Plugging the Leaks:
Revenue Assurance for IPTV

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A few years ago DSL services were in a very similar position to IPTV today. It was a new technology, and there was an urgency to deploy services and a market share business model, causing SPs to neglect profit maximization. With DSL, this led to deployment of services without enough design testing, leading into huge revenue leakages, which analysts estimate were between 3-15 percent of the whole revenue. These leakages were practically money left on the table, not because customers are not willing to pay it, but due to the operators not requesting payment. A typical example that happened with DSL is that customers often continued to receive services after a trial period, without being requested to pay for them. This chaotic situation yielded first to the application of reactive Revenue Assurance (RA) methods, to measure the leakages, and later active RA methods in order to try and recover some of the leakages. IPTV is in a similar situation today, where the name of the game is the race to launch these services. The operators have two options – one is to act the same way as they did with DSL, and launch the services, and only later start to worry about data and processes integrity and lost revenues. Taking this approach would probably end up showing the same symptoms of the DSL case, where operators found themselves losing up to 15% of their revenues as a result of these loopholes. The other approach takes advantage of the developments of RA discipline, and enables the operator to apply proactive RA techniques, to plan in advance RA controls, KPIs, and systems to support the IPTV products, thereby reducing the risk of Revenue Leakages from day one.

Special importance for RA for IPTV

The importance of Revenue Assurance is accentuated in the IPTV world since un-billing and over-billing consequences are aggravated. In a classical revenue leakages scenario, the damage caused from un-billing is limited to not getting payment for a service provided. IPTV providers have to engage in complex agreements with content and application providers, and pay creators, developers and performers for the rights to distribute their content. The result of these complex agreements might be that the operator might need to pay third parties, even if it does not charge the customer for the service delivery. Therefore, the revenue leakage not only end in not receiving money for a service, but in actually spending money out of pocket. Moreover, often the third party share is significant, so a small number of un-billed errors, which might have been acceptable in a classical interconnect scenario, might jeopardize the profitability of the whole service in the IPTV world. The other task of RA is preventing incorrect charges. With IPTV over charging might be a larger economical risk then under-charging. The complexity of the IPTV services makes it prone to mistakes. In a standard telephony scenario, customers are not likely to distinguish and complain about minor errors (e.g., rounding errors). In the IPTV framework, however, such mistakes are much more tangible and customers are likely to complain, e.g., if they were charged for a movie they did not order. Each such complaint poses a costly burden on the Call Center and the CRM systems. Beyond the cost exposure associated with

mass amounts of customers complaints, customers that are unhappy with the billing correctness for IPTV services are more likely to churn to a competing operator taking the revenues for the full bundle of services with them. Hence, the impact of billing errors in IPTV services environment becomes much more significant than in traditional voice and data services.

Special Challenges of RA for IPTV

In order to comprehend the special challenges to RA on the IPTV framework let's consider, for example, the case in which a customer is watching a video on demand, and let's suppose that the VOD server is operated by a content aggregator, which, in turn, acquires the video files from a content provider. The IPTV operator, in this case, merely provides the communication pipe connecting the VOD server with the customer. The price of the movie to the end customer might be affected by many factors, such as title, length, time of the day, bundles to which the customer is subscribed, and many others. The value for some of these factors is not within the scope of control, or even the knowledge, of the operator, and these factors affect not only the price to the end customer, but also the cost that the operator has to pay to the content aggregator. The complex revenue chain, the specialization of content creators and providers and the complex structure of content costs introduce new levels of complexity in the contractual engagement between the IPTV operator and content providers. The modeling of the contractual terms and the pricing schemes became more complex and harder to model posing a challenge to traditional RA approaches.

In the complex business environment of IPTV imposed by the long and diversified value chain, operators cannot afford themselves to keep focusing only on their internal processes when performing Revenue Assurance practices. In traditional services the information exchanged between parties of the value chain consisted mainly of time related information, charges and monetary transactions. Discrepancies between the operator's record and the other parties in these traditional services were relatively easy to detect and to resolve, as the value chain was relatively simple and the factors affecting the price were all manageable, or at least measurable by the operator. The IPTV operator is not always exposed to all the information required for discovering discrepancies or leakages. In order to check whether a customer was billed correctly or not, the RA system will need to use information that is distributed in different parts along the revenue chain, e.g., between the

IPTV provider, the content aggregator, and content provider. To successfully identify, analyze, and eventually prevent revenue leakages, the RA system will now be required to connect and to correlate information from all of these distinct information sources, some of which beyond the operators domain.

A basic expectation from the IPTV operators is to provide television broadcast in a quality comparable to that of the Cable TV operators. As simple as it may sound - considering the nature of the IP protocol, quality of service for the individual consumers is very difficult to guarantee. Hence, verifying that an operator provided a service does not necessary means that the customer received it in an acceptable quality. Now the role of RA expands from checking that a service was provided to checking that it was received in an acceptable quality, a quality that will permit to charge for the service without creating endless customer complains. This requires the RA systems to connect to new information sources to obtain information about quality, and to use this information, which in many cases is not straight forward or organized in a coherent way.

RA for recurrent charges services is normally based on taking snapshots of the systems and finding discrepancies. E.g., comparing the service subscription data as it is represented in the CRM system, the Billing system, the Inventory system and the Network itself. However, an environment in which customers change their portfolio of services online on a regular basis, involving different service components originating at various content and application providers, threatens the traditional snapshot approach. RA systems will need to augment the snapshots approach with information at the transaction level. RA systems, apart from handling discrepancies between snapshots taken from two systems, will have to analyze the validity of the found discrepancies based on transactional data, describing provisional changes made by the customer which might justify the discrepancies found in the snapshot.