

The imperative for intelligent network operations

Publication date:

21 Jul 2023

Author:

Kris Szaniawski, Research Director, Access, Software & Transformation

The imperative for intelligent network operations

The rapidly increasing pace of 5G network deployments, digital transformation, and the shift to the cloud is driving the need for more intelligent network operations and maintenance (O&M) capabilities.

Service providers are increasingly looking to AI-enabled automation to manage an ever-larger and more complex range of networks and services, especially with the advent of 5G. The pressure on O&M personnel is increasing dramatically with the need to handle multiple network and service requirements as well as identify and respond to various alarms, faults, customer complaints, and service requests.

This is not something that can be addressed using established manual processes, legacy tools, siloed operations, and fragmented data sources. Therefore, anything that can add automation and intelligence to the O&M mix is increasingly in demand among the service provider community.

In an Omdia survey conducted last year, around 50% of service providers claimed that their digital transformation was “well advanced.” Omdia research also suggests that in the network operations and management (O&M) domain specifically, at least 60% of operators have already deployed or are trialing AI deployments of some kind, and a further 25% of operators are at the planning stage.

Why is this? There are numerous drivers for intelligent O&M. Firstly, a huge increase in volume and diversity of services is driving the need for a wider range of more agile real-time capabilities, and this will only increase as operators need to support numerous new enterprise services, manufacturing solutions, smart city offerings, and consumer services such as cloud gaming, HD live broadcast, smart home, and augmented reality/virtual reality (AR/VR). Secondly, we are also seeing increasing scale and complexity in network environments. Thirdly, customers are becoming more demanding with regard to quality of service and customer experience, so operators need access to automated networks capable of

supporting diverse and often stringent service level agreements (SLAs). Finally, there are also challenges due to cost pressure and the continuing need for human intervention in operations.

For all these reasons, operators need solutions that can make use of closed-loop automation and deliver proactive modes of operation, including predictive operations and intelligent troubleshooting. Solutions should also use AI models to aggregate and analyze multiple systems and data sources scattered across the business.

Huawei's AUTIN

One of the solutions seeking to address these issues is Huawei's AUTIN-branded intelligent operations solution.

AUTIN stands for "**AUT**omation + **Intelligence**." The solution takes what Huawei calls a "3 Zero" approach, which aims to support "Zero" Service Impact, "Zero" Intervention, and "Zero" Code development, enabling a more intelligent approach to network operations. Huawei has continuously invested in platform, process, people, and technology innovation to support this approach.

AUTIN supports multi-service convergent operations, such as mobile broadband, home and enterprise-focused broadband services, 5G core, and private industrial networks, helping CSPs quickly launch new services with great network quality.

Huawei has introduced Intelligent Event Management (iEM) to enable a transformation from network-centric operation to service-oriented network operation and then to service-centric operation. iEM implements closed-loop analysis, diagnosis, and troubleshooting of network faults with multi-dimensional data sources, including an accurate assessment of the service impact of each fault on end users.

AUTIN also provides a powerful low-code development platform with scenario-based orchestration capabilities, which can enable CSPs to shorten their operations app development cycle from months to days.

Huawei has also set up an innovative O&M lab to continuously explore technology innovations in the ICT operations domain. The company has accumulated more than 1,000 automation rules, 150 AI models, 300 knowledge graphs, 1,000 scenario-based APIs, and 200 atomic operations capabilities. These powerful R&D capabilities have made the company a leading contributor to international standards, such as Huawei's recent contribution to TMF standard IG1294 EDNS (Expected Demand Not Served).

With over 30 years of extensive experience in ICT operations, Huawei is well positioned to develop innovative network operation solutions for the industry. The company has successfully delivered over 200 intelligent operations projects in more than 100 countries, serving 1.6 billion end users worldwide.

Outcomes driving the change

Automating O&M has massive potential to improve network efficiency and customer experience, given the increasing complexity of the systems and networks being managed.

Therefore, AUTIN has the potential to deliver a wide range of operational improvements, such as ensuring limited service interruption, automating network operations, and providing a low-code development environment.

For example, AUTIN has enabled service providers to reduce the mean time to repair (MTTR) by 25 percent and has significantly decreased the number of required site visits. Other examples include

increasing 5G core risk predictability by 30% and using automated diagnosis of network performance and self-healing to deliver major savings in manpower and other operational costs.

But equally important is the need to boost revenue, and this is where AUTIN can also contribute by helping service providers to better target and support B2C, B2B, and B2B2C markets with improved services and tighter SLAs. One example is where service-oriented O&M capabilities have helped CSPs reduce traffic loss by 10%.

A need for software and process transformation in tandem

To deliver on all this requires a mix of capabilities that combines software platforms as well as people and process transformation.

Digital transformation is not something that happens just because a new set of product solutions has been implemented. On the contrary, it requires focus across all the “3Ps” of operations: people skills need to be developed (e.g., software development), processes need to be revised, and the new platforms and technologies need to be fully integrated. The deployment of AUTIN can address all these aspects.

A good starting point for any operations transformation initiative is to use a maturity assessment model to assess where a service provider currently finds itself across a range of domains and so clearly identify the gaps between current performance and what it seeks to achieve. But this is only the starting point. Ultimately, the success of a digital operations transformation depends on addressing those gaps, and that depends on the embedded knowledge of those implementing it. This is why Huawei has been building into AUTIN the models and best practices that the vendor has developed over many years supporting a large global customer base with many managed services contracts.

What is expected next

Any vendor wishing to help deliver successful digital operations transformation needs to have a comprehensive set of capabilities encompassing technology, business, and organizational understanding. But on top of that, it needs to be willing to fully partner and deeply engage with its service provider customers.

Omdia research backs this up, suggesting that while technology innovation is the top selection criteria communications service providers use to select digital transformation partners, with 58% considering it essential, this is closely followed by service and support capabilities, with 42% of service providers considering these essential selection criteria. Interestingly, this combination of technical and services capabilities is considered more important than product roadmaps, breadth of portfolio, or financial factors.

So, it is probably just as well that Huawei has been investing heavily in the service aspects of intelligent operations transformation. Huawei already has over 1,000 AUTIN R&D engineers and over 9,000 app developers in its O&M ecosystem and is continuing to invest to grow its capabilities. The first of these investment areas is the AI and data-focused technologies required to improve its IT operations systems. The second investment is in analyzing and codifying Huawei’s telecoms knowledge and experience to rules and policies that can be learned and implemented by machine. The third investment area is the iStudio “no-code” operation applications development platform and the expansion of its third-party developer ecosystem.

Going forward, Huawei is determined not just to invest in the AUTIN solution but to expand its reach both externally, through a widening ecosystem, and internally, by encouraging employees to develop

Commissioned Research

their own customized applications. The dream of fully autonomous operations is getting ever closer to being realized.

Appendix

Author

Kris Szaniawski, Research Director, Access, Software & Transformation

askananalyst@omdia.com



Omdia Commissioned Research

This piece of research was commissioned by Huawei.

Citation policy

Request external citation and usage of Omdia research and data via citations@omdia.com.

Omdia consulting

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Omdia's consulting team may be able to help you. For more information about Omdia's consulting capabilities, please contact us directly at consulting@omdia.com.

Copyright notice and disclaimer

The Omdia research, data and information referenced herein (the "Omdia Materials") are the copyrighted property of Informa Tech and its subsidiaries or affiliates (together "Informa Tech") or its third party data providers and represent data, research, opinions, or viewpoints published by Informa Tech, and are not representations of fact.

The Omdia Materials reflect information and opinions from the original publication date and not from the date of this document. The information and opinions expressed in the Omdia Materials are subject to change without notice and Informa Tech does not have any duty or responsibility to update the Omdia Materials or this publication as a result.

Omdia Materials are delivered on an "as-is" and "as-available" basis. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness, or correctness of the information, opinions, and conclusions contained in Omdia Materials.

To the maximum extent permitted by law, Informa Tech and its affiliates, officers, directors, employees, agents, and third party data providers disclaim any liability (including, without limitation, any liability arising from fault or negligence) as to the accuracy or completeness or use of the Omdia Materials. Informa Tech will not, under any circumstance whatsoever, be liable for any trading, investment, commercial, or other decisions based on or made in reliance of the Omdia Materials.

CONTACT US

[omdia.com](https://www.omdia.com)

customersuccess@omdia.com