

IOH improves customer service with AI-native operations overhaul

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Author:

Joanne Taaffe,
Editor in Chief
TM Forum

Overview



Who: IOH

What: Deploying agentic operations to automate and streamline operations across multiple network and business domains

How: Combining strong data foundations and AI technologies to simplify workflows and to create closed-loop decision-making processes.

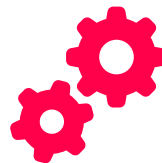
Results

Network & Service Quality Improvement:



B2C customer complaints dropped by above

50%



Mean time to repair (MTTR) decreased by

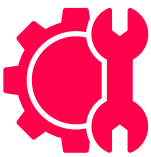
15%



Network downtime reduced by

50%

Intelligent Operations Achievement:



80%+

faults resolved autonomously by agents



Abnormal events decreased by

27%



Cross-domain aggregation/demarcation accuracy exceeds

90%+

via agent-digital twin synergy



20%

improvement in interaction efficiency with A2A-T multi-agent collaboration vs. standard A2A



Generalized inference diagnostic accuracy greater than

85%

for unknown scenarios

Overview

When in 2023 Indonesia's IOH laid out its strategy to become an AI-native techco, many telcos worldwide were still in the initial stages of exploring what GenAI would mean for their businesses and customers.

IOH's early move to become AI-native led to a strategy based on three pillars. One is to build sovereign AI solutions for enterprises and governments. Another is to support the country's efforts to democratize the use of AI tools by Indonesians for Indonesians. The third entails using AI to make its own network and business operations markedly more efficient and error-free and to facilitate the delivery of 'marvelous' customer experiences. Its success in the latter will shape IOH's ability to deliver new AI services and to help Indonesia benefit from AI.

It's a multi-year transformation and the end goal is to not to deploy AI for its own sake, according to Luthfi Auzan, Vice President Operations, IOH. For although IOH is investing in AI and advanced analytics to transform operations, its ultimate aim is to deliver an end-to-end, highly personalized service experience to customers, underpinned by high-performing networks. AI use cases alone will not accomplish this, which is why IOH is also simultaneously investing in creating a single source of data truth, and a careful overhaul of workflows and systems, enabled by agentic operations that straddles multiple domains.

Investment in building its AI-native future is ongoing, but IOH's results for the last quarter of 2025 already point to greater customer satisfaction and engagement. Blended ARPU, for example, grew 10.5% quarter on quarter to reach IDR 44k. Separately, the company has recorded a 32% drop in customer complaints.

End-to-end service starts here

One of the principal foundations for IOH's AI-native ambition is the consolidation of its network operations center (NOC), security operations center (SOC) and network design and operations (NDO) within a single end-to-end platform of service expertise.

Called the Digital Intelligence Operations Center (DIOC) it aims to overcome multiple obstacles to end-to-end service management. Built in close partnership with Huawei it drew on TM Forum's Autonomous Operations Maturity Model (AOMM) and will serve as the command post for IOH's network operations.

Given the breadth and complexity of IOH's network, which serves upwards of 100 million subscribers across more than 55,000 sites, automation is increasingly dependent on agentic operations. To this end, IOH is currently rolling out what it calls "all intelligent operations."

"We are going to implement what we call the cognitive ... the intent of network operations," says Auzan.

One of the issues IOH is addressing through the orchestrated use of agents is the diagnosis of faults across multiple network domains. Without automation, this is a labor-intensive activity, and success depends heavily on individual human expertise, the level of which can vary greatly.



Watch this video



IOH's Chief Technology Officer, Desmond Cheung, assesses the potential of agentic AI to address the growing complexity of network operations in this interview with TM Forum's Chief Analyst, Mark Newman



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Luthfi Auzan
Vice President Operations, IOH

Cross-domain agentic AI

IOH has therefore integrated a cross-domain fault management agent into its production system. This agent handles tasks directly, displaying which agents are processing what and where, as well as when there is need for human intervention, including by field engineers.

The cross-domain fault management agent collaborates with several other agents, each specialized in fault management within specific network domains, be it wireless, IP, or microwave.

Agents also ensure real-time quality of service monitoring to help IOH's teams tackle issues before customers are aware they have happened. If the system flags a drop in the service quality of a private line, for example, an agent could identify that it stems from an optical device on the network. It could then diagnose why this has happened and recommend a solution such as replacing an optical fiber.

A key source of intelligence and solutions for IOH's operational experts is a real-time digital twin of the network, which the operator has built with Huawei. IOH deployed its first iteration of a network digital twin on the island of Bali. This helped the company develop new B2B services such latency as a service. It is now scaling up its network digital twin to other geographies.

The digital twin engine and a large language model (LLM) together provide insights that feed into an automatic closed loop that extends from fault detection to recovery.



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Closing the loop

As a result of using the Huawei intelligent Agent closed-loop solution, supported by agentic operations, IOH has been able to both reduce site visits and shorten mean time to repair by 15.3%. Meanwhile, Intelligent QoS detection and deterministic SLA Assurance solutions have also helped cut fault location time from 54 minutes to 15.

Crucially, having an intelligent fault agent system has also allowed IOH to completely rethink and simplify the traditional operations and management process. As a result, the number of steps in end-to-end intelligent fault handling in the NOC has fallen from 12 to only three.

And IOH's investment in its centralized DIOC platform enables it to manage, for example, interoperability issues between its more than 15 network equipment suppliers so that it can establish a single source of truth about a customer's network experience.

"It gives us a single pane of glass [whether it is] a new supplier ... [or] an old supplier," details Auzan. As long as the new supplier can support our new platform API, then it means that we are going to have a single pane of glass [and] we are not going to have different data anymore. We are going to have a single source of that truth."

IOH has developed that single pane of glass using Huawei's digital Operation Web Services (OWS) platform – a low code / no code development, microservices- and API-based software platform for open and real-time network management.

Providing a single window onto a customer's real-time end-to-end experience of network-based services saves time that was previously spent manually exchanging data across disparate teams and systems, explains Auzan. It will also enable proactive and automated service management of services such as sovereign cloud security data monitoring, which are more sophisticated "than selling connectivity from A to B," he adds.

Capturing and using data from disparate network equipment isn't the only obstacle to optimizing customer experience and delivering future intent-based, end-to-end services.

IOH has also unified its view of more than 50 software systems working in silos, across everything from customer relationship management through to planning and network operations and maintenance.

Bringing together service and network operations centers under the DIOC has enabled IOH to bridge diverse systems and automate data exchange, thereby saving teams considerable time and reducing errors.

Solving the data puzzle

The single source of truth envisaged by IOH requires access to reliable near real-time network and customer data.

Here, explains Auzan, IOH has implemented a central data repository that draws on a wide range of information, including charging, network operation and probe data.

The data lake is a key source of data for agents. In addition, IOH uses foundation models to automatically generate configuration commands and validate them in a digital twin environment and supported the deployment of large language models with telecom-specific datasets.

Of course, agents need to work within well-defined guardrails if they are to recommend or implement accurate, secure solutions. IOH has therefore invested in building multi-dimension data governance, with the digital twin playing an important role in ensuring agents have access to the right information from more than 20 million inventory items.

It also uses a telecoms version of the agent-to-agent (A2A-T) to enable seamless interoperability between autonomous agents and facilitate secure information exchange, coordinated actions and dynamic collaboration.

The governance system draws on more than ten data compensation algorithms to oversee operational information such as alarm, performance, and inventory data.

At the same time, the use of Huawei's EDNS (Expected Demand Not Served) measures the gap between what is expected from a service and what the network actually delivers. This allows IOH to use data to view its network service through the lens of its impact on customers rather than a number of network faults.

IOH is able to leverage AI to understand the relationship between Quality of Experience (QoE) and customer satisfaction (CSAT), amalgamating data and user feedback to construct more holistic user experience models.

It can then take proactive measures to safeguard and enhance end-user experiences. This involves refining processes and fostering collaboration between SOC, NOC and network design & optimization (NDO) teams to model services (such as WhatsApp), monitor content delivery networks (CDNs), and optimize wireless, IP and CDN networks end-to-end.

"We are not talking about traditional KPI anymore we are talking about Quality of Experience. We take input from six top apps, such as TikTok, WhatsApp, Instagram and gaming apps," explains Auzan.

This creates obvious benefits for customers, but a real time awareness of the customers' experience also serves IOH's internal business teams. Today, more than 80% of complaints can be addressed autonomously by agents. In addition, the combination of AI and converged data enables personalized, precision marketing adapted to customers' preferences and requirements.

"Our goal post is zero touch network operations by 2028, [supported] by people who will govern and make policies," concludes Auzan.



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