

# IMS Billing: Real-time Charging

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## Abstract

The evolution of network technologies to an IMS environment enables the operators to provide exciting new services to the customers but the variety of services made possible by IMS, has a profound impact on the billing and accounting systems. A monthly billing cycle will not support the requirements of such services. IMS services provide a rich user experience and a high level of user interaction that makes it necessary to provide real time charging for such services.

The objective of this project was to identify the challenges in the real-time IMS charging environment and analyze solutions to those challenges. 3GPP IMS charging architecture was studied in detail with more emphasis on the Online Charging architecture. Various technical and business challenges were explored in detail that are being faced by the operators in successfully implementing this architecture. Mediation, correlation and rating of charging data are discussed in detail and the future charging architecture is discussed at the end of this report with example scenarios describing paths towards a convergent postpaid and pre-paid charging system.

IMS is about fast transfer to market of the new services and charging should not be an IMS bottleneck. Traditional network-based prepaid platforms are unsuitable for IMS due to limited rating flexibility. A single system supporting both online and offline charging will be needed. Migration towards a convergent solution will be gradual by adding components to the existing billing systems. While recommending various paths to the convergent postpaid and prepaid solutions in this report, effort has been made to explore the solutions that can capitalize on the resources available to the operators within their existing networks.

Mediation of the charging data that includes the translation of the charging data, its validation, correlation and formatting to a unified format is the most important aspect of charging in the IMS environment. A mediation layer that provides a unified output to the upper layers and is capable of collecting charging information from a variety of network elements using device specific protocols, is the key component of the IMS charging architecture. Mediation, correlation and rating of the charging data and the requirements of these important charging components have been discussed in detail.