

CASE STUDY

EQUIPMENT HEALTH MONITORING (EHM)

OVERVIEW

Keane, a leading provider of hydraulic fracturing services, sought to address the challenge of unexpected equipment downtime at frac sites. The company recognized the need to leverage data visualization techniques to monitor site production effectively and mitigate potential disruptions. To achieve this goal, Keane partnered with Curtis Consulting to develop a robust Equipment Health Monitoring (EHM) system.

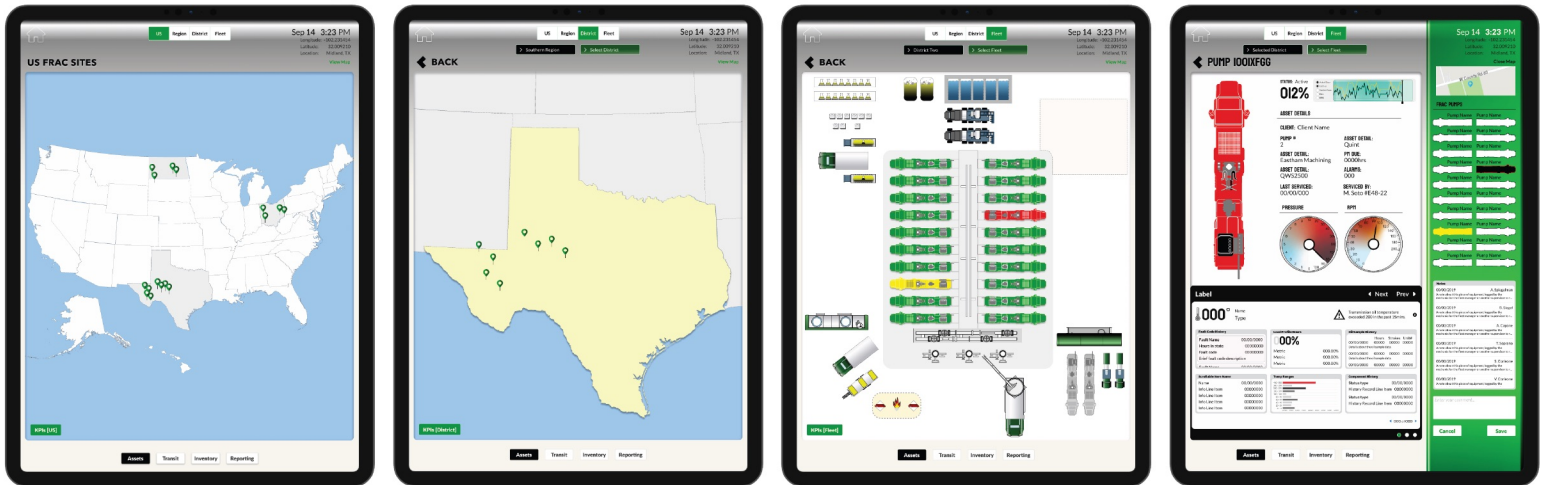
Keane (Next Tier)
Oil and Gas

BUSINESS PROBLEM

Keane faced the critical business problem of how to visualize frac site production data to reduce unexpected equipment downtime at frac sites. The lack of real-time insights into site production data made it challenging for the company to anticipate and prevent potential issues, leading to costly disruptions and delays in operations.



Curtis Consulting played a pivotal role in conceptualizing and implementing a user-centric solution for Keane's equipment health monitoring needs. The firm led design thinking workshops to align project milestones, deliverables, and execution plans. Additionally, Curtis Consulting oversaw the front-end user interface development team to ensure seamless integration of design principles and functionality.



SOLUTION APPROACH

The central focus of the project was to create an engaging data visualization platform that would enable Keane to monitor site production data in real-time and receive early warnings about potential equipment failures before they happened. Curtis Consulting employed a user-centered design approach, emphasizing the following key elements:

- 1. User Research:** Conducted extensive user research to understand the unique challenges and requirements of monitoring equipment health at frac sites.
- 2. Design Thinking Workshops:** Facilitated collaborative workshops to ideate and prioritize features essential for effective equipment health monitoring.
- 3. Prototyping and Iteration:** Developed interactive prototypes to gather feedback from stakeholders and iterate on the design based on user insights.
- 4. Responsive UI Development:** Implemented a responsive user interface (UI) design to ensure seamless accessibility across various devices and screen sizes.
- 5. Data Visualization Techniques:** Leveraged advanced data visualization techniques to present complex production data in an intuitive and informative manner.



KEY FEATURES

- **Real-time Monitoring:** Provides live updates on equipment performance and production metrics.
- **Predictive Analytics:** Utilizes machine learning algorithms to forecast potential equipment failures and downtime.
- **Customizable Dashboards:** Enables users to customize dashboards based on their specific monitoring needs and preferences.
- **Alerts and Notifications:** Sends proactive alerts and notifications to maintenance teams and stakeholders in case of anomalies or potential issues.
- **Historical Analysis:** Offers historical data analysis capabilities for trend analysis and performance optimization.

OUTCOME

The collaborative efforts between Keane and Curtis Consulting culminated in the successful development and implementation of the Equipment Health Monitoring (EHM) platform. The application platform currently saves Keane's customers millions of dollars daily by effectively managing downtime and providing early warnings before critical equipment issues occur. The intuitive user interface and advanced data visualization capabilities empower Keane's teams to make informed decisions and optimize operational efficiency across frac sites.

CONCLUSION

The Equipment Health Monitoring (EHM) project exemplifies the transformative impact of user-centric design and advanced data visualization techniques in addressing complex industrial challenges. By leveraging innovative technology solutions, Keane remains at the forefront of hydraulic fracturing services, ensuring operational reliability, and cost-effectiveness in an ever-evolving industry landscape.

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