How NGOSS Compliance Changes the Integration Game
By Martin Creaner

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By Martin Creaner, Vice President and CTO, TeleManagement Forum

OSS vendors' ranks have thinned somewhat during the recent recession. That notwithstanding, there are still hundreds of OSS companies. Each offers a bewildering array of functionality that delivers tangible value-add to their customers at face value. It is in the end-to-end integration of these disparate point solutions, however, that service providers see value disappearing and costs escalating. Only when this integration problem is overcome will service providers be able to automate their business processes to an extent that cuts significant costs and also delivers new services within a competitive market window.

Telecom's Spring Puts OSS on the Spot
No matter how often it happens, people are continually surprised and delighted when the natural cycle of boom and bust turns once more to boom. Like our primitive ancestors awestruck at the coming of spring, to some it is amazing that telecom's winter has ended and the green shoots of spring are upon us. Spring, of course, brings its own challenges.

The entire telecom industry remains highly aware of its recent recession. Service providers must continue to be cost-conscious with capital and operational expenditures, but also must tool up – and be nimble enough - to deliver their customers' complex 21st century services. Service providers need to automate operations, streamline business processes, and prepare to implement and integrate new solutions that help achieve these goals quickly. By delivering on this complex set of needs, OSS can become the key differentiator and enabler for success for service providers who "do it right." This, as a result, puts Operational & Business Support Systems (OSS) directly in the limelight.

Changing OSS Needs and Realities
Each of the three major groups in the OSS supply chain has compelling reasons to seek a new approach to OSS. Service providers, OSS software vendors, and systems integrators all face new constraints and new expectations as they approach the improving telecom market that will directly affect their strategies. Some of the market realities they face are the result of the kind of systems disparity the OSS market must overcome in its next wave.
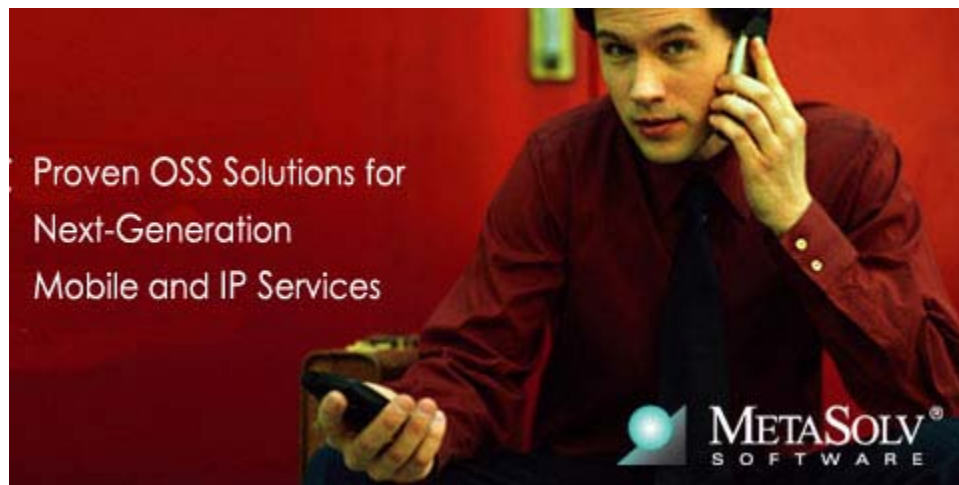
Service Providers

In today's financially sensitive market, service providers need cost effective OSS implementations. OSS systems must automate business processes to solve operational issues in the short term, and also show rapid returns for the investment. In addition, service providers require a long term IT strategy. Many carriers' OSS systems were put together to solve immediate needs without regard for a long term view. These systems are now having difficultly expanding to handle more complex networks, services and automated processes.

OSS Software Vendors
In each market sub-segment, numerous OSS providers are competing for the same business from the same service providers. This competition, coupled with price pressure from the service providers, is driving software vendors to reduce development costs in order to be profitable. Further, the OSS marketplace has become a conglomeration of companies that solve niche problems. As a result, vendors must be prepared to fit into the OSS puzzle presented to them by each service provider customer they engage.

System Integrators
While custom integration projects are typically the boon of telecom system integrators, mounting pressure from service providers to cut costs forces SIs to make their projects more predictable and repeatable, and thus less customized, to retain their margins. System integrators are looking to reuse elements across projects and use less staff to accomplish their results. In addition, with the large number of software suppliers in the industry and service providers using an ever increasing variation of software components, system integrators must continually learn how to integrate new elements.

Overcoming Integration Restraints with NGOSS
The TeleManagement Forum, through its New Generation Operations Systems and Software (NGOSS) program has recognized the challenges service providers, OSS software vendors and system integrators face. With the best resources of its 350 member

companies, TMForum is developing solutions that will revolutionize the OSS' role in tomorrow's telecommunications industry.

Defining NGOSS

NGOSS represents a set of de facto standards for integrating business processes and embodying them in OSS/BSS solutions. NGOSS's end-to-end approach enables service providers to redesign their key business processes in line with industry best practices while allowing suppliers to develop software cost-effectively that can easily fit into a service provider's IT environment.

Packaged as a set of tools, NGOSS delivers a common business process map and information models that are coupled with pre-defined integration interfaces, architectural principles, and compliance criteria. NGOSS also provides a step-by-step methodology for using the tools, and defines a lifecycle for how to develop and deploy NGOSS-based solutions.

Elements of the TeleManagment Forum's NGOSS Resources

• **Business Process Map:** An industry-agreed set of integrated business process descriptions, created with the customer-centric market in mind. These are used for mapping and analyzing operational processes. The Business Process Map itself is documented in the Enhanced Telecom Operations Map™, or eTOM.

• **Information Model:** A comprehensive information architecture that includes an industry-defined Shared Information and Data (SID) model. This provides standardized business and systems definitions aimed at achieving business process flow - through.

• **Integration Framework:** This provides key architectural guidelines and specifications to ensure high levels of flow-through among diverse systems and components.

• **Conformance Criteria:** These include guidelines and tests to ensure that systems defined and developed utilizing NGOSS specifications will interoperate.

• **How-to-Use NGOSS Guidelines:** Processes and artefacts are provided that allow developers and integrators to use the toolset to develop NGOSS-based solutions using a standard methodology and lifecycle approach.

Each element of NGOSS aligns with particular phases in the OSS/BSS definition, design, development and deployment process. The NGOSS tools are designed to be used in

tandem with each other to step through development cycles or individually to address particular business or technical challenges.

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NGOSS Benefits
NGOSS can benefit all stakeholders in the OSS/BSS value chain. It can reduce operational and development costs, and helps to eliminate what's known as the "integration tax." NGOSS also improves the speed with which solutions can be modified to meet new needs, and thus provides greater flexibility to service providers as they select OSS components.

- Reduced operational costs: Easier software integration enables tighter coupling of business processes and more automation
- Reduced development costs: NGOSS predefines a substantial portion of development, reducing time, effort and thus cost.
- Reduced integration tax: NGOSS' de facto standardization of the process and information models and architectural framework decreases integration complexity, time and cost
- Speed of modification: With NGOSS, business processes and systems are well understood and mapped, interfaces are well defined, and the architecture is designed for flexibility. The risk of making complex changes to tightly integrated systems is thus reduced, and modifications can be made in shorter cycle times.
- Flexibility in software selection: With simplified integration, service providers gain flexibility in software vendor selection and are not limited to one core vendor and its pre-integrated partners.

Getting NGOSS Adopted

The TMForum's 350 member companies have developed NGOSS over the past four years. It is becoming accepted increasingly as a framework upon which the future of OSS will be built. However, this general acceptance will only follow through to widespread adoption if the TMForum can execute on two critical aspects of the program – compliance and direction.

NGOSS Compliance
When any fundamental program such as NGOSS begins to reach fruition, the industry clamours for mechanisms that test vendors' compliance to the specifications. Such testing is essential if the industry is going to arrive from its torturous integration path to a plug 'n play destination. No one seriously expects the hugely complex OSS world to achieve plug 'n play at the level of PC peripherals. However, NGOSS promises orders of magnitude improvement in integration and a compliance structure is essential to drive it.

The TMForum has defined compliance tests and criteria that must be met to achieve NGOSS compliance. Due to NGOSS' scope, some of these tests are in the form of self-test software suites while others are assessed through auditing. These tests are available from the TMForum and many service providers – including BT, AT&T, NTT, Telstra, Telecom Italia, Vodafone, O2, and Orange are bringing them in-house to apply them to their prospective vendors. They are also incorporating NGOSS compliance criteria into their procurement documents. The TMForum has produced a procurement document template for OSS solutions that has the NGOSS criteria built into it, making it simpler for a Service Provider to ask for an NGOSS Complaint product or solution.

The NGOSS 'Cookbook'
Telecom operators' computing environments are among the most complex on the planet. As a result, applying an approach to reduce complexity has challenges. NGOSS provides the tools for the job, but vendors and service providers need education on how to use them well. The TMForum has invested significant time and effort over the past year to define the methodology for using NGOSS. Called "The Cookbook," this guide takes users through a step by step approach to defining business problems, and architecting, implementing and deploying solutions.

Operational processes and systems may not grab headlines like mergers, acquisitions and changes in the boardroom. But they have a profound impact on determining which operators will be successful and which will fail. Just as a sound appreciation of the laws of economics is germane to success in communications, so also is the understanding that what is happening 'down in the engine room' is essential to an operator's survival. Adoption of NGOSS principles, specifications and methodologies is one critical step any service provider, vendor or system integrator can take to help insure OSS success for the long term.