Pipeline
Technology for Service Providers.
www.pipelinepub.com Volume 13, Issue 8

Converging Cloud and Virtualization Standards: Critical industry-wide collaboration

By: Mark Cummings

Collaboration effort, making progress

A broad range of Telecommunications industry participants came together from December 6 to 10 in Bonn Germany in two consecutive meetings both hosted by Deutsche Telekom. The first was a Network and Service Management (NSM) Workshop. The second was a Multi SDO and Open Source Group (MSDO/OSG) collaboration effort. The results of both meetings are very promising in that they point to a new way of operating networks that will meet society's need for innovative and cost effective services while enabling financially strong network service providers. This vision has been building for some time and recently the NFV industry experience has catalyzed the industry to come together in a concerted effort to make it happen.

Over the last two years the industry has realized two things:

First, both vendors and operators seeking to implement NFV have discovered that it is very difficult to do so in the current Telco environment of silo'ed operations systems. The term information silos is widely used in the information industry in general isolated vertically sliced system segments. Sometimes the expression "stovepipes" is used to convey the same concept. However, the situation in Telco operations functions and resulting data is more akin to the separate cells that formed colonies of single cell animals before the evolution of multi-cell animals. An example that illustrates this situation is a major U.S. Telco that has over 200 separate inventory management systems. The simplest way of explaining the resulting difficulty is that trying to implement NFV without a software framework that enables end to end orchestration results in the creation of more operations data silos, held together by more inefficient and expensive manual effort making the situation worse, rather than better.

The second realization was that NFV is not an end in itself, but rather a tool to achieve a particular vision. It envisions Automated Network and Service Operations; Supporting Composable Services, enabled by an operations framework providing real time End to End Orchestration. In other words, getting Telco operations to resemble single multi-cell animals. This vision formed the basis for the presentations and discussions over the four days of the meetings. Some see the realization of this vision as an existential challenge to the current Telco industry.

The NSM Workshop focused on the What and the Why of the vision and flowed into the need for culture changes throughout the industry. The MSDO/OSG Collaboration focused on the nuts and bolts of the How.

Network and service management workshop

The 135 attendees of the NSM Workshop included representatives from international Telcos based in Europe and Asia; leading vendors from most of the Telco product categories, and a leading industry analyst. The presentations focused on why this vision was such a critical goal, what the benefits were of achieving it, and what each organization had been, and was planning to do to help achieve it. Participants sought to define what real time meant in the context of Telco operations and

came to a preliminary consensus that it meant sub second response time rather than the days, weeks, and months, that are typical for some functions today. Other presentations and discussions focused on what composability is and what benefits flow from it. This led to a heated discussion that led to a general consensus that there needed to be culture change in both operators and vendors to shift toward a software centric culture. There was a lot of discussion of Dev Ops, but little understanding of what Dev Ops actually is, and how it can be adapted/adopted effectively in the Telco world. It was recognized that making such a culture change is difficult. One attendee summed it up by saying, "It is not enough to change from suits and ties to jeans and T shirts."

At the end of the Workshop a smaller group of company representatives came together to develop a recommendation for how the NSM collaboration effort could best continue and develop. Alternatives for consideration include creating a new low overhead organization that provides a level playing field and transparency. This group was tasked with coming up with a set of recommendations to be delivered to the larger group in the April time frame.

MSDO/OSG

The MSDO/OSG Collaboration was a result of the recognition that the evolution of technology in general, and NFV in particular, is causing organizations once in separate domains to rub up against each other. In essence, they are now working in a single domain. Developers in vendors, and implementers in operators, are confronted by a confounding array of different nomenclature, data models, and architectures from these different Standards Development Organizations (SDO) and Open Source Groups. But their development and implementation efforts have to span this confounding array. It is the recognition of this that brought the groups together.

The extent of the problem became clear when these groups first came together and realized that they used the same words (in English – although the group is clearly international in scope and represents many language groups) to mean different things and used different words to mean the same things. The scope of the problem became clear when it was recognized that each group used the terms Information Model, Data Model, and Schema differently.

The Collaboration group consisted of 35 people representing the nine leading SDOs and Open Source Groups impinging on NFV. Presentations were made by representatives of each organization focused on identifying the scope of the problem, what had been done in efforts leading up to the Bonn meetings and what the issues were from the point of view of each. Subject matter included: nomenclature, common data models and/or translation of data models at touch points where different organizations intersected; issues associated with description languages, and architectures.

What emerged from the discussions was a general commitment to moving forward in a collaborative fashion. To that end, there was a set of specific action items that were developed with each led by a pair of individuals. These individuals were given the task of developing an initial approach to be shared with the whole group in the January 2017 time fame. One of the action items was to develop a recommendation for how the collaboration effort could best continue and develop. Alternatives for consideration include creating a new low overhead organization that provides a level playing field and transparency. And if such a group should be created, if it should be part of the NSM group or separate. The overall intent of all of the action items was to have specific results to share in the same April time frame being used by the NSM Group.

Background and implications for the future

The effort that resulted in these two meetings started several years ago with NGMN's (Next Generation Mobile Networks – an industry organization organized and controlled by network operators) NGCOR project (Next Generation Converged Requirements – a project led by many of the operators participating in the Bonn meetings). NGCOR resulted in the UIM (Umbrella Information Model) developed and promulgated jointly by 3GPP SA5 (3rd Generation Partnership Project – the SDO primarily responsible for mobile/cellular networks) and TMF (Tele Management

Forum – an industry association /standards group /conference organizer focusing on operations that grew out of historical fixed networks). The UIM provided the first comprehensive information model spanning operations aspects of the RAN (Radio Access Network) within the 3GPP domain and Backhaul within the TMF domain. The first implementation of the UIM was demonstrated by Orchestral Networks at Telemanagement World in Nice, France in conjunction with HP, Comarch, Juniper, and ZTE under the direction of the NGCOR project on 2013.

In 2015 inside the ETSI NFV ISG (European Standards Institute Network Function Virtualization International Standards Group) some saw that, although the UIM was helpful, it did not address the full range needed. They started organizing and their efforts resulted in a MSDO/OSG Meeting in January, 2016 held in Louisville, Colorado hosted by Cable Labs. It was the first time that these SDO's and Open Source Groups had come together. There was a concern going into that first meeting that there would be a lot of turf battles; but to the surprise of many, there was a recognition of the problem and a spirit of collaboration from the beginning. That first meeting did a lot to crystallize the recognition of the problem and the need for a solution. It did not, however, come to a clear path forward. At the end of the January meeting, Deutsche Telekom announced that it would host a meeting in December. The nature structure and focus of the December event was not defined.

During the intervening year there were ad hoc collaboration activities between the Louisville attending organizations. It was recognized that to make the needed progress a more focused effort was needed. As a result, several months of planning and informal conversations between group representatives went into not just planning the agenda of the Bonn meetings, but also planning for a process in the meetings that would generate clear paths forward after the meetings. This process was successful and both the NSM Workshop and the MSDO/OSG meetings ended with a clearly-defined path forward.

During the on-going planning process, the presentations from the MSDO/OSG and related information is temporarily being hosted here:

- **OPNFV:** https://wiki.opnfv.org/pages/viewpage.action?pageId=8687868
- **ETSI:** 2016_12_08_NFV_Information_Modelling_Workshop-Bonn.