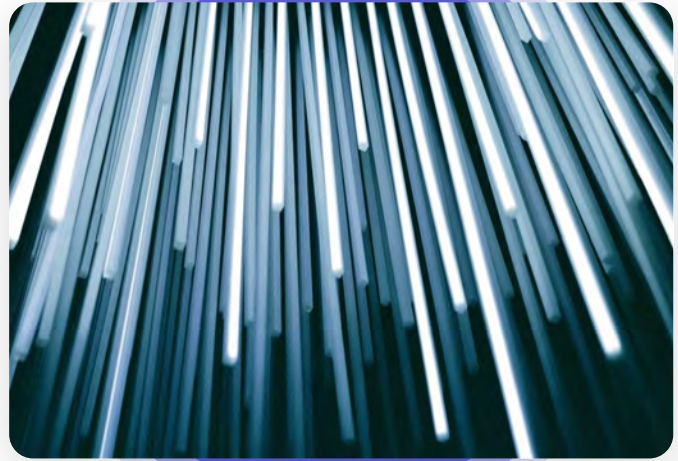




FROM THE FIELD NOTES BLOG

Three Ways Fiber-to-the-Home Providers Can Leverage AI



If you're a fiber-to-the-home (FTTH) provider, you know that speed is the name of the game. Not just the speed you're delivering to bandwidth-hungry customers, but there's also a mad dash to acquire as many customers as possible as quickly as you can. It's a booming business – [\\$18 billion](#) worth of new systems were installed globally in 2021, a figure expected to grow to \$54 billion by 2029.

It's also a fiercely competitive business where moving quickly matters. Every time a new installation hits a hitch, glitch, snag, or delay, that reduces the number of new customers you can bring online on schedule. And that hurts your customer satisfaction which, in turn, hurts your bottom line.

Field service management software can help you keep the "fast" while avoiding the "furious." Doing this effectively requires a combination of both general software design principles as well as specific functionality that targets some of the most common challenges FTTH providers face on a day-to-day basis. Many of these challenges can be addressed efficiently using a variety of AI techniques (more on those in a moment).

When speed is of the essence, there are several general design principles that are essential for field service operations that need to keep pace with fast growth and high expectations from customers. The ideal field service solution:

- should be designed for all users, with robust capabilities for both backoffice personnel working on PCs and laptops as well as field techs relying solely on their [mobile devices](#).
- offers the benefits of "off-the-shelf" solutions, with rapid deployment and a fast payback on your investment
- provides the benefits of custom software, including the ability to customize workflows to match your specific needs directly from a mobile app, without waiting months for help from IT or paying exorbitant fees for simple system integration
- addresses the reality that your requirements will change regularly with a [no-code environment](#) that enables you to update your workflows in real time, avoiding the bottlenecks when you're relying on technical expertise

With its AI-driven technology, Zinier is able to deliver solutions that also provide highly targeted functionality that addresses some of the most difficult challenges for FTTH providers. These solutions leverage some of the most powerful types of AI technology, including:

- computer vision (automated analysis of photographic imagery)
- video analysis (leveraging the ability to capture, relay, and understand video images to identify any suboptimal situations before it becomes a problem)
- machine learning (discerning patterns in data from past situations to provide recommendations for the current situation, driving continuous improvements in a process)

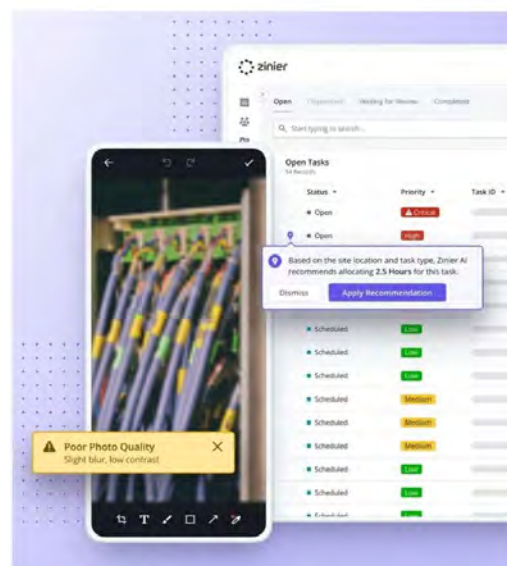
AI can save valuable time and resources during the installation and maintenance process for fiber-to-the-home providers. (If you're new to AI, you can find a three-minute introduction to the topic [here](#).)

One of the most difficult parts of many FTTH installations is ensuring a proper connection of the fiber with the terminal equipment. During one of the final steps in the installation process, the fiber optic cable in the customer-premises needs to be joined to the external cable using a faceplate and terminal connectors. Many companies experience failures as a result of problems rooted in the design of many faceplates.

The delicate glass fibers inside the cable have strict limits on how much they can be bent before they start “leaking” too much light. When the cable placement results in exceeding this “fiber bend radius,” it degrades the data transmission performance and can even damage the delicate fiber.

Solving with Computer Vision Techniques

Zinier’s [Task Builder](#) incorporates AI to identify faulty installations and provide real time feedback to the technicians. During a faceplate installation or repair, a technician can capture and upload a photo of the optical fiber inside the faceplate using their phone. The Zinier solution reviews the image using sophisticated computer vision techniques to determine the radius of curvature and the curvature angle of the fiber in the faceplate. If the analysis predicts that curvature approaches or exceeds the threshold established for the fiber bend radius, this will trigger an alert along with step-by-step guidance showing the technician how to address the situation.



Based on its analysis of an image or of data associated with a task, Zinier AI can also assist by doing things like generating recommendations for the time required to complete a task or identifying photos that should be reshot.

Solving with Video Analysis

Zinier also provides technicians the ability to [connect with remote subject matter experts](#) if further guidance is needed. The more experienced technician or supervisor can immediately jump in to help, leveraging their experience across the entire workforce. By sharing video of a troublespot, either an experienced technician or an AI component can assess if there is a light leak in the faceplate.

For example, a problem can arise with a FTTH installation if a terminal connector has been installed in an incorrect position. If the fiber is coiled clockwise, the terminal connector should be attached to the extreme right port, or to the extreme left port if the fiber is wound counterclockwise. When technicians submit a photo of the terminal connector and faceplate, Zinier's AI can also perform visual analysis to determine if the fiber has been wired correctly. If there has been an error in the installation, the system will flag in real time that it needs to be rectified.

Solving with Machine Learning

Zinier's AI-based analysis becomes more efficient over time, detecting similarities between previously reported problems and achieving higher levels of accuracy in analyzing issues from past experience. This reduces the revisit rate significantly, yielding significant cost savings. Zinier solutions also reduce dependencies on technicians with a high degree of experience in troubleshooting complex installation issues.

Outcomes

By leveraging AI-driven functionality, FTTH providers can reduce costs and accelerate the time required to train new staff. New technicians can become productive much faster thanks to these kinds of digital support strategies, and the knowledge and skills of experienced technicians can be leveraged across more installations. These technologies also reduce incidents resulting from human error.

With a robust set of strategies available to them, FTTH providers can do their job more efficiently while increasing First Time Fix Rate, reducing repeat truck rolls, and improving other metrics. Coupled with Zinier's no-code customization capabilities, FTTH providers have the right tools available to reduce costs, boost productivity, and ensure the best-possible [customer experience](#).

Ready to explore a robust field service solution for FTTH providers? [Click here](#) to schedule a demo.

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