Rewheel/research

DIGITAL FUEL MONITOR
MONITORING MOBILE CONNECTIVITY COMPETITIVENESS
By Rewheel

The state of 4G pricing – 2H2018

Digital Fuel Monitor 10th release, October 2018

With a special focus on US prices ahead of the planned 4 to 3 consolidation

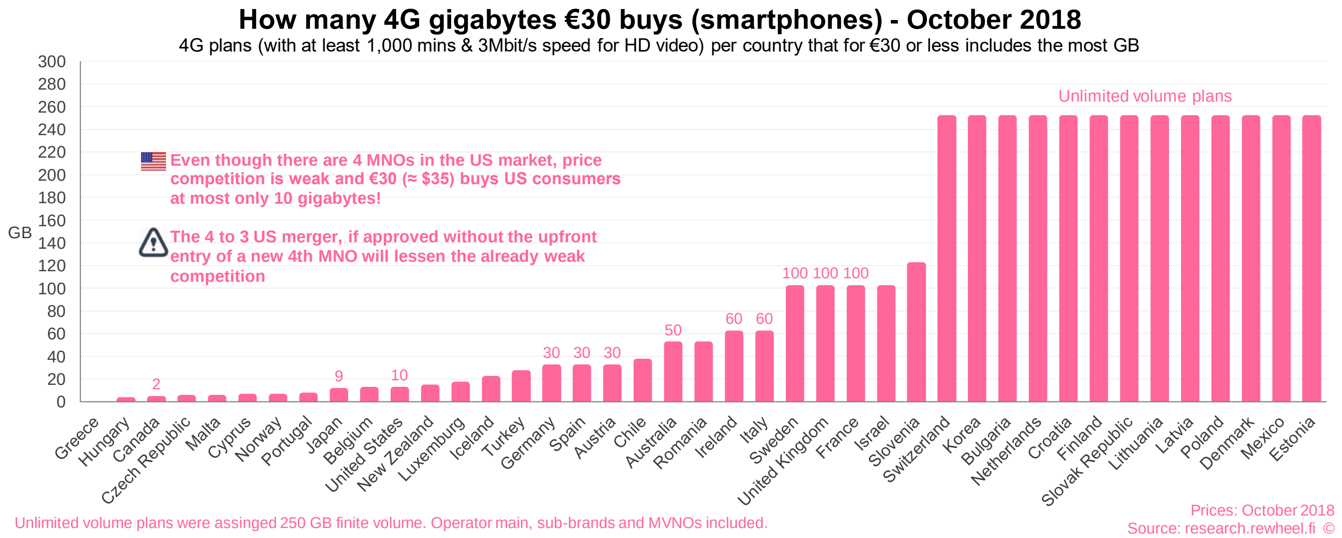
Rewheel research PRO study, 26th October 2018

Unlimited mobile data and fixed-to-mobile broadband substitution

– It is all about unlimited mobile internet: in smartphones, portable MiFi's or 4G wireless home broadband.

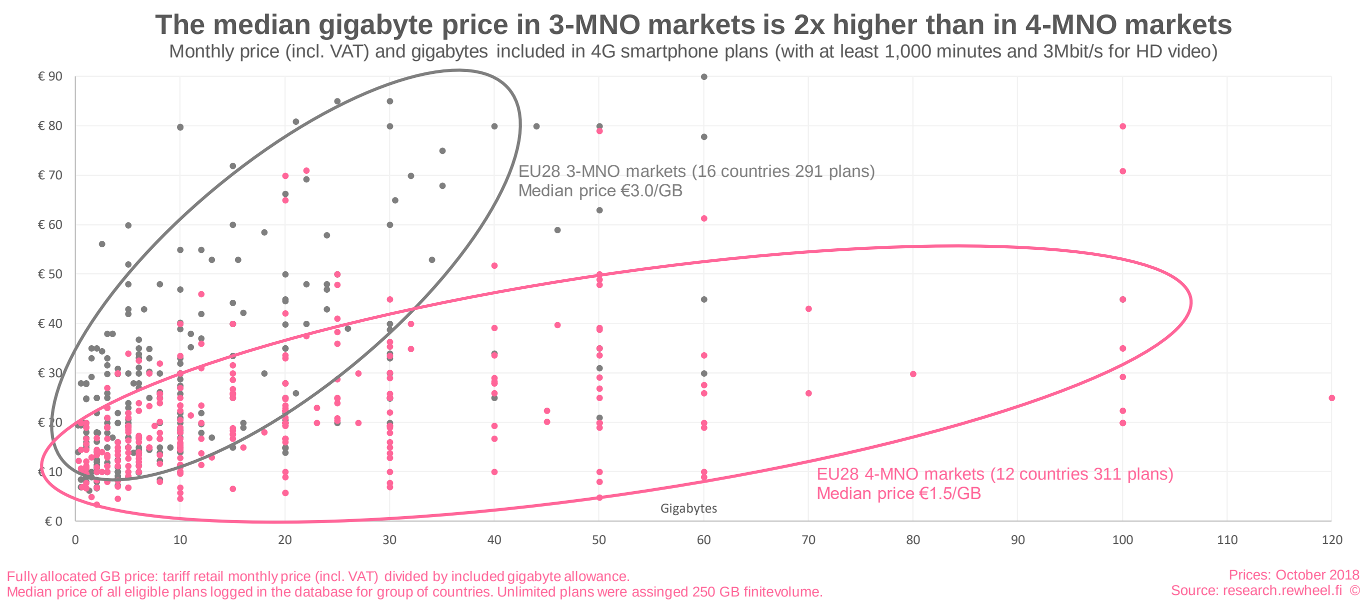
How many gigabytes €30 (≈ $35) buys in 4G smartphone plans?

– In October 2018 €30 bought a 4G smartphone plan with truly[1] unlimited volume in 13 countries (up from 10 in April 2018) while €20 bought a 4G smartphone plan with truly unlimited volume in 8 countries (up from 4 in April 2018).



Median gigabyte prices in 4 versus 3-MNO markets

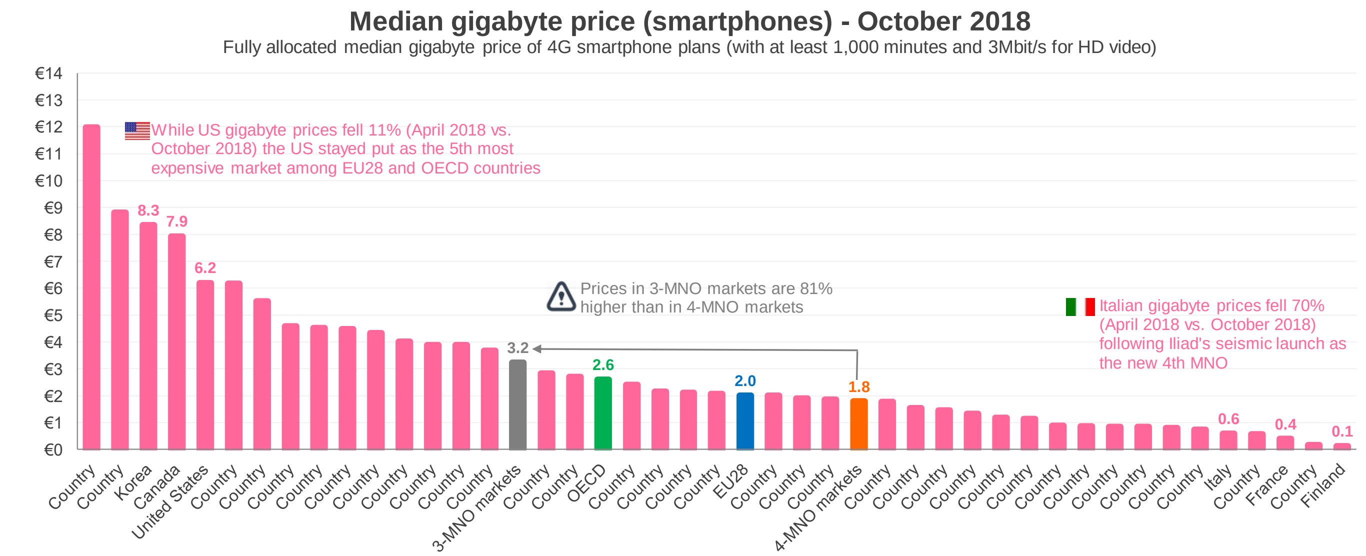
– Gigabyte prices in 3-MNO European markets are 2x higher than in 4-MNO markets.
– Gigabyte prices in 3-MNO EU28 & OECD markets are 81% higher than in 4-MNO markets.



[1]According to the DFMonitor methodology truly unlimited mobile data volume plans are plans without a named finite volume after which the speed is throttle below 3 Mbps or where the traffic is de-prioritized e.g. US unlimited volume plans

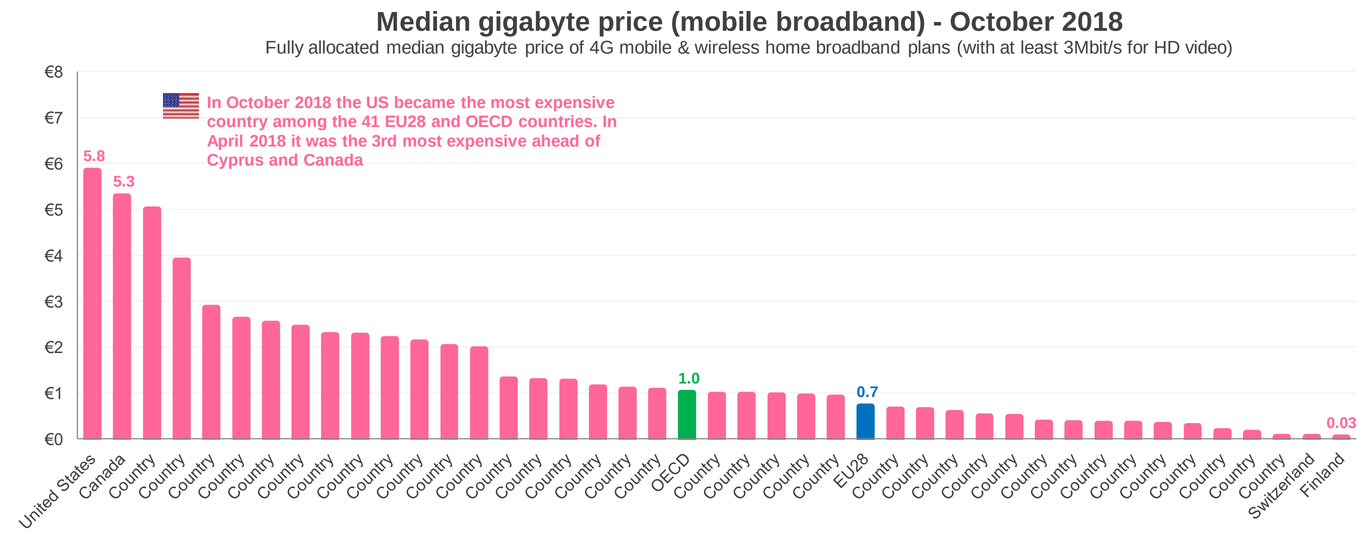
Are gigabyte prices in the 4-MNO US market competitive?

- Even though there are 4 MNOs present in the market US gigabyte prices are not competitive.
- The US has the 5th highest gigabyte prices in smartphone plans and is the most expensive market in mobile broadband among the 41 EU28 & OECD countries.



Fully allocated GB price: tariff retail monthly price (incl. VAT) divided by included gigabyte allowance. 3-MNO markets (27 countries), 4-MNO markets (14)
Median price of all eligible plans logged in the database for country or group of countries. Unlimited plans were assinged 250 GB finite volume.

Prices: October 2018
Source: research.rewheel.fi ©



Fully allocated GB price: tariff retail monthly price (incl. VAT) divided by included gigabyte allowance.
Median price of all eligible plans logged in the database for country or group of countries. Unlimited plans were assinged 1000 GB finite volume.

Prices: October 2018
Source: research.rewheel.fi ©

Key development in other markets

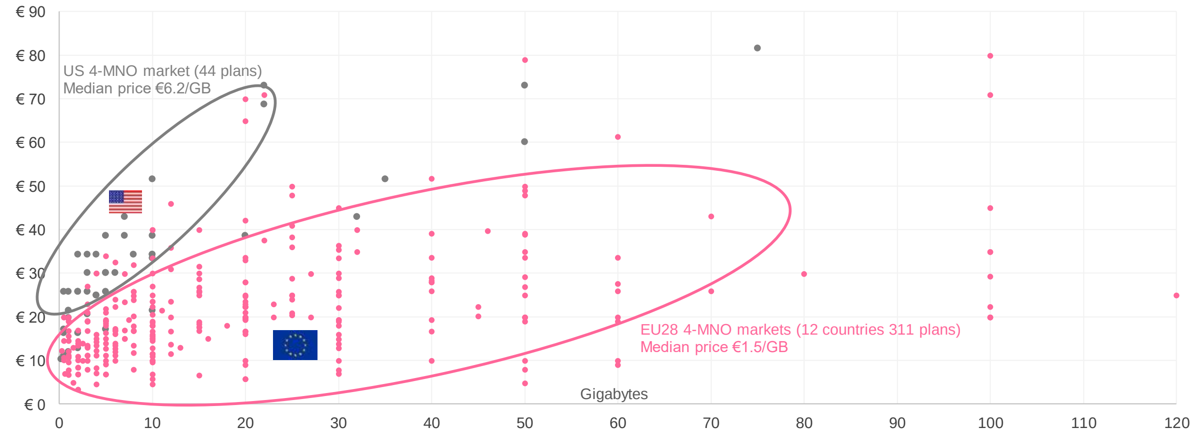
- Italian gigabyte prices fell 70% (October vs. April 2018) following Iliad’s seismic launch as the new 4th MNO.
- Dutch prices were flattish. After the announcement of the 4 to 3 mobile merger between T-Mobile and Tele2, Dutch gigabyte prices started falling much slower.
- The 4 to 3 consolidated Austrian market fell further behind during the 2H2018. In December 2012, just before the 4 to 3, Austria was the 3rd most competitive market among EU countries. In October 2018 it has fallen in the 18th place.
- In Korea, sub-brands of KT Telecom and LG Uplus have started selling smartphone plans for less than €30 with unlimited volume.
- KT Mobile and Uplussave have been discounting in promotional offers the price of their high-end smartphone plans from ≈49 300 WON (≈€37) to 33 880 WON (≈€26).
- Despite these new promotional offers, the overall gigabyte price level in Korea remained high (e.g. €20 buys only 3 GB) and hence in the median gigabyte price comparison Korea still ranks as the 3rd most expensive country.

Are US gigabyte prices much higher than in European 4-MNO markets?

- The median gigabyte price of smartphone plans in the US is 4x higher than in EU's 4-MNO markets
- The median gigabyte price in US is 16x higher than in a competitive 4-MNO large European market
- The US market is considerably less competitive than the 4 to 3 consolidated Austrian, Irish and German markets and a universe apart from the competitive Danish, French, UK, Dutch, Swedish and Italian 4-MNO markets.
- The US is an outlier 4-MNO market with much higher prices, that are typical to 3-MNO tight oligopoly markets.

The median gigabyte price in US is 4x higher than in EU's 4-MNO markets

Monthly price (incl. VAT) and gigabytes included in 4G smartphone plans (with at least 1,000 minutes and 3Mbit/s for HD video)

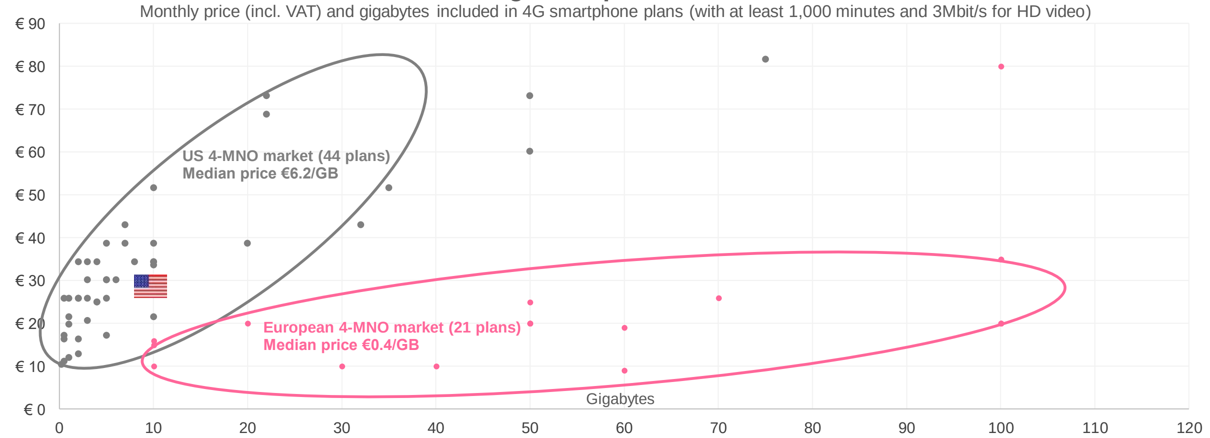


Fully allocated GB price: tariff retail monthly price (incl. VAT) divided by included gigabyte allowance.
Median price of all eligible plans logged in the database for country or group of countries. Unlimited plans were assinged 250 GB finite volume.

Prices: October 2018
Source: research.rewheel.fi ©

The median gigabyte price in US is 16x higher than in a trully competitive 4-MNO large European market

Monthly price (incl. VAT) and gigabytes included in 4G smartphone plans (with at least 1,000 minutes and 3Mbit/s for HD video)

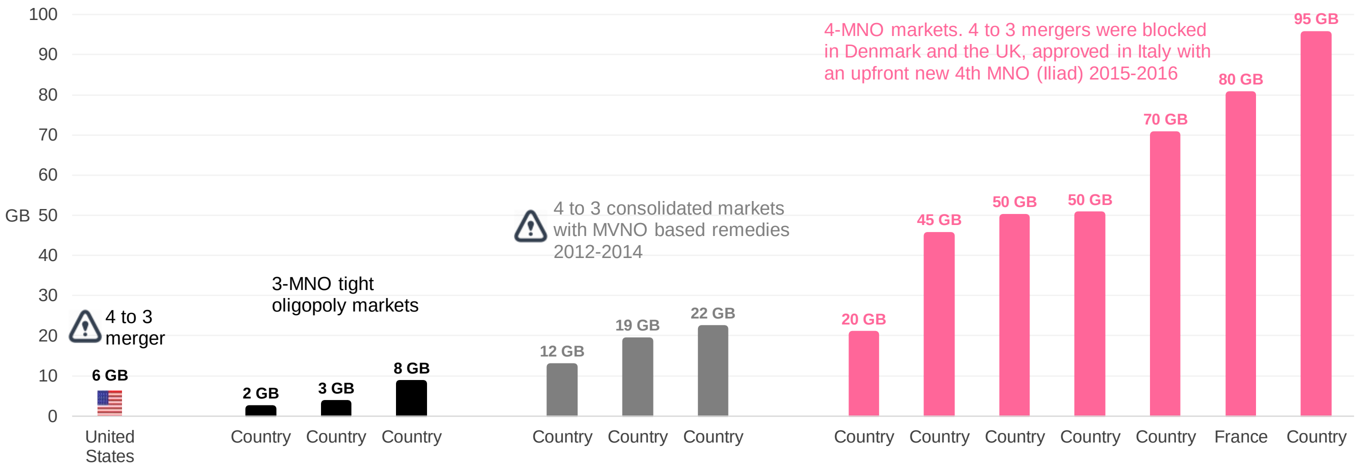


Fully allocated GB price: tariff retail monthly price (incl. VAT) divided by included gigabyte allowance.
Median price of all eligible plans logged in the database for country. Unlimited plans were assinged 250 GB finite volume.

Prices: October 2018
Source: research.rewheel.fi ©

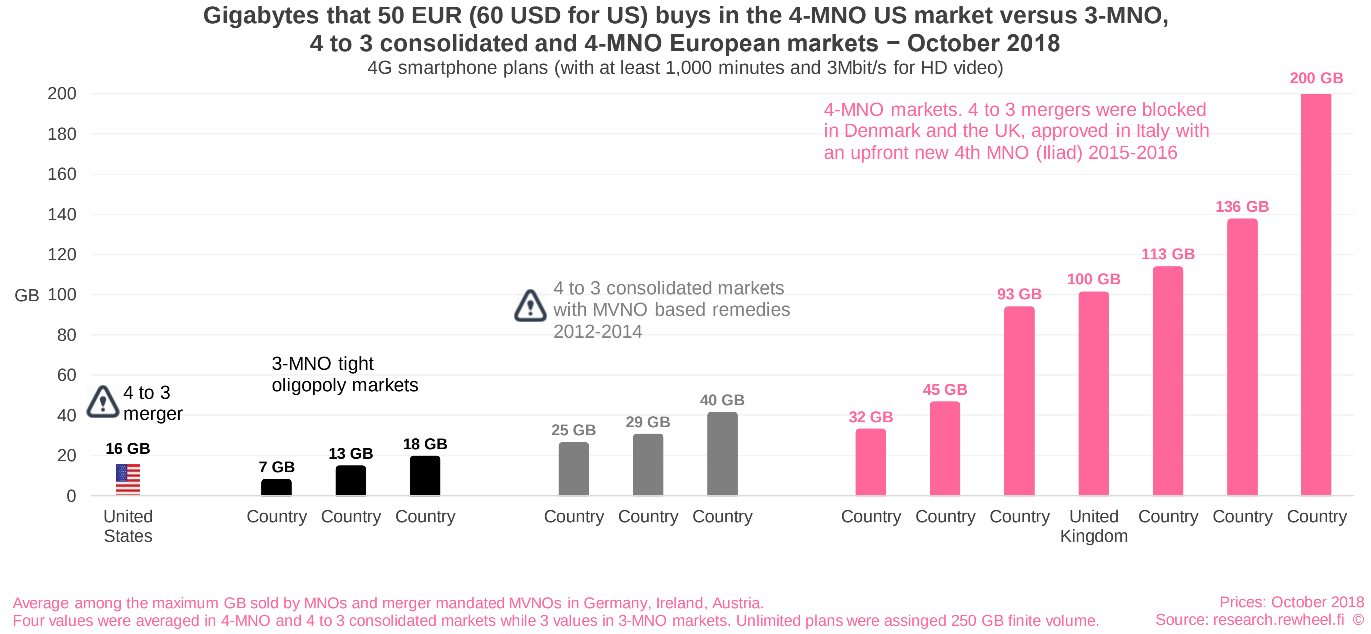
Gigabytes that 30 EUR (40 USD for US) buys in the 4-MNO US market versus 3-MNO, 4 to 3 consolidated and 4-MNO European markets − October 2018

4G smartphone plans (with at least 1,000 minutes and 3Mbit/s for HD video)



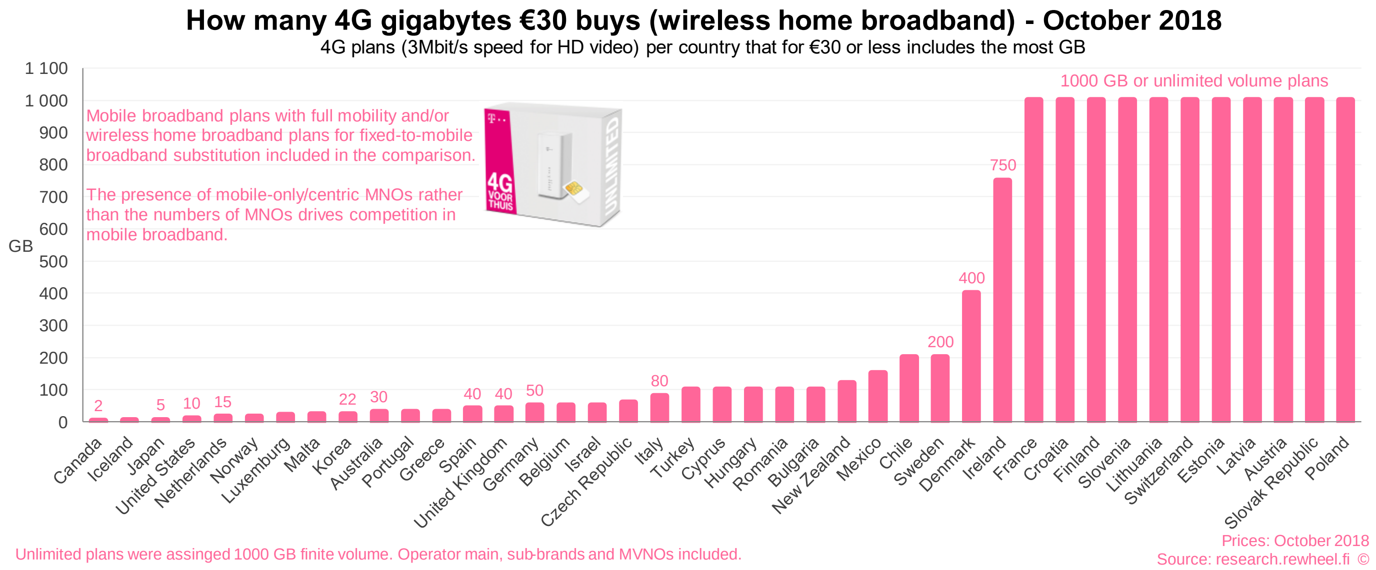
Average among the maximum GB sold by MNOs and merger mandated MVNOs in Germany, Ireland, Austria.
Four values were averaged in 4-MNO and 4 to 3 consolidated markets while 3 values in 3-MNO markets. Unlimited plans were assinged 250 GB finite volume.

Prices: October 2018
Source: research.rewheel.fi ©



How many gigabytes €30 buys in 4G mobile and wireless home broadband plans?

- Unlimited mobile broadband plans for fixed-to-mobile home broadband substitution (FMS) are now available for less than €30 in 11 countries (up from 9 countries in April 2018) and for less than €20 in 9 countries including Switzerland, Austria and Finland (up from 8 countries in April 2018).
- Judging from the excessive gigabyte prices, US operators are charging today for 4G mobile broadband (see Verizon's striking $710 100 gigabyte hotspot plan[2], in Europe 100 gigabyte mobile broadband typically costs between €10 and €20) merger promises concerning affordable 5G home broadband should be critically reviewed and if verified must be made binding.



[2] https://www.verizonwireless.com/plans/connected-device-plans/

How many 4G gigabytes €5, €10, €15, €20, €25, €30, €40, €50, €60, €70 and €80 could buy in EU and OECD markets on smartphone plans?

How many gigabytes consumers could buy in 4G smartphone plans with at leat 1,000 mins and at least 3Mbps for HD video in EU28 & OECD markets? - October 2018

EU28	OECD	Country code	Country name	GB for €5	GB for €10	GB for €15	GB for €20	GB for €25	GB for €30	GB for €40	GB for €50	GB for €60	GB for €70	GB for €80
			Country	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	5.00	15.00
			Country	0.00	0.00	0.00	1.00	1.00	2.00	10.00	10.00	15.00	20.00	20.00
			Country	0.00	0.00	0.00	0.50	0.50	3.00	10.00	12.00	18.00	22.00	22.00
			Country	0.00	0.00	0.00	0.00	3.00	3.00	10.00	20.00	20.00	20.00	20.00
			Country	0.00	0.00	0.00	0.00	2.00	4.00	7.00	7.00	7.00	7.00	10.00
			Country	0.00	0.00	0.20	3.00	5.00	5.00	5.00	8.00	30.00	32.00	40.00
			Country	0.00	0.00	0.00	3.00	9.00	9.00	21.00	21.00	50.00	50.00	50.00
			Country	0.00	0.00	2.00	4.00	5.00	10.00	20.00	24.00	24.00	24.00	24.00
			Country	0.00	0.00	2.00	5.00	10.00	10.00	20.00	32.00	35.00	50.00	50.00
			Country	0.00	0.00	0.00	0.00	4.50	12.00	30.00	30.00	30.00	30.00	40.00
			Country	0.00	1.00	10.00	10.00	15.00	15.00	22.00	25.00	34.00	35.00	50.00
			Country	0.00	0.00	1.00	5.00	20.00	20.00	50.00	50.00	250.00	250.00	250.00
			Country	6.00	15.00	25.00	25.00	25.00	25.00	25.00	50.00	50.00	50.00	50.00
			Country	0.00	3.00	6.00	10.00	20.00	30.00	30.00	60.00	250.00	250.00	250.00
			Country	0.00	3.00	7.00	23.00	25.00	30.00	46.00	46.00	46.00	46.00	46.00
			Country	0.00	10.00	20.00	30.00	30.00	30.00	30.00	30.00	46.00	50.00	60.00
			Country	0.00	0.00	10.00	25.00	25.00	35.00	60.00	70.00	70.00	70.00	70.00
			Country	0.00	6.00	20.00	30.00	40.00	50.00	80.00	150.00	150.00	200.00	200.00
			Country	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
			Country	0.00	0.00	0.00	25.00	40.00	60.00	60.00	60.00	60.00	60.00	60.00
			Country	0.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
			Country	0.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
			Country	0.00	0.60	10.00	60.00	120.00	120.00	120.00	120.00	120.00	120.00	120.00
			Country	0.00	60.00	60.00	100.00	100.00	100.00	100.00	100.00	Unlimited	Unlimited	Unlimited
			Country	0.00	0.00	0.00	0.00	1.00	1.00	6.00	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	0.00	1.00	1.00	3.00	4.00	12.00	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	4.00	20.00	20.00	25.00	100.00	100.00	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	2.00	10.00	30.00	100.00	100.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Switzerland	0.00	0.00	0.00	0.00	1.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	0.00	3.00	3.00	6.60	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	10.00	12.00	20.00	20.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	0.00	0.00	5.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	5.00	7.00	27.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Finland	0.00	0.00	0.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	0.00	0.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	0.50	6.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	8.00	8.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	2.00	8.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	1.50	2.50	10.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	0.00	30.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	10.00	30.00	30.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

How many 4G gigabytes €5, €10, €15, €20, €25, €30, €40, €50, €60, €70 and €80 could buy in EU and OECD markets on mobile broadband and wireless home broadband plans?

How many gigabytes consumers could buy in 4G mobile broadband or wireless home broadband plans with at least 3Mbps for HD video in EU28 & OECD markets? - October 2018

EU28	OECD	Country code	Country name	GB for €5	GB for €10	GB for €15	GB for €20	GB for €25	GB for €30	GB for €40	GB for €50	GB for €60	GB for €70	GB for €80
			Country	0.00	0.00	5.00	5.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
			Country	0.00	0.10	0.10	2.00	2.00	2.00	10.00	15.00	20.00	25.00	35.00
			Country	0.00	0.00	5.00	30.00	30.00	30.00	30.00	40.00	40.00	40.00	40.00
			Country	0.00	0.00	2.00	5.00	5.00	5.00	7.00	20.00	50.00	50.00	50.00
			Country	0.00	2.00	15.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
			Country	0.00	2.00	2.00	2.00	6.00	10.00	10.00	50.00	50.00	50.00	50.00
			Country	5.00	10.00	30.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
			Country	0.00	0.00	2.00	5.00	5.00	40.00	60.00	60.00	60.00	60.00	60.00
			Country	0.00	60.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
			Country	1.00	5.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
			Country	20.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
			Country	0.00	1.00	2.00	2.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
			Country	0.00	1.50	4.00	60.00	60.00	60.00	60.00	100.00	100.00	100.00	100.00
			Country	0.25	2.00	2.00	15.00	15.00	20.00	100.00	100.00	100.00	100.00	100.00
			Country	10.00	20.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
			Country	0.00	0.00	1.00	1.00	5.00	5.00	25.00	50.00	50.00	150.00	150.00
			Country	0.00	1.50	100.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00	150.00
			Country	0.00	0.00	1.00	1.50	60.00	120.00	240.00	240.00	240.00	240.00	240.00
			Country	0.00	0.00	10.00	18.00	150.00	200.00	200.00	200.00	200.00	200.00	200.00
			Country	1.00	3.00	5.00	30.00	30.00	50.00	100.00	200.00	200.00	200.00	200.00
			Country	20.00	30.00	50.00	50.00	75.00	100.00	200.00	200.00	200.00	200.00	200.00
			Country	0.00	2.00	20.00	40.00	40.00	40.00	50.00	50.00	100.00	200.00	200.00
			Country	0.00	0.00	0.00	7.00	15.00	15.00	30.00	100.00	200.00	300.00	300.00
			Country	0.00	5.00	12.00	12.00	22.00	22.00	22.00	350.00	350.00	350.00	350.00
			Country	0.00	5.00	20.00	25.00	100.00	200.00	200.00	500.00	500.00	500.00	500.00
			Country	0.00	0.00	15.00	25.00	25.00	750.00	750.00	750.00	750.00	750.00	750.00
			Country	0.00	5.00	60.00	100.00	100.00	400.00	500.00	500.00	1000.00	1000.00	1000.00
			Country	0.00	10.00	20.00	22.00	22.00	22.00	40.00	40.00	Unlimited	Unlimited	Unlimited
			Country	0.00	3.00	3.00	10.00	10.00	30.00	200.00	200.00	Unlimited	Unlimited	Unlimited
			Country	0.00	1.00	1.00	5.00	10.00	15.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	2.00	2.00	20.00	20.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	5.00	20.00	100.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Finland	0.00	0.00	0.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Switzerland	0.00	0.00	1.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	0.00	50.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	30.00	30.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	0.00	60.00	60.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	25.00	100.00	100.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	1.00	1.50	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	3.00	10.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
			Country	20.00	60.00	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

Context

Rewheel's Digital Fuel Monitor bi-annual releases have been tracking mobile data prices in the EU28 & OECD mobile markets since 2014. In this Digital Fuel Monitor 10th release 2H2018 we tracked and analysed the state of 4G pricing during the second half of 2018 (October 2018) and reported the main price developments compared to the first half of 2018 (April 2018).

As with every release, in this 10th release we have collected and analysed thousands of eligible smartphone, mobile broadband and wireless home broadband plans suitable for fixed-to-mobile broadband substitution from 41 markets in accordance with Digital Fuel Monitor's methodology[3].

In this 10th release we analysed the gigabyte prices and ranked the EU28 & OECD countries using the maximum gigabytes for €30 price metric, as we have done in the 2016 and 2017 releases, but as well using many more EUR baskets. We have ranked the EU28 & OECD countries using the maximum gigabytes that €5, €10, €15, €20, €25, €30, €40, €50, €60, €70 and €80 could buy. Similarly, to the 2016 and 2017 releases, we have as well calculated the fully allocated country median gigabyte prices and ranked the EU28 & OECD counties also based on this metric.

In earlier releases, when calculating the fully allocated gigabyte prices (i.e. monthly reoccurring fee including VAT divided by the included gigabyte allowance) we assigned to plans with truly unlimited volume a finite volume that was determined by the maximum finite gigabyte volume that €30 bought in any of the EU28 & OECD countries. In DFMonitor's 8th release 2H2017 the finite volume assigned in smartphone plans with unlimited volume was 100 gigabytes.

In DFMonitor's 9th release 1H2018 the finite volume assigned in smartphone plans with unlimited volume was 200 gigabytes. 200 gigabyte volume was the maximum finite gigabyte volume that €80 bought across the 41 markets. The reason for this adjustment was the fact that while €30 bought during April 2018 at most a finite volume of 120 gigabytes in smartphone plans across all EU28 & OECD countries €80 bought a higher finite volume of 200 gigabytes. Hence, if we were to stick to the €30 rule we would have created an artefact whereby truly unlimited volume plans that cost considerably less than €80 (e.g. €50) could end up having a higher fully allocated gigabyte price than more expensive plans with a large finite volume. This rule modification ensures that cheaper plans with a truly (i.e. 3 Mbps speed at all time for HD video) unlimited volume are always ranked higher than more expensive plans with large finite gigabyte volumes.

In this 10th release we assigned to plans with unlimited volume the maximum finite gigabyte volume that €80 bought i.e. 250 gigabytes. We apply the same principle for mobile broadband and/or wireless home broadband plans. 1000 gigabyte volume was the maximum finite gigabyte volume that €80 bought and was the finite volume we assigned to both unlimited volume mobile broadband and wireless home broadband plans.

In Digital Fuel Monitor 10th 2H2018 any plan that was marketed as '*unlimited*' where the operator named a finite volume and reserved the right to throttle the speed below 3 Mbps or deprioritize the traffic, has been designated as a finite volume plan with a volume equal to the named de-prioritization/throttling volume (e.g. 22, 32, 35, 50 or 75 GB for US operator unlimited plans). Unlimited plans in Digital Fuel Monitor 10th 2H2018 release are plans without a named finite volume and a speed of at least 3 Mbps at all times. TDC, Telia and Hutchison in Denmark sold smartphone plans with unlimited volume and a fair usage limit of 1000 gigabytes (one thousand). These plans were considered unlimited plans in our methodology due to their extremely high (practically unlimited for normal use) fair usage limit.

In the schematic below, we present year by year as far back as 2014, the EU28 & OECD countries where €30 bought 4G smartphone plans with truly unlimited data volume (and at least 1,000 mins) and as well the countries where €30 bought mobile broadband or wireless home broadband plans with truly unlimited data volume. Please note that for the chart below we made an exception and included in the list the UK even though in some years the price of Hutchison's 4G smartphone plan with unlimited data volume was a bit higher than €30 (e.g. in 2018).

4G plans with truly unlimited data volume (for any price) have now spread to 22 out of the 41 EU28 & OECD countries

[3] http://research.rewheel.fi/downloads/Methodology_DFMonitor_10th_release_2H2018.pdf

EU28 & OECD countries where €30 bought a 4G smartphone plan (with at least 1,000 mins) with truly unlimited data volume

				Mexico
				Korea
			Switzerland	Switzerland
			Netherlands	Netherlands
			Slovakia	Slovakia
			Croatia	Croatia
			Bulgaria	Bulgaria
			Estonia	Estonia
		Denmark	Denmark	Denmark
	Poland	Poland	Poland	Poland
	Latvia	Latvia	Latvia	Latvia
Estonia	Lithuania	Lithuania	Lithuania	Lithuania
UK[1]	UK[1]	UK[1]	UK[1]	UK[1]
Finland	Finland	Finland	Finland	Finland
2014	2015	2016	2017	2018

[1]Hutchison-3 in the UK has been selling a 4G smartphone plan with unlimited data volume for £18, £25-£27 or ≈£30 pounds which depending on the exhange rate is a bit above or below €30

EU28 & OECD countries where €30 bought a 4G mobile or wireless home broadband plan with truly unlimited data volume

				France
				Slovakia
			Switzerland	Switzerland
			Croatia	Croatia
		Lithuania	Lithuania	Lithuania
		Estonia	Estonia	Estonia
	Slovenia	Slovenia	Slovenia	Slovenia
	Poland	Poland	Poland	Poland
Latvia	Latvia	Latvia	Latvia	Latvia
Austria	Austria	Austria	Austria	Austria
Finland	Finland	Finland	Finland	Finland
2014	2015	2016	2017	2018

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Founded in 2009, Rewheel is a Finland based boutique management consultancy. Our clients are mainly European mobile network operators, telco groups, MVNO groups, sector regulators, governments, global internet firms, mobile data-centric start ups, PE and VC investors.

We delivered management consultancy work for clients in the United Kingdom, United States, Ireland, Switzerland, Finland, Sweden, Belgium, Greece, Poland, Slovenia, Hungary, Russia, Romania. Buyers of our research reports and related strategic workshops include many companies and authorities across Europe and worldwide.

Since 2010 we have been supporting a number of European challenger mobile operators in multiband (700, 700 SDL, 800, 900, 1400 SDL, 1800, 2600, 3.5 GHz) auctions with spectrum valuation and strategic advisory services.

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