Enabling accurate data capture and analytics in remote locations

Client
Canadian-based international mining company specializing in precious metals

Company Size
1,500+ employees

Location
Global

Featured Partners

Microsoft

The client, a large gold mining company, relied heavily on paper forms and spreadsheets for drilling progress reports. This approach resulted in inconsistent data, frequent validation errors, and delays in reporting, especially in remote locations without stable internet connectivity.

Marlabs developed a progressive web application (PWA) and leveraged Microsoft technologies to digitize data entry, ensure validation, and streamline reporting. The solution provided offline functionality, advanced analytics through Power BI, and stronger security controls, enabling accurate data capture and improved decision-making.

"The Marlabs team went above and beyond the call of duty making sure the project was delivered within timelines while satisfying our project requirements. Well done and thank you team for making this happen successfully!"

--Director of Technology Shared Services

Data Management

Application Development

Intelligent Automation

Advanced Analytics

The Challenge: Manual processes created errors in drilling data management

Objective: Digitize drilling progress reporting and provide reliable data validation.

Existing Issues: Remote drilling locations and manual entry caused frequent data errors and inefficiencies.

Solution Needed: An offline-capable digital solution with automated validation and analytics.

Outcome: Accurate data entry, streamlined approvals, and enhanced reporting capabilities.

The mining company's reliance on paper-based and offline spreadsheet processes led to inaccurate and inconsistent data. Managers lacked timely insights for performance tracking and decision-making.

The Solution: Building an offline-capable digital system for accurate data entry & analytics

Marlabs implemented a PWA integrated with SharePoint, Azure Functions, and Power BI to ensure accurate, validated, and accessible data reporting. This solution eliminated reliance on paper forms, introduced flexible approval workflows, and delivered real-time insights to improve operational decision-making.

Phase 1: Application Development & Offline Capability

We developed a progressive web application that enabled offline data entry and validation, even in remote environments.

Workstreams:

- Application development
- Offline data capture
- Validation logic

Phase 2: Integration with SharePoint & Azure Functions

The team utilized SharePoint Online and Azure Functions to create a seamless flow of validated data into organizational systems.

Workstreams:

- SharePoint integration
- Azure Functions configuration
- Data pipeline design

Phase 3: Analytics & Power BI Reporting

Marlabs built Power BI reports tailored to drilling operations, which enhanced monitoring, security, and performance analysis.

Workstreams:

- Power BI reporting
- Security controls
- Performance analytics

Phase 4: Workflow Automation & Validation

Our team implemented flexible validation rules and approval workflows to streamline processes and reduce errors.

Workstreams:

- Workflow automation
- Approval process design
- Validation framework

Services and Technologies Used:

Services:

- Data Strategy
- Data Management
- Data Architecture
- Digital Product Engineering
- Intelligent Automation
- Cloud Engineering
- Application Development
- Quality Engineering
- Advanced Analytics

Technologies:

- Progressive Web Application (PWA)
- SharePoint Online
- Azure Functions
- Power BI

The Results: Impact on the client organization

The new offline-capable digital solution transformed drilling data management by reducing errors, ensuring accurate validation, and delivering advanced reporting. Managers could now access timely insights, even in remote areas, which enabled more confident decision-making and streamlined operations.

Improved Data Accuracy: Offline validation ensured fewer errors in drilling progress reports.

Stronger Security: Role-based access controls ensured data integrity.

Enhanced Reporting: Power BI delivered advanced analytics and visual insights.

Increased Flexibility: Offline functionality allowed seamless reporting without internet connectivity.

Greater Productivity: Simplified approval processes reduced delays and inefficiencies.

Better Decision-Making: Real-time analytics supported operational and strategic planning.