Minsky™ Cube

The AI and IoT platform for real-time condition monitoring and predictive maintenance

24/7	Real-Time	No-Code	Digital Twin
Equipment monitoring & alerts	IoT data on live dashboards	Cloud AI — no coding for results	Data security & redundancy

The Challenge

- **Remote, hard-to-see assets:** transformers and power equipment sit far from the control room, so condition data arrives late or not at all.
- **Reactive maintenance:** failures are found after they happen, and catastrophic breakdowns cost far more than planned repairs.
- **Calendar-based schedules:** inspections run on a fixed cycle, so healthy equipment is serviced while worn equipment waits.
- **Data at risk:** critical asset data needs security and redundancy, not a single copy in one place.
- **Disconnected tools:** monitoring, analytics and work-order systems live apart, slowing technician dispatch.

The Answer: Minsky™ Cube

- **Live data from every asset:** IoT sensors stream into a data warehouse or cloud server, with a digital twin kept for security and redundancy.
- **AI that predicts failures:** real-time IoT data meets historical equipment data in the Minsky™ AI engine.
- **Dashboards you can act on:** Power BI, Tableau or any dashboard tool, with map views and alert heat maps.
- **Alerts, then action:** pre-defined alert conditions flag problems 24/7, and work orders flow to ServiceNow, Maximo and other ERP systems.
- **No-code AI:** a user-friendly cloud platform that gives results and predictions without coding skills.

Two Sides, One Platform

Monitor

Condition Monitoring

See every asset in real time — sensors, dashboards, maps and alerts on live data.

IoT Data Acquisition	ETL & Real-Time Movement
Digital Twin	Data Warehouse
Live Dashboards	Grid Map by Postal Code
Alert Heat Maps	Transformer Condition Data

Predict

Predictive Maintenance

Learn from history, spot trouble early and schedule the right fix at the right time.

Minsky™ AI Engine	Historical Data Modelling
Predictive Maintenance	Feature Dependency %
Model Tuning	Work-Order Integration
24/7 Alerts to Support Staff	ERP & 3rd-Party Integration

Shared by both: one data pipeline from sensor to dashboard to work order — real-time IoT data, historical equipment data and AI predictions working together.

Our Minsky™ Cube Platform — 12 Integrated Capabilities

Domains: ■ Data ■ AI ■ Visualize ■ Integrate *One pipeline · one AI engine · any dashboard*

IoT Data Acquisition
Sensors on remote assets such as transformers and power equipment

Data Warehouse
Cloud server or warehouse storage for sensor data

ETL Pipelines
SSIS packages move data into SQL Server in real time

Digital Twin
A second copy for data security and redundancy

Historical Data Modelling
Past equipment data used to train AI models

Minsky™ AI Engine
Real-time plus historical data analysed for predictions

Predictive Maintenance
Spot failures early; plan the best inspection routine

Model Tuning
Try different algorithms and prediction attributes

Interactive Dashboards
Power BI, Tableau or any dashboard tool on live data

Grid Map View
Assets plotted on a grid map by postal code

Alert Heat Maps
Live values against pre-defined alert conditions

Condition Data
Temperature, oil level and power load per transformer

Key Capabilities

Predictive Maintenance with AI
The Minsky™ AI engine combines live IoT readings with historical equipment data to model how assets fail, so maintenance can be planned before a breakdown, not after.

Know What Drives the Result
Minsky™ gives you a list of the % dependency of each feature, so you can see which factors matter most and use them to optimise your business.

Alerts You Define
Set pre-defined alert conditions and see them as live heat maps — for example, every transformer location where temperature is above 40 °C, or where oil level is below 70.

Digital Twin for Security
A digital twin is created alongside data acquisition, so asset data stays secure and redundant if a source or server fails.

From Alert to Work Order
MinskyCube integrates with ServiceNow, Maximo and other 3rd-party ERP systems to create work orders and dispatch service maintenance technicians.

Fine-Tune Without Code
Try different algorithms and prediction attributes to tune models. No coding skills are required for results or predictions.

How Minsky™ Cube Works — Typical Data Flow

1. Source
On-premises data: CSV, Oracle, SQL Server and IoT sensors

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2. Extract, Transform, Load
ETL moves data into the database in real time

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3. Store
Azure SQL Database and Data Warehouse, plus a digital twin

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4. Refresh
Scheduled data refresh keeps dashboards live

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5. Visualise
Power BI or Tableau on desktop, tablet and mobile

The same flow works with Tableau, Power BI or any other dashboard tool.

How Minsky™ Cube Works — Typical AI Data Flow

IT and OT Data
Asset data from equipment and business systems

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Industrial IoT Platform
Asset connectivity and management · Machine learning and analytics · Monitoring, analysis and event management

›

Minsky™ Engine
Models trained on historical data analyse the live feed

›

AI Predictions and Dashboards
Predictions, alerts and live condition views

Use Case in Action — Predictive Maintenance for a Power Utility

The Client's Need

A large power utility needed real-time data from remote assets such as transformers and power equipment, for condition monitoring and predictive maintenance. The solution also had to include a digital twin for data security and data redundancy.

What the Client Gets

- Live condition data from field equipment on interactive dashboards
- AI models built from the utility's own historical data
- Alerts and work orders tied into the systems the maintenance team already uses

What Minsky™ Cube Delivered

- **Data acquisition:** IoT sensor data stored in a data warehouse, with a digital twin created at the same time.
- **Real-time movement:** an SSIS package moves data into a SQL Server database so every dashboard shows live data.
- **Interactive Power BI dashboards:** data shown on a grid map from the SQL database, based on postal codes.
- **Pole transformer data:** temperature, oil level, power loads and more on dashboards for condition monitoring.
- **Predictive maintenance:** real-time data analysed by Minsky™ using AI models built from historical data.
- **Work orders:** integration with ServiceNow, Maximo and other 3rd-party ERP systems to dispatch service maintenance technicians.

Interactive Alert Dashboard: Temperature
A Power BI heat map shows live temperature values against pre-defined alert conditions — for example, every transformer location where temperature is above 40 °C.

Interactive Alert Dashboard: Oil Level
A Power BI heat map shows live oil-level values against pre-defined alert conditions — for example, every transformer location where oil level is below 70.

Why Minsky™ Cube — Minsky™ AI Platform Benefits

User-friendly, cloud-based
An AI platform your team can use without specialist set-up.

No coding skills required
Get results and predictions without writing code.

Feature dependency list
See the % dependency of each feature to optimise your business.

Tune and integrate easily
Try different algorithms and attributes; connect to Tableau and other 3rd-party tools.

Project Results and Benefits

Real-time condition monitoring
View live equipment data from interactive dashboards.

Lower maintenance costs
Fix what needs fixing, when it needs fixing.

Better spare-parts inventory
Know what you will need, before you need it.

Avoid catastrophic failures
Catch warning signs before they become outages.

Optimal maintenance schedule
Systematically schedule the right maintenance and inspection routine.

Avoid unnecessary maintenance
Skip scheduled work that equipment does not need.

Improved productivity
More efficient operations across the maintenance team.

Longer equipment life
Improved equipment lifespan through timely care.

24/7 monitoring and alerts
Alerts reach support staff so critical issues get fixed.

Built for Trust — and for Every Team

Security & Trust

- **Digital twin:** a second copy of asset data for security and redundancy.
- **Real-time pipelines:** SSIS packages keep SQL Server and every dashboard on live data.
- **Scheduled refresh:** dashboards update on a schedule so views stay current.
- **Open integration:** works with any 3rd-party ERP system and any data visualisation tool.
- **Cloud-based:** a user-friendly cloud AI platform with no coding required.

Who It Is For

- **Power & Utility Operators —** monitor transformers and power equipment in the field and plan maintenance with AI.
- **Asset & Maintenance Managers —** schedule inspections by actual condition and manage spare parts better.
- **Operations Teams —** 24/7 monitoring with alerts to support staff for critical issues.
- **Data & BI Teams —** connect IoT data to Power BI, Tableau or any dashboard tool.
- **IT & ERP Owners —** create work orders in ServiceNow, Maximo and other systems.

Works With IoT Sensors · Oracle · SQL Server · SSIS · Azure SQL · Power BI · Tableau · ServiceNow · Maximo · ERP

Delivers Live Dashboards · Heat Maps · Grid Maps · Digital Twin · AI Predictions · Alerts · Work Orders

Predict the failure — before it happens.

Monitor every asset, learn from every reading, and act on every alert.

Book a live briefing and see Minsky™ Cube on your own data at **www.ailabsinc.ai**

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