

ExpeRA

Smarter Revenue Assurance

Version 2.0

White Paper

October 2003



In the fiercely competitive telecommunications market the growing problem of revenue loss is more and more of a concern for Communication Service Providers.

Revenue Leakage is found in each link of the revenue lifecycle: from product design through customer care, up to and including rating and billing. A single error at any point in the revenue chain will travel downstream, resulting in revenue loss. In fact, industry experts estimate that up to 10% of provider revenue is lost through such leakage.

The increasingly complex telecommunication networks - encumbered with inter-carrier relationships, relatively new service offerings, and features involving cross-system billing schemes - contribute to create more data and process discrepancies which result in inaccurate invoices and lost revenue.

Identifying and Preventing Revenue Leakage

To cope with competition and maintain profit margins that are eroded by revenue leaks, carriers are taking a closer look at operational processes and the performance of their systems. Identifying and preventing revenue leakage are now business imperatives, and have become a critical factor for sustainability and success.

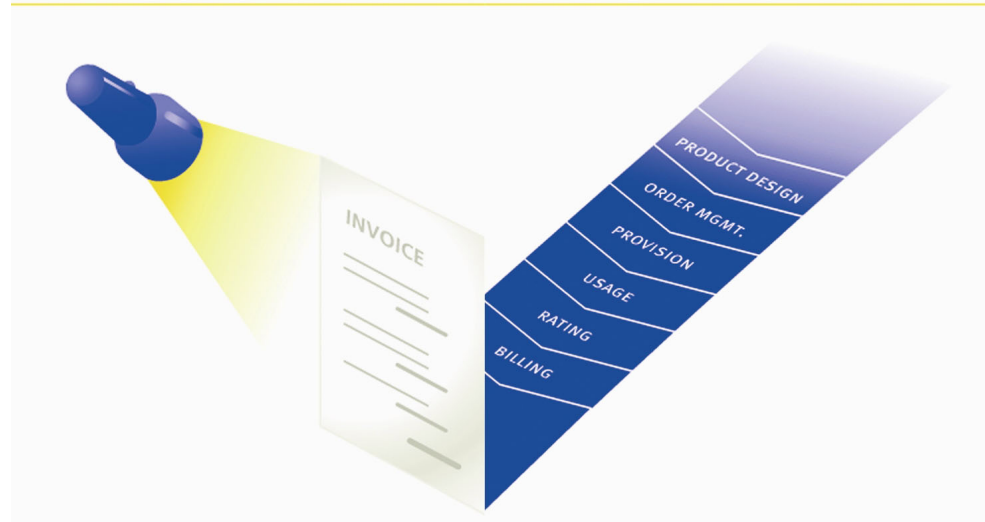
Revenue Assurance refers to the methods and processes a carrier employs to ensure that the bills sent to their customers are accurate and that the payable amounts are collected. From an information technology standpoint, the role of the revenue assurance process is to identify and amend revenue-affecting events and elements. In the absence of adequate revenue assurance processes, carriers are bound to lose hundreds of millions, perhaps billions of dollars (Price Waterhouse Coopers, 2003).

Focus on Invoice Verification

The carrier revenue assurance chain starts with marketing, and continues with customer care, physical infrastructure, usage switching, mediation, rating, and billing. Experience shows that even after applying control over these phases, significant errors still occur in invoices.

As the primary provider-customer interface, invoice accuracy has critical business impact. Through focusing on the invoice, **ExpeRA** enables detection of a wide range of errors and revenue leakage. As the invoice is the outcome of the last stage in the revenue assurance chain, it reflects leakage originating from all previous stages - from order management through provisioning, from customer service to billing.

ExpeRA IN THE REVENUE ASSURANCE CHAIN



Manual invoice verification is a highly labor-intensive process, as auditors need to use multiple subsystems to analyze customer and product-related information. Due to limited resources, auditors can usually track only a fraction of the revenue leakage. Moreover, inefficient invoice verification perpetrates business risks: overcharge billing errors can lead to class action lawsuits, as well as dramatically impact company image and increase potential churn.

SMARTER REVENUE ASSURANCE

ExpeRA is designed for invoice verification and the detection of billing errors in invoice statements. **ExpeRA** allows users with auditing responsibilities to manage and deploy invoice verification methods, and cope with key business challenges such as:

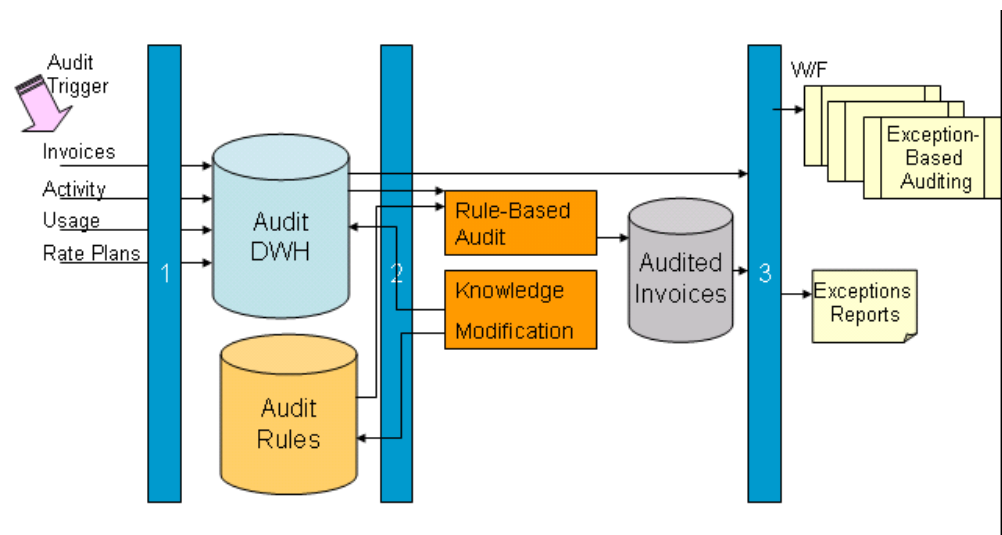
- *Performing audits based on exceptions* – the ability to have the system identify problems, using auditors to validate and analyse them rather than search for the problems.
- *Prioritizing corrective actions by their business impact* – allowing providers to review up to 100% of invoices for accuracy and then focus on the most critical errors affecting the largest number of invoices, with the most significant revenue impact.
- *Understanding the reason for the error* – by providing auditors natural-language access to the rules that determined the erroneous situation.
- *Homogenous checking, independent of human factors* such as the auditor's expertise and experience, which affect the quality of the audit results.
- *Early detection of errors* that are usually neglected during the standard manual stage, due to lack of time or resources.
- *The ability to add and modify audit rules* – since rate plans and promotions are dynamic, new error sources constantly appear.

- *A decision support mechanism* that guides recommendations for approving billing runs.
- *Integration of data from multiple systems in the revenue chain* – billing system, customer care systems, calls and other events, order management system, etc.

ExpeRA captures the expertise of the manual auditing process, and applies this knowledge rapidly and automatically in order to execute billing validation and auditing. **ExpeRA** implements the principles of the products using natural, rule-based language that mimics the human auditing processes.

ExpeRA is run right after the billing cycle ends, and before massive and expensive invoice printing. **ExpeRA** is capable of detecting possible errors in large quantities of invoices (up to 100% of the invoices), eliminating the need to for sample-based audits.

The following diagram illustrates the **ExpeRA** workflow.



SOLVING BUSINESS CHALLENGES

Solving Business Challenges

ExpeRA directly addresses the most mission-critical business challenge providers are facing today – their shrinking bottom line. **ExpeRA** locates revenue leakage and overcharges before the damage is done – solving profitability and liability problems before they happen, and helping companies:

- *Control and monitor revenue leakage from a point of view external to the billing system*
- *Trace revenue leakage back to the source*
- *Reduce overcharge exposure*
- *Prioritize corrective action according to business impact*
- *Improve billing accuracy and statement timeliness.*

Addressing Operational Needs

From an operational point of view, **ExpeRA** helps providers address complex, resource-intensive processes that involve large amounts of data located in diverse systems. **ExpeRA** allows for improvement of operational processes through:

- *Verification of all invoice sections – one time, monthly fees, events (calls, SMS, MMS, data) and content*
- *Ability to process large invoice volumes*
- *Long-term, ongoing monitoring*
- *Rapid adaptation to new products*
- *Natural language presentation of business knowledge*

FUNCTIONALITY AND FEATURES

Validating a Variety of Services

ExpeRA is designed to validate a wide variety of telecom and data services. Each service has its unique pricing logic expressed in separate rule groups, and each rule group is automatically applied to a subject invoice according to the relevant services. Verification rules relating to subtotal and total charges at the invoice level, as well as reasonability tests and other subscriber data tests can be performed at the invoice level.

Validating Different Elements

ExpeRA validates a wide variety of service elements including usage, monthly recurring charges, taxes, surcharges, directory assistance, operator services, SMS, GPRS, and content.

Rate Application Verification

One of **ExpeRA**'s main tasks is to ensure that rates have been applied correctly to the relevant elements. The rates are calculated by the rules, according to usage data (for example, call duration, dialled number, and time of day of the call), tariff data (according to the price plan), and relevant discounts/promotions.

Invoice Rating Verification

The validation rules ensure that invoice elements (e.g. one-time charges, recurring charges, and calls) have been rated. According to the subscriber's data and price plan, **ExpeRA** concludes which services the customer should pay for in the subject cycle. In the event that a certain element that should be rated is not, an error is displayed as an alert in the **ExpeRA** user interface and in system reports.

Validating Rates

There are two options available for validating service/call rating:

1. Relying on the billing tariff (reference) tables, and applying the rating algorithm that refers to the rates that were entered into the billing system. In this case, errors in the process of entering tariffs to the billing system will not be encountered by **ExpeRA**.

2. Extracting or manually entering the tariffs from the same source the billing system uses (for example, marketing department that defines new bill plans). In this case, **ExpeRA** can validate that the tariffs are correct.

In both cases, regardless of the relevant tariff source, the rules implement the rating logic in order to calculate the service/call charge. The resulting charge is compared to the charge that appears in the invoice, and in case the two figures are different, an error is identified and the associated alert is displayed.

Natural Language Support

The audit rules are written in natural language.. Expressing the audit rules in natural language enables authorized auditors to better analyse detected errors, and easily navigate, update and trace the audit rules.

Rule Visibility

ExpeRA provides real-time visible access to the audit rules. This powerful feature enables auditors to quickly track and analyse the root cause of any billing error. Rule visibility guarantees top class audit standards, even with large volumes of invoices.

ESI – Expert Solutions International

ESI - Expert Solutions International provides knowledge-based solutions and workforce management products based on its own proven technology. ESI's comprehensive line of products enables better utilization of the organization's knowledge assets and an improved decision-making process. ESI's mission is to help organizations leverage their hidden knowledge assets and their competitive edge to optimize business effectiveness and performance.

ESI is owned by Formula Vision Technologies (TASE: FVT), a spin-off of Formula Systems (NASDAQ: FORTY) and a member of the largest publicly held IT group in Israel. With offices and partners worldwide, ESI's customers are among international leaders in Finance, Telecom, Government and Defense.

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