



Islander January 2011 Technology Update

Are we heading for a Data Capacity Crunch in 2011?

Congestion of mobile networks

What has caused the biggest impact to cell and mobile phone operators in 2010? It has to be the massive growth in data traffic due to the enormous increase in smartphone and tablet usage, downloading apps and social networking.

There has been a plethora of extraordinary statistics at the end of 2010 describing the huge growth in data usage. Let me outline some of the best:-

- 5 billion apps were downloaded in 2010, as compared to 300 million in 2009 – according to MobileFuture.org.
- There was a 347% increase in Twitter use.
- Mobile Facebook users exceeded 200 million.
- 100 million YouTube videos were played on mobile devices every day.
- 137% growth in “Connected Devices” (iPhones, Android phones, iPads etc)
- Predicted sales of iPads of 10.5 million for 2010 had to be adjusted to 19.5 million and 55 million predicted for 2011 –according to Gartner Research.

In 2011, there will clearly be more users with faster devices using the same networks which, unless something changes, will become slower and more congested.

The majority of respondents (56%) to a survey by Mobile Europe were in agreement that they thought that the growth in data traffic was the biggest challenge facing operators in 2011. This is being termed the “Capacity Crunch”. The simple fact was that the growth in data traffic brought with it several headaches from aligning backhaul to meet demand, to providing enough data capacity in the most heavily used cell sites for service providers. This issue was the “number 1” issue by a long way and coming much further down the list in second and third place were “sorting out an Applications strategy” and “preparing for 4G and LTE”.

One fact appears to be that the faster and fatter networks called 4G and LTE, that came in third place, will not be a commercial reality before 2012 and will therefore not be the solution to solve the Capacity Crunch in 2011. However, this is predicted to be the highest and most likely investment by operators in 2011. 2011 is predicted to be the year when many operators will clear the way for widespread commercial LTE and 4G rollouts in 2012.

Bandwidth Management

Thus, due to the likelihood of Capacity Crunch being a reality in 2011, traffic optimisation and bandwidth management will be the name of the game to get more for less until the new fatter data pipes are laid.

The same thing is happening in the marine broadband world. As guests and crew have become more and more teched up with every device that begins with an “i” the bandwidth used on board is drying up. When the captain and the management companies running these yachts receive complaints, their immediate knee jerk reaction is to increase the bandwidth at more monthly cost with no knowledge of why and what it is being used for. This will be needed in the long term but the best immediate investment is traffic optimisation and bandwidth management to make more efficient use out of the bandwidth, and to know what

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it is being used for. We are introducing bandwidth management to an increasing number of yachts at the moment very successfully.

The same situation is occurring in businesses. Corporate IT departments now have a new role monitoring and managing bandwidth to keep businesses working.

Bandwidth hungry video - the expected growth behind the screens

So, it's clearly predicted that we won't have enough wireless capacity for mobile use in 2011 and thus our experience will become progressively sluggish and congested. But all should start improving in 2012!

To add to the mire, it is also predicted that there will be an increasing appetite for mobile video. Skype now claims that 40% of all calls are video calls. This proves that an attractive market for video calls does actually exist, even though Apple's FaceTime hasn't taken off – as yet.

According to a survey from consultants Oliver and Ohlbaum, almost half (43%) of mobile phone users have watched a video clip on their handheld in the last 12 months. Although they mostly watched user-generated content, plenty of news, sport and music videos also found their way onto the small screens. Mobiles will clearly be a big part of broadcasting's future.

Video, whether downloading and watching it, making a video call or watching broadcast content, is one of the most bandwidth hungry applications and will just add to the congestion.

Fixed networks struggling

Specifically, the fast-changing world of broadcasting will not only be a problem for our mobile phones but it is also causing a Capacity Crunch on our fixed network services in our homes and offices.

There are two significant developments in broadcasting predicted over the next 12 months. Some say the most significant will be 3DTV. This technology is continuously being enhanced. For those 3DTV sceptics you may be interested to know that Toshiba and Apple have applied for patents for new screens that do not require the viewer to wear special glasses.

Others may point to YouView, a new free-to-air, web connected TV service combining Freeview digital channels with on-demand content such as BBC iPlayer. This new service, due to launch later in 2011, is an attempt to develop a standard for internet TV in the UK.

We have been supplying internet TV (IPTV) solutions for yachts over the last year and they will only work well with a dedicated, broadband internet connection, available by using a VSAT. Our experience of using our existing YouView equivalent set-top box, as explained in this column in December, connected to an average typical domestic internet connection, still leaves a lot to be desired.

Today's fixed networks were conceived before the era of internet video. A domestic internet connection maybe labelled as 3Mb but the same connection may well be shared with the whole street or village. Thus what you actually get depends on who else is using it in the street and, for that matter, in your own home. The video experience may be good one day and poor on another and always good at 4am in the morning when everyone else is in bed. The live TV will stop and start buffering, as a YouTube video does, when it loads which is not the experience required. Larger bandwidth services are usually available but they cost more.

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This creates a challenge for service providers who are struggling to cope with the demands it puts on their infrastructure. The challenge which video poses to the network is that it creates a large and constant stream of data. The video streaming into the home has no long pauses as happens whilst agonising over your Facebook profile or as you stare in bafflement at the instructions for iTunes.

We are ahead of our time, trying to get these new IPTV technologies working on legacy fixed networks. These challenges are set to come to the forefront in many countries as initiatives such as YouView, which intends to enable every household with the right set-top box to access on-demand content via their TV, come to market.

So roll on 2012! Mobile and fixed networks providing data for our ever increasing demands will see only small improvements in 2011. Trying to get more out of the same by efficient use of data with good bandwidth management should be implemented before buying more bandwidth. Alternatively buy a marine VSAT!

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