



The Missing Guide in SP Managed Services Profitability

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The bottom half of the cover features a blue, glowing cityscape with network lines and nodes, set against a dark blue background.

MANAGED SERVICES CHALLENGES FOR SERVICE PROVIDERS

The demand for managed network services has never been so great. ACG Research projects that the managed services segment will grow with a 54% CAGR within five years. This growth will introduce new technologies as well as a range of diverse services. These new and undoubtedly complex services coupled with virtualization and service decentralization (on-premises and cloud) will make the networks more difficult to manage.

Although the growth in managed services is a great opportunity for CSPs, it is also a challenge: are CSPs' current automation platforms equipped to meet the requirements driven by new, sophisticated technologies? What are the features it must support to meet those new requirements? This paper answers these questions and serves as a guide for decision-makers on the technical and business benefits of all those must-have features. We also review the Cisco MSX automation platform capabilities to determine how it can bridge the gaps raised in this paper and if its capabilities can bring economic benefits for service providers.

CHALLENGES TO FASTER TIME TO MARKET

Although it is true that the managed services market is growing fast, the increase in service providers' profitability is extremely slow. Service providers must depend on the legacy and siloed automation platforms to manage the new services, which are far more complicated and hosted beyond the data centers in clouds. The result is the delays to launch new and innovative services. The following are other issues SPs must address:

Dealing with physical and virtual products:

As newer CPEs are virtualized and run on x86 servers (universal CPE), the automation platforms are expected to handle the complex virtualization part.

Enterprises' increased focus on mobility and security:

Modern workplaces are mobile, allowing employees to work from anywhere. Companies are encouraging their staff to adopt bring your own device, which brings challenges such as information protection and how the automation platforms can deal with services cohesively.

Service chaining on-premises and on cloud:

With the universal CPE concept, the customer expects to run multiple services (SD-WAN, security, WAN Opt., etc.) on premises or on the cloud. This requires extra features on automation platforms such as service chaining, which is not usually found in all platforms.

Too many integrations to OSS/BSS by too many systems:

With multiple independent systems to manage automation, virtualization, and service chaining, there will be a need to do too many OSS/BSS integrations. The delays in APIs integration will result in delays to introduce new services.

Growth in composite services and XaaS:

The growth in different types of devices and services, coupled with XaaS, brings issues that the automation platforms cannot efficiently handle.

Monolithic systems:

The automation platforms are built on monolithic software stacks that are not easy to upgrade or add new services quickly. A cloud-native approach to automation platform architecture ensures scalability needed to introduce new services.

The net result of these challenges is the delay in time to market as well as an increase in capital expense/operation expense that severely affects service providers' profits.

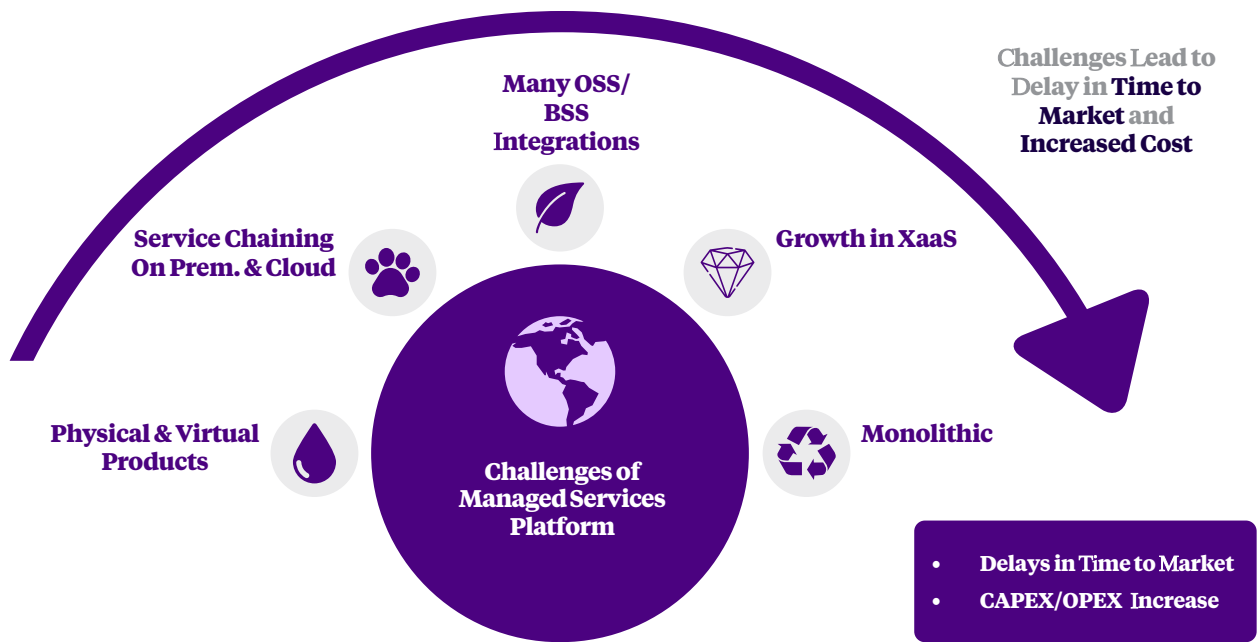


Figure 1. Automation Platform Challenges

CAPABILITIES NEEDED IN AUTOMATION PLATFORMS TO MANAGED SERVICES PROFITABILITY

These new challenges require a set of must-have features in an automation platform to overcome those challenges and ultimately increase managed services profitability. The following are requirements that must be addressed:

Consolidated automation and reduction of silos:

Having one system to manage diverse services reduces both the number of OSS/BSS integrations and the continued cost of maintaining them. The platform should be able to manage services of diverse technologies: SD-WAN, MPLS, security, firewall, load balancers, campus/LAN, switches, Wi-Fi, etc.

Multi-Tenant for optimizing the operation:

A multi-tenant system ensures a single pane of glass management of tenants and eliminates the operation expense of maintaining individual systems for each tenant.

Multi-Vendors' virtual network functions environments(VNF):

With more systems becoming virtualized on premises and in the cloud, it is imperative for the automation platform to manage not only physical but also virtual-/cloud- based services in multivendors' VNF environments. The automation platform must have the capability to service chain those services. Service chaining itself can be a gateway to new innovative services and thus a generator of new revenue potential.

Scalable cloud-native platform:

The legacy platforms are based on monolithic software, making it difficult to add new services or upgrade such platforms. When the automation platform is based on cloud-native architecture, it is easier to extend it with more services.

Open integration to OSS/BSS:

With open and standard-based northbound APIs, it is easier and quicker using re-usable interfaces for to the OSS/BSS to integrate with the system.

Faster onboarding and provisioning using smart intent-based automation:

Intent-based automation makes the OSS/BSS integration highly simplified. The OSS/BSS does not need to tell the automation platform how to configure a service but issues its intent. Instead of **how**, it issues **what**. The automation platform takes care of translating that to device configurations. This can greatly expedite time to launch and introduce new vendors in the network.

Centralize control and complete visibility:

Beyond the service delivery, it is also imperative for the system to have a single pane of glass for centralized control and management of the services. It should provide service assurance in terms of fault and performance management, hence cater to the complete life cycle of services without requiring additional tools.

In the next section we review the MSX automation platform from Cisco. Considering the capabilities listed, we found the MSX to be one of the most complete and feature rich platforms supporting a very diverse range of services available in the market.

¹ <https://www.acgcc.com/p/bae-software/>

THE CISCO MSX PLATFORM (MANAGED SERVICES ACCELERATOR)

The Cisco MSX is a purpose-built automation platform for managed services. It intends to be an all-on-one multiservices, multivendor and multitenant platform. For service providers, it provides a single-pane-of-glass management for diverse services. It can instantiate and provision both physical and virtual network elements. The MSX uses SDN, NFV, and advanced orchestration capabilities to deliver a range of business services. It supports SD-WAN, SD-Access, cloud security, and managed devices. The MSX supports seamlessly both of Cisco's SD-WAN solutions, Meraki and Viptela. It has also been successfully integrated with multiple third-party vendors.

With so many ready-made service packs, Cisco's focus has been on expediting the time to market for new services for service providers without waiting for long custom development. Because the platform is built on cloud-native architecture, it is highly scalable, making it extremely easy to add new services. The platform itself can be hosted on bare metal, on premises or in public cloud.

The follow table summarizes features versus MSX capabilities.

Enterprise Category	Capability
Zero-touch automation & configuration (physical & virtual)	<ul style="list-style-type: none"> • Provided via bulk site provisioning & configuration template with zero-touch provisioning • Management of UCPE • Service chaining of services
Hybrid SD-WAN management	<ul style="list-style-type: none"> • Consolidates Meraki and Cisco SD-WAN Tenants and CPEs at scale
Multi-tenancy with granular Role-Based Access Control	<ul style="list-style-type: none"> • Offers native multi-tenancy & single-pane-of-glass management • Automated tenant provisioning
Support for Cisco and 3rd party devices	Built-in Cisco IOS support & support of other Cisco devices & 3rd party devices
Federated management of Multi-DNAC environments	Built-in multitenancy with multi DNAC controller management (per end-customer) aggregating all enterprises' network domains in one single pane of glass
Scalability	Cloud-native scalable platform that can be hosted on premises or cloud through integrated and easy to deploy stack

Table 1. MSX Capabilities

Economic Benefits of MSX in Existing Managed Services Environment

The MSX has economic benefits in multiple areas:

MSX expedites time to market (TTM) and increases gross margin

We go back to our original argument in the paper that expediting TTM is the primary goal of any SP; however, the current automation platforms leave much to be desired. To that end, we do find that with the ready-made service packs that the MSX supports for both physical and virtual CPEs and its capability to enable one-time OSS/BSS integration for any technology, the platform can greatly expedite the TTM for SPs.

The goal is to integrate only one time with OSS/BSS, and going forward any services deployed over the MSX can take advantage of that integration. With this kind of integration, new services can be deployed quickly without waiting weeks and months.

The MSX can abstract any service for a service provider, enabling an application-like experience for any service. This enables an SP to provide XaaS, greatly simplifying and expediting the time to integrate services and time to market. For example, an SD-WAN service can be exposed as an SD-WANaaS, which means that OSS/BSS does not need to be aware of the complexity of any SD-WAN vendor as that complex part is handled by the MSX with only simple, open, re-usable APIs exposed toward the OSS/BSS.

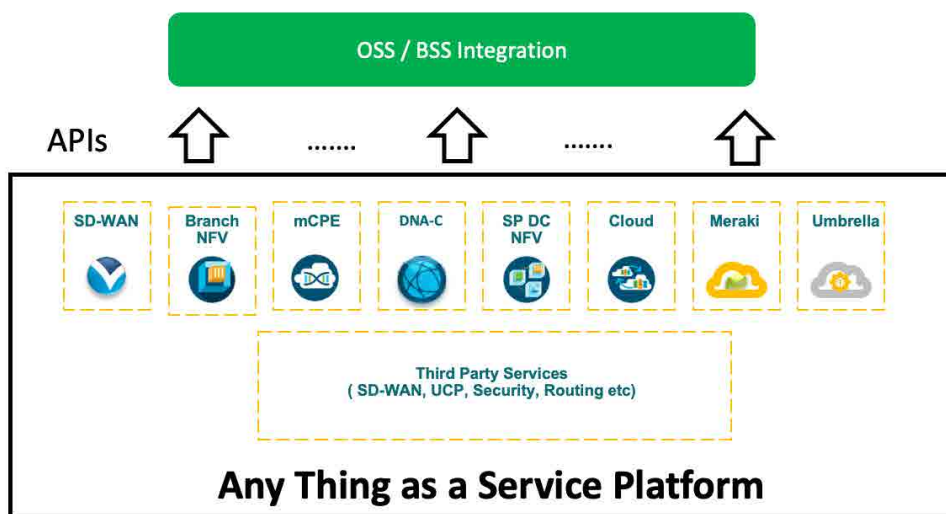


Figure 2. Anything as Service through Single Pane of Glass (Source: Cisco)

Based on an analysis in a typical growth and new service introduction cost, managed SD-WAN, 5k devices over 36 months, it has been shown that the MSX:

- Can expedite TTM by 14 months compared to a non MSX environment
- Is 40% less expensive for service creation and delivery within 12 months
- Can provide 55% more revenue over 3 years
- Delivers 42% GM in month 36 with the MSX versus -8% in a non MSX environment

Reasons: These benefits are attributed to the availability of ready-made service packs, re-use of OSS/BSS interfaces, the lower cost of integration, and overall lower cost of maintenance.



Based on a typical Tier 1 growth and new service introduction cost, Managed SD-WAN, 5k devices over 36 months

Figure 3. Cost and Revenue Analysis MSX (Source: Cisco)

MSX improves operational efficiency

Operation is a very important phase in a life cycle of a service. Once service is delivered, service assurance becomes critical for continued customer satisfaction. System upgrades and change requests all fall into this category. Automating tasks related to Day 2 operation can save time and reduces costs as more can be achieved in less time.

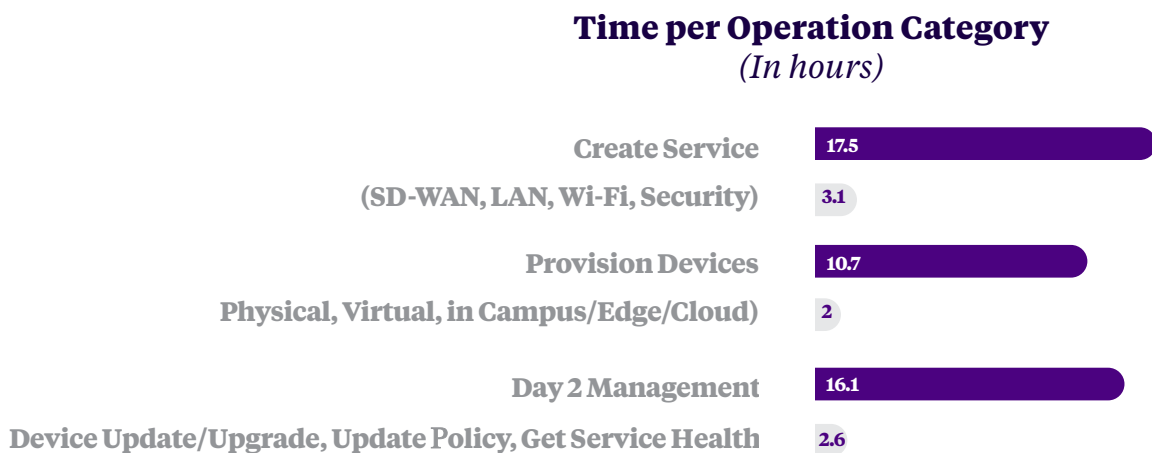
Going beyond service delivery, the MSX can handle the complete life-cycle management of services, including service assurance. MSX has shown to improve operational efficiency as much as 70%.

In a Tier 1 customer’s case study based on the joint calculation made with the SP team and the Cisco team using real operations data, the number of FTEs were shown to decrease by 70% (Figure 4).

Reasons: The improvement in operational efficiency was because of the decrease in the number of FTEs per year while adding new customers quickly; a decrease in change requests; and a decline in incidence resolutions as well as maintenance cases.

MSX Improves Operational Efficiency

Reduce time to complete common tasks by up to 70%



Customer case study based on joint calculation made with SP team and Cisco Team using real operations data: Tracking average time across several task: provision 1 to 100 devices, upgrades 1 and 100 device operating systems, deployed 1 and many control planes, real enterprise network health/ metric/monitoring, create NW overlays, new customers and tenants, RBAC management, create new policy + device config.

Figure 4. Operational Efficiency with MSX (Source: Cisco)

Conclusion

Faster time to market, gross margin, and operational efficiency remain core challenges facing SPs. The automation platforms on the market cannot efficiently handle these challenges; they are dealing with too many OSS/BSS integrations, multitenant management, multivendors' VNFs, faster onboarding and need for service assurance capabilities. The Cisco MSX can handle these complexities through its single-pane-of-glass management, which delivers economic benefits to service providers.

The following summarizes the business benefits of the new features on any automation platform needed to overcome these challenges.

Feature	Business Benefits
Consolidated automation (multiservice & multitenant)	<ul style="list-style-type: none"> • Fewer integrations with OSS/BSS reduce integration costs & decrease time to market • Fast time to market & onboarding of new services
Smart intent-based automation	Smart intent automation reduces overall operation expenses by decreasing the number of OSS/BSS integrations & expediting time to launch new services
Multivendors' VNFs & service chaining	<ul style="list-style-type: none"> • Full virtual CPE life-cycle management saves on the cost of extra platforms needed for virtualization • Service chaining can result in new revenue potential
Scalability	Software agility because of cloud-native nature

Table 2. Business Benefits

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