

Benefitting From the Network in the Cloud

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Network operators are constantly looking to introduce new services and design networks in different ways to improve performance and lower costs. The industry currently appears curious over Virtual Evolved Packet Core (vEPC), but this could be the innovative service that they have been looking for. Now is definitely the time for operators to press ahead and start deploying vEPC in large scale LTE networks. However, they need to know how to best utilise the solution, which we also refer to as the network in the cloud, and in what way to implement it in order to provide the highest Quality of Experience (QoE) possible to the end user, who in today's world demands 4G connectivity.



The trends

The trends the industry has seen regarding the development of virtualised EPCs are two-fold. Firstly there is EPC as a service, which is where EPC services are offered from a central point to many different users. The main use of EPC as a service is for field testing and product prototyping as they fill in the gap between research and product development by providing initial realistic environment prototyping, which is not necessarily offered by a traditional service provider. In addition to this, a further benefit of EPC as a service is the fact that it is a substantial enough application that it can be progressed into a virtualised solution, making the vEPC achievable as well as meaningful.

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The second trend being observed is wholesale EPC services. This is where a large operator or service provider offers EPC services to multiple tenants, often smaller operators such as mobile virtual network operators (MVNOs), which works effectively because of its modularity, scalability and flexibility. The modularity aspect of this solution enables different functions to be split up, allowing all components to be deployed separately or in any combination at the most appropriate point in the network. As a result, smaller operators avoid expensive hardware investment and larger operators benefit from a single point of control plane management. This level of scalability enables the solution to be tailored precisely to suit each and every customer's needs.

The opportunities

Companies can build the network via a vEPC "network in the cloud" solution as this option provides a fully-integrated, highly-scalable and cost-effective LTE mobility platform. This solution can support MVNOs requests for either a high number of simultaneous subscribers with low data requirements or a high data throughput level and a low level of subscribers due to its high degree of flexibility. They consist of MME, SGW, PGW, HSS and PCRF components all of which are optional and configurable. There are many proven LTE implementations but operators need be sure the solution they choose will provide a high level of reliability and the flexibility level required by customers in order to access all of the benefits.



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In order to split various network functions, the control and data planes need to be separated. The modularity aspect of the vEPC solution allows components to be enabled and disabled as required in deployment. This optimises capital expenditure as the operator is only paying for the modules they are using. The separated data plane enables deployment within closer proximity to the point of access which appeals to operators and users as it results in an increased performance level, encouraging the use of virtualised network functions in the cloud.

In this fast-paced world, it is important that operators understand the virtualisation aspect of the EPC and start to implement it. The benefits to them are vast, including a higher performance level, modularity, scalability and flexibility resulting in a far better level of connectivity for the end user. This solution can be tailored to suit various different needs due to the range of components which can be employed and deployed. Therefore, it's now time for operators to deploy vEPC in large scale LTE networks.