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Service Delivery Frameworks: The Service Provider's Mashup

by Wedge Greene & Trevor Hayes

"Asking for an SDP is like walking into Barnes and Nobles and asking for a library. An operator must identify what components of the SDP it requires, and whether those components should be owned or managed." - Alan Quayle

Service Delivery Platforms (SDP) are being built by dozens of vendors, and dozens more are contributing bits and parts to various SDPs. Yet every SDP is different and mutually incompatible. Further, some SDPs support and leverage IMS while others do not. Into this mess, the TMF has stepped forward with a powerful vision called a Service Delivery Framework (SDF). SDF will aim at interoperability. SDPs allow the rapid creation of services. SDF is planned as a broad glue using SOA to link otherwise incompatible SDPs with other resources and enablers. SDP is used to build a service. SDF, as conceived, allows services to be mashed up: service calling service, calling service, each being delivered by smart network enablers. While neither SDP nor SDF is a BOSS application we believe this work could be a ray of hope for Web 2.0 beleaguered service providers – *becoming the Network Operators Mashup.*

How Things Get Done

Around August 2006, Keith Willetts, Chairman of the TeleManagement Forum (TMF), chartered a "Landscape Team" to look at the whole emerging Web 2.0, SDP, content, and media convergence environment. Of course, nothing happens without precursors; here it seems to have come from Keith Miller (MD Pendragon Consulting Ltd and then CEO of Appium) lobbying since the spring of 2005 for the TMF to embrace service creation, especially for media and content. Keith Miller and Grant Lenahan of Telcordia came to lead this Landscape Team that included representatives from BT, AT&T, Alcatel/Lucent, Oracle, IBM, Amdocs, Telstra, Sun, and Siemens. In the fall of 2006, they concluded that the IMS and Web 2.0 initiatives were well understood, but a "big hole" existed in the SDF area. Basically, no one was building a framework that would bring together proprietary Service Delivery Platforms (SDF), IMS components, and Web 2.0 services in a usable, interoperable structure - probably because no one had yet invented something like that (although the precursor ideas have roots in the origin of NGOSS). So the

Service Delivery Framework (SDF) was conceived, or at least rediscovered, as the answer to a basic need: How in the heck were service providers going to cobble all this stuff together and deliver timely, customer embracing new services? This team had a vision that the TMF's work in NGOSS for OSS/BSS could be merged together with content and media to deliver rapid development and deployment of new services.



The banner for the SpringVONx 2008 Conference and Expo features a dark blue background with the 'VONx' logo in large, metallic letters. The tagline 'It's no longer just voice or video, it's everything over the Internet, commonly referred to as XoIP.' is prominently displayed. Below the logo, the event dates and location are listed: 'CONFERENCE: March 17-20, 2008 • EXPO: March 18-19, 2008' at the 'McEnery Convention Center • San Jose, CA • www.SpringVONx.com'. A central orange box offers a 'SAVE UP TO \$500 ON THE CONFERENCE* OR GET A FREE EXPO PASS*' with registration details. To the right, a 'KEY TOPICS' section lists various subjects like Open Source, IMS & Fixed Mobile Convergence, and Triple & Quad Play Strategies. At the bottom, logos for premier sponsors (AT&T Wholesale, Brix, POLYCOM) and a platform sponsor are shown.

Of course, not everyone on the team supported this – but the service providers understood the need and the infrastructure vendors and new ecosystem entrants saw the opportunity. They plowed through the challenges and obstructions of some entrenched OSS/BSS vendors. We saw this before when NGOSS was first placed in front of the TMF, but NGOSS had a distinct advantage – it already had defined business drivers, external momentum, and a preliminary architecture. When the SDF was presented to the larger TMF Board and Board advisors during the Fall TMW of 2006, it was just a concept and cartoon architecture, but it nevertheless resonated as something very exciting and important. Most of the vendors were building Service Delivery Platforms, but this sketchy SDF architecture was something more. We expect that Microsoft's presence was felt by the team even if it was not yet actively involved with their Connection Services Framework, an architecture which is clearly ancestral to the SDF. Still, in our opinion, this was the most important and most original activity taken up by the TMF since NGOSS. Like NGOSS, it would likely ride in with new vendor members. And it validated that NGOSS was maturing since it proposed using the experience and products of NGOSS to solve a critical problem in an area outside of Business and Operations Support Systems (BOSS).

The proposed scope of work was reviewed by the TMF Board and a program was chartered. Possibly, not all of the board actually realized the full extent of the proposed scope – a program that could become every bit as large as NGOSS, but they did pick up on the key drivers and the enthusiasm of the landscape team, and the work plan did focus specifically on the SDF and operations and management impacts to service providers. This is not to say that the TMF turned aside from Media Convergence and Web 2.0. These were considered to be better understood and spun off into other, less formal initiatives.

The SDF work program commenced in the summer of 2007. It still took another six months for this program to get started (Tony Richardson, TMF administrator of the SDF team, “[it]takes time to get common viewpoints in place”). During this time, much organizational work was accomplished; nevertheless, this delay may yet prove to be critical. Another TMF group, the NGN-M (Next Generation Network Management) team, after spinning off the NGOSS Harmonization team, was merged into the SDF activity. In this interim, a board sponsor stood up. TMF active contributors (notably Jenny Haung of AT&T, Johan Vandenberghe of Alcatel-Lucent, and Dave Milham of BT with Tony Richardson of the TMF) wrote an exceptional work charter with a clear six-month work plan – even if this seemed a retrenchment from the broad vision of the SDF. The larger TMF membership was informed of the program and solicited for interest and commitment of team member resources. Still, for something this important, this delay in starting is hard to understand. Perhaps the importance of this work and the critical time curve under which it must occur is not yet fully understood.



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However, momentum is growing – since our review article on SDF last January, a whopping 237 members from more than 125 companies have signed on to follow the work and twenty or so companies have placed contributing members on the team. This contributing group expanded to significant members beyond the Landscape Team. Member Companies of the TMF SDF Team include Alcatel-Lucent, Amdocs, AT&T Inc., BT Group plc, Computer Associates, EDS Information Services L.L.C., IBM Corporation, IONA Technologies, Microsoft Corporation, Oracle Corporation, Pendragon Consulting, QinetiQ, Nokia Siemens Networks BV, Sun Microsystems, Telcordia Technologies, and Telstra Corporation.

For the second half of 2007, this team struggled to complete its work plan. Vendors who were particularly active include Microsoft, Sun, IBM, and Oracle. Other members wandered in and out as the topics changed. With Tony Richardson involved (he has led the TMF’s liaison activities), lots of contact occurred with groups outside the TMF who were working in parallel areas or might contribute components or ideas. This diverse input needed to be assimilated and rationalized. All this has culminated in the TMF document TR139 Technical Report which should be finalized in time for the January 2008 TMF Team Week.

Officially, the TMF is pleased with progress. Tony Richardson:

“A lot has been achieved in the project to date – the creation of a first agreed version of the SDF Reference Model (which is presented in TR139 along with other related issues such as the main SDF business and technical drivers etc). Other items include evaluation / selection / initial usage of a tool for requirements capture, commencement of a BA development, forming of a set of Industry Groups collaborating in SDF development (via f2f workshops, conference calls etc.)”

But the contents of TR139 are essentially similar to the work of the Landscape Team. Six months is rather long for tooling up and as of this review, the document itself is unclear and muddy.

Stepping back, another possible reason for the slow ramp up emerges: neither SDP nor SDF is a Business and Operations Support System (BOSS) application, so why is the TMF getting involved? Is the learning curve for involvement exceptionally high? And why are we, the authors, concerned about this lengthy timeline?

Why SDF Now?

We find the introduction to the scope of this TMF SDF program “very telling”: “TM Forum is extending its Management activities to include end-to-end Management of Next Generation Services - which will include service components from many other Industry providers” [[TMF web site](#)]. With their book released in 1996, The Lean Communications Provider, Beth Adams (then NMF COO) and Keith Willetts, launched an agenda to turn the then-named Network Management Forum from network elements and connection management projects to an emerging new vision: *Service Management*. Today, Service Management is nearly universally accepted but back then, it was the new idea on the block. It was after reading the “Lean Provider” that Wedge Greene realized that traditional OSS and BSS systems and models, even the “advanced ones” Beth and Keith described, would never be able to deliver on this important opportunity. This was part of the incubation of NGOSS, and it could be argued that bringing NGOSS to the table interrupted the extension of the TMF into the full scope of end-to-end service management. However, now that these additional tools and skill sets are in place, it is easy to see Keith Willetts leading the TMF back into this broader activity, which, we suppose, was even then among his goals when reassuming leadership in the TMF at the beginning of this century.

This litany, from the SDF Team, should be well apparent to all by now: “Service providers want new enhanced services delivered faster. These services should work on many-to-all delivery platforms available to the user, and these services should be cheaper to develop and cheaper to manage. And given how volatile the market is today, providers want to become “more agile,” but no one seems to agree on how this agile, rapid, economical product delivery will be achieved. It seems now that a large group of companies “want to agree” – with only a few entrenched BOSS vendors resisting.

Both Keiths (Willetts and Miller) rightly see a critical, raw, open need for service providers and they target SDF directly at this. According to Keith Miller this is to:

- Reduce cost and cycle time to translate ideas to market offerings.
- Increase opportunities and innovations for monetizing existing assets.
- Adapt swiftly to market changes and customer preferences.

Increasing the scope of opportunities available to service providers is clearly of first importance. Tony Richardson: "I would say the biggest business drivers [for SDF] are to do with rapid delivery of service and support of multiple value chains and industry actors. From my perspective, biggest technical drivers are the application of SOA and the associated convergence of IT and telecoms. Also, convergence of communication service – fixed, mobile, cable, content, media etc." Similarly, for Keith Miller, "A standardized business and operational framework is required to effectively deliver and manage all these emerging services, e.g. Web2.0, IMS, IPTV, mobile, etc. Currently there is no consistent SDF definition in the industry."

Alan Quayle (www.alanquayle.com/blog) has spent much energy painstakingly elucidating all the drivers for SDPs and SDF, some of which include:

- Extends the life of traditional services
- Lowers costs associated with the development and introduction of new services
- Extends services across networks and devices
- Provides an operating environment and development tools for third-party software developers
- Improves the profitability of niche services

But getting an SDF will not be easy. Issues to be overcome include:

- Managing end-to-end application performance
- Modular, standards-based SDPs are still relatively immature
- Integration
- Service provider's are not yet organized to take advantage of SDPs
- Lack of a compelling business case
- Lack of standards creating confusion and trepidation
- Marketing challenges

All of this is rather familiar stuff. Indeed some of these were cited eight years ago as business drivers for NGOSS, and probably have been used to justify (or shoot down) most IT initiatives funded by service providers in the last five years. What is new is that the technical piece-parts are becoming available and perhaps the will of the service providers is stronger. And this time the vision just resonates. It is elegant.



It is not expected that the TMF will progress this work alone, or even take the lead in designing the actual architecture of the SDF. It expects to liaison with other industry groups to achieve this, but those groups do not seem to have formal SDF programs. Just as with NGOSS, the needs of the service provider seem to demand architectures and programs earlier than other industry groups – most of which only concern themselves with specific business enablers.

Formally, the TMF SDF group is not inventing the SDF. "Present work involves defining the Requirements to fill 'Gaps' in existing NGOSS Frameworks and associated specifications (eg eTOM, SID, TAM etc). In addition, the positioning of appropriate contributions from other Industry Groups and market sectors will also be an essential facet of this project. However, the proposal contained a cartoon architecture drawing laying out architecture for an SDF and this was further elaborated upon in the last year. This SDF "model" was fresh - now we see it replicated in the SDP product description documents of major vendor contributors like Nokia. So, de facto, despite expressed contrary wishes, the TMF is at it again - inventing architectures of broad significance, because after all, this is what the membership wants.

The opportunities and potential of this program are quite exciting. The SDF Team work-plan promises to deliver on some of these expectations. What actually got charted, as stated in the current final draft of TR139, as the work of the TMF SDF program is the definition of these elements:

- The meta-model for the SDF Service that all service components provider must comply in order to perform the lifecycle management;
- The lifecycle management interface of SDF service components;
- Impact on OSS/BSS and lifecycle management support infrastructure with for example interfaces, meta-data, and flows needed by inventories, Catalogs, and Registry.

But SDF contains the promise, the potential to include even more exciting implications - potential work products which have not, as yet formally, made it into the managed work plans of the team. Specifically, Keith Miller's larger vision includes:

- Identification of service enablers and application integration touch points (interfaces, interactions and other architectural definitions)
- Standard Metadata definition for service description and cataloging
- Standard Meta-capability specifications for lifecycle management
- SOA-based NGOSS management framework to support SDF
- Support for a complex B2B value chain
- A SOA-based governance definition to ensure multi-vendor interoperability

Also, Alan Quayle believes that an SDF must not have simply service management as its goal, but must take yet again a fundamental shift in management viewpoint. This from *services* to *customer experience*. "Consumer Experience is defined as an integrated digital life independent of access method." This is delivered by rich applications running on many elements, devices, and user terminals. So is everyone

just jumping in with their wish lists to bloat the SDF project? Or is this part of a necessary whole that will not work without all these properties? We have yet to hear from the service providers weighing in on this, they have been specifically vague about their SDF deployment plans, but we can examine the technical and architectural environment for answers.

SDPs as Components

SDP is a broad and perhaps overused term, covering:

- Communications and content based service creation, orchestration, and delivery;
- BOSS (Back Office and Operational Support Systems) for service definition and integration;
- Application Network Interface i.e. how network capabilities are exposed to internal, 3rd party and internet-based applications.

Typically, most SDPs include:

- a service creation environment
- a service orchestration environment
- a service execution environment
- a mechanism for service management

SDPs are here now. A large number of vendors are building and selling SDPs or parts that can be assembled into SDPs. Alan Quayle identifies over 40 active vendors. They come in all sorts of flavors, some hosted, some pure development platforms, some SI best-of-breed aggregations, some specifically for mobile services, many geared toward IMS. They are deployed today in many operators around the world, both large and small. HG3 Italy, Amena Spain, BT, Mobilkom Austria, SKT South Korea, Swisscom Mobile, SFR France, Telefonica Spain, Telenor Norway, Telus Canada, T-Mobile International, & Vodafone Spain.

Some of these are trials and some are small "get-your-feet-wet" projects, but some are quite comprehensive offerings. Vodafone Live used a home-built SDP to launch its offering back in 2002, a product that provides an integrated service across handsets, networks, content, and services. It includes video content, music downloads, and games. Perhaps among the most ambitious of projects, Sprint Nextel USA launched its Business Mobility Framework in 2004. It enables third parties to develop services using capabilities of the Sprint network. Sprint's approach focuses on IMS. Multiple vendors have been involved (including IBM, Microsoft, and AePONA) and even the basic development platform has been swapped out once.

Indeed seldom is one vendor supplying a whole SDP to a service provider. Again, Alan Quayle:

"SDP, like IMS, is not something that an operator pops down to their local mega-mart and buys off the shelf. It's a complex architecture; decisions on what components are required must be driven by service and operational need. An operator's strategic services roadmap, its multi-year view on how

its customers' experiences evolve, is critical to prioritizing and phasing the implementation of a SDP."

Moreover, the costs of a SDP are still very high: starting thresholds to get in this game are millions of US\$ - eventually working out to between \$.50 and \$3 per subscriber. The eventual returns from new services are expected to greatly exceed these costs, so SDP projects are multiplying. Indeed, business cases are being built on fractional benefits that can be easily quantified. Alan Quayle:

"SDP's generic drivers are: speeding time to market for new services, and lowering costs in launching new services through re-using common capabilities across services. However, in reality we see drivers such as capturing revenue leaking for prepaid content, and outsourcing expensive content portal software."

From these project trials and deployments our industry has learned some important lessons. It is important to have a lifecycle that allows for early service trials, and phased deployment, but eventually, users need to be able to migrate across service usage and platforms in real time. Additionally, Security in general and Identity Management in particular have become central requirements. Customers are demanding location and presence as service enablers. Opening the development environment to external developers greatly increases the eventual services available to the provider's customers and is expected to lower overall costs. However, this is not a wall-less garden – providers still have control of what is deployed. This adds a requirement to account for usage of and bill for services not originated by the provider.

There is also a strong current association between IMS and SDPs. Alan Quayle characterizes the kinship between SDP's and IMS:

"SDP Approach

- The SDP aims at optimizing the operator's IT and service layer infrastructure by replacing a great number of existing "stove pipes" by a single "horizontal" service delivery environment.

"IMS Approach:

- The IMS aims at optimizing the operator's network infrastructure by providing a single, all-IP core architecture for all types of existing and future access networks."

Alan Quayle uses an apt example to explain differences in IMS and SDF, while underscoring their sibling nature. He sees IMS as the province and program of the service provider CTO; while SDP is the solution put forth by the CIO. But the hope is that SDPs and IMS will converge. SOA technology is seen as the enabler of this convergence, but SDPs are such a diverse lot at present that their business goals are frequently the only thing they have in common. SOA is not always used. Indeed, many have little to do directly with IMS or even SIP. Use of Parlay and Jain is commonplace. SDP's are being built, but every one is different and likely incompatible. Increasingly, this incompatibility is seen as a problem. It limits assembly of end-to-end services which cross platforms and providers. It greatly increases the expenses of deployment and in particular the management costs. Increasingly, service providers want a managed service from SDPs.

These diverse SDPs need to converge. Tony Richardson:

"SDPs etc are being developed but there is no overall framework for interoperability, agreed capability etc. This could well lead to stove pipes of future services. One of the objectives of SDF is to prevent this – and in particular to try to provide common forms of manageability."

SDF will aim at interoperability. Keith Miller:

"...whilst all companies agreed that they have some of the necessary tools for building a proprietary SDP. This wasn't really the problem; as no customer wanted a totally proprietary SDF due to the high risk of implementing products that may have no significant future and no way of removing them due to the lack of agreement on how to manage an SDF today."

Service Delivery Framework and the "Garden Club"

"The SDF Reference Model aims to provide a means to assist industry agreement on the common SDF landscape, but TM Forum will be concentrating on the associated Management Requirements and specifications." - Tony Richardson.

At the moment, the SDF architecture is simply a broadly illustrative model. TR139 provides several cartoon architecture drawings that block out the subject areas and indicate that some significant relationship will exist to link these up. Basically, multiple suppliers interact to provide various services and service building blocks. Services are orchestrated from service components and delivered by service enablers which abstract network platforms. BOSS capabilities are linked to the Service Operations environment. Central to all is a domain of Service Lifecycle operations that covers the origination, the service life, and the retirement of services. Main areas of SDF:

- SDF Service Enablers & Applications
- SDF Service Lifecycle Operation Support
- SDF Management
- NGOSS SOA Integration Infrastructure

Several types of interfaces are envisioned. SDF interfaces specifically abstract the invocation of an underlying resource's function. This abstraction is key to the usefulness and interoperability of SDF components and allows managed service composition from many smaller building blocks. Interface types include:

- The functional interfaces
- The resource exposure interfaces
- The lifecycle management interfaces

Among vendors, Nokia has a clear image of what an SDF will be. Maxis' DaVinci Portal is a well thought out approach to a select service area. But perhaps the most comprehensive working architecture from a single vendor is the Microsoft Connect Service Framework in its largest context. Among service providers, we are impressed with AT&T's architecture and with Swisscomm Mobile.

SDF differs from SDPs in some important but subtle ways. One way of looking at SDF is as a super-framework that allows many different SDPs to be linked together.

Indeed, with some architectural constraints, even heritage systems may be used in service composition, abstracted thru a SOA interface. Importantly, SDF's will incorporate the architectural notion of domains with different resources, policies, and security. *This enables not just the assembly of a service that spans multiple platforms supplied by multiple vendors – it enables the composition of services that cross operator boundaries using networks, resources, and application components from multiple service providers.* This extends the notion of wholesaling from circuits to service components.

Lastly, and quite powerful in an SDF "Any application rendering a service may in turn become a component." (TR139) The SDF should not only provide the fast and reliable assembly of the service components but also provide the fast and reliable reassembly of any service component in another assembly. This recursive principle brings SDF right to the starting edge of the principles of Autonomic Communication.

Technical issues aside, a simpler way of looking at the difference between SDPs and SDF:

- SDPs allow creation of services.
- SDF allows services to be mashed up: service calling service, calling service.

For instance, an address book lookup gives a name which is used to find a person's location which brings up a map of reasonable trip routing, resulting in a call, once connected, linking in web co-browsing, with a location, type search to find for a restaurant along the trip route, clicking the restaurant's advertisement, resulting in a reservation, and a message to social-network shared friends to met them with directions inserted from that person's location. This Mashup is becoming possible with some Over-the-Top (OTT) service platforms; network operating providers must meet this challenge.

What we propose is that a fully realized SDF could enable creation of a middle-ground strategy between the wild west OTT services and the existing "walled garden" approaches typical of network operators. We call this open, yet controlled, strategy the "**garden club.**" Many different players in the ecosystem contribute both to the resources in this smart middleware and also to the composition of Mashup service products. Yet the network operator vets the garden membership, collects the dues and fees, and distributes the rewards.

All this Mashup complexity will require service creation and operation discipline. The ability to deliver the operators' comprehensive style of management and policy controlled QoS also might be a competitive edge for providers over OTT services. Tony Richardson: "[besides] the issue of SDP interoperability – the major aspect that TM Forum is progressing is the need for commonly agreed Management capability – and this will be TM Forum's principle focus."

Service Lifecycle Management

TR139 lays out a principle requirement for the SDF. "The SDF lifecycle management must be able to support the versioning, testing and configuration management of individual software components, as well as the creation, deployment and execution of application X and its versioning and testing."

This is not simply a product catalogue with gates indicating the step or state each service is in during its life; this is a true process flow with active management of the

evolution of a service, its expectations, and its value as it progresses from concept to implementation through useful life and finally to retirement. It is a child of the experience the TMF has gained with eTOM.

Indeed, the enablers, components, and service lifecycle create a new framework for NPI, as we stated in an earlier article [[NPI for Life](#)]. Specifically the various SDPs enable rapid development of components and resources. The SDF will lay out the interaction architecture for these enablers and components. Using the SDF, these parts will be assembled into composite services. The SDF Service Lifecycle Management will orchestrate the value curve for the composite service. The SDF Lifecycle phases should include:

- Conceptualization and design
- Lifecycle Management
- Operations Planning
- Configuration
- Campaign management
- Usage / run time execution of service
- Retirement

During the in-service period, Lifecycle management allows for basic BOSS services:

- Fulfillment
- Assurance
- Charging for usage
- Billing and revenue management
- Monitoring and management
- Trouble resolution

So far, the SDF team has not succeeded in directly linking SDF Service Lifecycle management to the eTOM except as an overlay drawing (the type we hate seeing so much when used by vendors to justify their products.) Relationship of SDF lifecycle to eTOM is clear during the in-service period, but likely will require extensions to eTOM to cover the creation and decommissioning periods. Also, eTOM does not itself yet have a model of service Mashup composition.

Other Bees in This Honey

Rather than compete, many members of the SDF community want to embrace and include Web 2.0 enablers in the SDF architecture mix. This expands the scope of SDF to include brokering between technologies. This enrichment also broadens the competitive positioning of services supplied via smart service provider middleware, potentially further marginalizing OTT services, but perhaps even OTT components could be incorporated.

When including Web 2.0 and Over-the-Top services, many new elements and enablers present themselves. These also are expected to be generated and managed through an SDF. Take for instance Identity Management and security. Many technologies and groups, like SAML, have little to do with IMS, and indeed are inventing alternative technologies faster than IMS can incorporate them in its architecture.

“The TMForum’s SDF work will embrace many of the major Identity groups work and provide a management structure for them. We have looked at the

Liberty Alliance, Higgins Trust Framework, OpenID and others and feel that it is necessary to support these ongoing initiatives and not to choose between them. Also as these functions are critical so the TMForum's SDF work must embrace their use and make it as easy as possible for them to be used with the rapid provision of all services and not limited to just content and media." [Keith Miller]

Of course, Identity Management itself *recursively* becomes just a component service that will enable and enhance the offerings of other services. In NGOSS, we call this a framework service. In SDF it becomes part of a complex Mashup of services - becoming at once both framework and business service - where it is composed of more basic platform constructs and then enhances more complex and complete offerings. For example:

"eBIZmobility has built an SDP integration on top of Aepona/ Appium's XWay application server that allows easy integration with charging gateways through their current Parlay/SIP implementations. This currently supports the Liberty alliances standards for Identity management and is being evolved with the TMForum's SDF management work as it is maturing." [Jeremy Kagan CEO eBIZmobility]

So SDF is the great service provider Mashup. It seeks to link NPI, lifecycle management, SDPs, IMS, Internet 2, SOA, W3C, and web 2.0. Add to this mix the concept of Resource Enablers made from, and abstracting, network elements and communications protocols and transport sub-components. This links SDF into Device Management, another new working team chartered by the TMF. Lastly, the possibilities of inter-working domains and multi-vendor component assemblies allows service providers to open up their network to service creation and deployment by third parties. This enables SDF as smart hosting middleware such as envisioned by FineGrain NGOSS. Realizing this broader vision of a SDF opens up a profound strategy for network owing service providers, what we call the "garden club."

Big Job Moving Forward

If the dedication and expectations of the TMF SDF team are an indication, this project is gaining in support and momentum. Witness these glowing statements:

Keith Miller, Pendragon Consulting, Ltd.:

"The TMForum SDF program has come a long way in a short time with over 230 people from approximately 125 companies now monitoring and contributing to the work since we started the program just over a year ago. The program holds out the best hope for providing an SDF's management integration in a painless and future-proofed manner. I am particularly pleased with the way that companies have collaborated in a pragmatic and open manner in order to move this work forward with the discussions being focused on meaningful implementation rather than each of their individual product lines!"

Jeremy Kagan, CEO eBIZmobility:

"We are pleased to see the TMForum take the initiative with the SDF program and we believe that this work is critical in bringing long term

stability to the SDF area overall and de-risking SDP implementations.”

Tony Richardson, TMF Staff Team Liaison:

“My opinion – [the SDF is] crucial [for the TMF current media convergence strategic direction.] The SDF and associated SDPs will be the means by which such future service offerings will be blended with more traditional and future services.

“In all, the work in the second-half of 2007 has provided a firm foundation to build Phase II of the SDF program – which will be defining the detailed requirements for SDF management specifications etc.”

SDF is a Big Job, and it is not happening soon. Without capital-C\$ Commitment it will never happen. All the players agree that SDF needs significant assignment of resources both in house, and in organizations like the TMF’s SDF team. Inside the TMF, SDF needs more attention of the Board and greater allocation of staff resources – commensurate to the extensive scope of the program. It needs to speed up the timeline for delivery of usable specifications. We cannot let the program get bogged down in debates between those OSS/BSS vendors who wish to block it and the infrastructure vendors and System Integrators who want it. This type of sniping and obstructionism slowed delivery of NGOSS by perhaps two years. If we allow this now, than those who dominate the status quo will continue to win contracts – but can service providers afford this outcome? The best news is a very large quantity of companies in the extended telecom/media ecosystem can get a piece of this pie by simply supplying either an enabler or a tool – *or the currently rare human expertise necessary to architect and build these complex environments.* If this extended ecosystem realizes the potential of SDF and then gets organized - it significantly broadens the coalition for SDF.

For Phase II, Telecom Italia has seconded Enrico Ronco, a TMF Fellow and major TMF contributor, to be the team lead and spearhead new progress toward deliverables. Everyone acknowledges this is a big job. Ronco knows this: “TMF is developing requirements at the moment. [While] there has been a big amount of work since [summer 2007] ..., personally, I think that at least 18 months at least will be necessary to see some concrete implementations of TMF SDF results – so Q3-Q4 09 (starting from mid 08).”

It has taken seven years for NGOSS to move from introduction to its current state - where Service Providers and vendors can design with the same expectations and common language and build NGOSS management structures that are interoperable. With a concept inception in the Landscape Team in August 2006, we are now 18 months into the TMF’s involvement with SDF. With Over-the-Top services [see December 2006 Pipeline] barreling down upon Service Providers, we believe network operating service providers cannot survive for five more years waiting on usable specifications for SDF, or for products which implement these.

The current TMF administration staff has placed strong project management on the TMF program with clear charters, reasonable work plans, and fixed deliverables. Just like a good NPI program should do – Specifications and Interoperable Agreements are the TMF’s products. Yet with a potential “Sword of Damocles” hanging over operators (OTT services and Web 2.0 companies aggressively entering their market), this “best practice” NPI may not be good enough anymore. Therefore some fundamental speed up in the way the TMF manages program deliverables

must occur. Again we see a requirement for what we are calling “TMF 2.0.” But a good first step is to remove any “boat anchors” from the teams.

Lastly, while Keith Willetts, with SDF, is getting his full vision of Service Management, nevertheless, Alan Quayle believes this just is not enough. SDF must also encompass the delivery of *enhanced customer experience* while increasing the pool of possible customers and suppliers in our now much larger ecosystem. It is hard for anyone to disagree with this.

If you have news you’d like to share with Pipeline, contact us at editor@pipelinepub.com.