

Velociti: EasyJet Intelligence Platform

Product Requirements Document (PRD) v1.0

Product Overview

Product Name: Velociti - AI-Powered Revenue Intelligence Platform for EasyJet **Product Owner:** Chief Intelligence Officer, Telos **Engineering Lead:** [TBD] **Target Users:** EasyJet Revenue Management Analysts, RM Managers, Commercial Executives

Problem Statement

EasyJet analysts face continuous intelligence challenges throughout the day: 3-4 hours each morning correlating fragmented overnight data, plus ongoing reactive analysis of real-time competitive moves, demand shifts, and operational changes. This fragmented approach delays critical pricing decisions and limits competitive response speed in the fast-moving European LCC market where conditions change hourly.

Solution Statement

Velociti provides an AI-powered intelligence workbench that operates continuously 24/7, processing overnight market changes for morning briefings while providing real-time intelligence throughout the day via conversational AI and specialized analytical agents, reducing morning briefing preparation time by 61% and total daily analysis time by 40% while improving decision speed and accuracy.

Success Metrics

- **Primary:** 61% reduction in morning briefing preparation time (from 180 minutes to 70 minutes)
 - **Secondary:** 2% improvement in network yield within 6 months
 - **Adoption:** 85% daily active usage by target analyst population
 - **Accuracy:** 90% accuracy on critical competitive intelligence alerts (>£50K revenue impact)
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User Personas & Stories

Primary Persona: Revenue Management Analyst

Profile: Sarah, RM Analyst with 3+ years experience, manages 40-60 European routes, proficient with Excel/Tableau but limited AI experience.

Core User Stories:

Epic 1: Continuous Intelligence Operations

- **US-001:** As an RM Analyst, I want to receive continuous intelligence updates throughout the day so that I can respond immediately to market changes
 - **AC1:** Morning briefing delivered by 7 AM GMT with overnight analysis
 - **AC2:** Critical alerts (>£50K impact) delivered within 15 minutes of detection
 - **AC3:** High-priority alerts (£20K-£50K impact) delivered within 30 minutes
 - **AC4:** Intraday market updates every 2 hours during business hours
 - **AC5:** End-of-day performance summary with next-day implications
- **US-002:** As an RM Analyst, I want to receive a prioritized morning briefing of overnight changes so that I can focus on high-impact issues first
 - **AC1:** Briefing loads within 5 seconds of login
 - **AC2:** Critical actions are ranked by revenue impact using defined thresholds
 - **AC3:** Each insight includes confidence score and supporting data links
 - **AC4:** I can dismiss, save, or escalate insights for later action
- **US-003:** As an RM Analyst, I want to drill down into any intelligence item (morning briefing or real-time alert) to understand the full context and supporting analysis
 - **AC1:** One-click expansion shows detailed analysis with visualizations
 - **AC2:** Historical context is provided for similar situations
 - **AC3:** Related routes/markets are automatically identified
 - **AC4:** I can export analysis for sharing with colleagues

Epic 2: Real-Time Intelligence & Alerts

- **US-004:** As an RM Analyst, I want immediate alerts when significant market changes occur during the day so I can respond before competitors
 - **AC1:** Critical competitive price changes (>15% and >£50K impact) trigger alerts within 15 minutes
 - **AC2:** High-priority changes (>10% and £20K-£50K impact) trigger alerts within 30 minutes
 - **AC3:** Medium-priority changes (>10% and £5K-£20K impact) included in next briefing cycle
 - **AC4:** Low-priority changes (<£5K impact) summarized in weekly reports
 - **AC5:** Alert fatigue prevention through intelligent filtering and batching
- **US-005:** As an RM Analyst, I want to access the same intelligence capabilities throughout the day, not just in morning briefings
 - **AC1:** Conversational interface available 24/7 with full context preservation

- **AC2:** All agents (competitive, performance, network) active during business hours
- **AC3:** Real-time data integration with <15-minute freshness during business hours
- **AC4:** Contextual recommendations adapt to time-of-day and market conditions

Epic 3: Data Interrogation & Self-Service Analytics

- **US-006:** As an RM Analyst, I want to ask natural language questions about my data and get immediate analytical responses
 - **AC1:** Databricks Genie integration supports natural language queries against EasyJet data
 - **AC2:** Queries return structured data results with visualizations within 10 seconds
 - **AC3:** Support for complex analytical queries (joins, aggregations, time series analysis)
 - **AC4:** Query history and saved queries for repeated analysis patterns
 - **AC5:** Context preservation when escalating data queries to strategic analysis
- **US-007:** As an RM Analyst, I want to explore data relationships and drill down into metrics without writing SQL
 - **AC1:** Natural language interface supports follow-up questions and data exploration
 - **AC2:** Automatic suggestion of related data points and relevant drill-downs
 - **AC3:** Export capabilities for data results to Excel/CSV for further analysis
 - **AC4:** Integration with existing EasyJet BI tools and workflows

Epic 4: Strategic Intelligence & Recommendations

- **US-008:** As an RM Analyst, I want AI-powered strategic recommendations and insights beyond raw data analysis
 - **AC1:** System understands aviation terminology and EasyJet-specific context
 - **AC2:** Responses include data visualizations and actionable recommendations
 - **AC3:** I can ask follow-up questions to dive deeper into analysis
 - **AC4:** Conversation history is preserved for reference
- **US-007:** As an RM Analyst, I want the system to proactively suggest relevant questions and actions based on current market conditions throughout the day
 - **AC1:** System suggests 3-5 relevant questions during each session
 - **AC2:** Suggestions adapt based on my historical query patterns
 - **AC3:** I can easily dismiss suggestions without disrupting workflow
 - **AC4:** Suggestion accuracy improves over time based on my interactions

Epic 5: Competitive Intelligence & Market Monitoring

- **US-010:** As an RM Analyst, I want continuous monitoring of competitor actions with immediate impact assessment
 - **AC1:** Real-time monitoring of Ryanair, Wizz Air, Vueling during business hours
 - **AC2:** Competitive moves assessed for revenue impact within 15 minutes using defined thresholds
 - **AC3:** Historical pattern matching to identify unusual competitive behavior
 - **AC4:** Automated response scenario modeling for significant competitive moves
 - **AC5:** Alert prioritization based on revenue impact classification system
 - **AC1:** Alerts trigger within 2 hours of competitive price changes >10%
 - **AC2:** Impact assessment shows potential revenue effect on EasyJet routes
 - **AC3:** Historical comparison shows if this is normal or unusual behavior
 - **AC4:** Response recommendations include specific pricing scenarios

Secondary Persona: Revenue Management Manager

Profile: James, RM Manager overseeing European route performance, 8+ years experience, focused on network optimization and analyst coordination.

Core User Stories:

Epic 6: Network Performance Management

- **US-011:** As an RM Manager, I want network-wide performance visibility so I can identify optimization opportunities across the European network
 - **AC1:** Network performance dashboard shows route-level performance vs. targets
 - **AC2:** Automated identification of underperforming routes with root cause analysis
 - **AC3:** Cross-route performance comparisons and benchmarking
 - **AC4:** Strategic recommendations for capacity reallocation and route optimization
 - **AC5:** Executive-ready reporting with network-level insights and strategic implications

Epic 7: Strategic Intelligence & Executive Reporting

- **US-012:** As an RM Manager, I want strategic insights about network performance and competitive positioning for executive reporting
 - **AC1:** Executive summary dashboard updated continuously during business hours
 - **AC2:** Key trends and network optimization opportunities automatically identified

- **AC3:** Strategic recommendations include implementation roadmaps and resource requirements
- **AC4:** Reports can be customized for different stakeholder audiences
- **AC5:** Integration with board presentation templates and formats

Tertiary Persona: Commercial Executive

Profile: Sophie, Head of Commercial, focused on strategic decisions, limited time for detailed analysis, needs high-level insights.

Core User Stories:

Epic 8: Executive Intelligence & Strategic Oversight

- **US-013:** As a Commercial Executive, I want continuous executive intelligence with immediate alerts for strategic issues
 - **AC1:** Daily executive summary delivered via email by 7 AM GMT
 - **AC2:** Critical strategic issues (>£100K impact) trigger immediate executive alerts
 - **AC3:** Each strategic issue includes recommended action and business impact assessment
 - **AC4:** Mobile-optimized interface for strategic decision-making on-the-go
 - **AC5:** Integration with existing executive dashboards and reporting systems
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Functional Requirements

Core Platform Requirements

FR-001: Agent Orchestration Engine

- **Requirement:** System must coordinate multiple specialized AI agents for different intelligence domains
- **Acceptance Criteria:**
 - Support minimum 5 concurrent specialized agents
 - Agent communication latency <200ms
 - Graceful degradation if individual agents fail
 - Agent performance monitoring and health checks

FR-002: Memory & Learning System

- **Requirement:** Platform must learn analyst preferences and decision patterns over time

- **Acceptance Criteria:**
 - Persistent storage of user interaction patterns
 - Preference adaptation visible within 5 interaction sessions
 - Historical decision outcome tracking for 12+ months
 - Privacy controls for individual vs. institutional learning

FR-003: Real-Time Data Integration

- **Requirement:** Platform must integrate with EasyJet's data sources for current intelligence
- **Acceptance Criteria:**
 - Databricks integration with <15-minute data freshness
 - Infare API integration with <2-hour competitive intelligence lag
 - OAG capacity data integration with daily updates
 - Internal RM system integration with read-only access

Intelligence Agent Requirements

FR-004: Continuous Intelligence Engine

- **Requirement:** 24/7 intelligence processing system that provides morning briefings, real-time monitoring, and end-of-day analysis
- **Acceptance Criteria:**
 - Morning briefing generation completed by 7 AM GMT
 - Real-time competitive monitoring during European business hours (7 AM - 7 PM GMT)
 - Intraday intelligence updates every 2 hours
 - End-of-day performance analysis and next-day preparation

FR-005: Real-Time Alert System

- **Requirement:** Continuous monitoring system that detects significant market changes and delivers immediate alerts
- **Acceptance Criteria:**
 - Competitive price changes >10% detected within 30 minutes
 - Demand variance >15% from forecast triggers immediate alert
 - Alert prioritization based on revenue impact and user preferences
 - Alert fatigue prevention through intelligent batching and filtering

FR-006: Competitive Intelligence Agent

- **Requirement:** Specialized agent for monitoring competitor actions and market intelligence
- **Acceptance Criteria:**
 - Monitor Ryanair, Wizz Air, Vueling pricing changes in real-time
 - Detect unusual competitive patterns with 85% accuracy
 - Assess revenue impact of competitive moves within £5K accuracy
 - Provide historical context for similar competitive situations

FR-007: Performance Attribution Agent

- **Requirement:** Agent that analyzes network performance variances and identifies root causes
- **Acceptance Criteria:**
 - Identify performance anomalies >5% variance from forecast
 - Attribute variances to specific causes (competitive, operational, market)
 - Provide route-level and network-level analysis
 - Support drill-down analysis to flight-level detail when needed

FR-008: RM System Transparency Agent

- **Requirement:** Agent that analyzes overnight RM system actions and provides transparency
- **Acceptance Criteria:**
 - Track all overnight pricing and inventory changes
 - Separate system-automated vs. analyst-manual actions
 - Analyze "Segment Finder" distance from profile metrics
 - Assess booking curve performance vs. historical patterns

User Interface Requirements

FR-009: Analyst Workbench Interface

- **Requirement:** Comprehensive workbench interface that integrates all analyst tools and intelligence modules
- **Acceptance Criteria:**
 - Unified interface combining morning briefings, real-time alerts, and continuous intelligence
 - Role-based customization for different analyst responsibilities and route portfolios
 - Drag-and-drop dashboard configuration for personalized workflows

- Integration with existing EasyJet tools and export capabilities to Excel/BI systems

FR-010: Continuous Intelligence Interface

- **Requirement:** Primary interface that serves morning briefings, real-time alerts, and continuous intelligence consumption
- **Acceptance Criteria:**
 - Morning briefing loads within 5 seconds
 - Real-time alerts display with <2-second latency
 - Seamless transition between briefing and real-time modes
 - Persistent state across browser sessions and mobile devices

FR-011: Real-Time Dashboard

- **Requirement:** Live dashboard showing current network status and emerging issues
- **Acceptance Criteria:**
 - Real-time data updates every 5 minutes during business hours
 - Visual indicators for routes requiring immediate attention
 - Drill-down capability from summary to detailed analysis
 - Customizable views based on analyst responsibilities

FR-012: Data Interrogation Interface (Databricks Genie)

- **Requirement:** Natural language interface for direct data queries and self-service analytics
- **Acceptance Criteria:**
 - Support natural language queries against EasyJet Databricks data warehouse
 - Return structured results with automatic visualizations within 10 seconds
 - Handle complex analytical queries (joins, aggregations, time series)
 - Query history and saved query management for repeated analysis

FR-013: Strategic Intelligence Interface (Writer Palmyra X5)

- **Requirement:** AI-powered interface for strategic recommendations and business intelligence beyond raw data
- **Acceptance Criteria:**
 - Provide strategic analysis and actionable recommendations with business context
 - Scenario modeling and "what-if" analysis capabilities

- Integration with data layer for evidence-based recommendations
- Confidence scoring and implementation guidance for all recommendations

FR-014: Dual-Interface Integration

- **Requirement:** Seamless integration between data interrogation (Genie) and strategic intelligence (Writer) layers
- **Acceptance Criteria:**
 - Users can escalate from data queries to strategic analysis within same interface
 - Context preservation when moving between Genie and Writer interactions
 - Clear distinction between data results and strategic recommendations
 - Unified conversation history across both interfaces

FR-015: Executive Dashboard

- **Requirement:** High-level dashboard for executive consumption
- **Acceptance Criteria:**
 - Single-page summary of network health and critical issues
 - Customizable metrics and thresholds
 - Mobile-optimized for smartphone access
 - Automated daily email delivery

Integration Requirements

FR-016: EasyJet System Integration

- **Requirement:** Secure integration with EasyJet's existing technology stack
- **Acceptance Criteria:**
 - SSO integration with EasyJet authentication system
 - Read-only access to sensitive revenue management data
 - API rate limiting to prevent system overload
 - Audit logging of all data access and user actions

FR-017: Third-Party Data Integration

- **Requirement:** Continuous integration with external aviation intelligence sources
- **Acceptance Criteria:**
 - Infare competitive pricing API with real-time updates during business hours

- OAG capacity and schedule data with daily batch updates
- Skyscanner search intelligence API with hourly demand updates
- Weather and event data integration for contextual analysis

FR-018: Alert Classification & Prioritization System

- **Requirement:** Automated alert classification system based on revenue impact and business context
- **Acceptance Criteria:**
 - Critical alerts (>£50K revenue impact): Immediate notification within 15 minutes
 - High-priority alerts (£20K-£50K impact): Notification within 30 minutes
 - Medium-priority alerts (£5K-£20K impact): Included in next briefing cycle
 - Low-priority alerts (<£5K impact): Weekly summary reporting only
 - User-configurable thresholds based on role and route portfolio

FR-019: Data Retention & Privacy Management

- **Requirement:** Comprehensive data governance system compliant with GDPR and EasyJet policies
- **Acceptance Criteria:**
 - Conversational history retained for 90 days with automatic deletion
 - Analysis results and recommendations retained for 2 years
 - Personal preferences and customizations retained until account deletion
 - GDPR right-to-delete requests processed within 30 days maximum
 - Data export capabilities for user data portability

FR-020: Mobile & Offline Capabilities

- **Requirement:** Mobile-optimized interface with limited offline capabilities for executives
- **Acceptance Criteria:**
 - Responsive web interface optimized for tablets and smartphones
 - Critical alerts accessible via mobile push notifications
 - Offline access to last 24 hours of briefings and analysis
 - Mobile-specific executive summary format for quick consumption

Non-Functional Requirements

Performance Requirements

- **NFR-001:** System response time <3 seconds for 95% of user interactions
- **NFR-002:** Continuous intelligence processing with real-time updates during business hours
- **NFR-003:** Morning briefing generation completed within 4-hour overnight window
- **NFR-004:** Support 50 concurrent users without performance degradation
- **NFR-005:** 99.9% uptime during European business hours (7 AM - 7 PM GMT) with 99.5% outside hours
- **NFR-006:** Alert delivery within defined SLA timeframes (15 minutes for critical, 30 minutes for high-priority)

Security Requirements

- **NFR-007:** GDPR compliance with European data residency requirements
- **NFR-008:** SOC 2 Type II security standards for enterprise data handling
- **NFR-009:** Role-based access controls with comprehensive audit logging
- **NFR-010:** Data encryption in transit and at rest with key rotation policies
- **NFR-011:** API rate limiting (1000 requests/hour per user) with abuse prevention

Scalability Requirements

- **NFR-012:** Support expansion to 200+ users without architectural changes
- **NFR-013:** Handle 10x increase in data volume with linear performance scaling
- **NFR-014:** Add new intelligence agents without system downtime
- **NFR-015:** Multi-region deployment capability for disaster recovery
- **NFR-016:** Automated horizontal scaling based on demand patterns

Usability Requirements

- **NFR-017:** New user onboarding completed within 30 minutes
- **NFR-018:** 90% of common tasks completable within 3 clicks
- **NFR-019:** Mobile-responsive design supporting tablet and smartphone usage
- **NFR-020:** Accessibility compliance with WCAG 2.1 Level AA standards

Reliability Requirements

- **NFR-021:** Disaster recovery with RTO 4 hours and RPO 1 hour
- **NFR-022:** Automated daily backups with 30-day retention policy

- **NFR-023:** Graceful degradation when individual components fail
 - **NFR-024:** Data integrity verification and corruption detection systems
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Technical Architecture Requirements

Data Architecture

- **TAR-001:** Event-driven architecture for real-time data processing
- **TAR-002:** Microservices architecture for agent orchestration
- **TAR-003:** Data lake architecture supporting structured and unstructured data
- **TAR-004:** API-first design for integration flexibility

AI/ML Architecture

- **TAR-005:** Dual AI engine architecture with Databricks Genie for data interrogation and Writer Palmyra X5 for strategic intelligence
- **TAR-006:** Seamless context preservation and handoff between Genie and Writer interfaces
- **TAR-007:** Vector database for similarity search and institutional memory functions
- **TAR-008:** MLOps pipeline for continuous model improvement and A/B testing framework
- **TAR-009:** Unified conversation history and session management across both AI engines
- **TAR-010:** Context inheritance system allowing Writer to access previous Genie query results

Infrastructure Architecture

- **TAR-011:** Cloud-native deployment on AWS with European data residency requirements
 - **TAR-012:** Container orchestration with Kubernetes for scalability and high availability
 - **TAR-013:** Infrastructure as Code (IaC) for repeatable deployments and disaster recovery
 - **TAR-014:** Comprehensive monitoring and observability with distributed tracing
 - **TAR-015:** Automated backup systems with 30-day retention and 4-hour RTO/1-hour RPO
 - **TAR-016:** API rate limiting (1000 requests/hour per user) with intelligent throttling
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Success Criteria & Metrics

User Adoption Metrics

- **Daily Active Users:** 85% of target analyst population
- **Session Duration:** Average 45+ minutes per morning session

- **Feature Adoption:** 70% usage of conversational interface within 30 days
- **User Satisfaction:** Net Promoter Score (NPS) >7

Business Impact Metrics

- **Efficiency Improvement:** 61% reduction in morning briefing preparation time (180→70 minutes) and 40% reduction in total daily analysis time
- **Decision Speed:** 70% faster response to competitive moves during business hours (average 45 minutes from detection to EasyJet response)
- **Alert Effectiveness:** 90% of critical alerts (>£50K impact) result in analyst action within 2 hours
- **Revenue Impact:** 2% improvement in network yield within 6 months
- **Competitive Response:** Reduce time-to-response for significant competitive moves from 4 hours to 45 minutes average
- **Accuracy Improvement:** 15% improvement in demand forecast accuracy

Technical Performance Metrics

- **System Availability:** 99.5% uptime during business hours
 - **Response Time:** <3 seconds for 95% of user interactions
 - **Data Accuracy:** 95% accuracy on competitive intelligence alerts
 - **Processing Reliability:** 99% successful overnight briefing generation
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Release Planning

Phase 1: MVP Core Intelligence (0-3 months)

Must Have Features:

- Morning briefing interface with prioritized insights
- Basic conversational interface for network queries
- Competitive intelligence agent for Ryanair monitoring
- Performance attribution agent for variance analysis
- EasyJet Databricks integration

Success Criteria:

- 10 pilot users actively using daily
- 50% reduction in morning analysis time for pilot users

- 85% accuracy on competitive move detection

Phase 2: Enhanced Intelligence (3-6 months)

Should Have Features:

- RM system transparency agent
- Advanced conversational capabilities with follow-up questions
- Executive dashboard for strategic intelligence
- Mobile-responsive interface
- Historical pattern recognition and learning

Success Criteria:

- Full analyst team adoption (30+ users)
- 2% measurable improvement in network yield
- Executive team regular usage for strategic decisions

Phase 3: Strategic Intelligence (6-12 months)

Could Have Features:

- Predictive demand modeling
- Advanced scenario planning capabilities
- Cross-route optimization recommendations
- Industry benchmarking intelligence
- Advanced customization and personalization

Success Criteria:

- Platform recognized as competitive advantage
- Executive dependency for strategic decisions
- Measurable ROI demonstration for enterprise licensing

Dependencies & Constraints

Technical Dependencies

- EasyJet Databricks platform access and API availability
- Writer Palmyra X5 API access and rate limits

- Infare competitive intelligence API contracts
- Internal RM system API development and access permissions

Business Dependencies

- EasyJet legal approval for data access and processing
- Analyst team availability for user research and testing
- Executive sponsorship for change management and adoption
- Integration with existing EasyJet workflows and tools

Resource Constraints

- 6-month development timeline for MVP delivery
- Budget constraints for third-party data licensing
- Limited availability of EasyJet domain experts for training
- European data residency and GDPR compliance requirements

Risk Mitigation

- **Technical Risk:** Phased rollout with fallback to existing processes
 - **Adoption Risk:** Extensive user training and change management program
 - **Performance Risk:** Load testing and gradual user onboarding
 - **Data Risk:** Read-only access patterns and comprehensive audit logging
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Acceptance Criteria for Release

MVP Release Criteria

- ☐ All Phase 1 functional requirements implemented and tested
- ☐ Performance benchmarks met (response time, availability)
- ☐ Security audit passed with no critical vulnerabilities
- ☐ User acceptance testing completed with 80% satisfaction score
- ☐ Integration testing with EasyJet systems completed successfully
- ☐ Documentation completed for user training and system administration

Production Release Criteria

- ☐ 30-day pilot program completed with success metrics achieved
- ☐ Scalability testing passed for target user load
- ☐ Disaster recovery procedures tested and validated

- ☐ Compliance audit passed (GDPR, SOC 2)
 - ☐ Executive stakeholder approval for full deployment
 - ☐ Support processes and runbooks completed
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Document Control:

- **Version:** 1.0
- **Last Updated:** July 29, 2025
- **Next Review:** August 15, 2025 (Post-Hackathon)
- **Approvers:** Chief Intelligence Officer, Head of Engineering, EasyJet Partnership Lead
- **Classification:** Confidential - Product Development