



CASE STUDY

Innovative Tree Monitoring for Enhanced Safety



Customer Challenge

Falling trees pose a significant safety hazard, endangering lives, damaging property, and creating costly cleanup efforts. Factors such as severe weather, soil erosion, and natural tree aging increase the likelihood of tree instability, yet these risks often go unnoticed until it's too late. Homeowners, property managers, and municipalities lack a reliable method to monitor tree health and predict potential falls, leaving them vulnerable to unforeseen accidents.

Recognizing this problem, Andy Papathanassiou—a North Carolina entrepreneur—sought an innovative solution to address the challenge. His goal was to create an affordable, user-friendly system that would detect and alert users to changes in tree stability, empowering them to take proactive measures to prevent disasters. The system needed to be accurate, weather-resistant, and easy to use across diverse applications, from residential properties to public spaces.

Solution Overview

Oxit collaborated with Andy to create Arbor Alert, an advanced tree monitoring system. By integrating tilt sensors to track movement and stability, a mobile app and web portal for real-time data visualization, and an in-home alarm system for immediate alerts, the solution ensures safety and usability. Weather data integration adds context, allowing users to make informed decisions. The system is designed to be user-friendly, weather-resistant, and suitable for both personal and professional applications.

The Result

Arbor Alert has transformed how tree stability is monitored, delivering real-time insights and proactive safety measures. The system provides continuous tracking of tree movement and tilt, enabling users to detect changes that could indicate potential falls. With integrated weather data, users can correlate environmental factors like wind speed and storms to tree behavior. The in-home alarm system alerts users to critical risks, ensuring immediate awareness, even during sleep or absence.

Arbor Alert's intuitive mobile app and web portal make it accessible to homeowners and professionals alike, offering detailed visualizations and historical data to support preventive actions. For arborists and tree service companies, the solution expands business opportunities by enabling remote monitoring for clients. By enhancing safety, promoting informed decision-making, and creating business value, Arbor Alert has redefined tree risk management and improved safety for people and property.

Innovative Solutions Delivered by Oxit

Advanced Tilt Monitoring

Engineered and calibrated tilt sensors to detect subtle changes in tree stability, ensuring precise and reliable monitoring for early intervention.

Integrated Weather Analytics

Developed seamless weather API integration to provide contextual data, enabling users to correlate weather events with tree behavior for informed decision-making.

Comprehensive Design

Delivered a complete system including sensor hardware, cloud-based data processing, and intuitive mobile and web interfaces for effortless usability and scalability.

Pro Monitoring Tools

Enabled arborists and tree service companies to remotely monitor multiple trees via a dedicated dashboard, creating opportunities for preventive maintenance services.

About Arbor Alert

Arbor Alert is an advanced tree monitoring system designed to enhance safety by providing real-time insights into tree stability. Equipped with precision tilt sensors and weather data integration, it detects potential risks and alerts users through a mobile app, web portal, and in-home alarm. Easy to install and weather-resistant, Arbor Alert is ideal for residential, commercial, and public safety applications.

For more information, please visit www.arboralert.com



About Oxit

Oxit Engineering Services empowers companies to achieve their innovation goals by building lasting partnerships, not just transactions. With deep expertise in IoT technologies, our team delivers tailored solutions that accelerate time-to-market, optimize development costs, and provide a competitive edge.

This case study underscores Oxit's dedication to delivering impactful solutions while maintaining a steadfast commitment to quality, collaboration, and our clients' long-term success.

Want to know more?

Visit us at www.oxit.com

Why Oxit?



Hardware Development

Oxit's engineering team specializes in designing IoT hardware that combines reliability, scalability, and performance. With expertise in RF systems, low-power design, and long-range technologies like LoRa, we deliver solutions that meet today's challenges and anticipate tomorrow's needs.



Software Development

Oxit bridges today's proven technologies with emerging trends, offering expertise in Wi-Fi, Cellular, Bluetooth, Zigbee, LoRa, and edge machine learning. Our approach ensures scalable, innovative solutions that keep our clients ahead in an ever-evolving market.



IoT Experience

With over a decade of IoT development experience, Oxit provides clients with secure, cost-effective, and adaptable architectures. We minimize risks, avoid costly mistakes, and empower our partners to scale confidently.



Comprehensive Ecosystem Understanding

Our knowledge of competitors, suppliers, and research partnerships enables us to streamline processes, avoid delays, and ensure efficient collaboration across all stages of development.



Defined Roles & Responsibilities

Oxit works closely with partners to balance priorities and clearly outline responsibilities. This structured approach creates alignment and maximizes the partnership's success.



Collaborative Interdependence

We prioritize mutual trust, recognizing that successful outcomes depend on seamless collaboration. By fostering interdependence, we ensure that every contribution aligns with the shared vision.



Matrixed Relationship Management

Our team engages at multiple levels, offering diverse perspectives and services to address every need. This dynamic approach ensures clear communication and smooth execution across all initiatives.



Open and Transparent Communication

We maintain consistent communication to align immediate goals with long-term objectives. This clarity ensures trust and keeps all stakeholders informed at every stage.



Self-Awareness

Oxit recognizes its strengths and adapts to overcome challenges, ensuring we remain a dependable and forward-thinking partner in delivering transformative solutions.