NEXTBEE CORPORATION

Technical Integration Reference

The Complete Engagement Orchestration Guide for Dealerships

Orchestrating DMS, CRM, and Reward Ecosystems

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1 Strategic Business Goals

The NextBee integration framework is designed to solve the “Fragmented Dealer Data” problem. Across the average dealership, customer records exist in at least four disconnected systems - the DMS, the CRM, the marketing platform, and the service scheduler. This fragmentation causes misattributed loyalty, missed upsell windows, and duplicated outreach that erodes brand trust. By creating a bidirectional flow between these existing systems, we achieve:

- **Operational Efficiency:** Eliminating manual reward entry by sales and service staff. When a Repair Order closes in the DMS, points are auto-credited to the customer’s loyalty profile within seconds - no staff intervention, no paper forms.
- **Revenue Growth:** Using real-time DMS data to trigger high-probability upsell alerts. A service visit for an oil change on a 48-month-old vehicle, for example, can automatically trigger a trade-in equity evaluation pushed to the salesperson’s CRM dashboard.
- **Unified Identity:** Ensuring a customer is recognized as the same individual in the CRM, the loyalty app, and the service bay. NextBee’s Identity Resolution Engine uses a composite key of Phone + Email + VIN to merge fragmented records into a single “Golden Record.”
- **Lifecycle Monetization:** Transforming each stage of the customer lifecycle - from first inquiry through years of service visits - into a measurable engagement opportunity with attributed revenue.
- **Churn Reduction:** Proactively identifying at-risk customers through engagement score decay and triggering win-back campaigns before they defect to a competing dealership.
- **Referral Amplification:** Converting satisfied service customers into an acquisition channel by automating referral invitations immediately after a positive service experience.

1.1 Connector Architecture Overview

The NextBee integration framework is organized around three named connectors, each serving a distinct business function:

Connector Name	Domain	Primary Business Function
The DMS Bridge	Transaction Intelligence	Converts passive transaction records (Repair Orders, Sales Contracts, Parts Invoices) into active engagement triggers.
The CRM Sync	Relationship Mastery	Enriches salesperson and BDC views with engagement scores, tier levels, and referral attribution; keeps marketing segments synchronized.
The Rewards Engine	Incentive Fulfillment	Manages secure issuance and redemption of value across digital and physical touchpoints - points, credits, gift cards, tier perks.

Table 1: Connector Architecture Summary

2 Connector 1: The DMS Bridge (Transaction Intelligence)

2.1 Business Goal

To convert passive transaction records - Repair Orders (ROs), Sales Contracts, Parts Counter Invoices, and Appointment Logs - into active engagement triggers that fire within seconds of a DMS event. The DMS Bridge is the data foundation upon which the entire loyalty ecosystem is built. Without accurate, timely transaction data, rewards cannot be issued, churn cannot be predicted, and the customer's lifecycle value remains invisible.

2.2 Supported Platforms: Detailed Profiles

2.2.1 CDK Global (CDK Drive)

- **Integration Method:** REST API via the Fortellis Automotive Commerce Exchange platform. NextBee registers as a Fortellis-certified application and consumes the CDK Drive Repair Order API (V2 Bundle), the CDK Drive Customer API, the CDK Drive Service Vehicle API, and the Data Extract API Bundle.

- **Authentication:** OAuth 2.0 client credentials flow. Dealer must provision API credentials via the Fortellis Developer Network and authorize NextBee's application.

- **Data Access:** Full lifecycle access to Repair Orders (create, read, update, monitor status changes). Customer search and retrieval by name, phone, or VIN. Service vehicle lookup including odometer and service history. Asynchronous event-driven data feeds for real-time notifications of RO status transitions.

- **Sync Frequency:** Near real-time via async event listeners (webhook-style). Batch data extracts available on configurable intervals (15-minute, hourly, daily) through the Data Extract API Bundle.

- **Key Capabilities:** Workshop management integration, parts pick-ticket access, payment settling status, appointment scheduling data. The V2 Bundle supports internal RO creation (e.g., PDI and vehicle inspections) without requiring a customer record.
- **Market Presence:** Serves approximately 30,000 retail locations globally. Dominant in large franchise groups and OEM-certified dealer networks.
- **Known Limitations:** Some legacy CDK installations (pre-Drive) may require the older STAR/StarConnect extraction method. NextBee supports both pathways with a compatibility adapter.

2.2.2 Dealertrack (Cox Automotive)

- **Integration Method:** SFTP-based flat file exports (primary) and API-based retrieval for newer Dealertrack DMS+ installations. Digital contracting workflows support DMS-to-lender data push which NextBee can intercept for deal-close events.
- **Authentication:** SFTP key-pair for file-based flows. API key + dealer ID for DMS+ REST endpoints.
- **Data Access:** Sales deal records (F&I data, contract status, vehicle details), service appointment scheduling, repair order summaries, customer demographic records.
- **Sync Frequency:** File-based exports typically run on dealer-configured schedules (hourly or daily). DMS+ API supports near real-time polling at 5-minute intervals.
- **Key Capabilities:** Strong F&I workflow integration - NextBee can detect deal funding status changes to trigger “Congratulations on your new vehicle” enrollment campaigns. Integrated with Cox Automotive’s VinSolutions CRM for cross-system data enrichment.
- **Market Presence:** Widely adopted among mid-size and independent dealerships across North America.
- **Known Limitations:** Flat file extracts may introduce latency (up to 60 minutes). NextBee recommends the DMS+ API pathway for time-sensitive reward triggers.

2.2.3 Reynolds and Reynolds (ERA-IGNITE / POWER)

- **Integration Method:** Reynolds Certified Interface (RCI) program. NextBee is an RCI-certified participant, enabling bi-directional, real-time data exchange through Reynolds’ proprietary secure interface layer.
- **Authentication:** RCI-managed authentication. Each dealer’s data connection is provisioned and audited by Reynolds’ data services team. Requires dealer-level authorization and Reynolds contract amendment.
- **Data Access:** Customer records, service history, RO details, vehicle ownership, sales transaction summaries, parts counter invoices. RCI interfaces are bi-directional - NextBee can both read DMS data and write loyalty metadata back.
- **Sync Frequency:** Real-time via RCI event-driven interface. Reynolds audits data changes and provides corruption detection and remediation if integration anomalies are detected.
- **Key Capabilities:** Deep integration with Reynolds’ FOCUS CRM module. Phone Alert integration enables screen pops with loyalty tier and points balance when a known customer calls the dealership. ERA-IGNITE’s unified sales/finance/service/parts architecture means a single RCI connection surfaces data from all departments.

- **Market Presence:** One of the three largest DMS vendors. Strong presence in large franchise groups, particularly domestic OEM brands. ERA-IGNITE is the flagship product; POWER serves smaller and independent dealers.
- **Known Limitations:** RCI certification requires a formal application, security audit, and compliance review. Initial setup timeline is 4–6 weeks. Reynolds maintains strict data governance - all integrations are audited during initial certification and subsequent recertifications.

2.2.4 Tekion (Automotive Retail Cloud)

- **Integration Method:** Open REST APIs via the Tekion Automotive Partner Cloud (APC). NextBee registers as an APC-certified Independent Software Vendor (ISV) and accesses Standard, Premium, and custom API tiers.
- **Authentication:** OAuth 2.0 via APC developer portal. Dealers activate the NextBee integration through the APC Integrations Hub with a self-serve activation flow.
- **Data Access:** Sales and F&I data, service ROs, inventory, parts, customer records, appointment scheduling, payment status (via Tekion Pay). Tekion's cloud-native architecture provides unlimited data storage and real-time API access.
- **Sync Frequency:** True real-time via webhooks and event subscriptions. Tekion's cloud-native architecture eliminates the batch-export model entirely.
- **Key Capabilities:** AI-driven upsell and cross-sell recommendations from Tekion's ML models can be combined with NextBee's engagement scoring. Tekion tracks household-level customer lifetime value natively. Supports contactless service check-in, online scheduling, and digital MPI (Multi-Point Inspection) workflows that NextBee can use to trigger loyalty actions at each touchpoint.
- **Market Presence:** Rapidly growing, particularly among forward-looking franchise groups and FCA-affiliated dealers (Tekion is FCA's preferred DMS provider). Cloud-native with ISO 27001, ISO 27701, SOC1, and SOC2 Type II compliance.
- **Known Limitations:** Newer platform - some dealers may still be migrating from legacy DMS providers. NextBee provides a migration bridge adapter for dealers transitioning from CDK or Reynolds to Tekion.

2.2.5 Autosoft (FLEX DMS)

- **Integration Method:** REST API with dealer-level API key provisioning. Autosoft's FLEX platform is cloud-based and provides an open integration architecture.
- **Authentication:** API key + dealer identifier. Provisioned through the Autosoft partner portal.
- **Data Access:** Sales deals, service ROs, customer records, vehicle inventory, parts invoices, accounting journal entries.
- **Sync Frequency:** Near real-time API polling (configurable 1–15 minute intervals) or webhook-based event subscription for RO status changes.
- **Key Capabilities:** Autosoft's focus on independent and smaller franchise dealers makes FLEX a cost-effective DMS target. Clean, modern API design with well-documented endpoints. Supports multi-rooftop configurations with centralized data access.

- **Market Presence:** Popular among independent dealers, small franchise groups, and BHPH (Buy Here Pay Here) operations.
- **Known Limitations:** Smaller ecosystem of third-party integrations compared to CDK or Reynolds. NextBee may need to perform additional field mapping for non-standard service code schemas.

2.2.6 Quorum Information Technologies (XSellerator / DealerMine)

- **Integration Method:** API-based integration with Quorum's XSellerator DMS and DealerMine CRM/service retention platform. Flat file exports available as a fallback.
- **Authentication:** API token with dealer-level scoping.
- **Data Access:** Service ROs, customer records, vehicle history, appointment scheduling, declined service tracking (a key feature for follow-up campaigns), recall status.
- **Sync Frequency:** API polling on configurable intervals. DealerMine's service retention module provides event-based notifications for service-due triggers.
- **Key Capabilities:** DealerMine's built-in service retention marketing can be layered with NextBee's loyalty program. Quorum tracks declined services at the RO level, enabling NextBee to trigger "Complete your recommended service for bonus points" follow-up campaigns.
- **Market Presence:** Strong presence in Canadian dealership market and growing in the U.S. among mid-size groups.
- **Known Limitations:** API documentation may require direct partnership coordination with Quorum's integration team.

2.2.7 PBS Systems

- **Integration Method:** Flat file (CSV/XML) export via scheduled jobs. PBS provides configurable data export templates for service, sales, and customer records.
- **Authentication:** Secure FTP with dealer-provisioned credentials.
- **Data Access:** Service ROs, sales contracts, customer demographic records, vehicle records, parts invoices.
- **Sync Frequency:** Batch exports on configurable schedules (minimum 30 minutes, typically hourly or daily).
- **Key Capabilities:** PBS is a well-established Canadian DMS with strong accounting and service management modules. NextBee's adapter normalizes PBS's data schema to the NextBee canonical model.
- **Market Presence:** Dominant in the Canadian dealership market, particularly among franchise dealers.
- **Known Limitations:** File-based integration introduces latency. Real-time reward triggers require NextBee's file-watcher daemon to poll the SFTP directory at sub-minute intervals.

2.3 Complete Data Schema and Technical Field Specification

2.3.1 DMS Transaction Data Bridge Summary

Field Name	Type	Allowed Filters	Transformation Logic
`RO_Number`	String	UniqueID, Non-Null	Primary Key for idempotency (prevents double-rewarding).
`Advisor_ID`	String	List-Match, Exclude	Used to trigger internal staff incentive contests.
`Labor_Net`	Decimal	>$0.00	Strips taxes, shop supplies, and sublet charges.
`Service_Code`	Enum	Regex, List-Value	Maps codes like *LOBP* to *Maintenance Tier 1*.
`Odometer`	Integer	>LastValue	Rejects entries where mileage is lower than previous history.
`VIN`	String	17-Char Regex	Normalizes casing; performs Checksum validation.
`Deal_Type`	String	[New, Used, Lease]	Determines specific purchase bonus logic (e.g., Lease vs. Finance).

Table 2: DMS Data Field Specification Overview

2.3.2 Service / Repair Order Fields

Field Name	Type	Required	Allowed Filters	Transformation Logic
`RO_Number`	String	Yes	Exact, Range	Unique identifier. Prefix with dealer code for multi-rooftop.
`RO_Open_Date`	DateTime	Yes	Before, After, Between	Convert to UTC; calculate days-open.
`RO_Close_Date`	DateTime	No	Before, After, Between	Null until closed. Triggers reward issuance on population.
`RO_Status`	Enum	Yes	[Open, In-Progress, Closed-Paid, Closed-Warranty, Voided, No-Show]	Trigger rewards only on `Closed-Paid` or `Closed-Warranty`.
`RO_Total`	Float	Yes	>, <, Between, Equals	Strip tax and shop supplies; net labor + parts = rewardable amount.
`RO_Labor_Amount`	Float	No	>, <, Between	Isolate labor dollars for service credit calculations.
`RO_Parts_Amount`	Float	No	>, <, Between	Isolate parts dollars; exclude fluids under $5 from reward calc.

Field Name	Type	Required	Allowed Filters	Transformation Logic
`RO_Tax_Amount`	Float	No	None	Excluded from reward calculations. Stored for audit trail.
`RO_Discount_Amount`	Float	No	None	Deducted before reward calculation. Prevents double-dipping on coupon + points.
`Service_Code`	String	Yes	Regex Match, Exact, List	Map DMS op-code (e.g., LOBP) to NextBee canonical service name ("Oil Change").
`Service_Category`	Enum	No	[Maintenance, Repair, Recall, Warranty, Body, Detail, Tire]	Derived from Service_Code mapping. Used for segment-based reward tiers.
`Technician_ID`	String	No	Exact, List	Map to internal staff records. Used for service advisor performance reports.
`Advisor_ID`	String	No	Exact, List	Advisor who wrote the RO. Used for advisor-level engagement attribution.
`Customer_ID`	String	Yes	Exact	Foreign key to the dealership's customer master record.
`VIN`	String	Yes	Length(17), Prefix, Regex	Verify 17-char ISO 3779 format; decode WMI for Year/Make/Model. Cross-reference with customer ownership.
`Odometer`	Integer	Yes	>, <, Between, Increment Check	Calculate avg daily mileage from prior visits. Flag anomalies (>500 mi/day).
`Mileage_In`	Integer	No	Increment Check	Odometer at vehicle drop-off. Must be >= prior visit's `Mileage_Out`.
`Mileage_Out`	Integer	No	None	Odometer at vehicle pickup. Must be >= `Mileage_In`.
`Appointment_ID`	String	No	Exact	Links RO to a prior appointment. Enables no-show detection.
`Declined_Services`	JSON Array	No	Contains, Count	Array of op-codes the customer declined. Used for follow-up campaigns.
`Promised_Time`	DateTime	No	Before, After	Used to measure service punctuality for customer satisfaction scoring.

Field Name	Type	Required	Allowed Filters	Transformation Logic
`Actual_Completion`	DateTime	No	Before, After	Compared against `Promised_Time` for SLA compliance.
`Warranty_Flag`	Boolean	No	True/False	If True, reward calculation may use a reduced multiplier or fixed bonus.
`Customer_Pay_Flag`	Boolean	No	True/False	If True, full reward multiplier applies.
`Internal_Flag`	Boolean	No	True/False	If True (e.g., PDI, lot damage), exclude from customer-facing rewards.
`Coupon_Code`	String	No	Exact, Regex	Track which marketing offers drove the visit. Attribute revenue to campaign.
`Source_DMS`	Enum	No	[CDK, Dealertrack, Reynolds, Tekion, Autosoft, Quorum, PBS]	Auto-populated by the adapter. Used for normalization routing.

Table 3: DMS Service / Repair Order Field Specification

2.3.3 Sales / Deal Fields

Field Name	Type	Required	Allowed Filters	Transformation Logic
`Deal_Number`	String	Yes	Exact, Range	Unique deal identifier. Prefix with dealer code.
`Deal_Status`	Enum	Yes	[Pending, Funded, Delivered, Unwound, Cancelled]	Trigger rewards only on `Funded` or `Delivered`.
`Deal_Type`	Enum	Yes	[New, Used, CPO, Lease, Fleet, Wholesale]	Reward tiers may vary by type (e.g., 2x points on New).
`Deal_Date`	DateTime	Yes	Before, After, Between	Convert to UTC. Used for anniversary campaigns.
`Delivery_Date`	DateTime	No	Before, After	Triggers "Welcome" enrollment flow.
`Sale_Price`	Float	Yes	>, <, Between	Gross sale price before trade and incentives.
`Trade_In_VIN`	String	No	Length(17), Prefix	If present, triggers trade-in loyalty credit and vehicle lifecycle tracking.
`Trade_In_Value`	Float	No	>, <, Between	Equity calculation for future trade-in alerts.
`F_I_Products`	JSON Array	No	Contains, Count	Array of F&I products sold (warranty, GAP, maintenance plan). Reward based on product type.

Field Name	Type	Required	Allowed Filters	Transformation Logic
`Salesperson_ID`	String	No	Exact, List	Attribute the sale for referral commission and leaderboard tracking.
`F_I_Manager_ID`	String	No	Exact, List	F&I manager who closed the deal.
`Buyer_Customer_ID`	String	Yes	Exact	Foreign key to the customer master record.
`Co_Buyer_ID`	String	No	Exact	Secondary buyer. Used for household-level loyalty grouping.
`Lender_Name`	String	No	Exact, List	Financing lender. Used for lender-specific co-branded reward programs.
`New_VIN`	String	Yes	Length(17), Prefix	VIN of the sold vehicle. Decode for Year/Make/Model.
`Stock_Number`	String	No	Exact	Dealer's internal inventory reference.
`OEM_Incentives`	Float	No	None	OEM rebates/incentives. Excluded from reward-eligible amount.
`Down_Payment`	Float	No	None	Customer's upfront payment. May factor into tier qualification.
`Monthly_Payment`	Float	No	None	Used for affordability-based follow-up campaigns.
`Lease_End_Date`	Date	No	Before, After, Between	Critical for lease maturity engagement campaigns.
`Source_DMS`	Enum	No	Auto	Auto-populated by adapter.

Table 4: DMS Sales / Deal Field Specification

2.3.4 Customer Master Fields (DMS-Sourced)

Field Name	Type	Required	Allowed Filters	Transformation Logic
`Customer_ID`	String	Yes	Exact	Primary key from DMS.
`First_Name`	String	Yes	Exact, Fuzzy	Title-case normalization; trim whitespace.
`Last_Name`	String	Yes	Exact, Fuzzy	Title-case normalization; trim whitespace.
`Email`	String	Yes	Exact, Domain	Validate format (RFC 5322). Lowercase. Used in identity resolution composite key.

Field Name	Type	Required	Allowed Filters	Transformation Logic
`Phone_Primary`	String	Yes	Exact, Area Code	Normalize to E.164 format (+1XXXXXXXXXX). Used in identity resolution composite key.
`Phone_Secondary`	String	No	Exact	Normalize to E.164.
`Address_Street`	String	No	Contains	Standardize via USPS CASS validation.
`Address_City`	String	No	Exact	Standardize against USPS database.
`Address_State`	String(2)	No	Exact, List	Two-letter state abbreviation.
`Address_Zip`	String	No	Exact, Range, Prefix	Validate 5-digit or ZIP+4. Used for geo-targeted campaigns.
`Date_of_Birth`	Date	No	Before, After, Month	Used for birthday reward campaigns. Validate age >16.
`Preferred_Contact`	Enum	No	[Email, SMS, Phone, Mail]	Determines default communication channel for NextBee campaigns.
`Opt_In_Email`	Boolean	No	True/False	Governs email campaign eligibility. Respect CAN-SPAM.
`Opt_In_SMS`	Boolean	No	True/False	Governs SMS campaign eligibility. Respect TCPA.
`Customer_Since`	Date	No	Before, After	Date of first DMS record. Used for tenure-based tier qualification.
`Total_Vehicles_Owned`	Integer	No	>, <	Count of distinct VINs associated. Multi-vehicle owners get premium tier consideration.
`Household_ID`	String	No	Exact	Groups family members. Used for household-level CLV and shared reward pools.
`Source_DMS`	Enum	No	Auto	Auto-populated by adapter.

Table 5: DMS Customer Master Field Specification

2.3.5 Vehicle Record Fields

Field Name	Type	Required	Allowed Filters	Transformation Logic
`VIN`	String(17)	Yes	Exact, Prefix, Checksum	ISO 3779 validation. Decode WMI (positions 1–3) for manufacturer.
`Year`	Integer(4)	Yes	Exact, Range	Decoded from VIN position 10 (model year).

Field Name	Type	Required	Allowed Filters	Transformation Logic
`Make`	String	Yes	Exact, List	Decoded from VIN WMI. Normalized to canonical list.
`Model`	String	Yes	Exact, List, Fuzzy	Decoded from VIN. Normalized against OEM model catalogs.
`Trim`	String	No	Exact, List	Extracted from VIN positions 4–8 (VDS).
`Engine_Type`	Enum	No	[Gas, Diesel, Hybrid, PHEV, BEV, Hydrogen]	Decoded from VIN. Used for service-type-specific campaigns.
`Color_Exterior`	String	No	Exact, List	Stored from DMS deal record.
`Color_Interior`	String	No	Exact, List	Stored from DMS deal record.
`Current_Odometer`	Integer	Yes	>, <, Between	Updated on each service visit. Calculate daily avg mileage.
`Purchase_Date`	Date	No	Before, After, Between	Date the vehicle was sold to this customer at this dealership.
`Purchase_Type`	Enum	No	[New, Used, CPO, Lease]	Determines lifecycle campaign track.
`Lease_End_Date`	Date	No	Before, After	If leased, used to trigger maturity campaigns 90/60/30 days prior.
`Warranty_Expiry`	Date	No	Before, After	Triggers "Warranty expiring - consider an extended plan" campaigns.
`Last_Service_Date`	Date	No	Before, After	Used to calculate days-since-last-service for churn scoring.
`Next_Service_Due`	Date	No	Before, After	Calculated from OEM maintenance schedule + mileage projection.
`Recall_Status`	JSON Array	No	Contains, Count	Active recall campaigns associated with this VIN from NHTSA data.
`Ownership_Status`	Enum	No	[Active, Traded-In, Sold-Private, Totaled]	Governs whether this vehicle is eligible for service campaigns.
`Source_DMS`	Enum	No	Auto	Auto-populated by adapter.

Table 6: DMS Vehicle Record Field Specification

2.3.6 Parts Counter Invoice Fields

Field Name	Type	Required	Allowed Filters	Transformation Logic
`Invoice_Number`	String	Yes	Exact, Range	Unique parts invoice ID.
`Invoice_Date`	DateTime	Yes	Before, After, Between	Convert to UTC.
`Customer_ID`	String	Yes	Exact	Links to customer master.
`Line_Items`	JSON Array	Yes	Contains, Count	Array of parts with part number, description, qty, unit price, extended price.
`Invoice_Total`	Float	Yes	>, <, Between	Sum of line items after discounts. Rewardable amount.
`Invoice_Type`	Enum	Yes	[Counter, Wholesale, Internal, Warranty]	Only `Counter` is reward-eligible by default.
`Source_DMS`	Enum	No	Auto	Auto-populated.

Table 7: DMS Parts Counter Invoice Field Specification

2.4 Supported Scenarios (DMS Bridge)

2.4.1 Service Lane Scenarios

- **Service Lane Loyalty (Auto-Points):** When an RO closes with a status of `Closed-Paid`, the system calculates the reward-eligible amount (`RO_Total` minus tax, shop supplies, and any coupon discounts) and issues points at the configured earn rate (e.g., 1 point per $1 spent). Points appear in the customer's loyalty app within 60 seconds.
- **First-Visit Enrollment:** When a new VIN appears in the DMS for the first time (no prior RO or deal record exists for this VIN + Customer_ID combination), trigger a "Welcome to [Dealer Name] Rewards" mobile app invitation via SMS with a one-time signup bonus (e.g., 100 points).
- **High-Value Service Recognition:** When an RO closes with `RO_Total` exceeding a configurable threshold (default: $500), trigger a special "Thank You" communication with an elevated reward - such as a referral credit or a complimentary car wash voucher.
- **Declined Service Follow-Up:** When the `Declined_Services` array is populated on a closed RO, schedule a follow-up SMS/email 48 hours later offering bonus points (e.g., "Complete your brake inspection this month and earn 50 bonus points").
- **Missed Appointment Recovery:** When an RO status is set to `No-Show` (or when an `Appointment_ID` exists without a corresponding RO within 24 hours), send a "We missed you - reschedule for 50 bonus points" SMS.
- **Service Frequency Bonus:** Track the number of service visits per customer per rolling 12-month period. When the count reaches a configurable milestone (e.g., 4th visit), issue a milestone bonus (e.g., 200 bonus points + "Loyal Customer" badge).
- **Oil Change Cadence:** Calculate projected next oil change date based on `Service_Code` (oil change) + `Odometer` + average daily mileage. Send a pre-service reminder 2 weeks before the projected date with a loyalty incentive.
- **Tire Season Campaign:** When the calendar enters a configurable "tire season" window (e.g., October–November for winter tires), query all active vehicles with `Last_Service_Date` for tire service older than 12 months and trigger a seasonal tire bonus offer.

- **Warranty-to-Customer-Pay Transition:** When `Warranty_Flag` is True on an RO but the vehicle's `Warranty_Expiry` date is within 90 days, trigger a "Your warranty is ending soon - lock in our loyalty service rates" campaign.
- **Recall Compliance Incentive:** When `Recall_Status` contains open recalls for a VIN, send a "Complete your safety recall and earn 75 bonus points" notification. Track recall completion via subsequent ROs with the recall-specific `Service_Code`.
- **Multi-Point Inspection Upsell:** When an MPI (Multi-Point Inspection) result is attached to an RO with amber or red findings, automatically send the customer a prioritized digital report with bonus point incentives for scheduling the recommended work within 30 days.
- **Service Advisor Gamification:** Track which `Advisor_ID` is associated with the most loyalty-earning ROs per month. Feed data into an internal leaderboard to incentivize service advisors to promote the loyalty program.

2.4.2 Sales Scenarios

- **Vehicle Purchase Enrollment:** When a deal reaches `Funded` or `Delivered` status, auto-enroll the buyer in the loyalty program at a configurable starting tier (e.g., Silver) with a welcome bonus (e.g., 500 points).
- **Trade-In Equity Alert:** Calculate vehicle age from `Purchase_Date` and current mileage from `Current_Odometer`. When age exceeds 48 months or mileage exceeds a configurable threshold (e.g., 60,000 miles), trigger a proactive trade-in equity evaluation offer pushed to the customer and the assigned salesperson.
- **Lease Maturity Engagement:** Beginning 90 days before `Lease_End_Date`, initiate a multi-touch campaign: 90-day awareness email, 60-day consultation invitation, 30-day urgency SMS with loyalty incentive for returning to the same dealership.
- **Referral-to-Sale Reward:** When a new deal is created and the `Referral_Source` (from the CRM Sync connector) attributes it to an existing loyalty member, issue the referrer a high-value reward (e.g., $200 service credit or 2,000 points) upon deal funding.
- **Anniversary Campaign:** On each anniversary of the `Deal_Date`, send a personalized "Happy [N]-Year Anniversary" message with a service discount or bonus points.
- **F&I Product Activation:** When `F_I_Products` includes a prepaid maintenance plan, auto-link the plan to the customer's loyalty profile so that each maintenance visit tracked through the DMS Bridge also redeems a prepaid service credit.
- **Second Vehicle Purchase:** When a customer with an existing loyalty profile completes a second vehicle purchase, apply a "Multi-Vehicle Owner" tier upgrade or bonus multiplier.
- **Conquest / Be-Back Campaign:** When a deal is created for a customer whose last purchase was at a *different* dealership (detected via VIN history), trigger a "Welcome Back" campaign with enhanced onboarding rewards.
- **Salesperson Follow-Up Automation:** 7 days after vehicle delivery, trigger a "How are you enjoying your new [Make Model]?" email from the assigned `Salesperson_ID` with a review request link and a referral invitation.

2.4.3 Parts Counter Scenarios

- **Parts Purchase Points:** Award loyalty points on qualifying parts counter invoices (type = `Counter`) at a configurable rate (e.g., 1 point per $2 spent on parts).
- **Accessory Upsell:** When a new vehicle sale is recorded and the vehicle model has a known accessories catalog, trigger a "Personalize your new [Model] - earn double points on accessories this month" email within 14 days of delivery.
- **DIY Loyalty:** Recognize customers who purchase parts over the counter (without an associated RO) as DIY enthusiasts and segment them for targeted parts-specific promotions and educational content.

2.5 Fraud and Error Safety (DMS Bridge)

Fraud Prevention Protocols

The DMS Bridge implements multiple layers of fraud detection to ensure the integrity of loyalty reward issuance:

- **Duplicate RO Check:** The system generates a SHA-256 hash of `RO_Number` + `VIN` + `Dealer_Code`. If a matching hash exists in the rewards ledger within the last 180 days, the reward issuance is rejected and an alert is sent to the dealer admin.
- **VIN Validation (Structural):** Every VIN is validated against the ISO 3779 standard: 17-character length check, check-digit verification (position 9), and WMI (World Manufacturer Identifier) lookup against NHTSA's VIN decoder API to confirm the vehicle is genuine and the Year/Make/Model decode is accurate.
- **VIN Ownership Cross-Reference:** The `VIN` on the RO is cross-referenced with the `Customer_ID` on the RO. If the customer does not have an ownership record for that VIN in the NextBee system, the reward is held for manual review. This prevents staff from attaching loyalty numbers to walk-in customers' ROs.
- **Odometer Anomaly Detection:** Each new odometer reading is compared against the vehicle's prior reading. If the new reading is lower (rollback) or implies more than 500 miles per day since the last visit, the record is flagged for review.
- **Velocity Limits:** Alerts are triggered if a single VIN records more than 3 service visits within 48 hours, or more than 8 visits within 30 days. These thresholds are configurable per dealer.
- **RO Amount Ceiling:** If `RO_Total` exceeds a configurable ceiling (default: $5,000 for customer-pay), the reward issuance is paused for manager approval before points are credited.
- **Internal RO Exclusion:** All ROs flagged with `Internal_Flag` = True (e.g., PDI, lot damage, demo vehicle service) are automatically excluded from customer-facing reward calculations.
- **Ghost Customer Detection:** The system checks for "ghost" customer records - those with no valid phone number, no valid email, and no purchase/service history beyond the current transaction. Ghost records are quarantined and do not receive loyalty enrollment.
- **Staff Transaction Filtering:** Transactions where the `Customer_ID` matches a known staff member record (based on `Technician_ID` or `Advisor_ID` lists) are flagged for separate processing under the dealer's internal rewards policy.
- **Deal Unwind Clawback:** If a deal status changes from `Funded` to `Unwound` or `Cancelled`, any rewards issued for that deal are automatically reversed and the customer is notified.
- **Coupon Stacking Prevention:** If a `Coupon_Code` is present on an RO and a loyalty redemption is also applied to the same RO, the system enforces configurable stacking rules (e.g., allow coupon OR loyalty redemption, not both; or allow both but cap total discount at 25%).
- **IP and Geo-Validation:** For mobile app check-ins (QR code scans), verify that the customer's device GPS coordinates are within a configurable radius (default: 500 meters) of the dealership's physical address. Reject check-ins from outside the geofence.
- **Timestamp Validation:** RO open/close timestamps are validated against business hours. ROs closed outside of business hours (e.g., 2:00 AM on a Sunday) are flagged for review unless the dealer has configured after-hours drop-off processing.

DMS Bridge – Fraud Configuration Parameters

```
# - Duplicate Detection -
DUPLICATE_HASH_ALGO = "SHA-256"
DUPLICATE_HASH_FIELDS = ["RO_Number", "VIN", "Dealer_Code"]
DUPLICATE_LOOKBACK_DAYS = 180

# - VIN Validation -
VIN_LENGTH_CHECK = True
VIN_CHECKDIGIT_VERIFY = True
VIN_WMI_LOOKUP = True # Cross-reference NHTSA VIN decoder
VIN_OWNERSHIP_CROSSREF = True

# - Velocity Limits -
MAX_VISITS_PER_VIN_48H = 3
MAX_VISITS_PER_VIN_30D = 8
MAX_RO_TOTAL_AUTO_APPROVE = 5000.00

# - Odometer -
ODOMETER_MAX_DAILY_MILES = 500
ODOMETER_ROLLBACK_BLOCK = True

# - Geofence (Mobile Check-In) -
GEOFENCE_RADIUS_METERS = 500
GEOFENCE_ENABLED = True

# - Internal Exclusions -
EXCLUDE_INTERNAL_RO = True
EXCLUDE_STAFF_TRANSACTIONS = True
STAFF_ID_SOURCES = ["Technician_ID", "Advisor_ID"]
```

3 Connector 2: The CRM Sync (Relationship Mastery)

3.1 Business Goal

To enrich the salesperson's, BDC agent's, and service advisor's real-time view with "Engagement Scores," loyalty tier levels, referral attribution, and redeemable point balances - ensuring that every customer-facing interaction is informed by the full loyalty context. Simultaneously, to ensure marketing segmentation in the CRM is always synchronized with the customer's current loyalty status, enabling hyper-targeted outreach based on tier, engagement recency, and lifecycle stage.

3.2 Supported Platforms: Detailed Profiles

3.2.1 Salesforce (Sales Cloud / Service Cloud)

- **Integration Method:** Salesforce Connected App using OAuth 2.0 Web Server Flow. NextBee installs a managed package containing custom objects, custom fields, Apex triggers, and Lightning Web Components (LWCs) into the dealer's Salesforce org.
- **Authentication:** OAuth 2.0 authorization code grant. Scoped to API access, custom object read/write, and platform events.
- **Data Pushed to CRM:** `NextBee_Points_Balance` (Integer), `NextBee_Tier_Level` (Picklist: Bronze/Silver/Gold/Platinum/Diamond), `NextBee_Engagement_Score` (Integer 0–100), `NextBee_Referra` (String), `NextBee_Referral_Count` (Integer), `NextBee_Last_Activity_Date` (DateTime), `NextBee_Lifeti` (Currency), `NextBee_Lifetime_Rewards_Redeemed` (Currency), `NextBee_Churn_Risk` (Picklist: Low/Medium/High/Critical).

- **Data Pulled from CRM:** Lead source, opportunity stage, campaign membership, task/activity history, email engagement metrics.
- **Sync Frequency:** Real-time via Salesforce Platform Events for critical updates (tier changes, reward redemptions). Batch sync every 15 minutes for engagement score recalculations.
- **Key Capabilities:** Salesforce Flow/Process Builder triggers can fire based on NextBee custom field changes - e.g., auto-create a Task for the Service Manager when `NextBee_Churn_Risk` changes to “Critical.” Lightning dashboard components display loyalty KPIs alongside CRM pipeline data. Salesforce Marketing Cloud integration enables `Points_Balance` as a merge tag in Journey Builder email campaigns.
- **Market Presence:** Enterprise-grade CRM used by large dealer groups with multi-rooftop operations.

3.2.2 HubSpot (Marketing Hub / Sales Hub / Service Hub)

- **Integration Method:** HubSpot Private App (OAuth 2.0) with custom properties and workflow extensions. NextBee creates custom contact properties and custom objects in the dealer’s HubSpot portal.
- **Authentication:** OAuth 2.0 via HubSpot developer portal. Scoped to contacts, custom objects, workflows, and timeline events.
- **Data Pushed to CRM:** Same loyalty custom fields as Salesforce (adapted to HubSpot property types): `nextbee_points_balance`, `nextbee_tier_level`, `nextbee_engagement_score`, `nextbee_refer` `nextbee_last_activity_date`, `nextbee_churn_risk`.
- **Data Pulled from CRM:** Lifecycle stage, deal stage, marketing email engagement (open/click rates), form submissions, page views.
- **Sync Frequency:** Near real-time via HubSpot Webhooks for property change events. Batch sync for full contact list reconciliation on a configurable schedule (hourly default).
- **Key Capabilities:** HubSpot Workflows can be triggered by NextBee property changes - e.g., “When `nextbee_tier_level` changes to Platinum, enroll in VIP Welcome Email Sequence.” `Points_Balance` is usable as a personalization token in marketing emails. Smart Lists can segment by tier, engagement score range, or churn risk.
- **Market Presence:** Popular among mid-size dealerships and dealer groups that prioritize marketing automation alongside CRM.

3.2.3 Elead CRM (CDK-owned)

- **Integration Method:** Elead API (REST) with dealer-level API credentials. NextBee writes loyalty data into Elead’s custom fields on the customer record and reads lead/opportunity data.
- **Authentication:** API key + dealer ID. Provisioned through CDK/Elead partner integration program.
- **Data Pushed to CRM:** Loyalty tier, points balance, last activity date, referral source, engagement score.
- **Data Pulled from CRM:** Lead source, appointment history, showroom visit tracking, call logs, email communication history.

- **Sync Frequency:** Polling-based at 5–15 minute intervals.
- **Key Capabilities:** Elead's native desking and lead management tools display NextBee loyalty badges alongside customer records, allowing BDC agents and sales reps to personalize their pitch (e.g., "I see you're a Platinum member - let me make sure you get our best loyalty pricing").
- **Market Presence:** Widely used by CDK-ecosystem dealerships, particularly domestic OEM franchises.

3.2.4 DriveCentric

- **Integration Method:** REST API with OAuth-based authentication. DriveCentric provides open API documentation for partner integrations.
- **Authentication:** OAuth 2.0 client credentials.
- **Data Pushed to CRM:** Loyalty custom fields on the contact record.
- **Data Pulled from CRM:** Video messaging engagement data (a DriveCentric differentiator), lead source, showroom visit logs, communication history.
- **Sync Frequency:** Near real-time via webhook event subscriptions.
- **Key Capabilities:** DriveCentric's video-first communication model pairs well with NextBee's engagement scoring - video views and video responses can feed into the engagement score calculation.
- **Market Presence:** Growing adoption among tech-forward dealerships that prioritize video-based customer engagement.

3.2.5 ProMax

- **Integration Method:** API-based integration (REST) with ProMax's partner program credentials.
- **Authentication:** API key with dealer-level scoping.
- **Data Pushed to CRM:** Loyalty custom fields mirroring the standard NextBee schema.
- **Data Pulled from CRM:** Lead management data, desking worksheets, marketing campaign results, BDC call outcomes.
- **Sync Frequency:** Polling at configurable intervals (5–30 minutes).
- **Key Capabilities:** ProMax's all-in-one approach (CRM + desking + marketing + BDC tools) means a single integration surfaces loyalty data across multiple dealer workflows. ProMax's equity mining tools can be cross-referenced with NextBee's trade-in equity alerts.
- **Market Presence:** Popular among mid-size franchise and independent dealers seeking an all-in-one platform.

3.2.6 VinSolutions (Cox Automotive)

- **Integration Method:** VinSolutions Connect API (REST). Cox Automotive partner certification required.
- **Authentication:** OAuth 2.0 via Cox Automotive developer portal.
- **Data Pushed to CRM:** Loyalty custom fields on the VinSolutions contact record.
- **Data Pulled from CRM:** Lead source, ILM (Internet Lead Management) activity, automated action plan progress, desking data, email/SMS communication logs.
- **Sync Frequency:** Near real-time via event-based API.
- **Key Capabilities:** VinSolutions' tight integration with Dealertrack DMS means the CRM Sync and DMS Bridge connectors can share a unified data pathway through the Cox Automotive ecosystem. VinSolutions' automated action plans can incorporate NextBee trigger points (e.g., "If loyalty tier = Gold, skip to personalized follow-up sequence").
- **Market Presence:** Widely adopted across all dealership sizes within the Cox Automotive ecosystem.

3.3 Data Fields and Synchronization

NextBee pushes the following "Loyalty Custom Objects/Fields" to the CRM. These are created during the initial setup and maintained by the sync engine:

CRM Field Name	Data Type	Direction	Description and Usage
`NextBee_Points_Balance`	Integer	Push	Current redeemable points balance. Displayed on contact/lead record. Usable as email merge tag.
`NextBee_Tier_Level`	Picklist	Push	Current loyalty tier (Bronze, Silver, Gold, Platinum, Diamond). Triggers CRM workflow automations on change.
`NextBee_Engagement_Score`	Integer (0–100)	Push	Composite score based on recency, frequency, monetary value, and program interaction. Updated every 15 minutes.
`NextBee_Referral_Source`	String	Push	Name/ID of the referring loyalty member. Populated when the lead/contact was created via a referral link.
`NextBee_Referral_Count`	Integer	Push	Number of successful referrals this customer has made. Used for referral leaderboard and ambassador identification.
`NextBee_Last_Activity_Date`	DateTime	Push	Timestamp of the customer's most recent loyalty interaction (point earn, redemption, app login, referral).

CRM Field Name	Data Type	Direction	Description and Usage
`NextBee_Lifetime_Earned`	Currency	Push	Total dollar-equivalent of rewards earned over the customer's lifetime.
`NextBee_Lifetime_Redeemed`	Currency	Push	Total dollar-equivalent of rewards redeemed.
`NextBee_Pending_Points`	Integer	Push	Points that have been earned but are in a "pending" hold period (e.g., 7-day hold on service points until RO is fully closed and not voided).
`NextBee_Churn_Risk`	Picklist	Push	Calculated churn risk level (Low, Medium, High, Critical). Based on engagement score trajectory, days since last activity, and service interval gaps.
`NextBee_Program_Status`	Picklist	Push	Active, Inactive, Suspended, Opted-Out. Governs campaign eligibility.
`NextBee_Preferred_Reward`	String	Push	The customer's most-redeemed reward type (Service Credit, Gift Card, Parts Discount). Used for personalization.
`NextBee_QR_Code_URL`	URL	Push	Link to the customer's unique QR code image for in-store check-in.
`CRM_Lead_Source`	String	Pull	Ingested from CRM to attribute acquisition channel in NextBee analytics.
`CRM_Deal_Stage`	Enum	Pull	Current deal/opportunity stage. Used to suppress or accelerate loyalty campaigns based on sales progress.
`CRM_Campaign_Member`	List	Pull	Active CRM campaign memberships. Prevents duplicate outreach across CRM and NextBee campaigns.

Table 8: CRM Sync Field Specification

3.4 Supported Scenarios (CRM Sync)

- **Sales Rep Transparency:** When a sales rep opens a lead or contact record, they immediately see a "Loyalty Card" component (Lightning Web Component in Salesforce, custom card in HubSpot) displaying the customer's tier badge (e.g., "Platinum"), points balance, engagement score, and tenure (e.g., "10-year service customer"). This empowers the rep to personalize the conversation.
- **Referral Attribution:** When a new lead is created in the CRM (via web form, phone call, or walk-in), the CRM Sync checks if the lead's email or phone matches an existing referral link click in the NextBee system. If matched, the CRM's `Lead_Source` field is automatically updated to the referrer's name and the referrer's `NextBee_Referral_Count` is incremented.

- **Churn Prevention Task:** When a customer's `NextBee_Engagement_Score` drops below 20 (or `NextBee_Churn_Risk` changes to "Critical"), the CRM Sync automatically creates a Task/Activity assigned to the Service Manager or the customer's last service advisor with the subject: "Loyalty Alert: [Customer Name] is at risk of churning. Last activity: [date]. Suggested action: personal call with [incentive offer]."
- **Tier Change Celebration:** When a customer's `NextBee_Tier_Level` changes (upgrade or downgrade), trigger a CRM workflow that sends a personalized email. Upgrades receive a congratulatory message with new tier benefits. Downgrades receive a "Here's how to get back to [previous tier]" retention message.
- **Personalized Eblasts:** Use `NextBee_Points_Balance` and `NextBee_Tier_Level` as merge tags in CRM-managed email campaigns. Example: "Hi [First Name], you have [Points Balance] points - that's enough for a free oil change! Book now."
- **BDC Call Script Enrichment:** When a BDC agent receives an inbound call or initiates an outbound call, the CRM screen pop displays the customer's loyalty summary. BDC scripts can branch based on tier level (e.g., Platinum callers are routed directly to a senior advisor).
- **Showroom Walk-In Identification:** When a customer checks in via the dealership's lobby kiosk or mobile app (QR scan), the CRM Sync pushes a real-time notification to the assigned salesperson's CRM dashboard: "[Customer Name] (Gold Tier, 1,200 points) just checked in."
- **Service-to-Sales Handoff:** When a service customer's vehicle meets trade-in criteria (detected by the DMS Bridge), the CRM Sync creates an Opportunity record in the CRM assigned to the customer's last salesperson, pre-populated with the vehicle details and a "Loyalty Trade-In" opportunity source.
- **Campaign Suppression:** The CRM Sync ensures that customers who are already enrolled in an active NextBee campaign (e.g., a referral challenge) are suppressed from overlapping CRM campaigns targeting the same audience, preventing communication fatigue.
- **Engagement Score Decay Alert:** If a customer's engagement score has declined by more than 30 points in a 60-day period, trigger an automated CRM task for the relationship owner to investigate and re-engage.
- **VIP Service Routing:** When a Platinum or Diamond tier customer books a service appointment, the CRM Sync triggers a flag in the scheduling system to assign a dedicated service advisor, reserve a loaner vehicle, and prepare a VIP welcome packet.
- **Lost Deal Win-Back:** When a CRM opportunity is marked as "Lost" but the contact has an active loyalty profile, trigger a win-back campaign sequence offering escalating loyalty incentives over 30/60/90 days.
- **Household Linking:** When the CRM identifies two contacts at the same address (or linked in a CRM household), the CRM Sync groups them under a shared `Household_ID` in NextBee, enabling shared reward pools and household-level CLV tracking.
- **Review Solicitation:** 72 hours after a service visit or vehicle delivery (confirmed via the DMS Bridge), the CRM Sync triggers an automated review request through the CRM's communication channel, with a "Leave a review, earn 50 points" incentive.

3.5 Fraud and Error Safety (CRM Sync)

- **Duplicate Contact Prevention:** Before creating or updating a CRM record, the sync engine performs a fuzzy match on First Name + Last Name + Phone + Email to prevent duplicate loyalty profiles. Match confidence above 85% triggers a merge recommendation rather than a new record creation.

- **Data Consistency Checks:** The sync engine validates that `NextBee_Points_Balance` in the CRM matches the authoritative balance in the NextBee ledger. If a discrepancy is detected (e.g., due to a failed sync), the CRM value is overwritten with the NextBee source of truth and an audit log entry is created.
- **Unauthorized Field Modification:** CRM users are granted read-only access to NextBee custom fields by default. Only the NextBee integration user can write to these fields. If a CRM admin manually modifies a NextBee field, the next sync cycle will detect and revert the change, logging the event.
- **Sync Failure Alerting:** If the sync engine fails to connect to the CRM API for 3 consecutive attempts (e.g., due to API rate limits, auth token expiry, or CRM outage), an alert is sent to the dealer's NextBee admin and the NextBee support team. All pending updates are queued and retried with exponential backoff.
- **Referral Self-Referral Block:** The system prevents a customer from being credited as both the referrer and the referee. Email, phone, IP address, and household ID are all checked to block self-referral attempts.
- **Engagement Score Audit Trail:** Every change to a customer's engagement score is logged with the contributing factors (e.g., "+5: Service visit on 2026-01-15; -2: No app login in 30 days"), providing a full audit trail for dispute resolution.

4 Connector 3: The Rewards Engine (Incentive Fulfillment)

4.1 Business Goal

To manage the secure issuance, tracking, and redemption of loyalty value across all digital and physical touchpoints. The Rewards Engine is the customer-facing manifestation of the entire integration framework - it's what the customer sees, interacts with, and values. The engine must handle real-time point crediting, multi-channel redemption (service counter, parts counter, mobile app, partner networks), tiered benefit management, and airtight financial controls to prevent reward fraud and liability overexposure.

4.2 Reward Types and Fulfillment Logic

4.2.1 Points-Based Rewards

- **Service Credit (1:1):** Points are redeemable at a 1-point-to-1-cent ratio directly at the service counter. Redemption is initiated by the customer via QR code scan on the loyalty app or by the service advisor entering the customer's loyalty ID at the DMS terminal. The redeemed amount is applied as a discount on the RO and the point deduction is recorded in the NextBee ledger in real-time.
- **Parts Discount:** Points redeemable at the parts counter at a configurable ratio (default: 1 point = 1 cent). Applicable to customer-pay parts counter invoices only.
- **F&I Product Discount:** Accumulated points can be applied toward F&I products (e.g., extended warranty, paint protection) at the time of a new vehicle purchase. Requires manager approval for redemptions over a configurable threshold.
- **Monthly Payment Credit:** For customers with active financing through dealer-affiliated lenders, points can be converted to a one-time monthly payment credit. Requires lender API integration (available for select partners).

4.2.2 Tier-Based Access Rewards

- **Free Loaner Vehicle:** Gold, Platinum, and Diamond tier members unlock complimentary loaner vehicle availability during service visits exceeding a configurable duration threshold (default: 2 hours).
- **Priority Service Bay:** Platinum and Diamond members receive “Skip the Line” service bay priority, automatically reflected in the service scheduling system via the DMS Bridge.
- **Dedicated Service Advisor:** Diamond members are assigned a dedicated service advisor who is notified via CRM task whenever the customer books an appointment.
- **VIP Waiting Lounge:** Dealers with physical VIP lounges can gate access by tier level using the loyalty app’s QR check-in feature.
- **Exclusive Event Invitations:** Platinum and Diamond members receive invitations to dealer-hosted events (new model launches, owner appreciation days, track days).
- **Extended Warranty Enhancement:** Top-tier members receive automatic extensions on manufacturer warranty periods (where permitted by OEM programs).
- **Complimentary Services:** Configurable per-tier complimentary services (e.g., Silver = free car wash per visit; Gold = free tire rotation annually; Platinum = free state inspection).

4.2.3 Partner Perks (External Fulfillment)

- **Digital Gift Cards:** Integrated with external fulfillment platforms (Amazon, Starbucks, Visa prepaid, restaurant chains) for instant digital gift card delivery via email or in-app. Available at configurable point-to-value conversion rates.
- **Charity Donation:** Customers can convert points to charitable donations to dealer-selected nonprofit partners. Tax receipt generation is handled by the fulfillment partner.
- **Experience Rewards:** Integration with experience platforms for redeemable rewards such as concert tickets, spa packages, or sporting event access.
- **Fuel Card Credits:** Points redeemable for fuel card credits (Shell, BP, ExxonMobil) via API integration with fuel card networks.

4.2.4 Automated Lifecycle Rewards

- **Birthday Gift:** Automate a $25 service credit on the customer’s birthday (sourced from `Date_of_Birth` in the customer master). Sent as a personalized push notification + email 7 days before the birthday with a 30-day redemption window.
- **Purchase Anniversary:** On each anniversary of the vehicle purchase date, send a celebration message with a tiered reward: Year 1 = 100 bonus points; Year 3 = 250 points; Year 5 = 500 points + a tier evaluation.
- **Service Milestone:** After every 5th service visit, issue a milestone reward (e.g., 200 bonus points + a “Loyal Customer” digital badge displayed in the app).
- **Referral Milestone:** After a customer’s 3rd successful referral, upgrade their tier by one level and issue a “Super Referrer” badge with permanent 1.5x point multiplier.
- **Points Expiry Warning:** 30 days before points are scheduled to expire (default expiry: 24 months from earn date), send a multi-channel reminder (push notification + email + SMS) urging the customer to redeem.

- **Inactivity Re-Engagement:** If a customer has had no loyalty activity for 180 days, trigger a "We miss you" campaign with a bonus points offer for their next service visit.
- **Welcome Bonus:** New enrollees receive a configurable welcome bonus (default: 100 points) credited immediately upon loyalty profile activation.
- **App Download Incentive:** Customers who download and register on the dealership's loyalty mobile app receive a one-time bonus (default: 50 points).
- **Review Reward:** Customers who complete a post-service review (Google, Yelp, or dealer-hosted survey) receive a review bonus (default: 50 points per review, capped at 1 review reward per visit).
- **Social Share Bonus:** Customers who share their loyalty milestone (tier upgrade, badge) on social media via the app's share feature receive a small bonus (default: 25 points, capped at 2 shares per month).

4.3 Fraud Prevention Protocols (Rewards Engine)

Reward Security Configuration

```
# === Financial Limits ===
REWARD_LIMIT_PER_USER_MONTH = 500.00
REWARD_LIMIT_PER_USER_YEAR = 5000.00
REWARD_APPROVAL_REQUIRED_OVER = 100.00
REWARD_APPROVAL_ROLE = "Dealer_Admin"

# === Referral Fraud ===
BLOCK_REFERRAL_SAME_IP = True
BLOCK_REFERRAL_SAME_HOUSEHOLD = True
BLOCK_REFERRAL_SAME_EMAIL_DOMAIN = False # Configurable for family domains
REFERRAL_COOLING_PERIOD_DAYS = 30 # Min days between referrals from same referrer
MAX_REFERRALS_PER_USER_MONTH = 5

# === Identity Verification ===
VERIFY_VIN_OWNERSHIP = True
VERIFY_PHONE_ON_REDEMPTION = True # OTP required for redemptions >$50
VERIFY_QR_GEOFENCE = True
QR_CHECK_IN_GEOFENCE_RADIUS = 500 # meters

# === Point Integrity ===
POINT_EARN_HOLD_PERIOD_DAYS = 7 # Points pending until RO is confirmed closed
POINT_EXPIRY_MONTHS = 24
POINT_EXPIRY_WARNING_DAYS = 30
CLAWBACK_ON_RO_VOID = True
CLAWBACK_ON_DEAL_UNWIND = True

# === Redemption Controls ===
MIN_REDEMPTION_AMOUNT = 5.00
REDEMPTION_COOLDOWN_HOURS = 24 # Min hours between redemptions
MAX_REDEMPTIONS_PER_DAY = 3
REQUIRE_MANAGER_OVERRIDE_OVER = 200.00

# === Gift Card Fraud ===
GIFT_CARD_VELOCITY_LIMIT_WEEK = 2
GIFT_CARD_MAX_VALUE_SINGLE = 100.00
GIFT_CARD_RECIPIENT_SELF_ONLY = True # Prevent gift card forwarding
```

- **Earn Holding Period:** Points earned from service visits are held in a "pending" state for a configurable period (default: 7 days) before becoming redeemable. This prevents scenarios where a customer earns points on an RO that is subsequently voided or adjusted.
- **Redemption OTP:** For redemptions exceeding a configurable threshold (default: $50), the customer must verify via a one-time password sent to their registered phone number.
- **Referral IP and Household Blocking:** Referral rewards are blocked when the referrer and referee share the same IP address, the same household ID, or the same physical address. This prevents self-referral schemes.
- **Gift Card Velocity Control:** A single customer can redeem a maximum of 2 gift cards per week, with a maximum single gift card value of $100. Gift cards are delivered only to the customer's registered email address (not forwarded to third parties).
- **Monthly and Annual Caps:** Total reward value per customer is capped at $500/month and $5,000/year (configurable). Exceeding these caps requires Dealer Admin approval.
- **Clawback Automation:** If an RO is voided or a deal is unwound after points were issued, the system automatically deducts the corresponding points. If the customer's balance goes negative (because they already redeemed), the negative balance carries forward and is offset against future earnings.
- **Liability Monitoring:** The Rewards Engine continuously calculates total outstanding points liability (total unredeemed points × point value) and alerts the Dealer Admin when liability exceeds configurable thresholds (e.g., $10,000, $25,000, $50,000).
- **Suspicious Activity Report (SAR):** A weekly automated report is generated identifying the top 10 accounts by reward velocity, accounts with multiple redemptions near the approval threshold (a potential structuring indicator), and accounts with unusual referral patterns.

5 Reports and Communication Matrix

5.1 Reports by Connected Dataset

5.1.1 DMS Sales Dataset Reports

- **Referral-to-Sale Conversion Report:** Tracks the full funnel from referral link click → lead creation → showroom visit → deal closure. Includes referral source attribution, average days-to-close for referred leads vs. non-referred, and referral program ROI.
- **New Vehicle Enrollment Rate:** Percentage of new vehicle buyers who enroll in the loyalty program within 30 days of delivery. Broken down by salesperson, model, and deal type.
- **Trade-In Equity Alert Effectiveness:** Tracks how many trade-in equity alerts were sent, how many resulted in a showroom visit, and how many converted to a new deal. Includes average gross profit on alert-driven deals.
- **Lease Maturity Campaign Performance:** Tracks the 90/60/30-day campaign sequence for lease maturations. Reports on customer retention rate (returned to same dealer vs. went elsewhere), campaign engagement (open/click rates), and revenue attributable to the campaign.
- **F&I Loyalty Attachment Rate:** Measures the correlation between loyalty tier level and F&I product penetration. Hypothesis: higher-tier members accept more F&I products due to trust and relationship.
- **Conquest vs. Retention Sales Mix:** Breakdown of new deals by customer origin: existing loyalty member, new enrollment, conquest from competitor.

5.1.2 DMS Service Dataset Reports

- **Service Lane Revenue Attribution:** Total service revenue attributable to loyalty program members vs. non-members. Includes average RO value comparison, visit frequency comparison, and incremental revenue analysis.
- **Declined Service Recovery Rate:** Tracks the percentage of declined services that are completed within 30/60/90 days after the follow-up campaign. Includes revenue recovered and points issued.
- **Service Frequency Analysis:** Average visits per customer per year, segmented by tier level. Demonstrates that higher-tier customers visit more frequently.
- **Customer Pay vs. Warranty Mix:** Breakdown of RO revenue by customer-pay vs. warranty vs. internal, segmented by loyalty tier.
- **Missed Appointment Recovery Report:** Number of no-shows, recovery messages sent, reschedule rate, and revenue recovered from rescheduled appointments.
- **Service Advisor Engagement Leaderboard:** Ranks service advisors by the number of loyalty-enrolled customers they served, points issued through their ROs, and customer satisfaction scores for loyalty members.
- **Recall Compliance Report:** Tracks open recalls by VIN, recall incentive messages sent, recall completion rate, and average days-to-compliance.
- **Seasonal Campaign ROI:** Measures the effectiveness of seasonal campaigns (e.g., winter tire, summer coolant flush) in terms of incremental service visits and revenue vs. campaign cost.

5.1.3 CRM Activity Dataset Reports

- **Customer Lifetime Value (CLV) Trends:** Tracks CLV over time, segmented by tier level, acquisition channel, and vehicle type. Includes predictive CLV projections based on engagement score trajectory.
- **Engagement Score Distribution:** Histogram of engagement scores across the customer base, with trend lines showing score movement over time. Identifies the "at-risk" segment (scores below 20).
- **Churn Risk Dashboard:** Real-time count of customers in each churn risk category (Low, Medium, High, Critical). Drill-down to individual customer records with recommended intervention actions.
- **Tier Migration Report:** Monthly/quarterly report showing the number of customers who upgraded, downgraded, or maintained their tier. Identifies the activities most correlated with tier advancement.
- **Referral Network Map:** Visual representation of the referral network, showing top referrers, referral chains, and the "viral coefficient" (average referrals per referring customer).
- **CRM-Loyalty Sync Health Report:** Technical report showing sync success rate, average sync latency, data discrepancy counts, and any failed sync events requiring investigation.
- **Multichannel Communication Effectiveness:** Compares engagement rates (open, click, conversion) across email, SMS, push notification, and in-app messaging channels, segmented by tier level and customer age cohort.

5.1.4 Rewards Dataset Reports

- **Liability and Redemption Rate Analysis:** Total outstanding points liability (unredeemed points $\times$ point value), monthly redemption rate, average time-to-redemption, and liability trend over time. Critical for financial planning and accounting.
- **Reward Type Popularity:** Breakdown of redemptions by type (service credit, parts discount, gift card, charity donation, tier perks). Identifies which rewards are most motivating and which are underutilized.
- **Earn-to-Burn Ratio:** Monthly ratio of points earned to points redeemed. A healthy program typically targets a 60–70% burn rate within 24 months.
- **Point Expiry Report:** Points expiring in the next 30/60/90 days, segmented by customer tier and account value. Used to calibrate expiry warning campaigns.
- **Fraud and Anomaly Report:** Weekly summary of flagged transactions: duplicate RO attempts, velocity limit breaches, self-referral blocks, odometer anomalies, and geofence violations.
- **Partner Perk Utilization:** For dealers offering external gift card redemptions, tracks which partners (Amazon, Starbucks, etc.) are most popular and the total value redeemed through each partner.
- **ROI Summary Dashboard:** High-level executive dashboard showing total program cost (points issued + admin cost), total attributable revenue (incremental service + sales revenue from loyalty members), and program ROI percentage.

5.2 Automated Communications Matrix

Dataset Source	Trigger Event	Communication Type	Channels
DMS Sales	Deal Funded/Delivered	Welcome enrollment + referral invite	Email, SMS, Push
DMS Sales	Delivery + 7 days	Review request + referral CTA	Email, Push
DMS Sales	Purchase anniversary	Anniversary celebration + bonus points	Email, Push, In-App
DMS Sales	Lease 90/60/30 days out	Lease maturity engagement sequence	Email, SMS, Direct Mail
DMS Sales	Trade-in criteria met	Trade-in equity evaluation offer	Email, SMS, CRM Task
DMS Service	RO Closed-Paid	Points earned confirmation	Push, SMS, Email
DMS Service	First VIN service visit	Welcome enrollment invitation	SMS, Email
DMS Service	RO >$500	High-value thank you + referral credit	Email, Push
DMS Service	Declined services detected	Follow-up with bonus point offer	SMS, Email (48h delay)
DMS Service	No-show detected	Reschedule incentive	SMS
DMS Service	Next service due (projected)	Pre-service reminder with loyalty offer	Email, SMS, Push
DMS Service	Recall open on VIN	Recall compliance incentive	SMS, Email, Push
DMS Service	MPI amber/red findings	Recommended service follow-up	Email, Push
CRM Activity	Tier upgrade	Congratulations + new benefits summary	Email, Push, In-App
CRM Activity	Tier downgrade	Retention message + requalification guide	Email
CRM Activity	Engagement score <20	CRM task for service manager + win-back offer	CRM Task, Email, SMS
CRM Activity	Score drop >30 in 60d	Decay alert to relationship owner	CRM Task
CRM Activity	Lost deal in CRM	Win-back campaign sequence (30/60/90d)	Email, SMS
CRM Activity	VIP service booking	VIP preparation notification to advisor	CRM Task, Internal Alert
Rewards	Points earned (any source)	Earn confirmation with balance update	Push, In-App
Rewards	Redemption completed	Redemption confirmation + remaining balance	Push, Email
Rewards	Points expiring in 30 days	Expiry warning + redemption suggestions	Push, Email, SMS
Rewards	180 days no activity	"We miss you" re-engagement offer	Email, SMS, Direct Mail
Rewards	Birthday (7 days prior)	Birthday gift credit delivery	Push, Email
Rewards	Referral reward earned	Referral success notification	Push, Email
Rewards	Milestone achieved	Milestone celebration + badge + bonus	Push, In-App, Email

Dataset Source	Trigger Event	Communication Type	Channels
Rewards	Suspicious activity	Account review notification (internal)	Internal Alert, Email (admin)

Table 9: Complete Automated Communications Matrix

6 Implementation and Deployment

The NextBee implementation team follows a structured 6-phase rollout to ensure data integrity, system stability, and dealer staff readiness:

1. **Discovery and Mapping (Week 1–2):** Joint workshops with the dealer's IT, sales, service, and marketing teams. Map DMS service codes to NextBee reward tiers. Identify CRM custom field requirements. Document existing loyalty or rewards programs for migration. Confirm DMS and CRM platform versions and API access availability.
2. **Configuration and Integration (Week 3–4):** Configure DMS Bridge adapter for the dealer's specific DMS platform. Install CRM Sync managed package or custom properties. Configure reward rules, earn rates, tier thresholds, and redemption options. Set up fraud prevention parameters based on dealer's risk tolerance.
3. **Staging and Testing (Week 5–6):** Deploy all three connectors in a sandbox/staging environment. Validate event triggers with synthetic test data covering all supported scenarios. Verify data field mapping accuracy across DMS → NextBee → CRM. Perform end-to-end transaction testing (service visit → points earned → CRM updated → points redeemed).
4. **Security Audit (Week 7):** Penetration testing of all API endpoints. API token rotation setup and verification. Data encryption validation (at rest and in transit). TCPA/CAN-SPAM compliance review for all automated communications. PCI DSS compliance verification for any payment-adjacent reward redemptions.
5. **Staff Training and Soft Launch (Week 8):** Train service advisors on loyalty enrollment, QR check-in, and point redemption workflows. Train sales reps on reading loyalty data in the CRM and leveraging it in conversations. Train BDC agents on loyalty-aware call scripts. Soft launch with a subset of customers (e.g., top 100 service customers) to validate in production.
6. **Go-Live and Optimization (Week 9+):** Enable real-time event listeners and customer-facing mobile app. Open enrollment to all customers. Monitor dashboards for the first 30 days with weekly optimization reviews. Adjust earn rates, tier thresholds, and campaign timing based on early data.

Post-Launch Support

NextBee provides a dedicated Customer Success Manager (CSM) for the first 90 days post-launch. Monthly Business Reviews (MBRs) include program performance analysis, A/B test recommendations, and reward structure optimization suggestions based on anonymized benchmarks from similar dealerships.

7 All Questions Answered Before Implementation

7.1 Dealer Principal / General Manager

Q1. What business problem does NextBee actually solve for my dealership?

NextBee eliminates fragmented customer data across DMS, CRM, marketing, and service systems. It converts transactions into measurable loyalty, repeat visits, referrals, and incremental revenue—without adding staff workload.

Q2. How does this increase revenue, not just issue discounts?

Rewards are tied only to profitable behaviors (service spend, repeat visits, referrals, trade-in cycles). Fraud controls prevent double dipping, coupon stacking abuse, and internal misuse.

Q3. Will this disrupt my sales or service operations?

No. All rewards are auto-triggered from existing DMS and CRM events. Advisors and sales reps do not manually enter anything

Q4. How long does implementation take?

Typical timeline:

- DMS connection: 1–4 weeks (vendor dependent)
- CRM sync: 3–7 days
- Rewards configuration: 2–5 days

Parallel workstreams reduce total elapsed time.

Q5. What is my financial exposure (liability)?

Points liability is continuously tracked. Monthly and annual caps, approval thresholds, and clawback automation prevent runaway exposure.

Q6. Can I turn this off or pause rewards if needed?

Yes. Rewards issuance, specific campaigns, or entire programs can be paused instantly without disconnecting integrations.

7.2 IT / Systems Administrator

Q1. What business problem does NextBee actually solve for my dealership?

NextBee eliminates fragmented customer data across DMS, CRM, marketing, and service systems. It converts transactions into measurable loyalty, repeat visits, referrals, and incremental revenue—without adding staff workload.

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Q3. Will this disrupt my sales or service operations?

No. All rewards are auto-triggered from existing DMS and CRM events. Advisors and sales reps do not manually enter anything.

Q4. What happens if an integration fails?

- Automatic retry with exponential backoff
- Queued transactions (no data loss)
- Admin alerts after repeated failures
- Manual replay supported

Q5. How is duplicate data prevented?

- Idempotent transaction keys
- SHA-256 hashing for RO and deal events
- Fuzzy identity matching (email + phone + VIN)

Q6. Does this affect DMS performance? No. Event-driven or scheduled data pulls are read-only and optimized for low load.

7.3 Software / Integration Partners (DMS, CRM, Martech)

Q1. Does NextBee follow partner certification requirements?

Yes. NextBee integrates through:

- Fortellis (CDK)
- Reynolds RCI
- Tekion APC
- Cox Automotive partner APIs
- Salesforce Connected Apps
- HubSpot Private Apps

Q2. Is this a bi-directional integration?

Yes, where allowed:

- Reads transactional data from DMS
- Writes loyalty metadata back to CRM
- Never writes financial or accounting data to DMS

Q3. How are schema changes handled?

- Canonical internal data model
- Adapter-based normalization
- Backward-compatible versioning
- Partner notifications before breaking changes

Q4. Who owns ongoing maintenance?

NextBee maintains:

- API upgrades
- Field mapping changes
- Vendor version compatibility

Dealer IT does not maintain custom code.

Q5. Can partners co-brand or extend this?

Yes. APIs and webhooks support partner extensions, co-branded rewards, and external fulfillment.

7.4 Marketing Manager / Loyalty Owner

Q1. Will this conflict with my existing CRM campaigns?

No. CRM Sync includes campaign suppression logic to prevent duplicate or overlapping outreach.

Q2. Can I control which actions earn rewards?

Yes. Every earn rule is configurable:

- Service types
- Spend thresholds
- Frequency caps
- Bonus multipliers
- Hold periods

Q3. How do referrals get attributed accurately?

Referral attribution uses:

- Unique referral links
- Email/phone matching
- CRM lead source updates
- Fraud blocks for self-referrals

Q4. How do I measure ROI?

Built-in reporting covers:

- Incremental service revenue
- Referral-to-sale conversion
- Trade-in campaign effectiveness
- Earn vs burn ratios
- Loyalty-driven CLV uplift

Q5. Can I personalize rewards by tier or behavior?

Yes. Tier-based access, milestone rewards, lifecycle triggers, and preferred reward profiling are all supported.

Q6. What if a customer disputes points or rewards?

Every earn, hold, redemption, and clawback action has a full audit trail.

7.5 Cross-Functional "Go-Live Readiness"

Q1. Is manual staff training required?

Minimal. Staff only need to recognize loyalty indicators already visible in CRM or DMS screens.

Q2. Can this run across multiple rooftops?

Yes. Dealer codes, rooftop segmentation, and shared household logic are built in.

Q3. What happens if a deal is unwound or RO is voided? Automatic clawback of points and rewards, with customer notification.

Q4. Can rewards be abused by staff or customers?

Multiple layers of fraud prevention exist:

- Velocity limits
- Geofencing
- Staff transaction filtering
- Approval thresholds
- Identity verification

Q5. Who signs off before launch?

Recommended checklist:

- Dealer Principal: business rules and caps
- IT: security and access
- Marketing: campaigns and messaging
- Accounting: liability thresholds

8 Troubleshooting Playbooks

8.1 Dealer Principal / General Manager

When Dealers Typically Raise Issues

- Customers say they didn't get points
- This seems to have stopped working
- Are we losing money or trust?

Step-by-Step Troubleshooting

- **Step 1: Confirm Scope (No Systems Yet)**
  Is this:
  - One customer
  - One department (sales/service/parts)
  - Whole dealership

  Since when? (date + approximate time)
  *If it's **one customer**, this is NOT a system outage.*
- **Step 2: Confirm Business Guardrails**
  Ask:
  - Was the RO paid or warranty?
  - Was the deal funded or unwound?
  - Was a coupon also used?

  Many "missing rewards" are intentional fraud or stacking protections.
- **Step 3: Financial Safety Check**
  Ask NextBee Admin:
  - Are rewards paused?
  - Was a monthly cap reached?
  - Is approval required?

  Confirms no financial leakage before escalation.
- **Step 4: Escalation Rule**
  Escalate only if:
  - Multiple customers
  - Multiple rooftops
  - Same issue >24 hours

  Dealer role ends here. Dealers should never troubleshoot APIs, fields, or exports.

8.2 IT / Systems Administrator

Typical IT Issues

- Data stopped syncing
- OAuth expired
- Files aren't arriving
- CRM fields look wrong

Step-by-Step Troubleshooting

- **Step 1: Connector Identification**
  Which layer is failing?
  - DMS Bridge
  - CRM Sync
  - Rewards Engine

  If Rewards only → skip DMS/CRM checks.
- **Step 2: Authentication Check (MOST COMMON)**
  - OAuth token valid?
  - API key active?
  - SFTP credentials unchanged?
  - Partner certificate still valid?

  60–70% of issues stop here.
- **Step 3: Source System Verification**
  Does the event exist in:
  - DMS?
  - CRM?

  Correct status?
  - Closed-Paid ≠ Closed
  - Funded ≠ Delivered

  If not present here → NextBee is not the issue.
- **Step 4: Transport Check**
  - API:
    - Rate limit?
    - 401 / 403 errors?
  - SFTP:
    - File arriving?
    - Filename format unchanged?
    - Timestamp updating?
- **Step 5: Change Management Audit**
  Ask:
  - Any DMS upgrade?
  - CRM workflow added?
  - Admin edited custom fields?

  Unauthorized changes are auto-reverted.

Escalate to NextBee Only After

- Auth confirmed
- Source event confirmed
- Transport confirmed

8.3 Software / Integration Partners (DMS, CRM, Martech)

Typical Partner Issues

- “Payload rejected”
- “Field mismatch”

- “Schema update broke sync”

Step-by-Step Troubleshooting

- **Step 1: Version Alignment**
  - API version unchanged?
  - Deprecated fields used?
  - New enum values introduced?

  Backward compatibility assumed - but verify.
- **Step 2: Contractual Trigger Validation**
  - Status values match allowed triggers?
  - Required fields present?
  - Nullable fields unexpectedly blank?
- **Step 3: Rate and Event Behavior**
  - Webhooks firing?
  - Duplicate events?
  - Event ordering preserved?
- **Step 4: Canonical Mapping Check**
  - Partner schema → NextBee canonical model
  - VIN / Customer ID mapping intact
  - Timezone normalization correct
- **Step 5: Responsibility Split**
  If issue is:
  - Partner payload → Partner fix
  - NextBee adapter → NextBee fix
  - Dealer config → Dealer action

  Avoid circular blame by isolating layer.

8.4 Marketing Manager / Loyalty Owner

Typical Marketing Issues

- Campaign didn’t fire
- Wrong customers rewarded
- Too many / too few points

Step-by-Step Troubleshooting

- **Step 1: Campaign Rule Validation**
  Check:
  - Trigger event correct?
  - Tier or spend threshold met?
  - Hold period elapsed?

  Most issues are rule-logic, not tech.
- **Step 2: Suppression and Conflict Check**
  - CRM campaign already active?
  - Customer opted out?
  - Duplicate campaign blocked?

- **Step 3: Customer Eligibility Check**
  - Internal RO?
  - Staff transaction?
  - Warranty vs customer-pay?
- **Step 4: Timing Expectations**
  Explain internally:
  - Pending $\neq$ missing
  - Holds $\neq$ failures
  - Clawbacks $\neq$ bugs
- **Step 5: Customer Communication**
  If customer impacted:
  - Use audit trail
  - Explain reason
  - Apply goodwill credit only if approved

8.5 Cross-Functional "Go-Live Readiness"

Trigger Conditions:

- Multi-rooftop
- Revenue-impacting
- 24 hours unresolved

Steps:

- Freeze config changes
- Validate source systems
- Review error volume trends
- Apply temporary mitigation
- Backfill after fix

9 Appendix

9.1 Engagement Score Calculation

The `NextBee_Engagement_Score` (0–100) is a composite metric calculated from four weighted factors:

Factor	Weight	Calculation
Recency	30%	Days since last loyalty interaction. 0–7 days = 100; 8–30 = 75; 31–90 = 50; 91–180 = 25; 180+ = 0.
Frequency	25%	Service visits + app logins + referrals in rolling 12 months. Scaled 0–100 based on dealer-specific percentile.
Monetary	25%	Total customer-pay spend in rolling 12 months. Scaled 0–100 based on dealer-specific percentile.
Engagement	20%	Point redemptions + app interactions + review submissions + social shares. Scaled 0–100.

Table 10: Engagement Score Factor Weights

9.2 Default Tier Qualification Criteria

Tier	Points Threshold	Annual Spend	Benefits Summary
Bronze	0	$0+	Base earn rate (1 pt/$1). Birthday reward. Points expiry reminders.
Silver	500	$500+	1.25x earn multiplier. Free car wash per visit. Anniversary bonus.
Gold	1,500	$1,500+	1.5x earn multiplier. Free loaner on long services. Priority scheduling. Free tire rotation annually.
Platinum	3,000	$3,000+	2x earn multiplier. Skip the Line. Dedicated advisor. Free state inspection. Exclusive event invitations.
Diamond	5,000	$5,000+	2.5x earn multiplier. All Platinum benefits + free annual detail. Personalized welcome on service visits. Referral champion badge with permanent 1.5x bonus.

Table 11: Default Tier Qualification and Benefits Matrix

9.3 Glossary of Terms

- **RO:** Repair Order - the DMS record created when a vehicle enters the service department.
- **VIN:** Vehicle Identification Number - a 17-character alphanumeric code uniquely identifying a motor vehicle (ISO 3779).
- **WMI:** World Manufacturer Identifier - the first three characters of a VIN identifying the manufacturer.
- **CLV:** Customer Lifetime Value - the projected total revenue a customer will generate over their entire relationship with the dealership.
- **BDC:** Business Development Center - the dealer's centralized team for inbound/outbound customer communications.

- **F&I:** Finance and Insurance - the dealership department handling vehicle financing, extended warranties, and aftermarket products.
- **MPI:** Multi-Point Inspection - a standardized vehicle health check performed during service visits.
- **CPO:** Certified Pre-Owned - a used vehicle that has passed a manufacturer's inspection and comes with an extended warranty.
- **OEM:** Original Equipment Manufacturer - the vehicle manufacturer (e.g., Ford, Toyota, BMW).
- **RCI:** Reynolds Certified Interface - Reynolds and Reynolds' partner integration certification program.
- **APC:** Automotive Partner Cloud - Tekion's partner integration platform.
- **TCPA:** Telephone Consumer Protection Act - U.S. federal law governing telemarketing calls and SMS messages.
- **CAN-SPAM:** Controlling the Assault of Non-Solicited Pornography And Marketing Act - U.S. federal law governing commercial email.
- **PCI DSS:** Payment Card Industry Data Security Standard - security standard for organizations handling credit card data.

Integration Support

Need a custom transformation, support for a proprietary DMS, or a bespoke reward fulfillment integration? Contact our Technical Solutions Architect team. `https://web.nextbee.com/contact-us.html`