

Treker launches safety-first approach to school travel powered by AT&T Internet of Things technology

- **Business needs**

Treker's groundbreaking school travel solution required robust, consistent connectivity to deliver near-real-time data on the location of buses and students.

- **Networking solution**

AT&T supplied the bandwidth, Internet of Things (IoT) expertise, and highly secure global network that helped Treker introduce its unique tracking solution.

- **Business value**

Enhanced student safety, parent peace of mind, and reliability

- **Industry focus**

Student safety technology

- **Size**

Small business

About Treker

Treker is a communication platform that enhances student safety and provides tools for school bus drivers, parents, and administrators. The platform includes a patented, hands-free bus check-on system for students, an easy-to-use app for parents, a feature-rich tablet for drivers, and portals that provide useful intelligence to administrators. The solution tracks and displays the locations of buses and students in near-real time, delivers estimated arrival times, and records students as they board and exit the bus.

The situation

Technology entrepreneur Thy Tang got the idea for Treker one snowy morning while waiting with his son for the school bus. He wondered how rideshare apps could show him exactly when his driver would arrive, yet he had no idea when the school bus might show up. Tang envisioned an app that would give parents automatic bus location updates. To support this vision, he needed dependable and affordable connectivity.

Solution

Treker chose IoT solutions from AT&T to power their innovative platform. Now the Treker platform can help parents know when the bus is arriving and track students as they board and leave. It also notifies officials if a student is left onboard. The IoT solution from AT&T simplifies provisioning for Treker, and helps them scale the solution as it grows.



A new approach to school travel

Entrepreneurs see opportunities where most people just see challenges. Fintech innovator Thy Tang got the idea for a school bus tracking app one cold New Jersey morning. He and his son shivered at the bus stop as they waited for the overdue bus. He called the school, but employees had no way of knowing when the bus might arrive.

Treker Chairman Jim Nguyen said the company was a passion project born of Tang's desire to solve a personal pain point. Tang envisioned a system that could not only let parents know when the bus would arrive but would also record when each student boarded and left the bus and alert school officials if a student were inadvertently left onboard.

"In this day and age when we can request a ride and track where the car is, we should be able to do the same

for the school bus," Tang said. He called on the team of developers that had worked with him on previous projects. "We knew we had to design a system that would be able to ingest a lot of GPS and student data and combine it to provide the ETA," he said.

Mark Heminger, Treker Creative Director, said employees share Tang's vision of helping to save children's lives. "Our internal rally cry is, 'Be protective, stay relentless, and keep it simple.' We're working to keep kids safer on the trek to and from school, and then to see where those possibilities through technology can take us."

Understanding needs to alleviate pain

Tang and a business partner began by focusing on parents' needs. "They figured out the feature functionality that would make parents' lives easier, give them peace of mind, and let them know that their child is safe," Nguyen said.

Next, they interviewed bus drivers, principals, and transportation directors to learn what would enable them to work more effectively.

"The solution that they arrived at was really through listening and understanding each user's pain points," he said. "Then they worked on developing tools to make each job more efficient and help keep students safe."

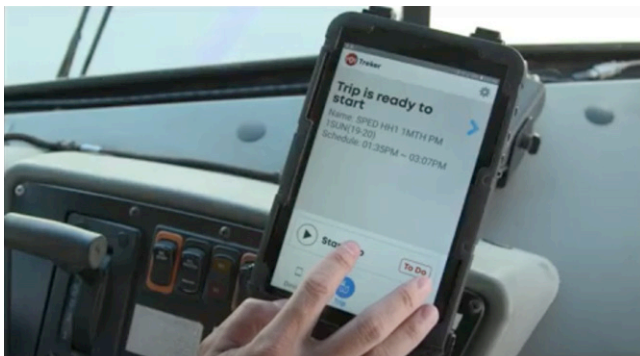
**"Without AT&T connectivity,
there would be no Treker.
We rely on the strength and
reliability of the A&T network."**

Gina McDuffie
President, Treker

In search of support for a custom solution

The startup had to devise a way to gather reliable GPS data simply and inexpensively. One solution Tang considered involved a black box system with a radio transmitter and receivers, which would be costly and difficult to install.

He thought about using radio-frequency identification (RFID) tags to capture the data when students boarded and exited the bus but worried that RFID readers could not gather the information quickly enough. He also investigated beacon Bluetooth solutions, but found they didn't provide the necessary accuracy.



Tang envisioned using off-the-shelf technology such as a tablet or cell phone that could provide GPS locations along with a screen that could display student manifests and other information. "That's what pushed us to develop our own custom solution to solve this problem," Tang said.

Treker contacted AT&T about using cellular connectivity for data transmission. Even with custom data plans, however, the solution would be expensive and tricky to manage. "Then AT&T suggested its new IoT solution platform," Tang said. "That makes our life much easier in terms of provisioning and then scaling up."

Troubleshooting and cost control

The AT&T platform gives Treker the power to collect valuable data for school administrators, bus drivers, and parents. AT&T Control Center supplies automated capabilities for managing cellular data connections more efficiently and cost effectively, giving the company control over ordering, testing, and activating/deactivating SIMs.

"Now if a problem arises, we don't have to call the account lead to find out what's wrong," Tang said. "This basically put the control in our hands so we can troubleshoot things much quicker."

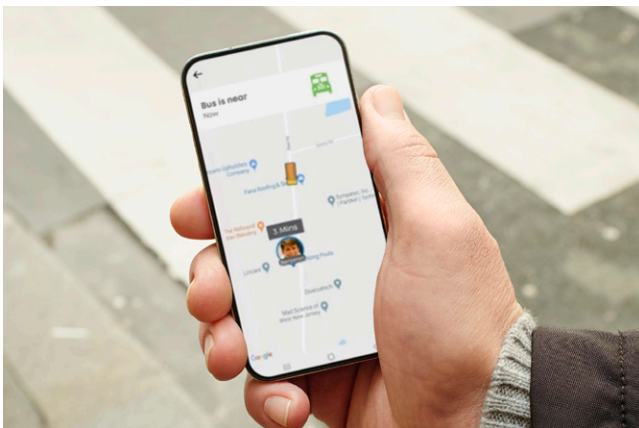
The nature of the school year complicates data management since most districts have 2–3 months off every summer. Nguyen said AT&T allows Treker to scale down to minimal usage when school is out to save money. "And that's another benefit of switching over to the IoT platform," he said.

A safety-first approach to school travel

AT&T connectivity is essential to the success of company operations, said Treker President Gina McDuffie. "Without AT&T connectivity, there would be no Treker," she stated. "We rely on the strength and reliability of the AT&T network."

The network supports Treker's safety-first approach to school travel. This includes TrekCheck. This feature allows parents and the school district to monitor a child's location. A small fob is clipped to a student's backpack—parents and administrators can instantly see when the child gets on and off the bus.

The only company in the industry built especially for schools, Treker understands school officials' responsibility to ensure that students are transported safely. "One of our clients told us the three words he never wants to hear at the end of the day are, 'We misplaced one,'" McDuffie said. "Our goal is to make sure that neither he nor any parent ever hears those words."



And parents can use the Treker app to learn when the bus will arrive, so they can head to the bus stop at just the right time. The app can also alert them in near-real time when their child checks on and off the bus.

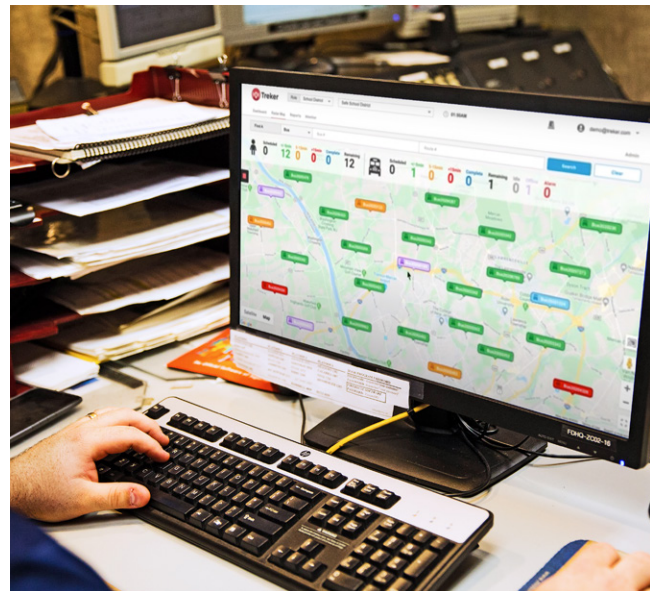
Heminger said the whole point of technology is to make life better. "For us that means keeping kids safer. We put technology in the hands of those who have a hand in keeping kids safer, which is bus drivers, administrators and parents."

A core data center on each bus

Treker's solution includes tablets mounted next to the steering wheel that register when each student boards and exits the bus. Drivers can use the tablets to access route details, upcoming stops, and traffic conditions in real time. They can also share alerts with administrators and parents and deploy an emergency communication system if difficulties arise.

"The tablet that AT&T provides us is really the core data center for all the information," McDuffie said. "It transmits the data to an administrative portal inside the district transportation office that's visible to any administrator that has login access."

"Our ability to track the bus, understand what's happening with the students and communicate that to parents and schools is really what the platform is built on," he said. "And the only way we're able to provide the solution is to collaborate with someone like AT&T that has the reach to allow us to track the bus virtually anywhere, from rural areas with limited connectivity to urban environments where there might be a lot of competing bandwidth demands."



Drivers also use the tablets to help ensure that the person picking up a child from the bus stop is a parent or guardian. Schools can upload photos of each child and the adults who are authorized to pick up at the bus stop. That way, even if there's a substitute driver, young students are protected.



Protecting kids from being left on the bus

“Thousands of U.S. students every year are left on school buses, some of whom die from the heat,” McDuffie said. “That’s why we have TrekAlert.”

TrekAlert is an alarm on each bus that sounds as soon as the motor is turned off. The alarm sounds until the driver presses a stop switch at the back of the bus. Walking the length of the bus to get to the switch lets the driver check for any children who may still be on board.

“If a driver doesn’t press the TrekAlert button within three minutes of turning the vehicle off,” she said, “it instantly notifies transportation directors, administrators, and even local law enforcement.”

The solution helps school districts comply with state laws requiring child safety alarms. “This is an area in which AT&T has helped us,” she said. “We’re the only company that offers a wireless solution that can automatically notify authorities to make sure every student gets off the bus.”

Simpler and more accurate government reimbursement

One of Treker’s first deployments was at Chula Vista, one of the nation’s largest elementary school districts, where the solution helps the district protect 3,000 students.

In addition to enhancing transportation safety, Treker has made it easier for the district to receive reimbursement from the federal government for transporting special education students. “The accuracy of the data provides the district really robust reporting,” Nguyen said.

Before Treker, most districts relied on drivers to manually document the number of special needs students they transported. Getting an accurate count is important. The reimbursement can bring millions of dollars to the district. “The additional revenue more than pays for the Treker solution,” he said.



A myriad of alternate uses

Treker has received requests to adapt its solution to help organizations track assets or ensure that workers have vacated work zones at the end of the day.

A private school has contacted Treker about monitoring students so they know exactly who is in the building in

case of an emergency. During a lockdown schools could use Treker to notify bus drivers not to pick up students until police have dealt with any dangers, which is much quicker than trying to reach each driver by cell phone.

Treker is considering adding payment card functionality to students' fobs for use in school cafeterias. "This makes the fobs more valuable, so kids are less likely to forget them," Nguyen said. "We're always looking at ways to build additional benefits into this device."



The company also plans to add value by rewarding students who remember to bring their fobs. "We're going to start incentivizing them for attending school and not losing their fobs by providing some kind of rewards," he said.

Opportunities for continued innovation

Treker executives recently met with engineers and other experts at the AT&T Foundry, which has worked with organizations to build technology prototypes for real-world solutions.

"The fact that we're here at the Foundry speaks volumes to the benefits that we're seeing in our relationship with AT&T," Tang said. "We're thinking through ways to partner on solutions and technologies that will solve some of the problems that no one's addressing."

Tang anticipates opportunities for continued innovation with AT&T. "It's not what's here and now," he said. "It's what's possible in the future. AT&T sees what's possible in Treker. That's really motivating and inspiring to us as a small company."

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Founder, Treker