Economic Evaluation of 2G to 3G Migration

(with a tool – based case study)

Abstract

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- Successful migration from 2G to 3G needs powerful modeling both from technical and economical perspectives. This paper considers the key factors in the techno-economical modeling that impact on the network costs, operational expenditures and cost assignment to service types

- The migration steps from GSM to GPRS/EDGE and UMTS are modeled in a dynamic manner through time maintaining the forward dimensioning and cost calculation as well as the backward cost assignment per service as a function of resources utilization

- Due to the important contribution to costs by the infrastructure and the system launching, special emphasis is done on the modeling and evaluation of the cost resource sharing for sites, towers, BST, backhaul, etc. Overall economical and business results are obtained as cost of ownership: CAPEX, OPEX, services revenues, NPV, ROI, etc.

- A case study is performed with the STEM tool (product of Analysys Consulting Ltd. At Cambridge, UK) which illustrates the overall techno-economical modeling, the business evaluation as well as the detailed analysis of cost components. Finally a what-if analysis is done to the different sharing factors and conclusions are derived