Zero-time Orchestration, Operations and Management (ZOOM)

TM Forum's Zero-time Orchestration, Operations and Management project will rewrite the rulebook for operations for the digital world. By bringing together the best in business, our vision is to create a living blueprint for a new generation of service provider support systems to deliver true business agility, and expert guidance on how to navigate the complex journey to get there.

The Virtual Operations Vision

With the advent of Network Functions Virtualization (NFV) and cloud computing, networks and services themselves are now being virtualized. This is a game changer – a paradigm shift in how the networks that underpin the digital economy are built and operated, and how the services they deliver are managed. This change opens up a wave of new business opportunities, and also mandates a new and highly agile operational approach. In fact, this is the first time in the history of our industry where operations must lead the revolution and not just support it.

In a virtual environment, services must work hand in hand with the network. Service creation and agility are key attributes of successful virtual operations: rapid delivery and effective management of services drives new business. In virtual operations, the relationship between networks and services is truly dynamic – a big change from today's operations support architectures, where resources are typically static and tied to specific physical devices. The virtual environment makes it both possible and essential to radically rethink operations management, and open up previously unimaginable expectations for service personalization, speed, flexibility, automation, and customer centricity.

In short, *virtual services require new virtual operations practices*. And that's where TM Forum comes in. We're leveraging our years of operations management experience and bringing together the depth of expertise across our member ecosystem to move quickly to usher in an era of Zero-time Orchestration, Operations and Management.

Transforming to meet the needs of the digital world

Succeeding in the digital world demands dramatic transformation of not only service provider support systems, but culture and technology as well. Service providers who embrace these opportunities will be rewarded with significant growth and benefits including:

- **Zero-touch, self-service operations** that can respond with the speed and agility to outpace competitors
- **Adaptive automation**, where changes in user needs, business goals, and/or environmental conditions are recognized, and a new, agile OSS uses these inputs to provide the resources and services needed at that point in time.
- **Personalized services** that are easily configured to fit individual customer preferences and requirements, by the customer themselves
- **Significantly lower operating costs and capital expenses** achieved through automation of manual tasks, simplification of configuration, virtualization and use of commodity-based resources.
- **Technology-driven innovation**, where business agility meets rapid development and experimentation and enables the transition from NetOps and SysOps to DevOps

In addition to our own experience, we want to bring the experience of cloud and data center providers leading the way in virtualization to ZOOM. Cloud and Software Defined Networks (SDN) are making rapid progress towards enabling commodity hardware coupled with software-based services. As an integral part of the digital ecosystem, working closely with lead in reusing the knowledge and approaches to operations learned in the data centers and applying it to a completely new approach for how networks and services are managed for service providers.

Emerging approaches like "DevOps" from the cloud arena need also to be learned from and utilized in order to accommodate the high rate of change and desired flexibility that a virtualized service provider network and operating environment will demand. As with cloud, virtualization of resources and services voids many of the fundamental assumptions today's operations systems are built on. These systems and even the approach to operations need to be rethought, and the cloud experiences will be a key part of the foundation.

What is ZOOM?

As a new TM Forum project led by the world's leading providers and suppliers, ZOOM will:

- Clearly define a **vision of the new virtualized operations** environment necessary to enable the delivery and management of virtualized network and services while enabling both low cost operations and innovation
- **Define an architecture** that that is based on the seamless interaction between physical and virtual components that are easily and dynamically assembled into personalized services. ZOOM provides solutions for all layers and realizes the requirements, use cases and solution for each layer can differ. It's a framework that harnesses the disruptive driver of virtualization to remake operations practices just as it's remade services and resources.
- Help service providers completely rethink their business and operations practices to achieve the profound **flexibility and agility needed to successfully leverage virtual networks and services**
- Provide tangible business and operational blueprints to successfully **navigate the transformation journey**, enabled by virtualization covering people, process and system impacts, and reducing the cost and risk of transformation
- Identify and define **new security approaches** that will protect **infrastructure, functions and services** across all layers of software and hardware.
- Complement ongoing work within ETSI and other fora, **working together** to provide the management platform and transformation guidance to support successful deployment of NFV

ZOOM Guiding Principles

To realize the true potential of NFV, we must address the challenge of end-to-end elastic service and network management, and deliver the automation and flexibility required to compete in the digital world. ZOOM was created to address this broader remit and is guided by a core set of guiding principles:

- **Open**, dynamic APIs, exposing standardized network and management functions all layers
- **Transparent end-to-end management** across both horizontal and vertical boundaries
- Event-driven, using policy **management, data, and metadata**, enabling automated management. Management is driven via closed control loop, and may be augmented by analytics
- **Integrated analytics**, enabling a consistent view and analytics from physical to virtual, by design
- **Self-service**, requiring minimal intervention from expert resources and enabling customer configuration
- **Service and business model agnostic**, enabling a flexible range of services and monetization models
- **Multi-tenancy capabilities** native to the infrastructure
- **Near Real-time and zero-touch**, executing requests rapidly without human intervention
- **Hardware agnostic**, separating hardware and software layers, with intelligence held in the software
- **Resilient** to hardware failure and localized load demands through intelligent software
- **Security and privacy** assured by design and at multiple levels
- **Software License management** built in rather added on to enable flexibility

Why TM Forum?

For 25 years, the Forum has been at the heart of service provider transformation and service management best practices. As a non-profit industry association, we've brought together the world's largest fixed, mobile and cable providers and their suppliers to establish essential standards and best practices, deployed hundreds of times and proven to reduce cost, risk and time-to-market.

ZOOM will take our established knowledge to the next level, defining the management functions, business processes, information models, best practices, and APIs required to enable automation, scalability, and agility in the virtual, digital world. We will work closely with other SDOs to leverage existing best practice and embrace emerging standards, and bring together experience from within our 900-company strong membership and large-scale virtualization in cloud businesses.

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Tactical Steps to realize project ZOOM

- Establish high priority NetOps, DevOps and ServOps user scenarios to drive the requirements and scope of ZOOM.
- Examine our existing technology neutral Information, Business Process, Application and Integration frameworks for reuse and gaps.
- Determine which techniques and solutions from the Cloud and IT community can help fill the gaps.
- Look to other SDO and fora such as DTMF, OMG, IETF, ATIS, etc. for solutions and to avoid overlap and redundant efforts in the industry.
- Assemble the thought leadership and technical expertise of our broad membership and develop pragmatic solutions that adhere to the guiding principles of ZOOM.
- Evolve TM Forum best practices and standards to enable full lifecycle management of virtual networks and services with the new approach that is dictated by the new architectures
- Exploit agile techniques to assure work is done quickly and in manageable sections
- Focus on pragmatic and accessible solutions and code vs. paper specifications
- Use the Catalyst demonstration program to validate proposed solutions and verify the practical aspects of implementations

How do I get involved?

We are currently recruiting dynamic, enthusiastic volunteers from member companies to participate in ZOOM in a range of roles:

- Executive sponsors, advisors and advocates – who will guide and champion our work, and dedicate the necessary resources to help it succeed
- Network and IT Architects – responsible for designing target network and management systems
- Operations – responsible for operating the network, service delivery and customer care
- Enterprise and IT architects – responsible for systems design…

To learn more and get involved,
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