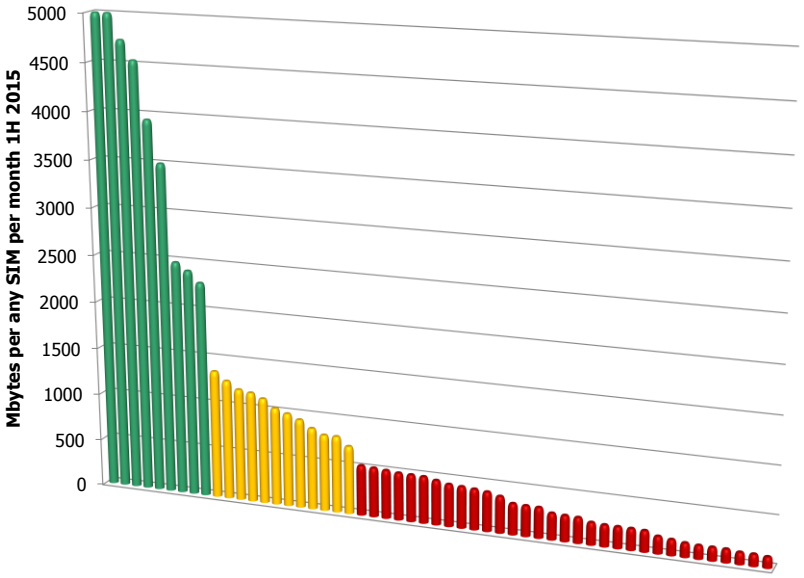
tefficient

Industry analysis #1 2016

Mobile data usage 1H 2015

5 GB per any SIM and month no longer a utopia – if price is right



This is tefficient's 12th public analysis on the development of mobile data usage. Also this time data usage continued to grow, but the rate varies between markets and within markets.

Mature markets in Asia – Japan, Singapore and Hong Kong – started to show signs of saturation whereas e.g. Ireland, France and Denmark demonstrated a rapidly increasing appetite for mobile data. The fastest growth was, however, in the country that already had the highest usage in the world.

The price per Mbyte matters: In Finland, average usage was 12 times that of the Netherlands where operators effectively charged 14 times more for a megabyte compared to Finland.

The average Finnish SIM card used 4.3 GB per month in 1H 2015

Figure 1 shows the development of mobile data usage for 25 countries[1] where regulators[2] report mobile data traffic.

The top countries of the world based on 1H 2015 stats are **Finland**, **Sweden**, **Korea**, **Japan**, **Denmark**, **Austria** and **Ireland**. [Estonia and Latvia are likely in the top as well, but 1H 2015 stats aren't reported]. Norway and Australia have entered the gigabyte club in 1H 2015 joining the mentioned seven countries plus Singapore.

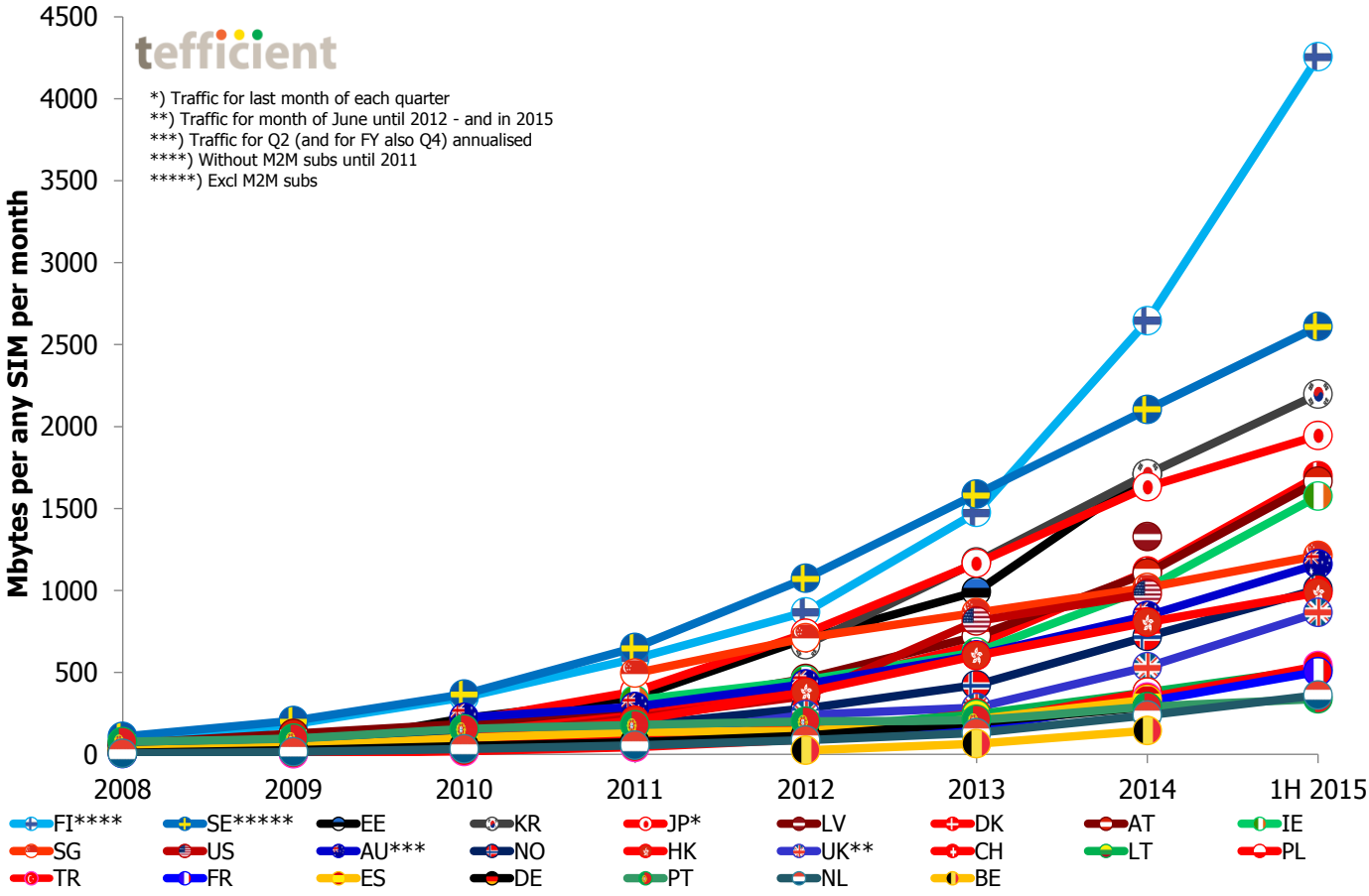


Figure 1. Development of mobile data usage per any SIM per country

With **4.3 GB** per month per any SIM, **Finland** really leaves the rest of the world behind in usage. It's 63% higher than the number 2 (Sweden) – and then the Swedish usage is actually

[1] Not all countries report stats every half year – that's why EE, LV, US, UK, CH, PL, DE and BE are missing 1H 2015

[2] Exception: USA, where data is from industry body CTIA

overstated compared to others since M2M SIMs aren't included[3]. 43% of the Finnish SIMs had **unlimited data** in June 2015: Monetisation in Finland is effectively based on throughput tiers and not on volume. Even though selected operators like e.g. Swisscom, Sprint, T-Mobile USA and 3 in the UK and Austria offer unlimited options, Finland is the only *market* which can be claimed to be de facto unlimited.

Sweden is number 2 with 2.6 GB per month (excl. M2M). **Korea** (2.2 GB) passed **Japan** (1.9 GB) in the first half of 2015. **Denmark** (1.7 GB) has showed strong usage. **Austria** (1.7 GB) was late into 4G and has also showed strong usage growth lately.

In the bottom, the **Netherlands** passed **Portugal** – a country which once was a leader in mobile data usage, but now show the lowest growth rate. If Belgium would have reported 1H 2015, it would likely still have been the lowest, though. In the Netherlands, Portugal and Belgium, public **Wi-Fi is widely available** through hot- and homespots[4] – not only provided by cablecos like **Ziggo**, **NOS**, **Telenet** and **VOO** but also by the incumbents **KPN**, **MEO** and **Proximus**.

Table 1 shows the list of countries for where 1H 2015 data is available.

Position	Country	Mbytes per any SIM and month 1H 2015	Mbytes per any SIM and month 2014
1	Finland	4256	2644
2	Sweden	2611 Excl. M2M	2104 Excl. M2M
3	Korea	2198	1711
4	Japan	1945 March+June figures times 3	1631 March+June+September+December figures times 3
5	Denmark	1699	1118
6	Austria	1667	1106
7	Ireland	1576	1014
8	Singapore	1213	1017
9	Australia	1161 Q to June times 2. Download only, but data over satellite on the other hand included.	847 Q to December+Q to June times 2. Download only, but data over satellite on the other hand included.
10	Norway	1007	718
11	Hong Kong	987	806
12	UK	866 Month of June 2014 times 6	534
13	Turkey	541	348
14	Lithuania	523	380
15	France	504	325
16	Spain	490	333
17	Netherlands	361	239
18	Portugal	338	289

Table 1. Mobile data usage per any SIM and month – values visualised in Figure 1

We will soon get back into comparing countries, but let's first take a look which *operators* who are having the customers with the highest mobile data usage.

[3] The number of reported M2M SIMs in Sweden is extremely high and 78% are with one specific international provider

[4] Using the home modems of customers to transmit dual SSIDs: One private for the home and one public for guests and passers-by

Operator top list – Sweden's comeback

Finland is the country with the highest average mobile data usage per any SIM in the world. But it isn't a Finnish operator who is having the highest position in the world[5], see Figure 2.

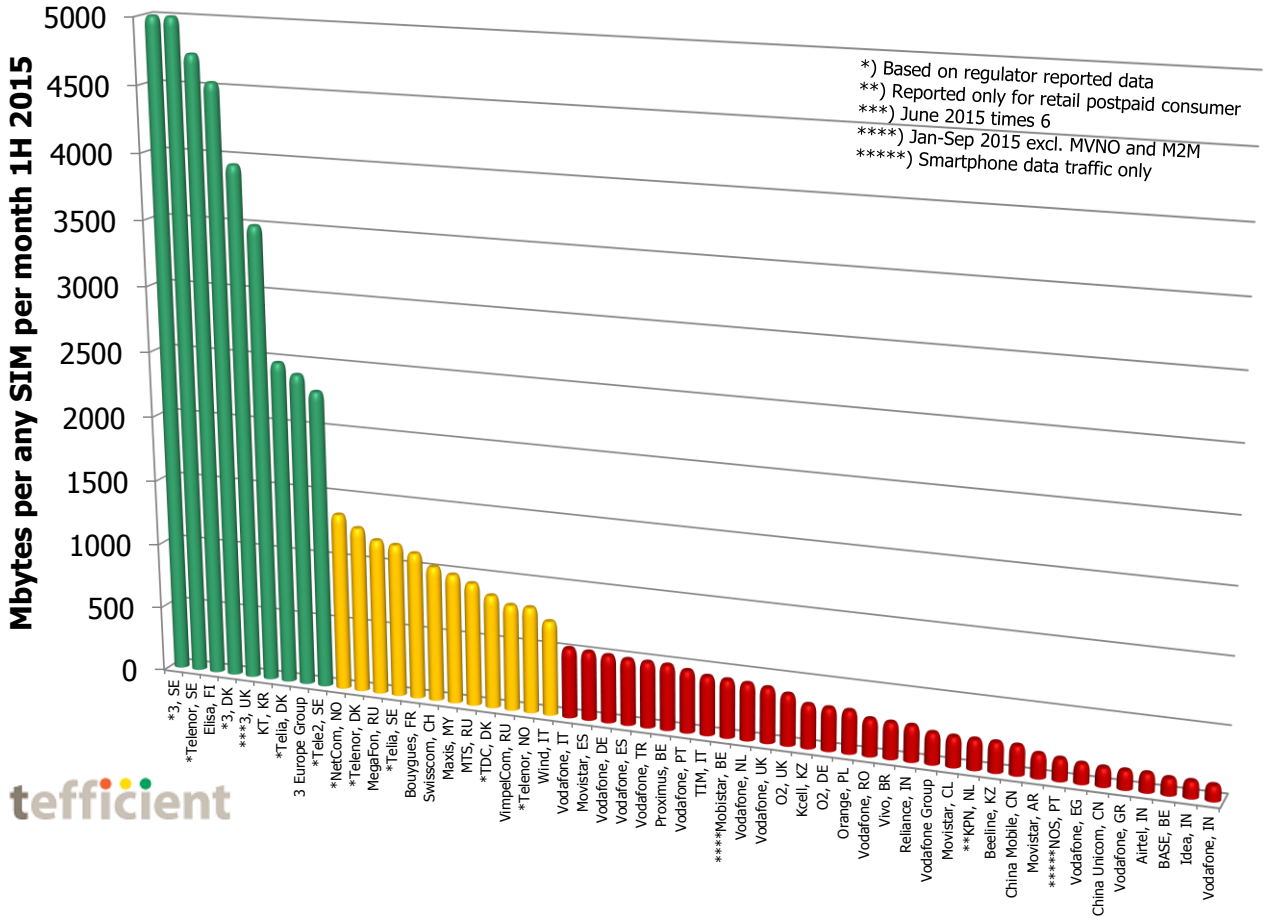


Figure 2. Mobile data usage per any SIM and month – for reporting operators (or where the regulator reports it)

Green tier >2 GB

With **5.0 GB** per any SIM and month in 2014, **3 Sweden** is the reporting[6] operator with the highest mobile data usage in the world. 29% of 3's SIM cards are data-only and these averagely used 12.2 GB per month in 1H 2015 which obviously lifts the average. Having said that, 3's voice-also subscriptions also had much traffic: 2.2 GB per month.

[5] At least not based on reported data; neither DNA nor Sonera from Finland have reported data traffic in 1H 2015
[6] Well, in this case it is their regulator reporting

3's competitor **Telenor Sweden** follows as number 2 – also with 5.0 GB – and did almost catch up 3 in 1H 2015. 20% of Telenor's SIM base is data-only – having used averagely 14.4 GB of data per month. Voice-also subscriptions used 2.7 GB.

The other two Swedish operators are in positions 9 (**Tele2**) and 13 (**Telia**).

As number 3 we find **Elisa** from Finland with 4.7 GB per month. In 2014[7], DNA had higher usage than Elisa, but neither DNA nor Sonera have reported traffic in 1H 2015.

In position 4 we find **3 Denmark** – and in position 5 **3 UK** – suggesting that 3's operations typically have high usage customers (which also is proved by the 3 Europe Group having position 8).

KT from Korea is in position 6.

Telia in Denmark has position 7.

Amber tier >0,5 GB <2 GB

The three major Russian operators – **MegaFon**, **MTS**, **VimpelCom** – are all in this tier, with MegaFon in the lead. Also both Norwegian operators – **NetCom** and **Telenor** – are in the amber tier. NetCom has significantly higher usage than Telenor even though NetCom now incorporate the lower-usage ex-Tele2 base.

Red tier <0,5 GB

A majority of European operators are still below 500 Mbyte per any SIM and month in 1H 2015 – alongside reporting operators from Brazil, Chile, China, Argentina, Egypt and India.

[7] http://tefficient.com/mobile-data-usage-price-and-bucket-size-matter/

Low usage = high growth? Not that simple.

When operators implement tighter control over mobile data usage – through controlled bucket sizes or increased prices – the growth of the mobile data usage is of course affected.

Looking at Figure 3 – which compares the usage level with its full year 2014 to 1H 2015 development – we can see two corners of the chart with atypical behaviour: **Finland**, upper right, represents one. Here mobile data usage grew **61%** in 1H 2015 vs FY 2014 in spite of the world's highest data usage. Is this where the rest of the world would be if mobile data was unlimited?

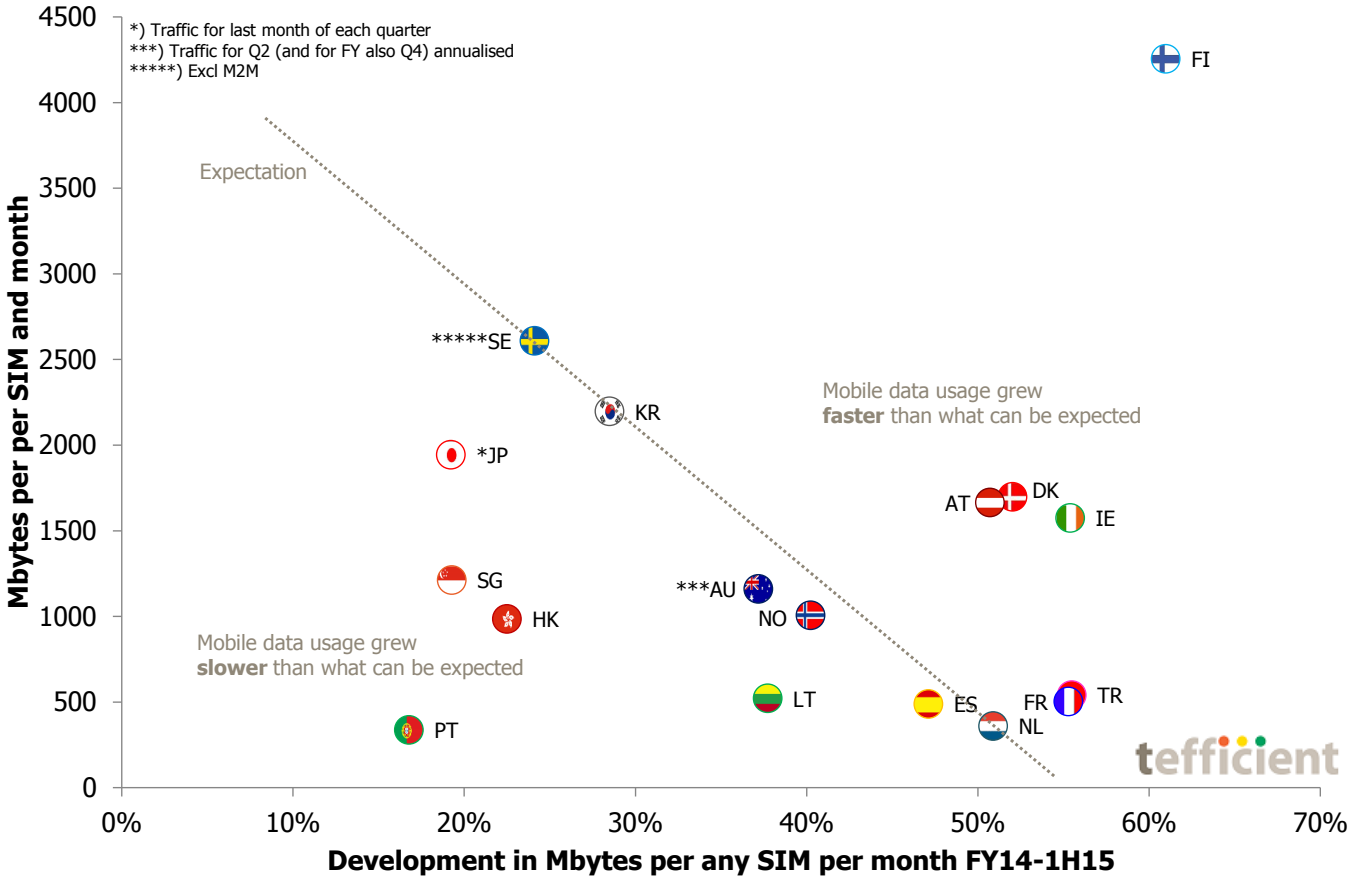


Figure 3. Mobile data usage vs. its development from 2014

The other atypical corner is represented by **Portugal**, **Singapore**, **Japan** and **Hong Kong** – lower left. Here we observe signs of saturation: Mobile data usage only grew about 20%.

Portugal has had a weak development in mobile data usage for a long time and in their case it's driven by fewer and fewer data-only subscriptions – and even if they just represented 3.4% of the SIMs in June 2015, 69% of the mobile data traffic was still carried by these SIMs. There's not much wrong with Portugal's

smartphone penetration – Vodafone reported 55% by the end of June – but the Portuguese simply seem to avoid using mobile data on their smartphones.

In the mature Asian markets **Singapore**, **Japan** and **Hong Kong**, the explanation to the low growth rate is rather to be found in operators' ambition to earn more on mobile data – while they at the same time build large Wi-Fi networks to offload cellular traffic. This doesn't mean that paid traffic is substituted by free traffic; many of these operators are indeed charging for Wi-Fi.

In Figure 4, we've ranked the mobile data usage development in 1H 2015 (the X-axis from Figure 3).

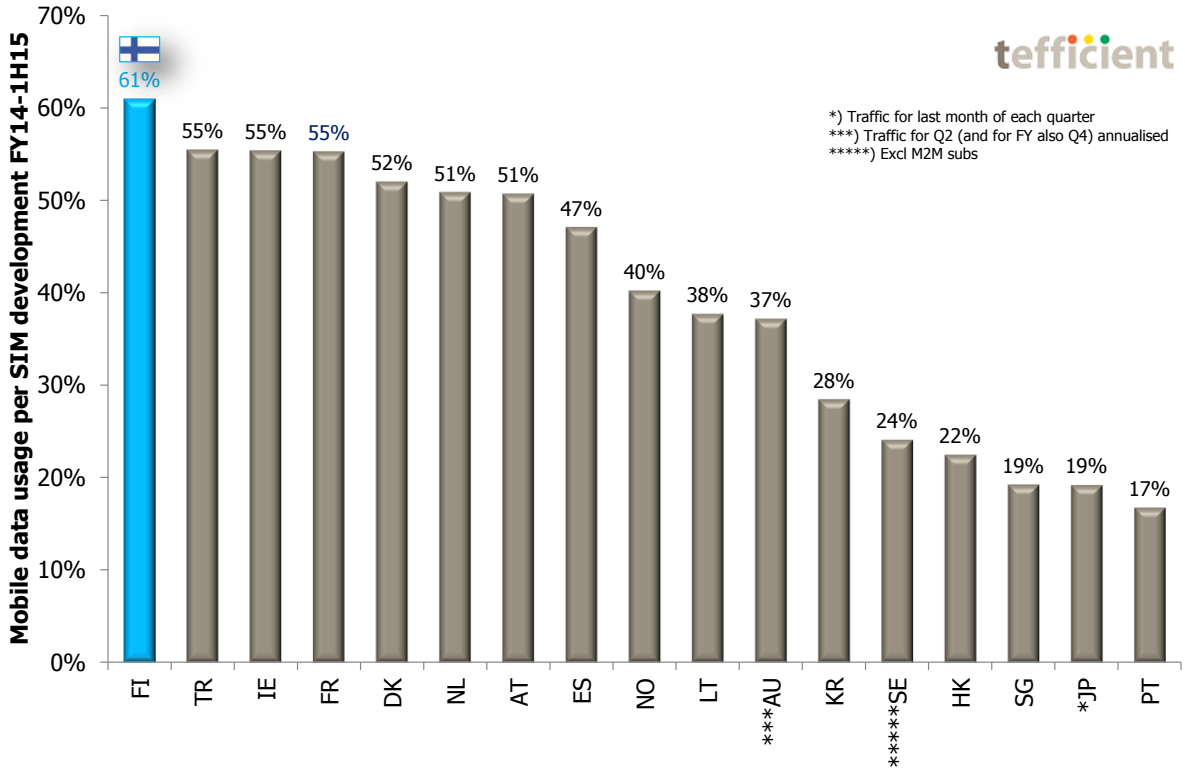


Figure 4. Mobile data usage development FY 2014-1H 2015

Finland – in spite of the world's highest usage already – leads with **61%** usage growth in 1H 2015 compared to FY 2014. Year on year (1H 2014 to 1H 2015), total traffic grew 97% with a SIM base growth of just 2%.

Average usage in **Turkey**, **Ireland** and **France** grew 55%. **Denmark** had 52%. The **Netherlands** and **Austria** follow with 51% usage growth. As Figure 3 shows, Denmark, Ireland and Austria (and to some extent Turkey and France) are growing faster than expected whereas the growth is the Netherlands is as expected.

As mentioned, Portugal, Japan, Singapore and Hong Kong have low usage growth. Also Sweden should perhaps join the close-to-saturation category since usage growth levelled off significantly the last 12 months.

Is data-only important for usage?

The bigger the screen, the higher the data consumption – right? Figure 5 is giving support for this.

Generally speaking, countries with a high penetration of **data-only SIMs** – sitting in e.g. tablets, PCs, modems – have much higher data usage than countries with a low data-only penetration. With 18% of SIMs being data-only, **Finland** has the highest data usage in the world. **Australia** is, however, at 19% with just 1.2 GB per SIM and month. Ireland is having higher usage than Australia with just 7% of SIMs being data-only.

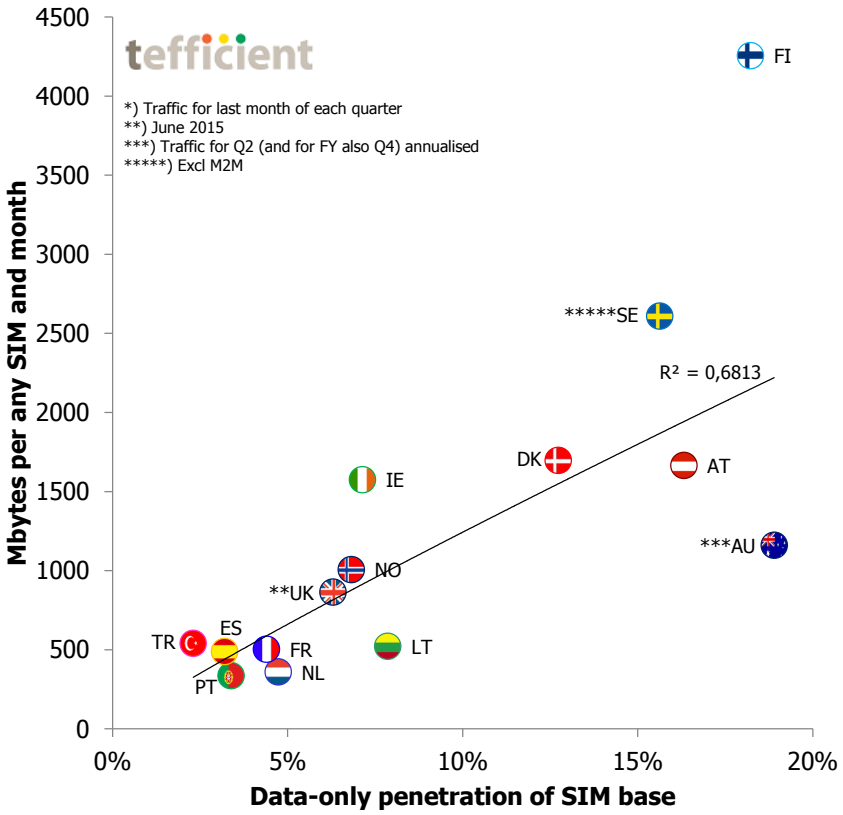


Figure 5. Mobile data usage vs. data-only penetration

If looking at the bottom-left corner, though, we can note that countries without a developed data-only market – **Turkey**, **Spain**, **Portugal**, **France** and the **Netherlands** – all experience average usage of 500 Mbyte or less per month. It would make sense for someone in these markets to start addressing and monetise the data-only segment soon.

Effective price per Mbyte vs. usage

Figure 6 plots the *total* mobile service revenue per Mbyte[8] against the average mobile data usage per country. To populate the graph more, we have two times series in Figure 6: The bigger markers indicate 1H 2015 whereas the small indicate FY 2014.

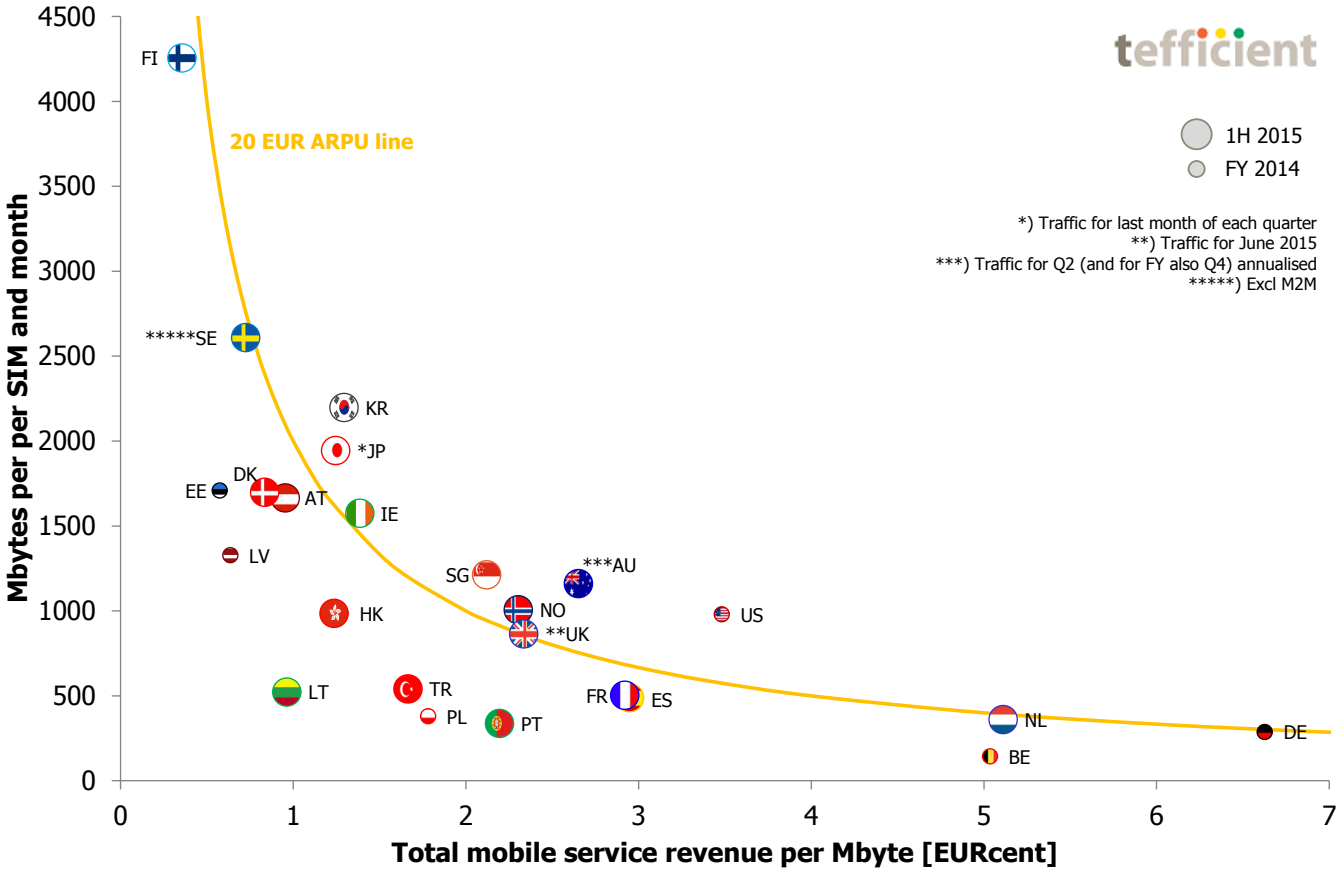


Figure 6. Comparing total mobile service revenue per Mbyte with mobile data usage

The amber line isn't a trend line – it's showing where **20 EUR of ARPU** is earned. Countries below it have lower ARPU than 20 EUR; countries above it higher ARPU than 20 EUR.

Based on 1H 2015 stats, **Netherlands** is still the country where the effective revenue per Mbyte is the highest[9] – **14 times** higher than in **Finland** who has the lowest effective revenue per Mbyte.

Based on Figure 6 we can yet again conclude that the key explanation for high mobile data usage is a low effective price per Mbyte: **Bigger data buckets lead to a lower price per Mbyte which increases usage**. As showed in Figure 5, it's important that customers can use big buckets also on data-only devices.

[8] Attributing zero value to voice and messaging – which is also how most mature operators have priced service bundles when voice and messaging is unlimited, but data capped on volume

[9] Germany is another candidate, but 1H 2015 isn't reported

Conclusion

Operators in **Finland**, **Sweden**, **Korea**, **Japan**, **Denmark**, **Austria** and **Ireland** (in that order) have – based on 1H 2015 traffic stats – the customers with the highest mobile data usage in the world.

The good news is that in most markets, usage continues to grow at high speed; the average usage growth was **40%** in 1H 2015 compared to full year 2014. Finland tops with 61%.

At the same time, markets like the **Portugal**, **Japan**, **Singapore** and **Hong Kong** show signs of saturation.

With a monetisation model predominantly based on data volume, it is tempting for operators to make sure that every Mbyte costs and brings in good margin by keeping bucket sizes down and prices up. Customers aren't without alternatives, though. Cablecos are – in e.g. the Netherlands and Belgium – providing their customers with access to **public Wi-Fi** and free-to-use Wi-Fi calling apps. In addition, there are a few **Wi-Fi first** services being introduced for mobile – best-known example being Google's **Project Fi**.

We're not suggesting that mobile operators should go back to unlimited data[10] – unless it is sold with a premium – but we believe operators need to **become more generous when it comes to bucket sizes** – also on lower price points – to avoid that their customers develop a Wi-Fi first behaviour. Alternatively, if mobile data is seen as too expensive to produce in significant volumes, incorporate the operator's own public Wi-Fi as an integral, not necessarily free, element in every mobile data plan.

[10] Finnish operators are facing a growing issue as they aren't able to monetise the quickly growing data volume – instead they can only monetise on a "thirst for speed" which might be difficult once the step from 3G to 4G has been taken by most customers