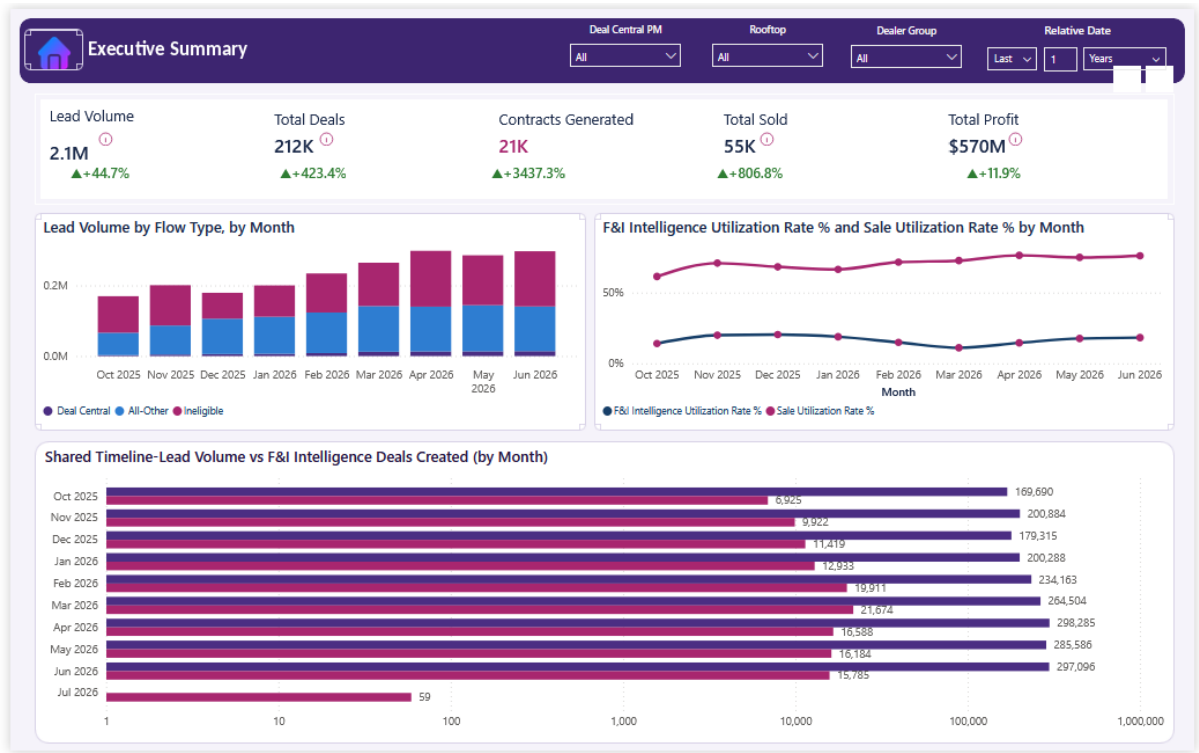


Unified Dealer Performance Analytics Platform

How three separate product reports for a leading US automotive software company became one trusted Power BI platform covering 4.8M+ leads, 173K+ deals and three dealer products.

4.8M+	173K+	145+	15	3
leads modeled	F&I deals analyzed	DAX measures	report pages	products unified



Executive Summary page: cross-product KPIs with year-over-year change, lead volume by flow type, F&I utilization trends and a shared lead-vs-deal timeline.

Project at a Glance

Client	A leading US automotive software company (name withheld under NDA)
Industry	Automotive retail technology: dealer software for sales, finance & insurance (F&I) and digital retailing
Products covered	Deal Central (lead and deal management), F&I Intelligence (finance & insurance workflow) and AMD Elite

My role	Senior Power BI Developer / Data Modeler: end-to-end ownership of model, DAX, report and documentation
Tools & stack	Power BI Desktop & Service, DAX, Power Query (M), Tabular Model / TMDL, calculation groups, row-level security, custom visuals, SQL views
Data scale	4.8M+ lead-level rows, 173K+ deal-level rows, daily dealer-status history across three product families
Deliverables	Unified semantic model, 15-page interactive report, non-closer analysis, migration report, data-gap specification, KPI glossary

1. Executive Summary

The client ran two separate Power BI reports for two of its dealer products, Deal Central and F&I Intelligence. Each had its own model, its own date logic and its own definitions of the same KPIs. Leadership could not see both products side by side, analysts duplicated work, and simple questions like "which dealers use both products?" had no answer.

I consolidated both into a single, governed semantic model with one shared calendar, one measure library of 145+ DAX measures and one 15-page report. During the project I also migrated the model to a new universal dealer source covering a third product (AMD Elite), caught and fixed a silent data regression, and delivered funnel and close-rate analysis that showed which tools drive dealer sales.

The result: one source of truth for product, sales and customer-success teams, with insights the business could act on immediately, such as finding that leads where the Desking tool was used closed at 49.0% versus 4.6% without it.

2. The Challenge

- **Two disconnected reports.** Deal Central and F&I lived in separate files with separate data models, so no one could compare or combine them.
- **Inconsistent KPIs.** The same metric could be calculated differently in each report, which eroded trust in the numbers.
- **No cross-product view.** The business could not tell which dealers used one, two or all three products, which is key for upsell and retention.
- **Large, granular data.** Millions of lead-level rows needed a model that stayed fast and easy for analysts to use.
- **A changing source system.** Mid-project, the core dealer table was retired and replaced by a new universal view covering three product families.
- **New questions from leadership.** The client needed to know why some dealers' usage was declining, where deals were dropping out of the funnel, and whether specific tools actually improved close rates.

3. My Approach

Phase	What I did
1. Discovery & audit	Reviewed both legacy reports page by page, mapped every KPI to its source, and documented definitions and differences.
2. Model design	Designed a star-schema semantic model with shared dimensions (date, dealer) and separate fact tables per product, so each product stays clean but can be analyzed together.
3. Measure library	Rebuilt all KPIs as explicit DAX measures in one hidden measures table, organized into display folders by product and topic.
4. Report build	Recreated every legacy page, then added new executive, trend, outreach and analysis pages plus a navigation hub.
5. Validation	Reconciled every number against the legacy reports and source data with DAX queries before release.
6. Iteration	Ran client feedback rounds, delivered new analysis on request, and documented every change.

4. The Solution

4.1 One Unified Semantic Model

- **Star schema** with a shared Date dimension (2022–2027) driving every page, so all time filters behave the same everywhere.
- **Separate fact tables** for Deal Central leads (4.8M+ rows) and F&I deals (detailed, summary and daily grains), connected through shared dealer keys.
- **Time Intelligence calculation group** with 7 items (Current, MTD, QTD, YTD, Prior Year, YoY %, MoM %). One measure now works in every time view, instead of writing seven versions of each KPI.
- **Governed measure layer:** implicit measures disabled model-wide so every number on every page comes from a reviewed, documented DAX measure.
- **Row-level security, hierarchies and perspectives** so each audience sees the right data at the right level of detail.

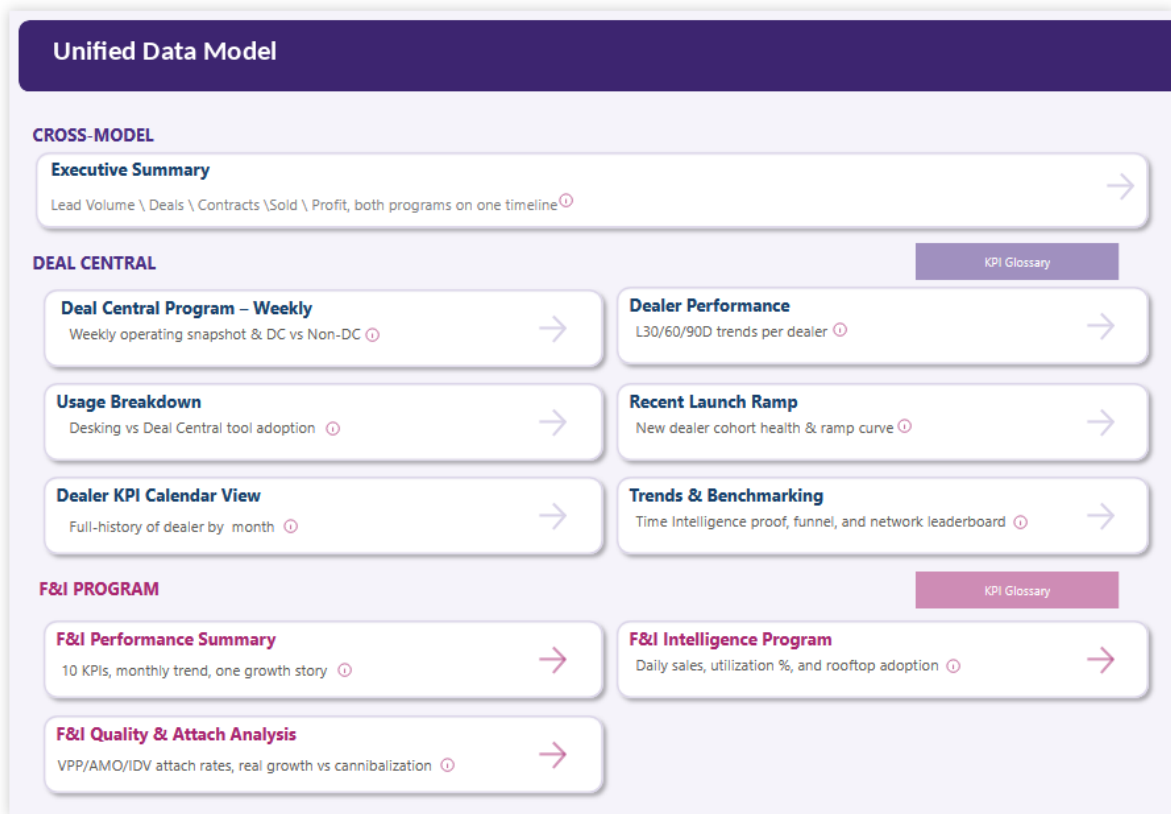
4.2 The 15-Page Interactive Report

Page	What it answers
Home (navigation hub)	One-click access to every page with a short description of each.
Executive Summary	Headline funnel KPIs with YoY % change, colored up/down

Page	What it answers
	indicators, and cross-product dealer overlap.
Deal Central Weekly	Weekly lead and sales performance with outcomes formatted for quick reading.
Dealer Performance	Dealer-level ranking and drill-down to spot leaders and laggards.
Usage Breakdown	Which Deal Central tools dealers actually use, and how often.
Recent Launch Ramp	How newly launched dealers ramp up by week and month since go-live.
Dealer KPI Calendar View	Day-by-day KPI heat view to spot patterns and gaps.
Trends & Benchmarking	Long-term trends and benchmarks across dealer groups.
PM Outreach – Declining Dealers	Dealers whose usage fell month over month, with where their funnel breaks, built for the Performance Manager team’s outreach.
F&I Intelligence Program	Program-level F&I adoption and activity.
Performance Summary	F&I deal outcomes and conversion KPIs.
Quality & Attach Analysis	ID verification, insurance verification and product attach rates.
F&I Non-Closer & Efficiency	Where F&I deals drop off and which steps correlate with closing.
DC Non-Closer & Efficiency	Where Deal Central leads drop off and which tools correlate with closing.
KPI Glossary & Report Links	Plain-English definition of every KPI and links to related reports.

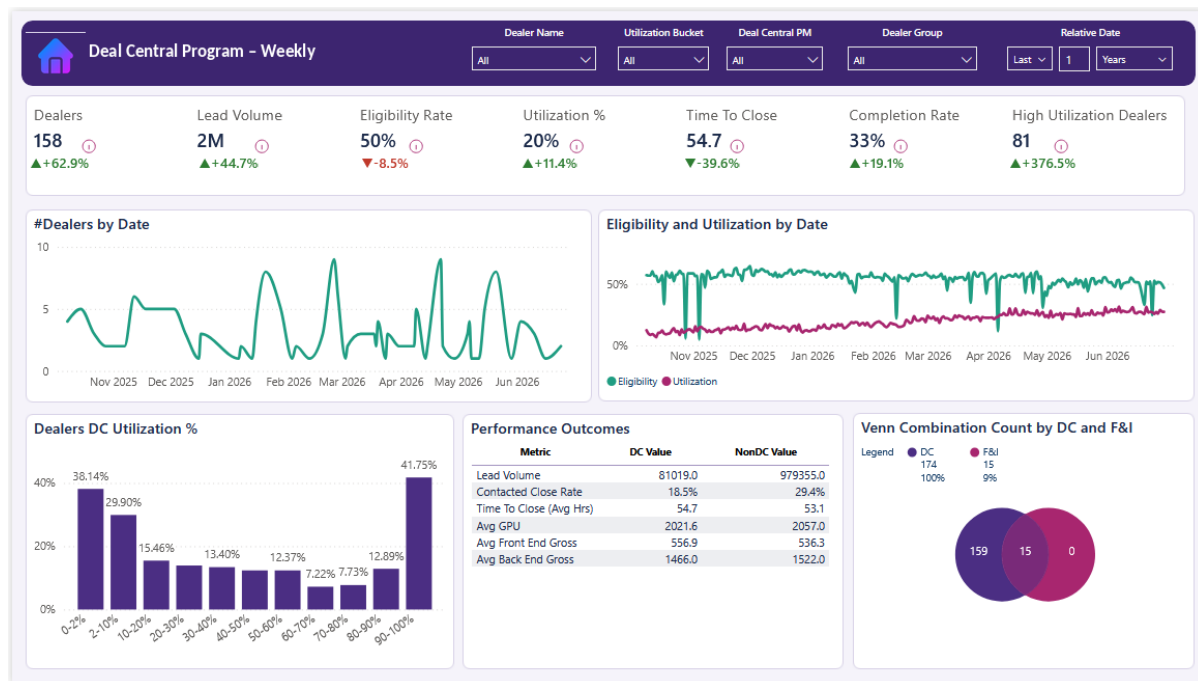
4.3 Inside the Dashboards

Every page follows the same layout so users learn it once: filters in the header bar, KPI cards with trend arrows across the top, trends in the middle and detail at the bottom. Client data and dealer names are kept confidential.



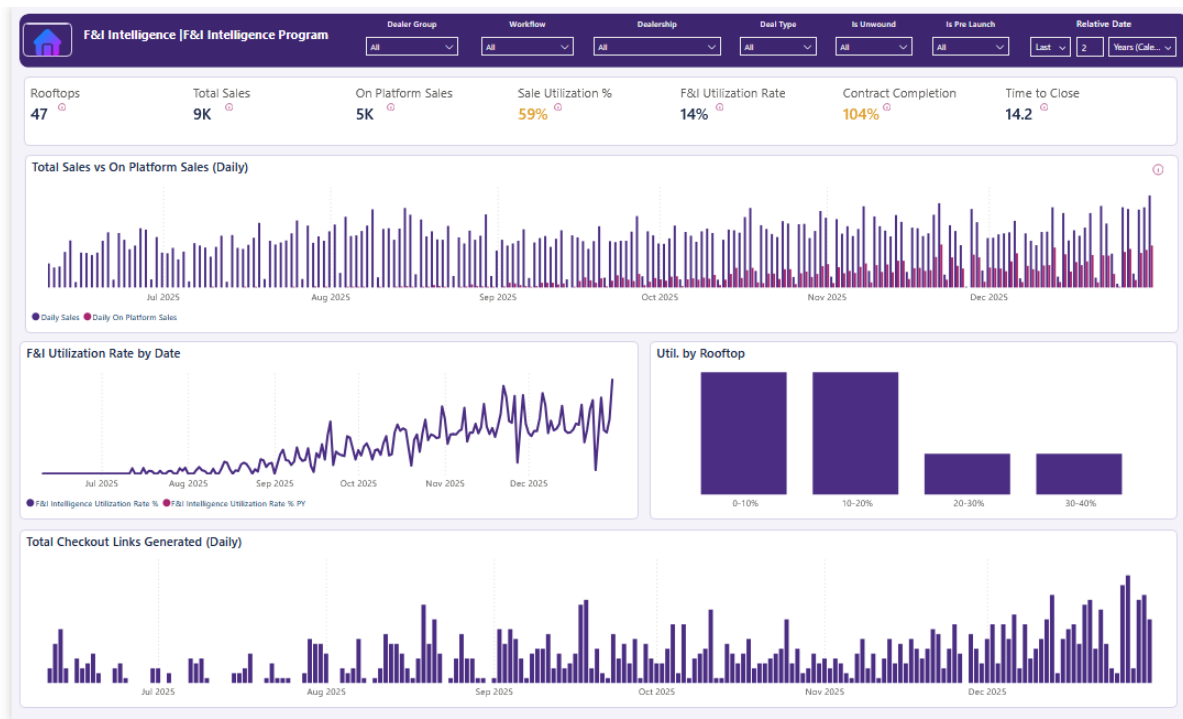
Home page navigation hub: every page grouped by program (Cross-Model, Deal Central, F&I), each with a one-line description, plus quick links to the KPI Glossary.

What makes this page work: a new user never gets lost in a 15-page report. They see what each page answers before they click, and the color coding (purple for Deal Central, pink for F&I) carries through every page.



Deal Central Weekly: 7 KPI cards with YoY indicators, eligibility vs. utilization trend, dealer utilization buckets, a DC vs. non-DC outcomes table with dynamic number formats, and the DC / F&I dealer overlap Venn.

What makes this page work: a manager can see in seconds whether utilization is rising, which dealers sit in the low-usage buckets, and how Deal Central users perform against non-users on close rate, time to close and gross profit.



F&I Intelligence Program: rooftops, total vs. on-platform sales, sale and F&I utilization, contract completion and time to close, with daily trends, utilization by rooftop and checkout link activity.

What makes this page work: daily-grain visuals show adoption growing over time, while the rooftop utilization buckets point the team straight to the dealerships that need support.

5. Technical Highlights

Real projects are never clean. These are the problems that would have broken the report, and how I solved them:

Problem	How I solved it
Core source table retired mid-project	Migrated the full model to the new universal dealer view (three product families): rebuilt 4 relationships, 22 measures, 5 calculated columns and 2 dependent tables, then validated exact matches against the old output (e.g. 450 = 450 dealers, 194 = 194 active).
Silent data regression	Found that "weeks / months since go-live" columns had gone blank for every row after the migration. Rebuilt them with a dedicated go-live lookup and confirmed the fix (max tenure back to 129 weeks / 30 months).
No shared dealer ID across products	About 37% of AMD Elite dealers had no common ID. Built a unified dealer key that falls back across identifiers, enabling a true three-way product overlap view.
Custom Venn visual would not render	Diagnosed that the visual needs 0/1 indicator fields, not text categories (contrary to its documentation), and built a binary indicator table so the three-product overlap displays correctly.
Mixed number formats in one table	Used dynamic format strings so percentages show as "19.7%" and counts as "84.6" in the same table, without duplicate measures.
Missing step-level funnel data	When step-level fields were blank, designed a reliable 4-stage funnel from the data that did exist, and documented the gap instead of showing misleading numbers.

6. Insights Delivered

Beyond dashboards, I delivered analysis that answered the client's business questions directly, built from individual deal- and lead-level data rather than estimates.

Finding	With	Without
Deal Central leads where Desking was used	49.0% close	4.6% close
Deal Central leads where Manager View was used	36.9% close	13.9% close

Finding	With	Without
Deal Central leads where Sales View was used	35.2% close	14.1% close
F&I deals using Insurance Verification	55.2% close	31.5% close
F&I deals using ID Verification	50.2% close	31.4% close
F&I deals with a protection product attached	38.0% close	29.8% close

- **Biggest single finding:** a 44-point close-rate gap tied to Desking usage, giving customer-success teams a clear, measurable behavior to promote with dealers.
- **Channel insight:** the highest-volume F&I workflow (eCommerce, 52K+ deals) had the lowest close rate at 4.0%, against 50%+ for the best workflows. This flagged a clear area for product investigation.
- **Funnel visibility:** Deal Central's overall close rate (14.5%) and where leads drop off, such as about 1.3M leads never contacted, were made visible for the first time.

Note: these are correlations, not proof of cause. Engaged dealers may simply use more tools. I stated this clearly in the report so leaders could make decisions with the right level of confidence.

7. Business Impact

- **One source of truth:** product, sales and customer-success teams now read the same numbers from the same definitions.
- **Faster answers:** questions that needed two reports and manual merging are now answered on one page with a slicer.
- **Targeted outreach:** the Performance Manager team gets a ready list of declining dealers and the exact point where each one's funnel breaks.
- **Cross-sell visibility:** a three-product overlap view shows which dealers use one, two or all three products.
- **Lower maintenance:** one model and one measure library instead of two. The calculation group removes hundreds of duplicate time-based measures.
- **Future-ready:** the model already runs on the new universal dealer source and is structured to add new products quickly.

8. Data Transparency

Good analytics means being honest about what the data can and cannot answer. When the client asked for the same close-rate analysis for AMD Elite, I confirmed that only dealer-level subscription data existed for that product, with no lead or deal records. Instead of producing misleading numbers, I:

- Explained the gap in plain English for non-technical stakeholders.

- Wrote a 6-point data specification the client's data team could hand directly to the system owner.
- Delivered a Migration Completion Status Report (DOCX and PDF) showing what was complete, what was blocked and why, and what sat outside Power BI.

9. Full List of Deliverables

Deliverable	Description
Unified semantic model	Star schema, shared Date table, 145+ DAX measures in organized folders, calculation group, RLS, perspectives.
15-page Power BI report	Executive, operational and analytical pages with a navigation hub.
Non-closer analysis pages	Funnel drop-off and tool-effectiveness analysis for both products, with HTML mockups for sign-off before build.
Source migration	Full move to the new universal dealer source with validation.
Migration status report	Client-ready DOCX and PDF report.
Data-gap specification	Requirements for the AMD Elite deal-level data needed to extend the analysis.
KPI glossary	Plain-English definitions for every KPI in the report.

10. Skills Demonstrated

Data modeling	Star schema design, multi-fact models, shared dimensions, relationship design, model consolidation
Advanced DAX	Calculation groups, time intelligence, dynamic format strings, context transition, LOOKUPVALUE patterns, KPI color logic
Report design	Executive storytelling, navigation hubs, drill-down, custom visuals, consistent layout and formatting
Governance	Explicit measures only, row-level security, perspectives, naming conventions, full documentation
Data quality	Reconciliation against legacy reports, regression detection, clear documentation of data gaps
Communication	Client-ready reports, plain-English findings, data specifications for technical and non-technical audiences

Have a Similar Challenge?

If your reports live in separate files, your KPIs don't match, or your Power BI model has grown hard to maintain, I can help you build one fast, trusted model your whole team relies on.

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