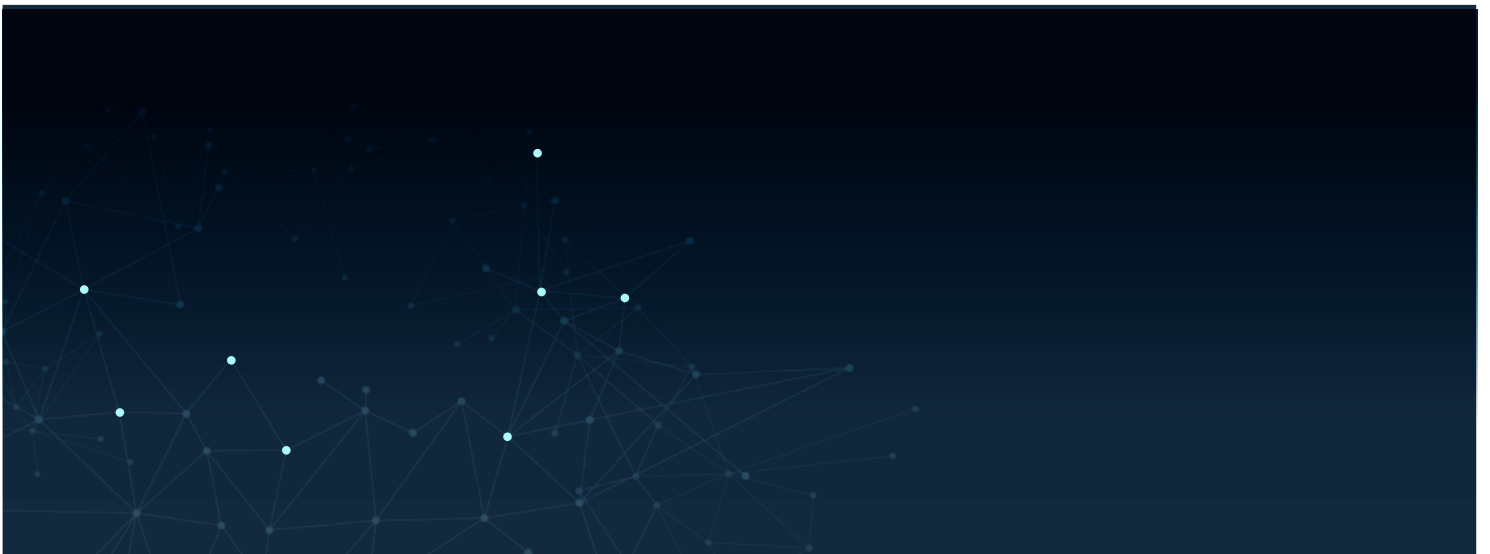# North American Tier 1 Operator Achieves 10% Certified Install Rate Increase.

Wi-Fi Certification and Monitoring Pilot Project Case Study
Tier 1 North American Service Provider

mariner

CASE STUDY

Wi-Fi Certification and Monitoring Pilot Project Case Study, Tier 1 North American Service Provider

A tier 1 North American service provider with operations in wireless, cable television, and internet connectivity approached Mariner to address difficulties with delivery of their in-home Wi-Fi.

Specifically, the service provider sought resolution of customer-facing issues related to Wi-Fi speed, coverage across the home and inconsistent quality of Wi-Fi. Additional challenges were related to Field Operations, particularly limitations faced by technicians which ultimately affected installation quality.

The pilot project outlined within effectively resolved these challenges with the deployment of Mariner's Wi-Fi certification solution. The solution was deployed to 2500 field technicians over a period of six months.

Struggling to deliver consistent, high quality Wi-Fi to their customers, the service provider sought to resolve the challenges of the complex in-home Wi-Fi environment, particularly quality and coverage inconsistencies.

CHALLENGES

Wi-Fi has become the primary source of internet connectivity in the home with exponential growth in the number and type of devices connected every day. Recognizing the complexities of delivering an in-home Wi-Fi experience and issues that negatively impact customer experience, the service provider expressed challenges with their Wi-Fi program on two fronts:

Customer-Facing
- Customers faced issues related to Wi-Fi speed, coverage across the home and inconsistent quality of Wi-Fi

Operational
- Limitations faced by technicians preventing quality installations
- Dependency of field technicians on third-party free mobile applications during Wi-Fi installation
- Limited visibility into Wi-Fi Quality of Experience (QoE) of a customer post-installation
- Lack of tools to troubleshoot and resolve Wi-Fi issues remotely

Failure to resolve these challenges would result in a decline in overall customer satisfaction and a negative impact on the bottom line, affecting all levels of the organization.

OBJECTIVES

Installation

- A smartphone application easily available in the Google Play store
- Offer field technicians a perceptive workflow to guide them through identification of the best gateway installation locations, as well as certification of Wi-Fi speeds and signal coverage throughout the home
- Provide an intuitive user interface for technicians with simple pass/fail views

Post-Installation

- Monitor the in-home environment of a customer from the moment technician leaves home after installation
- Identify customers experiencing Wi-Fi problems before they call
- Provide historical Wi-Fi QoE metrics for Care and Field teams with clear resolution steps when a customer is experiencing an issue

SOLUTION

Mariner's Wi-Fi certification solution maximized the service providers' hardware investment by giving front line technicians a tool to guide optimal access point placement, ensuring 'first time right' installations.

The signature mobile application allowed the field team to certify speeds, signal, interference levels before leaving the home. Using machine learning algorithms, Mariner monitored quality standards set by the service provider across all hardware vendors, alerting when QoE was impacted and advising the Care team, or customer, on how best to resolve the problem. Assurance analytics allow for measurement and verification of performance and trending of actionable performance characteristics.
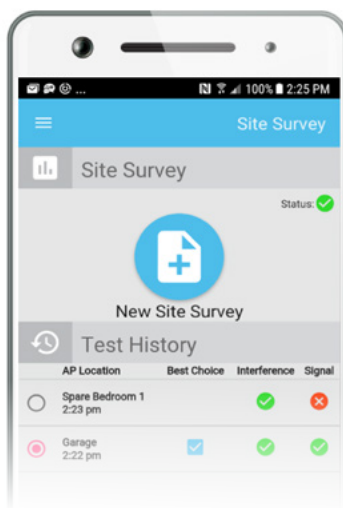
Includes the only app that guides technicians to optimal access point placement and verifies coverage and interference prior to wiring.

Wi-Fi certification deployment using the mobile application resulted in improved field efficiency and delighted customers.

The signature mobile application proved to be an extremely productive tool for technicians as it helped them achieve increased certified install rate, increased Wi-Fi download speed and a higher degree of customer satisfaction.

↑10%

Increase in Certified Install Rate

Certified install rate can be defined as the percentage of tested homes where all of the Wi-Fi KPIs passed predefined thresholds.

Certified install rate at the beginning of deployment: **76.7%**

Certified install rate at the end of deployment: **84.31%**

↑50%

Increase in Wi-Fi Speed

Customers who were certified using site survey saw improved speeds in 2.4 GHz Wi-Fi download speed versus customers who were not. Average complete home download speed of customers when:

Mobile app workflow not used : **36 Mbps**

Mobile app workflow used: **54 Mbps**

88%

Whole-home Wi-Fi coverage

Wi-Fi certification deployment using the mobile application resulted in 88% of customers experiencing complete home Wi-Fi coverage.

Customer & Technician Satisfaction

Delighted Customers

96% of customers were happy to allow the technician to use the mobile app to verify their Wi-Fi installation

96% of customers who allowed the app to be used were impressed that their service provider certified Wi-Fi speeds throughout their home

Improved Field Efficiency

86% of technicians indicated the mobile app helped them find the optimal placement of the access point before wiring on installs

96% of technicians indicated that the mobile app helped them objectively verify Wi-Fi quality

88% of technicians indicated the mobile app helped them easily communicate issues to the customer with their Wi-Fi service

86% of technicians indicated that the tool helped determine the root cause of the Wi-Fi problem or repair

Ongoing monitoring identified issues within the install base such as low signal strength and interference. These findings represented opportunities for the service provider including mesh upsell or optimized AP placement.
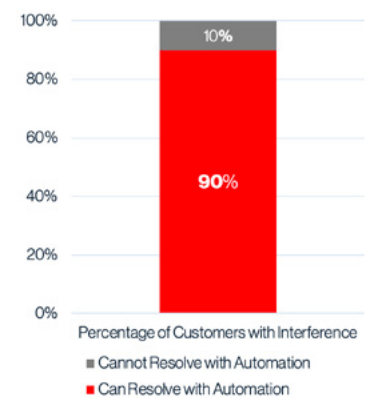
KEY FINDING: INTERFERENCE

Interference levels are typically considered critical when they reach a level where download speeds of connected devices are reduced by 40% or more.

Automation activities to resolve the issues can include remote channel changes and remote reboots.

26% of monitored accounts experienced critical interference

**90% of those accounts could be completely resolved via automation**

100%
80%
60%
40%
20%
0%

26%

74%

Percentage of Customers

■ Low Interference ■ Critical Interference

100%
80%
60%
40%
20%
0%

10%

90%

Percentage of Customers with Interference

■ Cannot Resolve with Automation
■ Can Resolve with Automation

KEY FINDING: LOW SIGNAL STRENGTH

Typically, -65dBm is the signal level required for reliable packet delivery. Poor signal is defined as a customer device experiencing less than -65dBm of signal in at least a third of measured reports per day.
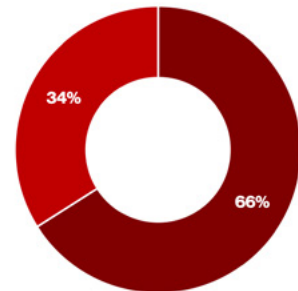
Below this threshold, a significant amount of data is lost which results in slower transfer speeds.

44% of monitored accounts had devices with low signal strength

34% of those accounts had low signal on 6 or more devices

56%
44%
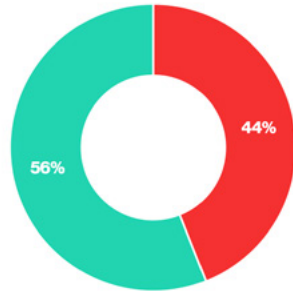
All Monitored Accounts
■ Accounts w/ Low Signal Issues   ■ Account w/o Low Signal Issues

34%
66%

Accounts with Low Signal Strength
■ 5 or Less Devices w/ Low Signal   ■ 6+ Devices w/ Low Signal

KEY FINDING: NETWORK-SLOWING DEVICES

A device that has a 802.11B or G chipset can affect the overall performance of all other devices on the same Wi-Fi network. Such devices were observed on 4.7% of customer networks using one of the gateways. Of these, 26% of those accounts had 6 or more devices being slowed by a single device.

4.7% of monitored accounts had customer devices with low quality Wi-Fi chipsets that were the root cause of issues for all devices on the account

26%
74%
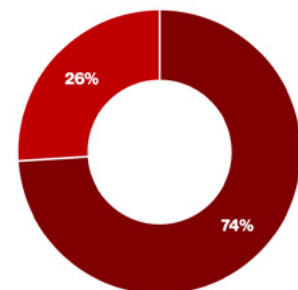
Accounts with Devices Slowing the Entire Network
■ 1-5 Devices Slowed   ■ 6+ Devices Slowed

" [Mariner's] ideas and ingenuity have produced an app that outdoes any other Wi-Fi analysis tool.

When you've got a tool like this to release to your workforce, it makes it easy to provide support and answers. Likewise, when you've got a vendor like Mariner who is flexible and smart, it makes it a pleasure to suggest ideas that are latched onto and taken beyond what you imagined.

– PROJECT LEADER, FIELD OPERATIONS TIER 1 SERVICE PROVIDER

We believe in technologies that make working lives smarter and easier. For over 15 years, we have delivered solutions that help telecom operations people make better decisions. We firmly believe analytics and automation should be used in a positive, human-centered way; empowering knowledge workers to achieve higher-value outcomes in their working lives, while helping service providers compete on the global stage.

Through continuous innovation and a keen focus on customer needs, Mariner has built an exceptional reputation as a trusted and reliable partner to the global communications service provider industry.

More information about Mariner is available at marinerxvu.com

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