

# Real-Time Equipment Monitoring for a Digital Communication Company with Custom Power BI Solution



## Location

Global



## Client

Digital communication  
company



## Solution

Xylity Technologies implemented a Power BI solution enabling the client to securely access real-time data and status of their machines from virtually anywhere, enhancing shop floor efficiency.



## Result

The solution led to early discovery of issues, reduced machine downtime, improved production, and significantly enhanced coordination and shop floor efficiency.

## About the Client

The client is a leading global manufacturer of equipment for the digital communications industry. They operate facilities around the world producing networking devices, servers, and other hardware. To keep production efficient across multiple plants, the client needed to closely monitor the real-time status of machinery on the factory floor. However, their existing system comprised disparate data sources and applications, making it difficult to get an accurate unified view of equipment performance remotely. Seeking greater visibility and coordination between teams, the client engaged Xylity Technologies to develop an integrated monitoring solution.

## Client's Goal

The client aimed to overcome the inefficiency of their existing process that involved data residing in multiple standalone applications and led to ineffective tracking of status issues, resulting in excessive downtime.





## The Challenge

The client faced several issues with their existing approach. The current BI tool was costly yet outdated, lacking real-time views tailored for equipment monitoring.

- Silos of local machine data in disparate databases instead of a centralized source
- No unified view available remotely for global visibility into production status

### Problems took longer than necessary to address as:

- Finding the root cause required contacting each plant individually
- Teams worked independently without a standard method for sharing insights

### As a critical supplier of digital hardware:

- Seconds of downtime impacted worldwide customers and margins
- Predictive maintenance was needed to minimize disruptions from unplanned outages

### Xylity Technologies would need to provide:

- A platform integrating real-time data from all sources into visuals
- Customizable views of the shop floor layout on any device
- Automatic issue logging across locations for faster troubleshooting

### Additional requirements included:

- Remote monitoring capabilities for efficient resource allocation
- Push notifications to proactively remedy potential issues
- Predictive analytics to schedule targeted preventative actions

The solution aimed to streamline global operations through a centralized real-time dashboard leveraging the power of Power BI.

## Implementation Process

**1. Requirements Gathering:** Workshops identified key metrics, users and their needs via demos.

**2. Data Integration:** An on-premise gateway pulled data from various sources into a SQL database.

**3. Visual Design:** Custom visuals were created like a zoomable floor map to pinpoint equipment issues.

**4. Dashboard Prototype:** An interactive proof of concept displayed the visuals and queries to stakeholders.

**5. Security Setup:** Row-level access was configured and SSO integrated Power BI with Active Directory.

**6. Data Modeling:** Metrics, hierarchies and relationships were structured in the data model for quick analysis.

**7. Automated Data Loads:** Scheduled imports kept the warehouse continuously in sync with plant systems.

**8. Report Building:** Pre-built templates streamlined report authoring for various user roles on the shop floor.

**9. Testing and Feedback:** User acceptance testing refined experiences based on manager and operator input.

**10. Training Materials:** Comprehensive guides educated clients to manage and customize their dashboards.

**11. Deployment:** The production instance went live along with admin procedures for long-term support.

**12. Change Management:** Operators adopted the new paradigm through a phased knowledge transfer process.

**13. Support Process:** Ticket logs and an ongoing service agreement ensured smooth post-implementation support.





## Our Solution

Xylity developed a customized Power BI solution that transformed the client's real-time equipment monitoring capabilities. At the center was an interactive dashboard accessible from any device. It incorporated custom visuals tailored for the manufacturing environment.

A digital floor plan view displayed the precise layout and status of each machine through color-coded icons. Hovering over assets showed key performance indicators without cluttering the interface. Drilling down offered historical trend analysis for predictive maintenance planning.

Additional visualizations included cards, gauges and charts. Lists indexed equipment by lines, models and key attributes like location for at-a-glance supervision. Graphs profiled metrics such as machine uptime percentages or throughput rates per shift.

Advanced filtering allowed focusing on specific time windows, plants or product families. Configurable alerts notified teams through multiple channels when predefined thresholds were crossed.

The solution automated critical processes as follows:

- Integrated real-time IoT data from various plant systems into the data model
- Scheduled daily refreshes to keep the data warehouse continuously updated
- Pushed desktop and mobile notifications on downtime events
- Standardized issue logging and assignment across all locations
- Incorporated predictive algorithms to flag anomalies indicating future issues

Top executives leveraged pre-configured executive reports on KPIs. Operators gained self-service capabilities to monitor production without IT assistance. Built-in governance ensured appropriate data access.

## Results

With real-time visibility into production assets, the client could instantly identify and remedy issues to maximize uptime. Machines experiencing minor problems could now be quickly serviced during brief breaks rather than taken entirely offline. This reduced lengthy corrective maintenance, avoiding costly production slowdowns. Engineers used early failure alerts from predictive models to proactively replace parts before breakdowns occurred. Empowered with self-service analytics, operators resolved more problems independently without involving IT. By standardizing communications through a centralized monitoring system, distributed shift teams coordinated seamlessly for increased efficiency and output. These changes led to an estimated 20% increase in overall equipment effectiveness.

## Tech Stack Used

The implemented solution leveraged:

- Power BI for data visualization and real-time monitoring
- SQL Server for data management and direct connection

## Conclusion

Xylity Technologies successfully implemented a custom Power BI solution for a digital communication company, enabling real-time monitoring of equipment and enhancing shop floor efficiency. The solution led to substantial time savings, reduced machine downtime, and improved production. If you're looking to leverage a similar solution for improved performance, contact Xylity Technologies today.

