

# Technology for good

VEON's Digital Operator vision is underpinned by our commitment to being a technology leader. We believe that through our investments, we bring transformational services to our customers and markets, using our technology for good.



Our technology investment consists of three elements: our network infrastructure and expansion of connectivity and digital services in ways that address the digital divide with our “4G for All” focus, supporting local businesses with enterprise solutions ranging from cloud services to adtech supporting the growth of local economies, and supporting the usage of AI – which we call Augmented Intelligence or AI1440 – to improve digital inclusion.

Each one of these are supported by our dedicated workforce, including the teams of our technology companies like Garaj in Pakistan, Kyivstar Tech in Ukraine, QazCode in Kazakhstan, and BeeLab and VEON AdTech in Uzbekistan.

## 4G for all

In the frontier markets in which we operate, 4G continues to be a transformational technology that enables the potential for digital services. we remain committed to the expansion and upgrading of our 4G networks to ensure access to high-quality digital services for our customers. Over the course of 2023, our operators have expanded the population coverage of our 4G network, and more importantly, made it accessible and relevant to our customers with digital services in entertainment, financial services, learning and health. This resulted in the growth in the share of 4G users in our customer base from 54% at the end of 2022 to 60% at the end of 2023.

VEON Group companies explore 5G use cases with industry-academy collaborations, most notably in Pakistan, and commercial partnerships for selective uses of 5G, notably in Ukraine. We have signed a letter of intent to explore the use of Open RAN technology in Ukraine in partnership with Rakuten Symphony, which covers both 4G and 5G technologies. With this partnership, we seek to explore the most efficient ways of rebuilding Ukraine's infrastructure. We are also exploring cooperation with satellite connectivity which can efficiently provide back-up when there are major floods, or earthquakes or emergency situations.

An important part of VEON's commitment to the expansion of its connectivity infrastructure is its asset-light strategy. We believe infrastructure-sharing is the more responsible way forward for the scarce resources of emerging market economies. Our asset-light approach allows us to focus our operators to focus their energy on digital services. To this end, we have taken steps in infrastructure sharing during 2023, including an agreement with Summit Towers Limited in Bangladesh for the sale of about 2,000 towers and a long-term service agreement.

## Supporting businesses with digital offerings in B2B

VEON's digital operators across our markets support local businesses with digital enterprise solutions, contributing to the growth of local economies.

Throughout the markets that we operate in, it is essential that cloud infrastructure is deployed to support not just our operations but also those of our business and government customers.

In Pakistan, Jazz's Garaj platform is already the country's largest onshore cloud, and Jazz has plans to significantly expand its datacentre offerings and capacity.

Cloud capabilities are also essential for small businesses in these countries to provide their IT services online through a “software as a service” model. Our local data centres strengthen the data sovereignty in our jurisdictions, ensuring that data is stored, analysed and turned into further value within the country where it is generated. These data centres also support global companies in providing solutions that ensure their data is stored locally and securely.

VEON's operating companies also support businesses with solutions in advertising technologies. In Pakistan and Bangladesh, we served our advertising partners on our digital entertainment platforms Tamasha and Toffee, where each country's leading advertisers can meet the digital customers with seamless digital experiences. In Uzbekistan, VEON AdTech

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supported local businesses optimise their advertising and a local shopping mall improve the customers experience with big data solutions.

## Augmented intelligence

Our third priority is AI, which we interpret as augmented intelligence. In a business of providing digital consumer services through a telecoms licence, the potential of AI is enormous. Beyond the immediate benefits of cost savings through the AI automation of customer interactions, we see a much wider horizon of entirely new services that will assist our customers to help their customers.

We are already well advanced in the deployment of AI and have focused initial development on local Large Language Models (LLMs). While the world's most popular languages are well served by LLMs, the languages of our OpCos such as Kazakh, Bengali, Uzbek and Kyrgyz are not supported at all. Our operating company Beeline Kazakhstan and its IT subsidiary QazCode have already developed a Kazakh LLM that supports the customer experience on Beeline's digital applications and enables the further development of augmented intelligence-based solutions in the Kazakh language. We have opened to usage of this AI module to all users in Kazakhstan, in order to contribute to the development of augmented intelligence across the country.

Beeline Kazakhstan has also deployed AI in video technologies in disaster response, and completed the integration of an AI-based solution that monitors for forest fires – the latest step in our work in using our technology for emergency response in natural disasters.

In 2024, VEON and Beeline Kazakhstan have signed a Memorandum of Understanding with Barcelona Supercomputing Center and the GSMA to explore the usage of AI-based language models for low-resources languages to address the AI language gap.

## Building new software companies

To accomplish our technology ambitions, we are cognisant of the need to evolve our development teams into new structures that streamline workflow and provide autonomy for commercial progress. To fulfil this, we have begun the process of building dedicated software companies within our OpCos that will bring together the coding, data analytics and AI talent.

In Uzbekistan, VEON OpCo Beeline Uzbekistan has built BeeLab, a dedicated technology company. Located on the country's prestigious IT Park in Tashkent, BeeLab offers specialised services in data analytics and cybersecurity.

Co-located with BeeLab on the IT Park is VEON AdTech, a dedicated adtech company that offers digital marketing services to support both VEON's OpCos and commercial companies in addressing the growing market for digital advertising. VEON AdTech provides highly targeted digital marketing services based on machine-learning algorithms, and addresses the spend on digital advertising in the countries where VEON operates.

In June 2023, VEON announced the launch of QazCode as a new software company spun out of Beeline Kazakhstan. With over 700 employees, QazCode was immediately ranked among the largest software development companies in Kazakhstan. QazCode's staff includes 350 developers with expertise across software development, big data analytics, cybersecurity and AI, all dedicated to building digital products and services for both local Kazakh and international clients, including other VEON digital operators.

The formation of dedicated software development organisations is part of VEON's Digital Operator strategy and helps us to deliver on our promise to combine connectivity with a comprehensive digital product and services portfolio. These, in turn, meet the local needs across financial services, entertainment, health, and education and other sectors, leading to greater engagement and value generation for customers.

Network KPIs	2023	2022	2021
<b>Total base stations (physical sites)</b>			
- 2G	<b>55,633</b>	52,951	47,047
- 3G	<b>41,535</b>	40,747	39,777
- 4G	<b>57,083</b>	56,970	45,638
Active mobile subscribers (three months) (millions)	<b>156</b>	157	153
Active mobile data subscribers (three months) (millions)	<b>116</b>	112	106
Active Mobile 4G subscribers (three months) (millions)	<b>94</b>	85	71
Network mobile data traffic in TBs ('000)	<b>10,725</b>	8,838	6,809
<b>GB of use (average GB per data user per month)</b>			
Ukraine	<b>9.8</b>	8.2	6.6
Pakistan	<b>6.3</b>	5.5	4.8
Bangladesh	<b>5.4</b>	4.8	3.7
Uzbekistan	<b>9.9</b>	7.5	5.2
Kazakhstan	<b>17.3</b>	15.4	12.6
Kyrgyzstan	<b>19.7</b>	16.3	13.0

Quality of service (%)	2023	2022	2021
<b>Network population coverage (percent)</b>			
<b>Ukraine</b>			
- 2G	<b>98</b>	98	98
- 3G	<b>75</b>	75	75
- 4G	<b>95</b>	94	90
<b>Pakistan</b>			
- 2G	<b>86</b>	84	79
- 3G	<b>55</b>	55	57
- 4G	<b>67</b>	64	59
<b>Bangladesh</b>			
- 2G	<b>97</b>	97	96
- 3G	<b>71</b>	76	76
- 4G	<b>87</b>	81	69
<b>Uzbekistan</b>			
- 2G	<b>94</b>	94	92
- 3G	<b>77</b>	75	75
- 4G	<b>85</b>	78	62
<b>Kazakhstan</b>			
- 2G	<b>98</b>	98	98
- 3G	<b>90</b>	89	88
- 4G	<b>89</b>	87	81
<b>Kyrgyzstan</b>			
- 2G	<b>98</b>	98	98
- 3G	<b>77</b>	77	77
- 4G	<b>92</b>	92	93

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Voice inaccessibility (%)	2023	2022	2021
<b>Ukraine</b>			
- 2G	<b>1.07</b>	2.34	0.37
- 3G	<b>0.18</b>	0.38	0.12
<b>Pakistan</b>			
- 2G	<b>1.52</b>	2.10	1.71
- 3G	<b>0.38</b>	0.46	0.49
<b>Bangladesh</b>			
- 2G	<b>0.56</b>	0.60	0.59
- 3G	<b>0.26</b>	0.42	0.33
<b>Uzbekistan</b>			
- 2G	<b>1.77</b>	1.29	0.83
- 3G	<b>0.47</b>	0.25	0.22
<b>Kazakhstan</b>			
- 2G	<b>0.60</b>	0.75	1.08
- 3G	<b>0.28</b>	0.40	0.28
<b>Kyrgyzstan</b>			
- 2G	<b>0.20</b>	0.19	0.24
- 3G	<b>0.08</b>	0.28	0.16

Data inaccessibility (%)	2023	2022	2021
<b>Ukraine</b>			
- 3G	<b>1.07</b>	2.06	0.76
- 4G	<b>0.37</b>	0.48	0.16
<b>Pakistan</b>			
- 3G	<b>0.80</b>	0.70	0.59
- 4G	<b>0.63</b>	0.92	0.41
<b>Bangladesh</b>			
- 3G	<b>0.35</b>	0.48	0.42
- 4G	<b>0.32</b>	0.49	0.47
<b>Uzbekistan</b>			
- 3G	<b>0.76</b>	0.61	0.46
- 4G	<b>0.84</b>	0.67	0.61
<b>Kazakhstan</b>			
- 3G	<b>1.02</b>	1.32	1.07
- 4G	<b>0.31</b>	0.35	0.40
<b>Kyrgyzstan</b>			
- 3G	<b>0.77</b>	1.25	0.76
- 4G	<b>0.30</b>	0.45	0.27

Voice call drop rate (%)	2023	2022	2021
<b>Ukraine</b>			
- 2G	<b>0.84</b>	0.90	0.76
- 3G	<b>0.24</b>	0.31	0.17
<b>Pakistan</b>			
- 2G	<b>1.02</b>	1.09	0.84
- 3G	<b>0.19</b>	0.19	0.15
<b>Bangladesh</b>			
- 2G	<b>0.48</b>	0.56	0.66
- 3G	<b>0.13</b>	0.20	0.21
<b>Uzbekistan</b>			
- 2G	<b>0.41</b>	0.41	0.42
- 3G	<b>0.13</b>	0.13	0.13
<b>Kazakhstan</b>			
- 2G	<b>0.70</b>	0.66	0.58
- 3G	<b>0.11</b>	0.14	0.14
<b>Kyrgyzstan</b>			
- 2G	<b>0.24</b>	0.30	0.33
- 3G	<b>0.55</b>	0.40	0.26

Data privacy and cybersecurity	2023	2022	2021
Progress of additional security measures implemented	<b>93%</b>	89%	84%
Potentially adverse events analysed	<b>10,118</b>	384	682
Critical incidents managed preventively and solved without major negative impact	<b>104</b>	51	19
Notifications from external cyber intelligence services	<b>1,902</b>	495	151
Internally identified compromises that resulted in a breach and exfiltration of data	<b>5</b>	3	15
Reports from outside parties and substantiated by the organisation	<b>10</b>	23	8
Complaints from regulatory bodies	<b>4</b>	4	1





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CASE STUDY

## Beeline Kyrgyzstan obtains International Standard Cybersecurity Certification

Beeline Kyrgyzstan is at the forefront of ensuring cybersecurity for its operations, subscribers and business customers, and was recently awarded ISO certification.

The ongoing digitalisation of Kyrgyzstan presents an unprecedented opportunity for growth. However, with devices increasingly interconnected, businesses and consumers become more vulnerable to the threat of cyber attacks.

As a Company providing converged connectivity, digital services and business IT services, it is imperative for Beeline Kyrgyzstan to adhere to global cybersecurity standards and safeguard against the rising tide of online threats faced by businesses and individuals.

In 2023, Beeline Kyrgyzstan achieved ISO/IEC 27001:2013 certification, a globally recognised standard for information security management systems. This certification, awarded after rigorous analysis and testing by the British Standards Institute, underscores VEON's commitment to protecting both corporate and individual clients against cyber threats.

The ISO certification reflects group-wide efforts in cybersecurity, closely aligned with the development of the Company's Global Digital Operator strategy.

