



ARPU patterns as market penetration rises

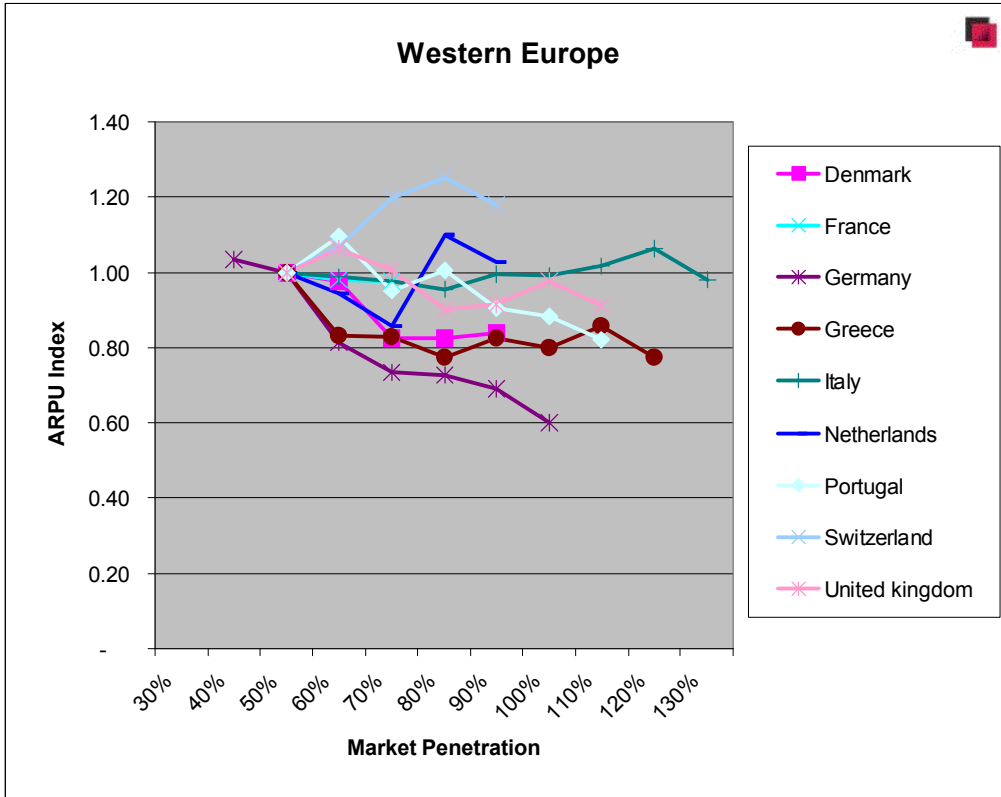
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Following some of our recent work on real ARPU, we look here at how ARPU changes with market penetration in the more mature markets to explore where the phenomenon of multiple connections per user takes effect. In many markets where pre-paid is significant, it appears that the market enters a phase of fairly stable ARPU when it reaches about 50% penetration, followed by a phase of falling ARPU at higher penetration levels as multiple connections become more of a feature of the market. However, multiple connections is only one factor affecting ARPU – in the last five years many of these markets have also been affected by reductions in termination rates and the arrival of MVNOs.



Figure 1 **Western European ARPU versus market penetration**



Source: Wireless Intelligence, July '06

Western Europe has some of the highest market penetration figures in the world, so provides a good test case for looking at the effect of multiple connections.

We have indexed the ARPU figures to the level they had reached when the market penetration was 50%, then plotted the change as market penetration has risen.

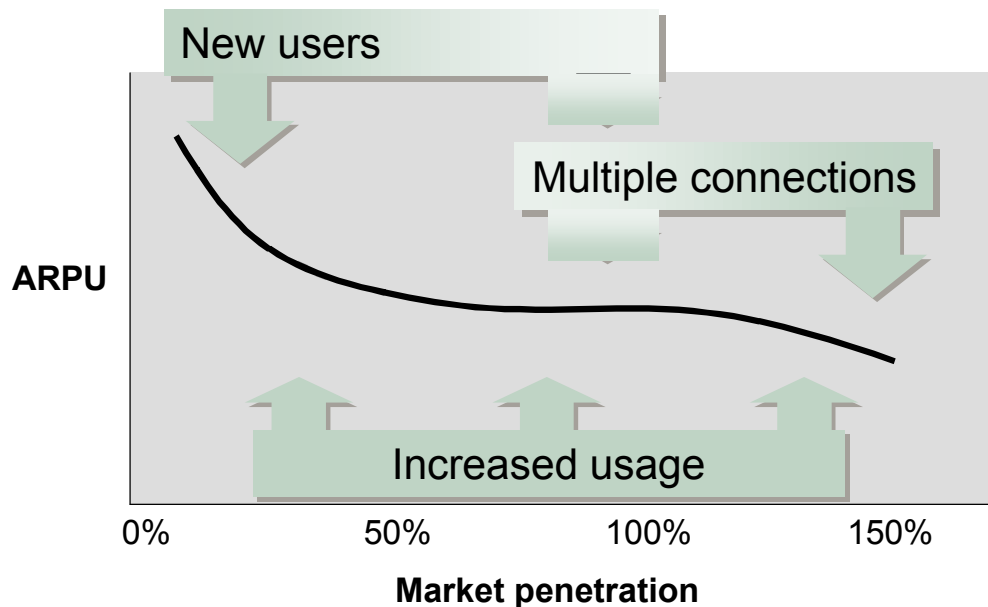
In most cases, ARPU becomes reasonably stable once penetration reaches typically 50–70%. This stability continues as penetration rises, until it gets above 100% when – at some point – ARPU starts to fall.

The ARPU data in this report covers the major markets in Western Europe and some other parts of the world. We have restricted the data presented to those markets where we have full ARPU data and can index the ARPU to the level it reached at a penetration of 50%. This rules out some of the most advanced markets, such as the Nordics and Israel, where the penetration was above 50% before the start of our data series. It also rules out some Latin American and Asia Pacific markets, where not all players report ARPU today, so the analysis would focus on too limited a subset of the players.

Analysis

Why does ARPU do this?

Figure 2 General pattern of ARPU change as penetration increases



Source: Wireless Intelligence, July '06

During a market's initial high growth phase, two main factors affect 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 ARPU falls during this phase.

As the penetration rises past 50% the balance changes, with a much slower rate of new users entering the market. During the next growth phase, the two effects are more balanced leading to a more stable 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 pre-paid users, such as Italy, because the cost of entry is lower. This pushes 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 ARPU from increased usage.



Other factors

Of course there are other factors that can have a significant effect on the ARPU of a market. These include:

- changes in termination rates, as we have seen in some parts of Western Europe, notably France, Germany, Italy and the UK
- pricing shocks through very fierce competition, as we have seen in some markets through the arrival of MVNOs notably in Finland, Sweden and Denmark.

What are multiple connections?

In some cases the multiple connections effect is caused by subscribers using multiple SIM cards. Normally this is done to take advantage of better tariffs at certain times of day, or to call groups of friends on another network. This will have a limited effect on users' overall traffic volumes since the only benefit is slightly cheaper rates.

A more interesting part of the effect is caused by subscribers using multiple connected devices such as a BlackBerry, data card as well as a phone. At present these numbers are small. However, they bring significant incremental traffic and spend per user, even if the ARPU on the additional connections is lower than on the user's primary phone. If handled correctly these should be a significant opportunity for operators.

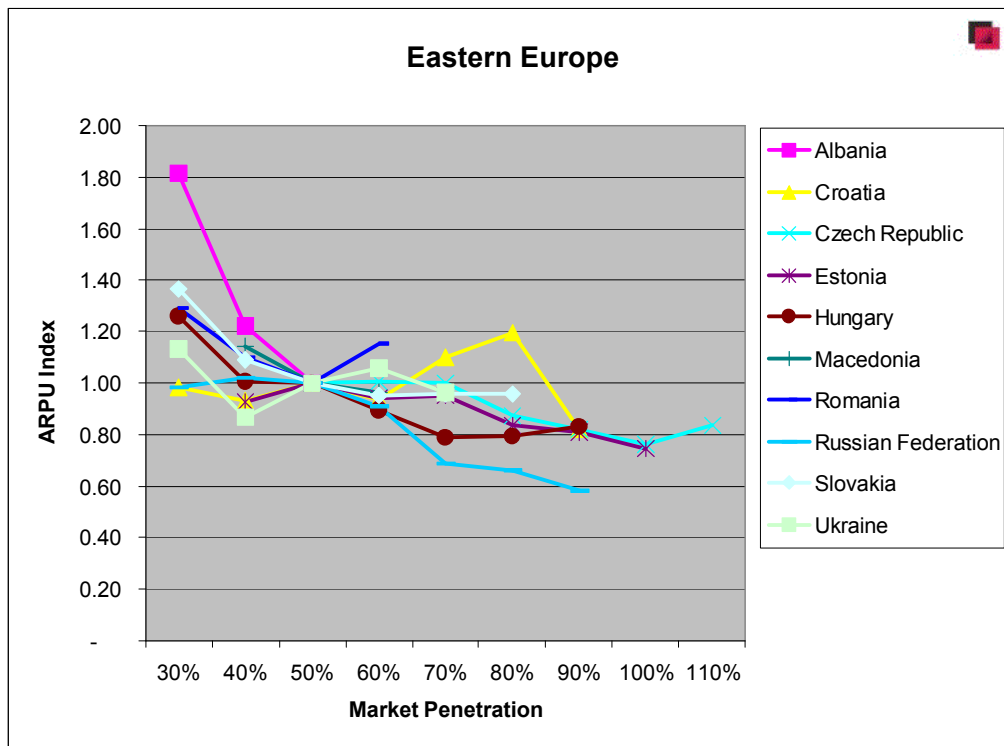
Other regions

Countries with a high share of pre-paid

The pattern of ARPU development appears to hold true in other countries that have a significant share of pre-paid users. But it looks as if the period of ARPU stability starts at a different penetration level than in Western Europe. Eastern Europe is a good example, as shown in Figure 3.



Figure 3 Eastern Europe ARPU versus penetration



Source: Wireless Intelligence, July '06

A similar pattern of ARPU stability exists in Eastern Europe, but it starts around 40% market penetration, compared with 50–70% in Western Europe. We attribute this to lower GDP per capita in the region (although there are wide variations between countries) – there will be more people who cannot afford mobile services, so saturation effects would be expected at lower levels of penetration.

In Eastern Europe there is today rather lower investment in cellular data services than in Western Europe, so we expect any impact of multiple connections to be because of multiple SIM usage rather than multiple connected devices.

Countries with a low share of pre-paid

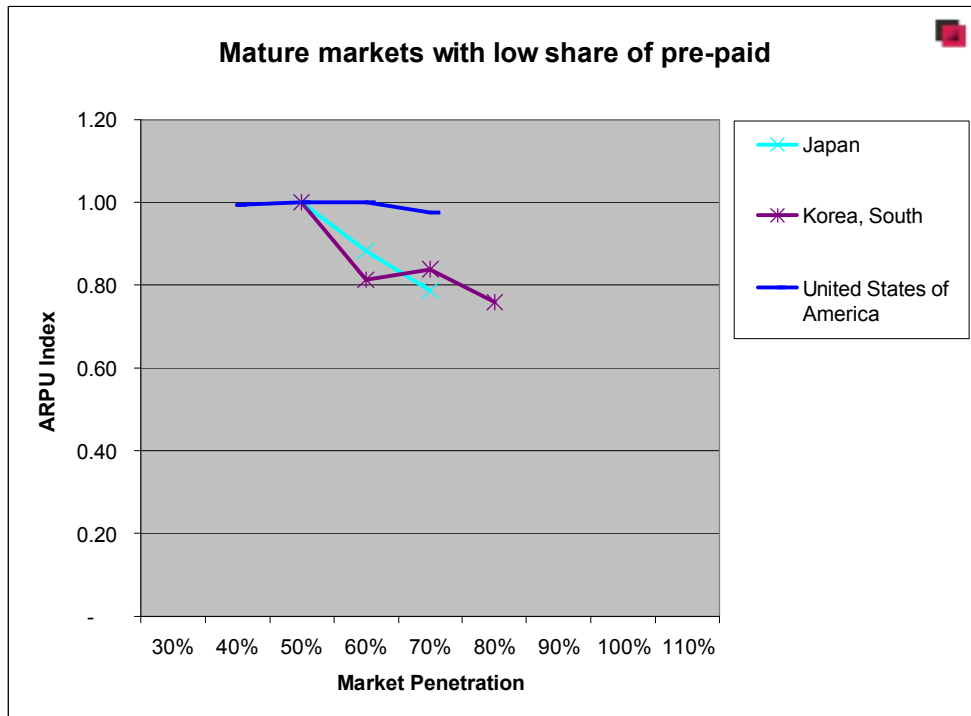
In some mature markets – notably the US, Japan and Korea – there is very little pre-paid so penetration growth has been slower. The multiple SIM phenomenon is very small and we are not seeing the very high levels of market penetration seen elsewhere. In these markets other factors dominate the ARPU trend.

For example in Japan, there has been heavy price competition as operators fought for market share and looked to migrate their customers to 3G services. In the US ARPU has been remarkably stable over the five years in which the market has grown from 30% to 70% penetration as operators have competed more on the size



of their bucket plans than on the price levels. In Korea rising usage, including value-added services such as mobile TV, is offsetting competitive pressures around 3G migration.

Figure 4 **Mature markets with a low level of pre-paid ARPU versus penetration**



Source: Wireless Intelligence, July '06

And finally

As we have reported before, a falling ARPU is not necessarily a bad thing in a mature market.

This report shows that, in a market with a large share of pre-paid, a falling ARPU is largely inevitable as penetration levels rise above 100% and multiple connections become a feature of the market.

In many cases this means that individual users end up using more and spending more.

Operators in maturing markets should begin to explore the scale of the opportunity for people owning multiple connected devices and look at tariffs that would encourage it, such as a personal pool of airtime to be used across connections.



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