**Note for Future Updates: All new entries to this diary should be appended to the bottom of the document, starting with the current date and timestamp. This ensures a chronological record of the project's progress.**

### **Project 'Market Pulse' - Handover & Status Summary**

***Generated: Saturday, July 5, 2025, at 12:51 PM CEST***

#### **1. Project Overview**

**"Market Pulse" is a web application designed to provide hotel performance metrics. It has two primary functions: a live dashboard for immediate operational insights and a strategic analysis tool for market comparison. The application is built with a Node.js backend (Express), a vanilla JavaScript frontend, and utilizes a Neon PostgreSQL database. The entire project is deployed and hosted on Vercel for continuous integration and delivery.**

#### **2. System Architecture & Workflow**

* **Test Kitchen (Local Machine): Development and testing of new features.**
* **Safety Net (GitHub): Centralized source code management.**
* **Live Bakery (Vercel): Production environment for the live application and cron jobs.**
* **Pantry (Neon): Cloud-hosted PostgreSQL database for all hotel metrics data.**

#### **3. Key Files & Their Purpose**

* **server.js: The main Express server application.**
* **public/index.html: The primary frontend file.**
* **public/script.js: The frontend logic for user interactions and data rendering.**
* **daily-refresh.js: A daily cron job script to fetch and store 365 days of forecast data.**
* **initial-sync.js: A one-time script for onboarding new hotels.**
* **seed-market-data.js: (New File) A special, one-time script created to parse a CSV file (daily\_metrics\_snapshots\_5hotels.csv) and populate the database with mock data for five competitor hotels.**
* **vercel.json: Vercel deployment configuration, including the cron job schedule.**
* **.env: Local file for storing sensitive credentials.**

#### **4. API & Endpoints**

* **External: Cloudbeds Insights API (/reports/query/data) and Cloudbeds General API (/getHotelDetails).**
* **Internal: POST /api/explore, GET /api/hotel-details, GET /api/metrics-from-db, GET /api/competitor-metrics.**

#### **Entry: Saturday, July 5, 2025 - Morning Session**

**The primary focus of the morning session was the successful migration of the "Market Pulse" application from a local-only setup to a fully operational, cloud-native solution on Vercel. Key achievements included debugging the data aggregation logic, deploying the application, configuring the production database connection, and setting up a daily cron job for data synchronization. A "sanity check" feature was also implemented in the frontend to compare live API data against the database to ensure perfect data integrity.**

#### **Entry: Saturday, July 5, 2025 - Afternoon Session (Data Seeding)**

**The afternoon session focused on solving the "cold start" problem for the "Us vs. The Market" feature. Since the live API can only provide data for our own hotel, we created a robust set of mock data to simulate a competitive market.**

* **Database Schema Enhancement: A hotels table was created to store static information (name, city, coordinates) for all properties. A foreign key constraint was established between daily\_metrics\_snapshots.hotel\_id and hotels.hotel\_id to ensure data integrity.**
* **Mock Hotel Creation: The new hotels table was populated with records for our primary hotel and five additional "fake" competitor hotels, all located in London.**
* **Metrics Data Generation: A comprehensive CSV file, daily\_metrics\_snapshots\_5hotels.csv, was created and used to populate the database with 3,650 rows of realistic, daily performance metrics for the five fake hotels.**
* **Data Ingestion: The seed-market-data.js script was developed and successfully executed to parse the CSV and populate the daily\_metrics\_snapshots table.**

#### **Entry: Saturday, July 5, 2025 - Late Afternoon Session (Refinement & Troubleshooting)**

**This session focused on refining the application's data handling and resolving deployment issues to prepare for the "Us vs. The Market" feature development.**

* **Backend Data Separation: The backend logic in server.js was updated to provide clearer data separation.**
* **Frontend UI Separation: The user interface was updated accordingly. index.html and script.js were modified to include a new "Competitor Market Data" section with its own table and data loading controls.**
* **Timezone Bug Fix: A critical "off-by-one-day" bug was identified and resolved.**
* **Deployment Troubleshooting: We diagnosed and resolved a Vercel deployment issue by reconnecting the Git repository and forcing a redeployment.**

#### **Entry: Saturday, July 5, 2025 - 2:40 PM CEST (UI & Backend Aggregation)**

**This session focused on transforming the raw data into a true "like-for-like" comparison view and significantly improving the user interface.**

* **Backend Aggregation: The /api/competitor-metrics endpoint in server.js was enhanced. Instead of returning raw data, it now uses SQL aggregation functions (AVG, SUM, GROUP BY) to calculate the daily market averages directly in the database. This makes the API more efficient and simplifies the frontend logic.**
* **UI Layout Improvement: The index.html file was restructured to create a more intuitive user experience. The "Your Hotel" and "Competitor Market" tables were placed into a two-column, side-by-side layout for direct visual comparison.**
* **UI Control Consolidation: The user controls were streamlined. The three separate date pickers were removed and replaced with a single "Master Date Controls" section at the top of the page. The two separate database load buttons were combined into a single "Load Database Data" button, which now populates both comparison tables simultaneously.**

#### **Entry: Saturday, July 5, 2025 - 3:15 PM CEST (Granularity Feature)**

**This session focused on implementing a powerful new feature allowing users to view data with different levels of time granularity.**

* **UI Enhancement: The index.html file was updated to include a new set of toggle buttons [ Daily ] [ Weekly ] [ Monthly ] within the master controls section. The date controls were also updated to use a more flexible Start Date and End Date picker combination.**
* **Frontend Logic: The script.js file was updated to manage the state of the new granularity toggles and to pass the selected granularity and date range to the backend API when the user requests data.**
* **Backend Logic & Debugging: The server.js file was significantly enhanced to support the new feature. The database API endpoints now dynamically modify their SQL queries based on the requested granularity, using the DATE\_TRUNC function to group data by day, week, or month. A bug related to incorrect SQL syntax (GROUP BY and ORDER BY clauses) was identified and resolved, ensuring the feature is now stable and working correctly.**

**Current Status: The application is now highly interactive and flexible. Users can select any date range and view the "Us vs. The Market" comparison data summarized daily, weekly, or monthly. The core functionality is robust and the project is in an excellent state.**