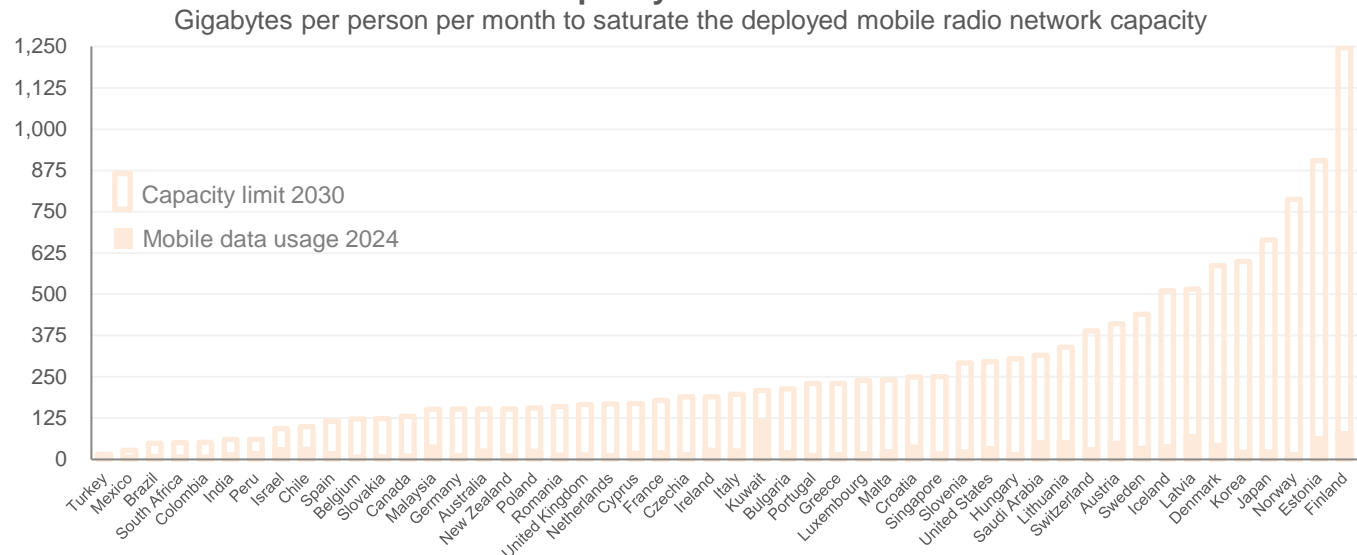


# Mobile data usage in 2024, capacity limits 2024-2030 and many other competitiveness metrics for 173 mobile network operators present across 50 EU & OECD mobile markets

A comprehensive analysis and database of mobile network operator and mobile market competitiveness metrics. The database includes mobile subscribers, mobile subscriber shares, deployed radio sites, radio site density, spectrum holdings per band, mobile network data volume, average data usage per subscriber, average data usage per person, spectrum usage, average BusyHour throughput per sector, radio network capacity utilization and radio network capacity limits in 2024 and in 2030.

Rewheel research PRO study – December 2024

## Capacity limit - 2030



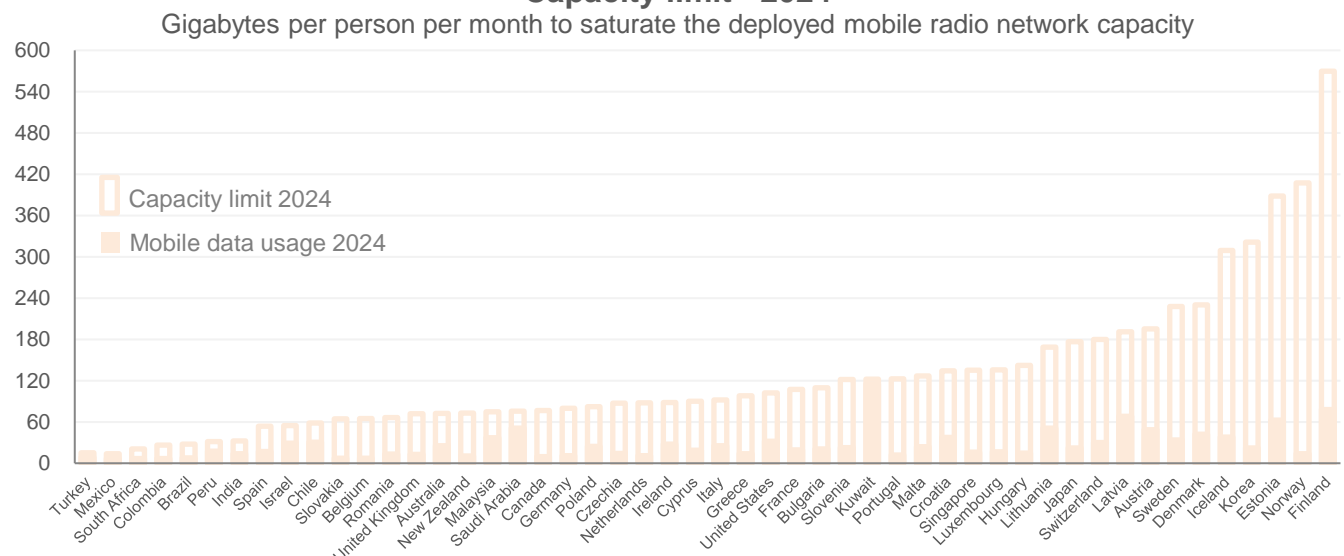
The mobile market capacity limit is the sum of the capacity limits of the mobile networks present in the market.

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### Highlights – Mobile markets

- In 2024 Finland continue to be the mobile market with the highest capacity limit per person per month, with projections maintaining this lead by 2030.
- In 2030, mobile networks in Finland will have enough capacity to carry a terabyte (1,000 gigabytes) per person per month.
- Turkey, Mexico and South Africa were the mobile markets with the lowest capacity limits in 2024 and projected limits in 2030.
- Kuwait was the mobile market with the highest average mobile data usage per person per month, 115 gigabytes in 2024.
- In Finland, the mobile market with the highest radio network site density, a fraction of the total available capacity was used in 2024 despite an average data usage of 78 gigabytes per person per month.
- Japan was the mobile market with the highest assigned licensed (FDD, SDL & TDD) spectrum across the 600–6000 MHz bands (1,447 MHz) while Turkey was the market with the lowest amount (549 MHz).

## Capacity limit - 2024



The mobile market capacity limit is the sum of the capacity limits of the mobile networks present in the market.

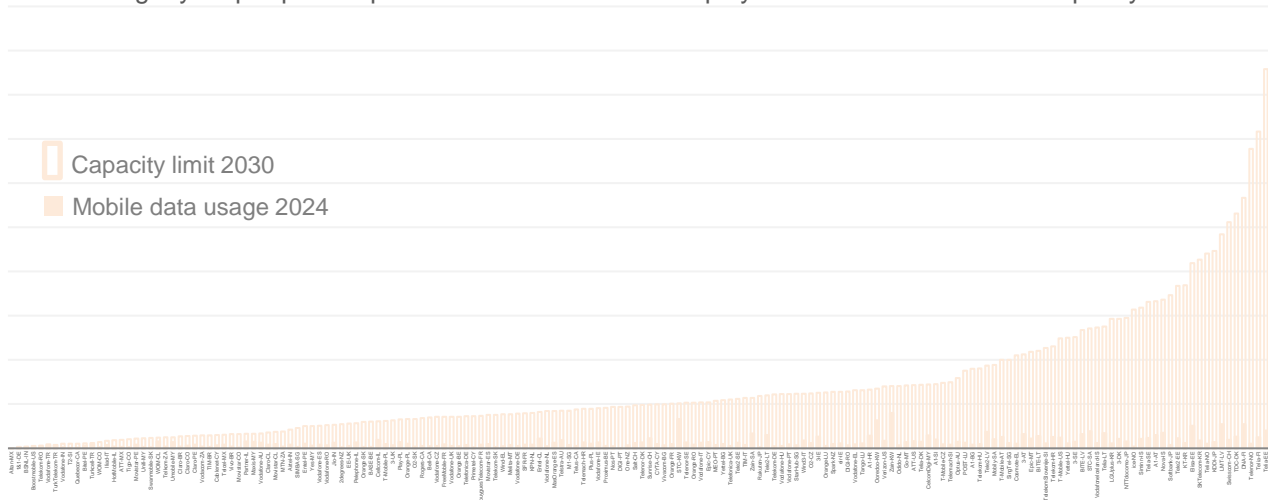
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Highlights – Mobile network operators

- For the first time since we started tracking data back in 2017, Elisa Finland was displaced from its top ranking as the mobile network operator with the highest radio site density and capacity limit.
- In 2024 Telia Estonia surpassed Elisa Finland and became the mobile network operator with the highest radio site density and the highest capacity limit in 2024.
- Elisa Finland retained its top ranking as the mobile network operator with the highest projected capacity limit in 2030.
- In 2030 mobile network operators with dense radio networks will have enough capacity to carry as much as one terabyte per unique customer per month.
- Altan Mexico, a mobile network operator that holds only 700 MHz FDD spectrum (45 MHz), was the operator with the lowest capacity limit in 2024 and the lowest projected capacity limit in 2030.

### Capacity limit - 2030

Gigabytes per person per month to saturate the deployed mobile radio network capacity

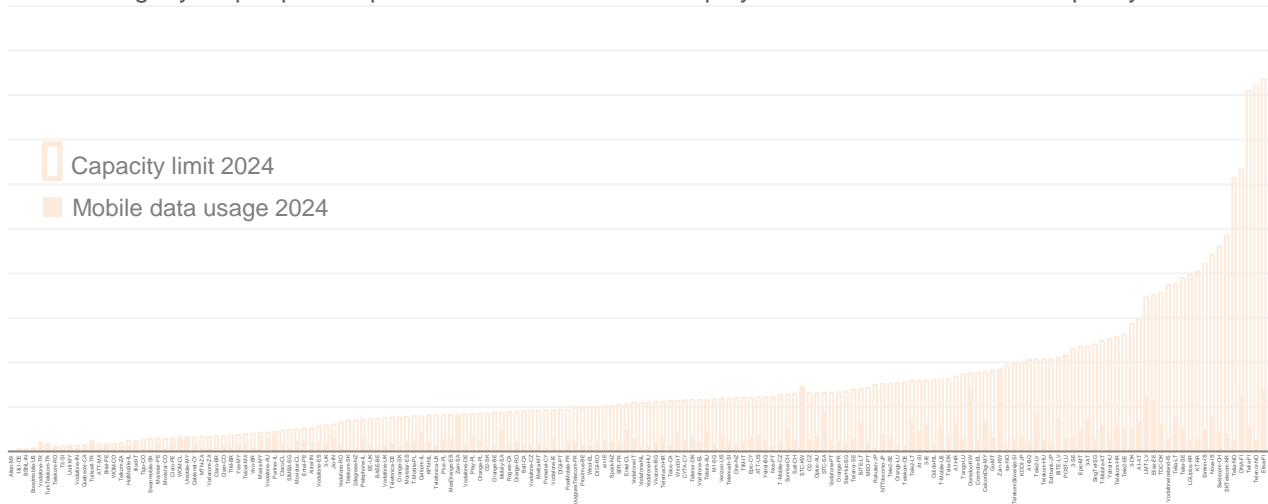


Monthly usage in gigabytes per person (population) per month that can be carried by the mobile network operator deployed radio site 5% most loaded sectors before saturation (80% sector capacity utilization).

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### Capacity limit - 2024

Gigabytes per person per month to saturate the deployed mobile radio network capacity

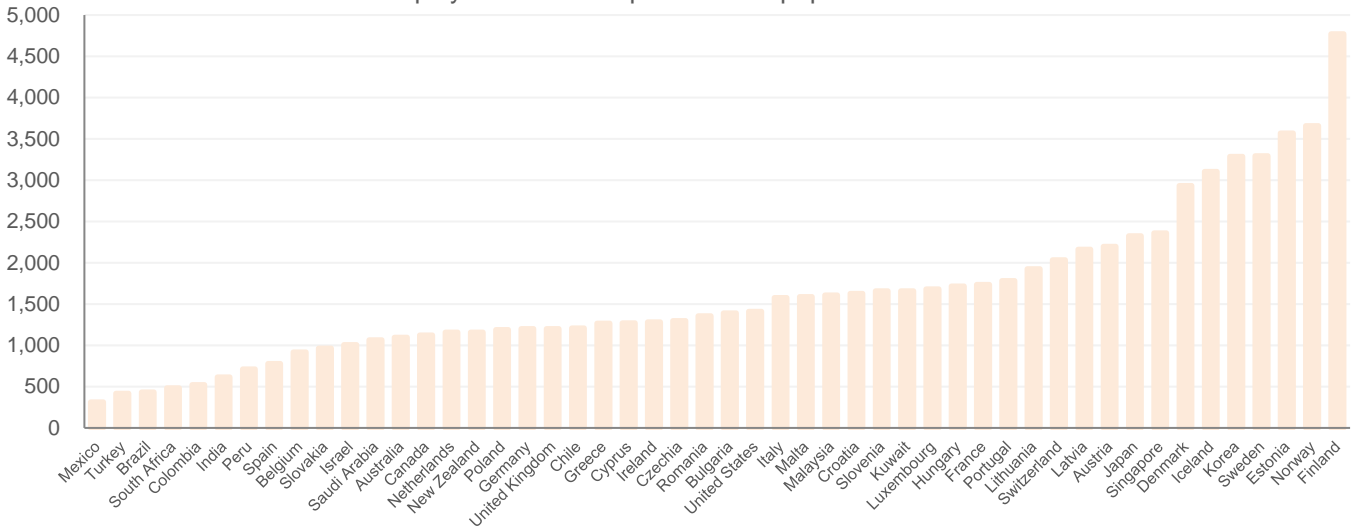


Monthly usage in gigabytes per person (population) per month that can be carried by the mobile network operator deployed radio site 5% most loaded sectors before saturation (80% sector capacity utilization).

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### Radio site density - 2024

Deployed radio sites per 1 million population

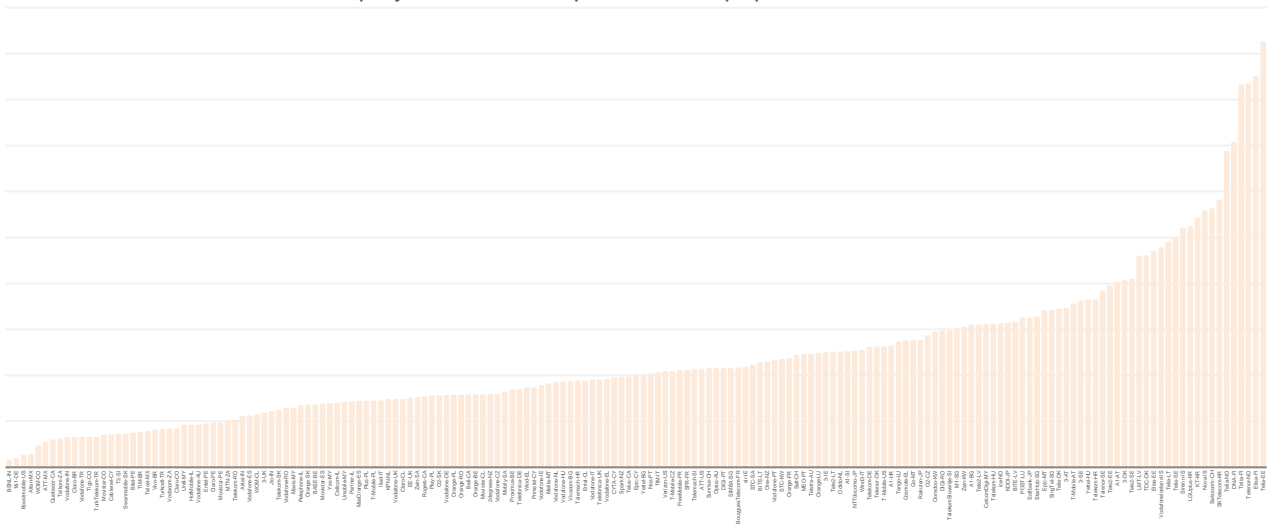


Mobile market deployed sites is the sum of the mobile network operator deployed sites. In some countries (e.g., US) the site count includes substantial amount of micro and small cells.

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### Radio site density - 2024

Deployed radio sites per 1 million population

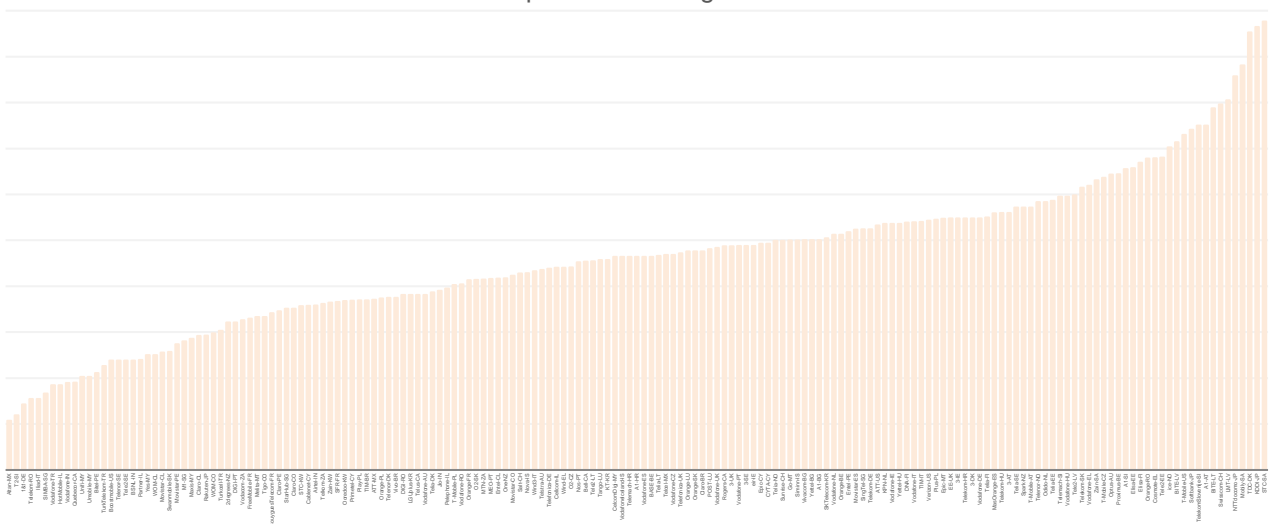


Mobile network operator deployed radio network sites. For some operators (e.g., some US operators) the site count includes substantial amount of micro and small cells.

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### Licensed spectrum holdings - 2024

Downlink FDD & SDL & TDD spectrum holdings in the 600-6000 MHz bands

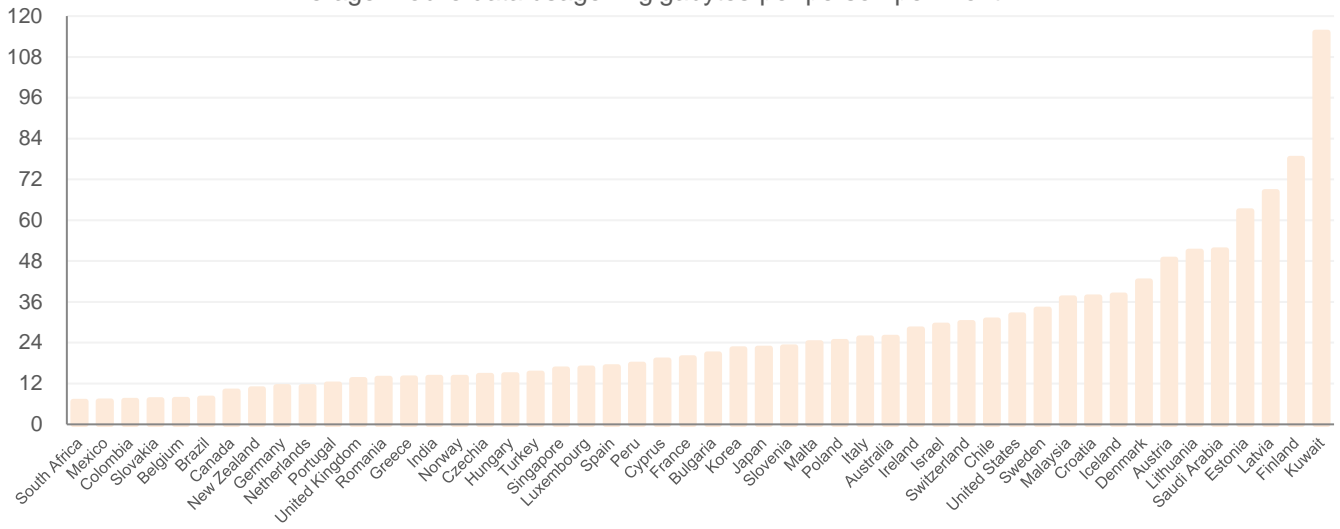


Mobile network operator licensed spectrum holdings.

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### Data usage - 2024

Average mobile data usage in gigabytes per person per month

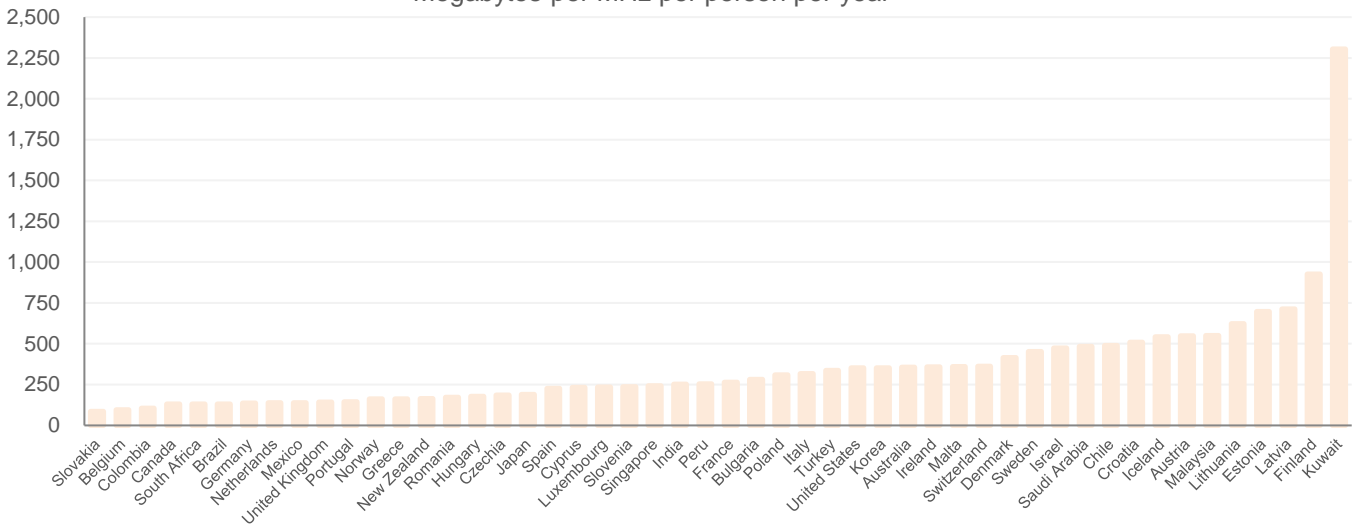


Mobile market data volume divided by country population.

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### Spectrum usage - 2024

Megabytes per MHz per person per year

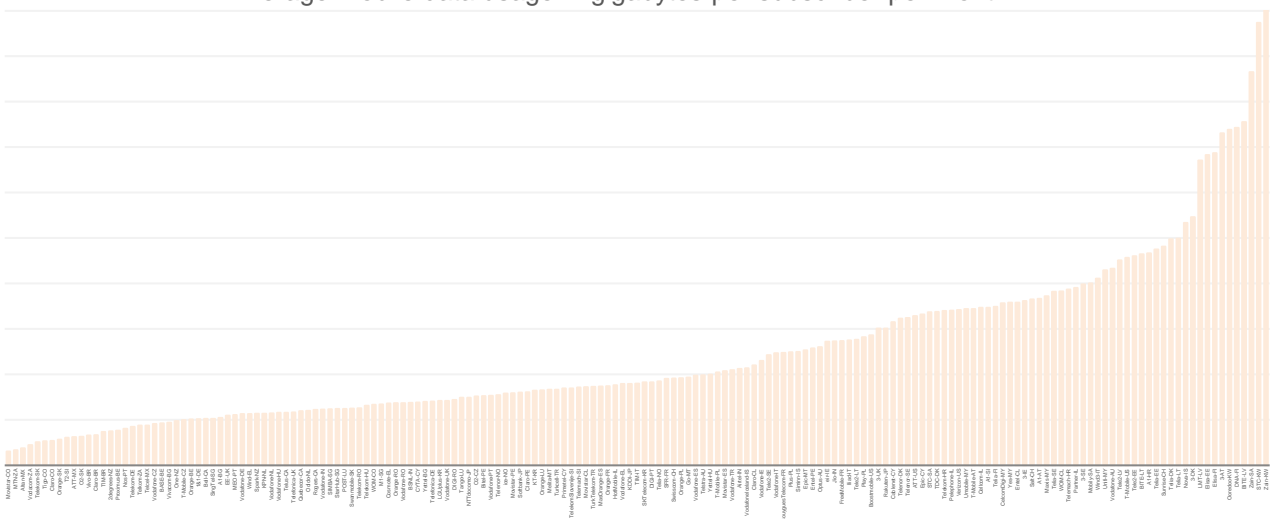


Mobile market annual mobile data volume divided by mobile market total assigned licensed spectrum holdings (2xFDD + SDL + TDD across 600 MHz - 6 GHz bands) and by the country population.

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### Data usage - 2024

Average mobile data usage in gigabytes per subscriber per month



Mobile network operator data volume divided by active mobile subscribers (active SIM cards excluding M2M).

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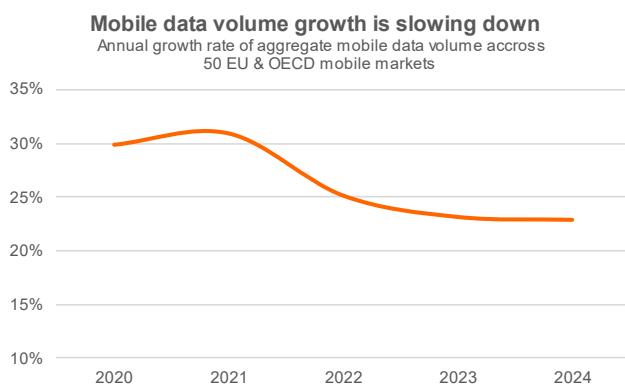
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**About Rewheel****82**

# 1 Study context and methodology overview

How many gigabytes of data in average were used by each mobile subscriber every month in 2024? Have mobile network operators run out of capacity in 2024? Which mobile network operators face capacity shortages? How many more gigabytes per user per month can mobile network operators carry by 2030?

As seen in the chart below that depicts the annual growth rate of the aggregate mobile data volume across 50 EU & OECD mobile markets – the 50 markets tracked by Rewheel – and similarly as reported by Ericsson<sup>1</sup> (global mobile traffic growth slowed to ~20% in 2024), mobile data volume growth is slowing down.



How dense are mobile networks across the 50 mobile markets and does radio site density matters? How does radio site density and spectrum holdings effects network capacity? Are there significant differences in mobile data and spectrum usage across the 50 mobile markets and among the 173 mobile network operators? In which mobile markets is spectrum put into efficient use?

This is Rewheel’s seventh annual study of mobile data usage, spectrum usage, radio network capacity utilization and capacity limits.

This seventh study tracks and analyses key mobile network competitiveness metrics such as subscriber numbers, market shares, mobile data traffic volumes, radio site density, spectrum holdings, data usage, spectrum usage, sector BusyHour throughput, radio network capacity utilization and radio network capacity limits for 173 mobile network operators that were present during 2024 in 50 European, American, Asian Pacific, Middle East and African countries.

In the unlimited mobile (wireless) broadband era where average mobile data usage is measured in hundreds of gigabytes rather than in few gigabytes per month the radio network capacity limit of mobile network operators is a key competitiveness factor – the number of mobile network operators present in mobile markets market is the most important exogenous competition driver<sup>2</sup> – that shapes the operators’ commercial mobile data strategies (e.g., unlimited vs. volume capped plans) and determines the boundaries of the operators’ mobile data prices.

As with our sixth study<sup>3</sup> that was released in December 2023 the key objective of this seventh study is to estimate how heavily were mobile networks utilized in 2024 and when – at what usage level – will operators run out of radio network capacity. The last few years operators in all but one of the 50 countries gained access to TDD 5G spectrum holdings in the sub-6 GHz bands and as a result greatly enhanced their capacity potential.

In the sixth release, we estimated the 2023 radio network capacity utilization of mobile operators in the 5% of their most loaded sectors (i.e., radio cells) and their capacity limits in 2023 and 2030 by taking into account their existing FDD, SDL and TDD sub-6 GHz licensed spectrum holdings, their reported or estimated number of radio sites including small cells, their reported or estimated 2023 mobile data traffic volume and by applying typical data traffic geo-distribution, BusyHour, spectral efficiency, carrier modulation, antenna configurations, etc.

In this seventh release, we present the 2024 radio network capacity utilization, the 2024 capacity limit and the projected 2030 capacity limit of mobile network operators in the 5% of their most loaded sectors by taking into account their existing FDD, SDL and TDD sub-6 GHz licensed spectrum holdings, their 2024 year-end deployed number of radio sites including small cells, their reported or estimated 2024 mobile data traffic volume and by applying typical data traffic geo-distribution, BusyHour, spectral efficiency, carrier configurations, modulation, antenna configurations, etc.

<sup>1</sup><https://www.ericsson.com/en/press-releases/2024/11/ericsson-mobility-report-early-movers-pursue-performance-based-business-models>  
<sup>2</sup>[https://research.rewheel.fi/downloads/The\\_state\\_of\\_mobile\\_and\\_broadband\\_pricing\\_1H2024\\_PUBLIC\\_REDACTED\\_VERSION.pdf](https://research.rewheel.fi/downloads/The_state_of_mobile_and_broadband_pricing_1H2024_PUBLIC_REDACTED_VERSION.pdf)

<sup>3</sup>[https://research.rewheel.fi/downloads/Wireless\\_market\\_operator\\_competitiveness\\_2023\\_PUBLIC.pdf](https://research.rewheel.fi/downloads/Wireless_market_operator_competitiveness_2023_PUBLIC.pdf)

Detail sector bandwidth limits, carrier configurations, spectral efficiencies, average number of sectors per site, traffic geo-distribution, BusyHour traffic share and other 4G and 5G capacity dimensioning parameters can be found in Section 3 of the full version of the report.

Please note that the 2024 radio network capacity utilization and capacity limits presented herein are the utilization and capacity limits of the 2024 operator deployed site grid. The actual radio network capacity utilization of 2024 may be substantially higher – and capacity limit may be substantially lower – for operators which have not upgraded their most loaded sectors with 5G, with their readily available spectrum and/or with advanced base station and antenna technology configurations.

mmWave spectrum has not been included in the capacity calculations presented herein. According to our understanding, by end of 2024, only a hand full of operators (e.g., Verizon US) had deploy mmWave spectrum in substantial parts of their networks. As of December 2024, 71 out of the 173 mobile network operators held mmWave spectrum in the 24-39 GHz bands.



## 2 173 mobile network operators from 50 mobile markets included in the study

The 50 mobile markets and 173 mobile network operators that were present across the 50 markets are listed in the tables below. For each mobile market we have denoted the European Union (EU27) membership, Organisation for Economic Co-operation and Development (OECD) membership, the two-letter country abbreviation code, the country name, the country population<sup>4</sup> in 2024 and the country land area<sup>5</sup>.

No.	EU27	OECD	Country code	Mobile network operator (MNO) or country name	Country population 2024	Country land area km <sup>2</sup>
1	Yes	Yes	AT	Austria	9,120,813	82,520
2	No	Yes	AU	Australia	26,713,205	7,692,020
3	Yes	Yes	BE	Belgium	11,738,763	30,280
4	Yes	No	BG	Bulgaria	6,757,689	108,560
5	No	No	BR	Brazil	211,998,573	8,358,140
6	No	Yes	CA	Canada	39,742,430	8,965,590
7	No	Yes	CH	Switzerland	8,921,981	39,516
8	No	Yes	CL	Chile	19,764,771	743,532
9	No	Yes	CO	Colombia	52,886,363	1,109,500
10	Yes	No	CY	Cyprus	1,358,282	9,240
11	Yes	Yes	CZ	Czechia	10,735,859	77,200
12	Yes	Yes	DE	Germany	84,552,242	349,380
13	Yes	Yes	DK	Denmark	5,977,412	40,000
14	Yes	Yes	EE	Estonia	1,360,546	43,470
15	Yes	Yes	EL	Greece	10,047,817	128,900
16	Yes	Yes	ES	Spain	47,910,526	499,603
17	Yes	Yes	FI	Finland	5,617,310	303,920
18	Yes	Yes	FR	France	66,548,530	547,557
19	Yes	No	HR	Croatia	3,875,325	56,590
20	Yes	Yes	HU	Hungary	9,676,135	91,260
21	Yes	Yes	IE	Ireland	5,255,017	68,890
22	No	Yes	IL	Israel	9,387,021	21,640
23	No	No	IN	India	1,450,935,791	2,973,190
24	No	Yes	IS	Iceland	393,396	100,830
25	Yes	Yes	IT	Italy	59,342,867	297,730
26	No	Yes	JP	Japan	123,753,041	364,500
27	No	Yes	KR	Korea	51,717,590	97,520
28	No	No	KW	Kuwait	4,934,507	17,820
29	Yes	No	LT	Lithuania	2,859,110	62,630
30	Yes	Yes	LU	Luxembourg	673,036	2,430
31	Yes	Yes	LV	Latvia	1,871,871	62,090
32	Yes	No	MT	Malta	539,607	320
33	No	Yes	MX	Mexico	130,861,007	1,943,950
34	No	No	MY	Malaysia	35,557,673	328,550
35	Yes	Yes	NL	Netherlands	18,228,742	33,670
36	No	Yes	NO	Norway	5,576,660	365,108
37	No	Yes	NZ	New Zealand	5,213,944	263,310
38	No	No	PE	Peru	34,217,848	1,280,000
39	Yes	Yes	PL	Poland	38,539,201	306,170
40	Yes	Yes	PT	Portugal	10,425,292	91,606
41	Yes	No	RO	Romania	19,015,088	230,080
42	No	No	SA	Saudi Arabia	33,962,757	2,149,690
43	Yes	Yes	SE	Sweden	10,606,999	407,310
44	No	No	SG	Singapore	5,832,387	718
45	Yes	Yes	SI	Slovenia	2,118,697	20,136
46	Yes	Yes	SK	Slovakia	5,506,760	48,080
47	No	Yes	TR	Turkey	87,473,805	769,630
48	No	Yes	UK	United Kingdom	69,138,192	241,930
49	No	Yes	US	United States	345,426,571	9,147,420
50	No	No	ZA	South Africa	64,007,187	1,213,090

In the table below mobile network operators have been first sorted alphabetically based on the two-letter country abbreviation code and then sorted based on their mobile market entry order.

<sup>4</sup><https://www.worldometers.info/world-population/population-by-country/>

<sup>5</sup><https://databank.worldbank.org/source/world-development-indicators/Series/AG.LND.TOTL.K2>



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The entire data set including the formulas we used to estimate the radio network capacity utilization and capacity limits are available for purchase in spreadsheet Excel format. Please contact at [research@rewheel.fi](mailto:research@rewheel.fi) or at +358 44 203 2339 for a quote.

### 3 Mobile network capacity modelling methodology

Below we present a summary of the modelling methodology and input assumptions we used in this study to estimate the radio network capacity utilization in 2024 and the capacity limits in 2024 and 2030. The detailed methodology description can be found in Section 3 of our “*Wireless market and operator competitiveness – 2023*” study<sup>6</sup>.

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<sup>6</sup>[https://research.rewheel.fi/downloads/Wireless\\_market\\_operator\\_competitiveness\\_2023\\_PUBLIC.pdf](https://research.rewheel.fi/downloads/Wireless_market_operator_competitiveness_2023_PUBLIC.pdf)

## 4 Mobile network operator and mobile market competitiveness metrics

In the section below we present the mobile network operator and mobile market competitiveness metrics. For each metric we present charts and tables where the 173 mobile network operators and the 50 mobile markets are ranked based on their performance and where relevant we complement the charts and table rankings with comments and insights.

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Rank 1-50	Country name	Mobile subscriber population share - 2024 Mobile market subscriber share of country's population (active SIM cards excl. M2M)
1	South Africa	177.7%
2	Singapore	174.3%
3	Korea	168.9%
4	Japan	167.5%
5	Colombia	166.4%
6	Lithuania	163.2%
7	Finland	162.3%
8	Kuwait	160.1%
9	Bulgaria	154.7%
10	Czechia	154.6%
11	Luxembourg	147.8%
12	Iceland	143.6%
13	Estonia	143.5%
14	Slovakia	143.5%
15	Latvia	142.4%
16	Saudi Arabia	141.6%
17	Malta	141.3%
18	Austria	138.5%
19	Chile	135.2%
20	Poland	132.0%
21	Sweden	131.8%
22	Slovenia	131.5%
23	Portugal	130.9%
24	New Zealand	130.4%
25	Denmark	130.4%
26	Malaysia	128.9%
27	Switzerland	125.5%
28	Australia	124.5%
29	Germany	124.2%
30	Romania	122.6%
31	Hungary	122.4%
32	Peru	122.0%
33	Netherlands	119.6%
34	Croatia	118.7%
35	Greece	118.4%
36	Ireland	118.1%
37	France	114.3%
38	Italy	114.3%
39	United Kingdom	111.9%
40	Spain	111.6%
41	Brazil	110.8%
42	Israel	110.2%
43	Mexico	109.6%
44	Canada	106.8%
45	Cyprus	106.8%
46	United States	106.7%
47	Turkey	104.1%
48	Belgium	103.8%
49	Norway	103.4%
50	India	80.2%

Rank 1-173	Mobile network operator Name and country code	Mobile subscribers - 2024 Active SIM cards excl. M2M	Rank 1-173	Mobile network operator Name and country code	Mobile subscribers - 2024 Active SIM cards excl. M2M
1	Jio-IN	471,700,299	88	Telekom-HU	
2	Airtel-IN		89	T-Mobile-AT	
3	Vodafone-IN		90	SingTel-SG	
4	T-Mobile-US		91	Telia-SE	
5	Verizon-US		92	Vodafone-CZ	
6	ATT-US		93	Vodafone-PT	
7	BSNL-IN		94	Nos-PT	
8	NTTdocomo-JP		95	Quebecor-CA	
9	Claro-BR		96	Yes-MY	
10	Vivo-BR		97	Tele2-SE	
11	Telcel-MX		98	A1-BG	
12	KDDI-JP		99	Yettel-HU	
13	TIM-BR		100	Orange-BE	
14	MTN-ZA		101	Vodafone-EL	
15	ATT-MX		102	Cellcom-IL	
16	Vodacom-ZA		103	Elisa-FI	
17	Softbank-JP		104	Vivacom-BG	
18	Claro-CO		105	TDC-DK	
19	Turkcell-TR		106	Yettel-BG	
20	SKTelecom-KR		107	Vodafone-HU	
21	Telekom-DE		108	Spark-NZ	
22	Telefonica-DE		109	Telenor-SE	
23	Vodafone-DE		110	Ooredoo-KW	
24	LGUplus-KR		111	BASE-BE	
25	TurkTelekom-TR		112	Sunrise-CH	
26	STC-SA		113	DNA-FI	
27	Vodafone-TR		114	Wind-EL	
28	KT-KR		115	Telekom-RO	
29	Orange-FR		116	3-AT	
30	Movistar-CO		117	Telia-FI	
31	EE-UK		118	Zain-KW	
32	MasOrange-ES		119	3-SE	
33	Telefonica-UK		120	3-IE	
34	Telkom-ZA		121	Partner-IL	
35	Vodafone-IT		122	Telenor-NO	
36	CelcomDigi-MY		123	Pelephone-IL	
37	SFR-FR		124	Telekom-SK	
38	Vodafone-UK		125	One-NZ	
39	Tigo-CO		126	Orange-SK	
40	Wind3-IT		127	O2-SK	
41	TIM-IT		128	STC-KW	
42	Telstra-AU		129	M1-SG	
43	Movistar-ES		130	StarHub-SG	
44	BouyguesTelecom-FR		131	Telia-NO	
45	FreeMobile-FR		132	Tele2-LT	
46	Altan-MX		133	Vodafone-IE	
47	Orange-PL		134	Salt-CH	
48	Vodafone-ES		135	Telekom-HR	
49	Telus-CA		136	Unifi-MY	
50	Play-PL		137	Telenor-DK	
51	Bell-CA		138	A1-HR	
52	T-Mobile-PL		139	3-DK	
53	Claro-PE		140	HotMobile-IL	
54	1&1-DE		141	eir-IE	
55	Mobily-SA		142	2degrees-NZ	
56	Rogers-CA		143	Telia-LT	
57	Movistar-PE		144	Telia-DK	
58	Iliad-IT		145	BITE-LT	
59	3-UK		146	Tele2-LV	
60	Plus-PL		147	SIMBA-SG	
61	Optus-AU		148	LMT-LV	
62	Umobile-MY		149	TelekomSlovenije-SI	
63	Maxis-MY		150	ice-NO	
64	Entel-PE		151	Telemach-HR	
65	KPN-NL		152	A1-SI	
66	Zain-SA		153	Telia-EE	
67	Entel-CL		154	Telemach-SI	
68	Orange-RO		155	Elisa-EE	
69	Bitel-PE		156	CYTA-CY	
70	Movistar-CL		157	Swanmobile-SK	
71	Rakuten-JP		158	BITE-LV	
72	Boostmobile-US		159	POST-LU	
73	Odidoo-NL		160	Tele2-EE	
74	T-Mobile-CZ		161	Epic-CY	
75	Vodafone-RO		162	Tango-LU	
76	Swisscom-CH		163	Epic-MT	
77	WOM-CO		164	Go-MT	
78	DIGI-RO		165	DIGI-PT	
79	O2-CZ		166	Siminn-IS	
80	Proximus-BE		167	Cablenet-CY	
81	Vodafone-NL		168	T2-SI	
82	Vodafone-AU		169	Nova-IS	
83	WOM-CL		170	Melita-MT	
84	Cosmote-EL		171	Orange-LU	
85	Claro-CL		172	Primetel-CY	
86	MEO-PT		173	VodafoneIceland-IS	150,000
87	A1-AT				

Rank 1-173	Mobile network operator Name and country code	Mobile network operator subscriber share - 2024 Active SIM cards excl. M2M	Rank 1-173	Mobile network operator Name and country code	Mobile network operator subscriber share - 2024 Active SIM cards excl. M2M
1	Telcel-MX	58.1%	88	O2-SK	
2	Swisscom-CH		89	STC-KW	
3	STC-SA		90	Telia-LT	
4	Telstra-AU		91	KT-KR	
5	POST-LU		92	Movistar-CL	
6	CYTA-CY		93	Movistar-PE	
7	Cosmote-EL		94	Vodafone-DE	
8	Proximus-BE		95	Epic-CY	
9	Tele2-LT		96	Rogers-CA	
10	SingTel-SG		97	Vodafone-TR	
11	MTN-ZA		98	Movistar-CO	
12	Telenor-NO		99	Tele2-SE	
13	Claro-CO		100	Orange-PL	
14	MasOrange-ES		101	Vodafone-RO	
15	Telekom-HR		102	VodafoneIceland-IS	
16	Spark-NZ		103	Telemach-SI	
17	NTTdocomo-JP		104	TIM-BR	
18	CelcomDigi-MY		105	Wind3-IT	
19	Telekom-HU		106	TIM-IT	
20	3-IE		107	Play-PL	
21	Turkcell-TR		108	SFR-FR	
22	Epic-MT		109	Vodafone-HU	
23	KPN-NL		110	DIGI-RO	
24	TDC-DK		111	Sunrise-CH	
25	Siminn-IS		112	Vodafone-NL	
26	A1-AT		113	Vodafone-CZ	
27	Jio-IN		114	BITE-LT	
28	Telia-EE		115	Partner-IL	
29	Tele2-LV		116	Mobily-SA	
30	T-Mobile-CZ		117	Pelephone-IL	
31	LMT-LV		118	Vodafone-ES	
32	SKTelecom-KR		119	T-Mobile-PL	
33	Elisa-FI		120	eir-IE	
34	MEO-PT		121	Vodafone-UK	
35	Claro-BR		122	Wind-EL	
36	Telia-NO		123	Tele2-EE	
37	T-Mobile-AT		124	BASE-BE	
38	Ooredoo-KW		125	Melita-MT	
39	A1-BG		126	M1-SG	
40	Vivo-BR		127	Entel-PE	
41	One-NZ		128	3-AT	
42	Elisa-EE		129	Umobile-MY	
43	Vodacom-ZA		130	StarHub-SG	
44	TelekomSlovenije-SI		131	Telenor-DK	
45	Tango-LU		132	Maxis-MY	
46	A1-HR		133	Plus-PL	
47	Orange-RO		134	Telenor-SE	
48	O2-CZ		135	3-DK	
49	Go-MT		136	BouyguesTelecom-FR	
50	T-Mobile-US		137	BITE-LV	
51	Cellcom-IL		138	WOM-CL	
52	Zain-KW		139	Tigo-CO	
53	Vodafone-IE		140	Telemach-HR	
54	Orange-FR		141	FreeMobile-FR	
55	Airtel-IN		142	Claro-CL	
56	KDDI-JP		143	2degrees-NZ	
57	Odido-NL		144	Softbank-JP	
58	Vivacom-BG		145	3-SE	
59	Telia-SE		146	Bitel-PE	
60	Verizon-US		147	Zain-SA	
61	LGUplus-KR		148	Telkom-ZA	
62	Nova-IS		149	Vodafone-IN	
63	EE-UK		150	Salt-CH	
64	Telekom-SK		151	ice-NO	
65	Optus-AU		152	Iliad-IT	
66	ATT-US		153	Vodafone-AU	
67	ATT-MX		154	Orange-LU	
68	Telus-CA		155	Telia-DK	
69	DNA-FI		156	HotMobile-IL	
70	Yettel-HU		157	3-UK	
71	Bell-CA		158	Cablenet-CY	
72	Entel-CL		159	Telekom-RO	
73	Yettel-BG		160	1&1-DE	
74	Vodafone-IT		161	Primetel-CY	
75	A1-SI		162	Altan-MX	
76	Telefonica-UK		163	SIMBA-SG	
77	Vodafone-PT		164	Quebecor-CA	
78	Telia-FI		165	Yes-MY	
79	Orange-BE		166	Swanmobile-SK	
80	Orange-SK		167	BSNL-IN	
81	Claro-PE		168	T2-SI	
82	Vodafone-EL		169	WOM-CO	
83	Nos-PT		170	Unifi-MY	
84	Telekom-DE		171	Rakuten-JP	
85	Movistar-ES		172	Boostmobile-US	
86	Telefonica-DE		173	DIGI-PT	1.9%
87	TurkTelekom-TR				

Rank 1-173	Mobile network operator Name and country code	Mobile data volume - 2024 Annual volume in terabytes	Rank 1-173	Mobile network operator Name and country code	Mobile data volume - 2024 Annual volume in terabytes
1	Jio-IN	120,669,000	88	Partner-IL	
2	Airtel-IN		89	Telia-FI	
3	T-Mobile-US		90	Tigo-CO	
4	Verizon-US		91	Telenor-SE	
5	ATT-US		92	3-IE	
6	Vodafone-IN		93	Tele2-SE	
7	NTTdocomo-JP		94	Pelephone-IL	
8	BSNL-IN		95	3-DK	
9	KDDI-JP		96	O2-CZ	
10	STC-SA		97	Vodafone-RO	
11	Zain-SA		98	DIGI-RO	
12	Wind3-IT		99	Unifi-MY	
13	Telcel-MX		100	Odido-NL	
14	CelcomDigi-MY		101	WOM-CO	
15	Softbank-JP		102	A1-HR	
16	Turkcell-TR		103	Salt-CH	
17	SKTelecom-KR		104	Movistar-CO	
18	Claro-BR		105	Cosmote-EL	
19	Vivo-BR		106	Yettel-HU	
20	Vodafone-TR		107	LMT-LV	
21	Vodafone-IT		108	Telekom-HR	
22	Mobily-SA		109	Telia-LT	
23	TurkTelekom-TR		110	Telekom-HU	
24	TIM-BR		111	T-Mobile-CZ	
25	Telefonica-DE		112	Vodafone-EL	
26	Orange-FR		113	Vodafone-NL	
27	FreeMobile-FR		114	Vodafone-PT	
28	MasOrange-ES		115	Telia-DK	
29	KT-KR		116	Tele2-LT	
30	LGUplus-KR		117	MEO-PT	
31	BouyguesTelecom-FR		118	Altan-MX	
32	Play-PL		119	BITE-LT	
33	SFR-FR		120	Telenor-DK	
34	Maxis-MY		121	Quebecor-CA	
35	Umobile-MY		122	Elisa-EE	
36	Telstra-AU		123	#N/A	
37	Vodafone-DE		124	Vodafone-IE	
38	Movistar-ES		125	SingTel-SG	
39	3-UK		126	Yettel-BG	
40	TIM-IT		127	Proximus-BE	
41	Iliad-IT		128	BITE-LV	
42	Entel-CL		129	Telenor-NO	
43	ATT-MX		130	eir-IE	
44	Telefonica-UK		131	Telia-NO	
45	Optus-AU		132	A1-BG	
46	Zain-KW		133	Vodafone-CZ	
47	Orange-PL		134	Orange-BE	
48	Plus-PL		135	Telia-EE	
49	EE-UK		136	Telemach-HR	
50	Telekom-DE		137	Vodafone-HU	
51	Vodafone-ES		138	Telekom-RO	
52	Vodafone-UK		139	Spark-NZ	
53	T-Mobile-PL		140	Nos-PT	
54	Entel-PE		141	Wind-EL	
55	Elisa-FI		142	Vivacom-BG	
56	Vodafone-AU		143	M1-SG	
57	Rakuten-JP		144	A1-SI	
58	STC-KW		145	HotMobile-IL	
59	Ooredoo-KW		146	StarHub-SG	
60	Claro-CO		147	BASE-BE	
61	DNA-FI		148	One-NZ	
62	WOM-CL		149	Tele2-EE	
63	Boostmobile-US		150	TelekomSlovenije-SI	
64	Claro-PE		151	ice-NO	
65	3-AT		152	O2-SK	
66	Movistar-PE		153	Orange-SK	
67	A1-AT		154	Epic-CY	
68	Telkom-ZA		155	SIMBA-SG	
69	Vodacom-ZA		156	Telekom-SK	
70	MTN-ZA		157	Telemach-SI	
71	Telia-SE		158	2degrees-NZ	
72	T-Mobile-AT		159	Nova-IS	
73	Telus-CA		160	CYTA-CY	
74	Rogers-CA		161	Swanmobile-SK	
75	Yes-MY		162	Epic-MT	
76	Sunrise-CH		163	Cablenet-CY	
77	Bell-CA		164	POST-LU	
78	Movistar-CL		165	Siminn-IS	
79	1&1-DE		166	Tango-LU	
80	Cellcom-IL		167	Go-MT	
81	Bitel-PE		168	DIGI-PT	
82	Swisscom-CH		169	VodafoneIceland-IS	
83	Claro-CL		170	Melita-MT	
84	Orange-RO		171	Primetel-CY	
85	TDC-DK		172	Orange-LU	
86	3-SE		173	T2-SI	11,300
87	KPN-NL				



Rank 1-173	Mobile network operator Name and country code	Mobile data volume share - 2024 Annual mobile data volume share	Rank 1-173	Mobile network operator Name and country code	Mobile data volume share - 2024 Annual mobile data volume share
1	Telcel-MX	68.4%	88	TIM-BR	
2	3-IE		89	TurkTelekom-TR	
3	Jio-IN		90	3-DK	
4	Nova-IS		91	TelekomSlovenije-SI	
5	Epic-MT		92	Bell-CA	
6	Spark-NZ		93	Vodafone-AU	
7	A1-SI		94	WOM-CL	
8	O2-CZ		95	LGUplus-KR	
9	Claro-CO		96	Orange-SK	
10	Elisa-EE		97	ATT-US	
11	LMT-LV		98	Vivacom-BG	
12	Elisa-FI		99	Vodafone-IT	
13	Cosmote-EL		100	Vodafone-RO	
14	SKTelecom-KR		101	DIGI-RO	
15	CelcomDigi-MY		102	Claro-PE	
16	POST-LU		103	Orange-FR	
17	Telenor-NO		104	Vodafone-ES	
18	Epic-CY		105	ATT-MX	
19	Yettel-HU		106	M1-SG	
20	A1-HR		107	BITE-LV	
21	T-Mobile-US		108	Vodafone-IE	
22	STC-SA		109	Pelephone-IL	
23	Telia-NO		110	FreeMobile-FR	
24	Sunrise-CH		111	Telekom-SK	
25	KPN-NL		112	Vodafone-NL	
26	MasOrange-ES		113	BASE-BE	
27	Vodafone-PT		114	Movistar-PE	
28	Proximus-BE		115	Telefonica-UK	
29	SingTel-SG		116	BouyguesTelecom-FR	
30	Telstra-AU		117	EE-UK	
31	NTTdocomo-JP		118	Vodafone-UK	
32	Entel-CL		119	StarHub-SG	
33	Turkcell-TR		120	Orange-PL	
34	Wind3-IT		121	Plus-PL	
35	Yettel-BG		122	SFR-FR	
36	DNA-FI		123	Telekom-DE	
37	Zain-KW		124	3-SE	
38	Tango-LU		125	Mobily-SA	
39	Telekom-HU		126	Salt-CH	
40	Telekom-HR		127	Maxis-MY	
41	Vodafone-EL		128	eir-IE	
42	Telefonica-DE		129	T-Mobile-PL	
43	Telia-LT		130	Telemach-SI	
44	Claro-BR		131	Nos-PT	
45	3-AT		132	Umobile-MY	
46	Telia-SE		133	Tigo-CO	
47	Swisscom-CH		134	Telenor-SE	
48	Cellcom-IL		135	Tele2-SE	
49	MEO-PT		136	Cablenet-CY	
50	Zain-SA		137	Tele2-EE	
51	KDDI-JP		138	Vodafone-HU	
52	One-NZ		139	Telemach-HR	
53	Orange-BE		140	Vodafone-CZ	
54	Telia-EE		141	Telia-DK	
55	Orange-RO		142	Orange-LU	
56	TDC-DK		143	Wind-EL	
57	Vivo-BR		144	Softbank-JP	
58	Telkom-ZA		145	Melita-MT	
59	A1-BG		146	Telia-FI	
60	T-Mobile-CZ		147	Movistar-CL	
61	A1-AT		148	WOM-CO	
62	Vodacom-ZA		149	Swanmobile-SK	
63	Odido-NL		150	VodafoneIceland-IS	
64	Airtel-IN		151	Telenor-DK	
65	Movistar-ES		152	TIM-IT	
66	Vodafone-TR		153	Iliad-IT	
67	Tele2-LT		154	ice-NO	
68	Go-MT		155	Movistar-CO	
69	Telus-CA		156	Bitel-PE	
70	Entel-PE		157	Claro-CL	
71	Optus-AU		158	2degrees-NZ	
72	Play-PL		159	SIMBA-SG	
73	MTN-ZA		160	Telekom-RO	
74	STC-KW		161	1&1-DE	
75	Siminn-IS		162	Vodafone-IN	
76	BITE-LT		163	Quebecor-CA	
77	Ooredoo-KW		164	Yes-MY	
78	Tele2-LV		165	Primetel-CY	
79	Partner-IL		166	HotMobile-IL	
80	Rogers-CA		167	Rakuten-JP	
81	CYTA-CY		168	Altan-MX	
82	O2-SK		169	Unifi-MY	
83	T-Mobile-AT		170	BSNL-IN	
84	3-UK		171	DIGI-PT	
85	Verizon-US		172	T2-SI	
86	KT-KR		173	Boostmobile-US	1.5%
87	Vodafone-DE				

Rank 1-173	Mobile network operator Name and country code	Data usage - 2024 GB/subscriber/month	Rank 1-173	Mobile network operator Name and country code	Data usage - 2024 GB/subscriber/month
1	Zain-KW	80.8	88	KDDI-JP	
2	STC-KW		89	Vodafone-EL	
3	Zain-SA		90	HotMobile-IL	
4	BITE-LV		91	Orange-FR	
5	DNA-FI		92	MasOrange-ES	
6	Ooredoo-KW		93	TurkTelekom-TR	
7	3-AT		94	Movistar-CL	
8	Elisa-FI		95	Telemach-SI	
9	Elisa-EE		96	TelekomSlovenije-SI	
10	LMT-LV		97	Primetel-CY	
11	3-DK		98	Turkcell-TR	
12	Nova-IS		99	Melita-MT	
13	Telia-LT		100	Orange-LU	
14	Telia-DK		101	KT-KR	
15	Sunrise-CH		102	Claro-PE	
16	Telia-EE		103	Softbank-JP	
17	A1-HR		104	Movistar-PE	
18	BITE-LT		105	ice-NO	
19	Tele2-EE		106	Telenor-NO	
20	T-Mobile-US		107	Vodafone-PT	
21	Tele2-LV		108	Bitel-PE	
22	Vodafone-AU		109	O2-CZ	
23	Unifi-MY		110	NTTdocomo-JP	
24	Wind3-IT		111	Tango-LU	
25	Mobily-SA		112	DIGI-RO	
26	3-SE		113	Vodafone-UK	
27	Partner-IL		114	LGUplus-KR	
28	Telemach-HR		115	Telefonica-DE	
29	WOM-CL		116	Yettel-BG	
30	Telia-SE		117	CYTA-CY	
31	Maxis-MY		118	BSNL-IN	
32	A1-AT		119	Vodafone-RO	
33	Salt-CH		120	Orange-RO	
34	3-IE		121	Cosmote-EL	
35	Entel-CL		122	M1-SG	
36	Yes-MY		123	WOM-CO	
37	CelcomDigi-MY		124	Telekom-HU	
38	Telia-FI		125	Telekom-RO	
39	A1-SI		126	Swanmobile-SK	
40	Cellcom-IL		127	POST-LU	
41	T-Mobile-AT		128	StarHub-SG	
42	Umobile-MY		129	SIMBA-SG	
43	Verizon-US		130	Vodafone-IN	
44	Pelephone-IL		131	Rogers-CA	
45	Telekom-HR		132	Odido-NL	
46	TDC-DK		133	Quebecor-CA	
47	STC-SA		134	Telefonica-UK	
48	Epic-CY		135	Telus-CA	
49	ATT-US		136	Vodafone-HU	
50	Telenor-SE		137	Vodafone-NL	
51	Telenor-DK		138	KPN-NL	
52	Cablenet-CY		139	Spark-NZ	
53	Rakuten-JP		140	Wind-EL	
54	3-UK		141	Vodafone-DE	
55	Boostmobile-US		142	MEO-PT	
56	Play-PL		143	EE-UK	
57	Tele2-LT		144	A1-BG	
58	Iliad-IT		145	SingTel-SG	
59	FreeMobile-FR		146	Bell-CA	
60	Jio-IN		147	1&1-DE	
61	eir-IE		148	Orange-BE	
62	Optus-AU		149	T-Mobile-CZ	
63	Entel-PE		150	One-NZ	
64	Epic-MT		151	Vivacom-BG	
65	Siminn-IS		152	BASE-BE	
66	Plus-PL		153	Vodafone-CZ	
67	BouyguesTelecom-FR		154	Telcel-MX	
68	Vodafone-IT		155	Telkom-ZA	
69	Tele2-SE		156	Telekom-DE	
70	Vodafone-IE		157	Nos-PT	
71	Claro-CL		158	Proximus-BE	
72	VodafoneIceland-IS		159	2degrees-NZ	
73	Airtel-IN		160	TIM-BR	
74	Vodafone-TR		161	Claro-BR	
75	Movistar-ES		162	Vivo-BR	
76	T-Mobile-PL		163	O2-SK	
77	Yettel-HU		164	ATT-MX	
78	Telstra-AU		165	T2-SI	
79	Vodafone-ES		166	Orange-SK	
80	Go-MT		167	Claro-CO	
81	Orange-PL		168	Tigo-CO	
82	Swisscom-CH		169	Telekom-SK	
83	SFR-FR		170	Vodacom-ZA	
84	Telia-NO		171	Altan-MX	
85	DIGI-PT		172	MTN-ZA	
86	SKTelecom-KR		173	Movistar-CO	2.4
87	TIM-IT				

Rank 1-173	Mobile network operator Name and country code	Radio sites - 2024 Deployed radio sites (macro, micro & small cells)	Rank 1-173	Mobile network operator Name and country code	Radio sites - 2024 Deployed radio sites (macro, micro & small cells)
1	Jio-IN	350,000	88	O2-CZ	
2	Airtel-IN		89	Telekom-HU	
3	Vodafone-IN		90	Orange-RO	
4	T-Mobile-US		91	Claro-CL	
5	ATT-US		92	Cosmote-EL	
6	Verizon-US		93	TDC-DK	
7	Softbank-JP		94	KPN-NL	
8	KDDI-JP		95	MEO-PT	
9	Rakuten-JP		96	Bitel-PE	
10	NTTdocomo-JP		97	Vodafone-AU	
11	SKTelecom-KR		98	3-DK	
12	KT-KR		99	Vodafone-RO	
13	LGUplus-KR		100	Vodafone-PT	
14	Telekom-DE		101	WOM-CO	
15	BSNL-IN		102	Quebecor-CA	
16	Vivo-BR		103	WOM-CL	
17	TIM-BR		104	DIGI-PT	
18	Orange-FR		105	T-Mobile-CZ	
19	Wind3-IT		106	Salt-CH	
20	BouyguesTelecom-FR		107	Nos-PT	
21	Telefonica-DE		108	A1-BG	
22	SFR-FR		109	Telia-DK	
23	FreeMobile-FR		110	SingTel-SG	
24	Claro-BR		111	Proximus-BE	
25	Vodafone-DE		112	Telekom-RO	
26	Telefonica-UK		113	Vodafone-EL	
27	TIM-IT		114	Sunrise-CH	
28	Vodafone-IT		115	StarHub-SG	
29	CelcomDigi-MY		116	Orange-BE	
30	EE-UK		117	Vodafone-HU	
31	Vodafone-UK		118	M1-SG	
32	Telcel-MX		119	ice-NO	
33	Boostmobile-US		120	Wind-EL	
34	Iliad-IT		121	Vodafone-CZ	
35	3-UK		122	BASE-BE	
36	Telus-CA		123	Telenor-DK	
37	STC-SA		124	1&1-DE	
38	Turkcell-TR		125	Zain-KW	
39	ATT-MX		126	Ooredoo-KW	
40	MasOrange-ES		127	Telekom-HR	
41	Movistar-ES		128	Telia-LT	
42	Telstra-AU		129	Yettel-BG	
43	MTN-ZA		130	Partner-IL	
44	Bell-CA		131	3-IE	
45	Rogers-CA		132	Cellcom-IL	
46	Orange-PL		133	Vivacom-BG	
47	Play-PL		134	Telia-EE	
48	Optus-AU		135	Pelephone-IL	
49	TurkTelekom-TR		136	SIMBA-SG	
50	Vodafone-TR		137	One-NZ	
51	DIGI-RO		138	STC-KW	
52	T-Mobile-PL		139	eir-IE	
53	Plus-PL		140	A1-HR	
54	Mobily-SA		141	Spark-NZ	
55	Vodafone-ES		142	Vodafone-IE	
56	Telia-SE		143	LMT-LV	
57	Vodacom-ZA		144	O2-SK	
58	Zain-SA		145	HotMobile-IL	
59	Swisscom-CH		146	2degrees-NZ	
60	Umobile-MY		147	Orange-SK	
61	Yes-MY		148	Telemach-HR	
62	Elisa-FI		149	Tele2-LT	
63	Telia-FI		150	Telekom-SK	
64	Telenor-NO		151	BITE-LT	
65	Odido-NL		152	Elisa-EE	
66	Maxis-MY		153	TelekomSlovenije-SI	
67	Claro-CO		154	BITE-LV	
68	Tele2-SE		155	Tele2-LV	
69	Telenor-SE		156	Tele2-EE	
70	DNA-FI		157	A1-SI	
71	Telkom-ZA		158	Telemach-SI	
72	3-SE		159	Swanmobile-SK	
73	Telia-NO		160	Epic-CY	
74	Entel-CL		161	CYTA-CY	
75	A1-AT		162	Primetel-CY	
76	Movistar-CO		163	Nova-IS	
77	Yettel-HU		164	POST-LU	
78	Altan-MX		165	Siminn-IS	
79	Tigo-CO		166	VodafoneIceland-IS	
80	Vodafone-NL		167	Tango-LU	
81	Movistar-PE		168	Epic-MT	
82	Claro-PE		169	Orange-LU	
83	T-Mobile-AT		170	T2-SI	
84	Unifi-MY		171	Go-MT	
85	Entel-PE		172	Melita-MT	
86	3-AT		173	Cablenet-CY	189
87	Movistar-CL				

Rank 1-173	Mobile network operator Name and country code	Share of licensed spectrum - 2024 Operator share of market uplink & downlink FDD & SDL & TDD spectrum in the 600-6000 MHz bands	Rank 1-173	Mobile network operator Name and country code	Share of licensed spectrum - 2024 Operator share of market uplink & downlink FDD & SDL & TDD spectrum in the 600-6000 MHz bands
1	Telcel-MX	48.5%	88	Epic-CY	
2	Swisscom-CH		89	O2-CZ	
3	BITE-LT		90	Airtel-IN	
4	Turkcell-TR		91	Nova-IS	
5	Spark-NZ		92	Vivo-BR	
6	Claro-BR		93	Tele2-LV	
7	MTN-ZA		94	Vodafone-PT	
8	TDC-DK		95	Bell-CA	
9	Epic-MT		96	Telia-LT	
10	STC-SA		97	TIM-BR	
11	A1-AT		98	Vodacom-ZA	
12	Optus-AU		99	Sunrise-CH	
13	Proximus-BE		100	3-AT	
14	SingTel-SG		101	BASE-BE	
15	Telia-SE		102	Orange-SK	
16	T-Mobile-CZ		103	Movistar-CO	
17	Cosmote-EL		104	LGUplus-KR	
18	Go-MT		105	Orange-FR	
19	SKTelecom-KR		106	3-SE	
20	Orange-RO		107	eir-IE	
21	LMT-LV		108	Tele2-LT	
22	Telekom-HR		109	Nos-PT	
23	3-IE		110	Telefonica-DE	
24	Elisa-FI		111	StarHub-SG	
25	Odido-NL		112	Wind3-IT	
26	ATT-MX		113	Salt-CH	
27	Siminn-IS		114	Softbank-JP	
28	TelekomSlovenije-SI		115	Verizon-US	
29	CelcomDigi-MY		116	Claro-CO	
30	MasOrange-ES		117	Wind-EL	
31	Entel-PE		118	Telemach-SI	
32	Cellcom-IL		119	Zain-SA	
33	Telenor-NO		120	Vodafone-AU	
34	Telekom-SK		121	MEO-PT	
35	Vodafone-EL		122	Claro-PE	
36	Vodafone-IE		123	ATT-US	
37	T-Mobile-US		124	Vodafone-TR	
38	Telekom-HU		125	Claro-CL	
39	Vodafone-HU		126	3-DK	
40	Telstra-AU		127	SFR-FR	
41	ice-NO		128	Vodafone-RO	
42	Elisa-EE		129	T-Mobile-PL	
43	Ooredoo-KW		130	Tigo-CO	
44	POST-LU		131	2degrees-NZ	
45	Mobily-SA		132	Telus-CA	
46	One-NZ		133	Vodafone-UK	
47	VodafoneIceland-IS		134	BouyguesTelecom-FR	
48	Movistar-ES		135	O2-SK	
49	Rogers-CA		136	DIGI-RO	
50	Tele2-EE		137	FreeMobile-FR	
51	Zain-KW		138	M1-SG	
52	BITE-LV		139	Maxis-MY	
53	Orange-LU		140	Telefonica-UK	
54	A1-BG		141	Orange-PL	
55	Yettel-BG		142	3-UK	
56	Vivacom-BG		143	Play-PL	
57	KT-KR		144	Movistar-CL	
58	KDDI-JP		145	Melita-MT	
59	Tango-LU		146	Movistar-PE	
60	Telekom-DE		147	Primetel-CY	
61	Vodafone-DE		148	WOM-CL	
62	A1-SI		149	WOM-CO	
63	STC-KW		150	Partner-IL	
64	Entel-CL		151	BSNL-IN	
65	Jio-IN		152	Cablenet-CY	
66	Telia-EE		153	Vodafone-IN	
67	Vodafone-NL		154	Telia-DK	
68	Telia-FI		155	Bitel-PE	
69	TurkTelekom-TR		156	Telenor-DK	
70	EE-UK		157	DIGI-PT	
71	Plus-PL		158	Tele2-SE	
72	Orange-BE		159	Telenor-SE	
73	A1-HR		160	Umobile-MY	
74	Telemach-HR		161	Altan-MX	
75	T-Mobile-AT		162	HotMobile-IL	
76	TIM-IT		163	Telekom-RO	
77	KPN-NL		164	Boostmobile-US	
78	Vodafone-IT		165	Yes-MY	
79	DNA-FI		166	Quebecor-CA	
80	Vodafone-CZ		167	Swanmobile-SK	
81	Yettel-HU		168	Unifi-MY	
82	Pelephone-IL		169	Iliad-IT	
83	Telkom-ZA		170	SIMBA-SG	
84	Vodafone-ES		171	Rakuten-JP	
85	Telia-NO		172	1&1-DE	
86	NTTdocomo-JP		173	T2-SI	5.1%
87	CYTA-CY				

Rank 1-173	Mobile network operator Name and country code	Radio network data traffic load - 2024 Average BusyHour downlink throughput per sector in the 5% most loaded sectors in Mbit/s	Rank 1-173	Mobile network operator Name and country code	Radio network data traffic load - 2024 Average BusyHour downlink throughput per sector in the 5% most loaded sectors in Mbit/s
1	STC-KW	526	88	Spark-NZ	
2	Zain-KW		89	Yettel-BG	
3	Zain-SA		90	Vivo-BR	
4	Ooredoo-KW		91	HotMobile-IL	
5	STC-SA		92	Telia-SE	
6	Vodafone-AU		93	KDDI-JP	
7	Vodafone-TR		94	Telefonica-DE	
8	Cellcom-IL		95	FreeMobile-FR	
9	WOM-CL		96	Melita-MT	
10	Turkcell-TR		97	Telia-DK	
11	Mobily-SA		98	Yes-MY	
12	1&1-DE		99	T-Mobile-CZ	
13	BITE-LT		100	TIM-BR	
14	TurkTelekom-TR		101	Vodafone-IN	
15	Tele2-LV		102	O2-CZ	
16	Tele2-LT		103	Tigo-CO	
17	Maxis-MY		104	Tango-LU	
18	Entel-CL		105	Telemach-SI	
19	LMT-LV		106	Orange-FR	
20	Partner-IL		107	Siminn-IS	
21	Entel-PE		108	Telia-EE	
22	A1-HR		109	3-SE	
23	Jio-IN		110	MTN-ZA	
24	Telcel-MX		111	BouyguesTelecom-FR	
25	Elisa-EE		112	POST-LU	
26	3-IE		113	Unifi-MY	
27	Sunrise-CH		114	Cosmote-EL	
28	Pelephone-IL		115	SFR-FR	
29	BITE-LV		116	TelekomSlovenije-SI	
30	Umobile-MY		117	TIM-IT	
31	Cablenet-CY		118	Vodafone-PT	
32	CelcomDigi-MY		119	EE-UK	
33	T-Mobile-US		120	Vodafone-UK	
34	3-AT		121	Vodafone-DE	
35	Play-PL		122	Vivacom-BG	
36	Claro-PE		123	Boostmobile-US	
37	BSNL-IN		124	Rogers-CA	
38	MasOrange-ES		125	SingTel-SG	
39	Movistar-PE		126	Telenor-SE	
40	Verizon-US		127	Swisscom-CH	
41	A1-SI		128	Vodafone-CZ	
42	Telstra-AU		129	MEO-PT	
43	ATT-US		130	Swanmobile-SK	
44	Airtel-IN		131	Telekom-HU	
45	Vodafone-IE		132	Bell-CA	
46	Movistar-ES		133	Proximus-BE	
47	Vodafone-ES		134	Tele2-SE	
48	DNA-FI		135	Telefonica-UK	
49	A1-AT		136	Quebecor-CA	
50	Telemach-HR		137	Movistar-CO	
51	T-Mobile-AT		138	Yettel-HU	
52	Epic-CY		139	Orange-BE	
53	Plus-PL		140	SKTelecom-KR	
54	Claro-CO		141	One-NZ	
55	Bitel-PE		142	Telus-CA	
56	Wind3-IT		143	Vodafone-HU	
57	Telkom-ZA		144	Telia-FI	
58	Telekom-HR		145	Vodafone-NL	
59	Optus-AU		146	Telekom-SK	
60	T-Mobile-PL		147	A1-BG	
61	Elisa-FI		148	Wind-EL	
62	Telia-LT		149	Odido-NL	
63	Vodafone-IT		150	Orange-SK	
64	Orange-PL		151	Telekom-RO	
65	Claro-BR		152	M1-SG	
66	Epic-MT		153	O2-SK	
67	NTTdocomo-JP		154	BASE-BE	
68	Movistar-CL		155	VodafoneIceland-IS	
69	Nova-IS		156	Altan-MX	
70	3-UK		157	Softbank-JP	
71	Claro-CL		158	Orange-LU	
72	ATT-MX		159	Nos-PT	
73	Tele2-EE		160	DIGI-RO	
74	KPN-NL		161	KT-KR	
75	TDC-DK		162	LGUplus-KR	
76	Orange-RO		163	StarHub-SG	
77	Iliad-IT		164	2degrees-NZ	
78	Vodafone-RO		165	Telekom-DE	
79	CYTA-CY		166	Primetel-CY	
80	3-DK		167	SIMBA-SG	
81	eir-IE		168	Telia-NO	
82	Vodacom-ZA		169	ice-NO	
83	Go-MT		170	Telenor-NO	
84	Salt-CH		171	T2-SI	
85	Telenor-DK		172	Rakuten-JP	
86	WOM-CO		173	DIGI-PT	6
87	Vodafone-EL				

Rank 1-173	Mobile network operator Name and country code	Radio network capacity utilization - 2024 of the operator 5% most loaded radio sectors	Rank 1-173	Mobile network operator Name and country code	Radio network capacity utilization - 2024 of the operator 5% most loaded radio sectors
1	Vodafone-TR	172.6%	88	Vivo-BR	
2	Turkcell-TR		89	Telenor-SE	
3	TurkTelekom-TR		90	Salt-CH	
4	Altan-MX		91	Spark-NZ	
5	1&1-DE		92	Telia-DK	
6	STC-KW		93	Epic-MT	
7	WOM-CL		94	Telia-LT	
8	Umobile-MY		95	O2-CZ	
9	Zain-KW		96	BouyguesTelecom-FR	
10	Zain-SA		97	CYTA-CY	
11	Partner-IL		98	Tele2-EE	
12	Maxis-MY		99	TIM-BR	
13	Ooredoo-KW		100	DNA-FI	
14	Bitel-PE		101	Melita-MT	
15	Iliad-IT		102	Tele2-SE	
16	Vodafone-AU		103	Nova-IS	
17	STC-SA		104	Vodafone-EL	
18	Claro-PE		105	Swanmobile-SK	
19	Movistar-PE		106	Yettel-BG	
20	BSNL-IN		107	SFR-FR	
21	Unifi-MY		108	Go-MT	
22	Telekom-RO		109	EE-UK	
23	Cellcom-IL		110	3-DK	
24	Mobily-SA		111	TDC-DK	
25	Telkom-ZA		112	Elisa-FI	
26	Cablenet-CY		113	Vodafone-UK	
27	Jio-IN		114	Telemach-SI	
28	Telcel-MX		115	KDDI-JP	
29	Entel-CL		116	Orange-FR	
30	Vodafone-IN		117	Movistar-CO	
31	BITE-LT		118	Telefonica-UK	
32	ATT-MX		119	T-Mobile-CZ	
33	Entel-PE		120	Vodafone-DE	
34	Movistar-CL		121	Vodafone-PT	
35	Pelephone-IL		122	SIMBA-SG	
36	Tele2-LT		123	DIGI-RO	
37	Claro-CL		124	Tango-LU	
38	HotMobile-IL		125	M1-SG	
39	Tele2-LV		126	TIM-IT	
40	Sunrise-CH		127	T2-SI	
41	Play-PL		128	3-SE	
42	A1-HR		129	Vivacom-BG	
43	Claro-CO		130	Cosmote-EL	
44	3-IE		131	Telia-SE	
45	CelcomDigi-MY		132	Rogers-CA	
46	Telstra-AU		133	POST-LU	
47	Yes-MY		134	TelekomSlovenije-SI	
48	Wind3-IT		135	Vodafone-CZ	
49	LMT-LV		136	MEO-PT	
50	Airtel-IN		137	One-NZ	
51	MasOrange-ES		138	Bell-CA	
52	BITE-LV		139	Proximus-BE	
53	T-Mobile-US		140	Orange-BE	
54	Elisa-EE		141	Siminn-IS	
55	Vodafone-ES		142	StarHub-SG	
56	Verizon-US		143	Telus-CA	
57	Vodafone-IE		144	SingTel-SG	
58	3-AT		145	Telekom-SK	
59	ATT-US		146	Telekom-HU	
60	Movistar-ES		147	Vodafone-HU	
61	A1-SI		148	Orange-SK	
62	Quebecor-CA		149	Wind-EL	
63	Vodacom-ZA		150	Vodafone-NL	
64	WOM-CO		151	O2-SK	
65	Plus-PL		152	BASE-BE	
66	T-Mobile-PL		153	Yettel-HU	
67	Telemach-HR		154	Telia-EE	
68	Boostmobile-US		155	Swisscom-CH	
69	MTN-ZA		156	Odido-NL	
70	Orange-PL		157	A1-BG	
71	Epic-CY		158	2degrees-NZ	
72	3-UK		159	Nos-PT	
73	Claro-BR		160	Orange-LU	
74	Vodafone-IT		161	Softbank-JP	
75	Optus-AU		162	SKTelecom-KR	
76	Telenor-DK		163	VodafoneIceland-IS	
77	eir-IE		164	Primetel-CY	
78	NTTdocomo-JP		165	Telia-FI	
79	T-Mobile-AT		166	Telekom-DE	
80	Tigo-CO		167	KT-KR	
81	KPN-NL		168	LGUplus-KR	
82	A1-AT		169	ice-NO	
83	Vodafone-RO		170	Rakuten-JP	
84	Telekom-HR		171	Telia-NO	
85	Telefonica-DE		172	Telenor-NO	
86	FreeMobile-FR		173	DIGI-PT	1.2%
87	Orange-RO				

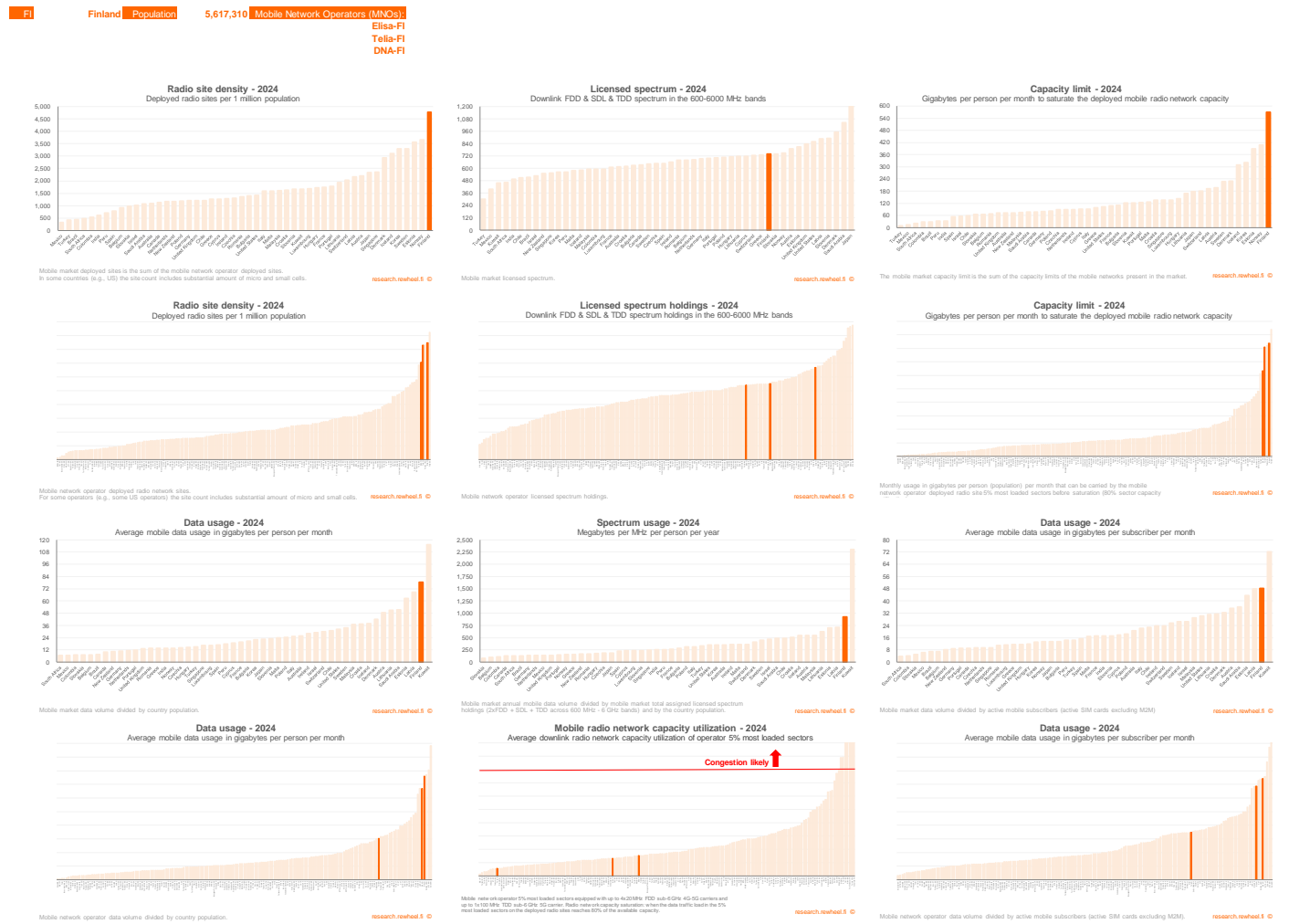
Rank 1-173	Mobile network operator Name and country code	Capacity limit - 2024 Annual mobile data volume in terabytes	Rank 1-173	Mobile network operator Name and country code	Capacity limit - 2024 Annual mobile data volume in terabytes
1	Jio-IN	258,170,827	88	Tigo-CO	
2	Airtel-IN		89	Yes-MY	
3	T-Mobile-US		90	Turkcell-TR	
4	ATT-US		91	Telia-EE	
5	Verizon-US		92	Nos-PT	
6	Softbank-JP		93	Vodafone-RO	
7	SKTelecom-KR		94	Telkom-ZA	
8	KDDI-JP		95	Vodafone-EL	
9	KT-KR		96	Proximus-BE	
10	LGUplus-KR		97	Salt-CH	
11	NTTdocomo-JP		98	Sunrise-CH	
12	Vodafone-IN		99	Vodafone-AU	
13	Rakuten-JP		100	Umobile-MY	
14	Telekom-DE		101	ice-NO	
15	Orange-FR		102	Telia-LT	
16	Vivo-BR		103	Vodafone-HU	
17	TIM-BR		104	Orange-BE	
18	Claro-BR		105	Claro-PE	
19	TIM-IT		106	Telekom-HR	
20	Vodafone-DE		107	Wind-EL	
21	SFR-FR		108	Vodafone-CZ	
22	Wind3-IT		109	Movistar-CL	
23	BSNL-IN		110	DIGI-PT	
24	Vodafone-IT		111	Telia-DK	
25	BouyguesTelecom-FR		112	Movistar-PE	
26	Telefonica-DE		113	Claro-CL	
27	CelcomDigi-MY		114	TurkTelekom-TR	
28	FreeMobile-FR		115	WOM-CO	
29	Telefonica-UK		116	Zain-KW	
30	Vodafone-UK		117	BASE-BE	
31	EE-UK		118	Ooredoo-KW	
32	Telcel-MX		119	3-IE	
33	Elisa-FI		120	Yettel-BG	
34	Telenor-NO		121	Vodafone-TR	
35	Telia-FI		122	StarHub-SG	
36	Telus-CA		123	Vivacom-BG	
37	STC-SA		124	Cellcom-IL	
38	Telia-SE		125	Telenor-DK	
39	Swisscom-CH		126	M1-SG	
40	3-UK		127	Pelephone-IL	
41	MasOrange-ES		128	A1-HR	
42	Movistar-ES		129	LMT-LV	
43	Bell-CA		130	STC-KW	
44	DNA-FI		131	One-NZ	
45	Rogers-CA		132	WOM-CL	
46	Optus-AU		133	Quebecor-CA	
47	Telia-NO		134	Bitel-PE	
48	Orange-PL		135	eir-IE	
49	Play-PL		136	Spark-NZ	
50	Plus-PL		137	Vodafone-IE	
51	Telstra-AU		138	Elisa-EE	
52	T-Mobile-PL		139	O2-SK	
53	Mobily-SA		140	Unifi-MY	
54	Odido-NL		141	Tele2-LT	
55	Zain-SA		142	Telemach-HR	
56	A1-AT		143	Orange-SK	
57	Vodafone-ES		144	TelekomSlovenije-SI	
58	Boostmobile-US		145	Partner-IL	
59	Yettel-HU		146	BITE-LT	
60	3-SE		147	BITE-LV	
61	T-Mobile-AT		148	Tele2-LV	
62	3-AT		149	Telekom-SK	
63	TDC-DK		150	2degrees-NZ	
64	Entel-CL		151	Tele2-EE	
65	Vodacom-ZA		152	A1-SI	
66	MTN-ZA		153	1&1-DE	
67	ATT-MX		154	SIMBA-SG	
68	Telekom-HU		155	Telemach-SI	
69	Vodafone-NL		156	HotMobile-IL	
70	DIGI-RO		157	Telekom-RO	
71	Claro-CO		158	Nova-IS	
72	Cosmote-EL		159	Siminn-IS	
73	Entel-PE		160	Epic-CY	
74	3-DK		161	CYTA-CY	
75	Orange-RO		162	Swanmobile-SK	
76	Tele2-SE		163	VodafoneIceland-IS	
77	Movistar-CO		164	POST-LU	
78	KPN-NL		165	Altan-MX	
79	MEO-PT		166	Epic-MT	
80	Telenor-SE		167	Primetel-CY	
81	Maxis-MY		168	Tango-LU	
82	Iliad-IT		169	Orange-LU	
83	O2-CZ		170	Go-MT	
84	SingTel-SG		171	Melita-MT	
85	A1-BG		172	Cablenet-CY	
86	Vodafone-PT		173	T2-SI	79,086
87	T-Mobile-CZ				

Rank 1-173	Mobile network operator Name and country code	Capacity limit - 2024 Gigabytes per subscriber per month	Rank 1-173	Mobile network operator Name and country code	Capacity limit - 2024 Gigabytes per subscriber per month
1	DIGI-PT	938.1	88	Ooredoo-KW	
2	Rakuten-JP		89	M1-SG	
3	Telenor-NO		90	Rogers-CA	
4	Telia-FI		91	Plus-PL	
5	Telia-EE		92	MEO-PT	
6	Telia-NO		93	Melita-MT	
7	Elisa-FI		94	STC-KW	
8	DNA-FI		95	Orange-BE	
9	ice-NO		96	Vodafone-UK	
10	3-DK		97	SIMBA-SG	
11	VodafoneIceland-IS		98	Bell-CA	
12	Nova-IS		99	2degrees-NZ	
13	Telia-SE		100	Pelephone-IL	
14	3-SE		101	One-NZ	
15	KT-KR		102	Yettel-BG	
16	Telia-LT		103	Entel-CL	
17	Primetel-CY		104	Mobily-SA	
18	Telia-DK		105	Play-PL	
19	3-AT		106	T-Mobile-PL	
20	Tele2-EE		107	Telefonica-UK	
21	LGUplus-KR		108	O2-CZ	
22	SKTelecom-KR		109	Vodafone-DE	
23	BITE-LV		110	Vodafone-IE	
24	Siminn-IS		111	Movistar-ES	
25	Elisa-EE		112	Vodafone-CZ	
26	Yettel-HU		113	Orange-PL	
27	Swisscom-CH		114	CYTA-CY	
28	TDC-DK		115	Unifi-MY	
29	Orange-LU		116	Swanmobile-SK	
30	Softbank-JP		117	Vivacom-BG	
31	LMT-LV		118	Cablenet-CY	
32	Salt-CH		119	Tele2-LT	
33	A1-AT		120	Cellcom-IL	
34	Telenor-SE		121	T-Mobile-CZ	
35	Telekom-HR		122	EE-UK	
36	T-Mobile-AT		123	Orange-RO	
37	Telemach-HR		124	NTTdocomo-JP	
38	T-Mobile-US		125	Proximus-BE	
39	TelekomSlovenije-SI		126	Vodafone-AU	
40	Telekom-DE		127	Telefonica-DE	
41	Tele2-SE		128	O2-SK	
42	Telenor-DK		129	Vodafone-ES	
43	Odido-NL		130	Vodafone-RO	
44	BouyguesTelecom-FR		131	Airtel-IN	
45	FreeMobile-FR		132	Entel-PE	
46	Epic-CY		133	Jio-IN	
47	TIM-IT		134	Telstra-AU	
48	A1-HR		135	Spark-NZ	
49	Sunrise-CH		136	Orange-SK	
50	Epic-MT		137	Claro-CL	
51	A1-SI		138	STC-SA	
52	Telekom-HU		139	MasOrange-ES	
53	Wind3-IT		140	KPN-NL	
54	3-UK		141	Partner-IL	
55	Go-MT		142	WOM-CO	
56	A1-BG		143	Telekom-SK	
57	Tele2-LV		144	Maxis-MY	
58	ATT-US		145	HotMobile-IL	
59	eir-IE		146	T2-SI	
60	KDDI-JP		147	Quebecor-CA	
61	Vodafone-NL		148	Movistar-CL	
62	StarHub-SG		149	Iliad-IT	
63	SFR-FR		150	TIM-BR	
64	Wind-EL		151	WOM-CL	
65	Orange-FR		152	Umobile-MY	
66	Vodafone-HU		153	Vivo-BR	
67	Verizon-US		154	Vodafone-IN	
68	Boostmobile-US		155	Claro-BR	
69	Telemach-SI		156	Movistar-PE	
70	Telus-CA		157	Claro-PE	
71	BITE-LT		158	Tigo-CO	
72	Zain-KW		159	Telekom-RO	
73	Optus-AU		160	BSNL-IN	
74	Vodafone-PT		161	Bitel-PE	
75	Tango-LU		162	Movistar-CO	
76	Yes-MY		163	Telcel-MX	
77	Cosmote-EL		164	Telkom-ZA	
78	Vodafone-EL		165	Vodacom-ZA	
79	3-IE		166	Claro-CO	
80	DIGI-RO		167	ATT-MX	
81	CelcomDigi-MY		168	MTN-ZA	
82	Vodafone-IT		169	TurkTelekom-TR	
83	Zain-SA		170	Turkcell-TR	
84	Nos-PT		171	Vodafone-TR	
85	SingTel-SG		172	1&1-DE	
86	POST-LU		173	Altan-MX	2.2
87	BASE-BE				



# Annex I Competitiveness dashboards 50 mobile markets 173 mobile network operators

The charts below depict the rankings of the Finnish mobile market and of the three mobile network operators present in the Finnish mobile market (Elisa, Telia and DNA) for selected competitiveness metrics. High resolution charts in spreadsheet format are available to Rewheel subscribers that gain access to the full PRO version of the report.



## About Rewheel

Mobile data and broadband pricing, mobile operator competitiveness rankings, market modelling & analysis, competition analysis (consolidation, 4 to 3 mobile mergers, effective remedies, new market entries), MNO near-zero marginal data cost, MVNO economics, mobile capacity-only play, mobile centric convergence (MCC) pro-competitive strategies and 4<sup>th</sup> MNO business case.

Founded in 2009 and incorporated in Finland, Rewheel is a privately owned independent telecom research firm and boutique management consultancy. Our clients are mobile network operators, telco groups, MVNO groups, competition authorities, telecom sector regulators, governments, global internet firms, mobile data-centric start-ups, PE and VC investors.

Rewheel has delivered management consultancy work for clients in the United Kingdom, United States, Germany, Ireland, Switzerland, Finland, Sweden, Belgium, Greece, Poland, Slovenia, Hungary, Russia, Romania.

The following authorities have acquired access to Rewheel's independent pricing, mobile market competitiveness, 4 to 3 merger analysis and remedy assessment research: The European Commission Directorate for Competition, the United States Department of Justice, the New York, California and many other US State Attorney General Offices, the national competition authorities of Canada, Australia, the Netherlands and Greece, the Ministry of Economic Affairs of the Netherlands, the Ministry of Industry and Trade of Czechia, the Korean Electronics and Telecommunication Research Institute, the sector regulators of the United Kingdom, Germany, France, the Netherlands, Ireland, Finland, Portugal, etc.

Rewheel's mobile data pricing, strategy, competition analysis, merger assessment, network economics, spectrum, profitability and competitiveness focused reports have been cited by OECD Economic Surveys, The Economist, The Financial Times, The New York Times, Reuters, Bloomberg, WSJ and publicly referenced by the UK telecoms regulator Ofcom, BIPT, Vodafone, Telefonica, Tele2, Elisa, DNA, GSMA, VPs of the EU Commission responsible for Competition, MEPs, IEEE, ITU.

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