



ROC® Fraud Management

Driving fraud prevention

- Proactive protection with inline controls
- Flexible, scalable, adaptable
- Rapid Return on Investment
- Minimize revenue leakage



Advancing Fraud Management to Fraud Prevention

To offset declining revenues from traditional services and remain competitive in a rapidly evolving market, telecom operators worldwide are moving toward diverse, high-margin, next-generation services. With these new services, however, come new opportunities for fraud.

According to industry sources, global fraud loss is estimated to be approximately 5% of telecom revenues annually. Faced with such losses, operators must be prepared for both known and unknown frauds, staying one step ahead of fraudsters to protect the bottom line. Tackling fraud as early as possible, ideally before the event, becomes essential. Unfortunately, fraud management approaches have been slow to adapt to today's dynamic telecom environment and to the constant innovation of determined fraudsters.

To combat fraud effectively, operators need to move beyond reactive fraud management to proactive fraud prevention. Such fraud prevention involves:

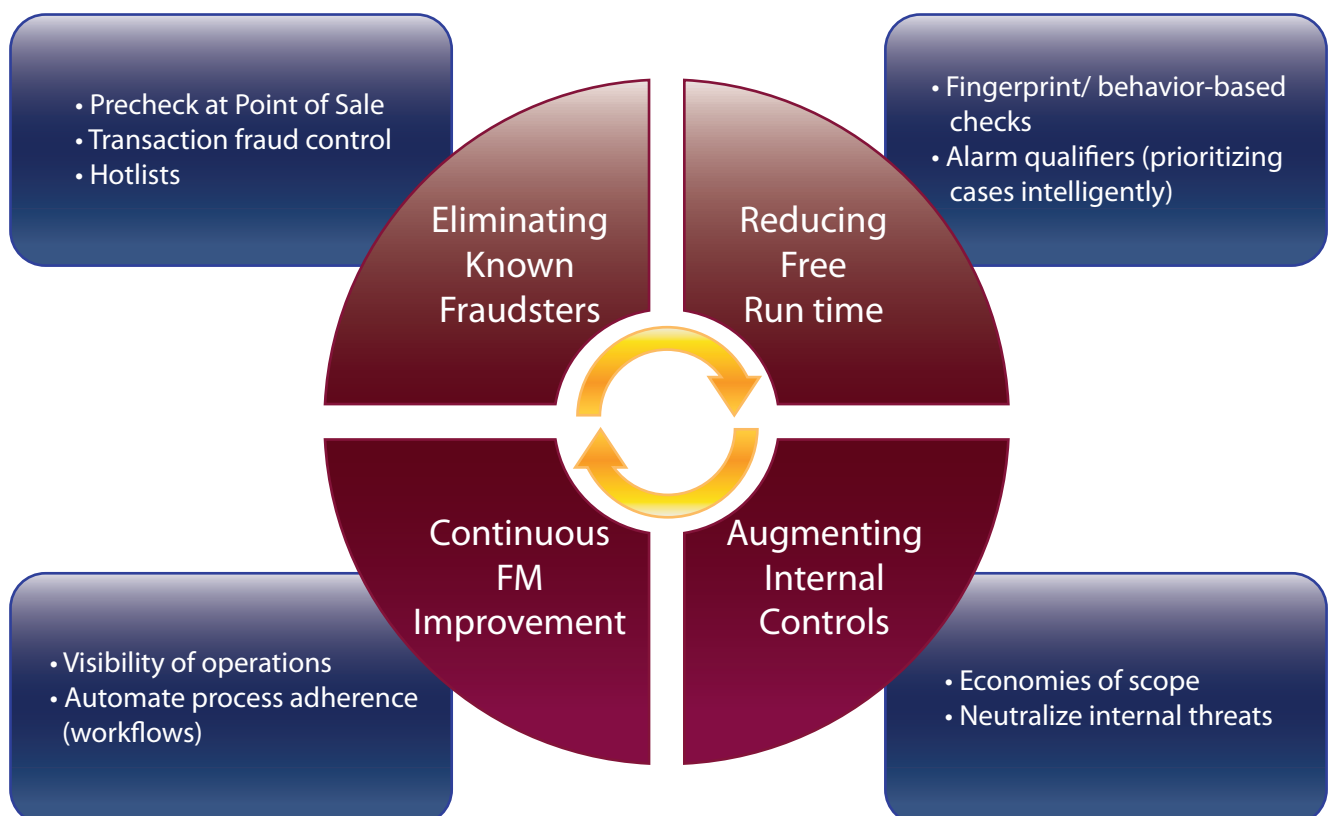
- Stopping fraudsters at the point of activation
- Minimizing fraudsters' time on the network
- Building strong profiles of fraudster credentials and behavior to quickly recognize repeat offenders
- Enforcing strong governance, thereby deterring internal employees from committing or colluding in fraud
- Implementing efficient and early fraud detection
- Continuously monitoring both internal and external entities
- Employing strong deterrents, both externally and internally, to minimize future frauds



ROC Fraud Management approach

ROC Fraud Management from Subex is built to drive fraud prevention by **eliminating known frauds, uncovering new fraud patterns, minimizing fraud run time, augmenting internal controls**, and supporting **continuous fraud management process improvement**. ROC Fraud Management identifies potential fraudsters by pre- and post-acquisition profiling. Its precheck functionality runs intelligent checks of new subscriptions against blacklists, while the system's behavioral rules and policy controls can prevent suspect payments, illegitimate transactions, or the illicit use of premium services and resources. The solution enables real-time responses to suspected fraud cases and uses adaptive artificial intelligence (AI) techniques to prioritize and qualify its fraud alerts. Through its patent-pending eFingerprinting, ROC fraud management also captures in-depth profiles of subscriber behavior and matches this against previously recorded suspect eFingerprints to identify repeat offenders and similar fraud attacks. It reinforces internal controls and processes through an advanced workflow capability, enhanced audit logging, and comprehensive security. Continuous fraud management improvement is supported through extensive reporting and dashboarding, utilization of a rule test facility, and Subex's world-class consultancy and cognitive analytics programs.

The solution's approach helps operators to catch fraud earlier in the cycle: detecting frauds and patterns of unusual behavior, investigating these unusual patterns for potential fraud, and then using this knowledge to protect against future intrusions.



Greater analyst efficiency

The solution is designed to maximize the effectiveness and efficiency of fraud analysts. Its in-context navigation, exportable record views, and report caching and distribution ensure that analysts have easy access to all the information they need during an investigation, thereby increasing productivity and enabling better-informed decisions. A personal home page complements alarm management and notification management tools, increasing efficiency and simplifying system use.



One-stop solution

An enterprise-wide solution, ROC Fraud Management supports end-to-end fraud management, from initial information gathering and detection through case closure. The system can be configured to tackle all types of fraud (Examples: Subscription, Bad Debt, Payment, PRS/PNS/ISS, Bypass/SIM-Box, Roaming, Internal, Dealer, PBX/Hacking) and easily adapts to network evolution and new fraud trends. With its flexible and modular architecture, users can introduce new capabilities on top of the existing platform with minimal fuss and without re-architecting the system.

Protection against repeat offenders

Most fraudsters are compulsive, professional, habitual offenders who may be delayed but not deterred by being caught. Our solution implements strong pre-activation subscriber verification tools that help operators guard against such offenders and the system builds detailed behavioral profiles to spot offenders who do manage to re-acquire service.



Rapid ROI

ROC Fraud Management solution ensures a rapid return on investment (ROI) by offering the strongest fraud management capabilities, increasing compliance, reducing risk, and providing economies of scope. Most of our fraud management customers achieve ROI break-even within a few months. Subex's detailed business benefit modeling tools allow customers to determine ROI, build reliable business cases, and explicitly see the value that our solution can bring to their business.

Versatility and scalability

ROC Fraud Management can detect fraud in any telecom environment, including wire line (PSTN, ISP, VoIP) and wireless (2G, 2.5G, 3G) and across all service types including postpaid, prepaid, value-added service (VAS), multimedia messaging service (MMS), M-Commerce, IPTV, and Triple/Quad Play. Its highly scalable platform can handle any data volumes and ever-increasing loads, offering a one-stop solution for an operator's fraud management needs.

Real time detection

ROC Fraud Management's inline control enables service providers to carry out proactive checks on a new subscriber at the time of customer acquisition itself. The Point of Sale (PoS) staff need not wait, until the subscriber is provisioned and later detected using the usual usage fraud rules. With inline controls the PoS staff can take real time decisions – accept or decline or defer - on any transaction happening at PoS, thereby preventing fraudsters from entering the network and walking away with the subsidized handsets.

Bird's eye view

Subex's fraud management solution's wide range of reports help operators detect a variety of frauds and offer key operational summary statistics. A document management system conveniently shares these reports and notifications through email and SMS, alerting users when specific reports are available. Its report caching capability ensures that the most recently generated versions are readily available to users without a time lag.

Accurate Monitoring and Protection

Our solution has overcome the challenge of defining accurate thresholds with its Adaptive Threshold Engine (ATE). ATE is a self-learning detection utility which uses statistical modeling algorithms to calculate thresholds for each subscriber, based on his/her actual usage patterns. Because thresholds reflect actual subscriber behavior, this approach enables accurate monitoring of and protection against each subscriber.

Increased workflow efficiency and productivity

ROC Fraud Management's workflows significantly reduce the complexity of the fraud investigation process. The system's workflows are SOA-enabled for interoperability with other systems and easily configurable to adapt to an operator's unique processes. Notification management further enhances workflow efficiency. An on-demand investigation and protection feature, Link Analysis, automatically correlates alarms under investigation with existing active alarms, dramatically reducing investigation time and subjectivity while increasing the accuracy of decisions. Links can be viewed graphically using the solution integrated i2 Link Analyst functionality.

Proactive Profiling

Fraud detection systems based on conventional rule creation and threshold definition tend either to overlook potential frauds or detect them too late. By introducing behavioral mechanisms to fraud detection, ROC Fraud Management's patent-pending eFingerprinting provides an identity-agnostic approach, making it a powerful tool for proactive fraud management. An optional module within the solution, eFingerprinting can be applied in a number of scenarios, from detecting defaulters and repeat subscription fraudsters to identifying internal fraudsters.

Easy and flexible configuration

Our solution's Enhanced Rule Engine makes it possible to monitor any aspect of the service including IMSEI, IMSI, IP Address, Cell-site, and Trunk ID. This gives analysts much needed flexibility to investigate complex, next-generation fraud cases. It's state-of-the-art rule creation environment combines sophisticated capabilities – like negative rules, ratio rules, and incidence rules – with a unique workbench that allows easy configuration of the most complex rules.

Reduced revenue leakage and increased customer satisfaction

The solution's unique (patent-pending) Intelligent Alarm Qualification (IAQ) function increases fraud analyst productivity and effectiveness in the face of an ever-increasing workload from new services and new forms of detection. IAQ uses AI techniques to prioritize investigation of the most likely fraud cases. IAQ detects truly false alarms, thereby increasing analyst productivity and reducing revenue leakage. Analysts can also undertake fraud investigation exercises without antagonizing genuine high value customers, thus reducing customer churn.

Subex Limited is a leading global provider of Business Support Systems (BSS) that empowers communications service providers (CSPs) to achieve competitive advantage through Business Optimization - thereby enabling them to improve their operational efficiency to deliver enhanced service experiences to subscribers.

The company pioneered the concept of a Revenue Operations Center (ROC®) – a centralized approach that sustains profitable growth and financial health through coordinated operational control. Subex's product portfolio powers the ROC and its best-in-class solutions such as revenue assurance, fraud management, credit risk management, cost management, route optimization, data integrity management and interconnect / inter-party settlement.

Subex also offers a scalable Managed Services program and has been the market leader in Business optimization for four consecutive years according to Analysys Mason (2007, 2008, 2009 & 2010). Business optimisation includes fraud, revenue assurance, analytics, cost management and credit risk management. Subex has been awarded the Global Telecoms Business Innovation Award 2011 along with Swisscom for the industry's first successful Risk Reward Sharing model for Fraud Management.

Subex's customers include 16 of top 20 wireless operators worldwide* and 26 of the world's 50 biggest# telecommunications service providers. The company has more than 300 installations across 70 countries.

*RCR Wireless list, 2010

#Forbes' Global 2000 list, 2010



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