Patterns of data ARPU

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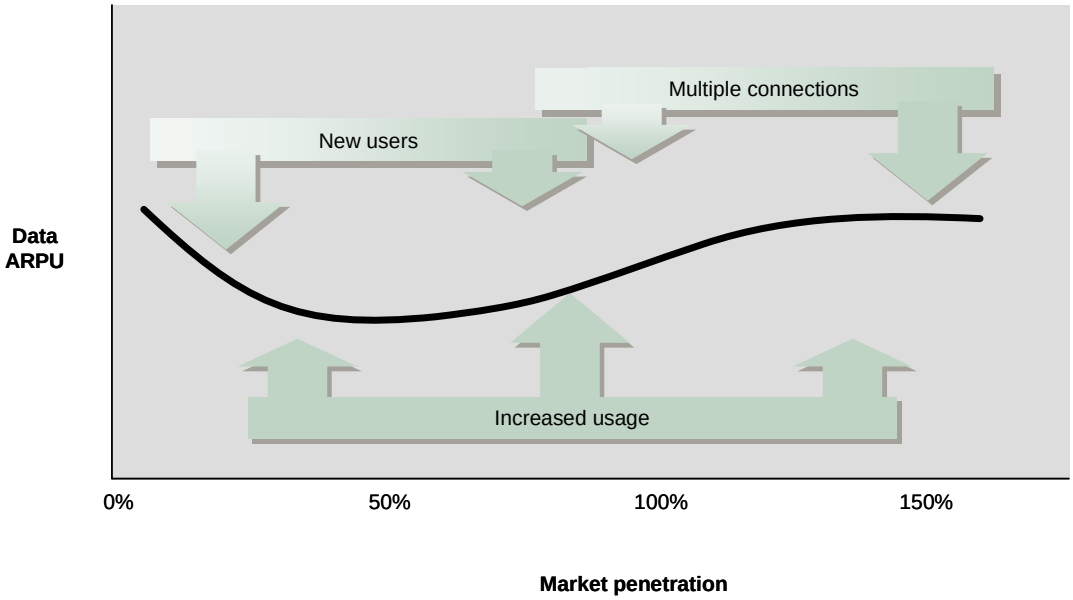
In our recent report 'ARPU patterns as market penetration rises', we found a broad trend of ARPU falling in the early stages of a market as new users dilute the average, followed by a period of stability as users increase their usage, followed by another period of falling ARPU (above 100% penetration) as users start to have multiple devices. Here we look at the pattern of data ARPU and find that it follows a similar path, except that the area between 40% and 100% penetration generally shows strong growth. This is down to the entry of the youth market plus operators improving their portfolio and marketing of data services, encouraging users to use and spend more. It appears that the multiple-device phenomenon will flatten data ARPU in more mature markets above 100% penetration, although there are some exceptions to this.

Figure 1 **General pattern of data ARPU development**



Source: Wireless Intelligence, November '06

The graph shows the most typical pattern of development for data ARPU as market penetration increases, with the initial phase followed by a period of sustained data ARPU growth.

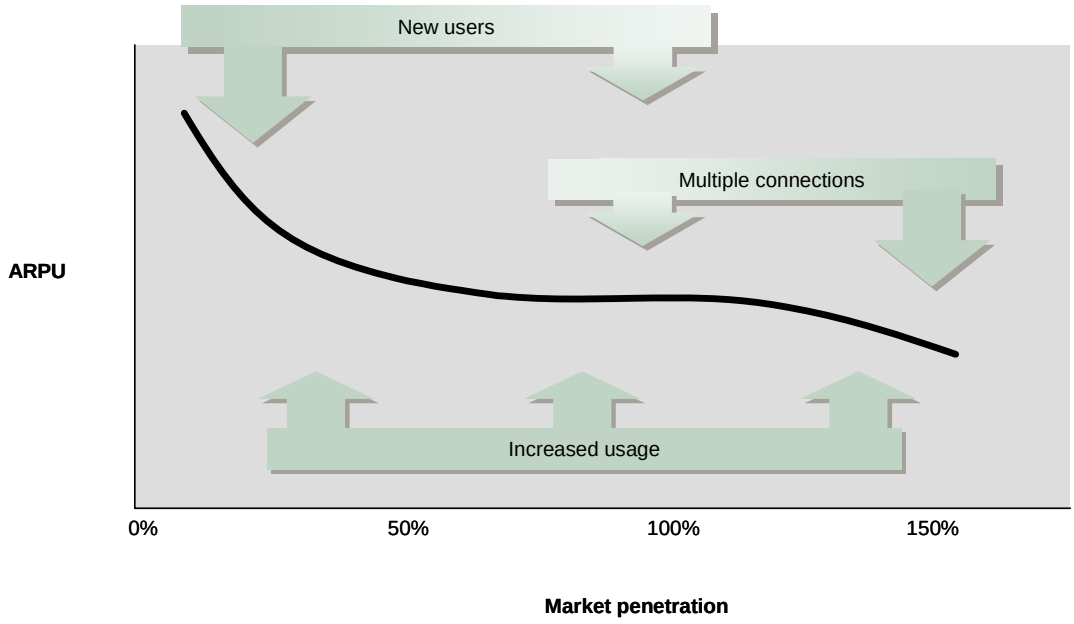
Wireless Intelligence collects data from all cellular operators worldwide. Data ARPU is not as well reported as total ARPU, so the analysis in this report is done at the operator level, with no attempt to aggregate up to country or region. We have data ARPU values for 76 operators from all regions of the world, who account for about 33% of worldwide connections.

Analysis

General pattern of ARPU development

In our report '*ARPU patterns as market penetration rises*', published in July 2006 we highlighted a general pattern of development for total ARPU as shown in Figure 2.

Figure 2 **General pattern of change in total ARPU as penetration increases**



Source: Wireless Intelligence, September '06

During a market's initial high growth phase, two main factors affect total ARPU:

- as new users enter the market and typically spend less than the earlier users, ARPU is diluted

- existing users generally increase their usage as prices fall, gradually substituting fixed network traffic and using value-added services. This works to raise their individual spend (obviously depending on pricing).

The dilution is the much stronger effect and total ARPU falls during this phase.

As the penetration rises past 50%, the balance changes – with a slower rate of new users entering the market. During the next growth phase, the two effects are more balanced leading to a more stable total ARPU.

As the penetration rises further, through 90-100%, it is clear that significant numbers of people have multiple connections. This is more widely seen in markets that have a high share of prepaid users, such as Italy, because the cost of entry is lower. This pushes total ARPU down as users typically spend less on their second (and subsequent) connections than on their first one.

While this is happening, there continues to be upward pressure on total ARPU from increased usage.

The pattern for data ARPU is similar, with some differences

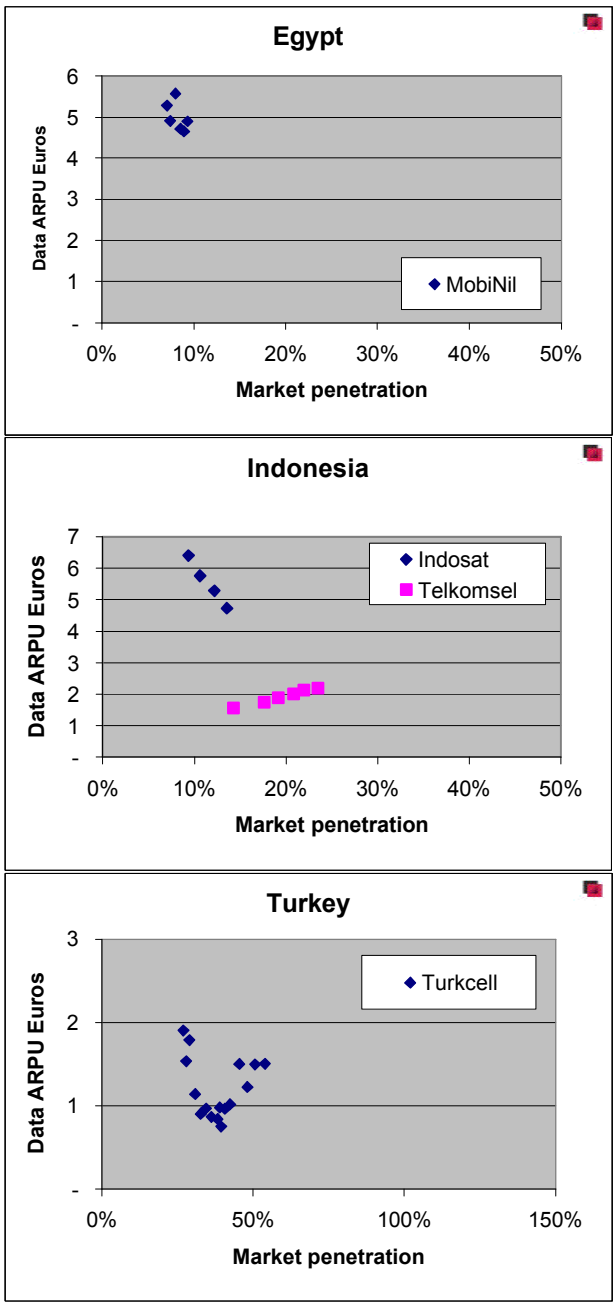
Data ARPU is typically 15%-25% of total ARPU, with SMS normally around 90% of this. Other services are growing and starting to increase their share of data ARPU, including MMS, WAP, web access, email, instant messaging, music and video downloads, and mobile TV.

We might expect that the same considerations would apply to data ARPU as we see for total ARPU as market penetration rises. It would seem reasonable that new users would use less than those who already have some experience with the services, and would dilute the average. Then increased usage could take over as the main factor affecting data ARPU levels. As the market matures, we would expect a further phase of dilution as people use multiple devices (SMS across multiple SIM cards, plus BlackBerry and other email devices).

There are a few examples where the early market phase appears to follow that pattern, shown in *Figure 3*.

Note: the graphs show quarterly data points for data ARPU plotted against market penetration.

Figure 3 **Early market conditions for data ARPU**



Source: Wireless Intelligence, November '06

Turkey and, to some extent, Indonesia both show signs of a market reaching a turning point, with the initial dilution phase giving way to a phase in which data ARPU starts to grow.

We believe that this is down to two main factors:

- the entry of the youth segment into the market
- operators placing greater focus on providing and marketing data services.

In the early stages of a market, cellular is usually priced at a level that is not affordable for youth. As the market grows and competition increases, this changes and the market starts to include much younger people, who are often the biggest users of SMS.

In parallel with this, operators often start to put much greater emphasis on data services. Many of these are around SMS, linking the service to TV and radio shows to provide mass voting, games, competitions etc. Of course, operators typically launch and promote many other data services including email, MMS, instant messaging, as well as WAP, web surfing, music and video downloads and mobile TV.

Once the growth phase starts, operators generally appear to be able to keep it going as market penetration rises up to around 100% as shown in *Figure 4*. After the penetration passes 100%, we see that data ARPU tends to flatten in many countries. As with total ARPU, this appears to be because of multiple SIMs or devices:

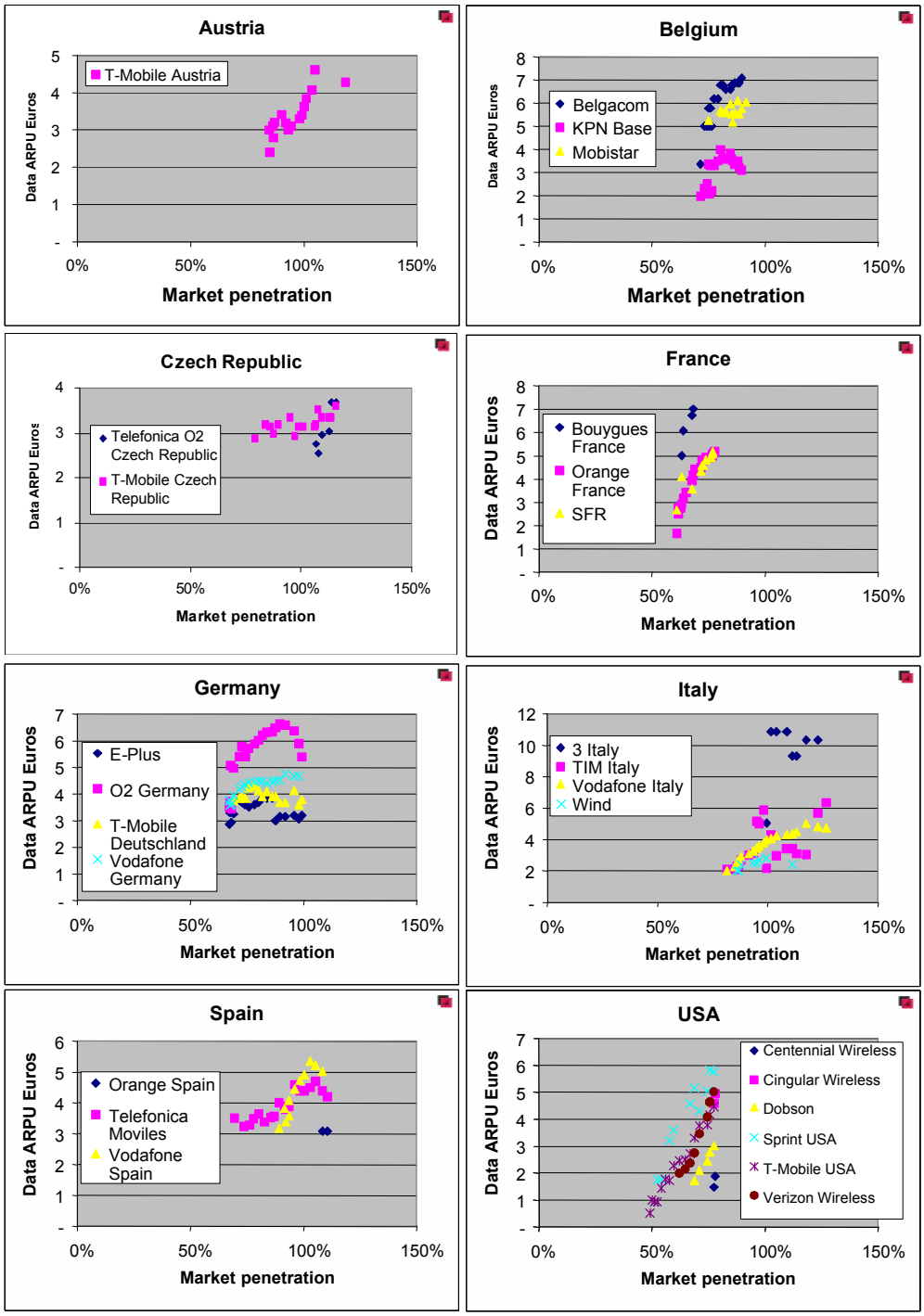
- users' data traffic is spread across two SIMs or devices, so the average for each is lower and the operators' average starts to be diluted again (even if the individual users' overall spend is higher)
- users do not spend as much through their second device as they do on their primary one.

Other factors that will affect the level of data ARPU include:

- reductions in termination rates
- increased competition pushing down prices.

However, provided these do not introduce sudden and large price shocks into the market, we expect price elasticity to mean that users will expand their usage over time and that the long-term effect on ARPU is either negligible or positive.

Figure 4 **Examples of data ARPU growth as the market matures**



Source: Wireless Intelligence, November '06

There are exceptions to the general pattern

Most of the countries and operators in our database follow the pattern nicely.

But we have found examples where:

- the growth phase is not evident, see *Figure 5*
- the operator is able to continue growing data ARPU at high levels of market maturity, see *Figure 6.*

The three main examples where the growth phase is not evident are Croatia, Estonia and Macedonia. There has been a lower focus on marketing data services in many parts of Eastern Europe and this analysis suggests that increasing attention, even just to SMS, could pay significant benefits in terms of ARPU uplift.

Interestingly, there are also a few operators who have managed to buck the trend in mature markets and continued to grow their data ARPU with penetration levels comfortably over 100%.

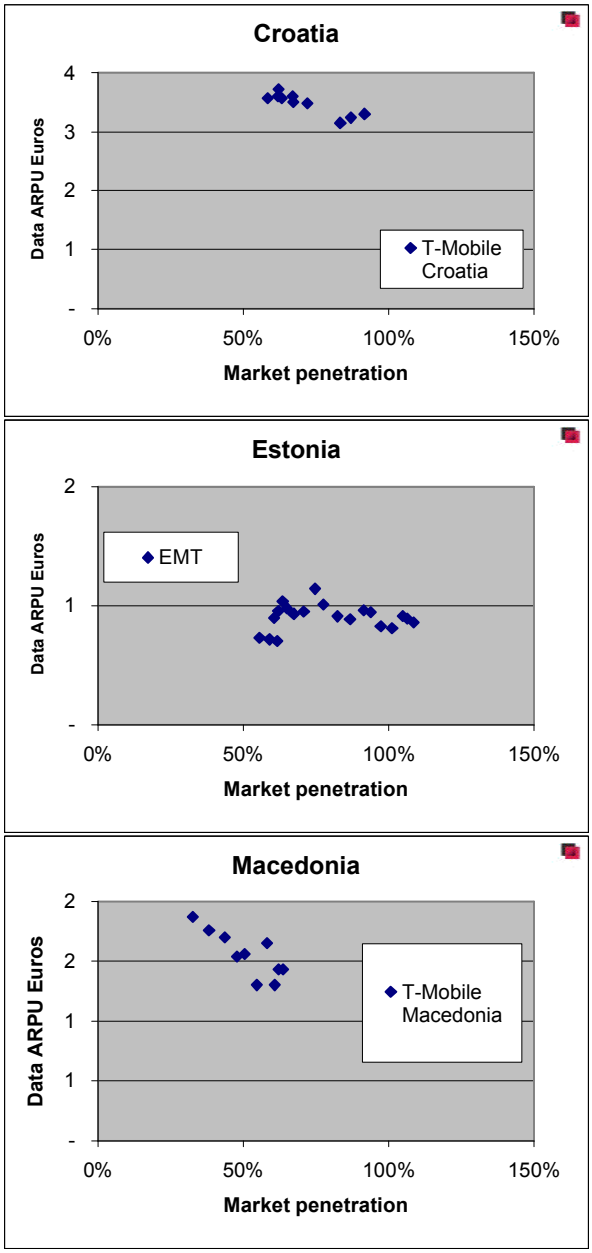
In Portugal, both Optimus and TMN have continued to grow their data ARPU as penetration has risen past 100% and it is only just beginning to slow down as the penetration hits 115%.

In Singapore all three operators have been able to continue to drive higher data ARPU, thanks to use of flat-rate data plans, some innovative services (visual radio, good TV offerings), plus a one-off effect from a reduction in penetration caused by changes in the registration rules in Q2 2006.

In the UK, although most operators are seeing a slow down, O2 is continuing to grow its data ARPU thanks to an innovative data services strategy. For example O2 was first to link up to very popular TV shows, such as *Big Brother*, for mass tele-voting. It was early with devices such as the XDA for web surfing and has pushed i-Mode internet services.

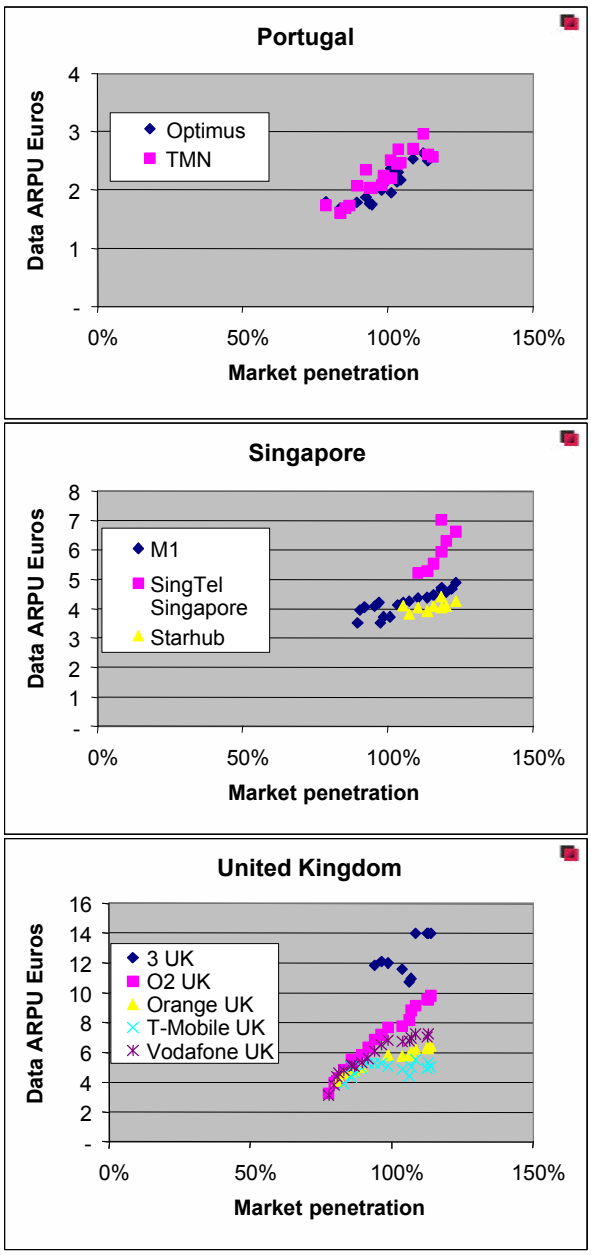
Notice that in the UK, 3's data ARPU had been falling but has turned upwards again. It launched in the UK when the market was already fairly mature and initially attracted high data ARPU customers. However, many of its second wave of additions were lesser data users attracted by cheap voice tariffs, so the data ARPU was diluted in a similar way to early market conditions. It is now pursuing an aggressive multimedia strategy and is reaping some benefit.

Figure 5 **Examples where the data ARPU growth phase is not evident**



Source: Wireless Intelligence, November '06

Figure 6 **Examples where the data ARPU continues to grow at high levels of market maturity**



Source: Wireless Intelligence, November '06