GSMA
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How Mobile Operators Can Go Granular

New tool enables operators to pinpoint customer experience by precise location

Your experience of mobile connectivity can be highly dependent on exactly where you are. Buildings, walls and even foliage can interfere with radio signals. In an urban environment or inside a building, moving just 50 metres can dramatically change the quality of your mobile connection for better or for worse.

To get a much more granular view of their customers' experiences, several mobile operators have deployed a new visualisation and analytics tool from P.I. Works that can pinpoint a customer's location to within 30 metres, while tracking signal strength, both indoors and outdoors.

Lifecell in Ukraine and Turkcell in Turkey are among the telcos deploying the Geo Data Analytics tool, one of the new additions to P.I. Works' suite of automated network management solutions. The two operators are using the tool, together with live radio and core network data and artificial intelligence, to detect and resolve service quality issues experienced by subscribers in specific locations.

The new tool – part of the P.I. Works' Experia subscriber data analytics solution - maps a customer's precise location to the data throughput of their device and its usage of the network to give a very granular view of the customer experience in different locations. The solution is designed to remove the need for drive testing in the field, lowering the cost of network optimisation, while enabling faster troubleshooting and user-level root cause analysis.

As P.I. Works' software can translate these technical metrics into commercial metrics, the tool can also b e used to track the ARPU being generated by geography. That information can be used to guide capital spending, as the operator will be able to see what impact a specific investment will have on customers, and revenue earned. That could help to make the business case to strengthen network coverage in particular locations, such as shopping malls or entertainment venues. This kind of highly informed and highly targeted investment could reduce subscriber churn.

P.I.WORKS

A rigorous approach to ROI

In short, P.I. Works is aiming to take the guess work out of capital spending, "Traditionally, capex is an argument between the CCO (chief customer officer) and the CTO, and then it goes up to a CEO," notes Hussain Suliman, advisor to P.I. Works CEO. "And unfortunately, these things have a lot of gut feel and decision making that's done subjectively based on information, which is based on averages. So you are spending billions of dollars on deciding on capex and you don't have a system that is actually tracking the pure ROI on that spend."

With the new tool, P.I. Works is seeking to build a bridge between the commercial data a telco already has and the technical data that shows the actual customer experience. "We are marrying up the technical with the commercial and then developing the AI tools or scripts we need to give us the answers as to what capex is required for the telco's benefit, and the customer experience required for the customer's benefit," explains Abdullah Yildizhan, Program Manager of P.I. Works.

Having worked in senior positions in multiple telcos, Hussain Suliman contends that most operator staff either focus on the commercial aspects of the business or the technical aspects, rarely making the link between the two. Armed with a tool that could estimate the return on capex investments, the CCO could take responsibility for capital spending. "If you give the leadership team confidence, that there is a tool, it's done the calculations with logic behind it, that makes the approvals a lot easier," says Hussain Suliman.

The goal is to enable an operator to identify exactly what return they will get from a specific investment in a new base station or additional backhaul capacity, for example. "Basically, I can say, I'm going to spend $10,000 and I'm going to return the $10,000 in six months," explains Hussain Suliman. "But if I spend $20,000, I'm only going to return it in 18 months, so you can make those decisions purely based on capacity and you can drive the usage based on the right customer offering."

For mobile operators trying to figure out how quickly to expand 5G coverage, such insights could be a boon. "You can identify the customers that have 5G use cases and the value they will bring to you," says Hussain Suliman "I may not need to put 5G at his house and I may not need to put it on the road, but I need to put it where he works because that's where he uses this product."

Operators can also use the Geo Data Analytics Tool to identify which parts of the network are under-used. "On the flip side of it, the tool also tells you where you have capacity that's not utilised and what customers you should target to utilise that capacity, so you can really drive the maximum ROI out of capex - your biggest spending in a telco business," adds Hussain Suliman. "Now, if you get this right for 4G, it changes how you can calculate the performance of 5G, because every operator is struggling with how much to spend on 5G."

Better marketing for one

The insights generated by the Geo Data Analytics Tool can also be used to underpin "marketing for one" propositions in which a customer receives highly tailored offers. In particular, P.I. Works says the tool can help the mobile operator determine whether the package the customer subscribes to meets their needs or not, and what the customer uses the service for in different locations. It can show how a customer's usage differs when they are at home, commuting (whether by bus, train, or car) or at work. If the customer isn't using the network much at home, the tool can reveal the reason why – it could be because the throughput is low.

"For example, someone might spend 8 to 10 hours at work, which is 20 kilometres away from where he lives and you're giving him a great experience," explains Hussain Suliman "It's a high value customer, but every time he gets home he's got a bad experience as his home maybe located in one street that's got bad coverage."

You can give a much better customer experience if you really know what the customer is experiencing

Hussain Suliman - advisor to P.I. Works CEO

While a mobile operator would be aware that the customer isn't using the mobile network in the evenings, it wouldn't necessarily know the reason why. "You can give a much better customer experience if you really know what the customer is experiencing," notes Hussain Suliman. "You've already got the data which tells you this customer is a high value or a low value customer. So, now you know what return on investment you can get by investing for this customer."

Bringing in multiple data sources

Drawing on various sources, the Geo Data Analytics Tool can correlate and visualize a wide range of data, such as signal strength, coverage, and crowdsourced quality metrics gathered from user equipment, on the same map to enable complex multidimensional analyses. The map displays the data at a street-level view. "With a flexible and configurable structure, any location-based data source can be easily incorporated into Experia," explains Abdullah Yildizhan. "User events can be pinpointed with an elevated level of precision based on call-trace analyses, enabling the collection of true customer experience insights."

The tool is designed to enable the operator's executives to easily visualise data in different formats, for example, by using heat maps, based on signal strength levels, to show the quality of the coverage in each cell. The software also enables the operator to segment the data by the brand of the end users' device or other criteria.

P.I. Works, which serves 67 mobile operators worldwide, says the overarching goal is to create a "line of sight" encompassing technical metrics, commercial and monetisation metrics, and the customer experience, which can be used to optimise capital spending and operational spending. "We are focused on delivering "bang for the buck" throughout the entire business chain driving commercial results linked to smart capex investment and ROI," says Hussain Suliman.

About the GSMA

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

For more information, please visit the GSMA corporate website at gsma.com

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About the GSMA Foundry

The GSMA Foundry is the go-to place for cross-industry collaboration and making positive change happen, supported by leading technology organisations and companies. By bringing together members and key industry players, engaging, and unifying the end-to-end connectivity ecosystem, the GSMA is solving real-world industry challenges.

Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. This enables the mobile industry's mission: to connect everyone and everything to a better future.

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About PI Works

P.I. Works, founded in 2005, is the leading provider of AI-based mobile network planning, management, and optimization solutions that empower mobile operators to drive the evolution toward Zero-Touch Operations. The company is headquartered in Turkey and has offices in the US, the UK, Romania, and Singapore.

The use of advanced automation techniques has been at the center of P.I. Works' approach to mobile network planning, operations, and optimization. P.I. Works has deployed its solutions at 67 operators across 47 countries and has been leading the market in automating the 5G networks with award-winning network automation products and value-added services. P.I. Works plays an important role in the development of key standards that define the future of mobile networks. P.I. Works actively contributes to the ETSI, O-RAN Alliance, GSMA, GTI, and 3GPP standardization forum as well as strategic open-source initiatives.

https://piworks.net/

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