

Banner Recreation: Website Chatbot - Tech Scope

1. Project Overview

Project Summary

Implementation of an intelligent chatbot system across Banner Recreation's powersports (bannerrec.com) and marine (bannermarine.com) websites to supplement existing navigation with conversational customer service, enabling 24/7 product inquiries and lead capture while maintaining cross-site product awareness.

Date Created

Oct 2, 2025

2. Stakeholders

Client Representatives:

- Jeff (Owner/Primary stakeholder)
- Sales team members
- Customer service representatives

Internal Team Leads:

- Justin (n8n development, Supabase configuration, DP360 Hubspot CRM integration, XML data pipeline, and system architecture)
- Melai (project coordination, stakeholder communication, and requirements gathering)
- Mike (strategy)

3. Current Situation

Process mapping

Currently, customers visiting Banner Recreation's websites must navigate through complex menu systems to find product information across ~500 models with multiple feature and color combinations. Customer inquiries require manual response from staff, creating delays and potential missed opportunities outside business hours.

Pain Points

Key inefficiencies, bottlenecks, or challenges identified:

- Customers need supplemental assistance alongside existing menu navigation
- Thousands of potential product combination questions cannot be manually documented
- No intelligent product cross-referencing between marine and powersports sites
- Manual lead qualification and CRM entry processes
- Limited availability outside business hours results in missed opportunities
- Delayed response times during peak periods

Existing Tools & Systems

List of tools, software, or platforms used:

- Website Platform: Dealerspike/ARI (bannerrec.com & bannermarine.com)
- Structured Data Feeds: XML inventory feeds (unitinventory_univ.xml)
- CRM: Dealer Performance 360 Hubspot (with available API)
- DMS: Blackpurl (unit data fed to structured XML endpoints)
- Email notification systems

4. Proposed Solution

Automation Scope

Processes or workflows targeted for automation:

Two-component system: n8n chatbot with automated daily XML data ingestion and vector embedding for intelligent product queries across both powersports and marine websites.

High-Level Workflow

Outline of the proposed workflow:

1. **Data Ingestion (Daily):** Automated fetch of structured XML inventory feeds from both websites, only update entries and delete removed entries where necessary
2. **Data Processing:** Parse and store inventory data in PostgreSQL database tables
3. **Vector Embedding:** Generate embeddings and store in Supabase pgvector for semantic search
4. **Customer Interaction:** Visitor initiates chat on either website
5. **Intent Recognition:** Bot analyzes inquiry and determines product category (marine vs powersports)
6. **Information Retrieval:** Performs vector similarity search against embedded inventory data
7. **Response Generation:** Provides intelligent answers with pricing (plus Freight, PDI, Doc fees if available)
8. **Lead Qualification:** Identifies high-intent customers based on keywords and behavior
9. **Action Routing:**
 - Create CRM entries for qualified leads via ~~DP360 API~~ Hubspot
 - Route cross-site inquiries appropriately
 - Escalate complex questions to sales team

Tech stack

Tools and platforms involved:

- **Chatbot Platform:** n8n with AI Agent node and chat interface
- **Automation Orchestration:** n8n for daily data pipeline
- **Database:** Supabase (PostgreSQL + pgvector extension)
- **Vector Storage:** Supabase pgvector for semantic search
- **Embedding Model:** OpenAI text-embedding-3-small
- **Website Integration:** n8n chat widget embedded on Dealerspike/ARI sites
- **CRM Integration:** Dealer Performance 360 API (docs-api.dp360crm.com) - Hubspot

Data Sources

Identify all inputs:

- Banner Recreation XML feed: bannerrec.com/unitinventory_univ.xml (fetched daily)
- Banner Marine XML feed: bannermarine.com/unitinventory_univ.xml (fetched daily)
- Product specifications and inventory data from structured XML
- Pricing information with fee structures (Freight, PDI, Doc fees)
- FAQ patterns and common inquiries
- Historical customer interaction data

Automation Outputs

What the automation delivers:

- Real-time chatbot responses to customer inquiries with semantic search
- Qualified lead records pushed to ~~Dealer Performance 360 CRM~~ Hubspot via API
- Chat interaction logs and analytics
- Cross-site referral notifications
- Escalation alerts for sales team follow-up
- Daily data sync reports with change summaries

Integration Points

List systems that require integration:

- Dealerspike/ARI website chat widget embedding
- ~~Dealer Performance 360~~ Hubspot CRM API integration for lead creation (docs-api.dp360crm.com)
- Supabase database for structured and vector data storage
- XML data endpoints for daily inventory sync
- Email notification system for lead alerts

Security Considerations

Data protection and compliance requirements:

- Secure API connections to Supabase and CRM systems
- Customer data protection and privacy compliance
- Chat log encryption and secure storage
- Website security standards maintenance
- Secure XML data processing and storage
- Environment variable management for API keys and credentials

Scalability

Can the automation handle increased volumes or additional features?

- Daily automated XML sync maintains current product information
- Expandable to additional website properties
- Scalable conversation handling during peak traffic via n8n
- Vector database scales efficiently for large product catalogs
- Additional tool integrations as business grows

Risks

- Website platform restrictions may limit chat widget customization
- XML feed structure changes may require pipeline adjustments
- ~~DP360 API~~ Hubspot rate limits during high-volume lead creation periods
- Customer expectations for complex technical questions may exceed bot capabilities
- Daily update frequency may miss intraday inventory changes
- Vector search accuracy depends on quality of embeddings and product descriptions

Assumptions & requirements

- Client maintains administrative access to both websites for chat integration
- XML feeds remain accessible and maintain consistent structure
- ~~Dealer Performance 360 API~~ Hubspot access and documentation provided from ~~docs-api.dp360crm.com~~
- Sales team availability for escalated inquiries during business hours
- Supabase account with pgvector extension enabled
- OpenAI API access for embedding generation

5. Project Plan

Timeline & Milestones

Phases with start and end dates:

Phase 1: Discovery & Setup (Week 1)

- n8n workspace configuration and initial setup
- Supabase database setup with pgvector extension
- DP360 CRM API configuration and testing using docs-api.dp360crm.com
- XML feed analysis and data structure mapping
- Website platform integration assessment

Phase 2: Data Pipeline Development (Week 1-2)

- Daily XML fetch automation in n8n
- XML parsing and normalization logic
- Database schema design and table creation
- Vector embedding pipeline implementation
- Initial data import and validation

Phase 3: Chatbot Development (Week 2-3)

- n8n AI agent configuration
- Vector search implementation with Supabase
- Chatbot conversation flow development
- Lead qualification criteria implementation
- Cross-site referral logic creation
- Testing and refinement of responses

Phase 4: Integration & Testing (Week 3)

- DP360 CRM API integration deployment
- Website chat widget implementation
- End-to-end workflow testing
- Daily automation testing and validation
- Performance optimization

Phase 5: Launch & Optimization (Week 4)

- Production deployment
- Performance monitoring setup
- Staff training on escalation processes

- Initial optimization based on real interactions

Deliverable checkpoints

- Week 1: Technical architecture approval, Supabase setup, and XML pipeline POC
- Week 2: Data pipeline operational with vector embedding system
- Week 3: Chatbot conversation flow review and CRM integration complete
- Week 4: Production launch and handover

NOTE: This timeline does not include any periods waiting on confirmations/data access/etc from client.

Approval workflow

Written confirmation via email suffices for approval of this technical scope and project plan.

6. Appendices

Any additional documentation or references:

- Dealer Performance 360 API documentation (docs-api.dp360crm.com)
- n8n AI agent documentation
- Supabase pgvector documentation
- Website platform technical specifications
- Sample XML structures from both inventory feeds
- Current customer inquiry patterns and common questions
- Vector embedding strategy and similarity search configuration