

A single diagnostic tool to deal with customers pain points

White paper



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Introduction

Operations in the telecommunication industry are often said to be one of the most complex aspects of the business to run, requiring constant monitoring and maintenance. Field and service operations alone could account for 60 to 70% of most telcos' operating budgets because traditionally, maintenance in the telecommunication industry has been a labour-intensive process, requiring significant human intervention

Usually, most maintenance professionals have combined many techniques, both quantitative and qualitative, in an effort to identify failure modes and mitigate downtime in facilities. But the rise of new connected technologies can enable machines or systems to do these tasks for them.

In short, automation will be a key pillar for telcos to achieve competitive differentiation in an increasingly saturated market.

Moreover, the right automation strategy helps telco companies eliminate friction points in everyday processes through intelligent, predefined workflows. For example, if a telco adopts intelligent process automation, they can set up predefined rules for what should happen when a certain event occurs – so-called, proactive care workflows.

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Revolutionising network maintenance



Generally, faults in the communication networks are approached manually as a large part of network management activities, but the continuous increase in networks complexity consequently leads to more demanding and intensive network management activities. Thus, the human component needs to be assisted or supported by automated processes of detection and fault management.

For Telekom Malaysia Berhad (TM), that is where Mobile Intelligent Network Diagnostic System, or MINDS, comes in. MINDS is a centralised platform that consolidates comprehensive location-based mobile network status as well as mobile subscriber's network-related experience. MINDS is envisioned as a companion intelligent platform for TM's mobile network operation team, which automates many analyses that were carried out manually before and provides advisories for them to optimize and maintain the network.

TM began utilising MINDS in December 2022 as a troubleshooting dashboard tool to handle all of their mobile customers complaints. Prior to MINDS, the technical helpdesk staff performed a number of manual analyses using data from multiple different systems, while ensuring data was fresh and not outdated.



Because the data, which comes from different source systems, is typically huge, the analysis and diagnosis process is also painstakingly slow. That is why the research arm of TM decided to work on MINDS, a mobile-sharing platform that could streamline the process for Unifi Mobile's network operation team.

The team, consisting of level two technical helpdesk, network quality assurance, network analytics automation and network planning, will be able to manage and expedite mobile customer trouble ticket handling by consolidating subscribers network profiles and experiences at a single centralized and managed platform.

Even level one Frontliners at Unifi Contact Centre (UCC) and Unifi Store utilises MINDS when handling mobile customer interaction. All in all, MINDS allows for the relevant team to facilitate proactive and preemptive actions to resolve customer (potential) issues by analysing the network's conditions and subscriber's service experience, hence reducing the number of customer's trouble tickets.

The visualised real-time mobile network status at a single centrally-managed dashboard provides actionable insights to assist critical business decision-making on mobile networks.

The second iteration of MINDS



Currently, Unifi Mobile's network operation team is utilising the first iteration of the platform. But as with most innovation, frequent usage allows for improvisation and TM R&D is working on MINDS 2.0 which will be made available from 2024 onwards.

To look into the improvisations made for MINDS 2.0, it is important to understand what MINDS 1.0 had solved initially. Prior to the existence of the platform, Unifi Mobile's network operation team was mostly handling data from multiple different systems via a manual process. For example, a Geographic Information System (GIS) software was manually uploaded to view network information and another Graphical User Interface (GUI) was utilised as an access portal to obtain network-related data.



The operation team would also make use of internal reporting and analytics software to manually generate tables and graphs for reporting, and perform coverage comparisons with other telcos. With the existence of MINDS 1.0, all manual operations are eliminated by having all relevant network data in one place.

Firstly, MINDS Network Status dashboard provides technical helpdesk staff with the capability to quickly identify network issues surrounding the exact customer's location. Then, by using MINDS as a diagnostic tool, the technical support team achieves a 50% improvement in average complaint handling time.

With MINDS 1.0, the existing standalone GIS software can be fully replaced by the platform and the operation team can pin-drop or search to simply view network information. The platform also allows for a more detailed bin visualisation, with auto-traced polygons on the map to view 500x500 meters clusters. For example, the network operation team can compare their coverage with those of the other telcos, while the network planning team can correlate poor coverage locations with dominant Place of Interest (POI) for further network improvement. MINDS 1.0 also adopts Technical Helpdesk (THD) reporting as customer trouble tickets analysis and reporting tool.

While both MINDS 1.0 and 2.0 are targeted to assist mobile network technical help desk staff in handling customer's issues and pain points, MINDS 1.0 is more focused on consolidating various network parameters and KPIs into a single platform and then visualising this network-related information on an interactive map view.

The upcoming iteration of MINDS, which is still under development, will provide subscriber profiling for the technical helpdesk staff to understand more about the subscriber's service condition and usage trends and behaviors.

MINDS 2.0 will also provide the next best action advisory for them to quickly identify potential root causes of the customer's pain points and hints as to what they should do next to resolve the issues.

In terms of average handling time (AHT), with MINDS 2.0, further improvements are expected at both level one and level two of the operation team. At L1, with MINDS 2.0's portal-based troubleshooting tools customised solely for the contact centre crew, the average handling time will be reduced by half. At L2/L3, MINDS 2.0 will provide advisory, internal ticketing and automation, translating to a 30% reduction in handling time compared to MINDS 1.0

Average Handling Time (L1)

- Reduced by 50%
- Portal-based troubleshooting tools customized for contact centre care crews

Average Handling Time (L2/L3)

- Further 30% reduction from MINDS 1.0 achievement
- MINDS advisory, internal ticketing and automation

Conclusion



We are living through critical times for the global telecom industry. With the rise of 5G networks, coverage and speed increasing rapidly in all markets, it is becoming more difficult for operators to differentiate, leading to the commoditisation of connectivity, fierce competition, and eroding margins.

Against this backdrop, enhanced data and advanced analytics play a vital role.

With those, operators can anticipate looming problems and intervene to prevent them. Operators can identify and address problems remotely, perhaps before the customer has noticed, and communicate using the quickest, most efficient channel.

A data-led approach like MINDS also enables operators to identify and address small issues before they grow into larger problems. After all, a lack of preventive maintenance can cause longer fault restoration, excessive inventory requirements, more service impact and less customer satisfaction.



Creator of Smarter Ecosystems for a better Malaysia

Established in 2000, TM R&D is the innovation arm for TM Group focusing on creating smarter ecosystems to make business and life easier for a better Malaysia. TM R&D's solutions are clustered around four (4) pillars namely Intelligent Platforms, Data Brokerage, Connectivity/Tools and IR4.0/Digital Solutions.

Growing from strength to strength since 2016, TM R&D has won multiple global awards and generated more than 2,800 Intellectual Property Rights (IPRs) and 1,400 digital assets to-date.

TM R&D's innovations are all developed in-house and cut across multiple verticals such as Utilities, Retail, Agriculture, Healthcare and Education with safety and productivity as the top priority.

As TM R&D continues to expand beyond connectivity and into smarter digital ecosystems, its role in TM has become more prominent and exciting.

We are looking for remarkable people to join us. People who are courageous enough to push boundaries, curious enough to experiment with new technologies, and who have the determination to drive new ideas forward. A new opportunity awaits you here in TM R&D.

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