

CASE STUDY

From fragmented retail data to executive decision infrastructure

Building an analytics function for national retail sales, promotion measurement and incentive programs. Connor Nobert, Pulse, 2017–2025: Technical Coordinator, then Director of Analytics & Technology from 2019.

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[About Connor](#)

Summary

At Pulse, I built and led the analytics function that turned fragmented, high-volume sales and operations data into trusted reporting for national enterprise clients, including Samsung. Pulse ran engagement platforms, training and incentive programs for those clients; the analytics department I created became part of what it sold.

The work covered the whole chain: a SQL Server data platform, Python ingestion, validation and reconciliation, daily executive dashboards, matched-control measurement of promotions and incentives, finance-ready program reporting, production database automation, and the team, standards and client relationships that kept it running.

TEAM

Built and led a five-person analytics team, with one departure in six years

DATA FEEDS	Hundreds, across sales, inventory, platform, training, survey and program systems
RETAIL FOOTPRINT	Thousands of retail locations; more than 50 dealer and retailer data environments
AUTOMATION	Hundreds of SQL Server Agent jobs and stored procedures; daily refresh
INCENTIVE PROGRAMS	15+ recurring programs that paid more than \$10M to over 25,000 retail sales reps
EXECUTIVE AUDIENCE	Quarterly and annual business reviews with 20+ stakeholders
MEASUREMENT	Matched-control lift analysis showing positive results for recurring promotions and incentives

The challenge

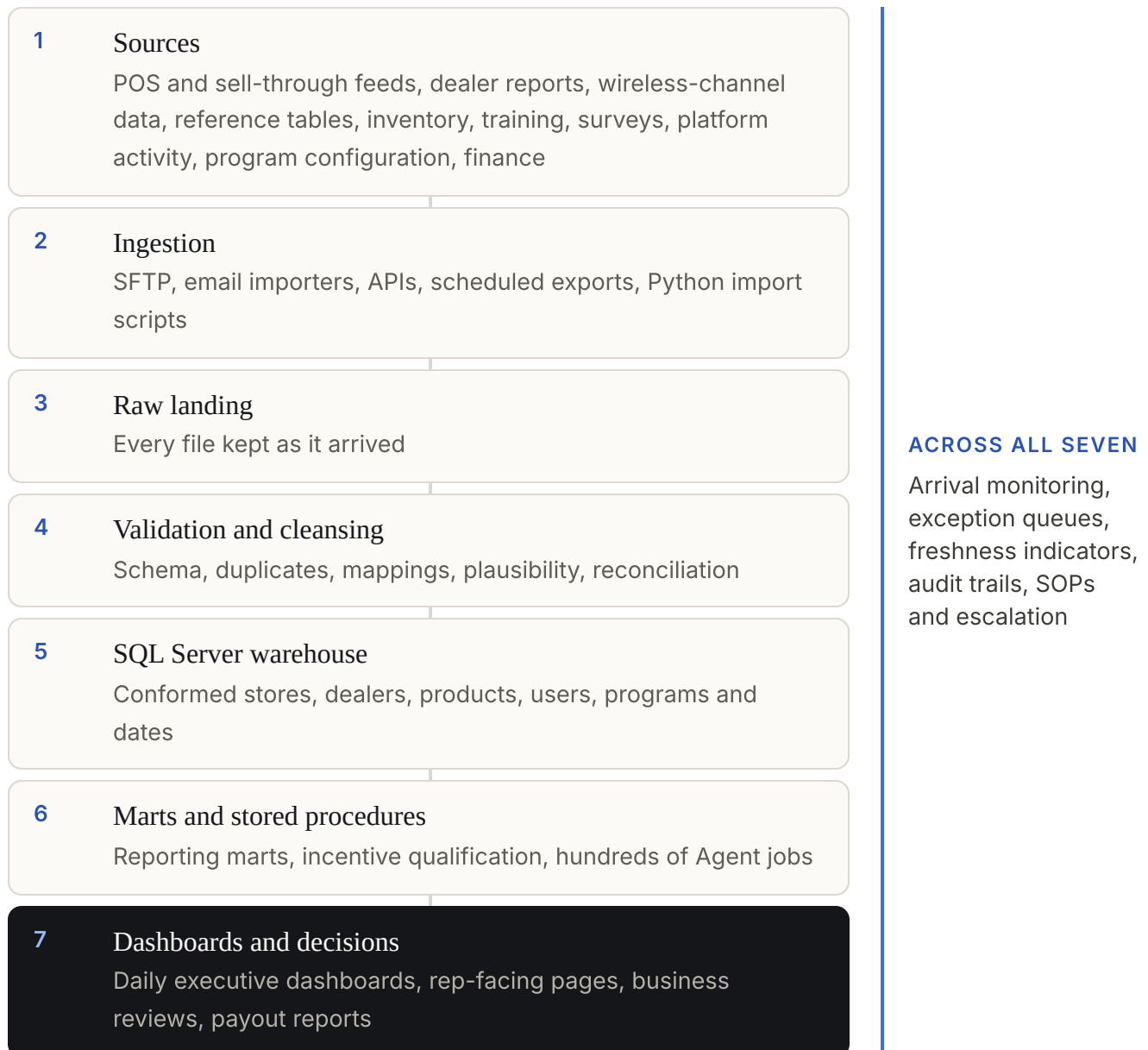
Clients needed accurate, timely, executive-ready visibility into national retail sales, product launches, promotions, inventory risk, training completion, employee engagement and incentive-program progress.

The data behind that came from many unrelated systems: dealer point-of-sale exports, national retail feeds, inventory and stockout reports, training platforms, survey tools, app activity logs, client reference files, program configuration tables and finance sources. Each had its own formats, field names, business rules, delivery method, schedule and quality problems. Some files arrived by SFTP, some by email, some through APIs, and some needed manual handling whenever an upstream system changed.

The stakes were high. These numbers fed daily executive dashboards, client business reviews, incentive payouts, finance approvals, launch decisions and multi-million-dollar promotions. The job was to build a system that could take in that fragmented data, validate and reconcile it, turn it into trusted metrics, and deliver them in a form people could make decisions on.

The system I built

I designed and led the build of a SQL Server analytics platform that connected ingestion, data quality, warehouse modeling, reporting marts, automated jobs, dashboards and recurring analysis. It served both recurring reporting and specialized work: promotion lift, incentive ROI, field performance, training completion, engagement and ad hoc executive requests.



The analytics platform: seven layers, with monitoring and governance across all of them.

Each feed brought its own business logic to apply on the way in: product and store mappings, dealer hierarchies, eligibility and incentive rules, sales

attribution, date normalization, duplicates and late-arriving data.

Sources included retail POS and sell-through feeds; dealer and authorized-retailer sales reports; national wireless-channel data; store, dealer and product reference tables; inventory and stockout data; retail demo interactions; surveys; training and certification records; mobile and desktop platform activity; incentive program configuration; promotion calendars; and finance and sellout reports.

Ingestion methods included SFTP transfers, email-based importers, API extraction, scheduled client and vendor exports, custom Python import scripts, SQL Server stored procedures, and remediation workflows for files whose format changed.

Keeping the data trustworthy

Because these numbers drove executive decisions and incentive payouts, reliability was a core requirement. A missed file, a bad mapping, a duplicate record or an unannounced source change could distort a daily dashboard or an incentive payout. So data was checked at four points: on arrival, in staging, during warehouse transformation, and before any report or dashboard was released.

The controls I designed included:

- **Arrival:** file-arrival monitoring, transfer-failure detection and missing-feed alerts
- **Structure:** schema and field-type validation, and duplicate detection
- **Meaning:** store, dealer, user and SKU mapping checks
- **Plausibility:** comparisons with historical trends, and outlier checks
- **Totals:** reconciliation against source totals, and post-refresh validation
- **Visibility:** refresh-status tracking, exception tables and error queues, and data-freshness indicators on dashboards

- **Accountability:** audit trails for incentive reporting, documentation and escalation procedures

Dashboards and decision support

The platform powered recurring executive dashboards and ad hoc analysis for account teams, client stakeholders, finance partners, field leaders and operations teams. People could see performance by product, retailer, dealer, store, region, program, user segment, training cohort and promotion window.

The reporting layer covered daily sales tracking; product and SKU performance; channel, dealer and retailer comparisons; regional and store views; inventory and stockout monitoring; promotion and incentive-program progress; rep-facing sales progress and rewards pages; training, survey and engagement reporting; executive KPI scorecards; finance-ready program reporting; and quarterly and annual business review materials.

The dashboards were designed to help people understand performance, diagnose problems, measure what programs earned, and decide what to do next. That meant turning complex data into clear metrics, segments that pointed to action, and executive-ready summaries.

Featured: measuring a device-launch promotion

The question. During a major Samsung device launch, a promotion sent LED advertising trucks along routes near the stores of a national wireless retail partner. The client needed to know whether the trucks drove enough extra sales to justify the cost, and whether to expand the program.

Why it was hard. A before-and-after comparison couldn't answer it. Sales depended on store location, local market conditions, product mix, baseline demand, recent momentum, demographics, launch timing and channel-wide trends. A credible answer had to identify which stores the trucks plausibly

reached, estimate how strongly, build fair comparison groups, track results as data arrived, and present them in a form executives could act on.

The method. I designed and ran a quasi-experimental, matched-control lift analysis:

1. **Route and store mapping.** I gathered the truck routes and dates, promotion details, store locations, historical and current daily sales by product, and store attributes, then overlaid the routes on the store footprint.
2. **Exposure tiers.** A Python geospatial process measured each store's distance from the routes and assigned a tier: closest to the routes, a moderate band, a broader market zone, or not exposed.
3. **Test groups by intensity.** Exposed stores formed the test group, kept by tier, because the effect was expected to be strongest near the routes and weaker farther out.
4. **Matched controls.** For each test store, a scoring and nearest-neighbor process chose comparable stores, matched on historical sales volume, recent momentum, product and category mix, geography, local market, demographics and behavior before the promotion. Each store was compared with stores like it, not with a national average.
5. **Daily lift dashboard.** A dashboard refreshed with each day's sales and compared test stores with their matched controls, showing the lift and the cumulative extra sales by promotion window, date range, exposure tier, product category, SKU group, store group and market.
6. **Lift and ROI.** The matched groups gave an estimate of the incremental sales the promotion produced, set against its cost.

The result. The analysis showed positive, statistically defensible lift associated with the promotion. It supported approval of an expanded version of the program for the next major device launch.

What it left behind:

- **A defensible way to measure ROI**, in place of anecdote.

- **A daily monitoring tool**, so stakeholders saw results as sales came in rather than at the end of the campaign.
- **A reusable method**. Other teams asked for walkthroughs so they could apply it to their own promotions.

The value was the whole decision system around the model: the geospatial work, the matched controls, daily tracking, executive visuals and a clear ROI story that settled a real business decision.

Sales incentive programs

The analytics function ran the data behind 15+ recurring sales incentive programs across major wireless and retail channels, which paid more than \$10M to over 25,000 retail sales reps. The programs rewarded store employees for selling specific products during set promotional periods, so every payout depended on sales being tracked correctly for each person and store.

That was hard because each dealer could have its own point-of-sale system, file format, schedule, fields, sales definitions and eligibility rules. Many feeds needed custom ingestion and cleaning before they could count toward a reward.

I led the analytics side of each program from design to payout:

1. **Design:** defining goals, incentive structure, targets, eligibility and reporting with the client, using historical sales and pricing data to support the proposals.
2. **Onboarding:** bringing each dealer's and retailer's sales feed in with custom Python ingestion, plus validation and reconciliation so every sale counted correctly.
3. **Tracking:** rep-facing progress pages, built with the design and development teams, where employees followed their own performance; dealer dashboards; and client dashboards for sales, goals and impact.
4. **Payout:** detailed sellout reporting and ROI documentation for finance approval.
5. **Measurement:** matched-control lift analysis to show whether each program produced incremental sales.

The programs consistently showed positive results using matched-control lift methods agreed with the client.

Platform operations, process and SOC 2

Pulse ran white-label mobile and desktop platforms for enterprise clients, covering training, gamification, surveys, tasks, notifications, rewards and performance tracking for large user populations. The analytics team wrote and maintained the SQL behind much of that platform: task completion, user progress, points, badges, sales and activity qualification, training status, program eligibility, reporting refreshes and engagement rollups. Most of it ran as stored procedures and SQL Server Agent jobs against busy production or production-adjacent databases.

Because that code could slow a live platform, I set and enforced practices for query writing, stored procedure design, job scheduling windows, indexing and optimization, avoiding peak traffic, and monitoring after deployments and launches. When something slowed or failed, we diagnosed it with the engineers and wrote a post-mortem. This moved the team from reporting into a production role, where judgment about risk mattered as much as SQL skill.

As the function grew, I wrote the SOPs, checklists, training materials and QA and escalation procedures that kept it reliable. They covered data imports, feed monitoring, refresh validation, SQL Agent job review, client reporting, incentive-program setup, dealer onboarding, exception handling, new-analyst onboarding and incident response. I also supported the process improvements and evidence collection for Pulse's SOC 2 readiness and certification.

Building and leading the team

As Pulse grew, analytics went from a technical capability to a formal department, and I built it. I hired five analysts, and one left in six years, in a demanding, fast-paced environment. I trained them, wrote the onboarding, set the standards for

SQL, ETL, dashboards and client delivery, assigned work across clients and programs, reviewed their output, and balanced recurring reporting, ad hoc analysis, operational support and urgent client requests.

I also represented the function to clients and executives:

- Led quarterly and annual business reviews for audiences of 20+ stakeholders, explaining findings to both executive and technical listeners
- Turned client feedback into reporting and system improvements
- Negotiated client analytics contracts and scope, and selected and negotiated with BI, data-engineering and infrastructure vendors
- Kept nearly all client contracts, and expanded into new client teams as other departments saw the work. That included dedicated analytics contracts with a client that had its own in-house analytics teams
- Planned the platform around expected growth, and found new places to extend analytics across clients and industries

Business impact

- **Executive visibility:** daily views of sales, program progress, inventory risk, product trends, regional differences, training and engagement, and promotion results.
- **Faster decisions:** automated dashboards, recurring refreshes and reporting marts replaced manual reporting bottlenecks.
- **Data people trusted:** validation, reconciliation, logging and documentation behind executive reporting and finance-sensitive payouts.
- **Better promotion and program spending:** matched-control lift and ROI reporting informed promotion, incentive and expansion decisions.
- **Room to grow:** the warehouse, automation, SOPs and training model let the function take on more clients, programs, sources and deliverables.

- **Client growth:** analytics became part of Pulse's client offering, with recurring analytics contracts and expansion into new client teams.

Tools and methods

DATA AND ENGINEERING

Microsoft SQL Server, T-SQL, stored procedures, SQL Server Agent, data warehousing and modeling, ETL design, Python automation, SFTP, email and API ingestion, validation and reconciliation, query optimization, performance monitoring

ANALYTICS AND MEASUREMENT

Executive KPI design, sales and launch reporting, promotion effectiveness, matched-control lift, quasi-experimental design, ROI measurement, forecasting, variance decomposition, KPI attribution, geospatial segmentation, incentive and pricing analysis

BI AND DECISION SUPPORT

Executive, sales, incentive and ROI dashboards; data-freshness indicators; operational monitoring; business review materials (Zoho Analytics, Tableau, Power BI)

LEADERSHIP AND OPERATIONS

Building the department, hiring and training, SOPs and governance, vendor selection, contract negotiation, executive presentations, incident response, SOC 2 support

From this work to Evident

Eight years of this work came down to a few principles: trusted data, deterministic computation, a clear plan for each analysis, evidence behind every insight, a method anyone can inspect, and output an executive can act on.

In 2025 I founded PhasePoint Analytics to build Evident on those principles. You ask a business question in plain words and get a finished analysis: a written Story

with charts, the check behind every figure, and a deck. Code computes every number; AI only chooses which findings matter and writes them up, and code checks every sentence it writes. Its test-against-a-control analysis is built for the question that decided real money at Pulse: did it work, beyond what would have happened anyway?

To learn more, see [how Evident works](#), or contact connornobert@gmail.com.

Exact sales, revenue and ROI figures, dealer names and client-internal KPIs are confidential and are left out.

The same question, answered in minutes.

Evident's test against a control reports the lift, lists the trust checks before anything runs, and opens every figure to its rows. You name the test and control groups; it doesn't pick a matched control for you yet.

[See how it works](#)

[Book a demo](#)