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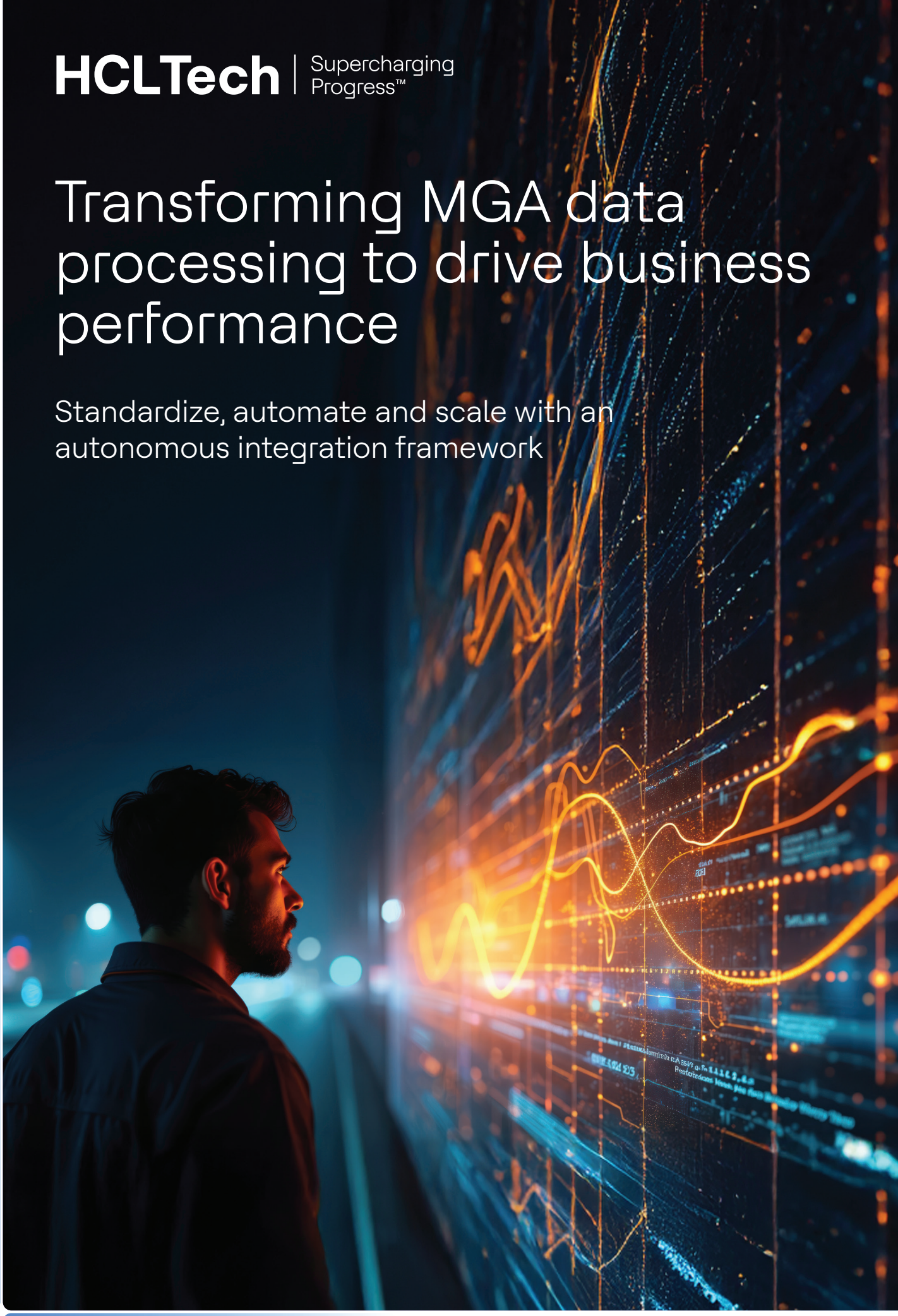
Transforming MGA data processing to drive business performance

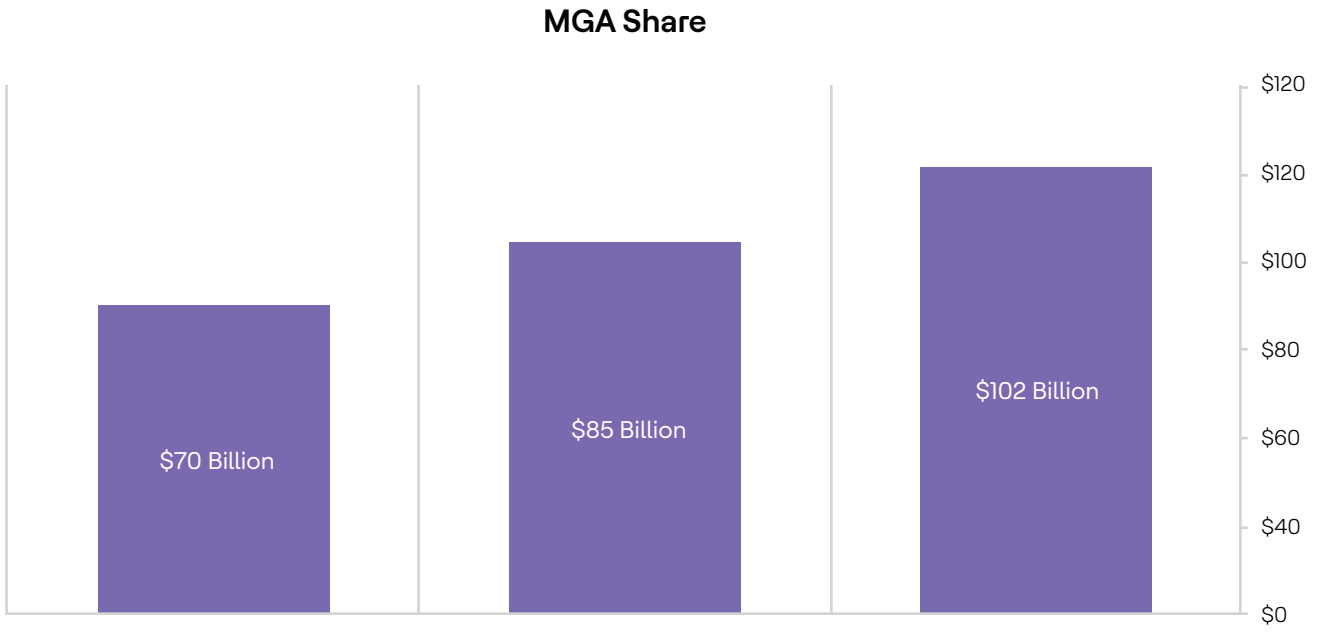
Standardize, automate and scale with an autonomous integration framework



1. The significance of MGAs in the insurance industry

Managing General Agents (MGAs) are increasingly vital force in the North American insurance market, especially in specialty lines. Acting as intermediaries, MGAs manage underwriting, claims and policy issuance, enabling insurers to enter niche markets without taking on the full operational burden.

The MGA market surpassed **$102 billion in direct premiums in 2023** and representing a substantial portion of the US Property & Casualty (P&C) market. This growth highlights their importance in **premium volume** and **product innovation**.



As insurers deepen their investments in MGA partnerships and Insurtech acquisitions, the need for efficient data handling and seamless integration becomes critical. However, the diversity of data formats and operational processes across MGAs presents a major challenge. To scale effectively, insurers must establish a robust technology intake framework that ensures compliance, reliability and operational efficiency.

2. Why data intake is paramount in handling MGAs

As data becomes central to underwriting, claims and risk management, MGAs—who manage specialized lines and generate large volumes of data play a pivotal role. However, integrating this data into insurers' core systems presents significant challenges:

- Inconsistent data formats
- Lack of standardization
- Varying submission methods
- Volume and frequency variabilityIntegration complexity
- Scalability limitations
- Security and compliance risks
- Real-time processing constraints

The sheer volume and complexity of data hinder efficient processing. As we have observed, even leading global organizations rely on excel sheets to manage MGA data—highlighting the urgent need for modernization.

This paper addresses these challenges and proposes IT solutions, such as AI, cloud computing and standardized frameworks, to streamline data intake, improve quality, enhance efficiency and ensure seamless integration, ultimately improving operational efficiency and risk management for insurers managing growing MGA portfolios.

3. Business considerations

Successful MGA partnerships require both technical reassurance for MGAs and technological awareness among insurer business teams. Establishing clear expectations and alignment between business and technical stakeholders from the outset is essential to avoid friction and ensure smooth operations.

Strategic alignment: Business-driven solutions

Before selecting technology, insurers must define:

- Business priorities (e.g., growth vs. cost efficiency)
- Regulatory requirements (e.g., GDPR, IFRS 17)
- Customer experience goals (e.g., instant policy issuance)

Business need	Required capability	Potential IT enabler
Faster MGA onboarding	Low-code/no-code integration	API gateways, iPaaS
Real-time underwriting	Instant data validation	Event-driven architecture
Regulatory compliance	Data lineage and audit logs	Blockchain, metadata mgmt.
Scalability	Cloud-based ingestion layer	AWS S3, Azure Data Lake
Cost efficiency	Automated STP workflows	RPA, AI data cleansing

Business model alignment:

The current business model often lacks the operational scalability and digital capabilities needed to efficiently process diverse, high-volume MGA data into core systems. The insurers must find out the answers to the following paramount questions before stepping into the solutions from an IT perspective:

- Is your operating model – especially around MGA relationships – designed for digital scale, or are you over-relying on manual processes and siloed systems?
- Do you treat MGA intake as a strategic capability or an operational afterthought?

Assuring the MGA on technical support:

When a new MGA is onboarded, it's important to clearly define the scope of technical support;

- Platform onboarding
- Integration assistance
- Ongoing system maintenance
- User training and troubleshooting
- Updates and release management

Clarity in these areas helps prevent misunderstandings and builds trust.

Aligning the business team:

Demonstrating the technology platform: Showcase how the platform supports business goals and operational workflows. This allows the business team to visualize the practical implications of the technology.

Explaining integration processes: Clearly outline timelines, dependencies and the impact on MGA workflows. The business team needs to understand the effort involved and how it will impact their workflows.

4. Capabilities framework: Assessing the gaps

What are the critical data management capabilities (e.g., ingestion, validation, transformation, integration) we need to master to support a growing network of MGAs effectively? Where are the current bottlenecks?

Before proposing IT solutions, insurers must evaluate their business and operational capabilities in handling MGA data and identify the gaps in their core capabilities.

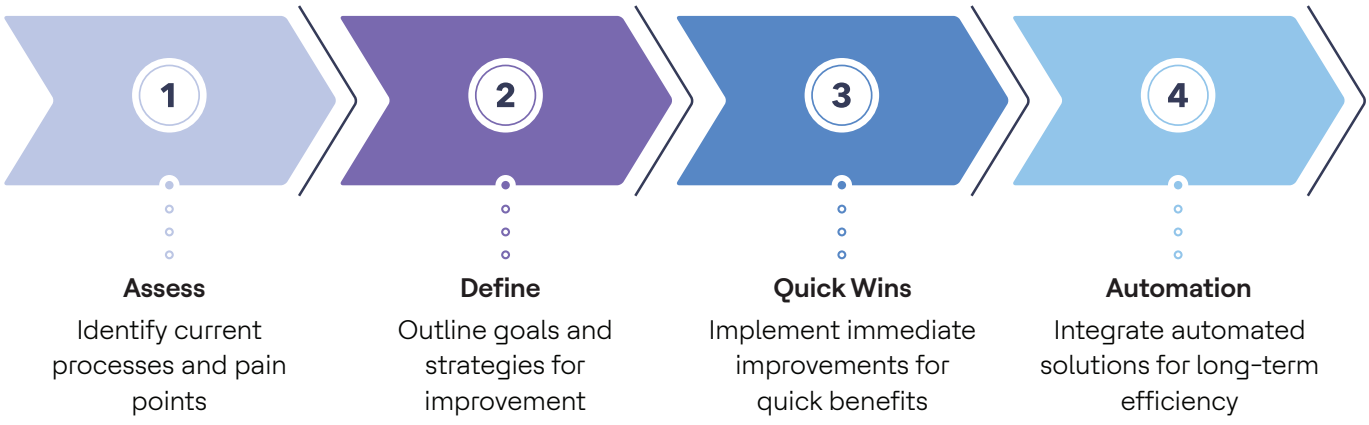
Capability	Description	Current state assessment
Data standardization	Ability to enforce uniform data formats across MGAs	❌ Ad-hoc, manual mappings
Real-time processing	Near-instant data ingestion and validation	❌ Batch-based, delays
Scalable integration	Support for adding new MGAs without IT bottlenecks	❌ Custom coding per MGA
Compliance and governance	Audit trails, data lineage, regulatory reporting	❌ Reactive, manual checks
Automated workflows	Straight-through processing (STP) for underwriting and booking	❌ High manual intervention

Maturity model for MGA data integration

Maturity level	Characteristics
Level 1 (Ad-hoc)	Manual data entry, no standardization, high error rates
Level 2 (Standardized)	Basic ETL processes, some automation, still batch-driven
Level 3 (Optimized)	API-driven, real-time sync, governance controls
Level 4 (Intelligent)	AI/ML for data validation, predictive underwriting

Most insurers currently operate at **Level 1 or 2**, resulting in inefficiencies and missed opportunities.

Roadmap for transformation:



5. Proposed solutions for effective data intake and processing

To improve data management with MGAs, insurers can adopt the following strategic solutions:

5.1 Implementing a data standardization framework

Insurers should adopt a standardized data exchange framework based on industry best practices and potentially leveraging ACORD standards. This framework should define

- Common data formats
- Validation rules
- Transmission protocols.

Establishing these standards will reduce inconsistencies, improve data quality and simplify transformation processes before data is booked into core systems.

5.2 Centralized data intake platform

A centralized platform should be developed to manage data from all MGAs. This platform must

- Handling multiple transmission methods
- Perform data validation and transformation using Extract Transform Load (ETL) processes
- Routing standardized data (e.g., ACORD XML, JSON) to core systems

Investing in data transformation and mapping tools will automate the conversion of diverse data formats into a unified structure. These tools should support validation, cleansing and enrichment.

5.3 Building a dedicated MGA database

Rather than pushing data directly into underwriting or claims systems, insurers can create a dedicated MGA business database. This centralized repository would:

- Serve as the single source of truth for all MGA-related data
- Integrate with downstream systems (e.g., billing, finance, reporting, reinsurance)
- Act as a parallel core system for the MGA business

This approach simplifies intake, reduces integration complexity and enhances scalability.

5.4 Seamless integration with core insurance applications

To enable real-time data flow and modular processing:

- Adopt a microservices architecture
- Use Robotic Process Automation (RPA) for legacy system interactions
- Integrate with policy administration systems via APIs

- Implement event-driven architecture (EDA) for real-time updates

This enhances decision-making speed and operational agility

5.5 Automated data validation and error handling

Automate data processing to reduce manual effort and improve accuracy:

- Use AI/ML tools for validation, cleansing, enrichment and anomaly detection
- Deploy rule-based engines to auto-correct formatting issues
- Establish automated feedback loops to notify MGAs of data errors
- Implement a data quality management system with profiling, validation and exception handling

5.6 API-driven data integration

Encourage MGAs to use APIs for secure, real-time data exchange. Insurers should:

- Develop and expose RESTful APIs
- Use middleware for real-time validation and transformation
- Implement API gateways to manage traffic and ensure secure access

Key benefits of API integration:

- Faster onboarding: AI-driven API mapping accelerates integration
- Real-time exchange: Synchronization reduces delays
- Scalable architecture: GenAI-powered middleware supports high-volume transactions

5.7 Scalable cloud-based data processing

Leverage cloud platforms (e.g., AWS, Azure) for scalable, cost-effective data processing:

- Use data lakes and warehouses for efficient storage
- Implement serverless computing to handle variable loads
- Apply parallel processing to accelerate validation and booking

Cloud platforms support elastic scaling during peak periods and ensure high availability.

5.8 Data security and compliance

Robust security measures should be implemented, including encryption, secure APIs and role-based access controls. AI can be used to monitor compliance with industry regulations, flagging non-compliant data and ensuring that data handling processes meet regulatory requirements.

5.9 Data governance framework

A strong data governance framework is necessary to define data ownership, establish data quality standards and ensure accountability. Clear communication channels between insurers and MGAs should be maintained to ensure that data is delivered in a timely and accurate manner.

6. How AI/GenAI can help in addressing this challenge

AI/GenAI can significantly enhance data management for insurers dealing with MGAs:

AI/GenAI for data standardization:

- **Data ingestion and extraction:** Automates extraction from various PDFs, spreadsheets and emails
- **Data normalization and standardization:** Maps MGA data to a common schema and standardizes terminology.
- **Automated transformation and integration:** AI-powered ETL converts data and automates routing to core systems.

Schema understanding via embeddings:

- AI converts data and core system fields into vector embeddings.
- **Automated schema comparison:** AI monitors schemas for structural changes using versioning.
- **Pattern and semantic analysis:** AI infers field relationships by analyzing historical mappings and semantic closeness (e.g., "Premium Amount" vs. "Total Premium").

Contextual pattern recognition:

- AI analyzes sample records to identify patterns, units and constraints (e.g., date formats).

Dynamic mapping:

- GenAI adapts to changes in data formats or schemas using self-learning models and adaptive mapping.
- **AI-based data mapping:** Auto-maps fields without hardcoding, adapting dynamically.
- **Adaptive ETL pipelines**: AI-enhanced ETL adjusts mappings and suggests optimizations.
- **RPA and AI synergy:** AI-powered bots automate manual data entry.
- **Predictive workflows:** AI anticipates issues and optimizes resource allocation.

Automated error correction using GenAI:

- **Anomaly detection:** AI flags unusual entries.
- **Error correction:** GenAI corrects typos, formatting issues and imputes missing data.
- **Self-learning corrections:** AI learns from past corrections and business rules.
- **Conversational AI for human review:** AI chatbots help underwriters clarify ambiguous data.

AI-driven compliance features:

- **Automated regulatory compliance checks:** AI scans data for compliance and makes adjustments.
- **Audit trail generation:** AI automatically generates compliance documentation and tracks transactions.

7. Our solution

We have developed an autonomous system to address these challenges with the help of GenAI, which accelerates and enhances the processing of bordereau data received from the MGAs periodically. The solution contains the following features:

Automated transformation and integration:

- AI-powered ETL converts raw data to standardized formats (JSON, XML, etc.).
- GenAI automates the routing of processed data to relevant systems.

Few-shot or zero-shot learning:

- GenAI infers field mappings based on training with diverse insurance data, generalizing without explicit prior knowledge.

Probabilistic matching and confidence scoring:

- AI assigns confidence scores to field mappings, flagging low-confidence matches for review.

API and integration for real-time mapping:

- AI models deployed as APIs dynamically map, validate and integrate incoming MGA data in real-time.

Intelligent handling of missing or new fields:

- **Missing field prediction:** AI identifies alternative sources or suggests synthetic fields.
- **New field alignment:** AI aligns new fields or proposes mappings with confidence scores.

AI-powered error detection:

- **Anomaly detection:** ML identifies unusual data values.
- **Pattern recognition:** AI detects and standardizes formatting inconsistencies across submissions.

Automated error correction using GenAI:

- **Fuzzy matching:** Corrects typos and misspellings.
- **Context-aware data imputation:** Predicts missing values based on historical data.
- **Standardization of terms and codes:** Converts custom codes and terms into industry standards.

Intuitive UI:

- Allows users to track file status, view/edit data, process validations, correct errors and reprocess files. A conversational UI supports smooth MGA onboarding and interaction.

Secured drop boxes:

- Provide MGAs with data guides and secure upload locations to ensure safe and standardized data submission.

Automated data quality check:

- A YAML-based engine validates uploaded data against master configurations, ensuring consistency and compliance before integration.

Benefits of the solution:

Fully configuration and metadata driven approach

Leverage Metadata driven self-healing data quality framework

Framework - Agent Driven - No Code/Low Code Ingestion

60% Reduction - Onboarding time

8. Conclusion

The challenges of data intake and integration from multiple MGAs are complex—but solvable. By adopting standardized data frameworks, automation and AI-powered integration tools, insurers can:

- Streamline data processing
- Improve data quality
- Enhance operational efficiency
- Strengthen compliance and governance

A proactive, technology-driven approach to data management will enable insurers to scale effectively, reduce risk and remain competitive in an increasingly data-intensive insurance landscape.

9. References

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10. About the authors

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Kumar Ganapthy is a senior leader at HCLTech, specializing in the Insurance domain with a strong focus on the European market. With extensive experience managing key client accounts and driving domain-centric growth strategies, Kumar Ganapathy has played a pivotal role in enabling insurers to adopt innovative technology solutions and modernize their operations. He brings a unique blend of business domain expertise and technology insight, helping clients unlock new opportunities across the insurance value chain. His passion lies in combining deep insurance knowledge with digital transformation levers such as AI, data and automation to deliver measurable business outcomes.