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CASE STUDY: Consolidating EV Infrastructure Operations via Google Workspace

Industry: National EV Installation

Project: Airtable-to-Sheets Migration & Automated Document Ecosystem

1. The Challenge: "SaaS Fragmentation"

Prior to this project, the company's technical data (Bill of Quantities and Groundworks) was siloed in Airtable. While Airtable served as a functional database, generating client-facing PDFs required third-party "bridge" software (like Zapier or Make) and external document generators.

The Pain Points:

- **High Subscription Overhead:** Multiple SaaS products were required just to move data from point A to point B.
- **Data Latency:** Project managers had to jump between Airtable for data entry and Google Calendar for scheduling.
- **Manual Exporting:** Turning a BOQ into a professional quote involved significant manual formatting and "copy-pasting."

2. The Solution: The "Single-Stack" Architecture

The company migrated its entire project lifecycle into a customized Google Workspace ecosystem. By utilizing **Google Apps Script**, we built a proprietary "Document Engine" that treats Google Sheets as a relational database.

Key Features of the New System:

- **Unified Data Hub:** A master spreadsheet now manages the 📊 `Dashboard`, `Quote gen`, `Bill of quantities`, and `Ground works B&Q` tabs in one location.
- **Automated Scheduling:** The system was integrated with **Google Calendar**, ensuring that when a site project is generated, it is instantly reflected in the project management calendar, eliminating double-entry.
- **Dynamic Document Assembly:** A custom script performs a "deep search" across all tabs to gather every material item and groundworks cost for a specific site, bundling them into professional, brand-aligned PDFs.

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3. The Automation Workflow

1. **Selection:** The user chooses between a **Customer Quote** or a **Contractor Offer** from a custom menu within the spreadsheet.
2. **Data Harvesting:** The engine aggregates data from three separate sheets based on the Site Name.
3. **Cross-Platform Sync:** The project is synced with the master installation calendar for team visibility.
4. **Instant Distribution:** The PDF is generated and instantly emailed to the internal Admin team for final review.

4. Results & Strategic Impact

- **Reduced SaaS Dependency:** By replacing Airtable and secondary PDF generators with native Google Apps Script, the company reduced its software "bloat" and monthly subscription costs.
- **Operational Velocity:** The time required to generate a contractor offer dropped from 20+ minutes of manual assembly to **under 30 seconds**.
- **Reduced Human Error:** Automating the "Collection" of BOQ rows ensures that no material item is ever forgotten in a quote, protecting the project's profit margins.
- **Improved Project Management:** Syncing directly to Google Calendar ensures that the sales, admin, and installation teams are always looking at the same schedule.

5. Conclusion

This migration demonstrates that for a high-growth national EV installation company, the most efficient "SaaS" is often the one you already own. By building a custom engine inside Google Workspace, the business gained a scalable, low-cost, and highly integrated project management tool that can grow as fast as the EV market itself.