Mobile operators recognize that QoS assurance on their home network and service infrastructure requires continuous efforts, especially due to the number of new services launched. But continuing the quality assurance for services carried through many roaming agreements adds yet more challenges

Boosting roaming usage and revenue through enhanced quality of service

Mobile operators are focusing much more attention on roaming services, estimated by leading analysts to account today for 10-15% of their overall revenue and an even higher percentage of their margin.

Solid growth is forecast over the coming years with the number of roaming users expected to grow from 207 million in 2004 to 850+ million in 2010*. This increase is backed by a growing usage of roaming services by light and medium consumer users travelling abroad, not just business users who today still represent most of the roaming users.

To make this growth prediction a reality, mobile operators face the major challenge of ensuring that any service can be accessed from anywhere in the world with good quality for an acceptable price.

Optimizing roaming agreement portfolios and alliance strategies is an ongoing task of roaming organizations while quality-of-service (QoS) assurance has recently been pushed to the highest level priorities of management.

Enhanced customer experience directly impacts roaming usage development

Each country and mobile operator experiences a specific mix of inbound roaming when their home networks are used by foreign visitors, and outbound roaming when their own customers travel abroad.

In both cases, enhancing the users' experience will not only reduce the loss of revenue due to service failure, but it will also stimulate usage, for example, by offering users virtual home environment capabilities enabling them to access and use services as if they were in their home countries, using their usual short codes, and so on.

Guaranteeing that such services really work is imperative for roaming. This will obviously have a tremendous positive impact on customer satisfaction — a major qualitative benefit considering that most roaming users are high-ARPU influential customers.

The challenges: scaling and industrializing roaming operations

Mobile operators recognize that QoS assurance on their home network and service infrastructure requires continuous efforts, especially due to the number of new services launched such as a push-email service — a very complex challenge in a roaming environment, on continually-evolving network and service platforms.

In roaming, operators are confronted with specific quality challenges from an infrastructure perspective — such as CAMEL support — and from a business perspective since part of the service delivery chain is out of their direct control, managed by international carriers and roaming partners.

Scaling and industrializing roaming partnership operations requires streamlined roaming service assurance operations.

Standardization bodies like the GSM Association have formalized through IREG specifications how QoS should be certified between roaming partners. However ensuring continuous quality with many hundreds of roaming partners and ever-changing infrastructures continues to be a significant operational obstacle.

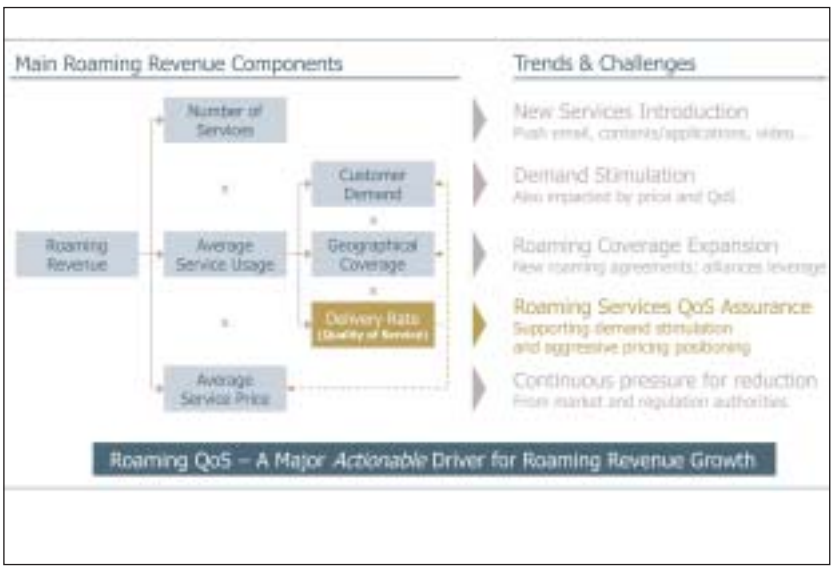
Processes and technologies required

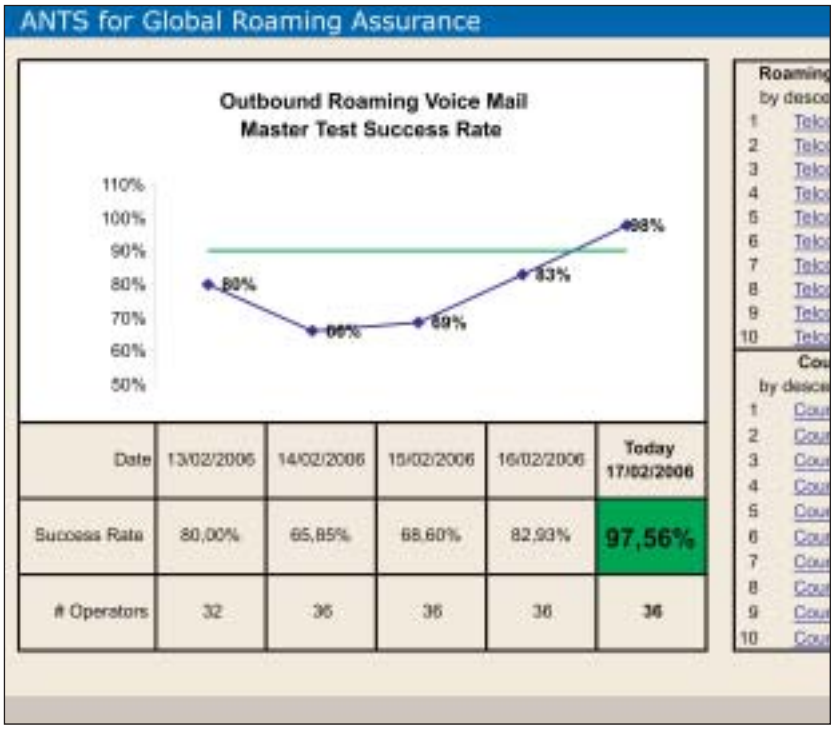
For both inbound and outbound roaming, streamlining QoS management operations typically requires three processes to be implemented.

- 24/7 monitoring of roaming QoS through ongoing testing of selected roaming use cases and production of key performance/quality indicators.

Such testing activity is key for outbound roaming to verify the service level provided by partners along the complex service delivery chain to valuable roam-

Roaming QoS is a major actionable driver for roaming revenue growth





Sample QoS management dashboard

ing customers allowing, as far as possible, to anticipate problems rather than reacting to them once communicated to customer care by an irate user.

Using personalized dashboards, management can make the right decisions fast while quality experts can easily drill-down into the test results to identify potential improvements. Alerts can be configured to inform selected people across the company based on their level of expertise and authority.

Tight integration of the continuous monitoring process with the internal transversal processes to solve issues is achieved through predetermined workflows that route issues to a pre-identified person who can solve that specific concern.

- Automated validation and non-regression through batch test campaigns play a major role when many roaming links have to be established or extended — for example, to cover new services such as MMS or 3G.

Non-regression is also a solid approach to certify that the ongoing infrastructure operations and maintenance does not affect service quality, provided that test campaigns can be scheduled with agility and efficiency.

- Troubleshooting support to minimize the resolution time of roaming QoS impairments.

To that end, providing network engineers the autonomy — without any costly and time-consuming coordination with roaming partners' correspondents — to instantaneously design and run ad-hoc tests and gather the related detailed technical traces is a proven and effective winning approach, regardless of the countries in which it takes place

The high value of each roaming service requires strong attention to controlling margins. The ability to verify the accuracy of inter-operator billing data — TAP files — is essential to verify costs related to revenue share on outbound roaming and secure revenue on inbound roaming.

The test and measurement infrastructure upon which the above processes can be built has to address roaming-specific constraints. From a service standpoint, CLI presentation, short codes support, and intelligent dialling assistants are examples of services requiring specific attention in roaming.

Also, efficiently managing many hundreds of SIM/USIM cards for inbound roaming QoS monitoring calls for powerful SIM remotization and multiplexing capabilities.

Finally, cost-effectively covering a significant number of international countries for outbound roaming service assurance cannot be handled with a traditional testing infrastructure deployment approach. Leveraging a mutualized pre-deployed testing infrastructure is the most effective way to accomplish this.

ANTS/GRA: outsourced roaming assurance

Leveraging many years of collaboration with telecom operators, Datamat has designed the ANTS for Global Roaming Assurance solution, enabling the streamlining of QoS assurance operations for both inbound and outbound roaming.

- A managed services approach — no testing infrastructure to deploy, operate and manage; no capital expenditure
- Tailored to mobile operators' needs — from on-demand testing to 24/7 QoS monitoring, ANTS for Global Roaming Assurance enables continuous QoS control, automatic QoS certification to validate new roaming agreements and network/service upgrades, and troubleshooting support to minimize resolution time
- Leveraging the ANTS end-to-end active testing platform covering a wide scope of services — including WAP/HTML navigation, contents streaming/download, video calls, and so on — and network technologies, such as GSM/GPRS, Edge and UMTS
- Pre-deployed across a significant number of countries to ensure rapid results and support agile extensions into new territories to rapidly adapt to evolving business requirements

Leveraging the by-design tight integration of service and revenue assurance capabilities in ANTS, the ANTS for Global Roaming Assurance solution naturally integrates revenue generation controls — such as verification of TAP files — to provide an end-to-end vision on roaming quality — from service usage to billing.

With ANTS for Global Roaming Assurance, mobile operators can leverage a pre-deployed testing infrastructure and need only a simple browser to access QoS dashboards and reports, to design and run ad-hoc tests, and so on.

This service approach not only provides tremendous flexibility to test new services or cover new countries but also assures a financial agility with a total cost of ownership aligned with actual usage and the avoidance of any capital expenditure.

"For a three million customer mobile operator, a 1% increase of roaming revenues through enhanced user experience represents a €1.5 million to €2.25 million impact on the company's top-line," says Paolo Brunelli, marketing director at Datamat for wireless testing solutions. Combining a managed services approach with a powerful end-to-end active testing infrastructure, solutions like ANTS for Global Roaming Assurance lead to high quality of service and fast ROI. ■

* Source: Informa Telecoms & Media, Global Mobile Roaming report, June 2005