ERICSSON LTE BROADCAST

The demands from mobile broadband users for instant and spontaneous access to TV and video content, a high-quality experience and more convergent mobile services are greater than ever before. Subscribers like to be able to consume content anytime, anywhere. As a result, new business models are emerging. Over-The-Top players and content aggregators are making premium content available on a variety of devices.

The Ericsson Mobility Report 2012 stated that mobile data subscriptions are expected to reach 4.2 billion by 2018. Mobile data traffic is expected to grow 12-fold by the end of 2018, driven mainly by video.

Mobile network operators (MNOs) face a challenge to meet consumer expectations while seeking a balance between the economics of their networks and creating new opportunities for revenue growth.

The introduction of LTE around the world is already preparing the ground for this explosion in video traffic. According to the GSA, as of January 2013 a total of 145 commercial LTE networks had already been deployed across 66 countries. Additionally, a further 381 operators in 114 countries had committed to build LTE networks. Also according to the GSA, 666 LTE-capable devices have been announced so far by 87 manufacturers with 221 of these being Smartphone. By the third quarter of 2012, over 43 million subscribers had already signed up to LTE services.

Ericsson LTE Broadcast, one of the services building on LTE networks, will enable new revenue models for premium media content, offering exceptional user experience while efficiently utilizing available LTE spectrum and operators' network resources. The capability and the flexibility enabled by Ericsson LTE broadcast is a very powerful tool for operators to embrace the impact and attraction of media contents and thus to provide new services and business opportunities in the mobile media era.

Ericsson, with its unique background in wireless, video compression and content management, has brought together three key technologies (eMBMS, HEVC and MPEG-DASH) to offer a complete end-to-end solution including consulting and system integration services to mobile network operators looking to exploit the benefits of LTE Broadcast.
New revenue enabler for premium media content

Ericsson LTE Broadcast supports a range of use cases: live streaming of video for high-demand content such as live sports, breaking news, most popular media delivery, e.g. popular TV show, video, music and e-printing, top OTT contents, software updates and emergency broadcasting.

MNOs may choose to deliver their own content or team up with content partners. Below are some of the key use cases associated with Ericsson LTE Broadcast and potential MNO business models.

New experiences of live events to open up new revenue sources

Mobile network operators can provide premium service with guaranteed quality. The premium service can include nationwide broadcasting live events even in dense areas to all the subscribers. Within the stadium, multiple-camera-angle channels can be offered to the event service subscribers. In addition, event related commercials, game statistics, etc can be broadcasted to generate other service revenues.

Popular media to mobile devices with innovative business models

Operators can offer innovative media services with new business models, such as real-time TV, Breaking News, stocks, sports and weather updates, radio and music streaming. Operators can partner with content owners, broadcasters and advertisers to complement each other’s services and brands with revenue sharing or wholesale models. Furthermore, operators can deliver enterprise venue services such as video streams in Disneyland for people who are queuing for the next entertainment.

Enhance end-user experience with guaranteed quality for OTT services

Operators can team up with Over-The-Top players to deliver live events, audio books, e-magazines, music via subscription, UE cached contents, to deliver media content services for revenue sharing business model.

Provide complementing emergency services to the public safety domain

Warning type or location-based information and video can be delivered by broadcasting as complementing emergency services in LTE network. For example, the video updates of accident hit area can be delivered instantly to the police network or to the subscribers.

UE caching – pushed contents for efficient delivery and manageability

Mobile network operators can offer customers the services to download and cache video and other contents overnight at attractive prices, extracting extra revenues when the network is quiet. Other contents such as Top20 video clips, games, software, applications, M2M digital content and firmware updates can also be delivered in this way.
Ericsson LTE Broadcast technology

Ericsson LTE Broadcast (eMBMS) enables multiple end users to receive the same content simultaneously. The technology is used to distribute broadcast streams into well-defined broadcast areas where all cells contribute to a Single Frequency Network sending the same data during exactly the same radio time-slots. Broadcast and unicast radio channels coexist in the same cell, sharing capacity, while the subsets of available radio resources are dynamically assigned to either the broadcast or unicast radio channels. Ericsson LTE Broadcast offers the greatest benefits in the delivery of content demanded by mass audiences.

Broadcast will complement unicast, not replace it, which provides diverse capability in video delivery within one LTE network.

At present, mobile network operators are restricted to delivering video content – streamed or file based – to subscribers on a one-by-one unicast basis. In situations where many subscribers may be watching the same live content simultaneously, such as during a major sporting event or important news announcement, this traditional unicast approach quickly leads to overload of the network capacity, directly impacting other users’ experience of service quality.

As an indication of the kinds of demand that must increasingly be anticipated and planned for by mobile network operators, during the London 2012 Olympic Games around 50% of search requests came from mobile phones in the UK. In the US, according to NBC (National Broadcasting Company) more than 45% of requests for streamed media during the same event also came from mobile phones. Similarly high figures were also reported from Australia, Japan and Israel.

LTE Broadcast is available in basic form through Release 9 of the 3GPP specifications and additional enhancements are already planned in the coming releases. In the network infrastructure, existing LTE/EPC network will be extended with LTE Broadcast SW functionality. A new media server layer dedicated to the service is required, as well as the back office systems when any new service is launched.

LTE Broadcast is supported for all the defined bandwidths and formats of LTE, including FDD, TDD and Carrier Aggregation (CA).
Two more key building blocks: HEVC and MPEG DASH

**HEVC** – High Efficiency Video Coding, also known as H.265, is the latest development from MPEG and is able to deliver compression levels up to twice compared to the H.264/MPEG-4 AVC standard currently in use. As such, it effectively halves the radio bandwidth required to transmit high quality video traffic.

**MPEG DASH** - Dynamic Adaptive Streaming over HTTP complements both LTE Broadcast and HEVC by intelligently optimizing bit flows during streaming to eliminate the kinds of stalls that can occur to video content as packets are delayed during their transmission. This kind of functionality is particularly important in the cellular environment, ensuring a far better quality of experience to the viewer and a far greater exploitation of network and radio capacity for the mobile network operator. It also opens up new possibilities for the successful monetization of new content services by providing an additional guarantee of reliability.

NOTES TO EDITORS

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*Our offering comprises services, software and infrastructure within Information and Communications Technology for telecom operators and other industries. Today more than 40 percent of the world’s mobile traffic goes through Ericsson networks and we support customers’ networks servicing more than 2.5 billion subscribers.*

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