

## LTE | The turning point of mobile infrastructure procurement models

*The budget of operators' LTE investments is being squeezed by the challenging mobile data business case. In order to make economic sense, the cost of rolling out an LTE network cannot be more than a fraction of the money that has been spent on 3G rollouts. Moreover, the price of incremental capacity upgrades needs to be at least ten times lower than the typical price of adding comparable capacity to HSPA networks.*

### Speed | from good enough to great

LTE, compared to today's 3G/HSPA networks, will increase the typical average user bit rates by a factor of five to six. That is a significant jump but probably will not fundamentally transform the end users' broadband experience. The change will not be as revolutionary as the step improvement that happened when HSDPA was introduced in 3G, lifting the network speeds from a few hundred kilobits to several megabits per second, which is sufficient for the most commonly used applications.

### Revenue boost? | no holy grail

HSDPA has already done most of the job of enabling mass market mobile broadband adoption and as such it is unlikely that LTE could fundamentally expand the addressable market of mobile broadband or justify substantially higher subscription fees. LTE may boost data ARPU or prevent erosion in the short term but that alone will not fix the mobile data business case. What operators truly expect from LTE is to slash the cost per a megabyte of data transferred over their networks.

### Cost efficiency | everything

The average monthly data usage per mobile data subscriber can easily grow fivefold by 2014 and exceed 10 GB per subscriber per month. It is imperative for operators to squeeze the cost per megabyte if they are to maintain future margins at current levels. To put this into perspective, at current infrastructure cost levels a single five minute YouTube video, if consumed in the busy hour, can cost several Euros for a network operator in directly data traffic related variable network costs alone.

### Capacity | a hard driver

LTE is often promoted with high bitrates but actually the only hard driver of LTE roll outs will be the need for additional capacity. In two to three years most European 3G/HSPA operators will run out of spectral resources in 10-30% of their base stations. Being the de-facto standard supported by gear and terminal makers in the newly auctioned frequency bands, in practice LTE will be the only technology option for adding extra capacity.

### Traffic-linked gear pricing | pray as you grow

Mobile telecom platforms have traditionally been shipped with sizeable hardware capacity and software licenses have been charged to unlock

capacity resources in the equipment. This is a "win-win" arrangement allowing the operators to spread out capacity investments over several years, while the vendors benefit from the operators' success in form of steady capacity-driven income. The approach was adequate with the average data usage per subscriber being in the range of tens to few hundreds of megabytes a month. But clearly, when flat-rate retail data tariffs prevail, traffic driven infrastructure capacity licensing mechanisms are no longer sustainable and cannot be the norm in LTE deal making.

### LTE | the end of traffic-linked equipment pricing

LTE's central premise of dramatically increased network capacity marks the end of telecom vendors' golden age with business models based on selling incremental network capacity at high margin to relatively price-insensitive operators. In the data-centric era the key selling point is low cost of capacity upgrades. The challenging mobile data business case will squeeze the budget of LTE investments. In order to make economic sense, the cost of rolling out an LTE network cannot be more than a fraction of the money spent on 3G rollouts. Moreover, the price of incremental capacity upgrades needs to be at least ten times lower than the typical price of adding comparable capacity to HSPA networks.

### Squeezing cost per MB | why wait for LTE?

The latest base station platforms can combine GSM, UMTS and LTE technologies in a single box. If the same bandwidth of radio spectrum is available for HSPA and LTE, the same equipment could handle similar capacity regardless whether it is run in HSPA or LTE mode. If LTE, according to the vendors' key selling arguments, can dramatically decrease cost per megabyte, the question is, given that the physical boxes are the same, why cannot HSPA capacity pricing be relaxed?

### Modernization | time to act

The solution to reduce network expenditures lies not in the radio access technology but rather in the general capacity scalability of radio, core, backhaul and backbone platforms. Since 2009 modern scalable platforms are available from all main suppliers and operators are rushing to replace their old capacity constrained gears and at the same time make "gigabyte friendly" capacity pricing deals. Even if projected traffic growth does not fully justify the deployment of LTE in the coming two to three years, operators will benefit from including LTE in the scope of their network modernization deals. Doing so can give them strong arguments for framing favorable capacity licensing mechanisms and enforcing rationalized pricing not only for the future LTE network but already for the modernized 3G/HSPA equipment.

Apart from squeezing variable traffic related costs, operators welcome any other propositions for lowering their fixed running expenditures. Modernizing of old GSM and UMTS networks into all-in-one high capacity platforms, and outsourcing network operations to vendors will likely to be discussed in conjunction with the LTE deals (the latter one, at least, may be a silver lining for the otherwise struggling gear makers).