Enabling Cloud-Like Services Over Automated & Interconnected Networks

By: Pascal Menezes

If there is one common theme that has emerged from recent conversations with top service provider experts, it is the sense of urgency that their companies must move quickly to address customer needs and adapt to competitive threats in the era of digital transformation.

Last month's edition of *Pipeline* did a great job of framing the primary areas of transformation that service providers need to consider: enterprise transformation, organizational and cultural transformation, and network transformation. Below, I want to build upon that discussion, focus on what service providers must do to survive and thrive, and discuss how MEF can help them on their transformation journey.

Addressing Rapidly Changing Customer Needs

Enterprises worldwide are looking to service providers to deliver more dynamic, assured, and secure services that increase their agility to innovative and adapt in a period of rapid change. They want connectivity to cloud applications that provide a high-quality, frictionless experience. They want their services delivered more quickly and seamlessly to any location. Many want granular visibility into service performance and do not want to have to deploy their own equipment at end points to gain that visibility. And many are turning to new SD-WAN solutions for increased flexibility while balancing cost, performance, reliability, and visibility factors.

Adapting to Competitive Threats

As one senior network technology director at a large European operator told a MEF audience in April: "We need to become a telco on steroids if we want to survive" in the face of intensifying competition from OTT and other players. "Customer loyalty is not guaranteed" in an increasingly on-demand world where *everything* is defined as a service.

This message echoed similar comments from a representative of another European incumbent provider, who stated "You cannot afford to stand still." This expert noted that while people talk about the need to create new revenue opportunities, a more fundamental and pressing near-term issue is the need to protect existing revenues and simply stay competitive in the market.

A senior VP at one of the world's largest global service providers was even more direct in private conversation: "If you are not nimble, quick, and responsive, you are going to get wiped out."

How Service Providers Must Transform

It has become abundantly clear from engagements with many of MEF's 130+ service provider members that providers in every geographic region must go through organizational, cultural, and network transformations to address the changing needs of retail and wholesale customers and keep their businesses moving forward.

At MEF, we see three basic things that service providers worldwide must do as part of their transformation journey: become more cloud-like, automated, and interconnected.

Going forward, it will not be enough for service providers to offer dynamic connectivity and virtualized services over just their own networks. We need to see service providers transition from operating as independent islands of excellence to being integral players in a worldwide business federation of cloud-like networks that support standardized dynamic services across multiple providers.

MEF 3.0 Transformational Global Services Framework

To assist service providers, MEF introduced the [MEF 3.0 transformational framework](#) last November to define, deliver, and certify agile, assured, and orchestrated services across a global ecosystem of automated networks. Dozens of leading service and technology providers, open source projects, and standards associations have voiced their support for MEF 3.0 and are now involved in MEF 3.0-related initiatives.

Emerging MEF 3.0 services will empower users with the dynamic performance and security required to thrive in the digital economy. These services will provide an on-demand, cloud-centric experience with unprecedented user- and application-directed control over network resources and service capabilities. The ultimate goal is to get from where we currently are to application-aware, self-organizing networks.

Industry Transformation Journey

MEF 3.0 comprises four major elements:

Standardized, Orchestrated Services. The planned MEF 3.0 service family includes dynamic Carrier Ethernet (CE), Layer 1, IP, SD-WAN, Security-as-a-Service, and other virtualized services that will be orchestrated over programmable networks using LSO (Lifecycle Service Orchestration) APIs. MEF 3.0 CE R1 is the first release available now within the MEF 3.0 framework, while work on standardizing other orchestration-ready services is progressing. MEF currently is on track to publish a MEF 3.0 Layer 1 services specification within the next several months, with SD-WAN soon to follow.

Open LSO APIs. MEF's [LSO Reference Architecture](#) guides agile development of standardized reference points for LSO APIs, models, processes, and tools for end-to-end orchestration of MEF 3.0 services across multiple providers and over multiple network technology domains (e.g., Optical Transport, CE, IP, 5G, etc.). LSO enables service providers to transition from a silo-structured BSS/OSS approach toward flexible end-to-end orchestration that helps maximize return on SDN and NFV investments.
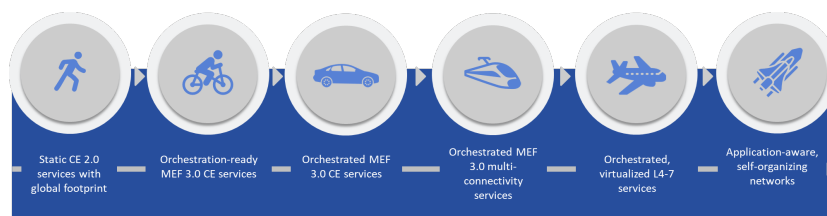
MEF has made great strides on LSO development over the past year. In April 2018, MEF published two new LSO API-related standards for service orchestration over network technology domains. This includes a new Interface Profile Specification (IPS) that defines an intra-provider LSO API for automated network resource provisioning that is now available for use with a mix of network technologies.

MEF members are also working to create a complete suite of standardized inter-provider LSO APIs dealing with automating commercial contractual agreements, address validation, serviceability, ordering, quoting, billing, assurance, testing, and change management. MEF members recently have taken steps to accelerate work related to LSO APIs for pre-ordering and ordering functions to meet a particularly pressing need for automating the buying and selling process related to wholesale connectivity services. We look forward to sharing more news on this front later this year.

Service and Technology Certifications. MEF has increased the agility of its popular service and equipment certification programs to accelerate availability and adoption of MEF 3.0-certified services and technologies. MEF 3.0 certification is delivered by MEF's testing partner, Iometrix, on a revolutionary on-demand, cloud-based virtual test platform that empowers companies to certify, on an ongoing basis, that their services and technologies comply with the latest agile MEF 3.0 releases. We have a growing pipeline of companies exploring MEF 3.0 certification.

Expanded Community Collaboration. MEF is working with many service and technology providers, open source projects, standards associations, and enterprises to realize a shared vision of orchestrating dynamic services across multiple providers and network technology domains. As part the MEF 3.0 agile standards development process, many MEF members are involved in a global distributed community of companies doing syndicated R&D work well ahead of any MEF standards (e.g., AI/ML Analytics, SECaaS, NNIs for SD-WANs, closed loop automation, etc.) and/or validating MEF's existing and progressing standards work, such as fulfillment and activation, inter-provider automated product ordering, and other key new orchestrated services (e.g., SD-WAN, Layer 1, and IP).

The key value of the MEF 3.0 Community is that members can experiment in a very agile process, work with members in their own geographic regions, syndicate with other members to solve common goals, mentor and utilize telecommunications graduate/post graduate students to do actual coding, work as teams in LSO Hackathons, gain market traction, and help get to ubiquitous market adoption on LSO APIs and MEF service specifications.

Many MEF projects utilize MEFnet, which is in essence a MEF members-based private IaaS cloud with compute, storage, and networking to enable development, testing, integration, and showcasing of MEF 3.0 solutions utilizing combinations of open source and closed source commercial products.

MEF is a very different Standards Developmental Organization (SDO). We combine the speed and agility of open source projects with the quality and rigorous documentation of traditional standards organizations. We encourage you to join us on this exciting journey to transform the telecommunication industry to deliver on cloud-like services with machine automation and interconnectedness with many business networks worldwide.