

Benefits at a glance

- Enhance message routing, network performance and QoS
- Enable cost effective growth
- Protect customers from spam and hostile denial of service attacks
- Expand revenues using SMS advertising
- Reduce customer churn with SMS personalized services



Tekelec SMS Network

Business Requirement

Global texters sent nearly 3.5 trillion messages in 2008, and forecasts indicate that short message service (SMS) will continue to grow well into the future. According to Frost and Sullivan (2008), SMS generates more revenue than all other mobile data services combined. However, the dramatic growth in messaging has a downside. As the traffic volumes grow, operators find they are facing a number of challenges.

Challenge

- **Profitability is Declining.** SMS message volume is forecasted to expand at a compound annual growth rate (CAGR) of 15.6 percent from 2007 to 2011, while SMS revenues are only expected to grow at a CAGR of 5.9 percent over that same period (Frost & Sullivan, 2008). SMS traffic growth is not translating into comparable revenues, due primarily to the commoditization of the service.
- **Traffic is Overloading the Network.** The global SMS market is evolving, expanding beyond simple person-to-person (P2P) text messaging to person-to-application (P2A), application-to-person (A2P) and even machine-to-machine (M2M) services. The growing use of SMS for applications beyond simple texting is increasing traffic loads.
- **Legacy Short Message Service Centers (SMSCs) are Behind the Technology Curve.** The current SMS delivery architecture, designed to handle simple P2P texting, no longer meets operator needs. The architecture does not scale cost effectively, and the antiquated store-and-forward delivery mode is inefficient and causes latency. Outdated, hard-coded logic employed by SMSCs does not support advanced messaging services and new delivery models.
- **Network Attacks are Increasing.** While the fraud techniques and delivery methods vary from region to region, trends indicate that the mobile messaging threat level is on the rise globally. Once considered purely a nuisance, fraud is evolving into a dangerous risk to operators and subscribers. Mobile messaging abuse consumes valuable network resources, impacts network efficiency and increases subscriber churn.

Solution: A New SMS Delivery Model – The SMS Network

Tekelec developed its SMS Network concept to help operators deliver advanced messaging without over-engineering or rebuilding the complete network. The carrier-grade SMS Network concept is a set of modular components that can be structured to fit individual operator's requirements. Using the components, operators can reduce network complexity and create a resilient, scalable messaging infrastructure that provides advanced service differentiation and reduced message latency.

The SMS Network concept provides an entirely new way for operators to capitalize on their investments; the products can be deployed in conjunction with the existing SMSC infrastructure to grow capacity and capabilities incrementally, or to create a complete, end-to-end SMS Network.

SOLUTION BRIEF

The SMS Network uses first delivery attempt (FDA) technology to offload approximately 85 to 95 percent of all messaging traffic from the SMSC, eliminating the need to store most SMS messages. Rather than the hard-coded logic used in SMSCs, Tekelec's solution leverages rules-based routing for flexible, efficient message handling.

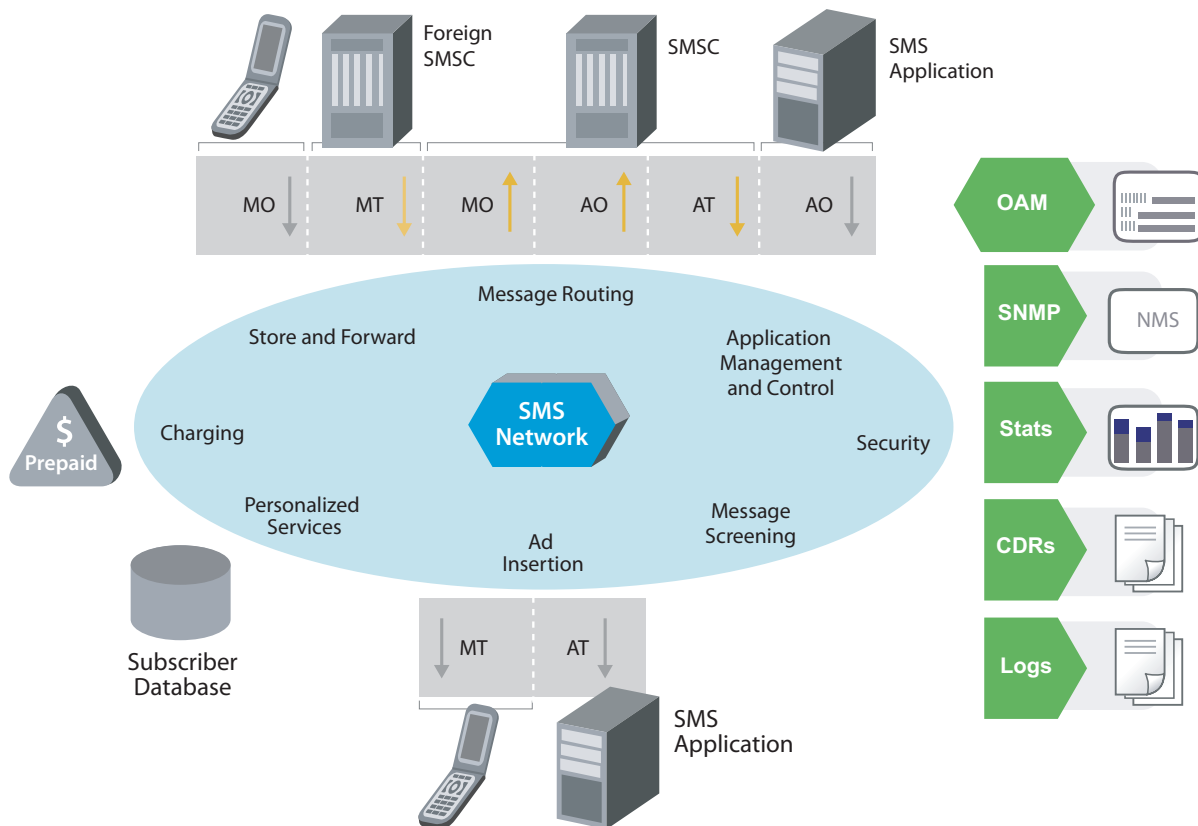
The SMS Network concept allows operators to manage incoming traffic before the SMS message enters the delivery path. This capability optimizes the SMS path through the entire network, improving messaging efficiency, reliability, delivery speed and cost. The functional components of the SMS Network include:

- **SMS Router:** Features FDA technology, advanced load balancing, throughput controls, and rules-based routing to deliver messages efficiently to their intended destination. Flexible routing paths expand the ways in which SMS messages are sent and received. An open interface enables operators to quickly introduce new features developed by Tekelec or third parties.
- **SMS Store:** Provides flexible message interception, handling, and FDA with storage in the event that the message cannot or should not be delivered immediately. SMS Store supports the efficient forward-and-store as well as the legacy store-and-forward models for message delivery.

- **SMS Firewall:** Supports advanced filtering and screening to prevent unwanted SMS messages and provides overload protection from signaling system 7 (SS7) and Internet protocol (IP) message originators.
- **Application Gateway:** Intelligently distributes application-originated and terminated traffic across SMS routers and legacy SMSCs to optimize and protect the network.
- **Advertising Insertion Center:** Enhances SMS messages with relevant, personalized advertising like sponsored text messages or voicemail message enrichment.
- **SMS Personalized Services:** Provide a portfolio of advanced SMS services that can be customized by the subscriber to generate new revenue and increase loyalty.

Benefits

- Improve message routing, network performance and quality of service (QoS).
- Enable cost effective growth.
- Protect network and customers from spam and hostile attacks.
- Increase revenues using SMS advertising.
- Improve customer loyalty with SMS personalized services.



SMS Network - Concept and Functionality

USE CASE 1: MEASURING THE SAVINGS

Frost and Sullivan compared the legacy SMSC infrastructure with the new SMS Network model in a recent paper, [Capturing the Benefits of an SMS Network: A Business Analysis of SMS Architectures](#). As part of the study, the firm looked at several hypothetical SMS use cases and compared the costs associated with each approach.

- An operator that needed to reduce SMSC loads realized CAPEX savings of roughly 60 percent by implementing the SMS Network with FDA technology.
- The SMS Network yielded approximately 60 percent in CAPEX savings over the traditional SMSC approach in managing voting traffic and balancing loads throughout the SMS Network.
- A single network that deployed all of the applications used in the use cases above delivered nearly 68 percent CAPEX savings.
- An operator looking to block SMS mobile-originated spoofing found that the SMS Network provided an OPEX savings of approximately 90 percent.

Conclusion

Legacy SMSCs are no longer meeting operator needs. Operators need to deploy a more cost-effective SMS delivery architecture to maintain profitability while handling increasing SMS traffic loads and rolling out advanced messaging applications.

Tekelec's SMS Network concept solves legacy SMSC challenges, enabling operators to flexibly and economically meet the demands of the rapidly changing SMS market. It reduces the cost of operation by maximizing network resources, simplifying administration, and enabling providers to grow capacity and functionality at their own pace. Employing a modular approach, operators can adapt and evolve the network as technology advances and changes.

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