposure to intellectual property claims of third parties.

If leaks of confidential information (including any information relating to our subscribers) occur, it may negatively impact our reputation and our brand image and lead to a loss of market share, which could materially adversely affect our business, financial condition, results of operations and prospects.

Despite our continuous efforts to protect confidential information, breaches of security and leaks of confidential information, including information relating to our subscribers, may negatively impact our reputation and our brand image and result in a loss of market share or otherwise have a material adverse effect on our business, financial condition and results of operations. For example, in January 2003, part of our database of subscribers, containing private subscriber information, was illegally copied and stolen. In addition, in May 2003, certain subscriber databases of several operators in the North-West Region, including those of MTS, MegaFon, Delta Telecom and two other operators, were

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stolen. In each case, the stolen databases were thereafter available for sale in Russia. Despite the measures taken, we cannot completely exclude the possibility of such incidents occurring in the future. See also "Legal Risks and Uncertainties Russian and foreign legislation on personal data and information security in information systems and communication networks may turn out to be hard to implement and require significant resources. Inability to comply with the requirements may lead to sanctions."

Alleged medical risks of cellular technology may subject us to negative publicity or risk of litigation, decrease our access to base station sites, diminish subscriber usage and hinder access to additional financing.

Electromagnetic emissions from transmitter masts and mobile handsets may harm the health of individuals exposed for long periods of time to such emissions. The actual or perceived health risks of transmitter masts and mobile handsets could materially adversely affect us or our subsidiaries by reducing subscriber growth, reducing usage per subscriber, increasing the number of product liability lawsuits, increasing the difficulty of obtaining or maintaining sites for base stations and/or reducing the financing available to the wireless communications industry. Each of these potential risks may adversely affect our business, financial condition, results of operations and prospects.

### **Risks Relating to our Financial Condition**

### We may be adversely affected by the current economic environment.

As a result of the credit market crisis (including uncertainties with respect to financial institutions and the global capital markets), decreased prices for major export commodities (including oil and metals) and other macro-economic challenges currently affecting many of the markets in which we operate, our subscribers' disposable incomes and our vendors' cash flows may be adversely impacted.

Consequently, subscribers may modify or decrease their usage of our services or fail to pay the outstanding balances on their accounts, and vendors may significantly increase their prices, eliminate vendor financing or reduce their output.

We may also experience increases in accounts receivable and bad debt among corporate subscribers, some of whom may face liquidity problems and potential bankruptcy, as well as the potential bankruptcy of our corporate partners. The deterioration of economies in the countries of our operation may lead, *inter alia*, to insolvency of financial institutions, which in turn may impact our business and financial condition.

The strained political situation in Ukraine coupled with an economic downturn resulted in financial difficulties in the banking system, including, notably, increased liquidity risks. As we hold the bulk of excess hryvnia and foreign currency cash in Ukrainian banks, a banking crisis or the bankruptcy or insolvency of the banks through which we receive or with which we hold our funds could result in the loss of our deposits or limit our ability to perform banking transactions in Ukraine and other countries, which could have a material adverse effect on our business, financial condition and results of operations. For example, we realized losses in the fourth quarter of 2014 due to an impairment of cash balances stemming from the insolvency of DeltaBank in Ukraine. In 2015, the Group wrote off certain cash balances deposited in distressed Ukrainian banks. As of April 1, 2019, these banks are being liquidated.

See also " Inflation could increase our costs and adversely affect our results of operations."

A decline in subscriber usage, an increase in bad debts, material changes in equipment pricing or financing terms or the potential bankruptcy of our corporate subscribers or partners may have a material adverse effect on our business, financial condition, results of operations and prospects.

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In addition, a further deterioration in macroeconomic conditions could require us to reassess the value of goodwill on certain of our assets, recorded as a difference between the fair value of the assets of business acquired and its purchase price. This goodwill is subject to impairment tests on an ongoing basis. The weakening macroeconomic conditions in the countries in which we operate and/or a significant difference between the performance of an acquired company and the business case assumed at the time of acquisition could require us to write down the value of the goodwill or portion of such value. Future write-downs relating to the value of the goodwill or portion of such value could have a material adverse effect on our financial condition and results of operations.

Continued turmoil in the credit markets could cause our business, financial condition, results of operations and the value of our shares and ADSs to suffer.

Sanctions introduced by the United States and the European Union with respect to the Russian Federation coupled with an economic downturn and decline in global oil prices caused a significant capital outflow, ruble depreciation, a rise of credit rates in the domestic market and a lack of available financing.

For example, certain Russian banks have in the past experienced difficulties that have caused them to become insolvent and have their licenses revoked, such as Bank Yugra, or to recognize large loan impairment provision losses that required steps to replenish their capital, as in the case of the Promsvyazbank, Bin Bank and Otkritie Bank.

During the period from 2016 and 2017 the cost of funding was decreasing, as the Central Bank of Russia periodically cut the key rate. However, in 2018, the rate cut cycle ended taking into account the dynamics of inflation and inflation expectations, as well as risks posed by external conditions and the reaction of financial markets. In September 2018 (for the first time since 2014), the Board of Directors of the Central Bank of Russia decided to raise the key rate by 0.25 p.p. (up to 7.5%). In December 2018, the key rate was further raised up to 7.75%. Should the key rate continue to grow in the future, this may negatively affect the cost of funding.

A continuation or repetition of the downturn in the global financial markets as well as a toughening or extension of international sanctions against Russia and the resulting volatility of the trading price of our shares and ADSs may negatively impact our ability to obtain financing on commercially reasonable terms, either domestically or overseas, and could have a material adverse effect on our business, financial condition, results of operations and prospects.

Our inability to generate sufficient free cash flow to satisfy our debt service obligations or to refinance debt on commercially reasonable terms, could materially adversely affect our business, financial condition, results of operations and prospects.

We have an amount of outstanding indebtedness, primarily consisting of the obligations we entered into in connection with our notes and bank loans. As of December 31, 2018, our consolidated total debt, excluding capital lease obligations and debt issuance costs, was RUB 368,722 million. Our finance cost for the year ended December 31, 2018 was RUB 38,165 million, net of the amounts of interest capitalized.

Our ability to service, repay and refinance our indebtedness and to fund planned capital expenditure will depend on our ability to generate cash in the future. This, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control. If we are unable to generate sufficient cash flow or otherwise obtain funds necessary to make required payments, we may default under the terms of our financial indebtedness, and the holders of our indebtedness would be able to accelerate the maturity of such indebtedness, potentially causing cross-defaults under and acceleration of our other indebtedness. The existing debt

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servicing is becoming more difficult due to our dependence on floating interest rates in the financial markets.

We may not be able to generate sufficient cash flow or access domestic or international capital markets, or incur additional loans to enable us to service or repay our indebtedness or to fund our other liquidity needs. We may be required to refinance all or a portion of our indebtedness on or before maturity for a number of reasons. For example, the terms of some of our loan agreements may require us to prepay the loan in certain circumstances, such as a deterioration in our credit rating, a delisting of our shares or a drop in our retained earnings below a certain level. This, in turn, may force us to sell assets, reduce or delay capital expenditure or seek additional capital. Refinancing or additional financing may not be available on commercially reasonable terms or at all, and we may not be able to sell our assets or, if sold, the proceeds therefrom may not be sufficient to meet our debt service obligations. Our inability to generate sufficient cash flow to satisfy our debt service obligations, or to refinance debt on commercially reasonable terms, would materially adversely affect our business, financial condition, results of operations and prospects. See "Item 5 Operating and Financial Review and Prospects B. Liquidity and Capital Resources."

Ruble volatility and regulatory changes in foreign currency regulation could increase our costs, decrease our available funds or make it more difficult for us to comply with financial covenants and to repay our debts and would affect the value of dividends received by holders of ADSs

The ruble has weakened significantly against the U.S. dollar during the period of 2014 to 2016, which can be explained by external geopolitical factors, limited financial markets, decrease in oil prices, international ratings agencies' downgrades of Russia's sovereign rating, reduction in internal consumption and other factors.

For example, on December 31, 2014, the official exchange rate published by the CBR was 56.26 rubles per U.S. dollar. The ruble continued to depreciate against the U.S. dollar reaching 72.88 rubles per one U.S. dollar on December 31, 2015, whereas on December 31, 2016, it amounted to 60.66 rubles per one U.S. dollar. On December 31, 2017, ruble amounted to 57.60 per one U.S. dollar. The ruble remained under pressure in 2018, against the backdrop of geopolitical tensions as well as investors outflow from the emerging markets. As of December 31, 2018, ruble amounted to 69.47 per one U.S. dollar.

See also " Changes in the exchange rate of local currencies in the countries where we operate against the Russian ruble, as well as changes in the exchange rate of the Russian ruble and local currencies against the U.S. dollar and/or euro could adversely impact our financial results."

The stability of the ruble will depend on many political and economic factors. These include the ability of the government to finance the deficit of the state budget without recourse to monetary emissions and to control the level of interest rates and inflation. Furthermore, changes in foreign currency regulation may affect our ability to fund payments denominated in foreign currency and result in us entering into supplementary agreements with our foreign counterparts.

A significant portion of our capital expenditure and liabilities and borrowings are either denominated in or tightly linked to the U.S. dollar. Conversely, a majority of our revenues are denominated in rubles. As a result, devaluation of the ruble against the U.S. dollar can adversely affect us by increasing our costs in rubles, both in absolute terms and relative to our revenues, and make it more difficult to comply with the financial ratios contained in our various loan agreements or fund cash payments on our indebtedness on time. It also reduces the U.S. dollar value of tax savings arising from tax incentives for capital investment and the depreciation of our property, plant and equipment, since their basis for tax purposes is denominated in rubles at the time of the investment. Increased tax liability would also increase total expenses, which would have an adverse impact on our results.

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We also anticipate that any dividends we may pay in the future on the shares represented by the ADSs will be declared and paid to the depositary in rubles and will be converted into U.S. dollars by the depositary and distributed to holders of the ADSs. Accordingly, the value of dividends received by holders of ADSs will be subject to fluctuations in the exchange rate between the ruble and the U.S. dollar. Any further depreciation of the ruble against the U.S. dollar could therefore materially adversely affect our financial condition, results of operations and prospects and the value of our ADSs. See also "Item 11" Quantitative and Qualitative Disclosures about Market Risk Foreign Currency Risk."

Changes in the exchange rate of local currencies in the countries where we operate against the Russian ruble, as well as changes in the exchange rate of the Russian ruble and local currencies against the U.S. dollar and/or euro could adversely impact our financial results.

A significant portion of our expenditure and liabilities, including capital expenditure and borrowings (including our U.S. dollar denominated notes), are either denominated in, or closely linked to, the U.S. dollar and/or euro, while substantially all of our revenues are denominated in local currencies of the countries where we operate. If the local currencies of the countries where we operate decline against the U.S. dollar and/or euro and our costs increase so that we cannot keep pace, we could have difficulty repaying or refinancing our U.S. dollar and/or euro-denominated indebtedness, including our U.S. dollar denominated notes. At the same time, the devaluation of local currencies against the Russian ruble can adversely affect our revenues reported in Russian rubles and increase our costs in terms of local currencies. In addition, local regulatory restrictions on the purchase of hard currency in the majority of countries where we operate (for example, Ukraine) may delay our ability to purchase equipment and services necessary for network expansion which, in turn, may cause difficulty in expanding our subscriber base in those countries. Further, a portion of our cash balances is held in jurisdictions outside Russia, and as a result of currency exchange controls in those jurisdictions, these cash balances may not always be readily available for our use.

Ukraine's economic crisis combined with political unrest and events in the Eastern part of Ukraine have led to the weakening of the hryvnia, with the exchange rate rising from 15.77 hryvnias per one U.S. dollar on December 31, 2014 to 24.00 and 27.19 hryvnias per one U.S. dollar on December 31, 2015 and on December 31, 2016, respectively, as a result of substantial capital outflow in response to the continuing political instability in Ukraine. As of December 31, 2017, the exchange rate amounted to 28.07 hryvnias per one U.S. dollar. As of December 31, 2018, the exchange rate amounted to 27.69 hryvnias per one U.S. dollar.

See also "Political and Social Risks Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations."

The Belarusian ruble depreciated against the U.S. dollar, whereby the exchange rate increased from 11,850 Belarusian rubles per one U.S. dollar on December 31, 2014, to 18,569 Belarusian rubles per one U.S. dollar on December 31, 2015. On July 1, 2016, Belarus redenominated its currency on a scale of 10,000:1. As of December 31, 2016, the official exchange rate published by the National Bank of the Republic of Belarus amounted to 1.96 Belarusian rubles per one U.S. dollar. As of December 31, 2017 and December 31, 2018, the official exchange rate published by the National Bank of the Republic of Belarus amounted to 1.97 and 2.16 Belarusian rubles per one U.S. dollar, respectively. The possible devaluation of the Belarusian ruble in the future may adversely affect our revenues from this market.

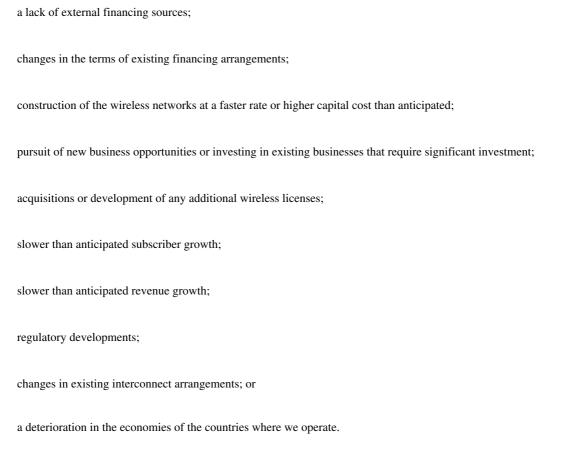
See also " Inflation could increase our costs and adversely affect our results of operations" and "Item 11 Quantitative and Qualitative Disclosures about Market Risk Foreign Currency Risk."

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If we are unable to obtain adequate capital, we may have to limit our operations substantially, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

We have to make significant capital expenditure, particularly in connection with the development, construction and maintenance of, and the purchasing of necessary software for, our mobile and fixed-line networks. We had capital expenditure in the amounts of RUB 83,551 million (excluding costs of RUB 2.598 billion for the acquisition of a 4G license in Russia) in 2016, RUB 76,431 million in 2017 and RUB 94,041 million (excluding costs of RUB 5.527 billion for the acquisition of a 4G license in Ukraine) in 2018. Further, the acquisition of 3G and 4G licenses and frequency allocations and the build-out of our 3G, 4G and broadband Internet networks will require additional capital expenditure. See "Item 4 Information on Our Company A. History and Development Capital Expenditure."

However, future financings and cash flow from our operations may not be sufficient to meet our planned needs in the event of various unanticipated potential developments, including the following:



During the period from 2014 to 2018, the United States and the European Union announced sanctions applying to a number of Russian and Ukrainian individuals and associated institutions. The sanctions may be extended and our ability to gain external funding may be affected. See also "Political and Social Risks Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations" and "A deterioration in relations between Russia and other former Soviet republics as well as other politically related disagreements and allegations between Russia and other countries and sanctions imposed as a result thereof, could materially adversely affect our business, financial condition, results of operations, prospects and the value of our shares and ADSs."

Our indebtedness and the limits imposed by covenants in our debt obligations could limit our ability to obtain additional financing and thereby constrain our ability to invest in our business and place us at a possible competitive disadvantage. In addition, we are currently unable to raise equity financing through newly issued depositary receipts, such as ADSs, due to Russian securities regulations providing that no more than 25% of a Russian company's shares may be circulated abroad through sponsored depositary receipt programs. Prior to December 31, 2005 and at the time of our initial public offering, this threshold was 40% and our current ADSs program is near its full capacity. If we cannot obtain adequate funds to satisfy our capital requirements, we may need to limit our operations significantly, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

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#### Inflation could increase our costs and adversely affect our results of operations.

The Russian and Ukrainian economies have been characterized by high rates of inflation, which over the past few years have been mainly driven by weakening of national currencies, restrictions on foreign trade and acceleration in food prices.

In 2014, the Bank of Russia implemented an inflation targeting program. As a result of this, inflation in Russia amounted to 5.4% in 2016, which was significantly lower as compared to 12.9% in 2015, according to the Federal Statistics Service. In 2017, inflation decreased to lower than 3% as compared to the target level of 4%. By the end of 2017, consumer inflation reached its historically lowest level of 2.5% year-to-year. In 2018, consumer inflation in Russia amounted to 4.3%. According to the Bank of Russia, in 2019 the end-of-year annual inflation forecast will range from 4.7% to 5.2%. The Bank of Russia plans to maintain inflation at the 4% target level in the long-term. To achieve this target, the Bank of Russia will more likely change main parameters of monetary policy. However, despite its plans to maintain inflation at the target level, there are risks of inflation increase due to the following factors:

possible unfreezing of monopolies' tariffs. During last 10 years tariffs of infrastructure monopolies significantly affected inflation parameters, and contributed more than 40% to the total price volatility in certain years;

import of inflation due to exchange rate of the Russian ruble. Cumulative effect of domestic prices change in response to change of exchange rate of the Russian ruble is defined as an effect of transferring dynamics of an exchange rate to prices, it has been salient during rubble depreciation in 2014 and 2015; and

low monetization of the Russian economy. The degree of monetization of the Russian economy is lower than in developed countries and in countries of the Eastern Europe. Attempts to increase the monetization of the Russian economy by raising money supply will likely lead to an increase in inflation due to the lack of confidence on the part of residents and non-residents in the Russian banking system.

According to the State Statistics Service of Ukraine, in December 2018, the annual consumer price index amounted to 9.8% (as compared to 13.7% for 2017). The decline in inflation was primarily achieved by the monetary policy of the National Bank of Ukraine (NBU) and the repeated increase in the discount rate. According to the forecasts of both the National Bank and the Government of Ukraine and the International financial organizations, it is expected that inflationary pressure on the economy of Ukraine will further decrease in the future as the budget value of the inflation rate for 2019 is set at 7.4%.

In addition, a further decline in global oil prices coupled with capital outflow from growing markets and depreciation of national currencies might cause a rise in inflation. High inflation levels may lead, *inter alia*, to increased marketing expenditure that could, in turn, affect our operating margins and profitability.

At the end of 2016 and 2017, inflation in Belarus amounted to 10.6% and 4.6%, respectively. In December 2018, the annual rise of consumer prices published by the National Bank of the Republic of Belarus amounted to 5.6%.

High rates of inflation in Russia, Ukraine and other countries of our operation could increase our costs and decrease our operating margins. See also "Item 5 Operating and Financial Review and Prospects A. Operating Results Certain Factors Affecting our Financial Position and Results of Operations Inflation."

See also " Changes in the exchange rate of local currencies in the countries where we operate against the Russian ruble, as well as changes in the exchange rate of the Russian ruble and local

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currencies against the U.S. dollar and/or euro could adversely impact our financial results" and "Item 11" Quantitative and Qualitative Disclosures about Market Risk Foreign Currency Risk."

Indentures relating to some of our notes contain, and some of our loan agreements and Sistema's loan agreements contain, restrictive covenants, which limit our ability to incur debt and to engage in various activities.

Covenants in the agreement relating to our Eurobonds due 2023 limit our ability to create liens on our properties, merge or consolidate with another person or convey our properties and assets to another person. Additionally, the indentures governing our U.S. dollar-denominated notes due 2020 contain covenants limiting our ability to incur debt, create liens on our properties, enter into sale and lease-back transactions, merge or consolidate with another person or convey our properties and assets to another person, as well as our ability to sell or transfer any of our or our subsidiaries' GSM licenses for the Moscow, St. Petersburg, Krasnodar and Ukraine license areas. Some of our loan agreements contain similar and other covenants, including, in relation to the incurrence of indebtedness, creation of liens and disposal of assets. We may also incur additional credit obligations providing for similar covenants. Failure to comply with these covenants may cause a default and result in the debt becoming immediately due and payable, which would materially adversely affect our business, financial condition and results of operations.

In addition, Sistema, which owns a controlling stake in MTS and consolidates our results in its financial statements, is subject to various covenants in its credit facilities. These covenants impose restrictions on Sistema and its restricted subsidiaries (including us) with respect to, *inter alia*, incurrence of indebtedness, creation of liens and disposal of assets. In its indentures, Sistema undertakes that it will not, and will not permit its restricted subsidiaries (including us) to, incur indebtedness unless a certain indebtedness level / EBITDA ratio is met. In addition to us, Sistema has various other businesses that require capital and, therefore, the consolidated Sistema group's capacity to incur indebtedness otherwise available to us could be diverted to its other businesses. Sistema may also enter into other agreements in the future that may further restrict it and its subsidiaries (including us) from engaging in these and other activities. We expect Sistema to exercise control over us in order for Sistema, as a consolidated group, to meet its obligations under its current and future financings and other agreements, which could materially limit our ability to obtain additional financing required for the implementation of our business strategy. The inability to implement our business strategy may have a material adverse effect on our financial condition and results of operations.

#### A change in control could have a material adverse effect on our financial condition and results of operations.

Under the terms of our outstanding notes, if a change in control occurs, our noteholders will have the right to require us to redeem notes not previously called for redemption. The price we will be required to pay upon such event will be 101% of the principal amount of the notes, plus interest accrued prior to the redemption date. A change in control will be deemed to have occurred in any of the following circumstances:

with respect to the notes due 2020, any person acquires beneficial or legal ownership of, or control over, more than 50% of our issued shares, ownership of or control over more than 50% of the voting interests in our share capital or obtains the power to elect not less than half of our directors, provided that the following transactions would not be deemed to result in a change of control:

any acquisition by Sistema or its subsidiaries that results in the 50% threshold being exceeded;

any acquisition by us, our subsidiary or our employee benefit plan; and

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a contribution by Sistema of all or part of its ownership interest in us into a partnership, joint venture or other indirect holding vehicle as long as any other person who is an owner of or party interested in that partnership, joint venture or other indirect holding vehicle does not acquire beneficial ownership of or control over more than 50% of our issued shares, does not acquire ownership of or control over more than 50% of the voting interests in our share capital and does not obtain the power to elect not less than half of our directors.

Some of our loan agreements contain similar change of control provisions. If a change in control occurs, and our noteholders and other debt holders exercise their right to require us to redeem all of their notes or debt, such event could have a material adverse effect on our financial condition and results of operations.

In addition, under certain of our debt agreements, an event of default may be deemed to have occurred and/or we may be required to make a prepayment if Sistema disposes of its stake in our company and a third party takes a controlling position in our company. The occurrence of any such event of default or failure to make any required prepayment, which leads to an event of default, could trigger cross default / cross acceleration provisions under certain of our other debt agreements. In such event, our obligations under one or more of these agreements could become immediately due and payable, which would have a material adverse effect on our business and our shareholders' equity. If Sistema were to dispose of its stake in us, our company may be deprived of the benefits and resources that it derives from Sistema, which could harm our business.

#### Risks Relating to Economic Risks in Our Countries of Operation

### Economic instability in the countries where we operate could adversely affect our business.

Since the dissolution of the Soviet Union in 1991, the economies of Russia and other countries where we operate have experienced periods of considerable instability. For example, GDP level significantly impacted basic commodity prices as was detected during the crisis in 2008 and 2009.

In 2016, the decline in the GDP of Russia was 0.2%, compared to 3.7% in 2015, according to the Federal State Statistics Service. In 2017, the GDP growth amounted to 1.5%, according to the Federal State Statistics Service.

In November 2018, the Ministry of Economic Development forecasted that the Russian economy would grow 1.8% in 2018. In January 2019, the Ministry of Economic Development estimated that the Russian economy grew by 2% in 2018.

Any future economic downturns in Russia or the other countries where we operate, could lead to a decrease in demand for our services and, consequently, in our revenues, and negatively affect our liquidity position and ability to obtain further debt financing, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

The Russian banking system remains underdeveloped, the number of creditworthy banks in Russia is limited and another banking crisis could place severe liquidity constraints on our business.

Russia's banking and financial services systems are less developed or regulated as compared to other countries, and Russian legislation relating to banks and bank accounts is subject to varying interpretations and inconsistent application. The August 1998 financial crisis resulted in the bankruptcy and liquidation of many Russian banks and almost entirely eliminated the developing market for commercial bank loans at that time. Many Russian banks currently do not meet international banking standards, and the transparency of the Russian banking sector in some respects still lags far behind internationally accepted norms. Aided by inadequate supervision by the regulators, certain banks do not follow existing CBR regulations with respect to lending criteria, credit quality, loan loss reserves or

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diversification of exposure. Furthermore, in Russia, bank deposits made by corporate entities are generally not insured.

In recent years, there has been a rapid increase in lending by Russian banks, which has been accompanied by a deterioration in the credit quality of the borrowers. In addition, a robust domestic corporate debt market is leading Russian banks (including the banks with which we conduct banking transactions) to hold increasingly large amounts of Russian corporate ruble bonds in their portfolios, which is further deteriorating the risk profile of Russian bank assets. The serious deficiencies in the Russian banking sector, combined with the deterioration in the credit portfolios of Russian banks, may result in the banking sector being more susceptible to market downturns or economic slowdowns, including due to Russian corporate defaults that may occur during any such market downturn or economic slowdown. In addition, the CBR has from time to time revoked the licenses of certain Russian banks, which resulted in market rumors about additional bank closures and many depositors withdrawing their savings. Recently, a number of banks and credit institutions have lost their licenses due to the deficiency of capital and failure to meet the CBR requirements. In 2014-2018, for instance, the CBR revoked the licenses of a number of Russian banks for reasons associated with implementing high-risk lending policies, loss of liquidity and non-compliance with anti-money laundering legislation. A combination of these factors may result in a significant deterioration in the financial fundamentals of Russian banks, notably liquidity, asset quality and profitability.

There is currently a limited number of sufficiently creditworthy Russian banks and few ruble denominated financial instruments in which we can invest our excess ruble cash. We hold the bulk of our excess ruble and foreign currency cash in Russian banks, including subsidiaries of foreign banks.

In the event of a banking crisis, Russian companies may be subject to severe liquidity constraints due to the limited supply of domestic savings and the withdrawal of foreign funding sources that may occur during such crisis. Another banking crisis or the bankruptcy or insolvency of the banks from which we receive or with which we hold our funds could result in the loss of our deposits or affect our ability to complete banking transactions in Russia, which could have a material adverse effect on our business, financial condition and results of operations.

The physical infrastructure in Russia, Ukraine and the other countries where we operate is in poor condition, which could disrupt our normal business activities and adversely impact our results.

The physical infrastructure in Russia, Ukraine and the other countries where we operate largely dates back to Soviet times and has not been always funded and maintained over the past years. Particularly affected are the rail and road networks, power generation and transmission systems, communication systems and building stock. For example, in August 2009, a major accident occurred at Russia's largest power plant, the Sayano-Shushenskaya hydroelectric power station, resulting in flooding of the engine and turbine rooms and the death of 75 people. Power generation from the station ceased completely following the incident, which led to a major power outage in the nearby residential areas and at certain industrial facilities as well as pollution of the rivers and soil as a result of an oil spill from the transformer.

In addition, the road conditions throughout our countries of operation are poor with many roads not meeting minimum quality standards, causing disruptions and delays in the transportation of goods to and within these countries. The Russian and Ukrainian governments are actively considering plans to reorganize their national rail, electricity and communications systems. Any such reorganization may result in increased charges and tariffs while failing to generate the anticipated capital investment needed to repair, maintain and improve these systems. The deterioration of the physical infrastructure in Russia, Ukraine and the other countries where we operate harms the national economies, adds costs to doing business in these countries and generally disrupts normal business activities. These difficulties can impact us directly; for example, we keep portable electrical generators to help us maintain base

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station operations in the event of power outages. Further deterioration of the physical infrastructure in Russia, Ukraine and the other countries where we operate could have a material adverse effect on our business, financial condition and results of operations. In addition, the increased charges and tariffs that may result from the government reorganization may also have a material adverse effect on our business, financial condition and results of operations.

Fluctuations in the global economy may materially adversely affect the economies of the countries where we operate and our business in these countries.

The economies of the countries where we operate are vulnerable to market downturns and economic slowdowns elsewhere in the world. As has happened in the past, financial problems or an increase in the perceived risks associated with investing in emerging economies could dampen foreign investment in Russia, Ukraine and the other countries where we operate, and businesses in these countries could consequently face severe liquidity constraints. Additionally, as Russia produces and exports large amounts of oil and gas, the Russian economy is especially vulnerable to the price of oil and gas on the world market and a decline in the price of oil and gas could negatively impact its economy. Recent military conflicts and international terrorist activity have significantly impacted the oil and gas prices globally, and pose additional risks to the Russian economy. Both Russia and Ukraine are also major producers and exporters of metal products and their economies are vulnerable to world commodity prices and the imposition of tariffs and/or anti-dumping measures by the United States, the European Union or other principal export markets.

The disruptions recently experienced in the domestic and international capital markets have led to reduced liquidity and increased credit risk premiums for certain market participants and have resulted in a reduction of available financing. Companies located in emerging markets, including us, may be particularly susceptible to these disruptions and reductions in the availability of credit or increases in financing costs. To the extent that the current market downturn continues or worsens, it may lead to constraints on our liquidity and ability to obtain debt financing, which may have a material adverse effect on our business, financial conditions and results of operations.

#### **Political and Social Risks**

Political and governmental instability in Russia and other countries of our operations could materially adversely affect our business, financial condition, results of operations and prospects and the value of our shares and ADSs.

The political and economic situation in Russia has been negatively affected by the global financial crisis, the economic sanctions imposed by the United States and the European Union and the ongoing volatile economic conditions. Other countries where we operate may pose similar challenges, for example, Ukraine, where political tensions and uncertainty are continuing. See also "Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations." Current and possible future political changes in Russia and other countries where we operate, major policy shifts or a lack of consensus between the various branches of power and powerful economic groups could disrupt or reverse economic and regulatory reforms. This could, in turn, lead to further political instability or conflicts among powerful economic groups, which could have a material adverse effect on our business, financial condition, results of operations, prospects and the value of our shares and ADSs. A deterioration of the socio-political situation in Russia could also trigger an event of default under some of our loan agreements.

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Potential conflict between central and regional authorities could create an uncertain operating environment hindering our long-term planning ability.

The Russian Federation is a federation of units, consisting of republics, territories, regions, cities of federal importance and autonomous regions and districts. The delineation of authority and jurisdiction among the members of the Russian Federation and the federal government is, in many instances, unclear and remains contested. A lack of consensus between the federal government and local or regional authorities could result in the enactment of conflicting legislation at various levels and may lead to political instability. In particular, conflicting laws have been enacted in the areas of privatization, land legislation and licensing. Some of these laws, as well as governmental and administrative decisions implementing them and certain transactions consummated pursuant to them, have in the past been challenged in the courts, and such challenges may occur in the future. This lack of consensus may hinder our long-term planning efforts and create uncertainties in our operating environment, both of which may prevent us from effectively and efficiently implementing our business strategy.

Additionally, ethnic, religious, historical and other divisions have, on occasion, given rise to tensions and, in certain cases, military conflict, which can halt normal economic activity and disrupt the economies of neighboring regions. The further intensification of violence, including terrorist attacks and suicide bombings, or its spread to other parts of Russia, could have significant political consequences, including the imposition of a state of emergency in some parts or the whole of Russia. Moreover, any terrorist attacks and the resulting heightened security measures are likely to cause disruptions to domestic commerce and exports from Russia. Any of these factors could materially adversely affect our business and the value of our shares and ADSs. In Ukraine, the political instability and the tensions in eastern Ukraine may also have negative effect on our business operations.

See also "Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations."

A deterioration in relations between Russia and other former Soviet republics, as well as other politically related disagreements and allegations between Russia and other countries and sanctions imposed as a result thereof, could materially adversely affect our business, financial condition, results of operations, prospects and the value of our shares and ADSs.

Relations between Russia and certain other former Soviet republics are or have in the past been strained. For example, in August 2008, an armed conflict erupted between Russia and Georgia over the self-appointed republics South Ossetia and Abkhazia, culminating in Russia's recognition of their independence from Georgia. The political and economic relationships between Ukraine and Russia have also been strained in recent years, see also "Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations" and "Risks Relating to our Financial Condition Changes in the exchange rate of local currencies in the countries where we operate against the Russian ruble, as well as changes in the exchange rate of the Russian ruble and local currencies against the U.S. dollar and/or euro could adversely impact our financial results."

The United States and the European Union have imposed sanctions on certain Russian and Ukrainian persons and entities. No individual or entity within our group has been designated with sanctions introduced by either the United States or the European Union. However, additional designations may be made, or additional categories of sanctions may be created, at any time, and we can give no assurance that any member of our group, or individuals holding positions within our group, will not be affected by future sanctions designations. Several pieces of legislation directed at amplifying United States sanctions against the Russian Federation have been introduced in the U.S. Congress and are currently under consideration. It is currently unclear at which point, if at all, any of these bills

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could be signed into law and what would be the scope of any new sanctions that may be imposed pursuant to such law.

Non-compliance with any potential sanctions could result in, among other things, the inability of the relevant group entities to contract with the governmental authorities of the United States or the decision-making and executive bodies of the European Union, or their agencies, potential civil or criminal liability for the sanctioned individuals and entities and their associates under the US and/or EU law, the imposition of significant fines and reputational damage.

Further tensions between Russia and other countries and any escalation of the existing tensions, the imposition of further sanctions, or continued uncertainty regarding the scope thereof, could have a negative effect on the Russian economy, the financial condition of our partners and suppliers, the financial condition of partners and suppliers of our subsidiaries, our ability to conduct trade and financial transactions, our ability to obtain financing on commercially reasonable terms (or at all), and the level and volatility of the trading price of our shares and ADSs.

The Ukrainian Cabinet of Ministers initiated adoption of the Law "On Sanctions" by the Verkhovna Rada of Ukraine which came into force on September 12, 2014. The law provides for special economic and other restrictive measures against foreign states, foreign legal entities and individuals involved in activities threatening the national security, sovereignty and territorial integrity of Ukraine and the rights and freedoms of its citizens. The law stipulates 25 types of sanctions which include, among others:

asset freezing;
temporary limitation of a right to use or dispose of property;
cancellation or suspension of licenses and other permits, including special permits for subsoil use;
prohibition to use radio frequency resources in Ukraine; and

use.

termination or suspension of rendering telecommunications services or utilizing telecommunications networks of general

On June 28, 2015, amendments to the Law of Ukraine "On Licensing of Certain Types of Economic Activity" came into force expanding the terms of license cancellation, including adoption of an "act on documentary proof of control over licensee actions by other states, carrying out armed aggression against Ukraine or whose actions create preconditions either for military conflict or use of military force against Ukraine." With effect from January 1, 2018, the licensing of certain activities in the telecommunications sector has been canceled in accordance with the Law of Ukraine "On Licensing of Certain Types of Economic Activity."

Furthermore, the Law of Ukraine "On amendments to the Law of Ukraine "On the protection of economic competition" came into force and is aimed to improve the procedures for control over the concentration of economic entities, and gives the Antimonopoly Committee of Ukraine the right to refuse to consider applications for concentration submitted by companies included in the sanctions list.

The draft law "On Amendments to Article 9 of the Law of Ukraine "On State Registration of Legal Entities, Individual Entrepreneurs and Public Organizations" was introduced in Ukraine, which requires economic entities to publish information relating to their beneficial owners in the unified state register (in the event that the beneficial owner of the company is a resident of a country carrying out armed aggression against Ukraine). In addition, the draft law "On amendments to some legislative acts relating to labeling of products (or services) produced by suppliers tied with an aggressor country" stipulates that the suppliers of goods (or services) might be obliged to mark the advertising of products (or services) with the information on their ties with an aggressor country. As of April 1, 2019, the draft

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laws have not been considered by functional committee of the Verkhovna Rada and the Parliament of Ukraine.

The Presidential Decree No. 133/2017 "On the Decision of the National Security and Defense Council of Ukraine "On the Imposition of Personal Special Economic and Other Restrictive Measures (Sanctions)" dated May 17, 2017 imposed new sanctions and determined a new sanction list against 1,228 individuals and 468 legal entities. VF Ukraine was not subject to these sanctions.

According to that Decree:

mobile operators and providers of telecommunications services must restrict access to a number of Internet resources listed in the annexes to the Decree;

software usage of a number of legal entities listed in the annexes to the Decree is prohibited; and

rendering of telecommunications services and access to telecommunications networks is prohibited for a number of legal entities listed in the annexes to the Decree.

In November 2016, NBU adopted a resolution that is aimed to, *inter alia*, impose restrictions on operations with persons and entities targeted by sanctions.

In March 2017, pursuant to the Resolution of the National Security and Defense Council of Ukraine dated March 15, 2017 "On the Imposition of Personal Special Economic and Other Restrictive Measures (Sanctions)," as approved by the Decree of the President of Ukraine No. 63/2017, NBU introduced sanctions aimed at Ukrainian subsidiaries of a number of Russian banks in order to prohibit financial operations, including any payments of dividends, in favor of the parent banks. This supplements a set of measures in respect of Russian entities subject to the sanctions introduced in accordance with the NBU Board Resolution No. 654 dated October 1, 2015 "On Ensuring the Implementation and Monitoring of the Effectiveness of Personal Special Economic and Other Restrictive Measures (Sanctions) and the Resolution No. 399 dated November 1, 2016 "On Amendments to the Resolution of the Board of the National Bank of Ukraine No. 654 dated October 1, 2015."

On May 8, 2018, a draft law "On Amendments to the Law "On Sanctions" (No. 8340) was registered in the Verkhovna Rada of Ukraine, which provides for new types of sanctions: nationalization and termination of activities of a business entity being under control of the state that is subject to sanctions/ residents of such states/ any other person included in the sanction list.

On September 21, 2018, a draft law "On Amendments to the Law "On Sanctions" (No. 9116) was registered in the Verkhovna Rada of Ukraine providing for extension of the grounds for the application of sanctions by Ukraine. In particular, it is proposed to add the following grounds: decisions of the authorized bodies of the United Kingdom and Northern Ireland; decisions of the authorized US bodies. Thus, the draft law introduces an automatic mechanism for synchronization of Ukrainian sanctions with its international partners.

In 2018, the National Security and Defense Council of Ukraine (the "NSDC") imposed a number of new sanctions and restrictive measures against certain individuals and legal entities who are the residents of Russia, Ukraine and other states. None of these sanctions imposed by NSDC were introduced against VF Ukraine.

In June 2017, the Board of the National Bank of Ukraine adopted Resolution No. 46 "On Amendments to the Resolution of the Board of the National Bank of Ukraine No. 654 dated October 1, 2015." The Resolution set out the requirements for banks dealing with persons designated in the sanctions list, in particular, prohibiting them from executing payment documents of any customers designated in the sanction list and transferring any funds to their accounts. On July 3, 2018,

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the NBU introduced amendments to this decision allowing the banks to execute certain categories of such payment orders strictly within the territory of Ukraine.

The Decree of the President of Ukraine No. 57/2018 dated March 6, 2018 enacted the Decision of the NSDC dated March 1, 2018 "On the Imposition of Personal Special Economic and Other Restrictive Measures (Sanctions)." The restrictive measures were extended in respect of subsidiaries of a number of Russian banks, which provide for the prevention of the withdrawal of capital outside Ukraine in favor of persons affiliated with the banks.

The Administration of the State Service of Special Communications and Information Protection of Ukraine developed a draft government resolution which provides further actions of authorized state bodies when blocking access to the information resources designated in the sanction list. The project provides, *inter alia*, connection to operators' networks of equipment to monitor the blocked information resources. Regarding the draft law special equipment might be connected to the operator's network, which may lead to additional costs. The document is currently under consideration.

On February 13, 2017, the Decree of the President of Ukraine No. 32/2017 provided the directions of legislative changes, that could lead to restriction of the use of software and telecommunications equipment produced in Russia and simplification for the regulators to access data from communication channels (for the purposes of the identification of service providers, blocking of certain information resources and facilitating the storage of telecommunications data by operators). These decisions may affect our operations to the extent that they allow access to information resources of Russian origin. Pursuant to this Decree, the draft law "On Amendments to the Law "On Sanctions" was submitted for public discussion, which proposes to impose additional sanctions, in particular, with regard to the prohibition or restriction of the use of software and telecommunications equipment originated in countries that are subject to sanctions, as well as software developed by companies in such countries (that are subject to sanctions). The draft law is currently under consideration.

There is still significant uncertainty regarding how these measures might affect VF Ukraine and our group, the extent and timing of any further sanctions, or the ultimate impact of these sanctions on our operations. These measures and any further measures and sanctions may have a negative effect on our business, financial condition, results of operations, prospects and the value of our shares and ADSs.

See also "Legal Risks and Uncertainties The inability of MTS-Turkmenistan to sustain its operations in Turkmenistan on commercially acceptable terms or at all may adversely affect our business, financial condition and results of operations" and "The inability of our subsidiaries in the countries in which we are present to maintain control over their operations and assets may adversely affect our business, financial condition and results of operations" and "Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations."

Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations.

Economic crisis, deterioration of key aspects of the economy and the lack of investment into the social infrastructure, has, amongst other things, led to the instability of the political situation in Ukraine where we have significant operations. Furthermore, the refusal of the Ukrainian Government to enter into an association agreement with the European Union in November 2013, incited mass protests in Kyiv and other regions of the country. These protests caused, amongst other things, a downgrade of Ukraine's international ratings and significant depreciation of the national currency, see "Risks Relating to our Financial Condition Changes in the exchange rate of local currencies in the countries where we operate against the Russian ruble, as well as changes in the exchange rate of the Russian ruble and local currencies against the U.S. dollar and/or euro could adversely impact our financial results."

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On March 16, 2014, a referendum in favor of joining the Russian Federation was held in Crimea with the consequent declaration of independence Crimea from Ukraine and the accession to the Russian Federation by the parliament of Crimea.

The armed conflict in Eastern Ukraine that has taken place since April 2014 has destabilized the region and caused uncertainty in our operation in the region of the armed conflict. It has also led to damage of our network equipment in the region followed by related losses. Should the economic and political situation in Eastern Ukraine become further destabilized, should local operators enter the market or other external factors affect the region, this may adversely affect our business, financial condition, corporate image and results of operations as well as cause regulatory uncertainties.

These events have resulted in heightened tensions between Ukraine and the Russian Federation and have strained relationships of the Russian Federation with the United States and the European Union, which may adversely impact our business. Furthermore, should the tensions between the Russian Federation and Ukraine continue or increase, or should the economic, social and political situation in Ukraine become further destabilized, our business interests in Ukraine and other impacted regions may be adversely affected or targeted. The continued impact of these events and any continuing or escalating military action, public protests, unrest, political instability or further sanctions could have a further adverse effect on our business in Ukraine, our financial condition and reputation.

See also "A deterioration in relations between Russia and other former Soviet republics, as well as other politically related disagreements and allegations between Russia and other countries and sanctions imposed as a result thereof, could materially adversely affect our business, financial condition, results of operations and prospects and the value of our shares and ADSs."

#### Crime and corruption could disrupt our ability to conduct our business and thus materially adversely affect our operations.

The political and economic changes in recent years in the countries where we operate have resulted in significant dislocations of authority. In addition, the local and international press have reported high levels of corruption, including the bribing of officials for the purpose of initiating investigations by government agencies. Press reports have also described instances in which government officials engaged in selective investigations and prosecutions to further the commercial interests of certain government officials or certain companies or individuals. Additionally, some members of the media in the countries we operate in regularly publish disparaging articles in return for payment. The depredations of organized or other crime or demands of dishonest officials could result in negative publicity, disrupt our ability to conduct our business and could thus materially adversely affect our business, financial condition, results of operations and prospects. Any actions which could result in a negative effect on investor confidence in Russia's business and legal environment could have a further material adverse effect on the Russian securities market and prices of Russian securities or securities issued or backed by Russian entities, including the shares.

Actions of fraudsters aimed against subscribers cause additional risks for operators. Despite our efforts to detect and prevent fraud, some forms of rendering services (for example, offering payments via external Internet sources) might entail risks of fraudulent charge-offs from subscribers' personal accounts. Such fraud actions could negatively affect our reputation and lead to an increase in subscriber churn, which could materially adversely affect our business, financial condition, results of operations and prospects.

Social instability could increase support for renewed centralized authority, nationalism or violence and thus materially adversely affect our operations.

The failure of the government and many private enterprises to pay full salaries on a regular basis and the failure of salaries and benefits generally to keep pace with the rapidly increasing cost of living

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have led in the past, and could lead in the future, to labor and social unrest. Labor and social unrest may have political, social and economic consequences, such as increased support for a renewal of centralized authority; increased nationalism, including restrictions on foreign involvement in the economies of the countries where we have operations; and increased violence. An occurrence of any of the foregoing events could restrict our operations and lead to the loss of revenues, materially adversely affecting our operations. See also "Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations."

#### **Legal Risks and Uncertainties**

Weaknesses relating to the legal system and legislation in the countries where we operate create an uncertain environment for investment and business activity, which could have a material adverse effect on the value of our shares and ADSs.

Each of the countries we operate in is still developing the legal framework required to support the market economy. The following risk factors relating to these legal systems create uncertainties with respect to the legal and business decisions that we make, many of which do not exist in countries with more developed market economies:

inconsistencies between and among the constitution, federal and regional laws and subordinate legislation (presidential decrees and governmental, ministerial and local orders, decisions and resolutions) and other acts;

the lack of judicial and administrative guidance on interpreting certain legislation as well as conflicting interpretations of supreme general jurisdiction and arbitrazh courts;

the relative inexperience of judges and courts in interpreting certain aspects of legislation;

the lack of an independent judiciary;

a high degree of discretion on the part of governmental authorities, which could result in arbitrary actions such as suspension or termination of our licenses; and

poorly developed bankruptcy and liquidation procedures and court practice that create possibilities of abuse.

The recent nature of much of the legislation in the CIS countries, the lack of consensus about the scope, content and pace of economic and political reform and the rapid evolution of these legal systems in ways that may not always coincide with market developments place the enforceability and underlying constitutionality of laws in doubt and result in ambiguities, inconsistencies and anomalies. In addition, legislation in these countries often contemplates implementing regulations that have not yet been promulgated, leaving substantial gaps in the regulatory infrastructure. All of these weaknesses could affect our ability to enforce our rights under our licenses and contracts, or to defend ourselves against claims by others. Moreover, it is possible that regulators, judicial authorities or third parties may challenge our internal procedures and bylaws, as well as our compliance with applicable laws, decrees and regulations.

The inability of our subsidiaries in the countries in which we are present to maintain control over their operations and assets may adversely affect our business, financial condition and results of operations.

If we are unable to protect our business entities in the countries in which we operate from the withdrawal or suspension or regulatory scrutiny, this may adversely affect our business, financial condition and results of operations. For example, in June 2012, the authorities of the Republic of Uzbekistan began audits of the financial and operating activities of our wholly owned subsidiary, Uzdunrobita. Further various claims for violation of tax, antimonopoly and industry legislation were made against Uzdunrobita, which resulted in significant amounts of fines and penalties, revocation of

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all licenses and suspension of services. Total amount of damages was calculated and determined on the basis of all the aforementioned claims against Uzdunrobita and amounted to approximately RUB 18,375 million payable in equal installments over eight months.

Uzdunrobita paid two scheduled installments in November and December 2012 totaling approximately RUB 4,583.4 million. On January 14, 2013, further to its partial payment of the third installment due in January 2013 totaling approximately RUB 481 million and constituting the remaining amount of cash held in its bank accounts, Uzdunrobita filed a petition for voluntary bankruptcy to the Tashkent Economic Court on the grounds of its inability to meet further obligations.

On April 22, 2013, the Tashkent Economic Court declared Uzdunrobita bankrupt and initiated a liquidation process. Uzdunrobita was later liquidated. In 2012, we filed a claim against the Republic of Uzbekistan in the International Center for Settlement of Investment Disputes ("ICSID"), part of the World Bank Group, in Washington, D.C.

On July 31, 2014, we and the Republic of Uzbekistan signed a settlement agreement (the "Settlement Agreement") and MTS agreed to reenter the Uzbekistan market through a joint enterprise with MTS holding a 50.01% in the charter capital of the joint enterprise, while the remaining 49.99% belongs to a state-owned unitary enterprise established and managed by the

State Committee for Communications, Development of Information Systems and Telecommunications Technologies of the Republic of Uzbekistan. The Settlement Agreement is governed by English law and provides for the resolution of any disputes arising out of the Settlement Agreement in the International Court of Arbitration under International Chamber of Commerce in Paris.

On September 24, 2014, in accordance with the Settlement Agreement, the authorities of the Republic of Uzbekistan granted the joint enterprise 2G, 3G and LTE licenses, provided necessary frequencies and numbering capacity, fostered entrance into lease agreements for communication channels and issued all permissions required to the joint enterprise so it could operate and offer full telecommunications services throughout Uzbekistan. The joint enterprise has also received guaranties for investment protection and return of investments in accordance with the laws of the Republic of Uzbekistan.

In November 2014, ICSID discontinued international arbitration proceedings between MTS and the Republic of Uzbekistan following the submission of a joint application by both parties.

On December 1, 2014, the joint enterprise, named UMS, launched sales of SIM cards through its proprietary network of 20 stores and through another 230 independent locations throughout Uzbekistan and started provision of 2G/3G telecommunications services on the entire territory of Uzbekistan.

On August 5, 2016, we sold our 50.01% stake in UMS to the State Unitary Enterprise Centre of Radio Communication,

Radio Broadcasting and Television of the Ministry of Development of Information Technologies and Communications of the Republic of Uzbekistan. The loss on disposal of investment in Uzbekistan was recorded in the financial report for the third quarter of 2016. See Note 10 to our audited consolidated financial statements.

See also "Political and Social Risks A deterioration in relations between Russia and other former Soviet republics as well as other politically related disagreements and allegations between Russia and other countries and sanctions imposed as a result thereof, could materially adversely affect our business, financial condition, results of operations, prospects and the value of our shares and ADSs" and "Political instability in Ukraine could have a material adverse effect on our operations in Ukraine and on our business, financial condition and results of operations."

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The inability of MTS-Turkmenistan to sustain its operations in Turkmenistan on commercially acceptable terms or at all may adversely affect our business, financial condition and results of operations.

In December 2010, the Group suspended its operations in Turkmenistan following notification by the Ministry of Communications of Turkmenistan of a decision to suspend licenses held by BCTI, the Group's wholly owned subsidiary in Turkmenistan, initially for a period of one month starting from December 21, 2010, and then permanently.

On May 24, 2012, we concluded an agreement with the state-owned telecom operator Turkmentelekom relating to our terms of operations in Turkmenistan, which resulted from negotiations between the Turkmenistan government and ministries. The agreement had a five-year term and could be extended for the following five years, provided certain terms and conditions are satisfied. Under this agreement, we were obliged to pay Turkmentelekom a monthly amount calculated as 30% of our net profit in Turkmenistan based on accounting rules of Turkmenistan.

On July 25, 2012, we, our subsidiary BCTI, the Republic of Turkmenistan, the Ministry of Communications of Turkmenistan, the state-owned company, Turkmentelecom, and a mobile operator, Altyn Asyr, signed a settlement agreement (which included the dismissal of all international lawsuits) concerning the suspension of our operations in Turkmenistan in December 2010.

In August 2012, we restarted our mobile communication network in Turkmenistan and resumed providing services to subscribers who had not canceled their contracts. Since October 1, 2012 we resumed our operations in Turkmenistan entirely and started entering into contracts with new subscribers.

MTS-Turkmenistan was compelled to suspend communication services in Turkmenistan from 00:00 September 29, 2017, due to the actions of the Government of Turkmenistan, the Ministry of Communications of Turkmenistan, the state-owned telecommunications company, Turkmentelekom, and its wholly-owned subsidiary, Altyn Asyr, the state owned mobile operator in Turkmenistan. These actions resulted in the disconnection of international and long-distance zonal communication services and Internet access.

In July 2018 we filed a Request for Arbitration against the Sovereign State of Turkmenistan with the ICSID in order to protect its legal rights and investments in Turkmenistan. The Tribunal for these proceedings was constituted on December 18, 2018 and the Company subsequently filed its Memorial (statement of claim) with ICSID on March 29, 2019. Our total losses are currently estimated to be USD 1.5 billion. Unless resolved to our satisfaction, we intend to vigorously pursue our claims in arbitration and seek all available remedies.

Russian and Ukrainian companies can be forced into liquidation on the basis of formal non-compliance with certain legal requirements.

Certain provisions of Russian law may allow government authorities to seek a court order for the liquidation of a Russian legal entity on the basis of its formal non-compliance with certain requirements during formation, reorganization or during its operation.

For example, under Russian corporate law, if the net assets of a Russian joint stock company calculated on the basis of Russian accounting standards are lower than its charter capital as at the end of its third or any subsequent financial year, the company must either decrease its charter capital or be placed in liquidation. If the company fails to comply with these requirements, governmental or local authorities can seek the involuntary liquidation of such company in court, and the company's creditors will have the right to accelerate their claims or demand early performance of the company's obligations as well as demand compensation of any damages.

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The existence of negative assets may not accurately reflect the actual ability to pay debts as they fall due. Many Russian companies have negative net assets due to very low historical asset values reflected on their Russian accounting standards balance sheets; however, their solvency, *i.e.*, their ability to pay debts as they fall due, is not otherwise adversely affected by such negative net assets. Some Russian courts, in deciding whether or not to order the liquidation of a company for having negative net assets, have looked beyond the fact that the company failed to fully comply with all applicable legal requirements and have taken into account other factors, such as the financial standing of the company and its ability to meet its tax obligations, as well as the economic and social consequences of its liquidation. Nonetheless, creditors have the right to accelerate claims, and file damages claims, and governmental or local authorities may seek the liquidation of a company with negative net assets.

Courts have, on rare occasions, ordered the involuntary liquidation of a company for having net assets less than the minimum charter capital required by law, even if the company had continued to fulfill its obligations and had net assets in excess of the minimum charter capital at the time of liquidation.

The amount of net assets in accordance with the local accounting standards of some of our subsidiaries is less than the minimum charter capital required by law. Although these subsidiaries continue to meet all of their obligations to creditors, there is a minimal risk of their liquidation while the net assets remain below the minimum legal requirements.

There have also been cases in the past in which formal deficiencies in the establishment process of a Russian legal entity or non-compliance with provisions of Russian law have been used as a basis to seek the liquidation of a legal entity. Weaknesses in the Russian legal system create an uncertain legal environment, which makes the decisions of a Russian court or a governmental authority difficult, if not impossible, to predict. If involuntary liquidation were to occur, such liquidation could lead to significant negative consequences for our group. Ukrainian law also contains provisions similar to Russian law, whereby a company's failure to comply with certain legal requirements concerning its formation, net assets or operation may be grounds for its liquidation.

Insufficient adherence to the independence and competitiveness of the judicial process, the difficulty of enforcing court decisions and governmental discretion in enforcing claims could prevent us or holders of our securities from obtaining effective redress in a court proceeding.

The judicial bodies in the countries where we operate are not always completely independent or immune from economic and political influences, and are often understaffed and underfunded. Judges and courts are often inexperienced in the area of business, corporate and industry (telecommunications) law. Judicial precedents generally have no binding effect on subsequent decisions, and not all court decisions are readily available to the public or organized in a manner that facilitates understanding. The judicial systems in these countries can also be slow or unjustifiably swift.

Enforcement of court orders can, in practice, be very difficult to achieve. All of these factors make judicial decisions in these countries difficult to predict and effective redress uncertain. Additionally, court claims are often used in furtherance of political and commercial aims or infighting. We may be subject to such claims and may not be able to receive a fair hearing. Additionally, court orders are not always enforced or followed by law enforcement agencies. Furthermore, recognition and enforcement of arbitral awards in countries where we operate is subject to compliance with corresponding rules of civil procedure and applicable laws, and courts in the countries where we operate may interpret applicable regulations in a manner which would result in denial of such recognition and enforcement.

These uncertainties also extend to property rights. For example, during Russia and Ukraine's transformation from centrally planned economies to market economies, legislation has been enacted in both countries to protect private property against uncompensated expropriation and nationalization.

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However, there is a risk that due to the lack of experience in enforcing these provisions and due to political factors, these protections would not be enforced in the event of an attempted expropriation or nationalization. Expropriation or nationalization of any of our entities, their assets or portions thereof, potentially without adequate compensation, would have a material adverse effect on our business, financial condition, results of operations and prospects.

Selective or arbitrary government action could have a material adverse effect on our business, financial condition, results of operations and prospects.

Governmental authorities in the countries where we operate have a high degree of discretion and, at times, act selectively or arbitrarily, without hearing or prior notice, and sometimes in a manner that is inconsistent with legislation or influenced by political or commercial considerations.

Selective or arbitrary governmental actions have reportedly included the denial or withdrawal of licenses, sudden and unexpected tax audits and claims, criminal prosecutions and civil actions. Federal and local government entities have also used ordinary defects in matters surrounding share issuances and registration as pretexts for court claims and other demands to invalidate such issuances and registrations or to void transactions. Moreover, the government also has the power in certain circumstances, by regulation or government acts, to interfere with the performance of, nullify or terminate contracts.

In addition, the Russian tax authorities have brought tax evasion claims relating to Russian companies' use of tax-optimization schemes, and press reports have speculated that these enforcement actions have been selective. Selective or arbitrary government action, if directed at us, could have a material adverse effect on our business, financial condition, results of operations and prospects.

Failure to comply with existing laws and regulations or to obtain all approvals, authorizations and permits required to transmit television channels or operate telecommunications equipment, or the findings of government inspections or increased governmental regulation of our operations, could result in a disruption in our business and substantial additional compliance costs and sanctions.

Our operations and properties are subject to regulation by various government entities and agencies in connection with obtaining and renewing various licenses, approvals, authorizations and permits, as well as with ongoing compliance with existing laws, regulations and standards. Regulatory authorities exercise considerable discretion in matters of enforcement and interpretation of applicable laws, regulations and standards, the issuance and renewal of licenses, approvals, authorizations and permits and in monitoring licensees' compliance with the terms thereof. Russian authorities have the right to, and frequently do, conduct periodic inspections of our operations and properties throughout the year. Any such future inspections may conclude that we or our subsidiaries have violated laws, decrees or regulations, and we may be unable to refute such conclusions or remedy the violations. See also " The regulatory environment for telecommunications in Russia, Ukraine and other countries where we operate or may operate in the future is uncertain and subject to political influence or manipulation, which may result in negative and arbitrary regulatory and other decisions against us on the basis of other than legal considerations and in preferential treatment for our competitors."

Primarily due to delays in the issuance of permits, approvals and authorizations by regulatory authorities, it is frequently not possible to procure all of the permits for each of our base stations or other aspects of our network before we put the base stations into commercial operation or to amend or maintain all of the permits when we make changes to the location or technical specifications of our base stations. At times, there can be a significant number of base stations or other communications facilities and other aspects of our networks for which we do not have final permits to operate and there can be delays in obtaining the final permits, approvals and authorizations for particular base stations or other communications facilities and other aspects of our networks. Furthermore, we are constantly in

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the process of registration and re-registration of ownership over certain infrastructure facilities, for example, MGTS carries out measures aimed at registration of ownership rights to the cable line structures (CLS). At the same time, MGTS is not insured against the risks of challenging the ownership rights by third parties. MGTS performs legal registration of its ownership rights to minimize the risk. In case of receiving reasonable claims, MGTS reconciles cable line objects to distinguish the ownership rights. MGTS is ready to assert its rights to CLS in court when necessary.

In addition, we may be unable to transmit certain television channels if entities that provide television content to us do not possess the requisite licenses. In case such providers of television content do not obtain the required licenses, or have their existing licenses suspended or terminated, our selection of potential television channels for transmission could be significantly limited. The Federal Law No. 257 "On Amending Federal Law "On Mass Media" and Federal Law "On Communications" dated July 13, 2015 introduced a number of amendments to the national mandatory free television channels list. Requirements on sequence of channels, sound and image quality and signal reception points of national mandatory free television channels were adopted in September 2015. The inability of operators to comply with such requirements may lead to suspension or termination of a license.

Furthermore, we could be subject to fines and other penalties, including forced suspension of our cable network operators' activity for up to 90 days. In some cases of our service provision (for example, those employing GPON technology) power failures in subscribers' households may lead to non-compliance with rules regulating local telephony communication services. Any of these consequences could have a material adverse effect on our business, financial condition and results of operations.

Our failure to comply with existing laws and regulations of the countries where we operate or to obtain all approvals, authorizations and permits required to operate telecommunications equipment, or the findings of government inspections including the State Labor Inspection Service may result in the imposition of fines or penalties or more severe sanctions including the suspension, amendment or termination of our licenses, approvals, authorizations and permits, or in requirements that we cease certain of our business activities, or in criminal and administrative penalties applicable to our officers.

Moreover, an agreement or transaction entered into in violation of law may be invalidated and/or unwound by a court decision. Any such decisions, requirements or sanctions, or any increase in governmental regulation of our operations, could result in a disruption of our business and substantial additional compliance costs and could materially adversely affect our business, financial condition, results of operations and prospects. In addition, we may assume risks of potential claims from subscribers and regulating authorities regarding former activities of the acquired or merged businesses.

Generally, communication networks are vulnerable to physical or software break-ins, viruses, unauthorized interferences and similar events. Should such events occur with respect to our network elements, we may become subject for additional inspection by the regulatory authorities. Although we obtain all necessary permissions and certificates for the operation of our equipment and provide measures to protect confidential information, our failure to fully comply with all legislation requirements could result in the imposition of fines or penalties, additional government regulations, substantial additional compliance costs, disruption of our business including its suspension or termination, and other adverse effects.

In addition, in 2015 the Prosecutor General's Office of Ukraine started criminal proceedings on the fact of "unauthorized intervention" in the operation of MTS Ukraine telecommunications network in Crimea on March 15 and 16, 2014. The outcome of the investigation is currently unclear. Possible legal risks or risks concerning the fulfillment of conditions arising from the proceedings might adversely affect our business, financial condition and results of operations.

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### The level of development of corporate and securities laws and regulations in Russia could limit our ability to attract future investment.

The regulation and supervision of the securities market, financial intermediaries and issuers are less developed in Russia than, for example, in the United States and Western Europe. Securities laws, including those relating to corporate governance, insider trading, disclosure and reporting requirements, are relatively new, while other laws concerning anti-fraud and directors' and officers' liabilities remain underdeveloped. The Russian securities market is regulated by several state authorities, which poses certain risks.

In addition, Russian corporate and securities rules and regulations can change rapidly, which may materially adversely affect our ability to conduct capital markets transactions. The regulatory requirements imposed on Russian issuers may lead to delays in the placement of securities and access to capital markets. It is often unclear whether or how regulations, decisions and letters issued by the various regulatory authorities apply to us. As a result, we may be subject to fines and/or other enforcement measures despite our best efforts at compliance, which could have a material adverse effect on our business, financial condition and results of operations.

Furthermore on July 1, 2016, provisions of the Federal Law No. 210 stipulating the procedure for corporate actions became effective which, *inter* alia, provides for a possibility of remote participation at general meetings of security holders (e-voting) for those shareholders who hold their shares either directly on a share register or through a depositary. These procedures may lead to delays in voting process and inconsistencies and may entail additional risks due to their novelty to the Russian market.

#### There is insufficient minority shareholder protection in Russia.

Minority shareholder protection under Russian law principally derives from (a) supermajority shareholder approval requirements for certain corporate actions, (b) the ability of a shareholder to demand that the company purchase the shares held by that shareholder if that shareholder voted against or did not participate in voting on certain types of actions, (c) the ability of a shareholder to sell his shares at a fair price when the control is changed, the company is acquired at a price determined in accordance with the requirements of the current legislation, (d) shareholders' right to challenge decisions of the company's management bodies in certain circumstances, and (e) shareholders' right to challenge transactions which caused company's loss. Companies are also required under Russian law to obtain the approval of disinterested shareholders for certain transactions with interested parties. In practice, enforcement of these protections has not always been effective. Shareholders of some companies have suffered as a result of fraudulent bankruptcies initiated by hostile creditors.

The supermajority shareholder approval requirement is met by a vote of 75% of all voting shares that are present at a shareholders' meeting. Thus, controlling shareholders owning slightly less than 75% of outstanding shares of a company may have a 75% or more voting power if certain minority shareholders are not present at the meeting. In situations where controlling shareholders effectively have 75% or more of the voting power at a shareholders' meeting, they are in a position to approve amendments to the charter of the company or significant transactions including asset transfers, which could be prejudicial to the interests of minority shareholders. It is possible that our controlling shareholder in the future may not operate us and our subsidiaries for the benefit of minority shareholders, and this could have a material adverse effect on the value of our shares and ADSs.

While the Federal Law on Joint Stock Companies provides that shareholders owning not less than 1% of the company's stock may bring an action for damages caused to a company by its CEO, member of the Board of Directors or its Management Board and certain other officials acting on behalf of the company, minority shareholders may have difficulties with proving such damages with the court and as a consequence their claims may be denied by the court. In 2009, legislation was adopted which

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contemplates class action litigation and in 2015 mechanism of class action regarding corporate disputes was introduced. Although there have been several disputes in the past few years, Russian courts do not have a clear and consistent approach in regards to class action litigation. In addition, the issue of claims by shareholders against the company to compensate the shareholders for their losses is not clearly regulated by the current legislation.

Accordingly, your ability to pursue legal redress against us may be limited, reducing the protections available to you as a holder of our shares and ADSs.

According to Russian legislation, shareholders/participants of Russian companies have an opportunity to demand either liquidation of a company in a judicial proceeding or exclusion of other shareholder/participant (except for public joint stock companies) from the company.

According to the amendments to the Civil Code of the Russian Federation, which came into effect on September 1, 2014, shareholders and participants of Russian companies have, *inter alia*, the following rights, which can be executed via judicial proceedings:

to demand the liquidation of a company in case of failure to achieve a corporate purpose for which it was created, including a case when an operation of a company becomes impossible or is substantially hampered; and

to demand exclusion of a shareholder or a participant (except for the public joint stock companies, including MTS) whose actions/inactivity either cause significant harm or hampers the company's operations.

In this regard, we cannot rule out the possibility of such claims being filed against us. Should such claims be brought, this may have a negative impact on our business, financial condition and results of operations.

Shareholder liability under Russian legislation could cause us to become liable for both obligations of our subsidiaries and losses of the legal entities in which we have a practical possibility of determining actions.

The Civil Code of the Russian Federation, the Joint Stock Companies Law and the Federal Law "On Limited Liability Companies" generally provide that shareholders in a Russian joint stock company or members of a limited liability company are not liable for the obligations of the company and bear only the risk of loss of their investment. This may not be the case, however, when one entity is capable of determining decisions made by another entity. The entity capable of determining such decisions is deemed an "effective parent." The entity whose decisions are capable of being so determined is deemed an "effective subsidiary." The effective parent bears joint and several liability for transactions concluded by the effective subsidiary in carrying out its decisions or decisions made with its consent. However, joint and several responsibility of the effective parent is excluded in case of voting of the effective parent on the approval of the transaction at a general shareholders' meeting of the effective subsidiary, as well as the approval of the transaction by the body of the effective parent, if the need for such approval is envisaged in the charter of the effective subsidiary and/or the effective parent. In addition, an effective parent is secondarily liable for an effective subsidiary's debts if an effective subsidiary becomes insolvent or bankrupt resulting from the action or failure to act of an effective parent. This is the case no matter how the effective parent's ability to determine decisions of the effective subsidiary arises.

Accordingly, we could be liable in some cases for debts of our subsidiaries and losses of the legal entities to the extent that we had any power of determining such subsidiaries' actions that caused such losses. This liability could have a material adverse effect on our business, results of operations and financial condition.

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Shareholder rights provisions under Russian law could impose additional obligations and costs on us, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Russian law provides that shareholders that vote against or did not participate in voting on certain matters have the right to sell their shares to the company at market value in accordance with Russian law. The decisions that trigger this right to sell shares include:

decisions with respect to a reorganization;

the approval by shareholders of a "major transaction," which involves property in excess of 50% of the balance sheet value of the company's assets calculated according to Russian accounting standards, regardless of whether the transaction is actually consummated (including those which are simultaneously interested-party transactions), except for transactions undertaken in the ordinary course of business;

the amendment of our charter in a manner that limits shareholder rights;

the amendment of our charter in a manner that excludes reference to the entity's public status, approved simultaneously with a decision on applying to the CBR on release from obligation to disclose information under the laws of the Russian Federation on securities; and

a decision on applying for delisting of shares and convertible securities from a stock exchange.

For example, during 2015-2019 we repurchased MTS ordinary shares, for more details see "Item 16E Purchases of Equity Securities by the Issuer and Affiliated Purchasers." Our obligation to purchase shares in these circumstances, which is limited to 10% of the company's net assets calculated in accordance with Russian accounting standards at the time the matter at issue is voted upon, could have a material adverse effect on our business, financial condition, results of operations and prospects. Under Russian law, if we are unable to sell the repurchased shares at a price equal to or exceeding the market price within one year of the date of repurchase, we will have to reduce our charter capital accordingly.

The Strategic Foreign Investment Law imposes certain restrictions on us and our existing and potential foreign shareholders, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

On May 7, 2008, the Federal Law "On the Procedure for Foreign Investment in Commercial Organizations of Strategic Importance for the Defense and Security of the State," or the Strategic Foreign Investment Law, came into force in Russia. This law sets forth certain restrictions relating to foreign investments in Russian companies of "strategic importance." Among others, companies with a dominant position in the Russian telecommunications market are considered to be strategically important and foreign investments in such companies are subject to regulations and restrictions to these companies set out by the Strategic Foreign Investment Law. For purposes of the Strategic Foreign Investment Law, a mobile telecommunications provider is deemed to be dominant if its market share in the Russian market exceeds 25%, as may be determined by FAS. In addition, a company may be considered to be strategically important due to our offering of services involving the use of cryptographic technologies.

Starting from the effective date of the Strategic Foreign Investment Law, a foreign investor (including Russian citizens having foreign citizenship according to the amendments which came in force on July 1, 2017) seeking to obtain direct or indirect control over a strategically important company is required to have the respective transaction pre-approved by a special governmental commission on control of foreign investments. On December 6, 2014, the amendments to the Strategic Foreign Investment Law came into effect. The law stipulates that foreign investors are obliged to obtain prior approval of transactions envisaging the acquisition of right of ownership, possession or use of property

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classified as the fixed production assets of a strategic company and the value of which represents 25% or more of the balance sheet value of the assets of such company as of the last reporting date, according to accounts. In addition, foreign investors are required to notify this authorized governmental body about any transactions undertaken by them resulting in the acquisition of 5% or more of the charter capital of strategically important companies. Within 180 days from the effective date of the Strategic Foreign Investment Law, foreign investors having 5% or more of the charter capital of strategically important companies were required to notify the authorized governmental body about their current shareholding in such companies.

Commencing December 6, 2014, a foreign investor is also obliged to notify the authorized governmental body about the fact of conducting the pre-approved transactions. With effect from July 1, 2017, according to the amendments, offshore companies (and companies under their control) are prohibited from obtaining control over a strategically important company and are obliged to have any acquisition of 25% or more of right of ownership of voting shares pre-approved. According to the amendments that came into force on July 1, 2017, certain sanctions may be imposed in respect of such transactions conducted without notification, for example, a deprivation of the foreign investor of any voting rights at a shareholders' meeting of strategically important companies through judicial proceedings brought by an authorized governmental body.

As we are classified as a strategically important company, our current and future foreign investors are subject to the notification requirements described above and our current and potential investors may be limited in their ability to acquire a controlling stake in, or otherwise gain control over, us. Such increase in governmental control or limitation on foreign investment could impair the value of your investment and could hinder our access to additional capital.

Regulatory changes in Russia, including the reduction of settlement rate, regulation of other inter-carrier and subscriber tariffs and others, as well as regulatory changes at the international level may have a material adverse effect on our financial condition and results of operations.

Following an amendment to the Federal Law on Communications, which became effective July 1, 2006, fixed-line operators began charging their subscribers for calls to mobile phone users and started to transfer a percentage of the charge to mobile operators terminating such calls. The percentage transferred to mobile operators is established by the regulator and is known as the "settlement rate."

The Ministry of Communications and Mass Media is considering altering the approach to inter-carrier settlements in Russia and the subsequent lowering of the settlement rate. Any reduction of the settlement rate by the regulator could have a negative impact on our average monthly service revenues per subscriber and margins. In September 2013, the Government commission on telecommunications supported the proposal of the Ministry of Communications and Mass Media to simplify the process of traffic transmission within one sub-federal region, as well as to simplify the process of traffic transmission within the voice and data networks while transmitting voice information within one sub-federal region of the Russian Federation. The exact changes to the current regulations may be significant, including the regulation of interconnect leading to operators' inability to determine the autonomous pricing of interconnect rates.

In November 2014, the Government of Russia considered a proposal on reconsideration of the interconnect regulation approach submitted by the Ministry of Communications. In December 2018, the Ministry of Communications developed new initiatives relating to the reframing of interaction between operators. It is unclear yet how this proposal may be implemented, however it may potentially lead to a reduction in traffic transmission revenues and an increase in traffic transmission costs. The final decision on the implementation of this proposal has not been made yet.

The agreement on the conditions of inter-carrier mutual settlements while delivering international communication services in CIS-countries was signed on the CIS Heads of Government Council meeting

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held in Dushanbe on October 30, 2015 (the "**Agreement**"). The enforcement of certain provisions of the Agreement may adversely affect our operation in terms of the execution of inter-carrier mutual settlements among CIS-operators. In order to be implemented, the corresponding provisions should be introduced to the Russian legislation. To date, the provisions have not been implemented yet.

In December 2013 and July 2014, the State Commission for Radio frequencies introduced a number of modifications to the conditions of using the frequency band for 3G and 4G. These changes resulted in implementation of the principle of technological neutrality for frequency bands 900 MHz (UMTS and LTE) and 1800 MHz (LTE). The Government Regulation No. 480 dated May 24, 2014, requiring that tenders shall be held mainly in the form of auctions, came into force on June 6, 2014.

These changes may strengthen competition in the market as well as add costs for development of the network infrastructure.

According to press reports, a proposal on carrying international traffic from the country's territory through the networks of nationwide operators is being considered. The list of nationwide operators has not been specified yet. In case such initiative is implemented and MTS is not included in the list of nationwide operators, this may lead to an increase in our traffic transmission costs.

According to Government Regulation No. 1240 dated November 24, 2014, starting from January 1, 2015, federal public bodies were vested with a right to make decisions on using data transmission network of government bodies, which is a part of infrastructure ensuring information and technological interaction with the information systems used for rendering state and municipal electronic services for the purposes of exercising public functions. To date, the single operator of infrastructure of electronic state services is Rostelecom. Adoption of the Regulation may adversely affect our revenues with regard to the B2G market segment due to competitive disadvantage.

With the entry into force of the Treaty on the Eurasian Economic Union (the "**EEU**") on January 1, 2015, a supra-national antimonopoly body empowered to control compliance with general competition rules on cross-border markets and to apply antitrust measures was established. Should violations with respect to companies operating on cross-border markets be identified, this might lead both, to imposition of fines in accordance with the legislation of the EEU and adoption of the decisions for compulsory execution.

The amendments introduced to Article 5 of the Federal Law No. 115 "On Combating Legalization (Laundering) of Criminally Gained Income and Financing of Terrorism" dated August 7, 2001, entered into force on March 1, 2015. The list of organizations carrying out cash/other property operations, to whom the law requirements are applied, was expanded according to those amendments. In addition to telecommunications operators entitled to independently render mobile radio telecommunications services, the telecommunications operators occupying "substantial position" in public switched telephone networks entitled to independently provide data transmission services and render services on the basis of contracts with individual subscribers, have been also included in the list. A telecommunications operator which meets the specified criteria is obliged to provide the Federal Financial Monitoring Service with the information on cash/other property operations (that is subject to compulsory control or that seems suspicious while implementing the rules of internal control), as well as to take measures for freezing of cash assets / other property (in case there is an information on its involvement in extremist activities or terrorism). Lack of law enforcement practice may cause difficulties in interpreting the above-mentioned amendments and lead to additional burden for telecommunications operators.

On July 8, 2017, the Federal Law No. 110 "On Amendments to Article 66 of the Federal Law "On Communications" and Article 35 of the Federal Law "On Mass Media" dated June 7, 2017 came into force, which requires operators to transmit warning signals to telecommunications services users or inform them about dangers arisen by threat of occurrence of emergencies or occurrence of

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emergencies. Expenditure related to the transmission of warning signals is not compensated to operators.

On April 4, 2016, the Ministry of Communications of the Russian Federation adopted the order No. 135 "On the Approval of Requirements for Communication Networks Operation With Respect to the Use of Services Provided by Third Parties." The order came into force on July 26, 2017.

According to the requirements, a telecommunications operator is obliged (on a quarterly basis) to provide authorities with data on foreign companies and foreign citizens that are engaged to provide works or services related to exploitation and management of its communication network. In addition, a telecommunications operator is obliged to store information concerning all actions on communication facilities executed by servicing staff or third parties engaged in exploitation and management of communication networks both from workplaces and with the use of a remote access.

The Federal Law No. 374 "On the Introduction of Amendments to Certain Legislative Acts of the Russian Federation with Respect to Setting up of Additional Counter-terrorism Measures and Public Security Enforcement" was adopted on July 6, 2016. Pursuant to that law, operators are obliged to store information on the facts of receiving, transferring, delivery and/or processing of voice information and text messages, as well as images, sounds, video- and other messages of telecommunications services users (for a three-year period) and the contents of such communications, including voice data, text messages, pictures, sounds, video or other communications (for up to six months). The requirement relating to the storage of messages contents entered into force on July 1, 2018. The Government of the Russian Federation is responsible for approving the rules, terms and volume of information to be stored. The Government regulation "On Rules, Terms and Volume of Voice Information, Text Messages, Images, Sounds, Video- and Other Messages of Telecommunications Services Users to be Stored" was adopted on April 12, 2018 (the "Rules on Storage"). According to this regulation, commencing July 1, 2018, communication operators that render intercity and international communication services (as well as personal radio call services, mobile radio services in a public communication network, mobile radiotelephone and satellite communication services, data transmission services for the purposes of transferring voice information, zonal and local telephone communication services) are required to store voice information and text messages, for a period of six months from the moment of the end of their receipt, transfer, delivery and/or processing. Starting from October 1, 2018, operators that render telematics services, as well as data transmission services (except for data transmission services for the purposes of transferring voice information) are obliged to store telecommunication messages by using data storage technical equipment in the volume of electronic communication messages sent and received by the operator's subscribers (the actual traffic) during 30 days before the commissioning date of the technical equipment. Moreover, the capacity of the data traffic storage system is required to be increased by 15% annually during 5 years from the date the data storage technical equipment was put into operation. Significant additional costs will be required in order to comply with these requirements.

The Ministry of Communications of the Russian Federation has developed a draft decree on the introduction of amendments and additions to the Rules on Storage. According to the proposed amendments, technical means for the accumulation of information must have confirmation of their production in the territory of the Russian Federation. The possibility of applying these restrictions is not yet clear since there are not many Russian producers of this equipment. If this draft law is adopted, it may have a material adverse effect on our operations.

In December 2018, a draft law aimed at ensuring safe and sustainable functioning of the internet in the Russian Federation was submitted for consideration to the State Duma. On April 16, 2019, the State Duma adopted this draft law. Under this initiative, operators (including us) may be required to install new equipment on their networks, which could adversely affect the networks' stability and the

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quality of provided communication services. Additional costs for maintenance and operation of this equipment may be required from the operators, which cannot be estimated currently.

On January 14, 2019, the Government of the Russian Federation published a list of instructions aimed at encouraging the procurement of telecommunication equipment of Russian origin. According to the document, ministries should prepare proposals by May 1, 2019, relating to an increase in the import customs duty rate to a level of up to 20% with respect to telecommunication equipment. Currently, there can be no certainty as to the form of the implementation of these initiatives; therefore, it is difficult to assess how such changes will affect the company's operations. Should the import customs duty rate increase in respect of the equipment we purchase, this may have a material adverse effect on our financial condition and results of operations.

Currently, the Russian Civil Code is undergoing the process of substantial revisions with new provisions being introduced relating to a number of sectors. At present, the potential interpretation of these amendments by state authorities (including the courts), along with their impact on our activities are unknown.

On June 1, 2018, Federal Law No. 245 "On Amendments to the Federal Law" On Communications" entered into force and is aimed at further aligning the process of concluding a contract for the provision of mobile radiotelephone communication services without appropriate identification of a subscriber (*i.e.*, a user) of communication services. On November 17, 2018, the Decree of the Government of the Russian Federation came into force, which introduced amendments to the Rules for the provision of telephone services and specified the procedure for compliance with the requirements of this federal law. Additional costs were required from operators to provide a set of measures to improve the filling of databases with information about subscribers and the organization of interaction with state systems to verify the reliability of information about subscribers. Adoption of similar legislation in the future may lead to incurring additional costs by the operators, which may have a material adverse effect on our financial condition and results of operations.

A roadmap for 2018-2022, for the development of competition in economic sectors of the Russian Federation and the transition of particular sectors from the state of natural monopolies to the competitive market was approved by the Order of the Government of the Russian Federation No. 1697-r dated August 16, 2018. The roadmap provides for the adoption of a number of regulatory legal acts, *inter alia*, in the telecommunication sphere. Currently, it is difficult to assess how such changes and their interpretation by state bodies, particularly by courts, may affect our operation.

Russian companies are obliged to pay various and significant taxes including income tax, VAT, real estate tax, excise tax, payroll tax and others. Along with tax liabilities there are different obligatory non-tax payments. These include payments into Universal Service Fund, which currently amounts to 1.2% of our annual revenue on telecommunications services. Furthermore, potential regulatory changes that may be enacted in the future, such as the introduction of new rules regulating MVNOs, new rules concerning our pricing policy and others, could weaken our competitive position in the mobile telecommunications market. Changes in tax laws and non-tax regulations may lead to the growth of our tax burden and may, as a result, materially adversely affect our financial condition and results of operations.

The failure of our subsidiaries that are subject to regulations as natural monopolies to comply with the requirements of the Federal Law No. 223 "On Procurement Process," inter alia, in case of collective tendering can lead to application of certain liability measures with respect to our subsidiaries.

One of our subsidiaries, MGTS, is categorized as a natural monopoly in the Moscow telecommunications market. According to the Federal Law No. 223 "On Procurement Process," natural monopolies are obliged to conduct the procurement process in accordance with the principles of transparency and non-discrimination and unjustified limitation of competition. If our subsidiaries that

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are under additional regulations as natural monopolies are found failing to comply with the law on procurement process, *inter alia* in case of collective tendering with us, our subsidiaries can be subject to certain liability measures, according to Russian legislation. See also "Risks Relating to Our Business If we are found to have a dominant position in the markets where we operate and are determined to have abused this position, the FAS may be entitled to regulate our subscriber tariffs and impose certain restrictions on our operations."

Russian and foreign legislation on personal data and information security in information systems and communication networks may turn out to be hard to implement and require significant resources. Inability to comply with the requirements may lead to sanctions.

Communication operator activity in the sphere of information security in the Russian Federation is represented by the following legal acts: Federal laws "On Communication," "On Information, Information Technologies and Information Protection," "On Personal Data," "On Trade Secret," "On Electronic Signature," by-laws of the Government, FSTEC, FSS, Ministry of Communication and The Federal Service for Supervision of Communications, Information Technology and Mass Media of the Russian Federation, among others. Main risks, posed by organization of processing and providing security of personal data include the following factors:

ambiguity of applicability of legislation on communication, personal data, trade secret, etc. to a single object of legal regulation. Data may be simultaneously attributed to different categories of limited access information, which fall under different information security requirements under different sections of the Russian legislation;

responsibility of personal data operators for the actions of the third parties, processing personal data at the request of personal data operators;

ambiguity of the criteria for determining personal data protection level during its processing in the information systems (for example, in case undocumented possibilities in system and/or applied software exist), set by Government Decree No.1119, dated November 1, 2012;

high level of requirements to the personal data protection;

significant costs on creation of information protection system and support of protection level;

necessity to use the means of information protection, which have undergone a special conformity assessment procedure; replacement of the existing means of information protection with the ones, certified by FSTEC and FSS of Russia may require additional costs on certification of the existing means of information protection and later on certificates renewal (because of the limited period of certificates validity);

in case of untimely obtaining licenses or untimely confirmation of licenses for the technical and cryptographic protection activity of confidential information by FSTEC of Russia or FSS of Russia, the company would not be able to provide the corresponding commercial services to the third parties; and

ambiguity of the requirement of Federal law No. 152 to localize processing of the Russian citizens personal data on the territory of Russia, keeping the possibility of cross-border transfer of this data.

In case of non-compliance with the Russian legislation on information security and personal data protection, the company cannot rule out the possibility of imposing sanctions by the regulatory bodies in the form of fines, confiscation of uncertified means of information protection, suspension of business processes for 90 days as well as suspension or withdrawal of the license, allowing to provide communication services, technical and cryptographic protection of confidential information.

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In addition, it is possible that subscribers will file legal claims, seeking to reimburse tangible and moral damage in connection with the violation of the legislation requirements. With effect from May 25, 2018, the General Data Protection Regulation came into force in the European Union. Our basic business processes and our subsidiaries were audited in order to determine applicability and compliance with the GDPR requirements. In addition, a control mechanism for determination of compliance with the specified requirements was proposed to be established for new business processes (if they are initiated). If the resources required to maintain, develop and implement data protection and information security systems meeting the legislation requirement are greater than expected, or we fail to comply with the data protection and information security laws despite our best efforts to do so, our business, financial condition and results of operations could be materially adversely affected.

On October 5, 2017, the Law of Ukraine "On the Basic Principles of Ensuring the Cybersecurity of Ukraine" was adopted and entered into force on May 9, 2018. It provides the requirements and procedures for identifying critical infrastructure objects to ensure cybersecurity. All enterprises in the field of information and communications technologies might be recognized as objects of critical infrastructure that can bear the risks of additional costs and additional responsibility for ensuring cybersecurity. The drafts of the decisions of the Cabinet of Ministers of Ukraine relating to the implementation of procedures for identification of critical infrastructure objects, their audit, etc. are being developed by the State Service of Special Communications and Information Protection of Ukraine.

On October 19, 2017, The Ministry of Economic Development and Trade developed and submitted for public discussion the draft law "On Amendments to the Law of Ukraine "On Foreign Economic Activities," which proposed to grant the Ministry of Economic Development and Trade a right to suspend foreign economic activities for a period of one year according to a submission of the Security Service of Ukraine if subjects of foreign economic activity carry out activities connected with the financing of terrorism and encroachment of national interests, national security and territorial integrity of Ukraine.

On July 20, 2018, the Ministry of Economic Development and Trade developed and submitted for public discussion the draft law of Ukraine "On Critical Information Infrastructure and Its Protection." The draft law is aimed at creating an environment for the development and effective implementation of state policy with regard to protection of critical infrastructure. The Security Service of Ukraine is vested, *inter alia*, with the following powers: takes part in investment review and verifies the origin of the capital allocated to critical infrastructure, takes part in inspections to ensure that telecommunication operators are in compliance with the national security interests, gets access to automated information and referral information systems, registers and databases, whose holders (administrators) are operators of critical infrastructure objects. In case the company or objects of the company's infrastructure are classified as critical infrastructure objects in the future, it may entail enhanced control of the NCCIR, the State Service of Special Communications and Information Protection, the Security Service of Ukraine, as well as pose additional requirements with regard to business continuity and preservation of information.

Changes in Ukrainian telecommunications legislation have caused uncertainty in relation to the regulation of the Ukrainian telecommunications industry and may adversely affect our business, financial condition and results of operations.

In November 2012, the NCCIR issued the decision regarding the rules governing the provision of MNP service, which enables the subscribers to retain their telephone number after switching from one operator of mobile communications to another. MNP law came into legal force on July 5, 2013 with the beginning of switching to other operators from December 20, 2013. On December 30, 2013 a resolution that postponed the beginning of service provision to July 2014 came into legal force, however, implementation of MNP service was cancelled later on by a court decision. On July 31, 2015, the

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NCCIR approved the procedure for MNP service rendering and introduced amendments to the basic requirements of agreements for the provision of telecommunications services. The decision entered into force on September 8, 2015, after which the NCCIR appointed the USCRF as an administrator of the centralized database of the ported numbers.

In May 2017, operators received approved documents including technical requirements for MNP service. The court proceedings regarding the choice of a supplier for the centralized database have been finished. According to the decision of the NCCIR dated November 27, 2018, the MNP service is to be launched into a commercial use on May 1, 2019.

The Verkhovna Rada of Ukraine regularly reviews different versions of draft laws "On Electronic Communications." The key one of these draft laws requires, *inter alia*, the identification of the entire subscriber base of operators. The draft law provides for a period of compulsory registration, being six months. The inability to identify subscribers within the prescribed timeframe could have a negative effect on business operations of VF Ukraine. The request of VF Ukraine and Kyivstar PrJSC with regard to extending the transition period to two years was passed to legislators by way of an official letter. As of April 1, 2019, the draft law has not been considered.

In addition, the NCCIR approved a new procedure for the identification of anonymous subscribers, which obliged operators to register subscribers in electronic form, including with the use of an electronic subscriber identification system. The new procedure came into force in December 2018.

Legislative changes regulating the telecommunications industry may materially adversely affect our business, financial condition and results of operations. See "Item 4 Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Regulation in Ukraine Legislation."

The Russian taxation system is underdeveloped and any imposition of significant additional tax liabilities could have a material adverse effect on our business, financial condition or results of operations.

The discussion below provides general information regarding the Russian tax regime and is not intended to be inclusive of all issues. Investors should seek advice from their own tax advisors as to these tax matters before investing in our shares and ADSs. See also "Item 10" Additional Information E. Taxation."

In general, taxes payable by Russian companies are substantial and numerous. These taxes include, among others, corporate income tax, value added tax, property taxes, excise duties, payroll-related taxes and other taxes.

In addition, intercompany dividends are subject to a withholding tax of 0% or 13% (depending on whether the recipient of dividends qualifies for Russian participation exemption rules), if being distributed to Russian companies, and 15% (or lower, subject to benefits provided by relevant double tax treaties), if being distributed to foreign companies.

The Russian tax authorities may take a more assertive position in their interpretation of the legislation and assessments, and it is possible that transactions and activities that have not been challenged in the past may nonetheless be subject to challenges in the future. The foregoing factors raise the risk of the imposition of arbitrary or onerous taxes on us, which could adversely affect the value of our shares and ADSs.

Current Russian tax legislation is, in general, based upon the formal manner in which transactions are documented, looking to form rather than substance. However, the Russian tax authorities are increasingly taking a "substance and form" approach, which may cause additional tax exposures to arise in the future. Moreover, the Russian Tax Code was amended with direct provisions which prohibit tax benefits, if achieved without real business activities, or the main aim of the transaction was tax benefits.

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Additional tax exposures could have a material adverse effect on our business, financial condition, results of operations and prospects.

It is expected that Russian tax legislation will become more sophisticated, which may result in the introduction of additional revenue raising measures. Although it is unclear how any new measures would operate, any such introduction may affect our overall tax efficiency and may result in significant additional taxes becoming payable. Additional tax exposures could have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition to the usual tax burden imposed on Russian taxpayers, these conditions complicate tax planning and related business decisions. For example, tax laws are unclear with respect to deductibility of certain expenses. This uncertainty could possibly expose us to significant fines and penalties and to enforcement measures, despite our best efforts at compliance, and could result in a greater than expected tax burden.

See also "Item 8 Financial Information A. Consolidated Statements and Other Financial Information 7. Litigation Tax Audits and Claims."

# Lack of law enforcement practice of the Russian anti-offshore policy may have adverse impact on our business, financial condition and results of operations.

In the past few years, the Russian Federation like a number of other countries in the world has been actively involved in a discussion of measures against tax evasion by the use of low tax jurisdictions as well as aggressive tax planning structures.

The rules of controlled foreign companies (CFC) came into force on January 1, 2015. The rules oblige Russian taxpayers being controlling persons of a foreign company to submit to the tax authorities both standard notifications on participation in CFC and tax declarations in certain cases. Profit generated commencing in 2015, including retained earnings, is subject to taxation in the Russian Federation. The innovations could impose additional tax on the undistributed profits of any foreign entity controlled by us (in proportion to such controlling stake) at the rate of 20%. These innovations caused amendments to the Tax Code providing for liability in case of non-disclosure or incomplete disclosure of information on CFCs and the non-payment or underpayment of relevant tax.

In addition, implementation of new concept of beneficial ownership, with regard to taxation of payment of passive income (dividends, royalty, interest, capital gain), may negatively affect possibility to apply benefits set by the double tax treaties, in case such payments pass through intermediary entities.

This may potentially lead to increase of tax burden with regard to such payments.

On November 4, 2014, the President of the Russian Federation signed the Federal law No. 325 "On Ratification of the Convention on Mutual Administrative Assistance in Tax Matters." Ratification of this Convention will enable the Russian Federation to receive tax information from all participating countries, which include a number of offshore jurisdictions.

Lack of law enforcement practice may cause difficulties in interpreting the above-mentioned laws by the Russian tax authorities. It is also currently unclear how the enacted laws could affect our counterparties, which may be registered in off shore jurisdictions.

In case the impact of legislative initiatives is significant for some of our counterparties it may also impact our results of operations.

# The tax system in Ukraine is undergoing a reform and various tax laws are subject to different interpretations.

Taxes and statutory charges are levied in accordance with the Tax Code of Ukraine ("TCU") that came into effect in 2011. Along with TCU requirements, Ukrainian taxpayers are obligated to follow

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other legal acts and legislative provisions. Applicable taxes include value added tax ("VAT"), corporate income tax ("CIT"), customs duties, payroll taxes and other taxes. Ukrainian legislation is ambiguous, which could result in various tax disputes due to a number of mutually controversial or incomplete provisions.

For example, payments for computer software can be treated as royalty or payments for intangible assets depending on whether a company purchases end-user rights or not. VF Ukraine purchases limited rights for the use of computer software, which are currently determined as end-user rights with an appropriate taxation. However, such treatment could still be disputed.

Also, rules established by the TCU for recalculation of the input tax credit for non-current assets are unclear. Uncertain transfer pricing rules and their inconsistent application by the Ukrainian tax authorities and courts may also adversely affect VF Ukraine's operations. VF Ukraine's transactions with its non-resident related parties as well as certain transactions with other non-residents registered in low-tax jurisdictions (exhaustive list of these jurisdictions is established by the Cabinet of Ministers of Ukraine) may fall under transfer pricing ("TP") rules. For 2017 such transactions should be treated as controlled ones provided the following two conditions are met: (i) taxpayer's annual income exceeds UAH 150 mln; (ii) total volume of transactions with one counterparty for the respective year exceeds UAH 10 mln. Based on TP legislation, Ukrainian entities engaged in controlled transactions are required to submit report on controlled transactions and prepare transfer pricing documentation to substantiate the price in a particular controlled transaction. However, we may not exclude the risk that the tax authorities might challenge the prices in intercompany transactions taking into consideration the fact, that TP practice in Ukraine is relatively new and there is lack of practical cases describing approach applied by tax authorities regarding intra-group pricing. In case of any price adjustments, VF Ukraine's effective tax rate may increase and its financial results may be adversely affected.

Starting from 2018, to determine whether or not the taxpayer's business transactions are to be treated as controlled, the volume of such transactions should be calculated based on arm's length prices (instead of contractual prices as was previously commonly used in practice). These changes are intended to eliminate possible abuses such as a deliberate understatement of contractual prices; however, they may give rise to disputes with the tax authorities concerning the determination of whether the transactions should be treated as controlled.

Generally, tax returns as well as primary documents in Ukraine can be subject to inspection for a three-year period and, for issues of transfer pricing for a seven-year period. However, this term may be extended under certain circumstances, including criminal investigation.

In 2017, VF Ukraine submitted adjustments to CIT-returns for the years ended December 31, 2015 and 2016 in order to eliminate double taxation, arising from different profit calculation for accounting and tax purposes in earlier periods.

During 2017 there was an obligation to register VAT invoices within 15 days from the date of issuance the act of acceptance or from the date of prepayment. In case VAT invoice is not registered, tax authorities may impose penalties up to 100%.

CIT regulation may undergo significant changes in the nearest future. The move from tax regime under which all companies' profits are subject to taxation to a system where tax is paid only if corporate profits are distributed was delayed for a year (previously it was expected to occur on January 1, 2019). Ukrainian companies are expected to be taxed on their actual and deemed distributed profits, including expenses incurred or other payments unrelated to economic activities, etc. It is not stated yet if the companies will be able to use deferred tax assets or set off CIT-overpayments against future tax payable. These and other changes could have a material adverse effect on our results of operations and financial condition.

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While we believe that we currently comply with the tax laws affecting our operations in Ukraine, it is possible that relevant authorities may take differing positions with regard to interpretative issues resulting in additional payment obligations and penalties, which may result in a material adverse effect on our results of operations and financial condition.

Vaguely drafted Russian transfer pricing rules, and lack of reliable pricing information may impact our business and results of operations.

Russian transfer pricing legislation became effective in the Russian Federation on January 1, 1999.

This legislation allowed the tax authorities to make transfer pricing adjustments and impose additional tax liabilities with respect to all "controlled" transactions, provided that the transaction price differed from the market price by more than 20%. "Controlled" transactions included transactions with related parties, barter transactions, foreign trade transactions and transactions with significant price fluctuations (*i.e.*, if the price with respect to such transactions differs from the prices on similar transactions conducted within a short period of time by more than 20%). Special transfer pricing provisions were established for operations with securities and derivatives. Russian transfer pricing rules were vaguely drafted, generally leaving wide scope for interpretation by Russian tax authorities and courts. There has been very little guidance (although some court practice is available) as to how these rules should be applied. These transfer pricing rules apply with respect to transactions that occurred before January 1, 2012.

New transfer pricing rules became effective on January 1, 2012. The implementation of these new rules should help to align domestic rules with OECD principles. The new rules are expected to considerably toughen the previously effective law by, among other things, effectively shifting the burden of proving market prices from the tax authorities to the taxpayer and obliging the taxpayer to keep specific documentation.

If the Russian tax authorities were to impose significant additional tax liabilities through the introduction of transfer pricing adjustments, they could have a material adverse impact on our business, financial condition and results of operations. The adoption of the new transfer pricing rules may increase the risk of transfer pricing adjustments being made by the tax authorities. In addition to the usual tax risks and tax burden imposed on Russian taxpayers, the uncertainties of the new transfer pricing rules complicate tax planning and related business decisions. It will also require us to ensure compliance with the new transfer pricing documentation requirements proposed in such rules. Uncertainty of the new rules may also require us to expend significant additional time and material resources for implementation of our internal compliance procedures. Tax authorities could impose additional tax liability as well as 40% penalties on the underpaid tax in case the prices or profitability are outside the market range and if the required transfer pricing documentation has not been prepared, which could have a material adverse effect on our results of operations and financial condition.

The regulatory environment for telecommunications in Russia, Ukraine and other countries where we operate or may operate in the future is uncertain and subject to political influence or manipulation, which may result in negative and arbitrary regulatory and other decisions against us on the basis of other than legal considerations and in preferential treatment for our competitors.

We operate in an uncertain regulatory environment. The legal framework with respect to the provision of telecommunications services in Russia and Ukraine and the other countries where we operate or may operate in the future is not well developed, and a number of conflicting laws, decrees and regulations apply to the telecommunications sector.

Moreover, regulation is conducted largely through the issuance of licenses and instructions, and governmental officials have a high degree of discretion. In this environment, political influence or manipulation could be used to affect regulatory, tax and other decisions against us on the basis of other

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than legal considerations. In addition, some of our competitors may receive preferential treatment from the government, potentially giving them an advantage over us.

# We are subject to currency control regulations.

The Currency Control Law provides a framework and establishes general rules within which the government of Russia and the Bank of Russia are authorized to introduce certain measures of currency regulation, in connection with which there may be some uncertainty in the process of our implementation of foreign exchange operations when importing equipment.

The change in the currency regulation may negatively affect our performance of obligations under contracts previously concluded with Russian and foreign counterparties, requiring us to make payments on them in foreign currency and necessitating the conclusion of additional agreements in relation to the relevant contracts. As a result, we are exposed to the risks of changes in the currency regulation and foreign exchange control in Russia.

The regulation of critical information infrastructure in the Russian Federation may lead to additional costs which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Federal Law No. 187 "On the Security of the Critical Information Infrastructure of the Russian Federation" which came into force on January 1, 2018 (the "Law on CII") provides for the creation of a register of significant critical information infrastructure (CII) objects, to which the communication networks may be assigned (after the classification of CII objects). Both state-owned and non-state-owned organizations are classified as subjects of the CII.

The law envisages criminal penalties imposed on officials owning significant CII objects if the security requirements in respect of such significant CII objects are not met and damage is incurred. Information on CII security measures, on the status of its protection against computer attacks is classified as a state secret. CII subjects, including communication operators, are required to, among other things:

categorize CII objects;

agree the results of CII objects categorization with the authorized body (FSTEC - Federal Service for Technology and Export Control of the Russian Federation);

create a security system for significant CII objects and implement measures targeted at significant CII protection and protection of information, belonging to the corresponding category; and

set up and provide the operations of means for attacks search on the communication network with the transfer of management to the authorized body (FSS of Russia).

The by-laws envisage measures aimed at CII objects protection, which are difficult to implement, especially as regards the implementation of information protection measures that are not provided by such communication standards as 3GPP, ETSI, etc., which may lead to incompliance with the regulatory requirements. The implementation of these requirements will require additional costs to be incurred. Introduction of similar regulations, which may require additional costs to be incurred by us or otherwise negatively affect us could have a material adverse effect on our business, financial condition, results of operations and prospects.

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# Risks Relating to the Shares and ADSs and the Trading Market

# Government regulations may limit the ability of investors to deposit shares into our ADS facility.

The ability of investors to deposit shares into our ADS facility may be affected by current or future governmental regulations. For example, under Russian securities regulations, no more than 25% of a Russian company's shares may be circulated abroad through sponsored depositary receipt programs. Prior to December 31, 2005, and at the time of our initial public offering, this threshold was 40%. Although we believe that the new lower threshold does not apply to our ADSs, in the future, we may be required to reduce the size of our ADS program or amend the depositary agreement for the ADSs.

Because our ADS program is regularly at or near capacity, purchasers of our shares may not be able to deposit these shares into our ADS facility, and ADS holders who withdraw the underlying shares from the facility may not be able to re-deposit their shares in the future. As a result, effective arbitrage between our ADSs and our shares may not always be possible. Our shares are listed and traded on the Moscow Exchange. Due to the limited public free float of our common stock, the public market for our shares is significantly less active and liquid than for our ADSs. The cumulative effect of these factors is that our shares may from time to time, and for extended periods of time, trade at a significant discount to our ADSs.

# Failure to comply with requirements on the disclosure of certain information on ADSs and ADS holders may restrict your ability to vote.

Pursuant to the Russian securities laws, depositaries, and as a result, ADS holders are not able to vote in connection with the shares underlying ADSs on behalf of the ADS holders unless they provide certain information to the issuer. At a minimum, this information includes the identity of the holder of the ADSs, registration details including a state registration number (for legal entities), and the number of shares attributable to each ADS holder.

Nevertheless, the legislation stipulates that the issuer, CBR, Russian courts and pretrial investigation agencies may request such lists of depositary receipt holders from the holder of depositary program depo account. The holder of depositary program depo account shall take all reasonable measures in order to provide such information. In case of non-compliance with the above requirements, the CBR may suspend, or impose limitations on, transactions with securities held in the relevant accounts of Russian custodians for a period of up to six months. As a result, the shares underlying the ADSs may be blocked and it may be impossible to deposit or withdraw the shares into or from the depositary program. In addition, uncertainties with respect to exercise of certain rights attaching to shares underlying ADS holders could complicate the exercise of right to, and the ability to derive benefits from, the shares represented by ADSs.

# The market price of our ADSs has been and may continue to be volatile.

The market price of our ADSs experienced, and may continue to experience, significant volatility.

periods of regional or global macroeconomic instability;

For information on the closing price of our ADSs on the New York Stock Exchange, see "Item 9 Offer and Listing Details A.4. Market Price Information."

Numerous factors, including many over which we have no control, may have a significant impact on the market price of our ADSs, including, among other things:

announcements of technological or competitive developments;
regulatory developments in our target markets affecting us, our customers or our competitors;

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actual or anticipated fluctuations in our quarterly operating results;

changes in financial estimates or other material comments by securities analysts relating to us, our competitors or our industry in general;

the value of local currencies in the markets where we operate compared to the US dollar;

announcements by other companies in our industry relating to their operations, strategic initiatives, financial condition or financial performance or to our industry in general;

announcements of acquisitions or consolidations involving industry competitors or industry suppliers;

sales or perceived sales of additional ordinary shares or ADSs by us or our significant shareholders; and

impact and development of any investigation or lawsuit, currently pending or threatened, or that may be instituted in the future.

For example, market price of our ADSs experienced volatility in 2017 due to legal proceedings relating to Sistema, initiated by Rosneft, Bashneft and the Ministry of Land and Property Relations of Republic of Bashkortostan, and arrest of 31.76% of shares in our authorized capital held by Sistema, which was lifted as a result of execution of the settlement agreement.

In addition, the stock market in recent years has experienced extreme price and trading volume fluctuations that often have been unrelated or disproportionate to the operating performance of individual companies. These broad market fluctuations may adversely affect the price of our ADSs, regardless of our operating performance.

Voting rights with respect to the shares represented by our ADSs are limited by the terms of the deposit agreement for our ADSs and relevant requirements of Russian law.

ADS holders will have no direct voting rights with respect to the shares represented by the ADSs.

They are able to exercise voting rights with respect to the shares represented by ADSs only in accordance with the provisions of the deposit agreement relating to the ADSs and relevant requirements of Russian law. Therefore, there are practical limitations upon the ability of ADS holders to exercise their voting rights due to the additional procedural steps involved in communicating with them. For example, the Joint Stock Companies Law and our charter require us to notify shareholders no less than 30 days prior to the date of any meeting and at least 50 days prior to the date of an extraordinary meeting to elect our Board of Directors. Our ordinary shareholders will receive notice directly from us and will be able to exercise their voting rights by either attending the meeting in person or voting by power of attorney.

ADS holders by comparison, will not receive notice directly from us. Rather, in accordance with the deposit agreement, we will provide the notice to the depositary. The depositary has undertaken, in turn, as soon as practicable thereafter, to mail to ADS holders the notice of such meeting, voting instruction forms and a statement as to the manner in which instructions may be given by ADS holders.

To exercise their voting rights, ADS holders must then instruct the depositary how to vote the shares represented by the ADSs they hold. Because of this additional procedural step involving the depositary, the process for exercising voting rights may take longer for ADS holders than for holders of the shares and we cannot assure ADS holders that they will receive voting materials in time to enable them to return voting instructions to the depositary in a timely manner. ADSs for which the depositary does not receive timely voting instructions will not be voted.

Given the above, we cannot provide any assurance that holders and beneficial owners of ADSs will (i) receive notice of shareholder meetings to enable the timely return of voting instructions to the

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depositary, (ii) receive notice to enable the timely cancellation of ADSs in respect of shareholder actions or (iii) be given the benefit of dissenting or minority shareholders' rights in respect of an event or action in which the holder or beneficial owner has voted against, abstained from voting or not given voting instructions.

See also "Failure to comply with requirements on the disclosure of certain information on ADSs and ADS holders may restrict your ability to vote."

## ADS holders may be unable to repatriate distributions made on the shares and ADSs.

We anticipate that any dividends we may pay in the future on the shares represented by the ADSs will be declared and paid to the depositary in rubles and will be converted into U.S. dollars by the depositary and distributed to holders of ADSs, net of the depositary's fees and expenses. The ability to convert rubles into U.S. dollars is subject to the availability of U.S. dollars in Russia's currency markets.

Although there is an existing, albeit limited by size, market within Russia for the conversion of rubles into U.S. dollars, including the interbank currency exchange and over-the-counter and currency futures markets, the further development of this market is uncertain. At present, there is a limited market for the conversion of rubles into foreign currencies outside of Russia and limited market in which to hedge ruble and ruble-denominated investments.

## ADS holders may be subject to Russian regulatory restrictions.

Prior to the amendments to the Russian securities laws introduced in 2011, a depositary bank could be considered the owner of the shares underlying the ADS, and as such could be subject to the mandatory public tender offer rules, anti-monopoly clearance rules, governmental consents or reporting requirements in respect of acquisition of shares and other limitations contemplated by Russian law. The amendments to the Russian securities laws introduced in 2011 provide that a depositary bank is not an owner of underlying shares, and as such, these requirements should apply to ADS holders.

## ADS holders may be unable to benefit from the United States Russia income tax treaty.

Under Russian law, dividends paid to a non-resident holder of the shares generally will be subject to Russian withholding tax at a rate of 15%. The tax burden may be reduced to 5% or 10% under the United States Russia income tax treaty for eligible U.S. holders; a 5% rate may potentially apply for U.S. holders who are legal entities owning 10% or more of the company's voting shares, and a 10% rate applies to dividends paid to eligible U.S. holders in other cases, including dividend payments to individuals and legal entities owning less than 10% of the company's voting shares. However, according to the recent amendments to the Russian Tax Code, U.S. holders will only be able to utilize the 5% reduced rate through tax reimbursement procedures, as the tax agent is required to use the baseline tax rate established by the code or the applicable tax treaty, whichever is appropriate. See also "Item 10 Additional Information E. Taxation United States Russia Income Tax Treaty Procedures."

The Russian tax rules in relation to ADS holders (that would affect U.S. holders) are characterized by significant uncertainties and limited interpretive guidance. Recent amendments to the tax rules have clarified the status of the ADS holders as beneficial owners of the income from the underlying shares by establishing that the custodian holding the depo account with the shares underlying the ADSs acting as the tax agent and determines amounts of the withholding tax based on the information about the ADS holders and their tax residency status as provided by the program depositary. However, the application of the baseline tax rate for ADS holders and any double tax treaty relief is available only if the tax treaty residence of the holder is provided to the custodian along with the other information prescribed by the Tax Code. In relation to ADS holders such information is to be provided by the ADS holders to the depositary, who relays it to the custodian, who acts as the tax agent and withholds the taxes when making transferring the dividends to the depositary. It is currently unclear how the

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depositary will collect the necessary information from ADS holders. Thus, while a U.S. holder may technically be entitled to benefit from the provisions of the United States Russia income tax treaty, in practice such relief may be difficult or impossible to obtain. See also "Item 10" Additional Information E. Taxation" for additional information.

#### Capital gain from the sale of shares and ADSs may be subject to Russian income tax.

Income received by a foreign company from the sale, exchange or other disposal (assuming that such income is not related to a permanent establishment of a foreign company in Russia) of shares (participation interest) in an organization in which over 50% of the assets consist of immovable property located in Russia, as well as financial instruments derived from such shares, is treated as income derived from a source in the Russian Federation and is subject to withholding tax at a rate of 20%. However, gains arising from the disposition of the securities, which are traded on an organized stock exchange, are not treated as Russian-source income, and should not be subject to taxation in Russia.

The amount of such income is typically determined as the sales price of shares (participation interest). However, if documentary support for the acquisition cost of the shares (participation interest) is available, the tax may instead be assessed on the basis of the difference between the sales price and the acquisition cost (including other related costs) if documentary evidence of such costs is submitted to the tax agent. The Russian Tax Code also establishes special rules for calculating the tax base for the purposes of transactions with securities. However, an exemption applies if immovable property located in Russia constitutes more than 50% of a company's assets and the securities are traded on a foreign stock exchange. The determination of whether more than 50% of our assets consist of immovable property located in Russia is inherently factual and is made on an on-going basis and the relevant Russian legislation and regulations in this respect are not entirely clear. Hence, there can be no assurance that immovable property owned by us and located in Russia does not currently and will not constitute more than 50% of our assets as at the date of the sale of ADSs by non-residents.

Where the ADSs are sold by legal entities or organizations to persons other than a Russian company or a foreign company or an organization with a registered permanent establishment in Russia, even if the resulting capital gain is considered taxable in Russia, there is currently no mechanism under which the purchaser will be able to withhold the tax and remit it to the Russian budget.

Under the United States / Russia income tax treaty, capital gains from the sale of shares and/or ADSs by eligible U.S. holders should be relieved from taxation in Russia, unless 50% or more of our assets (the term "fixed assets" is used in the Russian version of the treaty) were to consist of immovable property located in Russia.

The taxation of income of non-resident individuals depends on whether this income is received from Russian or non-Russian sources. Russian tax law does not give a definition of how the "source of income" should be determined with respect to the sale of securities, other than that income from the sale of securities, which takes place "in Russia" should be considered as Russian source income. As there is no further definition of what should be considered to be a sale "in Russia," the Russian tax authorities have a certain amount of freedom to conclude what transactions take place in or outside Russia, including looking at the place of the transaction, the place of the issuer of the shares, the location of the registrar recording the transfer of legal title to the relevant securities or other similar criteria.

Non-residents who are individuals are taxable on Russian-source income. Provided that gains arising from the disposition of the foregoing types of securities and derivatives outside of Russia by U.S. holders who are individuals not resident in Russia for tax purposes will not be considered Russian source income, then such income should not be taxable in Russia. However, gains arising from the disposition of the same securities and derivatives "in Russia" by U.S. holders who are individuals not

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resident in Russia for tax purposes may be subject to tax either at the source in Russia or based on an annual tax return, which they may be required to submit with the Russian tax authorities. See also "Item 10" Additional Information E. Taxation."

The lack of a developed practice relating to share registration system in Russia may result in improper record ownership of our shares, including the shares underlying the ADSs, and other problems connected with the rights attributed to the relevant shares such as dividend payments.

Ownership of Russian joint stock company shares (or, if the shares are held through a nominee or custodian, then the holding of such nominee or custodian) is determined by entries in a share register and is evidenced by extracts from that register. Currently, the central registration system in Russia is under development. Since October 1, 2014, share registers of all joint stock companies are maintained by licensed registrars. Regulations were issued regarding the licensing conditions for such registrars, as well as the procedures to be followed by both companies maintaining their own registers and licensed registrars when performing the functions of registrar; however, companies are no longer able to maintain the registers themselves. Nevertheless, in practice registrars tend to have relatively low levels of capitalization and insufficient insurance coverage.

On December 7, 2011, amendments to the relevant legislation were adopted, substantially reforming the registration system by introducing the CSD. In the course of this reform of the share keeping system, numerous different depositaries with accounts in the registers of companies were replaced by a single central depositary, whose primary function is the custody of shares in all major companies. These changes became effective on January 1, 2012 and are still being implemented. On November 6, 2012, FSFM officially appointed the National Settlement Depositary as the central depositary. Since the central depositary opened its account in MTS' register in March 2013, all the other custodians are restricted from opening their accounts in the register. Currently the central depositary is the only custodian with an account in MTS' register and other custodians hold custodial accounts with the central depositary.

In addition, certain amendments to the Civil Code of the Russian Federation entered into force on October 1, 2013 regarding the transfer and restitution of securities that are aimed at protection of rights of security holders and on September 1, 2014 regarding the regulation of legal entities and their corporate governance. However, we cannot entirely exclude that transactions in respect of a company's shares could be improperly or inaccurately recorded, and share registration could be lost through fraud, negligence, official and unofficial governmental actions or oversight by registrars incapable of compensating shareholders for their misconduct. This creates risks of loss as well as difficulties relating to dividend payments not normally associated with investments in other securities markets.

The depositary reform in Ukraine, as well as regulation of issues relating to repatriation of dividends outside Ukraine may lead to an increase in terms of dividend payments with respect to VF Ukraine shareholders, as well as adversely affect our cash flows, which may have adverse impact on our financial condition and results of operations.

The National Securities and Stock Market Commission of Ukraine, by its decision No. 391 "On Procedure of Payment of Dividends by a Joint Stock Company" dated April 12, 2016 stated that joint stock companies might carry out dividend payments either through the depository system of Ukraine or directly to shareholders. The specific method of the dividend payment is determined by a relevant decision of the general shareholders meeting with respect to the entire issue of securities of the joint stock company. The Regulation No. 591 of the National Bank of Ukraine "On Amendments to Certain Legislative Acts of the National Bank of Ukraine" that entered into force on September 23, 2014 was prolonged by the corresponding regulations of the NBU (the latest regulation expired on June 8, 2016).

The regulations set the restriction on a number of operations in foreign currency, including repatriation of dividends to the foreign investor.

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According to the NBU Board Resolutions No. 342, 386, 410 "On Resolving the Situation in the Money and Foreign Exchange Markets of Ukraine" adopted in 2016, key currency restrictions have been re-extended until introduction of new resolutions of the NBU. The dividends may be repatriated with certain limitations. The Resolution of the NBU dated November 22, 2016 continued gradual mitigation of temporary restrictions on the currency market, by expanding opportunities for the clients of resident banks to purchase foreign currency in the interbank market.

On April 13, 2017, the NBU adopted a resolution that allows the repatriation of dividends not only for the period of 2014 to 2015, but also for 2016, and simplifies the mechanism of such payments, allowing the repatriation of dividends for the specified years in a total amount of up to 5 million U.S. dollars within one month. The NBU adopted a resolution, which changes the terms of the repatriation of dividends to foreign shareholders of Ukrainian companies with effect from November 15, 2017. Accordingly, the repatriation of dividends accrued until 2016 is permitted. The monthly limit on the repatriation of dividends for the period of up to 2013 is equivalent to 2 million U.S. dollars. In March 2018 the NBU adopted another resolution, which permits repatriation of dividends to foreign shareholders of Ukrainian companies irrespective of the period they were accrued in a total amount of up to 7 million U.S. dollars per month.

On January 4, 2019, the NBU approved a new system of currency regulation and published a currency liberalization roadmap providing for the gradual removal of FX restrictions as Ukraine's macroeconomic conditions improve. However, in case restrictions on the repatriation of dividends remain or are tightened in the future, it may adversely affect our cash flows, which may have adverse impact on our financial condition and results of operations.

See also " Failure to comply with requirements on the disclosure of certain information on ADSs and ADS holders may restrict your ability to vote."

# Foreign judgments may not be enforceable against us.

Our presence outside the United States may limit your legal recourse against us. We are incorporated under the laws of the Russian Federation. Substantially all of our directors and executive officers named in this document reside outside the United States. All or a substantial portion of our assets and the assets of our officers and directors are located outside the United States. As a result, you may not be able to effect service of process within the United States on us or on our officers and directors. Similarly, you may not be able to obtain or enforce U.S. court judgments against us, our officers and directors, including actions based on the civil liability provisions of the U.S. securities laws.

In addition, it may be difficult for you to enforce, in original actions brought in courts in jurisdictions outside the United States, liabilities predicated upon U.S. securities laws.

There is no treaty between the United States and the Russian Federation providing for reciprocal recognition and enforcement of foreign court judgments in civil and commercial matters. These limitations may deprive you of effective legal recourse for claims related to your investment in our shares and ADSs. The deposit agreement provides for actions brought by any party thereto against us to be settled by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association, provided that any action under the U.S. federal securities laws or the rules or regulations promulgated thereunder may, but need not, be submitted to arbitration. The Russian Federation is a party to the United Nations (New York) Convention on the Recognition and Enforcement of Foreign Arbitral Awards, but it may be difficult to enforce arbitral awards in the Russian Federation due to a number of factors, including the inexperience of Russian courts in international commercial transactions, official and unofficial political resistance to enforcement of awards against Russian companies in favor of foreign investors and Russian courts' inability to enforce such orders and corruption.

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## Other Risks

# We have not independently verified information we have sourced from third parties.

We have sourced certain information contained in this document from third parties, including private companies and Russian government agencies, and we have relied on the accuracy of this information without independent verification. The official data published by Russian federal, regional and local governments may be substantially less complete or researched than those of more developed countries. Official statistics may also be produced on different bases than those used in Western countries. Any discussion of matters relating to Russia in this document must, therefore, be subject to uncertainty due to concerns about the completeness or reliability of available official and public information. In addition, the veracity of some official data released by the Russian government may be questionable.

Because no standard definition of an average monthly service revenue per user ("ARPU"), average monthly usage per user ("MOU") or churn exists in the telecommunications industry, comparisons between certain operating data of different companies may be difficult to draw.

The methodology for calculating subscriber numbers, ARPU, MOU and churn varies substantially in the telecommunications industry, resulting in variances in reported numbers from that which would result from the use of a uniform methodology. Therefore, comparisons of certain operating data between different telecommunications companies may be difficult to draw.

#### Factors over which we have little or no control may affect our revenues.

Our business activities depend on a number of factors which are outside of our control, including natural disasters, imposition of a state of emergency in the countries of our operations, strikes and global and regional economic conditions. Any of these factors could result in deterioration of our revenues, which could have a material adverse effect on our results of operations, financial condition, prospects and the price of our ADSs.

# Item 4. Information on Our Company

# A. History and Development

Mobile TeleSystems CJSC ("MTS CJSC") our predecessor, was formed in 1993. The founding shareholders included MGTS and three other Russian telecommunications companies, which collectively held 53% of our original share capital, and two German companies, Siemens AG and T-Mobile Deutschland GmbH, an affiliate of Deutsche Telekom AG, which collectively held the remaining 47%. Sistema currently owns 44.57% of our share capital (50.07% excluding treasury shares). See "Item 7. Major Shareholders and Related Party Transactions A. Major Shareholders."

Our legal name is Mobile TeleSystems Public Joint Stock Company (MTS) and we are incorporated under the laws of the Russian Federation. Our head office is located at 5 Vorontsovskaya Street, Bldg. 2, Moscow 109147, Russian Federation, and the telephone number of our investor relations department is +7 495 223-2025. The address of our incorporation is 4 Marksistskaya Street, Moscow 109147, Russian Federation. We maintain a website at www.ir.mts.ru. The information on our website is not a part of this report. We have appointed Puglisi & Associates, 850 Library Avenue, Suite 204, Newark, Delaware 19715 as our authorized agent for service of process for any suit or proceeding arising out of or relating to our shares, ADSs or the deposit agreement.

MTS is the new legal name of Mobile TeleSystems Open Joint Stock Company (MTS OJSC) registered on July 1, 2015 in order to comply with the regulations of Chapter 4 of the Civil Code of Russian Federation (as amended). MTS OJSC was created on March 1, 2000, through the merger of MTS CJSC and RTC CJSC, a wholly owned subsidiary. Our charter was registered with the State

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Registration Chamber on March 1, 2000, which is our date of incorporation, and with the Moscow Registration Chamber on March 22, 2000. Our initial share issuance was registered by the Russian Federal Commission on the Securities Market on April 28, 2000.

We completed our initial public offering on July 6, 2000, and listed our shares of common stock, represented by ADSs on the New York Stock Exchange (the "NYSE") under the symbol "MBT." Each ADS represents two underlying shares of our common stock. Prior to May 3, 2010, each ADS represented five shares of our common stock.

In September 2001, we won a tender held by the Telecommunications Ministry of the Belarus Republic to form a joint venture with a GSM 900/1800 license to operate in Belarus. On June 26, 2002, MTS Belarus received all of the governmental approvals and licenses required to commence operations in Belarus and it began operations on June 27, 2002. In 2003 through a number of purchases we acquired a 100% stake in MTS Ukraine (now Vodafone Ukraine) for RUB 11,872 million. Starting from 2007 until 2015, we operated under the MTS brand in Ukraine. In 2015, as part of our strategic partnership with Vodafone, we introduced Vodafone brand in Ukraine.

We started operations in Uzbekistan, following the two step acquisition of 100% ownership interest in Uzdunrobita in 2004 and 2007. In July 2012, we suspended providing services in Uzbekistan per the order from the State Agency for Communications and Information ("SACI") of Uzbekistan on the temporary suspension of the operating license of Uzdunrobita for a period of 10 business days which was subsequently extended to three months. On April 22, 2013, the Tashkent Economic Court declared Uzdunrobita bankrupt and initiated liquidation procedures. As a result, we lost control over the subsidiary and deconsolidated Uzdunrobita. In July 2014 the disputes between us and Republic of Uzbekistan were resolved. The parties signed the Settlement Agreement and according to its terms all mutual claims were eliminated. Furthermore, a new mobile operator, UMS, was established by governmental authorities of Republic of Uzbekistan. On September 24, 2014, an ownership interest of 50.01% in UMS was transferred to us as an incentive for reentrance into the country by the State Unitary Enterprise "Center of radio communications, radio broadcasting and television," the second shareholder of an operator, on behalf of the Republic of Uzbekistan. We started operations in Uzbekistan in December 2014. On August 5, 2016, we sold our 50.01% stake in UMS to the State Unitary Enterprise "Center of radio communications, radio broadcasting and television."

Please see "Item 3. Key Information D. Risk Factors Legal Risks and Uncertainties The inability of our subsidiaries in the countries in which we are present to maintain control over their operations and assets may adversely affect our business, financial condition and results of operations" regarding recent suspension of our services in Uzbekistan and "Item 8. Financial Information A. Consolidated Statements and Other Financial Information 7. Litigation Uzbekistan."

In two separate purchases in June and November 2005, we acquired 100% of BCTI, the leading wireless operator in Turkmenistan, for \$46.7 million (RUB 1,343 million) in cash. Since October 2006, we have operated under the MTS brand in Turkmenistan. On December 21, 2010, the Ministry of Communication of Turkmenistan suspended our primary operating license and we ceased providing mobile telecommunications services in Turkmenistan. In August 2012, we restarted our mobile communication operations in Turkmenistan via MTS-Turkmenistan and resumed providing services for subscribers who did not cancel their contracts. Since October 1, 2012, we resumed our operations in Turkmenistan entirely and started entering into contracts with new subscribers. On September 29, 2017, we stopped providing communication services in Turkmenistan due to the actions of the state-owned telecommunication company Turkmentelekom, which resulted in the disconnection of international and long-distance zonal communication services and internet access. See "Item 3. Key Information D. Risk Factors Legal Risks and Uncertainties The inability of MTS-Turkmenistan to sustain its operations in Turkmenistan on commercially acceptable terms or at all may adversely affect our business, financial condition and results of operations."

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In September 2007, we acquired an 80% stake in International Cell Holding Ltd., a 100% indirect owner of K-Telecom, the leading wireless operator in Armenia, for €260.0 million (RUB 9,142 million), and entered into a call and put option agreement initially valid until 2012 (and later extended until 2018) for the remaining 20%. Under the option agreement, we had a right to exercise a call option up to December 31, 2018. In December 2018 we served a call notice on the minority shareholders of MTS Armenia (formerly K-Telecom) to purchase the remaining 20% stake.K-Telecom operates in the GSM-900/1800 standard, covering the entire territory of Armenia. It historically operated under the VivaCell brand, and was re-branded as VivaCell-MTS in September 2008.

In October 2009, we acquired a 50.91% stake in Comstar, a leading fixed line operator in Russia, from Sistema, and subsequently increased our ownership interest to 61.97% (or 64.03% excluding treasury shares) in December 2009 and to 70.97% (or 73.33% excluding treasury shares) in September 2010 through a voluntary tender offer. On December 23, 2010, the extraordinary general meetings of shareholders of Comstar and MTS approved a merger, which was completed on April 1, 2011. As a result, Comstar ceased to exist as a separate legal entity and MTS became the legal successor of Comstar in respect of all its rights and obligations.

Prior to April 1, 2011, Comstar operated in both the Moscow and other fixed line communications markets, offering voice telephony, broadband Internet and pay-TV, operator interconnect and other services to its subscribers. As of now we still continue to provide these services. One of Comstar subsidiaries was MGTS, Moscow's incumbent fixed line operator with "last mile" access (the final phase of delivering connectivity from a communications provider to a customer) to approximately 96% of the households in Moscow. In 2011, we completed the re-branding of Comstar with our main MTS brand. MGTS continues to provide services under its own brand.

In 2009, we started to develop our sales and distribution network both organically and through the acquisition of several national and regional retail chains. We organized our retail operations under a wholly owned subsidiary, Russian Telephone Company ("RTC"). RTC handles all functions relating to our retail operations, including the management of points-of-sale, the purchase and sale of handsets and accessories and subscriber enrollment at our retail outlets.

Between 2009 and 2014 we acquired controlling stakes in various regional fixed line operators as we are determined to develop broadband Internet through regional expansion.

In April 2013, we acquired a 25.095% stake in MTS Bank for 5.09 billion rubles through an additional share issuance by the bank. As of December 31, 2017 our interest comprised 26.61% of the bank's shareholding. In July 2018, we acquired additional stake in MTS Bank for RUB 8.27 billion from Sistema and our ownership share increased to 55.4%, providing control over the bank. The acquisition allows us to consolidate MTS business in the Russian FinTech market, simplify corporate and operational management, and accelerate the launch of new products.

In December 2014, we acquired controlling stakes in Penza-GSM, SMARTS-Ivanovo and SMARTS-Ufa, operating in Penza, Ivanovo and the Bashkortostan Republic, respectively. The acquired companies hold rights to use 900 and 1800 MHz radio frequencies within the regions mentioned. The acquisition enhances our spectrum resources in the above mentioned regions. The purchase price comprised of cash consideration and a deferred payment, payable in 18 months after the acquisition date. These companies were subsequently merged with MTS.

In April 2014, we acquired a 10.82% stake in OZON, a leading Russian e-commerce company, through the purchase of OZON Holdings Limited's additional share issuance for RUB 2,702 million. Cooperation with OZON creates new distribution channels available to us through its extensive online retail platforms. As of December 31, 2017 our interest comprised 11.19% and was further increased to 18.69% as of December 31, 2018. In March 2019 we sold our stake in OZON to Sistema.

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In December 2015, we have completed the acquisition of NVision Group and its subsidiaries for RUB 11.2 billion. Through this transaction, we have obtained proprietary rights over our billing systems which will allow us to reduce the time-to-market for new products and better manage billing and IT-related expenses. NVision Group is also one of the largest system integrators and complex IT solutions providers in Russia.

In September 2016, we acquired controlling stake in Smarts-Yoshkar-Ola, a company, operating in the Republic of Mari El and holding rights to use 1800 MHz radio frequencies. The acquisition enhances our spectrum resources in the Republic of Mari El.

In July 2017, we acquired a 100% ownership interest in Bashkortostan Cellular Communication OJSC, a company which operates in the Republic of Bashkortostan and holds rights to use 450 MHz and 2,100 MHz radio frequencies. The acquisition enhances our spectrum resources in the Republic of Bashkortostan.

In October 2017, we acquired 50.82% of ownership interest in the Russian retail software developer Oblachny Retail LLC, operating under trademark LiteBox, with a call and put option arrangement existing over another 49.18% of shares. The deal allows us to enter the cloud-based cash register market as a fully licensed fiscal data operator ("FDO") and a provider of integrated digital cash management solutions for B2B clients.

In December 2017, we purchased a 100% stake in Praliss Enterprises, thus acquiring one of the world's leading eSport clubs Gambit Esports. The acquisition is a part of our digital innovation strategy.

In January 2018, we acquired a 78.2% stake in Kulturnaya Sluzhba LLC, operating under the trademark Ponominalu.ru. In February 2018, we acquired a 100% ownership interest in Moskovskaia Direktciia Teatralno-Kontcertnyh i Sportivno-Zrelishchnyh Kass LLC, operating under the trademark Ticketland.ru. These acquisitions allow us to enter the event ticket market, while broadening our suite of digital services, and integrate a key new product into existing loyalty program and mobile applications ecosystem.

In August 2018, we purchased a 99% stake in Progressivniye Technologii CJSC, provider of fixed-line services in the cities of Zhukovskiy and Anapa, which allowed us to strengthen our position in the local markets and benefit from the expected synergies from the acquisition.

In October 2018, we acquired Dekart property complex in full from Sistema. The property complex comprises office facilities, parking premises and engineering networks and is partly occupied by us and partly used as investment property.

In December 2018, we acquired a 100% interest in IT-Grad 1 Cloud LLC, one of the largest cloud providers on the Russian IaaS (Infrastructure as a Service) market. This acquisition allows the Group to strengthen its presence in the Russian cloud services market.

In December 2018, we acquired Serebryaniy Bor property complex in full from Sistema. The property complex comprises administrative facilities, land and engineering networks and is partly occupied by us and partly designated as investment property. In December 2018, we also acquired Serebryaniy Bor administrative property complex from Sistema.

# **Capital Expenditures**

We spent in total RUB 99,568 million in 2018 for network development in Russia and the other countries where we operate, which included RUB 72,290 million in cash expenditures on property, plant and equipment (RUB 7,559 million thereof for acquisition of Avantage data center), and RUB 27,278 million for the purchase of intangible assets (RUB 5,527 million thereof for acquisition of 4G license in Ukraine). We expect to spend up to RUB 90 billion (excluding potential capital

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expendures for acquisition of 4G licences) in 2019 for the construction of radio subsystem and additional storage, processing and indexing centers to comply with requirements of "Yarovaya-Ozerov bundle of laws," maintenance capital expenditures, further network expansion, special projects relating to development of clouds, artificial intelligence, smart education, esport and E-health as well as commercial 5G solutions, roll-out of LTE networks in Ukraine, construction of new sites and purchase of software for network managing in Armenia and other. We plan to finance our capital expenditures primarily through operating cash flows, and to the extent necessary, through additional external financing. The actual amount of our capital expenditures for 2019 may vary depending on subscriber growth, demand and network development, as well as currency volatility, vendor terms and the availability of external financing. The capital expenditure estimate for 2019 excludes expenditures that may be made in connection with acquisitions. A breakdown of our capital expenditures in 2018 by country is set forth below.

We spent RUB 3,444 million, 367 million and 5 million in 2018, 2017 and 2016, respectively, for acquisitions of subsidiaries, net of cash acquired from third parties. In addition, in 2018, we spent RUB 13,242 million, net of cash acquired, for acquisition of bisinesses under common control.

#### Russia

We spent RUB 82,701 million in 2018 for network development in Russia, including RUB 64,688 million in cash expenditures on property, plant and equipment (thereof RUB 7,559 million for acquisition of Avantage data center), and RUB 18,013 million for the purchase of intangible assets.

## Ukraine

We spent RUB 14,867 million in 2018 for network development in Ukraine, including RUB 6,373 million in cash expenditures on property, plant and equipment, and RUB 8,495 million for the purchase of intangible assets (thereof RUB 5,527 million for acquisition of 4G license in Ukraine).

#### Armenia

We spent RUB 1,986 million in 2018 for network development in Armenia, including RUB 1,220 million in cash expenditures on property, plant and equipment, and RUB 766 million for the purchase of intangible assets.

#### Belarus

MTS Belarus spent RUB 2,812 million in 2018 for network development, including RUB 2,046 million in cash expenditures on property, plant and equipment, and RUB 766 million for the purchase of intangible assets. We do not include the capital expenditures of MTS Belarus in our capital expenditures described above as its results are not consolidated in our financial statements.

#### **B.** Business Overview

We are a leading telecommunications provider in Russia and the CIS, providing a wide range of mobile and fixed line voice and data telecommunications services, including data transfer, broadband, pay-TV and various value-added services, including Big Data, IoT, cloud services, banking services, e-commerce, as well as selling equipment, accessories and software. According to AC&M Consulting, we are the largest provider of mobile cellular communications services in Russia and the second largest in Ukraine in terms of mobile subscribers. According to our own estimates, we are also the largest provider of mobile cellular communication services in Armenia in terms of mobile subscribers.

As of December 31, 2018, we had a mobile subscriber base of approximately 99.8 million (approximately 78.0 million in Russia, 19.7 million in Ukraine and 2.1 million in Armenia) which is a decrease of 1.4% compared to December 31, 2017. As of December 31, 2017, we had a mobile

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subscriber base of approximately 101.2 million (approximately 78.3 million in Russia, 20.8 million in Ukraine and 2.1 million in Armenia) which is a decrease of 3% compared to December 31, 2016. As of December 31, 2016, we had a mobile subscriber base of approximately 104.6 million (approximately 80.0 million in Russia, 20.9 million in Ukraine, 2.1 million in Armenia and 1.7 million in Turkmenistan).

We are also the largest operator in the Moscow residential broadband market in terms of subscribers, with a 35% market share as of December 31, 2018, based on TMT consulting data. Our revenues for the year ended December 31, 2018, were RUB 480,293 million, representing 8.4% increase from the year ended December 31, 2017. Our revenues for the year ended December 31, 2017, were RUB 442,911 million, which is an increase of 1.7% from RUB 435,692 million for the year ended December 31, 2016. Our net income for the year ended December 31, 2018, was RUB 7,832 million, which is an decrease of 86.2% from the year ended December 31, 2017. Our net income for the year ended December 31, 2017, was RUB 56,590 million, which is an increase of 16.8% from RUB 48,450 million for the year ended December 31, 2016.

Russia is our principal market, both in terms of subscribers and revenues. For the year ended December 31, 2018 approximately 92% of our revenues came from operations in Russia; approximately 6% of our revenues came from operations in Ukraine; and approximately 2% of our revenues came from operations in other countries, respectively.

In July 2018, we started rendering banking services made possible by the acquisition of control over MTS Bank (see Note 5 to the consolidated financial statements). Banking services revenue for the period from the date of consolidation to the end of 2018 was RUB 11,851 million, representing 2.5% of our total revenues for the year ended December 31, 2018. MTS Bank's net operating profit was positive and amounted to RUB 1,291 million. MTS Bank activities (financial assets and liabilities, management of liquidity risks connected with the activities) are described in Note 29 to the consolidated financial statements. Outstanding deposits and loans to customers as at December 31, 2018 came to RUB 63,038 million. Loans to legal entities made up 42.5% of that total, 56% were loans to individuals.

Detailed segment information for MTS Bank is presented in Note 6 to the consolidated financial statements.

As of December 31, 2018, approximately 78% of our mobile subscriber base was in Russia and approximately 20% was in Ukraine. According to AC&M-Consulting, as of December 31, 2018, we had a 31% market share of total mobile subscribers in Russia.

The table below sets forth our total mobile subscribers as of the end of the last five years:

Period	$Subscribers^{(1)}$
	(in million)
2014	98.6(2)
2015	101.4(2)
2016	104.6(2)
2017	101.2(3)
2018	99.8(3)

- Excludes MTS Belarus subscribers as its results of operations are not consolidated in our financial statements. We define a subscriber as an organization or individual, whose SIM-card shows traffic-generating activity or accrues a balance for services rendered or is replenished of topped off over the course of any three- month period, inclusive within the reporting period, and was not blocked at the end of the period.
- (2) Excludes Uzbekistan subscribers
- (3) Excludes Turkmenistan subscribers.

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In August 2016, we ceased our operations in Uzbekistan. In September 2017, we suspended the provision of telecommunication services to our subscribers in Turkmenistan, due to the termination by Turkmen state-owned companies and state authorities of line rental, frequency allocation, interconnect, and other agreements necessary to servicing MTS clients. For more information, see "Item 3. Key Information D. Risk Factors Legal Risks and Uncertainties The inability of MTS-Turkmenistan to sustain its operations in Turkmenistan on commercially acceptable terms or at all may adversely affect our business, financial condition and results of operations."

According to AC&M Consulting, overall mobile cellular penetration in Russia was approximately 179% as at December 31, 2018 and 179% as of December 31, 2017. According to our estimates, mobile cellular penetration in Ukraine was approximately 126.5% as at December 31, 2018 and 130.5% as of December 31, 2017, which represents a decrease, compared to 136.3% as of December 31, 2016. According to our estimates, mobile cellular penetration in Armenia was approximately 125.5% as at December 31, 2018 and 121.5% as of December 31, 2017, as compared to approximately 119% as of December 31, 2016.

Our consolidated mobile subscriber base changed insignificantly in the first two months of 2019. Specifically, according to our estimates at April 1, 2019, we had approximately 99.3 million subscribers, including approximately 77.6 million in Russia, 19.6 million in Ukraine and 2.1 million in Armenia.

As of December 31, 2018, according to our estimates, MTS Belarus had approximately 5.5 million subscribers and a leading market share of 45.9%. As of December 31, 2017, according to our estimates, MTS Belarus had approximately 5.2 million subscribers and a leading market share of 44.8%. As of December 31, 2016, according to our estimates, MTS Belarus had approximately 5.2 million subscribers and a leading market share of 44.4%. Belarus, a country with a population of approximately 9.5 million, had a mobile cellular penetration rate of approximately 126.2% as of December 31, 2018, according to our estimates.

As of December 31, 2018, we had mobile licenses to operate and commercial mobile operations throughout the entire territory of Russia with a population of approximately 146.8 million people, throughout the entire territory of Ukraine with a population of approximately 42.2 million people and throughout the entire territory of Armenia with a population of approximately 3.0 million people. See "Item 3. Key Information D. Risk Factors Risks Relating to Our Business Failure to renew our licenses or receive renewed or new licenses with similar terms to our existing licenses, could have a material adverse effect on our business and results of operations," and "Failure to fulfill the terms of our licenses could result in their suspension or termination, which could have a material adverse effect on our business and results of operations."

In 2018, we offer fixed line communications services in over 185 cities across Russia, covering a population of over 53 million people.

Our Moscow fixed line operations contemplate communications services provided through incumbent operator MGTS. Our Moscow fixed line operations included 2.9 million unique residential subscribers as of December 31, 2018. We are the largest operator in the Moscow residential broadband market, with a 35% market share. MGTS holds licenses and regulatory approvals to provide local telephony, DLD/ILD voice telephony, interconnect to other operators, Internet and data transmission and other services.

Our fixed line operations in other cities include the following communications services: voice, data and Internet and pay-TV services for corporate and residential subscribers, as well as the provision of interconnect services to other communications operators and numbering capacity to their subscribers. As of December 31, 2018, we had 2.8 million unique residential subscribers according to our estimates. Fixed line services are also provided in Ukraine and Armenia with digital telephony communications services, data transmission, Internet access and the renting of channels.

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We have also continued to develop our proprietary sales and distribution network organically.

To maintain and increase our market share and brand awareness, we use a combination of print media, radio, television, direct mail and outdoor advertising, focusing on brand and image advertising, as well as promotion of particular tariff plans.

## **Business Strategy**

Our key strategic goal is leadership on all markets of presence, delivering the best-on-the-market experience to our clients, including high-speed Internet access at home and on the go, cable and satellite TV entertainment with access to best content portfolio and top quality mobile and fixed voice services. We do our best to be at the forefront of LTE development in Russia and CIS and we are focused on building the fastest and most reliable 4G wireless networks and providing the best service to our customers by bringing access to the connected world.

Starting from 2016 our strategic motto is 3D: "Data Digital Dividends," which is focused on digitalization:

"Data" stays the core of our business, the backbone, allowing us to expand into adjacent business-areas, widen our products portfolio, enabling us to be in-line with customers' data-driven lifestyles. We bring the best available technology to our subscribers both individuals and corporations, such as building high-speed 4G LTE and IoT-oriented networks (Internet of Things) which allows us to meet growing needs for data consumption. We follow further technological development towards 5G through participating in a wide range of discussions with industry players and authorities on approaches to spectrum allocation and network building principles and preparing our technological platform by building experimental 5G zones using innovative technological solutions, which we used, for example, during the World Cup 2018 in Russia. The ultimate goal of the "Data" component of our 3D strategy is to ensure customers have the best possible connectivity experience at their homes, workspace and places in between.

"Digital" is the main point where we plan to evolve in the nearest future. At the moment it contains several major areas of our efforts located on 3 layers. The first layer is traditional products such as Digital commerce, Internet of Things and System integration which are very close to our main business. The second layer includes adjacent high-tech areas of Fintech (financial technologies), Mobile Applications and Big Data. The third level is represented by a number of prospective experimental areas which we invest in (such as e-ticketing, cloud storage and computing), GPRS technology with download data rate of up to 85.6 Kbit/s and the projects which we develop within the Center of Innovations - a special business unit that was dedicated to lower corporative borders in order to give more freedom, agility and flexibility to go as fast as possible in a very vivid and dynamical environment of digital competition. The list of areas is flexible as we continuously seek for new opportunities and perspectives. "Digital" plays an important role in our traditional business-directions too.

"Dividends" is the result of our efforts to make our operations effective both revenue- and profitability-wise. We continuously improve the operational and investment efficiency of MTS, develop the organizational capabilities of our company, constantly work on organizational effectiveness and keep it responsive to market challenges and customer needs. By using benefits of digitalization for further operational improvements we sustain high level of business profitability and aim to enhance shareholder returns.

In addition to 3D there is another dimension of "**Digital Transformation**." It is aimed at transforming everyday operations, corporate culture and managerial techniques to make the company fit in the digital world in the best way. The most recent implementation of digitalization principles is our corporate program called iDA (internal Digital Automation), which we started in 2018 with plans to run it for the next 4 years. It incorporates the initiatives on internal processes digitalization giving

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each employee an opportunity to take part in it and to benefit from the initiatives as a part of the positive financial effect is transferred into payout to the initiator.

We strongly believe that our strategy and our approach to further development will enable us to stay at the forefront of the telecommunication industry and perspective digital areas on all markets where we have presence, to provide our customers with best user experience, to be a valuable and credible business-partner, trustworthy and effective investment for our shareholders.

Implementation of the strategy is subject to a number of risks. See "Item 3. Key Information D. Risk Factors" for a description of these and other risks we face.

## **Current Operations**

We are a provider of wireless and fixed line communications services in Russia, Ukraine, Armenia and Belarus.

In addition, we provide system integration services, IoT solutions, banking service, e-ticketing and cloud services.

### Subsidiaries

For a list of our major subsidiaries and our ownership percentages in these subsidiaries, see "Item 4. Information on our Company C. Organizational Structure."

# **Mobile Operations**

Network Infrastructure Mobile Core

As of December 31, 2018 MTS Mobile core network in Russia includes the following nodes:

Mobile switching centre-server (MSC-S): 102 nodes, servicing 60 mln. subs.;

Media gateway (MGW): 136 nodes, maximum capacity 3.7 mln. Erl.;

Subscriber Data Management (SDM) includes 22 nodes (Home Location Register (HLR) / Home Subscriber Server (HSS)).

15 Serving GPRS Support Node/Mobility Management Entity (SGSN/MME) and Serving/Packet Data Network Gateway (S/P-GW) nodes are used to handle packet data services.

16 Signalling Relay Function (SRF) nodes deployed on network for handling Mobile Number Portability (MNP) services.

The following network expansion and modernization projects were executed during the course of 2018:

MSC-S/MGW and S/P-GW nodes were expanded as a result of voice and data traffic growth;

Network modernization: obsoleted MSS APZ212 50 and MGW GMPv3 Ericsson nodes were replaced by new MSS BSP-C and MGW GMPv4/MRS Ericsson:

Upgrade IMS (IP Multimedia Subsystem) Core Nokia launched VoLTE (Voice over LTE) in 25 regions.

# Services Offered

# Network Access

We primarily offer mobile cellular voice and data communication services to our subscribers on the basis of various tariff plans designed for different market segments. In general, most of our tariff plans combine voice and data usage for a fixed monthly charge. See "Item 4. Information on Our Company B. Business Overview Mobile Operations Tariffs."

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Automatic Roaming

Roaming allows our customers, both subscribers and guest roamers, to receive and make international, local and long-distance calls while traveling outside of their home network. Roaming is provided through the agreements between us and other operators.

As of December 31, 2018, we had bilateral roaming contracts with 863 wireless operators/networks in 232 countries, including 17 regional operators/networks in Russia. We continually seek to expand our roaming capability and are currently in negotiations with additional operators.

## Value-Added Services

We offer various value-added services to our customers. These services may be included in the tariff plan selected by the subscriber or subscribers may pay additional monthly charges and, in some cases, usage charges for them. Some basic value-added services that we offer include:

Basic telephony	Customer care	Other services
Call Divert/Forwarding	Itemization of Monthly Bills	Ring Back Tone
Caller ID Display and anti-Caller ID Display	Information and Directory Service	Second Memory (Cloud storage)
Conference Calling	Automatic Customer Care System and Customer Care System via the Internet	Parental control for internet, calls, sms
	My MTS service app	
Voicemail		
Call Barring		MTS Music
Call Waiting		MTS TV
Missed Call Alert		MTS Books
Intelligent call assistant		MTS Fitness
		MTS Razvivayka (for kids)
Collect call		VoD (Video on Demand)
Black List		Location Based Service ("LBS")
VoLTE/WiFi Calling		Mobile banking

		Security and Privacy services for B2C
		MTS Connect Branded App for calls
Messaging	Mobile internet	Mobile Electronic Signature on a SIM card
SMS P2P, A2P	3G, 4G (LTE)	
MMS	Data share plan	
Application MTS Connect	Real IP	
	E shop	
	APN remote access point	
	Fixed Mobile Convergence	
	MTS Modem	
	MTS Tablet	
	Mobile Office	
	Wi Fi	

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We also provide many voice and SMS-based value-added services in cooperation with various content providers.

# GPRS, EDGE services

We launched our commercial 2G network in 1994 based on GSM-900 technology. From 1999, we significantly improved our 2G network capacity based on GSM- 1800 technology. From 2001, we implemented wireless data communication services based on GPRS technology with download data rate of up to 85.6 Kbit/s. In 2005, we modernized our GSM network to support EDGE technology and tripled data services rates. Today we continue supporting and modernizing our 2G network and we put the prime focus at the development of our 3G and LTE networks in order to provide our subscribers with high-speed broadband wireless services. As of December 31, 2018, we provided GSM, GPRS and EDGE services with more than 40,000 2G sites over the geographic area with more than 94.7% of population of Russia.

## 3G Technology

In April 2007, we received a nationwide 3G/UMTS (Universal Mobile Telecommunications System) license in Russia. The license was valid till May 21, 2017 and covers the entire territory of Russia with frequencies 1950-1965 MHz and 2140-2155 MHz. In February 2017 the 3G/UMTS license in Russia was prolonged by the Federal Service for Supervision of Communications, Information Technoligy and Mass Media till May 21, 2022. We currently have commercial 3G networks launched in all regions of Russia with the exception of Crimea. By the end of 2018, we installed 42,216 3G sites throughout Russia.

Starting from 2010, we implement HSPA+ technology, which supports up to 21 Mbit per second data transmission speed. In addition, we launched second and third 3G carriers to improve capacity and activated Dual Carrier technology, which supports up to 42 Mbit per second data transmission speed in more than 43,200 sites in Russia.

Since 2011 we use 3G femtocell network. Femtocells are small low-power wireless base stations in the licensed 2100 MHz spectrum. They connect to a mobile operator's network using residential DSL or cable broadband connections and can support multiple standard mobile devices. Femtocells deliver a strong signal and high-quality voice service to standard mobile devices in homes, small and large offices. A femtocell network also provides for high speed of data upload and download. In 2016 we launched offer of femtocells for consumers as B2C market segment. The total number of femtocells installed in Russia reached 10,834 by the end of 2018.

In February 2015, we obtained UMTS spectrum in 2100 MHz band in Ukraine through an open tender held by the National Commission for the State Regulation of Communications and Informatization. Upon completion of critical network upgrades, we started providing our own 3G services in major Ukrainian cities under the Vodafone brand starting from November 2015. HSPA+ (QAM64 and Dual Carrier) technology, which is available in our 3G network from the start, allows to download speeds up to 42 Mbit\s.

In January and March 2018, we obtained LTE spectrum in 2600 MHz and 1800 MHzA bands as the result of national auctions and launched LTE services in Ukraine in April 2018. In 2018, VF Ukraine provided telecommunications services using GSM-900/1800, UMTS-2100 and LTE-1800/2600 technologies. By the end of 2018 we had over 8000 sites with UMTS services.

MTS Armenia, our subsidiary in Armenia, have operated commercial 3G network since 2009. In 2011, MTS Armenia started to provide telecommunications services based on HSPA+ technology in Yerevan, six northern regions and in some southern regions of the country. At present HSPA+ technology with QAM64 and Dual Carrier features is available to almost 99% of the Armenian population.

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In 2018 we launched a major network upgrade project in Armenia, which is expected to result in significant increase of 3G and 4G services coverage as well as of network capacity. It includes a refarming of 900 MHz frequency band to UMTS and 1800 MHz band to LTE with implementation of Carrier Aggregation technology. New Core network nodes were put in operation in 2018, marking the end of a bigger CS and PS Core modernization project.

## LTE Technology

In July 2012, the Russian Ministry of Communications and Mass Media announced the results of a tender for national-wide LTE-FDD frequencies. MTS is among the four companies, including Rostelecom, MegaFon, and VEON Ltd. (VimpelCom) which obtained LTE-FDD frequencies in 700, 800 and 2600 MHz bands.

In September 2012, we began offering LTE-based commercial services in Moscow region.

In 2014, we started DCS 1800 spectrum refarming to LTE and rolled out LTE-1800 network, while expanding LTE 800/2600 coverage. In February 2016 MTS won Russian Ministry of Communications and Mass Media tender for nationwide LTE-TDD license and obtained LTE-TDD frequencies in following band: 2595 - 2620 MHz for the whole territory of Russia, except Moscow region (obtained earlier). We plan to use LTE-TDD as a capacity layer to cope with increase of network utilization due to growth of data traffic. As of December 31, 2018, we had 54,607 LTE sites in 83 regions of Russia. In 2019, we are going to further roll out LTE in available frequency bands, implementing LTE-Advanced technologies.

In 2018, we launched IoT services based on NB-IoT technology (Narrow Band IoT) in 20 largest Russian cities, including Moscow, St. Petersburg, Novosibirsk, Kazan, Nizhny Novgorod, Vladivostok and others. We plan to continue NB-IoT rollout in the smaller cities of Russia in 2019.

In May 2018, we launched a commercial broadband Gigabit Class LTE network with LAA (License Assisted Access) technology. The network showed downlink user throughput of up to 979 Mbps due to the aggregation of licensed LTE spectrum in the 1800 MHz (4x4 MIMO, 256-QAM) and three 20 MHz carriers (2x2 MIMO, 256-QAM) in the 5 GHz unlicensed spectrum.

In June 2018, at the FIFA 2018 World Cup MTS performed world's first commercial launch of massive MIMO (Multiple Input Multiple Output) technology at mass event of such scale and complexity. The technology was introduced in the LTE-TDD 2600 MHz band (B38) in more than 40 sites in seven out of the 11 tournament cities, including Moscow, St. Petersburg, Kazan, Rostov-on-Don, Nizhny Novgorod, Ekaterinburg and Samara. The new technology allowed us to increase efficiently network capacity around the stadiums, at railway stations, at airports, in fan zones, and recreation areas. During the same FIFA World Cup event, in cooperation with our partners we have demonstrated the potential of the 5G technology in several demo zones in Moscow and Saint Petersburg for various use cases.

In Ukraine we acquired LTE frequencies in 2600 and 1800 MHZ bands through open auctions held in January and March of 2018. By the end of 2018 we had over 3500 sites with LTE base stations. We implemented Carrier Aggregation in 1800 and 2600 MHz LTE bands to ensure better customer experience in priority locations. Hundreds of new "green field" multi technology sites were also rolled out to expand the coverage and quality of service for our customers.

In 2018, we continued upgrading our transmission network to accommodate increased data traffic volumes and new services requirements in Ukraine. Those upgrades included new IP microwave links, fiber optics lines, new IP MPLS (Multiprotocol Label Switching) and DWDM (Dense Wavelength Division Multiplexing) nodes, increased SON (Self Optimized Network) coverage. A new virtualized Evolved Packet Core was put in operation in terms of our NFV (Network Function Virtualization) and Cloud services strategy.

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In 2019 in Ukraine we aim at significant increase of LTE coverage by providing 4G services in all cities with more than 10,000 inhabitants. A launch of IMS platform with VoLTE services is also foreseen in 2020.

MTS Armenia provides LTE based telecommunication services since 2010 and by the end of 2018 we had more than 64% of Armenian population covered by our LTE network.

In 2019, we plan to continue network upgrades in Armenia. We also plan to take part in announced government tenders for 800 MHz and 1800 MHz frequencies, which would allow us to offer better LTE and LTE Advanced services to the population of the Republic of Armenia. The launch of VoLTE services is planned in Armneia as well.

## **Banking Services**

In July 2018, we started rendering banking services made possible by the acquisition of control over MTS Bank. MTS Bank has accelerated the sale of its retail product with the help of MTS' Big Data capabilities and MTS' digital sales channels. The bank's financial products are complementary to our core business and fully integrating it under the MTS Group umbrella allows us to offer our customers new integrated services, unlocking new revenue streams and consolidating our brand in the wider consumer space.

#### Other Services

In addition to cellular communication services, we offer corporate clients a number of telecommunications services such as design, construction and installation of local voice and data networks capable of interconnecting with fixed line operators, installation and maintenance of cellular payphones, lease of digital communication channels, access to open computer databases and data networks, including the Internet, and provision of fixed, local and long- distance telecommunications services, as well as video conferencing.

# Strategic Partnership with Vodafone

In October 2008, we announced a strategic agreement with Vodafone aimed at drawing on Vodafone's expertise in building and developing 3G networks and mobile broadband products, working with leading global equipment providers and deploying innovative client relationship management ("**CRM**") practices to enhance quality and further improve the efficiency of our operations. In addition, the agreement allows us exclusive access to a range of products, services and devices from Vodafone for our markets of operation in Russia, Ukraine and Armenia.

In 2015, the Group extended its strategic partnership agreement with Vodafone to introduce the Vodafone brand in Ukraine. In 2017 under the partnership, MTS Ukraine (now Vodafone Ukraine) and Vodafone continued to roll out 3G networks and to develop a number of new services, which have proved extremely popular in Europe, including bundled offers, competitive long-distance international calls and worry-free roaming when abroad, in the Ukrainian market. Other areas of cooperation remain in full force.

In 2018 agreement with Vodafone was prolonged until 2020.

# Sales and Marketing

# Target Customers

Our service model is based on the provision of services to differentiated levels of customers to meet the needs of distinctive customer segments as such segments have developed. We are not just a mobile operator brand. Our strategy is to build an umbrella brand which provides digital services and

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innovative products. We continued to work with youth audience with the main focus on digital channels, such as social media, banners, pre-rolls and branded content.

In 2018, we focused our efforts on the following directions:

promoting "Smart" V&D (voice & data) billing plans;

promoting the "ALL MTS" new convergent offer;

promoting devices with special operator offers;

promoting new innovative products;

promoting fixed broadband business and satellite TV; and

promoting our services specifically for teenage audience.

### Advertising and Marketing

Our advertising and public relations initiatives include:

brand and image advertising and public relations to position us as the leading mobile cellular operator in Russia, Ukraine, Belarus and Armenia;

category and loyalty campaigns to inform our current and potential customers of the advantages of the high quality and variety of our services and the extensive coverage we offer; and

product and tariff related advertising and promotions, pricing discounts for various target audiences to demonstrate value for money and cover specific needs.

The key subjects for our advertising campaigns in 2018 included promotion of "Smart" V&D (voice & data) billing plan and its benefits, including the "Zabugorishe" special option with advantageous conditions in roaming, new innovative products, such as Telemedicine, Online education and Corporate accelerator, devices and advantageous data offers for active Internet users, including households, which we target with our fixed broadband, satellite TV and convergence offer "ALL MTS."

In order to build brand awareness and stimulate demand we use a combination of various advertising formats, including television, outdoor, newspaper, magazine and radio. Increasingly, we also advertise on-line and in mobile (with the help of traditional as well as innovative and novel projects) to market and promote our products and services to the broad audiences of current and potential customers. Additionally, our indirect advertising includes sponsorship of selected television programs, sport events, music shows and other popular events. We also coordinate the advertising policies of our dealers and partners, such as MTS Bank, to capitalize on the increased volume of joint advertising and preserve the integrity and high-quality image of the MTS brand.

In line with our strategy to find new ways of effective communications, especially in the digital channel, we launched special activations with partner websites and several collaborations with popular Russian bloggers and other formats of online advertising (branded content, mobile app, collaborations with fashion designers, artists and bloggers; tests, advertorials, product placements, etc.) in 2018.

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To support our key directions, we undertook the following initiatives in 2018 in Russia and in other countries where we operate:

Smart billing plans

In 2018, we continued improving our Smart V&D billing plan range and updated it to meet the requirements of Russia's changing telecom market:

The first Smart campaign of 2018 communicated the new opportunity to customize the Smart billing plan to your needs. We gave people a chance to decide themselves how much Internet traffic, SMS and minutes they really need in their billing plan.

A special billing plan for the whole family. In spring, we launched a billing plan giving subscribers the opportunity to share their traffic, minutes and SMS with family so that 5 people can use the traffic package from one contract.

Unlimited mobile Internet returned to the Russian telecom market with the new "Tarifishe" billing plan. MTS launched Tarifishe in August 2018, the time when none of competitors had unlimited billing plans. Tarifishe includes not only unlimited Internet traffic, but also the opportunity to make calls throughout Russia all at one price.

Promoting "Tarifishe" for youth audience:

2018 was a year of experiments. We launched a marketing campaign called "Dostup" (Access) to support the "Tarifishe" unlimited billing plan among teenagers. The idea was to stress the value of unlimited mobile Internet with restricted access to the unique AR (Augmented Reality) content that was developed in collaboration with more than 40 artists, musicians and content makers, and making it available only to digital users outdoors who use the AR application.

Mobile payments and financial services

In 2018, we released a new product - no-commission money transfers between MTS and MegaFon subscribers. The product was promoted mainly in digital.

Devices

In 2018, the majority of devices-related communication campaigns were targeted at supporting smartphone sales (of various price categories) in MTS retail, as well as supporting launches of global specialty products (iPhone Xs, Samsung Galaxy, Honor 10, etc.).

Most of these campaigns were developed and implemented in cooperation with major device vendors, such as Samsung, Honor, Apple and Alcatel.

The main mechanics used in promotion (and communication) were: loans, cashback, price offers, as well as trading-in and bundled package offers (device and billing plan as one subscription).

GPON and Satellite TV

In Moscow, we continued to promote the benefits of the GPON technology (fixed broadband and TV through optic cable) focusing on communication of our high-speed Internet. In 2018, we launched a TV campaign focusing on our leader's image communication "200 Mbit for 490 rubles."

We continued to promote the benefits of Internet and Home TV. Our federal TV campaign focus was on a the variety of great content offered that is easy to get at home. We attracted attention with a special offer: thousands of movies and series for free for new Internet and Home TV subscribers.

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We continued to promote the benefits of the GPON technology / fast Internet with a special offer "250 Mbit for just 550 rubles per month." The idea was not only stressing the valuable promo offer, but also reminding users about the new technologies at home which require advanced Internet connectivity with the slogan "Modern Internet technologies for your modern devices."

Satellite television was promoted in 2018 with two major federal TV campaigns. Both campaigns focused communication on special billing plans for new subscribers, overcoming the barrier that "Satellite TV is expensive." In spring 2018, we showed celebrities in a countryside setting, hence making an additional emphasis on the summer season and the opportunity for people to install Satellite TV in almost any Russian country house. In autumn 2018, we additionally stressed the "half the price for half a year" offer and a package of quality content with a slogan that it was so tempting even "celebrities chose to stay at home and watch Satellite TV from MTS at such a great price."

# ALL MTS Convergent offer

In 2018, we launched the "All MTS" convergent product line. It was promoted in 2018 with a federal TV campaign. The offer includes broadband Internet access, TV and mobile telephony with unlimited data with the data access free of charge. Convergence is one of the business directions with the high prospects today. In 2019, we will proceed mixing all our products in convergent offers.

### Innovative products

In 2018, we released a new product developed in partnership with the Medsi clinic network Smartmed, a telemedicine application which provides telehealth services and consultation with doctors of various specializations. The product was promoted mainly in digital and POSm (point of sale materials).

In 2018, we launched the Smart University education platform. Smart University is a platform of online preparation for the unified state exam (general education certificate) with professional teachers. We promote this product in digital with banners and pre-rolls and at education events.

In 2018, we launched MTS Startup Hub - an accelerator of start-ups of various areas that may be useful for our business customers. The product was promoted in digital, on special web resources about business and startups.

### Investors offers

# **APPLE**

In 2018, we and Apple became partners with the following strategic goals:

ensuring MTS leadership and innovativeness through a partnership with a major global brand - Apple;

obtaining loyalty of customers; and

attracting new clients (increase sales and traffic to retail stores).

In spring - summer 2018, we ran two multichannel promo campaigns including federal TV, digital, OOH (out of home), Indoor placement for two operator's offers:

two terabits of internet for purchasing iPhone in MTS; and

six months of Apple Music for all MTS users for free.

During the next year we plan to run second wave of Apple Music Promo Campaign.

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## B2B offers

The key initiatives for the corporate segment have amplified the idea of our B2B positioning "MTS B2B products and services help companies to perform efficiently now and in future."

In 2018, we launched a number of products, including:

"MTS Kassa," focusing on small and medium business. "MTS Kassa" is a comprehensive solution that includes a cash register, software, Internet access and OFD (fiscal data operator) services. The product was promoted mainly in TV and digital.

"MTS Marketolog" ("Marketing Expert") focusing on small and medium business. "MTS Marketolog" is a platform that helps companies to launch advertising campaigns without agencies. The product was promoted mainly in digital.

"Cloud MTS" focusing on medium and large business. "CloudMTS" is an innovative cloud IT platform. The product was promoted mainly in digital.

### Roaming

In 2018, we continued promoting the "Zabugorishe" ("Abroadest"), an offer for international roaming (both a billing plan and add-on option). Any "Zabugorishe" subscriber can make calls and use Internet both in Russia and abroad just like at home (within the usual home package).

#### Global recognition

In 2018, we received several awards at the international Effie festival: Seasonal Marketing category (Gold) award for the "Zabugorishe" international roaming option, Telecom category (Silver) award for the "Hype" billing plan and Media Ideas category (Bronze) award for "Nagiev Calling."

# Sales and Distribution

We have historically enrolled the vast majority of our subscribers through a network of independent dealers that operate numerous points-of-sale in places with high consumer activity, such as supermarkets, shopping centers, transportation hubs and markets. In 2009, in response to changes in the independent retail market, we began to develop our own proprietary retail network to more effectively control sales of SIM-cards and provide a platform to sell handsets and accessories. We organized our retail operations under a wholly owned subsidiary, RTC. RTC handles all functions relating to our retail operations, including the management of points-of-sale, the purchase and sale of handsets and accessories and subscriber enrollment at our retail outlets. It also requires us to secure optimal locations for our points-of-sale and monitors the effectiveness of their operations.

At the same time, in 2010, we focused on improving cooperation with a certain few of the large national and regional mobile handset retailers, such as Euroset and Svyaznoy, through which we had previously sold our products and serviced. In 2009, VEON Ltd. (VimpelCom), one of our main competitors, acquired a minority stake in Euroset, while in 2012, its ownership structure changed to accomodate an investment by MegaFon, another one of our main competitors, which equalized ownership with VEON Ltd. (VimpelCom) at 50/50. Throughout 2013 Euroset prioritized sales of its owners at the expense of MTS which impaired our ability to attract higher-quality subscribers and impacted profitability. Thus, we terminated its agreement with Euroset in May 2014.

In 2013, we entered into an agreement with Svyaznoy to distribute SIM-cards and our sales through its outlets increased significantly during the year. We also continued to develop our monobrand retail chain, and in 2014, we could boast of attracting over half of our subscribers through our own proprietary distribution network. In 2014, Svyaznoy was the second in sales volume among MTS sales channels. In November 2014, Svyaznoy experienced changes in its ownership which led to the

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deterioration of MTS sales and an increase in competitors' sales beginning April 2015. While volumes declined throughout 2015, as of August 2015, MTS entirely ceased sales at Svyaznoy outlets. MTS designed a range of activities including the development of proprietary distribution network and stimulation of sales growth in regional distributors channel to compensate for the losses in subscriptions and achieve sales targets. We now realize over 53% of our SIM-card sales through our own monobrand retail chain while our retail arm is an increasingly important component of our differentiation strategy and ability to offer affordable handsets and accessories to our customers. See "Item 3. Key Information D. Risk Factors Risks Relating to Our Business The failure to launch and develop distribution network in Ukraine could have a material adverse effect on our business."

Our competitors VEON Ltd. and MegaFon agreed on the termination of their joint ownership of Euroset outlets. Thus, MegaFon purchased the brand and the business. VEON Ltd. purchased 50% of points-of-sale.

In 2018, VEON Ltd. rebranded points-of-sale that were obtained as a result of the Euroset division. These points-of-sale began to work under the "Beeline" brand. The deal affected the improvement of the mobile retail market. This was the start of the transformation from the multibrand retail network to the monobrand retail network. In 2017, sales in the market reduced for the first time in Russian Federation and continued to reduce at a higher rate in 2018. Moreover, the churn rate reduced also, which confirmed the improvement of the mobile retail market.

Our proprietary distribution network consists of MTS-branded franchise points-of-sale (third-party dealers operating under the MTS brand) and MTS-branded points-of-sale owned by us. As of December 31, 2018, we operated 5,867 points- of-sale, including 1,801 franchise points-of-sale and 4,066 points-of-sale owned by us. In 2018, we increased the efficiency of retail points-of-sale, as a result that the number of points-of-sale has increased by 220 year-to-year.

For newly acquired mobile subscribers in Russia, we link commissions payable to a dealer on a monthly basis to the amount of revenues we receive during six- to 12-month period from the date a subscriber is activated by a dealer. In addition, we have established caps, or a maximum commission amount payable to our dealers. The dealer commissions in Russia currently range between RUB 80 and RUB 2,800 per subscription.

In Ukraine, we link dealer commissions to the tariff package sold, category of subscriber, subscriber revenue, the duration of a subscriber being active, city of subscription and sales channel. We have different commission structures based on whether the subscriber is Prepaid or Postpaid. For each new subscriber, a dealer typically receives a one-time commission payment at the time the contract is signed or monthly payments based on the revenue generated from the subscriber.

The dealer commissions in Ukraine for Postpaid tariffs consist of one-time commissions of RUB 50 to RUB 250, which depends on the cost of tariff plan connected. In addition, we may also pay monthly commission in an amount ranging from 40% to 55% of the revenues generated by the subscriber for 6 months depending on the region of activation and on the cost of tariff plan. Dealers are also rewarded ((from RUB 13 to RUB 225) for providing a range of services for prepaid and postpaid subscribers, as well as a monthly amount of RUB 4,390 and RUB 188,177 to exclusive dealers who sell exclusively VF Ukraine products and services.

Prepaid tariff commissions for activation of a subscriber are linked to the territory where a dealer operates. The period during which we pay a dealer commission depends on our market share in that territory and may vary from 4 to 8 months and from 35% to 50% of the subscriber's monthly invoice. The amount of the dealer commissions is adjusted on the coefficients between 0.8 and 1.2, which depends on the dealers plan achievement and on quality of activation.

We believe that our method for paying commissions provides dealers with greater incentives to add new subscribers, reduces the risk of dealer fraud and improves our cash-flow management.

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#### Competition

The Russian wireless telecommunications market

Demand for wireless communications services in Russia has grown rapidly over the last years due to increased business activity, declining prices due to intensified competition among wireless communications providers and growth of new emerging consumers of telecom services such as IoT. As of December 31, 2018, overall wireless penetration in Russia was approximately 179%, or approximately 255.7 million subscribers, according to AC&M-Consulting.

The following table sets forth key data on Russia's wireless telecommunications market as of the dates indicated:

# As of December 31,

	2018	2017	2016
Subscribers <sup>(1)</sup>	255.7	255.1	255.6
Subscriber penetration (%)	179	173.7	179

According to AC&M-Consulting

(1)
Based on registered subscribers (SIM cards only). There is no uniform definition of active subscribers in the Russian wireless market.

The primary mobile providers in Russia include us, MegaFon and VEON (VimpelCom), each of which has effective national coverage in Russia. Competition is based on network coverage and quality, the level of customer service provided, roaming and international tariffs, local tariff prices and the range of services offered. For a description of the risks we face from increasing competition, see "Item 3. Key Information D. Risk Factors Risks Relating to Our Business We face increasing competition in the markets where we operate, which may result in reduced operating margins and loss of market share, as well as different pricing, service or marketing policies."

The following table illustrates the number of wireless subscribers for each network operator in Russia as of December 31, 2018, 2017 and 2016:

	As of	As of December 31,		
Operator	2018	2017	2016	
	(amou	ınts in milli	ions)	
MTS	78.0	78.3	80.0	
MegaFon	75.2	75.4	75.6	
VEON Ltd. (VimpelCom)	55.3	58.2	58.3	
T2 RTK Holding (Tele2+Rostelecom)	42.3	40.6	39.0	
Others	4.9	2.6	2.7	

According to our estimates

<u>MegaFon.</u> MegaFon, which operates GSM 900/1800, UMTS (3G) and LTE (4G) networks, is one of our primary competitors in Russia, and it is the second largest GSM wireless operator in Russia in terms of subscribers. According to our estimates, MegaFon had a subscriber base of approximately 75.2 million subscribers in Russia, which represented a 29.4% market share as of December 31, 2018.

<u>VEON.</u> In addition to MegaFon, we also compete with VEON, which is the third largest GSM 900/1800/UMTS (3G)/LTE (4G) wireless operator in Russia in terms of subscribers.

According to our estimates, VEON had a subscriber base of approximately 55.3 million in Russia at December 31, 2018. At December 31, 2018, VEON had a 21.6% market share of total wireless subscribers in Russia.

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T2 RTK Holding. In February 2014, Tele2 and Rostelecom announced a merger which created a new federal wireless provider. The license portfolio of the new company covers all Russia which effectively permits the roll out of federal-scale networks. The most important event for operator was the launch of 3G/4G network in Moscow region in October 2015. The operator's services are now available on the territory where 97% of Moscow Region residents live. In 2018, Tele2 have actively rolled out 3G and 4G networks, launched new tariffs, options and services which enabled to provide customers with services similar to those of the market leaders. By the end of 2018, Tele2 LTE networks were launched in all 65 regions. In 2019, the operator plans to launch a network in the Ivanovo and Yaroslavl regions in the 2G / 3G / 4G standard.

According to our estimates, Tele2 had a subscriber base of approximately 42.3 million in Russia and 16.7% market share as at December 31, 2018.

<u>Other Operators.</u> The number of subscribers of other operators, including MVNO operators, is about 4.9 million customers as of December 31, 2018.

The Ukrainian wireless telecommunications market

The history of mobile communications in Ukraine began in 1993. The first company in the mobile market of Ukraine was UMC (Ukrainian Mobile Communication), afterwards it became MTS Ukraine and finally, Vodafone Ukraine (PrJSC "VF Ukraine") in May 2017. In 1997, the mobile operator Kyivstar launched services under GSM 900/1800 standard. While Astelit, another GSM 900/1800 standard operator and joint venture between Turkcell and local Ukrainian shareholders, began operations in 2005. The two largest wireless telecommunications providers in Ukraine (in terms of subscribers) are Vodafone Ukraine and Kyivstar sharing 86.3% of the market, with 36.9% and 49.4%, respectively, as of December 31, 2018, according to official financial and operational reports of operators.

In Ukraine, we compete primarily with Kyivstar, which provided services to approximately 26.4 million subscribers as of December 31, 2018. Kyivstar offers wireless services using GSM 900/1800 and UMTS technologies under the "Kyivstar" brand and fixed line services by the fiber-to-the-building technology ("FTTB") under the brand "Kyivstar Home Internet." Astelit offers services in GSM 900/1800 and UMTS standards under the "lifecell" brand.

Customer base in Ukraine decreased in the fourth quarter of 2018 by 1.1 million subscribers (y-o-y). Average price per minute (APPM) increased by 46.3% in RUB (increased by 19.6% in UAH) y-o-y in 2018. ARPU increased by 35.5% in RUB (increased by 10.9% in UAH) and MOU decreased by 7.3% y-o-y.

Overall wireless penetration in Ukraine in 2018 decreased to 126.5%, or approximately 53.3 million subscribers, as compared to 130.7%, or approximately 55.3 million subscribers, in 2017.

The following table shows the number of subscribers of the top mobile operators in Ukraine as of the dates indicated and the coverage area of Vodafone Ukraine and our competitors in Ukraine:

	As at December,		
Operator	2018	2017	2016
	(amou	ınts in mill	ions)
Kyivstar	26.4	26.5	26.1
Vodafone Ukraine	19.7	20.8	20.9
Astelit	7.3	8.0	9.2

Source: Subscriber information based on operators' official financial and operational reports, taking into account the number of three-month active subscribers.

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The Armenian wireless telecommunications market

As of December 31, 2018, overall wireless penetration in Armenia was around 125.5%, or total 3.72 million active subscribers, according to published Socio-Demographic Data report published by Statistical Committee of Republic of Armenia (about 2.97 million population) and estimated active subscriber base of the competitors.

The following table illustrates number of active subscribers and the coverage area of MTS Armenia and competitors Beeline (VEON Armenia) and Ucom, as of indicated dates.

	As	As of December 31,		
Operator	2018	2017	Coverage Area	
	(amo	ounts in thousa	nds)	
MTS Armenia	2,128.13	2,119.69	Nationwide	
Beeline	1,002.35	933.83	Nationwide	
Ucom	590.53	570.21	Nationwide	

Sources: https://beeline.am; https://www.ucom.am; http://mts.am.

As of December 31, 2018, MTS Armenia reported total 2.13 million 3-month active subscriber base, reflecting increase of 0.40%, y-o-y. Market share from 3-month active subscriber base was around 57% as of end of the year.

# **Tariffs**

We customize our marketing efforts and pricing policies in each region of Russia and our other countries of operation by considering such factors as average income levels, the competitive environment and subscriber needs, all of which vary from region to region. Consistent with our marketing strategy, we have developed tariff plans to appeal to a broader market. The following table shows the mix between Prepaid and other subscribers, such as contract and corporate customers, for Russia and Ukraine for the periods indicated:

	As of 1	As of December 31,		
	2018	2017	2016	
Russia				
Prepaid	36%	43%	49%	
Contract and corporate	64%	57%	51%	
Ukraine				
Prepaid	90%	91%	91%	
Other	10%	9%	9%	

We currently have a unified system of tariff plans offered to subscribers throughout Russia. The unified system is aimed at achieving such benefits as clarity, simplicity and transparency for prospective subscribers by offering the same set of tariff categories throughout Russia. Under each tariff category, we offer different tariff plans with different connection fees, per minute call charges and a wide range of value-added services.

By advertising on a national rather than regional or local level, we have been able to streamline and reduce our advertising and marketing expenses through unified advertising campaigns throughout Russia. Furthermore, we are able to convey to consumers a more uniform perception of our brand and services.

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## Tariff Plans in Russia

Currently, each of our tariff plans in Russia combines per minute usage charges, value-added services in packages and different monthly network access fees (with the exception of the prepaid tariff plans) designed for different market segments. Our tariff plans are currently divided into several categories - "Prepaid," "Smart," "Premium," "Data," IoT, "Corporate" and "Convergent" - with each category designed to target specific segments as follows:

*Prepaid*: Prepaid tariff plans are geared towards consumers who use their mobile phones for personal communication. These plans do not have monthly subscription fees and the per-minute fee charges depend largely on the tariff plan chosen. We offer tariff plan "Super MTS" which varies depending on the region of the customer. Subscribers to our prepaid plans can reduce the price of their calls by using tariff options which have a subscription fee. After our customers subscribe to a particular prepaid plan, they have the option of switching to a different prepaid plan by sending an SMS message (USSD request) to a designated number.

Smart: "Smart" is the family of integrated voice and data tariff plans for customers with active mobile data usage, which we believe will remain the main offer for a long period of time. "Smart" has a monthly fee for a bundle of all-net minutes and Internet. On-net calls above the bundle are free. Versions of "Smart" ("Smart" "My Smart," "X" for Youth segment, "Tarifische" with unlimited Internet and "Smart Top") differ by amount of minutes and megabytes included in the bundle and the corresponding monthly fee. "My Smart" is a personal tariff plan, where each user can adjust the tariff for their needs and select the required package of minutes and Internet. "Tarifische" was launched in 2018 and it is the the first tariff with unlimited Internet and option to adjust the tariff for personal needs and select the required package of minutes. In 2018, we also launched the new tariff plan "Our Smart" for family segment with opportunity to share bundle of all-net minutes and Internet with 5 devices.

*Premium:* "Premium" tariff plans are designed for heavy users who call primarily within their domestic region. Subscribers of unlimited tariff plans are provided an unlimited number of local minutes, an opportunity to pay through our credit payment system and access to personal customer care service. In the Moscow region, for those subscribers issued a local number, monthly fees start from RUB 2,881.4 and those using a federal number pay from 2,457.6 per month. The "Ultra" tariff plan includes unlimited calls to MTS numbers as long as the recipient and the caller are in the same region (defined as "home region"), free domestic calls from the MTS network to any number regardless of carrier up to a certain limit of minutes, no roaming charges within Russia, up to 20 gigabytes of mobile Internet access and 5000 SMS messages within the network.

*Data:* For active users of mobile Internet devices (e.g., 4G capable USB-modems and routers) we offer an unlimited tariff plan with limited speed 4Mbit/second after certain threshold.

*IoT:* For smart devices with special consumption needs we developed unique tariff plan "Smart device" with annual subscription fee. In 2018, we launched a new tariff plan adaptive for different IoT devices.

Convergent: "All MTS" is a brand new family of integrated mobile and fixed line services with digital or satellite television that was launched in 2018. The purpose of "All MTS" is to strengthen the user base and reduce customer churn. "All MTS" has a monthly fee for a bundle (mobile, fix Internet and TV). The price for this tariff varies by region and depends on the competitive situation in the market.

*Corporate:* We offer different tariff plans in each region targeted to meet the demands of our corporate clients, each plan allowing them to optimize their communication expenses in accordance with their individual consumption patterns. These plans feature specialized customer

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care, payment through our credit system and volume and tenure discounts. In addition, we provide customized pricing offers and technical solutions to our biggest clients.

Our tariffs vary from plan to plan. The description of tariffs and charges are, in each case, exclusive of VAT. As of December 31, 2018, the per-minute tariff for local calls within the MTS network varied from zero per minute to RUB 2.12 per minute. Different rates apply to local calls to other networks and vary from RUB 0.72 per minute to RUB 3.39 per minute. Higher rates apply to domestic long distance calls and rates for international calls vary from RUB 1.27 per minute for calls to the CIS to RUB 59.32 per minute for calls to other parts of the world. Periodically, we run various promotional campaigns, either on the federal or regional level, in which we provide temporary discounts to our regular prices.

#### Tariff Plans in Ukraine

We offer unified tariffs throughout Ukraine with special conditions and segmented tariff plans that focus on the differentiation of subscribers' needs in the various market segments under brand Vodafone. Our tariffs in Ukraine are oriented towards the following three main segments: "Postpaid Business," "Postpaid Private" and "Prepaid."

Vodafone Ukraine (PrJSC "VF Ukraine") has the following Postpaid tariff plans:

Postpaid Business: Propositions for corporate clients "Vodafone Red Business" operate throughout Ukraine and offer all services in accordance with the "worry free" principles. Vodafone offers wide range of tariff plans for corporate clients to meet all their business needs: "Red Business VIP," "Red Business XXL," "Red Business XL," "Red Business L+," "Red Business L+," "Red Business L," "Red Business M," "Red Business S" and "Red Business XS." All tariffs offer all-in-one services: unlimited calls within corporation, Vodafone Ukraine customers; GB of mobile EDGE/3G/4G internet; bundled minutes for calls (excluding "Red Business XS") and SMS/MMS to other networks in Ukraine and other 62 countries of the world. Also subscribers can use the same volume of the services in roaming as well as in Ukraine, when they have activated "Roam like home" service for an additional fee for 30 days. Moreover, there are tariffs for Internet of Things "Vodafone IoT." They are represented by 6 tariff plans: "Vodafone IoT M," "Vodafone IoT L," "Vodafone IoT 3G S," "Vodafone IoT 3G M," "Vodafone IoT 3G L" and "Vodafone IoT 3G XL," "Vodafone IoT 3G XXL." All tariffs offer mobile EDGE/3G/4G Internet, CSD data transmission and SMS/MMS to other networks in Ukraine and 62 countries of the world. There is an opportunity to activate "Roam like home" service for 30 days, which gives advantageous conditions in Roaming, for additional fee.

A set of Postpaid Business corporate tariff plans "Smart Office," which have unlimited calls within the network and mobile internet, bundled minutes of calls and SMS to other mobile operators, special prices for international calls, no connection fees and per minute charging intervals. We offer a unique product "ULTRA" for the high-value customers who have unlimited calls and SMS in the network, unlimited mobile internet and special prices for international calls and roaming. We also have special tariff plans for the machine-to-machine (M2M) segment "Telematika," "Navigator" and "Monitor," which combine service packages for M2M-cards, personalized service, special tariffs for data roaming, special heavy duty SIM cards and consulting support services.

Postpaid Private: Mass-market proposition "Vodafone Red L" and tariffs "Vodafone Red S" and "Vodafone Red Light" (for individual proposal only) operate throughout Ukraine. We offer all-in-one services in accordance with the "worry free" principles and are suitable for active voice and data users. In May 2018, Vodafone Ukraine offered contract customers a new line of tariffs: "Vodafone Red" (S, M, L XL, and XXL) and Vodafone Ultra (Ultra, Ultra VIP). Vodafone Red tariff line includes tariffs with 4G Internet - from 2 GB to unlimited bundle,

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bundled minutes to any other Ukrainian networks from 50 to unlimited messages to Ukrainian and foreign numbers from 50 to 2500 units and bundles up to 750 minutes of international calls.

Vodafone Ukraine has the following Prepaid tariff plans:

There are tariff plans for mass-market subscribers that operate throughout Ukraine and vary in value of included services and monthly fees: "Vodafone Red XS+/S/M/ L." Also we have tariff plans with greater volumes of services: "Vodafone EXTRA S," "Vodafone EXTRA M," "Vodafone EXTRA L," with unlimited messenger and social network. All these services are fully available also in roaming at most popular European countries with special roaming service for 7 days - "Roam like home." Moreover, there are voice oriented Pay-Per-Use tariff "Light" with unlimited calls within the network and Pay Per Month tariff "Light +." We also offer tariff plans which are targeted directly at the users of tablets, GPS/ GSM-car alarms and other smart devices and have Pay Per Use charging: "Vodafone Device S," "Vodafone Device M," "Vodafone Device L." Moreover, there is a new tariff plan for Lvov region "Zahid" with unique service unlimited calls to Poland. We have as well the tariff line "Vodafone Family," which includes social networks, domestic and international calls. In second part of 2018 new 4G tariff plans were launched: "SuperNet Start," "SuperNet Pro," "SuperNet Pro-1" and "SuperNet Unlim," which included large traffic volume of Internet from 4GB to unlimited, bundled minutes to any other Ukrainian networks -from 65 to 150 minutes, bundled 30 minutes of international calls, unlimited messenger and social network, unlimited YouTube. In 2018, we offered data-oriented tariffs: "SuperNet Pro-1," "SuperNet Turbo" and tariff line "Vodafone Family," which includes social networks, domestic and international calls.

As of December 31, 2018, the standard per minute tariff for calls to mobile network operators in Ukraine varied from RUB 0.50 per minute to RUB 3.76 per minute. Tariffs for calls to fixed lines in Ukraine varied from RUB 0.50 per minute to RUB 3.76 per minute. The standard per minute tariff for calls within the VF Ukraine network ranged from 0 RUB per minute with limitations in minutes per day or month to RUB 0.50 per minute. International tariffs ranged from RUB 1.25 per minute to RUB 326.17 per minute in standard international tariffs for satellites. All tariffs for Vodafone Ukraine subscribers are quoted in hryvnias. The tariffs set forth above are translated from hryvnias to Russian rubles using the official exchange rate of 0,398561 hryvnias per RUB 1 as of December 31, 2018.

### Customer Payments and Billing

We enroll new prepaid subscribers in an advance payment program. As of December 31, 2018, 75% of our consolidated subscriber base was enrolled in the advance payment program and 25% used a credit based system.

Our advance payment system monitors each subscriber account and sends an advance warning on the subscriber's mobile telephone when the balance on the subscriber's account decreases below a certain threshold.

Under the credit payment system, customers are billed monthly in arrears for their network access and usage. We limit the amount of credit extended to customers based on the customer's payment history, type of account and past usage. As of December 31, 2018, subscribers using the credit system of payment had credit limits of up to RUB 2.87 million for key corporate customers in Russia. When a credit limit is reached, we block the telephone number until the balance is settled. There are no credit limits established for certain exceptional, high loyalty customers.

We provide "in full confidence" service, which allows our Prepaid customers who subscribe to this service to continue using services when the balance on the subscriber's account becomes negative. As of December 31, 2018, subscribers using the "in full confidence" service had a maximum credit limit of RUB 283.8 thousands. Customer service representatives can set individual credit limits for subscribers

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based on their payments and charge history (*i.e.*, average balance usage) during the prior three months. When the credit limit is reached, our billing system blocks the phone number until the balance is settled. Similar to the credit payment system, the subscribers are billed monthly in arrears for usage. The invoice, which can be delivered to the customer by e-mail, fax, regular post and Internet, should be settled within 24 days. If the invoice is not paid five to seven days prior to the due date, the system sends an additional reminder. The telephone number is blocked on the 25th day if the invoice is not settled.

In Russia, we offer our subscribers various ways to pay for our services, including cash or credit card, wire transfer, prepaid cards and express payment cards.

We implemented Foris billing system in Russia in 2008. The Foris billing system allows us to offer all of our subscribers a uniform and consistently high level of service. It also supports the monitoring of account usage in real time. In addition, the system provides us with the ability to offer flexible tariff plans with various usage discounts and subscriber loyalty bonuses. Furthermore, we are able to provide our corporate subscribers with more sophisticated customized billing solutions. For example, our corporate subscribers who use multiple phone numbers in different regions of Russia now receive a single invoice, whereas our previous billing system could not support such a service.

In Ukraine, our Postpaid corporate and high-end subscribers receive an invoice which must be paid by a specified date. If the subscriber fails to pay, we block the phone number until the balance is settled. Our contract subscribers, who make an advance payment, are able to continue using our services once they reach a zero balance or until their accounts reach the credit limit specified in their service agreements. When the limit for such a subscriber is reached, we suspend our services until the balance is settled. We determine account terms and credit limits for each subscriber based on the subscriber's account age, payment history and tariff plan.

In Ukraine we provide services to our Prepaid customers for as long as the balance on their accounts remains above zero and/or the tariff plans allow to use free-of-charge services without having the positive balance on the account.

In Ukraine we offer our subscribers various ways to pay for our services, including cash or card payment at the cash desk of the bank, through the recharge terminals, bank transfer from the current account (for legal entities), via internet and payment card of fixed nominal value.

In Armenia, we use the "Eskadenia" billing system.

#### **Customer Service**

# Russia

In order to attract and retain customers, we must ensure a high level of service at all points of customer assistance, care and billing. In each region where we operate, we have contact centers that provide customer service 24 hours a day, seven days a week. Contact centers provide different services to our clients through various channels (telephone, email, chat). Customer service representatives respond to various issues such as phone lock due to lack of payment, handset operation, roaming capabilities, service coverage and billing. A particular group of customer service representatives handles customer complaints and helps those who want to change their service terms. We use automatic systems and independent analysis for monitoring availability and customer satisfaction level of service in our contact centers regularly. We conduct outbound campaigns with the assistance of our employees in the outbound contact center and the laboratory of the customer relationship management inasmuch as we need to improve customer loyalty and promote our services.

In 2018, we continued to develop "Situational IVR." When calling the Contact Centre, customers listen to information about some cases, which correspond to their needs with respect to the events and

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statistics. More than 140 relevant scripts were created. This project decreased the number of calls to the contact-center up to 19% year-on-year.

In 2018, we started the intellect chatbot based on the artificial intelligence (AI) for solution of a number of questions and service of mobile business customers excluding the transfer to the chat operator. Chatbot is available for all mobile business customers to chat through the mobile application and our website. At the end of the 4th quarter 2018, the share of unique customers who had completed the service using chatbot without the transfer to the chat operator was 70%. This reduced the average work load of chat operators per month in the regions with active chatbot by 40%. We believe that in the 4th quarter 2018 the efficiency of the chatbot was 70%.

In 2018, we continued to develop online robot for any incidents at back-office. We developed and implemented the service of the tariff plan change. Thus, the automation of this operation is about 80%. The correction process of an erroneous payment transfer was also automated. More than 60% of erroneous payments are corrected automatically without the contact center operator.

In 2018, we presented the project "from consultant to expert" in order to start provision of services directly to the customer and to implement new employee motivation system based on the monthly rating. Now the operator award directly depends on the personal efficiency and the work quality in comparison with other contact center operators (thus, the award can be up to 75% of the salary).

We have developed a new instrument for the contact center operators to initiate service requests, "Usability Siebel." Therefore, access to information that is mostly required by customer service was simplified.

The process of SMS-informing on status of solving technical complaints was optimized. Customers receive more personalized recommendations after solving their issues. If additional time is required to resolve the incident, an interim SMS with new terms is sent.

### Ukraine

In Ukraine we made the customer assistance process more personalized by anticipating customer needs. We have enhanced the quality of our customer service as a result of the complete integration of our IVRs and billing. We have improved IVRs menu that enhance its utility. We continued to work on the improvement and expansion of self-service channels for subscribers. As part of online "self-service," we continued developing "self-care" functions through the web and IVRs (which provide, among other things, details of the subscriber's account, tariff plan specifications, amounts charged on credit cards, management of on-line service and charge details for contract subscribers). We also developed special services, such as shortened phone numbers, for broadband users and premium customers who require assistance. We increased the number of services available to our customers in contact centers. We have a mobile version of the Internet Helper for smartphones. In 2013, we launched a new mobile application for Android OS. The application allows users to manage their account directly from their smartphones. We started the process of implementing an operational CRM system and the process of renewal of our contact centre technical platform. We also changed the approach to subscriber differentiation. In 2013, we finished the process of integration of our broadband subscribers into our system of customer service.

### Customer Relationship Management (CRM)

In 2016, the mobile application for Android OS and iOS was developed, final completions of internal systems are carrying out. We performed equipment procurements within the New Contact Center project for Genesys platform implementation, which responds to all modern requirements in customer care. Also we paid the considerable attention to the solution of customer questions from the

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first contact in the most short time. The solution of requests from the first contact grew from 76% to 82%, and more than 81% customers complaints are solved in 24 hours. The Interactive Voice Response system was updated according to needs of customers and now more than 71% of customers are solve their questions via the IVR. Internet requests servicing was provided not only in Facebook official group and web site, but also was expanded on all space of social media (Facebook, Vkontakte, Forums, Internet editions etc.).

In 2017, the first part of the project Operational CRM was implemented. Mobile application MyVodafone for Android OS and iOS was successfully launched, and the number of users exceeded one million subscribers at the end of the year. Genesys infrastructure was deployed within the framework of the New Contact Center Project and preparations for launching chat channels and outbound were completed. Service of the B2B segment - key account / national customers was successfully launched in own contact centers. Customer service processes are constantly being improved - first contact resolution rate (FCR24) has grown from 82% to 85%, more than 93% of customer complaints are resolved in 24 hours.

In 2018, the New Contact Center project was implemented - launching a channel for incoming and outgoing calls, chat processing and Work Force Management. The mobile application MyVodafone was actively developing, the number of users increased by more than 3 times and reach more than 3.3 million users. The "Requests" and "Sales" modules of operational CRM were launched. Service standards were launched in the contact center and more than 500 stores. Thanks to the optimization of service processes and redirection of calls to digital channels, the number of calls decreased by 25% year to year. The contact center successfully launched sales to B2B segment subscribers (key accounts / national customers).

In 2019, it is planned to launch "Complaints work flow" - the last module of operational CRM. The implementation of operational CRM for B2B segment subscribers - key account / national customers is planned to be launched. As part of Contact Center development, it is planned to launch flexible IVR structures (situational IVR), chat and voice bots, and further develop the functionality of the MyVodafone application. We will continue optimization activity, for reducing the load on the contact center and redirection of calls to digital channels. Due to launch of the Mobile number portability project in May 2019, the contact center will play a key role in acquisition and retention processes. Thanks to the implementation of a unified service model, work on reducing of customer service flow to stores has begun and will continue. One of the main activities will be work with customer loyalty and tNPS (transactional Net Promoter Score) in all channels of interaction with the client. Two remote sales centers were created in 2019 with the main directions of development being sales to B2C subscribers, sales to B2B subscribers and sales via online store and digital channels.

Network Infrastructure Technology Strategy

Our technology strategy is formed in accordance with overall company's business strategy and intended to support the existing business operations, as well as to introduce new technologies allowing to launch new services in the future. Our technology strategy considers world technology trends in telecommunications.

The main focus of the technology strategy is consequent development of the network meeting future technology requirements: higher throughputs, lower latencies and flexible network core as enabler of the new services.

LTE has the main priority while deploying Radio Access Network (58% of the RAN deployment was LTE in 2018) and 2G/3G investments decrease gradually in accordance with changes in network UE penetration structure and traffic migration.

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According to Technology Strategy we deploy LTE primarily in most efficient 1800 MHz band and use Carrier Aggregation, 256 QAM, MIMO 4×4 and other cutting edge techniques for better user experience. In 2019, we plan to start LTE deployment in 2100 MHz band. Our technology strategy implies consistent innovative technologies introduction to make our network future proof and ready for the new services introduction. We have already deployed the Nb-IoT network in 19 regions and plan to expand coverage throughout Russia by the end of 2019. We have an understanding of how we will deploy first 5G networks, we have therefore started testing and initial preparation for 5G launch which is planned to take place in 2020.

Network Infrastructure Site Construction and Sharing

In October 2014 MTS and VEON Ltd. (VimpelCom) has signed a contract about shared LTE networks deployment and operation. According to this contract one shared LTE network should be deployed for servicing subscribers of both companies.

During 2018, 2017 and 2016 scope of the projects has expanded: shared networks are deployed in 42 of 85 regions of Russia.

By the end of 2018 we had 4,416 LTE base stations shared with VEON Ltd. (VimpelCom) in 22 regions and VEON Ltd. (VimpelCom) had 3,957 LTE base stations shared with MTS in other 20 regions of Russia. Total amount of shared infrastructure nodes is 8,373 base stations servicing in 800 MHz, 1800 MHz and 2600 MHz bands.

In addition to network deployment investments and operational costs savings target architecture of the Site Sharing project includes frequency resources shared usage: by the end of 2018 networks in ten regions of Russia run in shared 2600 band spectrum usage mode (MOCN concept). The area of MOCN implementation will be expanded in 2019. In 2018, LTE TDD networks (3GPP Band 38) was added to the project scope.

Network Infrastructure and Frequency Allocation

We use switching and other network equipment supplied by Nokia Solutions and Networks, Ericsson, Huawei, Alcatel-Lucent, Samsung and other major network equipment manufacturers.

In the Moscow license area, we have been allocated frequencies spanning  $2 \times 11.4$  MHz of spectrum in the 900 frequency band and  $2 \times 24.6$  MHz of spectrum in the 1800 frequency band for operation of a dual GSM 900/1800 network and UMTS900 network and LTE1800 network. In St. Petersburg and the Leningrad region, we have been allocated frequencies spanning  $2 \times 9.6$  MHz of spectrum in the 900 frequency band (including  $2 \times 1.6$  MHz in the E-GSM band) and  $2 \times 18.2$  MHz of spectrum in the 1800 frequency band for operation of a dual GSM 900/1800 network, UMTS900 network and LTE1800 network.

We have different amounts of spectrum in the 900 MHz band for GSM 900 and UMTS and LTE networks and in the 1800 MHz band for GSM and LTE networks in almost every region of the Russian Federation.

We have been allocated frequencies 1950-1965 MHz, 2010-2015 MHz and 2140-2155 MHz for UMTS and LTE network deployment for the entire territory of the Russian Federation.

In addition, we have been allocated frequencies 453-457,4 MHz/463-467,4 MHz for IMT-MC and LTE networks and 1920 - 1935 MHz/2110 - 2125 MHz for UMTS and LTE networks in Khanty-Mansi Autonomous Okrug and Republic of Bashkortostan.

We have been allocated frequency bands 2540-2550 MHz and 2660-2670 MHz spanning  $2 \times 10$  MHz and frequency bands 798. 5-806 MHz and 839.5-847 MHz spanning  $2 \times 7.5$  MHz for LTE FDD network deployment for the entire territory of the Russian Federation. In addition, we have

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been allocated frequency band 2595-2620 MHz spanning 25 MHz for LTE TDD network deployment for the entire territory of the Russian Federation.

We have frequencies allocated to us for the operation of GSM 900 and GSM 1800 frequency bands in all regions of Ukraine. The radio frequencies allocated to us for the operation of GSM 900 span from  $2 \times 4.4$  MHz of spectrum in Chernigov region to  $2 \times 5.8$  MHz in the Nikolaev, Lugansk, Chernovtsy and Kirovograd regions and in Kyiv. We also have been allocated frequencies spanning from  $2 \times 20.0$  MHz in the Kyiv region to  $2 \times 26.6$  MHz in the Dnepropetrovsk region for operation of GSM 1800 base stations. In addition, we have been allocated frequencies spanning from 453.35-457.1 MHz and 463.35-467.1 MHz in the CDMA-450 core frequency and bands spanning  $3 \times 1.25$  MHz for CDMA-450 network deployment for the entire territory of the Ukraine. In June 2018 we terminated CDMA services and shut down CDMA network due to providing faster 3G and 4G data services and focusing on UMTS and LTE networks construction (such networks tend to upload and download data faster than CDMA). In addition, in July 2018 CDMA-450 frequency licences were cancelled.

In 2015, we were allocated frequencies 1950-1965 MHz and 2140-2155 MHz for UMTS network deployment for the entire territory of Ukraine. In 2018 we were allocated frequencies 2510-2520 MHz, 2630-2640 MHz and 1750-1770 MHz, 1780-1785 MHz, 1845-1865 MHz and 1875-1880 MHz for LTE network deployment in Ukraine.

We believe that we have been allocated adequate spectrum in each of our license areas.

Network Infrastructure Virtual Infrastructure

The following projects have been launched in 2018:

IMS (IP Multimedia Subsystem) for 5G on NFV platform: 2nd stage was finished; and

3rd stage was launched;

EPC (New Product Code);

DPI (Deep Packet Inspection) Statistic was finished;

NetAct was finished;

U2000 was launched;

SON (Self Optimized Network) was launched;

POC (Proof Of Concept) TCP Optimization was finished;

POC SD-WAN (Software Defined Wide Area Network) was finished.

A new multi-purpose module data-center started operating in Nizhny Novgorod for deployment of virtual platforms for telecommunication services and cloud services in 2018.

Network Infrastructure Energy Infrastructure

One of the main goals in Energy Infrastructure is to decrease operational costs for electric energy.

According to legislative acts of Russian Federation electric energy payment categories were introduced in 2012. This payment category can be chosen by a consumer in a case of introduction electric energy accounting system, which allows hourly monitoring of electric energy usage and reporting to energy company with accepted procedure.

Considering these conditions we decided to deploy Electric Energy Accounting Automatic System (EEAAS). According to this trial projects of different EEAAS solutions were executed in different regions of Russia (Moscow, Nizhny Novgorod, Vologda, Saint Petersburg, Novosibirsk, Ekaterinburg and Republic of Karelia) in 2014-2015.

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EEAAS deployment projects was accepted in 2016 based on the analysis of those trials, System implementation started in 2016.

Introduction of the EEAAS will allow to:

Reduce electricity payments and thus reduce operational costs;

Increase level of precise accounting;

Implement energy usage management and control; track energy usage dynamics.

The project implementation leads to reduction of payments for the electric energy: in 2018 implementation coverage reached 21 regions and the weighted average share of economy was 12%. In 2019 we plan to increase the coverage to 70 regions and the weighted average share of economy to 7%.

We are planning to deploy EEAAS in all regions of Russia.

Base Station Site Procurement and Maintenance

The process of obtaining appropriate sites requires that our personnel coordinate, among other things, site-specific requirements for engineering and design, leasing of the required space, obtaining all necessary governmental permits, construction of the facility and equipment installation. In Russia, we use special radio planning software supplied by TEOCO Corporation to assess new sites so that the network design and site development are coordinated. This software can create digital cellular coverage maps of our licensed areas, taking into account the peculiarities of the urban landscape, including the reflection of radio waves from buildings and moving automobiles and supports all necessary technologies, such as 2G, 3G, LTE andNB-IoT. To use these tools more effectively we purchase high quality 3D digital maps for more precise planning. Used together, these software tools enable us to plan base station sites without the need for numerous field trips and on-site testing, saving us considerable time and money in our network build-out.

Base station site contracts are essentially cooperation agreements that allow us to use space for our base stations and other network equipment. The terms of these agreements range from one to 49 years, with the term of the majority of these agreements being one to five years. Under these agreements, we have the right to use premises located in attics or on top floors of buildings for base stations and space on roofs for antennas. In areas where a suitable base station site is unavailable, we construct towers to accommodate base station antennas, mainly on leased plots of land. We anticipate that we will be able to continue to use our existing GSM 900 base station sites and to co-locate GSM 1800, UMTS 2100 and UMTS 900 base stations at some of the same sites. In 2018, we continued to rollout LTE network and started the large-scale development of LTE 1800 network, the latter amounted to 85% of the newly installed LTE base stations. In 2018, we started the NB IoT technology on 8,178 base stations of LTE.

Network Monitoring Equipment

We constantly control and monitor the performance of our network, call completion rate and other major key technical performance indicators. We use monitoring systems to optimize our network and to locate and identify the cause of failures or problems, and also to analyze our network performance and obtain network statistics. We have agreements with different suppliers for technical support services that allow us to obtain their assistance in trouble shooting and correcting problems with our network within the warranty period.

To provide high quality service to our subscribers in Russia, we have a global network operation center ("GNOC") in Krasnodar and additionally a local operation and maintenance center in Voronezh which takes the form of outsourcing partnership with Nokia Solutions and Networks. The GNOC experts and a staff of the local operation and maintenance center have the technical ability to monitor

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network problems and unusual situations online in all regional branches of MTS in Russia around the clock. Our maintenance department, staffed 24 hours per day, performs daily network integrity checks and responds to reported problems. Our technicians inspect base stations and carry out preventative maintenance at least once every six months.

The GNOC in Krasnodar allows us to centralize such functions as monitoring and controlling of equipment, network planning and optimization, and also helps to solve incidents related to service interruptions. The GNOC strengthens our network's reliability and safety, as well as creates the necessary conditions to launch and implement new technologies and network standards.

In November 2015, a Global Fixed Network Operation Center (GFNOC) was launched in Nizhny Novgorod, thus completing the centralization process of the MTS mobile and fixed network management. The GFNOC combined functions of monitoring and controlling the equipment in 54 regions of Russia where we offer broadband Internet access, TV and fixed line telephony services. For the subscribers connected to these services the GFNOC acts as a single entry point for technical support. Under the GFNOC project a centralized unit was also set up which is responsible for the quality of the services provided to corporate customers with bundled packages of mobile and fixed communications. Our subsidiary company MGTS performs these functions in Moscow region of Russia.

With the Global Fixed Network Operation Center deployed, we put together all resources for management of the quality of provided mobile and fixed line voice services, data transmission via mobile and fixed networks, leased dedicated digital circuits and VPN channels and digital TV.

In 2016, we also opened satellite TV operation and maintenance center in Moscow, which is used for monitoring head-end station and satellite TV services.

Our networks in Ukraine, Armenia and Belarus are monitored by our local operation and maintenance centers in each country. In addition to the monitoring of network performance, those centers analyze network quality parameters, provide troubleshooting, regular and extraordinary reporting to the management and our headquarters. The monitoring of our network in Turkmenistan has been ceased in September 2017 due to cancelation of providing telecommunication services.

The handling of any significant network problems and outages is monitored and coordinated at our headquarters, where we also manage the cross-functional coordination of our networks in all countries of operation.

# Interconnect Arrangements and Telephone Numbering Capacity

We operate various types of communications networks, including mobile cellular, DLD/ILD and local fixed line and zonal fixed line networks.

Cellular operators must interconnect with fixed zonal, wireless, long distance and international telephone operators to obtain access to their networks and, via these operators, to the networks of other operators around the world. Cellular and fixed line operators must also obtain telephone numbering capacity to allocate to their subscribers. There are two categories of telephone numbers: "federal" 11-digit numbers (non-geographical numbering plan for cellular operators) and "local" seven-digit numbers (geographical numbering plan for fixed-line operators which can also be used as additional numbering capacity for mobile operators). In Moscow, both "federal" and "local" numbers have been used in the 11-digit format since the beginning of 2011. We have entered into various agreements for the provision of local telephone numbering capacity with several local telecommunications operators in Moscow and in other regions of Russia and in Ukraine. We have also built our own local networks in certain cities within Russia (including Moscow) to provide local telephone numbering capacity to our subscribers. Federal telephone numbering capacity is allocated by the government and we provide interconnect services to other operators in all regions of Russia. Our fixed line zonal and local networks in Russia are interconnected with other operators. Zonal/local

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interconnect typically entails payment of a one-time connection fee per point of interconnect (E1) and a usage charge based on minutes of traffic. Operators with a Substantial Market Power may also charge a guarantee monthly usage fee in case traffic is less than 30 kmin per E1.

The Ministry of Communications and Mass Media has allocated special numbering codes for federal 11-digit telephone numbers on a non-geographical basis to all the cellular operators. We believe that sufficient numbering capacity has been allocated to us for the development of our network. However, a combination of regulatory, technological and financial factors has led to the limited availability of local 7-digit telephone numbering capacity in Moscow and the Moscow region. Moscow's "495" code and the Moscow region's "496" code have already reached numbering capacity limits. As a result, the new "499" code was introduced in order to increase the Moscow numbering capacity, the "498" code was introduced to increase Moscow region numbering capacity and since 2011 "local" numbers have been used in Moscow in 11-digit format.

To meet subscriber's demand and provide for an adequate inventory of numbering capacity, we previously entered into contracts with local fixed line providers for allocation of numbering capacity to us. However, the Ministry of Communications and Mass Media subsequently took the view that numbering capacity assigned to one operator could not be rented to other operators. Accordingly, we have entered into arrangements whereby fixed line operators make their numbers available to our subscribers via agency contracts between the subscribers and us acting on behalf of such fixed line operators. Our right to use numbering capacity ranges from five years to an unlimited period of time. As a result of our merger with Comstar, we have decreased the use of local numbering capacity of other operators. As of December 31, 2018, we had numbering capacity (federal and local) for approximately 34.68 million subscribers in the Moscow license area.

To provide our subscribers in Russia with DLD/ILD services, we have interconnect agreements with national operators Rostelecom, MTT (an affiliate of Sistema until March 18, 2009), VEON Ltd. (VimpelCom) and other national transit operators. We have also built and operate our own DLD/ILD network, which allows us to interconnect directly to foreign operators and thereby decrease our interconnect costs. Most interconnect fees for connecting users of other operators' fixed line and wireless networks to our network are based on a one-time connection fee and usage by minute which varies depending on the destination called.

Russian legislation provides that fixed line operators with a substantial market power cannot refuse to provide interconnect or discriminate against one operator in relation to another, and the interconnect rates of operators with a Substantial Market Power are regulated by the government. See "Item 4. Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Regulation in the Russian Federation Competition, Interconnect and Pricing" and "Item 3. Key Information D. Risk Factors Risks Relating to Our Business If we cannot interconnect cost-effectively with other telecommunications operators, we may be unable to provide services at competitive prices, which may diminish our market share and result in a loss of revenues and margins."

Interconnect and traffic transit between the networks of mobile operators in Russia occurs through direct channels connecting the switches of the different mobile operators within the same city; through the network of transit long distance operators, which connect the networks of different mobile operators in different cities or through our own DLD/ILD network. For domestic long distance traffic transit we use our DLD/ILD network and networks of different national operators, including among others: MTT, Rostelecom and VEON Ltd. (VimpelCom). For ILD traffic transit we primarily use our DLD/ILD network which is interconnected with 51 international carriers. We also have an interconnect between the DLD/ILD MTS network and the ILD networks of our subsidiaries, Vodafone Ukraine and MTS Armenia, in order to provide transit for international traffic.

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In Ukraine, mobile operators are allocated numbering capacity by the NCCIR (National Commission for the State Regulation of Communications and Informatization). We believe that sufficient numbering capacity has been allocated to us in Ukraine for the development of our mobile network. We also believe that we have been allocated sufficient fixed line numbering capacity with respect to the cities in which we are developing our fixed line networks.

## Handsets

Nearly all of our handset sales consist of tri-band GSM 900/1800/1900 and dual-band UMTS 900/2100 handsets, except for certain models in the low cost segment. Those handsets, which function in the GSM 900, GSM 1800 and PCS-1900 standards, provide users with greater automatic roaming possibilities in Russia, Europe, the United States and Canada. All LTE handsets support bandwidth LTE-FDD 1800 MHz (Band 3), 2600 MHz (Band 7), 800 MHz (Band 20) and LTE-TDD 2600 MHz (band 38), also there are smartphones in our sales with LTE Advanced support. In 2018, we continued the process of implementation Voice over LTE and WiFi Calling functions.

From 2009, RTC, our wholly-owned subsidiary, started handling all functions relating to our retail operations, including the purchase and sale of handsets and accessories and subscriber enrollment at our retail outlets. RTC has entered into arrangements with Apple, Sony, Samsung, Nokia, Alcatel, Xiaomi, Philips, Huawei, Honor and others to purchase handsets. In 2018, we continued our cooperation with A-brand smartphone vendors. We also offer an array of mobile telephone accessories. Since 2009 we have been successfully selling MTS branded phones.

### **Fixed Line Services**

We offer fixed line communications services in over 185 cities across Russia, covering a population of over 53 million people.

Our other fixed line operations include the following communications services: voice, data and Internet and pay-TV services for corporate and residential subscribers, as well as the provision of interconnect services to other communications operators and numbering capacity to their subscribers. Based on TMT Consulting data, as of December 31, 2018, we were the largest operator in the Moscow residential broadband market in terms of subscribers, with a 35% market share. We also operate in Ukraine and Armenia, where we provide digital telephony communications services, data transmission, Internet access and the renting of channels. For a list of the telecommunications licenses held by us, see "Item 4. Information on Our Company B. Business Overview Regulation of Telecommunications in the Russian Federation and Ukraine Licenses."

# Customers and Services Offered Moscow Fixed Line Operations

We provide fixed line communications services through our subsidiary, MGTS, which is the incumbent fixed line PSTN operator in Moscow. MGTS owns Moscow's PSTN infrastructure, including switches, a transmission network, underground ducts, and owns or holds leases to properties housing its offices and equipment.

As of December 31, 2018, MGTS had approximately 3.47 million active lines in service, a cable network of over 53,372 km, a fiber optic network of over 41,175 km and 2,079 payphones. Currently, MGTS has focused its efforts on the deployment of GPON, IP/MPLS technologies and an IMS core. The old SDH equipment is being removed which results in the decreased number of E1 streams, a reduction in the copper network and the respective extension of the fiber- optic network. MGTS also develops new services for IP TV, and MVNO as the convergent service for mobile and fixed telephony.

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The total installed capacity of the telephone network reached 1.05 million numbers on the TDM area (Time Division Multiplexing) and 5.18 million numbers on the IMS area (IP Multimedia Subsystem) as of December 31, 2018.

Residential subscribers accounted for approximately 84% of MGTS' total lines, corporates for 8% and public sector subscribers for 8%, as of December 31, 2018. Residential subscribers accounted for approximately 83% of MGTS' total lines, corporates for 9% and public sector subscribers for 8%, as of December 31, 2017. Residential subscribers accounted for approximately 83% of MGTS' total lines, corporates for 9% and public sector subscribers for 8%, as of December 31, 2016.

MGTS holds licenses and regulatory approvals to provide, among others, the following services:

local telephony;
DLD/ILD voice telephony through licensed DLD/ILD operators, including us;
interconnect to other operators;
Internet and data transmission, including leased DLD/ILD services;
IP TV for B2C and B2B subscribers;
MVNO mobile telephony and Internet;
inquiry and information, including telephone directories;
local telephony with use of payphones;
telematic communications services;
telecommunications services associated with providing of communication channel;
telecommunications services associated with voice data transmission;
telecommunications services associated with cablecasting;
movable radiotelephony services; and
measures and (or) services for the protection of State secrets;
capital construction projects engineering.

As the only licensed PSTN operator in Moscow, MGTS is considered a natural monopoly under Russian antimonopoly regulations. Consequently, substantial part of services provided by MGTS are subject to governmental regulation. The Federal Antimonopoly Service of the Russian Federation regulates MGTS' tariffs for voice telephony services provided to its PSTN subscribers, including monthly subscription fees, installation fees and local call charges. Revenues from regulated services are accounted for approximately 38% of service operating revenues of our Moscow fixed line operations in 2018, 42% in 2017 and 49% in 2016. The percentage decline is connected with gradual growth of operating revenues from non-regulated services as a proportion of the overall operating revenues in 2018, 2017 and 2016. The Federal Antimonopoly Service of the Russian Federation sets the tariffs MGTS can charge taking into account cost of services, network investment and a certain profit margin, and the current tariffs fully compensate MGTS for the cost of services provided to residential and government subscribers. According to Russian legislation, MGTS is allowed to petition the Federal Antimonopoly Service of the Russian Federation for tariff increases upon certain conditions, such as inflation or increases in the cost of services. Historically, MGTS has petitioned the relevant Russian government agency for tariff increases once per year. The Federal Antimonopoly Service of the Russian Federation has permitted MGTS to increase its tariffs several times.

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MGTS also provides a number of unregulated services. According to Russian legislation, DLD/ILD services provided by licensed non-monopoly operators, data transmission services, value-added services and a number of other services are not subject to tariff regulation. Among others, MGTS provides the following unregulated services:

various value-added services, including call forwarding, call waiting, call holding, caller ID, provision of second direct inward dialing (DID) number;

Internet access for residential subscribers and corporates;

IP TV for B2C and B2B subscribers;

MVNO mobile telephony and Internet;

alarm signaling;

domestic maintenance services, including electric installation, sanitary engineering, cleaning, computer emergency, and consumer electronics installation;

video-surveillance; and

rent of space for telecommunications equipment of other operators connected to MGTS' network.

MGTS does not have license to provide DLD/ILD communications services directly to its subscribers but must route such traffic through a licensed DLD/ILD operator. As a result, DLD/ILD traffic originated by MGTS subscribers is carried either by us, with these services included in MGTS' monthly bill, or by other providers of DLD/ILD services, who bill MGTS subscribers directly or pay MGTS an agency fee for processing their bills.

The following table presents certain operating data for our Moscow fixed line operations as of and for the years ended December 31, 2018, 2017 and 2016.

Moscow fixed line operations	December 31, 2018	December 31, 2017	December 31, 2016
Installed telephone lines on TDM (000s) <sup>(1)</sup>	1,050	2,750	3,731
Installed telephone lines on IMS (000s) <sup>(1)</sup>	5,180	5,180	5,180
Residential			
Number of subscribers (000s)	2,686	3,012	3,148
CPP traffic (millions of minutes)	307	399	526
Corporate <sup>(2)</sup>			
Number of active lines (000s)	561	612	654
Number of subscribers (000s)	49	52	54
CPP traffic (millions of minutes)	248	301	369

(1) Telephone lines on TDM and IMS can be installed at one household.

(2) Includes state-owned enterprises and government agencies.

MGTS' subscriber segments and the services provided to each subscriber segment are further described below.

Residential and corporate subscribers

MGTS provides basic regulated voice services to residential and corporate subscribers using its PSTN facilities and copper or optical "last mile" access.

In addition to basic voice services, MGTS provides its residential and corporate subscribers with digital telecommunications services, Internet, IP TV, MVNO mobile telephony and Internet and VPN

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deployment services, rental of high-speed communication channels, intelligent voice and various other services.

The following table illustrates MGTS' regulated tariff development:

MGTS Regulated Tariffs	March 1, 2019	March 1, 2018	March 1, 2017
Residential <sup>(1)</sup>	2015	2010	2017
Line rental			
RUB per month	214	205	205
Per minute tariff plan local connection fee			
RUB per minute	0.60	0.60	0.60
Unlimited tariff plan connection fee (unlimited connection)			
RUB per month	294	294	294
Combined tariff plan fee for fixed amount of minute(s)			
RUB per month	224	224	224
Combined tariff plan fee for each additional minute			
RUB per minute	0.58	0.58	0.58
Corporate (non-governmental) <sup>(1)</sup>			
Line rental			
RUB per month	225	220	220
Per minute tariff plan local connection fee			
RUB per minute	0.60	0.60	0.60
Unlimited tariff plan connection fee (unlimited connection)			
RUB per month	416	416	416
Combined tariff plan fee for fixed amount of minutes			
RUB per month	224	224	224
Combined tariff plan fee for each additional minute			
RUB per minute	0.58	0.58	0.58
Corporate (governmental and state-funded organizations) $^{(1)}$			
Line rental			
RUB per month	215	215	215
Per minute tariff plan local connection fee			
RUB per minute	0.60	0.60	0.60
Unlimited tariff plan connection fee (unlimited connection)			
RUB per month	416	416	416
Combined tariff plan fee for fixed amount of minutes <sup>9</sup>			
RUB per month	224	224	224
Combined tariff plan fee for each additional minute			
RUB per minute	0.58	0.58	0.58

<sup>(1)</sup>Tariffs for residential subscribers are shown including VAT; tariffs for non-governmental corporate subscribers and governmental/state-funded organizations are shown excluding VAT.

## **Operators**

MGTS provides interconnect, traffic transmission and leased line services to other communications operators. Interconnect is carried out on the local and zonal levels in accordance with terms and conditions that are publicly disclosed. MGTS also provides additional services to operators interconnecting to MGTS' network, including access to emergency service, information and customer care numbers.

<sup>(2)</sup> The plan included 400 minutes per month.

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MGTS has also established an active presence in the data transmission market. Through its PDTN, MGTS can establish VPNs for other operators as well as provide other data network services. Operators can also rent space and utility systems from MGTS to house their network equipment.

#### Customers and Services Offered Other Fixed Line Operations

We provide fixed line communications services to corporate, operator and residential subscribers in over 185 cities throughout Russia. Specifically, we offer local voice, DLD/ILD voice, data and Internet and pay-TV services to our subscribers. Some of the interconnect tariffs we charge other telecommunications operators for in Moscow and certain other cities are regulated by the Russian government. We believe our fixed line subscribers typically evaluate our service and product offerings based on such factors as price, technology, security, reliability and customer service.

The following table presents certain operating data for our other fixed line operations in Russia as of and for the years ended December 31, 2018 and 2017.

Other fixed line operations	December 31, 2018	December 31, 2017
Residential		
Number of subscribers (000s) <sup>(1)</sup>	2,827	2,909
Corporate <sup>(2)</sup>		
Number of subscribers (000s)	104	138

- Subscribers to broadband Internet, pay-TV, Wi- Max, voice and other services.
- (2) Includes state-owned enterprises and government agencies.

# Corporate subscribers

We target corporate subscribers covering a range of industries, such as business centers, hotels, financial institutions, professional services firms, consumer goods companies, manufacturers and companies involved in extractive industries, among others. These subscribers vary in size, ranging from large multinational and Russian corporations with thousands of employees to small-and medium-sized enterprises with up to several hundred employees. As of December 31, 2018, we had approximately 33,000 voice and 56,600 Internet corporate subscribers.

As further described below, we offer voice, data transmission and Internet and various value-added services to our corporate subscribers.

<u>Voice Services.</u> We provide a full range of other fixed line voice services to corporates in Moscow, the Moscow region and other selected regions of Russia, which include local, zonal, and DLD/ILD services using our transmission network and leased capacity between major Russian cities. We also provide integrated voice and data services, voice over frame relay and certain integrated services digital network ("ISDN") services.

<u>Data Transmission and Internet Services.</u> We offer high quality data transmission services to corporates, which allow for data exchange between their various branches or offices located within Russia and internationally. For data transmission services, our network is capable of transferring data at speeds of up to 10 Gbps and utilizes various technologies, such as 10 GE, GE, ATM, TDM, VPN-MPLS/VPLS, GPON, Microwave radio relay (MRR), xDSL, LTE and Wi-Fi to provide high quality solutions at a relatively low cost. We endeavor to ensure the reliability of network connections by utilizing a full reservation approach to back up all elements of the network.

In addition, we offer a wide range of Internet services to corporates, including broadband Internet access, VoIP, VPNs and data center services using the following technologies: (1) NGN (up to

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10 Gbps), (2) GPON (up to 1 Gbps), (3) xDSL (up to 100 Mbps), (4) radio Ethernet (up to 300 Mbps), (5) MRR (up to 1 Gbps), (6) Wi-Fi (up to 600 Mbps), and (7) LTE (up to 100 Mbps). We also provide continuous flexibility to upgrade their network capacity to handle additional Internet services. For example, we often integrate data transmission and Internet services for our clients as they expand their operations and need to interconnect and exchange data with newly opened offices and/or branches.

We also provide security services, such as Anti DDoS-protection and various AntiVirus solutions.

We offer a broad range of Internet packages that vary in terms of data transfer speeds and pricing, with higher tariffs for faster uploading and downloading capabilities. Corporates with GPON broadband Internet packages generally experience data transfer speeds between 1 Mbps and 1 Gbps. In addition, we offer a premium broadband Internet service over our NGN in which subscribers enjoy data transfer speeds between 1 Mbps and 10 Gbps. The NGN provides subscribers with the benefit of the same uploading and downloading data transfer speeds, whereas Internet subscribers using an xDSL/GPON connection upload at speeds that are much slower than the one at which they can download.

We also utilize MGTS' PDTN to provide high-speed reliable Internet services and create VPNs for our corporates.

<u>Leased Channels.</u> We provide corporate clients with the ability to rent high speed data channels. These "leased channels" are dedicated lines of data transmission.

<u>Value-Added Services</u>. We provide corporates with several value-added services, including Autosekretar and integrated solutions. The Autosekretar service is based on our proprietary IN and is designed to help our corporates manage the reception and servicing of a large volume of incoming calls. The unique multi- channel telephone number assigned to customers will not change even if the customer moves to a different location in Moscow, and does not require the customer to install any equipment. In addition, this service allows all incoming calls to be transferred to other fixed or mobile telephone numbers in Russia or in other countries. The IN identifies a subscriber by phone number, phone card or password, which allows our customers to bill their subscribers for services and, if necessary, block access for subscribers who have a negative balance on their account.

In addition, we serve as general contractor for the provision of a full range of integrated solutions to subscribers wishing to establish a modern integrated communications infrastructure. Each solution is customized for subscriber- specific needs. In developing these customized networks, we are able to offer the following range of services: site survey, cost analysis and optimum project planning, assistance with government-related documentation, supply of equipment and operational, technical and maintenance support on an ongoing basis. Once the infrastructure is established or renovated, as the case may be, we typically provide digital voice communications, voice intelligent services, high-speed Internet services, videoconferencing and other data transmission services. We intend to expand our service offerings to include customer premises management and network-centric IT solutions.

<u>Fixed mobile convergence</u>. Based on our fixed and mobile networks, we offer fixed-to-mobile convergence services to corporate clients providing use of their mobile phone as an extension of their private branch exchange ("PBX"). We also provide access to corporate IP-networks from a mobile phone via GPRS/EDGE/3G/4G.

#### **Operators**

We operate fixed-line local and zonal networks in Moscow and other cities for provision of telephony services to fixed-line subscribers and additional local numbers to mobile subscribers. In order to lower the costs of intercity and international traffic transition, we put into operation an intercity international network in December 2008.

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According to our estimates, together with MGTS, we had approximately 77% of the total active numbering capacity in Moscow as of December 31, 2018. We had approximately 204 local fixed nodes in 62 regions of Russia, including Moscow, and 40 zonal fixed networks to provide telephony services to subscribers as of December 31, 2018. Our integrated intercity/international network is interconnected to more than 49 international operators. As of December 31, 2018, we had total more than 1,660 interconnect agreements with national and international operators for interconnection of our networks, including fixed, mobile and Intercity/International networks.

#### Residential subscribers

We offer voice, Internet and pay-TV services to residential subscribers.

<u>Voice Services.</u> We provide voice services to residential and corporate subscribers. Like corporate subscribers, residential subscribers in each of the regions that we are present in seek a full range of high quality voice services equivalent to those provided in Western Europe. In addition to "basic" voice telephony services, we provide a number of additional services, such as call forwarding, call transferring, call waiting, conference, voicemail and Caller ID, among others.

<u>Internet Services.</u> We offer broadband Internet services to residential subscribers throughout Russia. As of December 31, 2018, we had 10% market share in the Russian Federation together with Moscow where we had a 35% share, based on TMT Consulting data. Depending on the Internet connection speed, we charge residential subscribers a subscription fee of RUB 200-RUB 1,499 per month in Moscow and a subscription fee of RUB 190-RUB 3,500 in other regions of Russia. We do not charge a connection fee in Moscow and in most of the Russian regions.

<u>Pay-TV.</u> We operate a TV service based on IPTV service over ADSL and GPON technologies in Moscow. In addition, we offer pay-TV services based on DVB-C (digital television via cable connection), analog cable transmission and MMDS (wireless cable) technologies in most of the regions in which we are present. Since November 2013, we connect our subscribers only to the TV with digital quality and since 2017 we broadcast in 4K ultra HD quality. Special auxiliary equipment (set-top box) allows pay-TV subscribers to access more than 170 channels of digital quality, including 40 channels of HD quality from a home television and 4 channels of 4K ultra HD quality. International and Russian channels are included as part of the base services package.

Our pricing structure is designed to appeal to large numbers of consumers with various interests and purchasing power, and varies significantly between regions. We charge a subscription fee between RUB 50-RUB 1,060 per month in Moscow and a subscription fee of between RUB 200-RUB 460 in other regions of Russia, depending on the number of channels included in the package. We also offer bundled Internet and pay-TV services for RUB 320-RUB 1,699 per month in Moscow and RUB 250-RUB 3,850 in certain other regions of Russia, depending on the speed of the Internet connection, the number of pay-TV channels being provided and level of competition in a particular region. In 2018, convergent bundles, that included Internet, TV and mobile services, were introduced in 45 regions and more than 70 thousand subscribers were connected.

### Sales and Marketing

Moscow fixed line operations

In 2018, MGTS continued monetization of its own high-tech fiber-optic network GPON. To achieve this, MGTS signed a number of contracts with video services and online cinemas (ivi, tvigle, Amediateka, Home of HBO, Sony Pictures). Furthermore, MGTS offered the market a Smart Home solution. To increase ARPU and retain subscribers MGTS launched high-speed tariffs for home Internet, including a unique offer of 1 Gb/s, as well as a social tariff with special conditions for certain categories of the population. In order to expand and consolidate its market share, MGTS continued to

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enter the Moscow Region market through the construction of its own network, as well as through acquisition of local Internet service providers.

By the end of 2018, 1.94 million subscribers were transferred to GPON. In 2019, MGTS plans to develop and implement new services as part of the concept of Smart Home and Smart City, participate in the cloud solutions market more actively, develop partnerships with delivery services and become a partner of iconic city projects.

Other fixed line operations

Our target customers include corporate, operator and residential subscribers.

To promote our product and service offerings, we use various communication channels for advertising and marketing, including direct marketing, printed mass media, television, Internet, radio, directories, outdoor advertising, advertising in the subway, special promotions and cross promotions. Through these various advertising and marketing channels, we intend to further develop our brand recognition. Our marketing strategy is designed to create a unified brand for each of our various product and service offerings with the aim of becoming a single source for all of our subscribers' communications needs.

We also actively promote our services to existing subscribers with special bundled product offerings aimed at servicing their communication requirements and enhancing subscriber loyalty. Our advertising and marketing materials are aimed primarily at the promotion of MTS brand. All fixed-line products are offered and marketed under this brand. However, when we enter new markets and acquire companies, we have to use both brands in advertising - MTS brand and the acquired brand. This is done to decrease churn as customers tend to express strong loyalty towards local brands. We then gradually decrease presence of the acquired brand and this allows us to make MTS a market leader in a given region in future. Our advertising and marketing efforts are designed to convey a positive image of us to the market as a leading communications operator focused on customer satisfaction.

### Competition

We compete with a number of fixed line telecommunications operators servicing Moscow, St. Petersburg and other major Russian cities. Moscow is the largest and most competitive of these markets. Our primary competitors include:

VEON Ltd. (VimpelCom), which is also one of our primary competitors in the Russian mobile communications market, offers voice, data and Internet services to corporates, operators and residential subscribers in major cities throughout Russia, Ukraine, Kazakhstan and Uzbekistan. We compete with VEON Ltd. (VimpelCom) in the corporate, operator and residential fixed line telecommunications markets in Moscow and in certain other regions of Russia where we are present, including, among others, St. Petersburg, Rostov, Nizhny Novgorod, Ekaterinburg and Krasnodar.

*Rostelecom*, Russia's largest national fixed line telecommunications operator with presence in all Russian regions. We compete with Rostelecom in the corporate, operator and residential fixed line telecommunications markets in all regions where we operate in Russia. We also compete with Rostelecom in the mobile telecommunications market.

*Akado Group*, provider of pay-TV, broadband Internet and digital telephony in Moscow. We compete with the Akado Group primarily in the residential fixed line telecommunications markets in Moscow and Ekaterinburg.

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*MegaFon*, swhich acquired operators Synterra and Net-by-Net, and offers services in the operator, corporate and residential fixed line telecommunications markets in Moscow, St. Petersburg, and other regions.

*Er-Telecom*, voice telephony, broadband and TV operator. We compete with Er-Telecom in the corporate and residential fixed line telecommunications market in St. Petersburg, Novosibirsk, Omsk, N.Novgorod, Ekaterinburg, Kazan, Novosibirsk, Chelyabinsk and other regions.

# Corporate subscribers

The following table sets forth the corporate subscriber market shares of the primary fixed line operators in Moscow as of December 31, 2018:

MTS	22%
VEON Ltd. (VimpelCom)	17%
Akado	6%
Rostelecom	18%
Other	37%
Total	100%

Source: TMT Consulting.

In the corporate subscriber segment, we generally compete on the basis of network quality, individual and bundled service offerings, customer service, installation time, geographical presence and pricing.

# Residential subscribers

### Voice services

The following table sets forth the market shares of the primary fixed line operators for voice services in Russia as of December 31, 2018:

Company	Russia
MTS	14%
Rostelecom	69%
Other	17%
Total	100%

Source: TMT Consulting.

As Moscow's only PSTN operator, MGTS faces limited competition in the market for residential local telephony services in Moscow. As of December 31, 2018, MGTS provided local voice telephony services for approximately 96% of all residential subscribers in Moscow, according to TMT Consulting.

In the other voice services market, we generally compete based on the availability of bundled packages comprising broadband Internet access and pay-TV services, value-added services, network quality, installation time and customer service.

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#### Internet

According to TMT Consulting, as of December 31, 2018, broadband Internet penetration of households was 59% in Russia. The following table sets forth the market shares of the primary operators in the residential broadband Internet market in Russia as of December 31, 2018:

Company	Russia
MTS	10%
TTK	5%
VEON Ltd. (VimpelCom)	7%
Er-Telecom	11%
Rostelecom	36%
Other	31%
Total	100%

Source: TMT Consulting.

### Pay-TV

According to TMT Consulting, as of December 31, 2018, pay-TV penetration was 77% in Russia. The following table sets forth the market shares of the primary operators in the TV market in Russia as of December 31, 2018:

Company	Russia
MTS	8%
Rostelecom	23%
Tricolor TV	28%
Er-Telecom	8%
Orion Express	7%
Other	26%
Total	100%

Source: TMT Consulting.

In the TV market, we generally compete on the basis of pricing, channel selection and content, individual and bundled service offerings, customer service and installation time.

### **Tariffs**

We establish prices for our unregulated services and different subscriber segments based on certain common considerations, policies and goals. For example, we generally seek to establish competitive prices based on market rates for the services we offer and below market prices when our lower-than-average costs or economies of scale allow us to do so. We also offer subscribers bundled service packages with several services offered together at a discount to the cost of ordering each individual service separately and to promote additional services to our existing subscribers. In addition, we often offer promotions to our various subscriber segments waiving or discounting installation fees in order to attract new subscribers or promote new services.

With regard to corporates, we generally aim to derive the bulk of our operating revenues from monthly payments. Thus, depending on the scale and type of services ordered, we will often discount or waive installation fees.

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For services offered to other communications service providers, we aim to generate most of our operating revenues from monthly payments and by offering an array of value-added services.

### Network Infrastructure

Network Infrastructure Transmission Networks

Backbone and Internet Networks

Mobile, fixed and inter-carrier aggregated traffic increased in 2018: downlink (towards users) data throughput reached 3.87 Tbps (2.88 Tbps in 2017), uplink (from users) data throughput reached 1.34 Tbps in 2017).

The size of MTS fiber-optic networks increased by 16,752 km in 2018 and reached 243,187 km in total, thanks to deployment of the following fiber optic lines:

Okha Yuzhno-Sakhalinsk (ring reservations of Sakhalin island);

Ufa Chelyabinsk (the third reserve route to the Urals); and

Saransk Nizhny Novgorod (reservation of the Volga region).

### Convergent network

According to deployment plans, the following projects were executed in 2018:

New MBH nodes were deployed: 1,810; replacement of obsoleted MBH equipment is ongoing.

Micro wave links were deployed: 4,637. According to transport network strategy evolution unlicensed in Russia E-band micro wave link was used for linking base stations (1 Gbps and above), E-band link share increased from 14.5% to 18.8% in 2018, E-band share, among other technologies, is expected to rise in 2019. 10 Gbps E-band equipment was tested and is planned to be deployed in 2019.

We continue the shared network deployment and links interchange projects with other operators and have signed the memorandum of understanding with respect to the potential projects. Memorandum defines a list of directions (parts of fiber-optic communication links) which are mutually interesting for both participants. Summarized length of provided communication links is approximately equal on both sides.

Management and monitoring systems virtualization is ongoing. Unified system for link facilities based on GE Small World solution is launched in production mode in the fourth quarter 2017.

As a part of evolution of IPBB (IP Backbone) network equipment modernization is ongoing. The projects assume replacement Cisco 7600 nodes for ASR9000 nodes due to an end of a support of 7600 nodes. The project is planned to be finished at 2019.

Satellite Network

In 2018 we:

Developed and coordinated the project backup of the project the satellite communication network of MTS, providing a redundant fiber-optic Backbone network in the Northwest region, Siberia and the Far East. The aim of the project is to reduce operating costs for rent backup communication channels, and ensuring that pass voice traffic in case of accidents on major routes. The project was completed in 2018.

Performed preparation for works on integration of satellite communication systems with 5G / LTE / IoT networks.

Optimized the existing backbone and VSAT networks.

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Public Switching Telephone networks (PSTN)

The network infrastructure we maintain in Moscow is substantially different to the infrastructures we use in the regions. In Moscow, primarily we have organically grown, while our regional development has largely been through the acquisition of companies with different business models and a focus on different services. As a result, the network infrastructures in the regions outside Moscow and the technologies used to support such infrastructures are different from the network infrastructure established in Moscow and which we currently own. Now telephone network in Moscow and Moscow region has a capacity of more than 1,100,000 telephone numbers.

All of our PSTN switching centers (TDM and Soft switch) are connected to a digital transport network, which uses SDH and IP technology. The network ensures connectivity with a digital equipment of PSTNs of other operators.

The SDH network will be operated to support existing clients, but we also provide the moving traffic and clients from SDH/TDM technology to IP.

The management of the transport network and digital PSTN is carried out remotely from network operation centers.

As of December 31, 2018, in Moscow and the Moscow region we had a wireless broadband network including 476 base and subscriber stations in the 5-6 GHz frequency band and also near 108 radio-relay lines in the 70-80 GHz frequency band.

For the provision of Internet access, IP-telephony and other services, we have our own IP network, the core of which is constructed as IP MPLS rings with routers connected to each other by means of 10 GE channels. In addition, separate routers are used for inter-carrier connections and are connected to the core routers by means of 10 GE interfaces.

### Russia

As of December 31, 2018 we provided cable Internet access to about 9.3 million households and cable TV access to about 9.8 million households. The access equipment used are Ethernet switches, IP DSLAM and Optical Receivers. We mainly use FTTB technology for Internet (8,6 million households) and CATV access, which can provide speeds up to 1 Gb/s per building and about 250 channels CATV (analog and digital). In 2011, we started to roll-out DVB-C technology for a cable TV service. Currently, we have digital TV service (DVB-C&DVB-S2) in 187 cities and localities with 3.46 million of subscribers. In 2014, we started to roll-out an advanced hybrid TV service (DVBC/DVB-S2/IPTV+IP/VOD, CatchUp). By December 2017, we launched Hybrid TV platform with an IPTV commercial service in Moscow and other 10 regions, DVB-C/IP Hybrid commercial service in 95 regional cities and DVB-S2/IP Hybrid commercial service all over Russia. During 2018 in DVB-C and DVB-S networks we increased the number of broadcasted 4K/UHD channels using HEVC (H.265) format. Total number of connected hybrid TV users is approximately 0.61 million.

During 2018 we continued to expand set of external interactive services together with different Internet partners (START, TVIGLE), modified VoD service with support of series and SVoD feature and launched TV statistics and usage analysis system.

Also during 2018 we started swap of existing Hybrid TV platform for unified TV platform which will support both fixed and mobile TV segments and allow us to provide same services and look&feel on every TV screen. It is expected to replace current Hybrid TV platform by 2020. Commercial launch of OTT segment on new platform is set for May 1, 2019.

In Moscow and regions as an Internet traffic supplier, we mainly use MTS own IP Backbone network.

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The acquisition of Comstar provided us with an opportunity to use MTS fiber optic lines for fixed network development. Optical network construction in cities is carried out on the basis of fixed and mobile business needs. When we modernize and construct new networks, we deploy fixed and mobile equipment on the basis of "collocation" method

# Principal suppliers

Our principal suppliers are: NVision Group, subsidiary of the Group and integrator; Huawei, Iskratel, Oracle PSTN switching equipment and SBC; Ericsson, Harmonic, Summavision Teleste equipment of Digital TV station; Irdeto, Verimatrix CAS TV systems; Ericsson, Huawei Hybrid TV platform; Cisco Systems, Huawei, D-Link FTTB core and access; Juniper Networks, Huawei, ECI Telecom, Tellabs and Alcatel Lucent for a transport network equipment.

All of our equipment is supplied directly through authorized dealers

### Seasonality

Our results of operations are impacted by certain seasonal trends. Generally, revenue is higher during the second and third quarter due to increase in roaming revenues and guest roaming revenues during these quarters. Quarterly trends can also be influenced by a number of factors, including new marketing campaigns and promotions, and may not be consistent from year to year.

# Regulation of Telecommunications in the Russian Federation and Ukraine

#### **Regulation in the Russian Federation**

In the Russian Federation, the federal government regulates telecommunications services. The principal law regulating telecommunications in the Russian Federation is the Federal Law on Communications, which provides, among other elements, for the following:

licensing of telecommunications services;
requirements for obtaining a radio frequency allocation;
equipment certification;
equal rights for individuals and legal entities, including foreign individuals and legal entities, to offer telecommunications services;
fair competition;
freedom of pricing other than pricing by companies with a substantial position in public telecommunication networks; and
liability for violations of Russian legislation on telecommunications.

The Federal Law on Communications came into force on January 1, 2004. The Federal Law on Communications creates a framework in which government authorities may enact specific regulations. Regulations enacted under the legislative framework in place prior to the enactment of the Federal Law on Communications continue to be applied to the extent they do not conflict with the Federal Law on Communications.

The Federal Law on Communications, which confers broad powers to the state to regulate the communications industry, including the allocation of frequencies, the establishment of fees for frequency use and the allocation and revocation of numbering capacity, significantly modifies the system of government regulation of the provision of communications services in Russia. In particular, licenses to provide

communications services in territories where frequency and numbering capacity are limited may be issued only on the basis of a tender, whereas according to the Government Decree

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No. 480 dated May 24, 2014, licenses to provide communication services with frequency spectrum - only on auction basis. In addition, the Federal Law on Communications provides for the establishment of a "universal services reserve fund" which is funded by a levy imposed on all operators of public networks, including us.

#### Regulatory Authorities

The Russian telecommunications industry is regulated by several governmental agencies. These agencies form a complex, multi-tier system of regulation that resulted, in part, from the implementation of the Federal Law on Communications, as well as from the large-scale restructuring of the Russian government in March 2004 and subsequent restructuring in May 2008. See also "Item 3. Key Information D. Risk Factors Risks Relating to Our Countries of Operation Political and Social Risks Political and governmental instability in Russia and other countries of our operations could materially adversely affect our business, financial condition, results of operations and prospects and the value of our shares and ADSs."

The Ministry of Digital Development, Communications and Mass Media of the Russian Federation is the federal executive body that develops and supervises the implementation of governmental policy in the area of communications and coordinates and controls the activities of its subordinate agencies. The Ministry has the authority to issue certain regulations implementing the federal law on communications and other federal laws.

The Federal Service for Supervision of Communications, Information Technologies and Mass Media is a federal executive body that supervises and controls certain areas of communications and information technologies, including:

the issuance of licenses and permissions in the area of communications and information technologies;

the registration of radio-electronic and high-frequency equipment;

the assignment of radio frequencies based on decisions taken by the State Radio Frequencies Commission and registration of such assignments;

the technical supervision of networks and network equipment throughout Russia;

the monitoring of compliance by network operators with applicable regulations, terms of their licenses and terms of the use of frequencies allocated and assigned to them;

the enforcement of equipment certification requirements;

the examination of electromagnetic compatibility of equipment with existing civil radio-electronic equipment;

the organization of tenders with respect to licenses in the sphere of communications;

the control of activity in processing of personal data; and

creation, building and maintenance of a unified automated information system Unified Register of Domain Names, Internet Website Page Locators and Network Addresses which Allow to Identify Internet Websites Containing Information Prohibited for Distribution in the Russian Federation.

The Federal Communications Agency is a federal executive body that implements governmental policy, manages state property and provides public services in the area of communications, including the allocation of numbering capacity and the certification of equipment for compliance with technical requirements.

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The State Radio Frequencies Commission is an inter-agency coordination body acting under the Ministry of Digital Development, Communications and Mass Media of the Russian Federation which is responsible for the regulation of the radio frequency spectrum, develops long-term policy for frequency allocation in the Russian Federation and decides on the allocation of frequency bands.

The Federal Antimonopoly Service (FAS) is a federal executive body that supervises competition regulations and enforces the Federal Law on Protection of Competition and the Federal Law on Natural Monopolies and the regulations enacted thereunder. The FAS controls certain activity of natural monopolies, including monitoring their execution of certain obligatory contracts, and can issue mandatory orders as provided for in the Federal Law on Natural Monopolies. In addition, the FAS regulates certain tariffs in the sphere of telecommunications, including the tariffs on the local, intrazone and DLD calls by subscribers of public switched telephone networks and installation and subscription fees.

Other regulatory authorities. The Federal Service for the Oversight of Consumer Protection and Welfare is responsible for the enforcement of sanitary regulations, including some authority over the location of telecommunications equipment, and supervises the compliance of companies with the regulations relating to the protection of consumer rights. The Federal Service for State Registration, Cadastre and Cartography is responsible for registering certain telecommunications infrastructure that is considered real property in accordance with Government Decree No. 68 dated February 11, 2005. The Federal Service for Financial Monitoring (Rosfinmonitoring) is a federal executive body responsible for countering money laundering and terrorism financing. Mobile operators are to comply with Federal Law No. 115-FZ dated August 7, 2001 "On Combating Money Laundering and Terrorist Financing."

#### Licensing of Telecommunications Services and Radio Frequency Allocation

Telecommunications licenses are issued based on the Federal Law on Communications and Government Decree No. 480 dated May 24, 2014 on Bidding Process (Auctions, Tenders) for Receipt of Telecommunications License. Under these regulations, licenses may be issued and renewed for periods ranging from three to twenty-five years. Several different licenses to conduct different communication services may be issued to one entity. Provided the licensee has conducted its activities in accordance with the applicable law and terms of the license, renewals may be obtained upon application to the Federal Service for Supervision of Communications, Information Technologies and Mass Media. Officials of the Federal Service for Supervision of Communications, Information Technologies and Mass Media have broad discretion with respect to both issuance and renewal procedures.

A company must complete a multi-stage process before the commercial launch of its communications network. A company must:

receive a license from the Federal Service for Supervision of Communications, Information Technologies and Mass Media to provide communications services;

obtain approval to use specific frequencies within the specified band from the State Radio Frequencies Commission if providing wireless telecommunications services; and

obtain permission from the Federal Service for Supervision of Communications, Information Technologies and Mass Media for network operations. To receive this permission, a wireless telecommunications services provider must develop a frequency assignment and site plan, which is then reviewed and certified by the Federal Service for Supervision of Communications, Information Technologies and Mass Media for electromagnetic compatibility of the proposed cellular network with other radio equipment operating in the license area. The Federal Service for Supervision of Communications, Information Technologies and Mass Media has discretion to

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modify this plan, if necessary, to ensure such compatibility. Effective January 1, 2004, licenses may be transferred in case of mergers or other reorganizations of the licensee upon application by a transferee as a new license holder. Additionally, the Ministry of Digital Development, Communications and Mass Media of the Russian Federation has declared that agreements on the provision of telecommunications services must be concluded and performed by the license holder.

If the terms of a license are not fulfilled or the service provider violates applicable legislation, the license may be suspended or terminated. Licenses may be suspended for various reasons, including:

detection of violations which may cause damage to rights, interests, life or health of individuals or to interests of government administration including, but not limited to, presidential and government telecommunication networks, defense, security and protection of legal order in the Russian Federation;

annulment of a frequency allocation if it results in the inability to render communications services;

failure in a timely requirements of the licensing authority, which commits to eliminate detected violations, including provisions that had been granted under reprimand to suspend the license.

In addition, licenses may be terminated for various reasons by a court, including:

failure to remedy in a timely manner a violation that led to the suspension of the license;

provision of inaccurate information in documents on the basis of which a license was issued; and

failure to fulfill obligations undertaken in the process of a tender or auction.

The license may also be terminated by the Federal Service for Supervision of Communications, Information Technologies and Mass Media in a number of cases, including liquidation of a license holder. A suspension or termination of a license may be appealed in court.

Frequencies are allocated for a maximum term of ten years, which may be extended upon the application of a frequency user. Under the Federal Law on Communications, frequency allocations may be changed for purposes of state management, defense, security and protection of legal order in the Russian Federation with the license holder to be compensated for related losses. Further, frequency allocations may be suspended or terminated for a number of reasons, including failure to comply with the conditions on which the frequency was allocated.

The following one-time license fee is payable irrespective of the number of regions covered by the license: RUB 7,500 for services involving, among other things, the use of a frequency spectrum and the lease of communication channels. The license fee for a license received through a tender or auction is determined by the terms of such tender or auction.

Furthermore, the Federal Law on Communications provides for the establishment of a "universal services reserve fund" for the purpose of supporting communications companies operating in less developed regions of Russia through the financing, construction and maintenance of telecommunications networks in low-profit and unprofitable sectors. This reserve fund is aimed at eliminating the practice of cross-subsidies by compensating operators for certain mandatory, loss-making local services in rural and sparsely populated areas. It is funded by a levy imposed on all operators of public networks, including us, in the amount of 1.2% of revenues from telecommunications services less the amount of taxes paid by subscribers. The universal service fund concept has been used in some developed countries and in Eastern Europe.

The Federal Law on Communications empowers the Russian government to determine and annually review the list of licensing requirements applicable to various communication services being

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licensed. The list of licensing requirements was enacted by Government Decree No. 87 dated February 18, 2005, as amended. Licenses also generally contain a number of other detailed conditions, including a date by which service must begin, technical standards and certain other terms and conditions. We have either commenced service by the applicable deadline or received an extension of the applicable deadline for all of our licenses.

### **Equipment Certification**

Government Decree No. 532 adopted on June 25, 2009, sets forth the types of communications equipment that is subject to mandatory certification. Communications equipment must be certified, or its compliance with the established requirements must be declared and proven in the interconnected communications network of the Russian Federation, which includes all fixed line and wireless networks open to the public. All our networks must be certified. The Federal Communications Agency issues certificates of compliance with technical requirements to equipment suppliers based on the Agency's internal review. In addition, a Presidential decree requires that licenses and equipment certifications should be obtained from the Federal Security Service to design, produce, sell, use or import encryption devices. Some commonly used digital cellular telephones are designed with encryption capabilities and must be certified by the Federal Security Service.

Further, certain high-frequency equipment, a list of which was approved by Government Decree No. 539 dated October 12, 2004 (as amended), manufactured or used in the Russian Federation, requires special permission from the Federal Service for Supervision of Communications, Information Technologies and Mass Media. Failure to receive such certification could result in the mandatory cessation of the use of such equipment. In accordance to Government Decree No. 1252 dated November 27, 2014, the equipment can be shared by operators according to their agreement and certificate of the Federal Service for Supervision of Communications, Information Technologies and Mass Media. In accordance with the Federal Law No. 204 dated June 23, 2016, the radio frequency spectrum can be shared by operators according to their agreement. In the case of shared-use of the radio frequency spectrum for the provision of telecommunications services each operator should have proper telecommunications services license.

## Competition, Interconnect and Pricing

The Federal Law on Communications requires federal regulatory agencies to encourage competition in the provision of communication services and prohibits the abuse of a dominant position to limit competition. The Federal Law on Communications provides that telecommunications tariffs may be regulated in cases provided for by legislation. The Federal Law on Communications and Presidential Decree No. 221, enacted on February 28, 1995, as amended, on Measures for Streamlining State Regulation of Prices (Tariffs) allow for regulation of tariffs and other commercial activities of telecommunications companies that are "natural monopolies." Government Decree No. 637, dated October 24, 2005 (as amended by the Government Decree No. 941, dated September 4, 2015) authorized the FAS to set the following tariffs for the natural monopolies in the communications market, including:

provision of access to a local telephone network;

permanent use of a subscriber's line; and

local, intra-zone and DLD calls.

In addition, the Federal Law on Natural Monopolies No. 147 dated August 17, 1995 establishes the legal basis for federal regulation of natural monopolies, including those in the communications market, and provides for governmental control over tariffs and certain activities of the natural monopolies. The Federal Law on Natural Monopolies outlines the types of transactions for which a

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regulated entity must obtain prior FAS approval and establishes the general principle that regulated entities may not refuse to provide regulated services to certain types of consumers. Regulated entities are also subject to continuous reporting requirements, including submitting plans for capital investments.

The FAS maintains a Register of Natural Monopolies whose tariffs are controlled and regulated by the state. A telecommunications operator may be included in this register upon a decision by the FAS based on analysis of the operator's activities and the market conditions.

Our subsidiary, MGTS, was added to the Register of Natural Monopolies in 2000 and, therefore, is subject to the requirements of the Federal Law on Natural Monopolies including, *inter alia*, the following:

the FAS regulates and controls tariffs for services provided by MGTS, including installation fees, monthly subscription fees (for subscribers to the unlimited tariff plan) and local call charges (for subscribers who do not use the unlimited tariff plan);

MGTS must obtain prior FAS approval for any transaction involving the acquisition, disposal or lease of assets not related to the regulated activity, if the value of such assets exceeds 10% of MGTS' share capital, additional capital, retained profits and reserves:

MGTS is required to maintain separate accounting records for each type of activity;

MGTS is required to publicly disclose information on tariffs, products, material conditions of contracts with customers, capital expenditure programs and certain other information; and

MGTS is required to comply with Federal law No. 223-FZ dated July 18, 2011 "On Procurement of Goods, Works, Services by Certain Types of Legal Entities" while procurement of goods and services.

It should also be noted that our subsidiary Comstar-Regions was added to the Register of Natural Monopolies in 2009, but on November 24, 2015 it was excluded therefrom and on December 5, 2015, it merged into MTS.

In addition, companies which are found to have dominant position on relevant markets may be subject to certain FAS restrictions in conducting their business, including in relation to pricing, acquisitions, geographical expansion, and associations and agreements with competitors. On January 5, 2016, the new version of the Federal law No. 135-FZ "On Protection of the Competition" came into force and the regulations in relation to the register of companies holding market share excess 35% were repealed. Nowadays, dominant position should be determined regarding each case without a register. See also "Item 3. Key Information D. Risk Factors Risks Relating to Our Business If we are found to have a dominant position in the markets where we operate and are determined to have abused this position, the FAS may be entitled to regulate our subscriber tariffs and impose certain restrictions on our operations."

The Federal Law on Communications also provides for the special regulation of telecommunications operators occupying a "substantial position," *i.e.*, operators which together with their affiliates have, in the Russian Federation generally or in a geographically defined specific numerical zone, 25% or more of installed capacity or capacity to carry out transmission of not less than 25% of traffic. MGTS was added to the register of telecommunications operators occupying a substantial position and, therefore, is subject to the requirements of the Federal Law on Communications relating to operators occupying a substantial position in the public switched telephone networks including, *inter alia*, the following:

MGTS must develop interconnect rules and procedures in accordance with the requirements set forth by the federal government;

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MGTS must ensure that interconnect agreements with operators who intend to interconnect to our networks are entered on the same terms and conditions as the agreements between MGTS, us and our affiliates; MGTS also cannot refuse to provide interconnect or discriminate against one operator over another;

MGTS must comply with the mandatory orders of the Federal Service for Supervision of Communications, Information Technologies and Mass Media issued if non-compliance with law was identified as a result of monitoring of MGTS' interconnect terms; and

MGTS must comply with the tariffs for interconnect and traffic transit where determined by the Federal Communications Agency.

The Federal Law on Communications and implementation rules adopted by Government Decrees No. 161 dated March 28, 2005, and No. 627 dated October 19, 2005, also provides for government regulation of interconnect tariffs established by operators occupying a substantial position. In addition, such operators, including MGTS, are required to develop standard interconnect contracts and publish them as a public offer for all operators who intend to use such interconnect services.

Notwithstanding the above, fixed line operators not considered to occupy a substantial position and not included in the Register of Natural Monopolies, as well as mobile operators, are free to set their own tariffs. Also see "Item 3. Key Information D. Risk Factors Risks Relating to Our Business If we or any of our mobile network operator subsidiaries operating in Russia are identified as an operator occupying a "substantial position," the regulator may reduce our interconnect tariffs which, in turn, may have a material adverse effect on our financial condition and results of operations."

#### Calling Party Pays

In March 2006, the Federal Law on Communications was amended to incorporate a "calling party pays" scheme effective as of July 1, 2006. Prior to the implementation of the "calling party pays" principle, subscribers of fixed line operators could initiate calls to mobile phone users free of charge. Under the current system, fixed line operators charge their subscribers for such calls and transfer a percentage to mobile operators terminating such calls. The percentage transferred to mobile operators is regulated by the Federal Service for Supervision of Communications, Information Technologies and Mass Media and is known as the settlement rate.

### Communications Services rules and Mobile Number Portability

On December 15, 2014, Government Decree No. 1342 concerning fixed and mobile services rules was adopted. This act, *inter alia*, has changed rules and conditions of MNP process (retaining telephone number after switching from one mobile operator to another) of certain types of legal entities and state customers. The period of switching numbers for mentioned subscribers was decreased and the procedure was simplified.

Introduction of renewed procedure on MNP in respect of particular legal entities and state customers affects the mobile services market in Russia and leads to intensification of competition.

### Anti-terror law

The Federal Law No. 374 dated July 6, 2016, amended some legislative acts and established additional measures to counter terrorism and to maintain public safety.

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In accordance with the abovementioned amendments to the Federal Law on Communications (came into force in July, 2018) the telecommunications operators will have to store and to provide to the authorities upon request the information on the facts of receiving, transmitting, delivering and (or) processing of voice information, text messages, images, sounds, video, or other communications by their subscribers, as well as relevant messages themselves.

The implementation of these amendments has a material effect on telecommunications operators' financials and performance (see also "Item 3. Key Information D. Risk Factors").

### Subscribers identification

The Federal Law No 245 dated July 29, 2017, amended the Federal Law on Communication to prevent the conclusion of the contract on the provision of services of mobile communications without proper identification of the subscriber (user) of communication services.

These amendments (came into force in June, 2018) have material effect on telecommunication operators since it was necessary to implement measures to organize the interaction with state resources for verification of information on subscribers, which subsequently led to changes in the relevant business processes.

### Regulation in Ukraine

#### Regulatory Authorities

Administration of State Service on Special Communications and Information Protection of Ukraine. This body is responsible mainly for establishing and overseeing technical policies and standards in the sphere of telecommunications. Previously these functions were carried out by the State Communications Administration.

The NCCIR. The functions of the NCCIR were formerly carried out by the NCRC (National Commission for Communications Regulation of Ukraine). Established by a Decree of the President of Ukraine in August 2004, the NCRC was vested with the powers of the central regulatory body in the sphere of telecommunications on January 1, 2005 pursuant to the Telecommunications Law described below. It consisted of seven members and a chairperson. The NCRC commenced its activity in April 2005 when the chairperson and its members were appointed as required by the Telecommunications Law.

The NCRC has been responsible for issuing licenses for telecommunications services and use of radio frequencies commencing January 1, 2005, as well as various other responsibilities of the SCA from that date. According to the amendments to the Telecommunications Law introduced in July 2011, the NCRC was replaced in August 2011 with the NCCIR, which now consists of six members and a chairperson. The NCCIR is currently responsible for issuing licenses for telecommunications services and use of radio frequencies, and other functions of former NCRC.

The State Center for Radio Frequencies of Ukraine (the "SCRF"). While licenses for radio frequencies for wireless communications are issued by the NCCIR, SCRF is the authority responsible for all technical issues related to the use of radio frequency resources and, in such proxy, is also involved in the issuance of radio frequency licenses. In particular, the SCRF determines frequency availability and technical aspects of frequency allocation, as well as provides the NCCIR with an expert opinion in relation to each application for radio frequency. The SCRF also monitors use of the frequencies and continued monitoring compliance with the license terms and carried out physical inspections of operators and providers of telecommunications services until the establishment of the State Inspection of Communications, as described below. The SCRF also independently issues individual permissions for the use of radio-electronic and radio-emitting equipment, its development,

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import, sale and purchase. In 2018, SCRF started acting as MNP Administrator as MNP launching process started in Ukraine.

The Antimonopoly Committee of Ukraine (the "AMC") is charged with the administration of competition legislation and the protection and regulation of economic competition in Ukraine, including economic competition among industry participants in the telecommunications sector.

### Legislation

The principal legislation regulating the telecommunications industry consists of the Law on Telecommunications dated November 18, 2003, (the "**Telecommunications Law**"), and the Radio Frequencies Law dated June 1, 2000 (the "**Radio Frequencies Law**").

The Telecommunications Law provides for, among other things, equal rights for private entrepreneurs and legal entities to offer telecommunications services, fair competition and freedom of pricing. The Telecommunications Law also sets forth the legal, economic and organizational framework for the operation of companies, associations and government bodies forming part of the telecommunications networks. The licensing of telecommunications services, the requirements for equipment certification and liability for violations of Ukrainian legislation on telecommunications are also determined by this legislation. The Telecommunications Law also governs the relations between the state and local governmental bodies, telecommunications operators and users of telecommunications services and radio frequencies.

The Telecommunications Law addresses various areas of telecommunications services in Ukraine, including numbering requirements, tariff and settlement regulations, interconnect, public telecommunications services, market access rules and licensing issuance and renewal. The Telecommunications Law also significantly expands the definition of the telecommunications services market, including in its scope Internet Protocol telecommunications, transmission of data and facsimile communications.

The Telecommunications Law also restructured the regulatory bodies governing the area of telecommunications. It provided for the creation of the NCRC, which, between January 1, 2005, and July 5, 2011, had been responsible for many of the functions formerly handled by the SCA. In August 2011, the NCRC was replaced with the NCCIR, which is authorized, *inter alia*, to issue regulations for telecommunications services, issue telecommunications licenses to operators and providers, issue frequency licenses, request information from operators, providers and authorities, impose administrative penalties and maintain the register of the operators and providers. The NCCIR is also authorized to conduct hearings and to resolve disputes among operators concerning the interconnect of telecommunications networks.

In July 2010, the Telecommunications Law was amended with provisions on mobile number portability and national roaming obligations. In April 2013 the NCCIR (formerly NCRC) adopted regulations which allow subscribers to retain their mobile telephone numbers when switching from one mobile telecommunications operator to another.

On August 25, 2011, the NCCIR enacted national roaming regulations. Accordingly, telecommunications operators were permitted to conclude agreements on national roaming and prescribed to provide this service as described in the regulations (*e.g.*, must inform users on roaming prices and maintain quality of service on the same level for own subscribers and subscribers of operators with whom roaming agreements are signed). Foreign investments in Ukrainian telecommunications operators are not limited; however, in order to provide telecommunications services in Ukraine an entity must be located on the territory of Ukraine and registered in accordance with Ukrainian legislation.

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In 2018, the process of the MNP launching started, all necessary procedures were implemented by NCCIR and SCRF. NCCIR approved the decision "On Launching MNP in Ukraine." MNP is expected to be launched on May 5, 2019.

The Radio Frequencies Law sets forth comprehensive rules regarding the allocation, assignment, interrelation and use of radio frequencies, the licensing of the users of radio frequencies and other relevant issues.

### Licensing of Telecommunications Services and Radio Frequency Allocation

Commencing January 1, 2005, the NCCIR (formerly NCRC) has assumed responsibility for issuing telecommunications licenses and frequency licenses pursuant to the Telecommunications Law and the 2004 amendments to the Radio Frequencies Law. Licenses are issued for the following types of telecommunications services:

fixed-line telephone communications services (local, intercity, international);

fixed-wireless telephone communications services (local, intercity, international);

mobile telephone communications services; and

technical maintenance and exploitation of telecommunications networks.

Starting from July 5, 2011, the leasing of electric communications channels no longer requires licensing.

Other telecommunications services do not require licenses.

An operator that is granted a telecommunications license may not commence the provision of wireless telecommunications services until it receives a frequency license. The issuance of a frequency license is, in turn, subject to the availability of radio frequencies in the respective regions of Ukraine. Frequency licenses are issued for specific bandwidths within certain frequency spectrums in specific regions. The GSM and UMTS spectrum is presently considered to be the most commercially attractive for telecommunications operators. It is currently deemed to be virtually impossible to obtain a license for GSM frequencies in major Ukrainian cities because most of the GSM radio frequencies in such cities are already licensed to the existing GSM operators, including us. UMTS radio frequencies are currently allocated for special users, in particular, the Ministry of Defense.

Under applicable legislation, licenses for telecommunications services may be issued and renewed for periods of not less than 5 years, with the actual period generally ranging from 10 to 15 years. Renewal of a license is made by an application submitted to the NCCIR at least four months prior to the expiration of the license term. NCCIR officials have broad discretion with respect to both the issuance and the renewal of licenses. The Telecommunications Law further provides that the NCCIR must grant licenses on a first come-first served basis within 30 days from submission of an application. If resources are limited or consumer interests so require, the NCCIR may adopt a decision to limit the number of licenses. In this event, the law requires that such decision is made public along with the rationale and that the licenses be allocated through a tender.

The Law "On the Licensing of Certain Types of activities" No. 222-VIII dated March 2, 2015 (the "Licensing Law") cancelled telecom activities' licensing from the January 1, 2018. This action created legal collision because NCCIR continues to perform all licensing processes on the basis Telecommunications Law, which was not changed in accordance with Licensing Law. From the NCCIR's point of the view, licensing of telecom services will be canceled only after Telecommunications Law is changed respectively. In 2018, two Licensing and Telecommunication Law were acting.

In accordance with the Radio Frequencies Law, the NCCIR issues a frequency license concurrently with the issuance of a telecommunications license for the type of services requiring use of radio

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frequency resources. A telecommunications operator that has the respective telecommunications license may apply for licenses for additional radio frequency bands. Frequency licenses may not be issued for a period shorter than the term of the relevant telecommunications license.

Under applicable legislation, a public tender or an auction for a radio frequency license must be held by the NCCIR if demand for radio frequency resources exceeds available resources. Radio frequency licenses issued on the basis of a public tender or an auction for the same type of radio technology must include identical conditions regarding the radio frequency bands and development period. Telecommunications operators are allowed to apply to the NCCIR for redistribution of the radio frequency resources previously allocated to them.

Applicable legislation prohibits the transfer of a license by the licensee, including by means of assignment or pledge of a license as collateral, and agreements regarding the provision of telecommunications services must be executed and performed by the actual licensee.

Licenses generally contain a number of detailed conditions, including the date by which service must be commenced, terms of network deployment and territory coverage, the requirement to use only certified equipment, the technical standards which must be considered and the requirement to comply with all environmental regulations. Frequency licenses issued after January 1, 2005 also contain the date by which the radio frequency resources must be fully utilized.

Telecommunications operators' activities are subject to strict regulations, especially regarding electromagnetic compatibility; construction and technical maintenance of a telecommunications network must be carried out in accordance with specific regulations applicable in Ukraine. Telecommunications operators must submit periodic reports to the NCCIR on the amount and quality of services provided under the telecommunications license. We believe that we are in compliance with the applicable laws and regulations related to our Ukrainian licenses.

Some licenses also provide that services for persons entitled to certain social benefits must be provided at or below certain minimum thresholds established by Ukrainian legislation in effect at that time.

If the terms of a license are not fulfilled or the service provider violates legislation, the license may be suspended or terminated. Both telecommunications services licenses and radio frequency licenses may be terminated for various reasons, including:

provision of inaccurate information in the application for a license;

repeated refusal to allow the representatives of the NCCIR to make inspections;

failure to remedy in a timely manner the circumstances which resulted in a violation of the license terms;

repeated violation of the license terms;

transfer or assignment of the license to a third party; and

other grounds set forth by Ukrainian laws.

Radio frequency licenses may also be terminated for the following reasons:

failure to commence using radio frequency resources within the time period specified in the license;

termination of use of radio frequency resources specified in the license for more than one year;

failure to use radio frequency resources to the full extent within the time period specified in the license; and

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failure to pay monthly fees for the use of allocated radio frequencies for six months or more.

Decisions of the NCCIR with respect to the termination of licenses may be appealed to a court.

MTS' Ukraine license to construct and maintain the telecommunication network and provide services using such network was due to expire on December 3, 2013. In October 2013, MTS Ukraine submitted an application to the NCCIR requesting the renewal of the license. On October 15, 2013, the NCCIR refused to renew the license and recommended that MTS Ukraine receive a new license to provide operations in the telecommunications sphere. On October 21, 2013, MTS Ukraine filed a lawsuit against the NCCIR with a demand to renew the license. On November 19, 2013, a court decision was issued in favour of MTS Ukraine. The decision obliged the NCCIR to renew the license. The NCCIR appealed against the court decision. On January 15, 2014, the court of appeal issued a judgement in which the court refused to sustain the NCCIR appeal. On January 28, 2014, the NCCIR renewed MTS Ukraine license until December, 2018. On January 27, 2014, the NCCIR filed an appeal against the court of appeals' order which was denied by the Court. The cassation procedure was started by Court of Cassation. According to decision of the Highest Administrative Court dated January 22, 2015, the satisfaction of claim dated November 19, 2013 in favor of MTS Ukraine was denied making the resolution of January 28, 2014 to prolong the license for MTS Ukraine illegitimate. In 2016, the case was sent to a new trial. The first instance Court (03/25/2016) and Appeal Court (05/31/2016) refused to satisfy MTS Ukraine demand to prolong the license for MTS Ukraine. On the basis of the resolution of the Superior Court of Ukraine dated July 11, 2016, cassation procedure was opened. Demands of the MTS Ukraine were rejected by Decision of the Superior Court of Ukraine dated October 10, 2018 and the license was canceled. VF Ukraine is acting on the basis of a new license, which is valid until 2030. At the same time MTS Ukraine bought new license for providing all available mobile services in 2G and 3G networks and NCCIR issued a license for MTS Ukraine on January 27, 2015, which is valid until 2030 (the basic acting licence).

In accordance with the terms of obtaining a license for 3G frequency, MTS Ukraine has signed conversion agreements with special users of radio frequency resource. Currently, VF Ukraine complies with all license requirements and makes all necessary payments under the license.

#### 4G/LTE

Under the instruction of the President of Ukraine on the introduction of 4G network, the Cabinet of Ministers adopted a decree "On Approval of the Action Plan for Introduction of Mobile Communication of the Fourth Generation" in 2017, which established a tender process for 4G frequency in the second half of 2017, primarily requiring carrying out a research and analysis of the existing radio frequency resource. This research was assigned to foreign consultants with payment to be imposed on telecommunications operators, Analyses Mason LTD (London, UK). The research was completed and new legislation for 4G\LTE launch was approved in 2018. Two tenders were held in January (2600 MHz) and March (1800MHz) of 2018. As a result, VF Ukraine received two spectrum bands in the both diapasons, and in the end of April of 2018 we launched 4G/LTE services in Ukraine. Currently, VF Ukraine complies with all license requirements and had made all necessary payments under the licenses.

### **Equipment Certification**

In order to install the vendor's or manufacturer's equipment intended for use within the telecommunication network of Ukraine the vendor or manufacturer should submit to the telecommunication network carrier the document confirming that the above-mentioned equipment meets the regulatory documents requirements being in force in Ukraine, has been included into the technical equipment register and can be used within the telecommunication network of Ukraine. According to the Telecommunications Law of Ukraine the technical equipment register is managed and

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supported by the Administration of the State Service of Special Communication and Information Protection of Ukraine

The Radio Frequencies Law includes the provision according to which the users of radio frequency resources should obtain a permission to operate the radio-electronic and radio-emitting equipment (with certain exceptions for equipment which can be used on permission-free basis). In order to obtain the operation permission a company should apply to the Ukrainian Centre of Radio Frequencies. The Radio Frequencies Law also requires that the radio-electronic and radio-emitting equipment intended for use in Ukraine should be registered in a special list managed and supported by the National Commission for the State Regulation of Communications and Informatization by the producers and importers of such equipment.

#### Competition

The Telecommunications Law provides that one of the purposes of the licensing of telecommunications services is to encourage competition and de-monopolization in the telecommunications industry.

Ukrainian antimonopoly legislation prohibits a company operating in Ukraine from abusing its dominant position in its market to gain, *inter alia*, an unfair or anti-competitive advantage in the provision of its services or products. A legal entity is deemed to be in a dominant position if such entity has no competitor in the market or is not subject to substantial competition due to restricted access or entry barriers for other business entities. Further, Ukrainian antimonopoly legislation provides that a company shall be deemed dominant if its market share in the respective product market exceeds 35% unless such company proves that it faces significant competition in the respective product market. A telecommunications operators which are found by the AMC as having a dominant position in the markethave to use the rates for national and international interconnect, which are established by the NCCIR.

According to our estimates, Vodafone Ukraine had a 37% market share of the wireless communications market in Ukraine as of December 31, 2018.

Please see also "Item 3. Key Information D. Risk Factors Risks Relating to Our Business A finding by the AMC that we have acted in contravention of antimonopoly legislation could have a material adverse effect on our business, financial condition and results of operations."

#### **Tariffs**

According to the Ukrainian laws, NCCIR regulates the following tariffs:

maximum tariffs on public telecommunication services;

tariffs on leasing of communication channels for operators with dominant market position;

maximum tariffs on leasing channels of cable duct system; and

calculation rates for services of crossing traffic to the telecommunication networks of telecommunications operators with substantial market advantage on the markets of certain telecommunication services.

Under the Law of Ukraine on Telecommunications the Cabinet of Ministers of Ukraine is not authorized to regulate prices for telecommunication services.

Although there are no additional regulations limiting level of maximum tariffs on wireless telecommunications services, if the Antimonopoly Committee believes competition laws are violated, it can assert that tariffs unfair and injurious to market competition. In such cases, the AMC may, *inter alia*, request the telecommunications operator whom AMC considers as one violating the laws to

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remedy the situation, in particular, to amend its tariff scheme, and impose fines on the company for an violation.

Subject to the above, wireless operators are free to set tariffs at levels they consider appropriate.

### Interconnect Arrangements and Telephone Numbering Capacity

In Ukraine, mobile operators are allocated numbering capacity by the NCCIR (National Commission for the State Regulation of Communications and Informatization). We believe that sufficient numbering capacity has been allocated to us in Ukraine for the development of our mobile network. We also believe that we have been allocated sufficient fixed line numbering capacity with respect to the cities in which we are developing our fixed line networks.

Interconnect activity is regulated by the NCCIR. Operators may provide offers for interconnect to the NCCIR, and the NCCIR is required to publish on an annual or regular basis a catalog of such offers. Operators with a dominant position on the market and operators having significant market power (SMP-operators) are obliged to submit interconnect offers to the NCCIR for each catalog.

Interconnect is made pursuant to interconnect agreements between network operators as prescribed by the regulatory authorities. Such agreements are required under the law to contain certain provisions. An operator with a dominant position, as well as SMP-operator, cannot refuse an offer to conclude an interconnect agreement with another operator, if the offeror has offered points of interconnect that were previously published by the NCCIR in the catalog of interconnect proposals.

The NCCIR is authorized to conduct hearings and to resolve disputes among operators concerning the interconnection of telecommunications networks. Decisions of the NCCIR are binding upon the parties in the dispute but a party to the dispute may appeal such a decision in court.

In May 2009, the AMC issued a finding that eight mobile operators, including MTS Ukraine and its closest competitors, have a dominant position in relation to the market for interconnecting to each of their respective networks. In February 2010, the NCRC established regulated interconnect fees for termination of calls on the networks of operators that have a dominant position. See "Competition."

In October 2011, the NCCIR defined all of operators, including MTS Ukraine, that have operated in the Ukrainian market in the period from 2009 through 2010 as having significant market power for termination traffic on their fixed and mobile networks. Effective 1 January 2012, the NCCIR regulates the interconnection rates for all SMP fixed and mobile operators, including MTS Ukraine. The interconnection rates charged by long-distance operators are set up equal to rates charged by mobile operators.

The NCCIR regularly analyses the telecommunication market to determine operators with significant market power in this market (SMP-operators). In October 2017 and in February 2018 the NCCIR published the results of the latest market analysis according to which 177 fixed and all six mobile operators, including VF Ukraine (former MTS Ukraine), were defined as SMP-operators. On October 9, 2018 the NCCIR adopted a regulatory act which establishes new interconnect rates for termination traffic on the networks of SMP-operators, which are effective since January 1, 2019. As a result, the interconnect rates were decreased:

for long-distance and mobile operators from UAH 0.15 (RUB 0.376354) to UAH 0.12 (RUB 0.301083); and

for local operators from UAH 0.11 (RUB 0.275993) to UAH 0.09 (RUB 0.225812).

Please see also "Item 3. Key Information D. Risk Factors Risks Relating to Our Business If we cannot interconnect cost-effectively with other telecommunications operators, we may be unable to provide services at competitive prices, which may diminish our market share and result in a loss of revenues and margins" for details of NCCIR's plans to substantially lower interconnect rates for the termination of traffic.

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## Licenses

## **Mobile Services**

The following table shows, as of April 18, 2019, information with respect to the license areas in which we and our subsidiaries and affiliates provide or expect to provide GSM services:

	GSM 900		GSM 1800	
License region	Licensee	Expiry date	Licensee	Expiry date
Moscow License Area				
Moscow	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Moscow region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
St. Petersburg License				
Area				
St. Petersburg	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Leningrad region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Russian Regional				
License Areas				
European Russia				
Adygeya Republic	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Arkhangelsk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Astrakhan region	MTS PJSC	December 11, 2023	MTS PJSC	October 18, 2021
Bashkortostan Republic	MTS PJSC	August 22, 2022	MTS PJSC	August 22, 2022
Belgorod region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Bryansk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Chuvashia Republic	MTS PJSC	December 30, 2023	MTS PJSC	December 30, 2023
Chechen Republic	MTS PJSC	June 10, 2019	MTS PJSC	April 28, 2021
Dagestan Republic	MTS PJSC	December 30, 2023	MTS PJSC	December 30, 2023
Ivanovo region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Ingushetia Republic	MTS PJSC	December 30, 2023	MTS PJSC	December 30, 2023
Kabardino-Balkar	MTS PJSC	June 10, 2019	MTS PJSC	December 30, 2023
Republic				
Kaliningrad region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Kalmykia Republic	MTS PJSC	January 25, 2021	MTS PJSC	December 30, 2023
Kaluga region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Karachaevo-Cherkesia	MTS PJSC	December 30, 2023	MTS PJSC	December 30, 2023
Republic				
Karelia Republic	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Kirov region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Komi Republic	MTS PJSC	August 22, 2022	MTS PJSC	August 22, 2022
Kostroma region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Krasnodar region	MTS PJSC	May 30, 2022	MTS PJSC	May 30, 2022
Kursk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Lipetsk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Mari-El Republic	MTS PJSC	January 15, 2022	MTS PJSC	January 15, 2022
Mordovia Republic	MTS PJSC	December 30, 2023	MTS PJSC	December 30, 2023
Murmansk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Nenetsk Autonomous	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
region				
Nizhny Novgorod region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Novgorod region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Orel region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Orenburg region	MTS PJSC	April 28,2023	MTS PJSC	April 28, 2023
Orenburg region			MTS PJSC	October 21, 2025
Penza region	MTS PJSC	May 6, 2021		

	GS	SM 900	GS	M 1800
License region	Licensee	Expiry date	Licensee	Expiry date
Penza region	MTS PJSC	September 2, 2022	MTS PJSC	September 2, 2022
Perm region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Perm region (excluding Komi-Permyak territory)	MTS PJSC		MTS PJSC	October 21, 2025
Perm region (Komi-Permyak territory)	MTS PJSC		MTS PJSC	October 21, 2025
Pskov region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Rostov region	MTS PJSC	July 1, 2020	MTS PJSC	July 1, 2020
Ryazan region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Samara region	MTS PJSC	December 30, 2022	MTS PJSC	December 30, 2022
Saratov region	MTS PJSC	July 11, 2022	MTS PJSC	July 11, 2022
Severnaya Osetia-Alania Republic	MTS PJSC	September 1, 2021	MTS PJSC	September 1, 2021
Severnaya Osetia-Alania Republic	MTS PJSC		MTS PJSC	October 21, 2025
Smolensk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Stavropol region	MTS PJSC	December 30, 2023	MTS PJSC	December 30, 2023
Tambov region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Tatarstan Republic	MTS PJSC	June 26, 2022	MTS PJSC	June 26, 2022
Tula region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Tver region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Udmurt Republic	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Ulyanovsk region	MTS PJSC	May 6, 2021	MTS PJSC	December 30, 2023
Vladimir region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Volgograd region	MTS PJSC	r	MTS PJSC	October 4, 2021
Volgograd region	MTS PJSC	February 26, 2024	MTS PJSC	, ,
Vologda region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Voronezh region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Yaroslavl region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Asian Russia		· /		,
Altai region	MTS PJSC	September 8, 2020	MTS PJSC	September 8, 2020
Altai Republic	MTS PJSC	July 19, 2021	MTS PJSC	December 30, 2023
Amur region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Amur region		•	MTS PJSC	October 21, 2025
Buryatiya Republic	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Chelyabinsk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Zabaykalsky region	CJSC Sibintertelecom	June 5, 2019	CJSC Sibintertelecom	June 5, 2019
Zabaykalsky region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Chukotsk Autonomous region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Jewish Autonomous region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Irkutsk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Kamchatka region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Kemerovo region	MTS PJSC	December 30, 2023	MTS PJSC	December 30, 2023
Khabarovsk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Khakassiya Republic	MTS PJSC	September 13, 2021	MTS PJSC	September 13, 2021
Khanty Mansiysk	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Autonomous region				
Krasnoyarsk region	MTS PJSC	May 7, 2023	MTS PJSC	May 7, 2023
Kurgan region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Magadan region	MTS PJSC	April 28, 2023 132	MTS PJSC	April 28, 2023

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	GSM 900		GSM 1800	
License region	Licensee	Expiry date	Licensee	Expiry date
Novosibirsk region	MTS PJSC	February 21, 2022	MTS PJSC	February 21, 2022
Omsk region	MTS PJSC	December 20, 2021	MTS PJSC	December 20, 2021
Primorsky region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Sakha Republic (Yakutia)	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Sakhalin region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Sverdlovsk region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Tomsk region	MTS PJSC	June 5, 2023	MTS PJSC	June 5, 2023
Tyumen region	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Tyva Republic	MTS PJSC	July 19, 2021	MTS PJSC	December 30, 2023
Yamalo-Nenetsk	MTS PJSC	April 28, 2023	MTS PJSC	April 28, 2023
Autonomous region				
Ukraine				
Ukraine	PJSC Vodafone Ukraine	March 30, 2030	PJSC Vodafone Ukraine	March 30, 2030
Armenia				
Armenia	CJSC MTS-Armenia	November 4, 2019	CJSC MTS-Armenia	November 4, 2019
Belarus				
Belarus	LLC Mobile Telesystems	April 30, 2022	LLC Mobile Telesystems	April 30, 2022

# IMT-2000/UMTS/CDMA

License Region	Licensee	Expiry date
Asian Russia	MTS PJSC	May 21, 2022
European Russia, except Crimea Republic,		
Sevastopol	MTS PJSC	May 21, 2022
Moscow License Area	MTS PJSC	May 21, 2022
St. Petersburg License Area	MTS PJSC	May 21, 2022
Moscow, Moscow region	MTS PJSC	April 28, 2023
St. Petersburg, Leningrad region	MTS PJSC	May 21, 2022
European Russia		
Adygeya Republic	MTS PJSC	May 21, 2022
Arkhangelsk region	MTS PJSC	May 21, 2022
Bashkortostan Republic	JSC BCC	November 21, 2021
Bashkortostan Republic	MTS PJSC	May 21, 2022
Bryanks region	MTS PJSC	May 21, 2022
Belgorod region	MTS PJSC	May 21, 2022
Chelyabinsk region	MTS PJSC	May 21, 2022
Chuvash republic	MTS PJSC	May 21, 2022
Dagestan Republic	MTS PJSC	May 21, 2022
Ingushetia Republic	MTS PJSC	May 21, 2022
Irkutsk region	MTS PJSC	May 21, 2022
Ivanovo region	MTS PJSC	May 21, 2022
Kabardino-Balkarian Republic	MTS PJSC	May 21, 2022
Kaliningrad region	MTS PJSC	May 21, 2022
KarachaevoCherkesia Republic	MTS PJSC	May 21, 2022
Karelia Republic	MTS PJSC	May 21, 2022
Kaluga region	MTS PJSC	May 21, 2022
Kemerevo region	MTS PJSC	May 21, 2022
Kirov region	MTS PJSC	May 21, 2022
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License Region		Licensee	Expiry date
Komi Republic	MTS PJSC	May 21, 20	
Kostroma region	MTS PJSC	May 21, 20	
Krasnodar region	MTS PJSC	May 21, 20	
Krasnoyarsk region	MTS PJSC	May 21, 20	
Kurgan region	MTS PJSC	May 21, 20	
Kursk region	MTS PJSC	May 21, 20	
Lipetsk region	MTS PJSC	May 21, 20	
Mordovis republic	MTS PJSC	May 21, 20	
Murmansk region	MTS PJSC	May 21, 20	
Nenetsk Autonomous region	MTS PJSC	May 21, 20 May 21, 20	
North Osetia republic	MTS PJSC	May 21, 20	
Novgorod region	MTS PJSC	May 21, 20	
Novosibirsk region	MTS PJSC	May 21, 20 May 21, 20	
Omsk region	MTS PJSC	May 21, 20 May 21, 20	
Orenburg region	MTS PJSC	May 21, 20	
Orel region	MTS PJSC	May 21, 20	
Penza region	MTS PJSC	May 21, 20	
Perm region	MTS PJSC	May 21, 20	
Perm region	MTS PJSC	April 28, 20	
Pskov region	MTS PJSC	May 21, 20	
Rostov region	MTS PJSC	May 21, 20	
Ryazan region	MTS PJSC	May 21, 20	
Samara region	MTS PJSC	May 21, 20	
Saratov region	MTS PJSC	May 21, 20	
Smolensk region	MTS PJSC	May 21, 20	22
Stavropol region	MTS PJSC	May 21, 20	22
Sverdlovsk region	MTS PJSC	May 21, 20	22
Tambov region	MTS PJSC	May 21, 20	
Tomsk region	MTS PJSC	May 21, 20	22
Tula region	MTS PJSC	May 21, 20	
Tver region	MTS PJSC	May 21, 20	22
Tyumen region	MTS PJSC	May 21, 20	22
Vladimir region	MTS PJSC	May 21, 20	
Volgograd region	MTS PJSC	May 21, 20	
Vologda region	MTS PJSC	May 21, 20	
Voronezh region	MTS PJSC	May 21, 20	
Vologda region	MTS PJSC	May 21, 20	
Ulyanovsk region	MTS PJSC	May 21, 20	
Yaroslavl region	MTS PJSC	May 21, 20	
Asian Russia		111aj 21, 20	
Altai Republic	MTS PJSC	May 21, 20	22.
Amur region	MTS PJSC	May 21, 20 May 21, 20	
Buryatiya Republic	MTS PJSC	May 21, 20	
Chechen republic	MTS PJSC	May 21, 20 May 21, 20	
Chelyabinsk region	MTS PJSC	April 28, 20	
Chukotsk Autonomous region	MTS PJSC	May 21, 20	
Irkutsk Autonomous region	MTS PJSC	May 21, 20 May 21, 20	
		•	
Jewish Autonomous region	MTS PJSC	May 21, 20	
Kalmykia republic	MTS PJSC	May 21, 20	
Kamchatka region	MTS PJSC	May 21, 20	22
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License Region	Licensee	Expiry date
Khabarovsk region	MTS PJSC	May 21, 2022
Khakassia republic	MTS PJSC	May 21, 2022
Khanty Mansiysk Autonomous region	MTS PJSC	May 23, 2023
Khanty Mansiysk Autonomous region	MTS PJSC	April 28, 2023
Kurgan region	MTS PJSC	April 28, 2023
Magadan region	MTS PJSC	May 21, 2022
Marij El republic	MTS PJSC	May 21, 2022
Primorsky region	MTS PJSC	May 21, 2022
Sakha Republic (Yakutia)	MTS PJSC	May 21, 2022
Sakhalin region	MTS PJSC	May 21, 2022
Sverdlovsk region	MTS PJSC	April 28, 2023
Zabaykalsky region	MTS PJSC	May 21, 2022
Tatarstan	MTS PJSC	May 21, 2022
Tumen region	MTS PJSC	April 28, 2023
Yamalo-Nenets Autonomous dostrict	MTS PJSC	May 21, 2022
Tuva	MTS PJSC	May 21, 2022
Tuva	MTS PJSC	July 19, 2021
Udmurt republic	MTS PJSC	May 21, 2022
Armenia		
Armenia	CJSC MTS-Armenia	November 4, 2019
Belarus		
Belarus	LLC Mobile Telesystems	April 30, 2022
Ukraine		
Ukraine	PJSC Vodafone Ukraine	March 23, 2030

# LTE

License Region	Licensee	Expiry date
Asian Russia	MTS PJSC	July 25, 2022
Asian Russia	MTS PJSC	May 21, 2022
Asian Russia	MTS PJSC	April 15, 2026
European Russia, except Crimea Republic,		
Sevastopol	MTS PJSC	May 21, 2022
European Russia	MTS PJSC	July 25, 2022
European Russia, except Crimea Republic,		
Sevastopol	MTS PJSC	April 15, 2026
Moscow License Area	MTS PJSC	July 25, 2022
Moscow License Area	MTS PJSC	May 21, 2022
Moscow, Moscow region License Area	MTS PJSC	December 29, 2021
St. Petersburg License Area	MTS PJSC	May 21, 2022
St. Petersburg License Area	MTS PJSC	July 25, 2022
St. Petersburg License Area	MTS PJSC	April 15, 2026
Moscow, Moscow region	MTS PJSC	April 28, 2023
St. Petersburg, Leningrad region	MTS PJSC	April 28, 2023
Asian Russia	MTS PJSC	
Altai Republic	MTS PJSC	December 30, 2023
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License Region	Licensee	Expiry date
Altai region	MTS PJSC	September 8, 2020
Amur region	MTS PJSC	April 28, 2023
Amur region	MTS PJSC	October 21, 2025
Buryatiya Republic	MTS PJSC	April 28, 2023
Chelyabinsk region	MTS PJSC	April 28, 2023
Chukotsk Autonomous region	MTS PJSC	April 28, 2023
Zabaykalsky region	MTS PJSC	April 28, 2023
rkutsk Autonomous region	MTS PJSC	April 28, 2023
ewish Autonomous region	MTS PJSC	April 28, 2023
Kamchatka region	MTS PJSC	April 28, 2023
Kemerovo region	MTS PJSC	December 30, 2023
Khabarovsk region	MTS PJSC	April 28, 2023
Khakassiya Republic	MTS PJSC	September 13, 2021
Khanty Mansiysk Autonomous region	MTS PJSC	April 28, 2023
Khanty Mansiysk Autonomous region	MTS PJSC	May 23, 2023
Krasnoyarsk Territory	MTS PJSC	May 7, 2023
Kurgan region	MTS PJSC	April 28, 2023
Magadan region	MTS PJSC	April 28, 2023
Novosibirsk region	MTS PJSC	February 21, 2022
Omsk region	MTS PJSC	December 20, 2021
Primorsky region	MTS PJSC	April 28, 2023
Sakha Republic (Yakutia)	MTS PJSC	April 28, 2023
Sakhalin region	MTS PJSC	April 28, 2023
Sverdlovsk region	MTS PJSC	April 28, 2023
Fomsk region	MTS PJSC	June 5, 2023
Γyumen region	MTS PJSC	April 28, 2023
Γyva Republic	MTS PJSC	December 30, 2023
YamaloNenetsk Autonomous region	MTS PJSC	April 28, 2023
European Russia	MTS PJSC	April 20, 2023
Adygeya Republic	MTS PJSC	April 28, 2023
Arkhangelsk region	MTS PJSC	April 28, 2023 April 28, 2023
Bashkortostan Republic	MTS PJSC	August 22, 2022
Bashkortostan Republic	JSC BCC	November 21, 2021
Belgorod region	MTS PJSC	April 28, 2023
Bryansk region	MTS PJSC	April 28, 2023 April 28, 2023
Chechen Republic	MTS PJSC	April 28, 2023 April 28, 2021
Chuvashia Republic	MTS PJSC	December 30, 2023
Dagestan Republic	MTS PJSC	December 30, 2023
	MTS PJSC	December 30, 2023
ngushetia Republic		· · · · · · · · · · · · · · · · · · ·
vanovo region	MTS PISC	April 28, 2023
KabardinoBalkar Republic	MTS PJSC	December 30, 2023
Kaliningrad region	MTS PJSC	April 28, 2023
Kaluga region	MTS PJSC	April 28, 2023
Kalmykia Republic	MTS PISC	December 30, 2023
Karachaevo-Cherkesia Republic	MTS PISC	December 30, 2023
	MTS PJSC MTS PJSC MTS PJSC	April 28, 2023 April 28, 2023

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License RegionKomi RepublicMTSKostroma regionMTS		Expiry date August 22, 2022
		rugust 22, 2022
	PJSC	April 28, 2023
Krasnodar territory MTS	PJSC	May 30, 2022
Kursk region MTS	PJSC	April 28, 2023
Lipetsk region MTS	PJSC	April 28, 2023
Mari El Republic MTS	PJSC	January 15, 2022
Mordovia Republic MTS	PJSC	December 30, 2023
Murmansk region MTS	PJSC	April 28, 2023
Nenetsk Autonomous region MTS	PJSC	April 28, 2023
Nizhny Novgorod region MTS	PJSC	April 28, 2023
	PJSC	April 28, 2023
Orel region MTS	PJSC	April 28, 2023
Orenburg region MTS	PJSC	April 28, 2023
Orenburg region MTS	PJSC	October 21, 2025
Penza region MTS	PJSC	September 2, 2022
Perm region MTS	PJSC	April 28, 2023
Perm region MTS	PJSC	October 21, 2025
Pskov region MTS	PJSC	April 28, 2023
Rostov region MTS	PJSC	July 1, 2020
Ryazan region MTS	PJSC	April 28, 2023
	PJSC	December 30, 2022
Saratov region MTS	PJSC	July 11, 2022
Severnaya Osetia Alania Republic MTS	PJSC	September 1, 2021
Severnaya Osetia Alania Republic MTS	PJSC	October 21, 2025
Smolensk region MTS	PJSC	April 28, 2023
Stavropol territory MTS	PJSC	December 30, 2023
Tambov region MTS	PJSC	April 28, 2023
Tatarstan Republic MTS	PJSC	June 26, 2022
Tula region MTS	PJSC	April 28, 2023
Tver region MTS	PJSC	April 28, 2023
Udmurt Republic MTS	PJSC	April 28, 2023
Ulyanovsk region MTS	PJSC	December 30, 2023
Vladimir region MTS	PJSC	April 28, 2023
Volgograd region MTS	PJSC	October 4, 2021
Vologda region MTS	PJSC	April 28, 2023
	PJSC	April 28, 2023
Yaroslavl region MTS	PJSC	April 28, 2023
Zabaikalye region MTS	PJSC	April 28, 2023
Armenia		
Armenia CJSC	MTS-Armenia	November 4, 2019
Ukraine		
Ukraine PJSC	Vodafone Ukraine	March 23, 2030

## **Mobile Virtual Network**

License Region	Licensee	Expiry date
Moscow, Moscow region	MGTS PJSC	August 2, 2023
Zabaykalsky region	CJSC Sibintertelecom	September 8, 2020
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Each of our licenses requires service to be started by a specific date. We have met this target or received extensions to these dates in those regional license areas in which we have not commenced operations. Neither the government nor other parties have taken or attempted to take legal actions to suspend, terminate or challenge the legality of any of our licenses (except for Uzbekistan, see Note 4 to our audited consolidated financial statements). We have not received any notice of violation of any of our licenses, and we believe that we are in compliance with all material terms of our licenses.

### Fixed Line Services

The following table shows, as of April 18, 2019, information with respect to our fixed line licenses:

Licensee	License Region(s)	License number	Expiry Date	
International, national, intra-zonal and local communications services				
MTS PJSC	Ryazan region	138952	December 23, 2020	
MTS PJSC	Sverdlovsk region	140009	March 15, 2021	
MTS PJSC	Tver region	157431	August 4, 2022	
CJSC City Telecom	Moscow	155381	October 24, 2022	
MTS PJSC	Saratov region	149654	March 15, 2022	
MTS PJSC	Penza region	149649	March 15, 2022	
MTS PJSC	Sverdlovsk region	149645	March 15, 2022	
MTS PJSC	Kirov region	149653	March 15, 2022	
MTS PJSC	Ivanovo region	146068	October 24, 2021	
MTS PJSC	Kurgan region	170433	February 17, 2024	
MTS PJSC	Bashkortostan Republic	135028	November 21, 2020	
MTS PJSC	Khanty Mansiysk Autonomous region	160629	December 1, 2020	
MTS PJSC	St. Petersburg, Leningrad region, Arkhangelsk region, Karelia Republic,	150052	April 17, 2022	
A ATTO TO LOCAL	Murmansk region, Novgorod region, Vologda region	1.40177	E 1 15 2022	
MTS PJSC	Altai Republic	148176	February 17, 2022	
MTS PJSC	Khabarovsk Territory	149647	March 15, 2022	
MTS PJSC	Primorsky Territory	149648	March 15, 2022	
MTS PJSC	Kaliningrad region	156888	December 17, 2022	
MGTS PJSC	Moscow	166444	December 11, 2023	
MGTS PJSC	Moscow region	169795	April 17, 2024	
MTS PJSC	Zabaykalsky Territory	127170	May 6, 2020	
MGTS PJSC	Moscow, Moscow region	127698	July 28, 2020	
MTS PJSC	Orenburg region	149644	March 15, 2022	
MTS PJSC	Udmurt Republic	149650	March 15, 2022	
MTS PJSC	Russian Federation	104893	February 16, 2020	
MTS PJSC	Krasnoyarsk Territory (except for the Evenk Autonomous District)	146087	October 24, 2021	
MTS PJSC	Yaroslavl region	146077	October 24, 2021	
MTS PJSC	Astrakhan region	146080	October 24, 2021	
MTS PJSC	Rostov region	146084	October 24, 2021	
MTS PJSC	Krasnodar territory	146067	October 24, 2021	
MTS PJSC	Chelyabinsk region	146074	October 24, 2021	
MTS PJSC	Perm region	146078	October 24, 2021	
MTS PJSC	Kurgan region	146086	October 24, 2021	
MTS PJSC	Khanty Mansiysk Autonomous region	164187	October 24, 2021	
MTS PJSC	Tomsk region	146094	October 24, 2021	
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		License	
Licensee	License Region(s)	number	Expiry Date
MTS PJSC	Novosibirsk region	146071	October 24, 2021
MTS PJSC	Altai territory	146073	October 24, 2021
MTS PJSC	Samara region	146090	October 24, 2021
MTS PJSC	Tatarstan Republic	146082	October 24, 2021
MTS PJSC	Nizhny Novgorod region	146075	October 24, 2021
MTS PJSC	Kirov region	146089	October 24, 2021
MTS PJSC	Komi Republic	146079	October 24, 2021
MTS PJSC	Sakha Republic (Yakutia)	146076	October 24, 2021
MTS PJSC	Khabarovsk Territory	146066	October 24, 2021
MTS PJSC	Amur region	146092	October 24, 2021
MTS PJSC	Khakassiya Republic	140458	June 6, 2021
MTS PJSC	Moscow region	135027	November 21, 2020
MTS PJSC	Moscow	137566	February 16, 2021
MTS PJSC	Moscow region	150058	March 30, 2022
MTS PJSC	Kaluga region	129946	July 3, 2020
MTS PJSC	Moscow	150054	March 30, 2022
MTS PJSC	Moscow	150064	March 30, 2022
MTS PJSC	Orel region	155416	October 3, 2022
MGTS PJSC	Moscow	161957	July 10, 2023
MTS PJSC	Rostov region	1163838	August 1, 2023
MTS PJSC	Severnaya Osetia Alania Republic	163839	August 1, 2023
MTS PJSC	Krasnodar territory	163840	August 1, 2023
MTS PJSC	Volgograd region	146085	November 17, 2021
MTS PJSC	Irkutsk region (except for the Ust-Ordyn Buryat Autonomus District)	146069	October 24, 2021
MTS PJSC	Sakhalin region	146081	October 24, 2021
MTS PJSC	Primorsky Territory	146070	October 24, 2021
MTS PJSC	Ufa, Bashkortostan Republic	131715	September 8, 2020
MTS PJSC	Bashkortostan Republic	149173	March 5, 2022
MTS PJSC	Orenburg region	146072	October 24, 2021
MTS PJSC	Kemerovo region	168619	December 26, 2023
MTS PJSC	Astrakhan region	169454	January 19, 2024
MTS PJSC	Kemerovo region	169451	January 19, 2024
MTS PJSC	Arkhangelsk region	169456	January 19, 2024
MTS PJSC	Vologda region	169452	January 19, 2024
MTS PJSC	Kaliningrad region	169457	January 19, 2024
MTS PJSC	Karelia Republic	169448	January 19, 2024
MTS PJSC	Murmansk region	169455	January 19, 2024
MTS PJSC	Novgorod region	169453	January 19, 2024
MTS PJSC	St. Petersburg	169450	January 19, 2024
MTS PJSC	Komi Republic	169449	January 19, 2024
MTS PJSC	Volgograd region	170831	March 4, 20124
MTS PJSC	Omsk region	146088	October 4, 2021
MTS PJSC	Udmurt Republic	146091	October 4, 2021
MTS PJSC	Omsk region	145060	October 4, 2021
MTS PJSC	Nizhny Novgorod region	123658	October 1, 2019
MTS PJSC	Ryazan region	129950	July 3, 2020
MTS PJSC	Orel region, Voronezh region	155415	October 24, 2022
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		License	
Licensee	License Region(s)	number	Expiry Date
MTS PJSC	Belgorod region, Bryansk region, Kursk region, Lipetsk region	158901	February 7, 2023
MTS PJSC	Severnaya Osetia Alania Republic	152518	June 5, 2022
MTS PJSC	Dagestan Republic	152517	June 5, 2022
MTS PJSC	Tomsk region	158904	February 27, 2023
MTS PJSC	Altai territory	158899	February 27, 2023
MTS PJSC	Krasnoyarsk Territory	158902	February 27, 2023
MTS PJSC	Novosibirsk region	158896	February 27, 2023
MTS PJSC	Tver region	158903	February 27, 2023
MTS PJSC	Smolensk region	158900	February 27, 2023
MTS PJSC	Buryatiya Republic	159602	April 18, 2023
MTS PJSC	Saratov region	159597	April 18, 2023
MTS PJSC	Chuvashia Republic	159599	April 11, 2023
MTS PJSC	Mari El Republic	159600	April 11, 2023
MTS PJSC	Penza region	150057	March 14, 2022
MTS PJSC	Tyumen region, YamaloNenetsk Autonomous region	135962	December 1, 2020
MTS PJSC	Tyumen region, YamaloNenetsk Autonomous region	154794	August 31, 2022
MTS PJSC	Ulyanovsk region	149171	February 28, 2022
MTS PJSC	Tambov region	149180	February 28, 2022
MTS PJSC	Perm region	135956	December 15, 2020
MTS PJSC	Ulyanovsk region	135960	December 15, 2020
MTS PJSC	Chelyabinsk region	135967	December 15, 2020
MTS PJSC	Samara region	123559	December 31, 2019
MTS PJSC	Leningrad region	147354	December 7, 2021
MTS PJSC	Tatarstan Republic	161954	May 23, 2023
	Telematic Services		
MTS PJSC	Komi Republic, Perm region, Orenburg region, Orel region, Nizhny Novgorod region, Lipetsk region, Moscow, Kostroma region, Smolensk region, Kirov region, Kaluga region, Ivanovo region, Bryansk region, Belgorod region, Moscow region, Kursk region, Voronezh region, Tyumen region, Sverdlovsk region, Omsk region, Kurgan region, Khanty Mansiysk Autonomous region, Chelyabinsk region, Pskov region, Yaroslavl region, Ryazan region, Vladimir region, Udmurt Republic, Tver region, Tula region, Tambov region, YamaloNenetsk Autonomous region, Amur region	137567	February 15, 2021
CJSC City Telecom	Moscow	155382	October 24, 2022
MTS PJSC	Russian Federation except Moscow, Moscow region, Republic of	142346	April 15, 2026
1111011100	Crimea, Sevastopol	112310	11pm 15, 2020
MTS PJSC	Bashkortostan Republic	140459	June 21, 2021
MTS PJSC	Krasnoyarsk Territory	161221	May 7, 2023
MGTS PJSC	Moscow, Moscow region	145447	December 11, 2021
	140		_ 55555. 11, 2021

<b>T</b> *	Viscos Posto ()	License	E t D.
Licensee Stream LLC	License Region(s) Russian Federation	number 145493	Expiry Date September 22, 2021
MTS PJSC	Tyva Republic	128521	July 28, 2020
MTS PJSC	Krasnodar territory	129951	July 15, 2020
MTS PJSC	Chuvashia Republic, Mordovia Republic	131717	September 14, 2020
MTS PJSC	Dagestan Republic, Ingushetia Republic, KabardinoBalkar Republic,	131717	September 14, 2020
	KarachaevoCherkesia Republic, Severnaya Osetia Alania Republic		
CJSC Sibintertelecom	Zabaykalsky Territory	132674	September 14, 2020
MTS PJSC	Rostov region	134507	October 26, 2020
MTS PJSC	Khabarovsk Territory	127169	June 17, 2020
MTS PJSC	Novosibirsk region	138258	April 13, 2021
MTS PJSC	Khakassiya Republic	128525	June 17, 2020
MTS PJSC	Tomsk region	128519	June 17, 2020
MTS PJSC	Sakha Republic (Yakutia)	128518	July 15, 2020
MTS PJSC	Tatarstan Republic	129944	July 15, 2020
MTS PJSC	St. Petersburg, Leningrad region, Arkhangelsk region, Kaliningrad region, Karelia Republic, Murmansk region, Nenetsk Autonomous region, Novgorod region, Vologda region	145056	October 4, 2021
MTS PJSC	Altai territory	147352	December 1, 2021
MTS PJSC	Altai Republic	152081	May 22, 2022
MTS PJSC	Penza region	125651	April 1, 2020
MTS PJSC	Chukotsk Autonomous region, Jewish Autonomous region, Irkutsk region, Koryak District of the Kamchatka Territory	130984	August 13, 2020
MTS PJSC	Mari El Republic	131716	September 14, 2020
MTS PJSC	Volgograd region	127684	May 30, 2020
MTS PJSC	Primorsky Territory	135961	December 21, 2020
MTS PJSC	Buryatiya Republic, Kamchatka region (excluding the excluding the Koryak Autonomous Area), Magadan region, Sakhalin region	128536	June 17, 2020
MTS PJSC	Zabaykalsky Territory	118159	June 5, 2019
MTS PJSC	Stavropol territory	127678	May 26, 2020
MTS PJSC	Samara region	127680	May 26, 2020
MTS PJSC	Saratov region	127688	May 31, 2020
MTS PJSC	Ulyanovsk region	127681	May 31, 2020
MTS PJSC	Republic of Khakassia	128530	May 31, 2020
MTS PJSC	Astrakhan region	129949	July 15, 2020
MTS PJSC	Adygeya Republic	129947	July 15, 2020
MTS PJSC	Kalmykia Republic	129957	July 28, 2020
MTS PJSC	Chechen Republic	156889	December 6, 2022
MTS PJSC	Russian Federation	101246	July 25, 2022
CJSC Teleservice	Voronezh region	135894	November 21, 2020
Case release vice	Leased Communications Circuits	133071	11010111001 21, 2020
CJSC City Telecom	Moscow	155379	October 24, 2022
MTS PJSC	Jewish Autonomous region	124558	November 14, 2019
	141		

Licensee	License Region(s)	License number	Expiry Date
MTS PJSC	Yamalo-Nenetsk Autonomous region, Tyumen region, Sverdlovsk	138262	April 13, 2021
	region, Kurgan region, Khanty Mansiysk Autonomous region,		1 /
	Chelyabinsk region, Amur region, Udmurt Republic, Tambov region,		
	Perm region, Orenburg region		
MTS PJSC	Russian Federation, except Crimea Republic, Sevastopol	1167992	December 29, 2021
MTS PJSC	Tatarstan Republic	161218	May 7, 2023
MTS PJSC	Kalmykia Republic, Severnaya Osetia Alania Republic	161219	May 7, 2023
MTS PJSC	Krasnoyarsk Territory	161220	May 7, 2023
MTS PJSC	Bashkortostan Republic	161223	May 7, 2023
MTS PJSC	Kemerovo region, Tomsk region	161214	May 7, 2023
MTS PJSC	Tyva Republic	128529	July 28, 2020
MTS PJSC	Chuvashia Republic	129943	July 28, 2020
MTS PJSC	Adygeya Republic, Krasnodar territory	129948	July 15, 2020
MTS PJSC	Kaluga region, Pskov region, Ryazan region, Smolensk region, Tula	134506	October 7, 2020
	region, Vladimir region		
MTS PJSC	Ivanovo region, Kirov region, Nizhny Novgorod region, Yaroslavl	134509	October 13, 2020
	region		
MTS PJSC	Mordovia Republic	135965	December 23, 2020
MTS PJSC	Altai territory, Altai Republic, Novosibirsk region	128528	July 28, 2020
MTS PJSC	Khakassiya Republic	128533	June 17, 2020
MTS PJSC	Kaliningrad region	149147	March 1, 2022
MTS PJSC	St. Petersburg, Leningrad region, Arkhangelsk region, Karelia Republic,	149174	March 1, 2022
	Murmansk region, Nenetsk Autonomous region, Novgorod region,		
	Vologda region		
MTS PJSC	Omsk region	147357	December 27, 2021
MTS PJSC	Chukotsk Autonomous region	119985	August 6, 2019
MTS PJSC	Belgorod region, Bryansk region, Kursk region, Lipetsk region, Orel	119295	July 2, 2019
	region, Voronezh region		
MTS PJSC	Rostov region, Rostov region	166424	October 2, 2023
MTS PJSC	Mari El Republic	134511	October 5, 2020
MTS PJSC	Khabarovsk Territory, Sakha Republic (Yakutia), Zabaykalsky Territory	135026	November 21, 2020
	(excluding the Aginski Buryatski Autonomous District)		
MTS PJSC	Magadan region	152080	May 21, 2022
MTS PJSC	Irkutsk region	152082	May 21, 2022
MTS PJSC	Kamchatka region, Koryakski Autonomous region	152084	May 21, 2022
MTS PJSC	Sakhalin region	130986	August 25, 2020
MTS PJSC	Buryatiya Republic	130983	August 25, 2020
MTS PJSC	Primorsky Territory	127171	May 10, 2020
	142		

Licensee	License Region(s)	License number	Expiry Date
MTS PJSC	Moscow, Moscow region, Komi Republic, Kostroma region, Tver	166958	November 24, 2023
MISTISC	region	100938	14, 2023
MTS PJSC	Aginski Buryatski Autonomous District of the Penza region	135963	December 1, 2020
MTS PJSC	Aginski Buryatski Autonomous District	135959	December 1, 2020
CJSC Sibintertelecom	Zabaykalsky Territory	119279	June 5, 2019
MTS PJSC	Samara region, Saratov region, Ulyanovsk region	127686	May 31, 2020
MTS PJSC	Astrakhan region, Stavropol territory	127683	May 31, 2020
MTS PJSC	Dagestan Republic	152083	May 21, 2022
MTS PJSC	Ingushetia Republic, KabardinoBalkar Republic, KarachaevoCherkesia Republic, Volgograd region	159601	April 18, 2023
MGTS PJSC	Moscow, Moscow region	166443	December 11, 2023
Sputnikovoe TV	Russian Federation	165243	August 2, 2023
,	Data Transmission Services		,
CJSC City Telecom	Moscow	155380	October 24, 2022
MTS PJSC	Russian Federation except Moscow, Moscow region, Republic of	142344	April 15, 2026
	Crimea, Sevastopol		<b>1</b> - 7 - 7 - 7
MGTS PJSC	Moscow	166445	December 11, 2023
MTS PJSC	Krasnoyarsk Territory	161217	May 7, 2023
MGTS PJSC	Moscow region	169794	April 17, 2024
MTS PJSC	Tyva Republic	128517	July 28, 2020
MTS PJSC	Kalmykia Republic	129942	July 28, 2020
MTS PJSC	Krasnodar territory	129952	July 15, 2020
MTS PJSC	Chuvashia Republic, Mordovia Republic	131718	September 14, 2020
MTS PJSC	Dagestan Republic, Ingushetia Republic, KabardinoBalkar Republic,	131719	September 14, 2020
	KarachaevoCherkesia Republic, Severnaya Osetia Alania Republic		
CJSC Sibintertelecom	Zabaykalsky Territory	132676	September 14, 2020
MTS PJSC	Rostov region	138261	April 3, 2021
MTS PJSC	Bashkortostan Republic	129955	June 30, 2020
MTS PJSC	Khabarovsk Territory	127172	May 31, 2020
MTS PJSC	Altai Republic	128534	July 15, 2020
MTS PJSC	Novosibirsk region	128526	July 15, 2020
MTS PJSC	Khakassiya Republic	128522	June 17, 2020
MTS PJSC	Tomsk region	128535	June 17, 2020
MTS PJSC	Novosibirsk region	128527	June 17, 2020
MTS PJSC	Tatarstan Republic	129953	July 15, 2020
MTS PJSC	Perm region, Chelyabinsk region, Khanty Mansiysk Autonomous region, Kurgan region, Omsk region, Sverdlovsk region, Tyumen region, YamaloNenetsk Autonomous region	150060	April 17, 2022
MTS PJSC	Orenburg region	150055	April 17, 2022
MTS PJSC	Kirov region, Nizhny Novgorod region, Udmurt Republic	150063	April 17, 2022
MTS PJSC	Moscow, Moscow region	150056	April 17, 2022
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Licensee	License Region(s)	License number	Expiry Date
MTS PJSC	Amur region	150053	April 17, 2022
MTS PJSC	Belgorod region, Bryansk region, Kursk region, Lipetsk region, Orel region, Voronezh region	150062	April 17, 2022
MTS PJSC	Ivanovo region, Kaluga region, Kostroma region, Ryazan region, Smolensk region, Tambov region, Tula region, Tver region, Vladimir region, Yaroslavl region	150059	April 17, 2022
MTS PJSC	St. Petersburg, Leningrad region, Arkhangelsk region, Kaliningrad region, Karelia Republic, Komi Republic, Murmansk region, Nenetsk Autonomous region, Novgorod region, Pskov region, Vologda region	150054	April 17, 2022
MTS PJSC	Penza region	125652	April 1, 2020
MTS PJSC	Chukotsk Autonomous region, Jewish Autonomous region, Irkutsk region, Koryak Autonomous Area of the Kamchatka region	130982	August 13, 2020
MTS PJSC	Zabaykalsky Territory	118158	June 5, 2019
MTS PJSC	Mari El Republic	131720	September 14, 2020
MTS PJSC	Altai territory	166425	October 31, 2023
MTS PJSC	Volgograd region	127682	June 30, 2020
MTS PJSC	Buryatiya Republic, Kamchatka region (excluding the Koryak Autonomous Area), Magadan region, Sakhalin region	128520	June 17, 2020
MTS PJSC	Primorsky Territory	135957	December 21, 2020
MTS PJSC	Stavropol territory	127685	May 26, 2020
MTS PJSC	Samara region	127689	May 26, 2020
MTS PJSC	Kemerovo region	128523	May 31, 2020
MTS PJSC	Saratov region	127687	May 31, 2020
MTS PJSC	Ulyanovsk region	127679	May 31, 2020
MTS PJSC	Astrakhan region	129956	July 15, 2020
MTS PJSC	Adygeya Republic	129945	July 15, 2020
MTS PJSC	Chechen Republic	156887	December 6, 2022
MTS PJSC	Russian Federation	101248	July 25, 2022
CJSC Teleservise	Voronezh region	135893	December 21, 2020
	Data Transmission Services for Voice		
CJSC City Telecom	Moscow	122706	December 18, 2019
MTS PJSC	Russian Federation except Moscow, Moscow region, Crimea Republic, Sevastopol	142345	April 15, 2026
MTS PJSC	Bashkortostan Republic	138260	April 11, 2021
MTS PJSC	Arkhangelsk region	170427	February 17, 2024
MTS PJSC	Krasnoyarsk Territory	170428	February 17, 2024
MTS PJSC	Novosibirsk region	170431	February 17, 2024
MTS PJSC	Leningrad region	170435	February 17, 2024
MTS PJSC	Nizhny Novgorod region	170426	February 17, 2024
MTS PJSC	Omsk region	170430	February 17, 2024
MTS PJSC	Smolensk region	170434	February 17, 2024
MTS PJSC	Novgorod region 144	170429	February 17, 2024

Licensee	License Region(s)	License number	Expiry Date
MTS PJSC	Tula region	170432	February 17, 2024
MTS PJSC	Volgograd region	170436	February 17, 2024
MTS PJSC	Kemerovo region	170425	February 17, 2024
MTS PJSC	Yaroslavl region	131138	June 4, 2020
MTS PJSC	Mordovia Republic	149158	March 15, 2022
MTS PJSC	Saratov region	149165	March 15, 2022
MTS PJSC	Tomsk region	149150	March 15, 2022
MTS PJSC	Mari El Republic	149148	March 15, 2022
MTS PJSC	Amur region	149178	March 15, 2022
MTS PJSC	Altai territory	149161	March 15, 2022
MTS PJSC	Buryatiya Republic	149156	March 15, 2022
MTS PJSC	Kalmykia Republic	149162	March 15, 2022
MTS PJSC	KarachaevoCherkesia Republic	149159	March 15, 2022
MTS PJSC	Pskov region	149177	March 15, 2022
MTS PJSC	Kamchatka region	149181	March 15, 2022
MTS PJSC	Komi Republic	149151	March 15, 2022
MTS PJSC	Murmansk region	149153	March 15, 2022
MTS PJSC	Kostroma region	149175	March 15, 2022
MTS PJSC	Altai Republic	149176	March 15, 2022
MTS PJSC	Vologda region	149187	March 15, 2022
MTS PJSC	Dagestan Republic	149179	March 15, 2022
MTS PJSC	Orenburg region	149182	March 15, 2022
MTS PJSC	Sakha Republic (Yakutia)	149183	March 15, 2022
MTS PJSC	Stavropol territory	149154	March 15, 2022
MTS PJSC	Tyva Republic	149172	March 15, 2022
MTS PJSC	Chechen Republic	149157	March 15, 2022
MTS PJSC	Zabaykalsky Territory	149185	March 15, 2022
MTS PJSC	Kirov region	149152	March 15, 2022
MTS PJSC	Khakassiya Republic	149184	March 15, 2022
MTS PJSC	KabardinoBalkar Republic	149163	March 15, 2022
MTS PJSC	Ulyanovsk region	149168	March 15, 2022
MTS PJSC	Adygeya Republic	149164	March 15, 2022
MTS PJSC	Ingushetia Republic	149160	March 15, 2022
MTS PJSC	Kaliningrad region	149146	March 15, 2022
MTS PJSC	Karelia Republic	149167	March 15, 2022
MTS PJSC	Penza region	149155	March 15, 2022
MTS PJSC	Severnaya Osetia Alania Republic	149149	March 15, 2022
MTS PJSC	Khabarovsk Territory	149170	March 15, 2022
MTS PJSC	Chuvashia Republic	149186	March 15, 2022
MTS PJSC	Khanty Mansiysk Autonomous region, Sverdlovsk region	159595	March 25, 2023
MTS PJSC	Nenetsk Autonomous region	159593	March 25, 2023
MTS PJSC	Tatarstan Republic	159598	March 25, 2023
MTS PJSC	Ryazan region, Vladimir region	159594	March 25, 2023
MTS PJSC	Chukotsk Autonomous region, Jewish Autonomous region	159596	March 25, 2023
MGTS PJSC	Moscow	135506	February 16, 2021
MTS PJSC	Magadan region	149188	March 15, 2022
MTS PJSC	Chelyabinsk region	149166	March 15, 2022
	145		,

Licensee	License Region(s)	License number	Expiry Date	
MTS PJSC	Kurgan region	149169	March 15, 2022	
MTS PJSC	Moscow	150061	March 30, 2022	
MTS PJSC	Kaluga region	134512	October 26, 2020	
MTS PJSC	Moscow region	134508	October 26, 2020	
MTS PJSC	Ivanovo region	134510	October 31, 2020	
MTS PJSC	Rostov region	137565	February 16, 2021	
MTS PJSC	Irkutsk region, Primorsky Territory, Sakhalin region	135029	December 12, 2020	
MTS PJSC	Belgorod region, Bryansk region, Kursk region, Lipetsk region, Orel	130985	July 28, 2020	
	region, Voronezh region		•	
MGTS PJSC	Moscow region	146656	January 26, 2022	
MTS PJSC	Astrakhan region	122731	December 18, 2019	
MTS PJSC	Krasnodar territory	153738	August 31, 2022	
MTS PJSC	Perm region	158898	February 27, 2023	
MTS PJSC	Russian Federation	101245	July 25, 2022	
MTS PJSC	Tambov region	122730	December 18, 2019	
MTS PJSC	Tyumen region, YamaloNenetsk Autonomous region	135966	December 1, 2020	
MTS PJSC	St. Petersburg	124994	January 28, 2020	
MTS PJSC	Udmurt Republic	158897	February 27, 2023	
MTS PJSC	Samara region	123560	December 31, 2019	
MTS PJSC	Tver region	122267	November 24, 2019	
	Mobile Radio Services			
MTS PJSC	Orenburg region	145058	October 2, 2021	
MTS PJSC	YamaloNenetsk Autonomous region	135964	December 15, 2020	
MTS PJSC	Khanty Mansiysk Autonomous region	138956	December 15, 2020	
MGTS PJSC	Moscow, Moscow Region	154857	May 16, 2022	
Telecommunications Services for Cablecasting				
MTS PJSC	Russian Federation	122268	November 24, 2019	
MGTS PJSC	Moscow	137356	January 27, 2021	
MGTS PJSC	Moscow region	161531	June 18, 2023	
OJSC Teleservice	Voronezh region	138177	March 15, 2021	
	146			

		License	
Licensee	License Region(s)	number	Expiry Date
	Telecommunications Services for Broadcasting		
Sputnikovoe TV	the Adygeya Republic, the Altai Republic, the Bashkortostan Republic,	123687	October 1, 2019
	the Buryatiya Republic, the Dagestan Republic, the Ingushetia		
	Republic, the KabardinoBalkar Republic, the Kalmykia Republic, the		
	KarachaevoCherkesia Republic, the Karelia Republic, the Komi		
	Republic, the Mari El Republic, the Mordovia Republic, the Sakha		
	Republic (Yakutia), the Severnaya Osetia Alania Republic, the		
	Tatarstan Republic, the Tuva Republic, the Udmurt Republic, the		
	Khakassia Republic, the Chechen Republic, the Chuvashia Republic,		
	the Altai region, the Zabaykalsky Territory, the Krasnodar region, the		
	Krasnoyarsk region, the Perm region, the Primorsky Territory, the		
	Stavropol Territory, the Khabarovsk Territory, the Amur region, the		
	Arkhangelsk region, the Astrakhan region, the Belgorod region, the		
	Bryansk region, the Vladimir region, the Volgograd region, the Vologda		
	region, the Voronezh region, the Ivanovo region, the Irkutsk region, the		
	Kaliningrad region, the Kaluga region, the Kemerovo region, the Kirov		
	region, the Kostroma region, the Kurgan region, the Kursk region, the		
	Leningrad region, the Lipetsk region, the Moscow region, the Nizhny		
	Novgorod region, the Novgorod region, the Novosibirsk region, the		
	Omsk region, the Orenburg region, the Orel region, the Penza region,		
	the Pskov region, the Rostov region, the Ryazan region, the Samara		
	region, the Saratov region, the Sakhalin region, the Sverdlovsk region,		
	the Smolensk region, the Tambov region, the Tver region, the Tomsk		
	region, the Tula region, the Tyumen region, the Ulyanovsk region, the		
	Chelyabinsk region, the Yaroslavl region, Moscow, St Petersburg,		
	Sevastopol, the Jewish Autonomous region, the Khanty Mansiysk		
	Autonomous region, the YamaloNenetsk Autonomous region	• • •	
A CETTO DIGG	Cable Radio (communication services for the purpose of wire broad		N. 1 00 0000
MTS PJSC	Chelyabinsk region	137711	November 20, 2020
MTS PJSC	Kirov region	149715	November 16, 2021
MTS PJSC	Krasnodar region	169190	October 4, 2023
MTS PJSC	Nizhny Novgorod region	153995	October 1, 2019
	147		

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		License	
Licensee	License Region(s)	number	Expiry Date
MTS PJSC	Novosibirsk region	171678	January 29, 2024
MTS PJSC	Penza region	159702	October 31, 2022
MTS PJSC	Perm region	129415	April 22, 2020
MTS PJSC	Rostov region	152165	February 8, 2022
MTS PJSC	Ryazan region	162597	February 19, 2023
MTS PJSC	Saratov region	168309	September 3, 2023
MTS PJSC	Sverdlovsk region	138953	May 23, 2019
MTS PJSC	Volgograd region	156543	July 5, 2022
MTS PJSC	Vologda region	172369	February 26, 2024

All licenses with expiry date before the date of 20F issuance were renewed

## C. Organizational Structure

The table below presents our significant subsidiaries and investees, the places of incorporation and our effective ownership interests therein as of December 31, 2018.

			Place of
	Accounting	Ownership	Incorporation/
Subsidiary	Method	Interest	Organization
RTC	Consolidated	100.0%	Russia
Vodafone Ukraine	Consolidated	100.0%	Ukraine
MTS Turkmenistan	Consolidated	100.0%	Turkmenistan
Sibintertelecom	Consolidated	100.0%	Russia
NVision Group	Consolidated	100.0%	Russia
Sitronics Telecom Solutions	Consolidated	100.0%	Russia
NVision Czech Republic	Consolidated	100.0%	Czech Republic
Sputnikovoe TV	Consolidated	100.0%	Russia
Stream LLC	Consolidated	100.0%	Russia
Dega Retail Holding Limited	Consolidated	100.0%	British Virgin Islands
Stream Digital LLC <sup>(1)</sup>	Consolidated	100.0%	Russia
MTS Energo	Consolidated	100.0%	Russia
Praliss Enterprises Limited	Consolidated	100.0%	Cyprus
LLC "MTDZK" (Ticketland)	Consolidated	100.0%	Russia
Kulturnaya Sluzhba LLC (Ponominalu)	Consolidated	100.0%	Russia
IT Grad LLC	Consolidated	100.0%	Russia
Metro-Telecom	Consolidated	95.0%	Russia
MGTS Group	Consolidated	94.7%	Russia
MTS Armenia	Consolidated	80.0%	Armenia
Kulturnaya Sluzhba LLC (Ponominalu)	Consolidated	78.2%	Russia
Navigation Information Systems Group	Consolidated	77.7%	Russia
MTS Bank	Consolidated	55.4%	Russia
Oblachny Retail LLC	Consolidated	50.8%	Russia
MTS International Funding DAC <sup>(2)</sup> ("MTS International")	Consolidated	SE	Ireland
MTS Belarus	Equity	49.0%	Belarus
Sistema Capital	Equity	30.0%	Russia
Zifrovoe TV	Equity	20.0%	Russia
OZON Holdings Limited	Equity	18.7%	Cyprus
YOUDO Web Technologies	Equity	13.7%	Cyprus
	1 7		V 1

 $<sup>\</sup>label{eq:Awholly-owned} A \ wholly-owned \ subsidiary, through \ which \ the \ Group \ currently \ repurchases \ its \ own \ shares.$ 

<sup>(2)</sup>A company organized and existing as a private limited company under the laws of Ireland. The Group does not have any equity in MTS International. It was established for the purpose of raising capital through the issuance of debt securities on

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the Irish Stock Exchange followed by transferring the proceeds through a loan facility to the Group. In 2010 and 2013, MTS International issued \$750 million 8.625% notes due in 2020 and \$500 million 5.0% notes due in 2023, respectively. The notes are guaranteed by MTS in the event of default. MTS International does not perform any other activities except those required for notes servicing. The Group bears all costs incurred by MTS International in connection with the notes' maintenance activities. Accordingly, the Group concluded that it exercises control over the entity.

See also Note 2 to our audited consolidated financial statements.

### D. Property, Plant and Equipment

### Property, Plant and Equipment

We own and occupy premises in Moscow at 4 Marksistskaya Street Bldgs. 1-4, 34 Marksistskaya Street Bldg. 10, 1/3 Vorontsovskaya Street Bldgs. 2 and 2a, 5 Vorontsovskaya Street Bldgs. 1 and 2, 13/14 Vorontsovskaya Street Bldg. 4, 8 Vorontsovskaya Street Bldg. 4À, 12/12 Pankratievsky Pereulok, 2/10 Perviy Golutvinskiy Pereulok Bldg. 1 and 2, 4 Perviy Golutvinskiy Pereulok Bldg. 1, 9 Magnitogorskaya Street, 6 Vtoroy Vyazovskiy Proezd Building 1-3, 2A Konstantina Simonova Street, 19 Dmitrovskoye shosse Bldg. 2, 103 Prospect Mira, 42 Profsoyuznaya Street Bldg. 1, Panfilovskiy prospect Zelenograd Bldg 1101À, 24/2 Malaya Dmitrovka Street, 5/9 Malaya Dmitrovka Street, 58/1 Ryazanskiy prospect, 60 Varshavskoe shosse, 27 Smolenskaya-Sennaya square Bldg 2, 27 Smolenskaya-Sennaya square Bldg 3, 6 Ostrovitjanova Street, 2 Mozhayskoe shosse, 51 Second Line of Khoroshevsky Serebryany Bor Bldg.1-3, 24 Central prospect of Khoroshevsky Serebryany Bor, 24 Central prospect, 18 Andropov prospect Bldg. 8-9, premises in Moscow region in village Valishevo, 2 Bldg 2, 2G, 2B which we use for administration, sales and other service centers as well as the operations of mobile switching centers.

We also lease buildings in Moscow for similar purposes, including marketing and sales and other service centers. In addition, through our subsidiary MGTS, we own approximately 133 buildings located throughout Moscow, which serve as sales and customer service offices, house MGTS' telecommunication equipment and are leased to third parties. We also own office buildings in some of our regional license areas and in Ukraine, and we lease office space on an as-needed basis. We believe that our properties are adequate for our current needs and additional space is available to us if and when it is needed.

The primary elements of our network are base stations, base station controllers, transcoders and mobile switching centers. Base stations occupy sites leased at selected locations in all the areas in which we provide network coverage. GSM, 3G and 4G technologies are based on an "open architecture," which means that equipment from one supplier can be combined with that of another supplier to expand the network. Thus, there are no technical limitations to using equipment from different suppliers.

### Item 4A. Unresolved Staff Comments

None.

### Item 5. Operating and Financial Review and Prospects

The following discussion of our financial condition and results of operations is intended to help the reader understand us, our operations and our present business environment and should be read in conjunction with our consolidated financial statements, related notes and other information included elsewhere in this document. In particular, we refer you to the risks discussed in "Item 3. Key Information D. Risk Factors" for information regarding governmental, economic, fiscal, monetary or political policies or factors that could materially adversely affect our operations or your investment in our shares and ADSs. In addition, this section contains forward-looking statements that involve risk and uncertainties. Our actual results may differ materially from those discussed in forward-looking statements as a result of various factors, including those described under "Item 3. Key Information D. Risk Factors" and "Cautionary Statement Regarding Forward-Looking Statements." Our reporting currency is the Russian ruble and our consolidated financial statements have been prepared in accordance with IFRS.

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### A. Operating Results

#### Overview

We are a leading telecommunications provider in Russia and the CIS, providing a wide range of mobile and fixed line voice, data telecommunications and digital services, including transmission, broadband, pay-TV, various value-added services as well as financial and integratrion services and selling equipment and accessories. According to AC&M-Consulting, we are the largest mobile operator in Russia in terms of mobile subscribers. We are also the largest operator in Armenia and the second largest in Ukraine in terms of mobile subscribers, according to our estimates. As of December 31, 2018, we had a mobile subscriber base of approximately 99.8 million.

Our revenues for the year ended December 31, 2018 grew by 8.4% compared to 2017 and totaled to RUB 480,293 million. In 2018 we increased our ownership share in MTS Bank to 55.4% and obtained control over the entity. The effect of MTS Bank consolidation on the Group revenue for the financial year 2018 amounted to RUB 9,336 million. Without the effect of MTS Bank, the Group's revenue increased by 6.3% to RUB 470,956 million mainly due to strong performance in core Russian market as well as continued positive trends in data consumption and digital service adoption across all the regions of operations. Our operating income for the year ended December 31, 2018 totaled to RUB 116,185 million, an increase of 20.8% in comparison with prior year was mainly due to effects from implementation of IFRS 15 and IFRS 16 as well as MTS Bank consolidation. On a like-for-like basis and without the effect of MTS Bank, the Group's operating profit increased by 11.5% compared to 2017 and totaled to RUB 107,153 million. Main positive effects relate to strong service revenue in Russia, higher income from sale of our fixed assets as well as lower impairment of our non-current assets. Our profit for the year ended December 31, 2018 declined to RUB 7,832 million mainly due to provision for fines and penalties relating to previously disclosed investigation of the Group's former subsidiary in Uzbekistan.

Our revenues for the year ended December 31, 2017 totaled to RUB 442,911 million, an increase of 1.7% year-over-year. Overall, the Group's performance in 2017 was largely driven by Russia where the increase in revenues was attributable to the natural growth in data consumption and better monetization through the cancellation of unlimited data plans. Our operating income for the year ended December 31, 2017 increased by 9.6% to RUB 96,100 million due to strong service revenue in Russia as well as roaming cost optimisation. Our profit for the year ended December 31, 2017 increased by 16.8% to RUB 56,590 million generally repeating our operating income dynamics.

Our revenues for the year ended December 31, 2016 increased by 2.1% to RUB 435,692 million due to sustained growth in data usage throughout key markets and increased handset sales in Russia. Our operating income for the year ended December 31, 2016 decreased by 6.7% to RUB 87,669 million due to additional expenses in retail as well as generally increased costs in Russia due to macroeconomic pressure. Our profit for the year ended December 31, 2016 increased slightly by 2.1% to RUB 48,450 million generally repeating our operating income dynamics. Our profit was also affected by an increase in finance costs related to repurchase of our Eurobonds due in 2020 and decreased finance income. Those effects were partially offset by the strengthening of the ruble coupled with improved performance of our non-operating affiliates (mainly MTS Bank).

Significant funds are required to support the growth of our subscriber base, primarily for increasing network capacity, maintaining and modernizing our mobile and fixed