AI-powered GVD: Transforming Value Communication Through Artificial Intelligence

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Global value dossier (GVD) development is critical to market access yet often constrained by fragmented evidence and inconsistent value narratives. AI-powered GVDs represent a step change by strengthening evidence integration, improving scientific quality, and supporting traceability and consistency of evidence packages across multiple health technology assessment (HTA) submissions. AI enables more innovative and insight-driven dossiers when deployed with rigorous governance. PharmaQuant's aiGVD tool integrates intelligent automation with expert oversight to deliver high-quality, compliant, and future-ready value narratives that support confident payer decision making.

The GVD Development Imperative

In today's increasingly complex reimbursement environment, the ability to communicate clinical, economic, and humanistic value with clarity and consistency is critical to market access success. The GVD serves as the foundational evidence repository, informing country-specific submissions for HTA bodies, such as National Institute for Health and Care Excellence (NICE), Pharmaceutical Benefits Advisory Committee (PBAC), Haute Autorité de Santé (HAS), and other payer negotiations (e.g., private insurance). Despite its pivotal role, GVD development remains highly resource intensive, fragmented, and operationally challenging (Table 1). The complexity increases further for multi-indication and multi-market products due to distinct local market requirements. Therefore, the manual, traditional approach is increasingly unsustainable.

Table 1: Challenges With The Traditional GVD Development Process

Challenge Area	Specific Challenge	Business Impact
Resources & Time	Four to six months from initiation to finalization	Strategic resource diversion
Evidence Fragmentation	Siloed databases, inconsistent search methodologies	Missed evidence, incomplete value narratives, HTA credibility risk
Quality & Consistency	Multiple authors, varying terminology and formatting	Reduced coherence, contradictory claims across submissions
Stakeholder Coordination	Multiple review cycles with limited workflow visibility	Delays, version control issues, reviewer fatigue
Rapid Evidence Evolution	Static dossiers become outdated post-submission	Weakened reimbursement arguments, reduced scientific credibility
Multi-Market Complexity	Manual adaptation across country -specific submissions (e.g., PBAC, NICE, HAS, etc.)	Error-prone localization, inconsistent messaging, effort duplication

The Case for AI in GVD Development

The traditional GVD development process is illustrated in Figure 1. It begins with the definition of the value story and evidence framework, followed by literature review, data extraction, and a synthesis of clinical, economic, and humanistic evidence. Content is developed in modular sections across specialized teams and consolidated through structured review and alignment cycles into a core GVD, which serves as the foundational evidence asset for downstream materials and market-specific submissions.

Figure 2 presents an AI-powered GVD development approach. Human experts lead strategic planning and scoping, while agentic AI supports evidence identification, structured drafting across core sections (value, burden, clinical, and economic evidence), and systematic regional adaptation. Human review, editorial oversight, and cross-functional governance remain embedded throughout the process; this includes an ongoing maintenance capability to incorporate emerging evidence and sustain compliance.

Figure 1: Traditional GVD Workflow

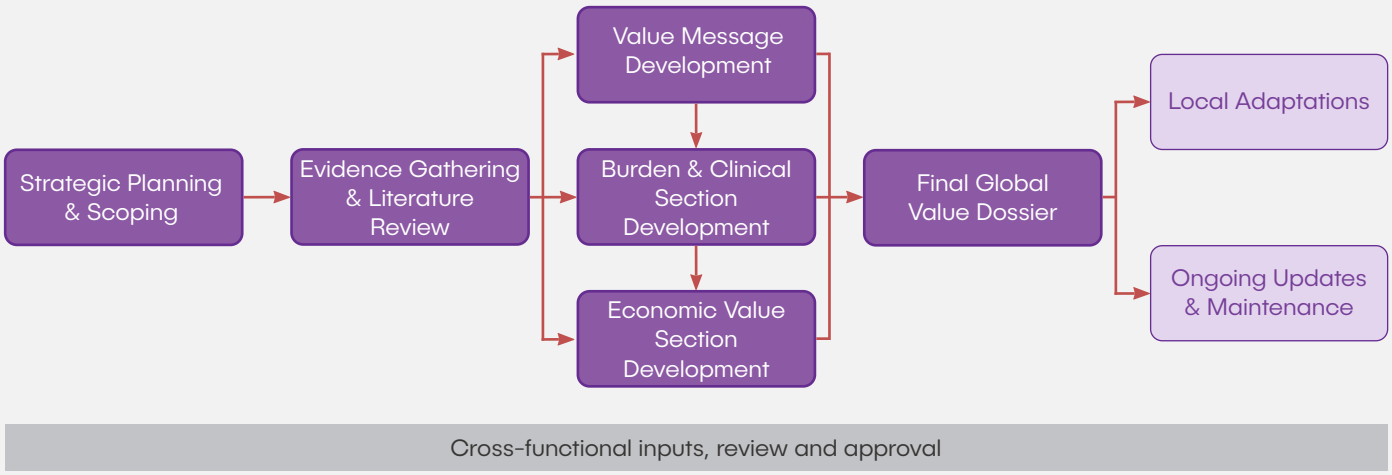
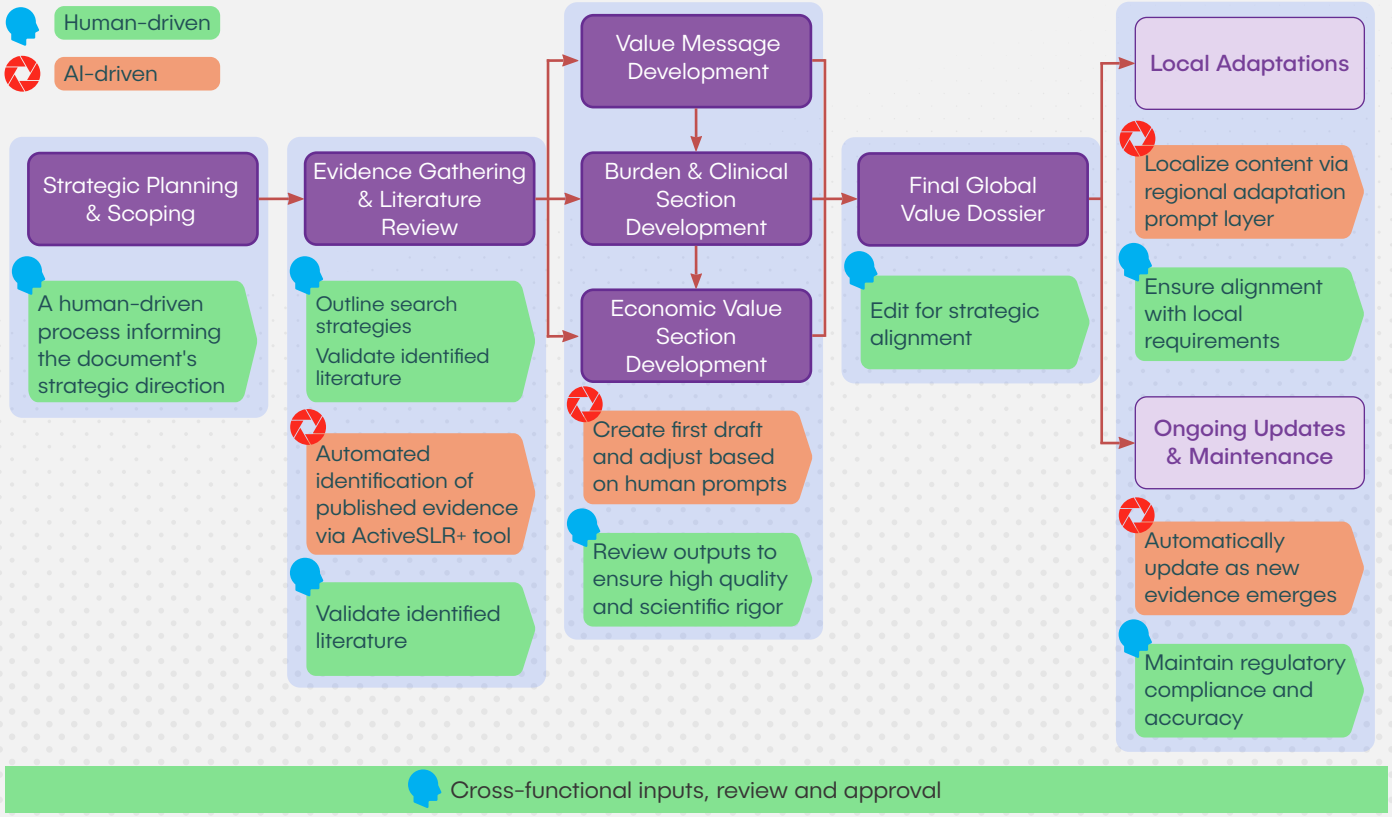


Figure 2: AI Powered GVD Workflow



PharmaQuant's aiGVD Framework

PharmaQuant's proprietary AI-powered GVD (aiGVD) is an integrated system designed to maintain scientific rigor, regulatory alignment, and full traceability while accelerating the GVD development process. It can integrate seamlessly with ActiveSLR+, PharmaQuant's proprietary AI-powered literature review tool, enabling automated, rapid identification and synthesis of relevant published literature.

The aiGVD architecture consists of five foundational layers, each purpose-built to support strategic health economics and outcomes research (HEOR) requirements (Figure 3). It integrates secure evidence infrastructure, intelligent evidence processing, and structured content generation with a regional adaptation layer. Expert validation checkpoints and full workflow governance ensure all AI-generated output remains fully transparent, verifiable, and compliant with rigorous medical and scientific standards.

Figure 3: aiGVD System Architecture

01 Secure Evidence Infrastructure

- Centralized repository for clinical evidence, guidelines, epidemiology data, HEOR/HTA studies, and comparator information
- Provides strong version control, data security protocols, and audit-ready traceability across all evidence retrieval, synthesis, and content generation steps

02 AI-Augmented Evidence Processing

- Multiformat intake (PDF, Word, PowerPoint), semantic chunking, domain-specific embeddings, metadata filtering, and cross-encoder re-ranking to prioritize the highest-relevance evidence
- Generates responses based exclusively on retrieved source material, reducing hallucinations and ensuring factual grounding

03 Structured Content Generation

- Controlled instruction framework with structured metadata
- 'Senior medical writer' persona enforcing tone and evidence hierarchy
- Guardrails preventing prohibited or overstated claims
- Section-specific templates for GVD sections

04 Regional Adaptation Layer

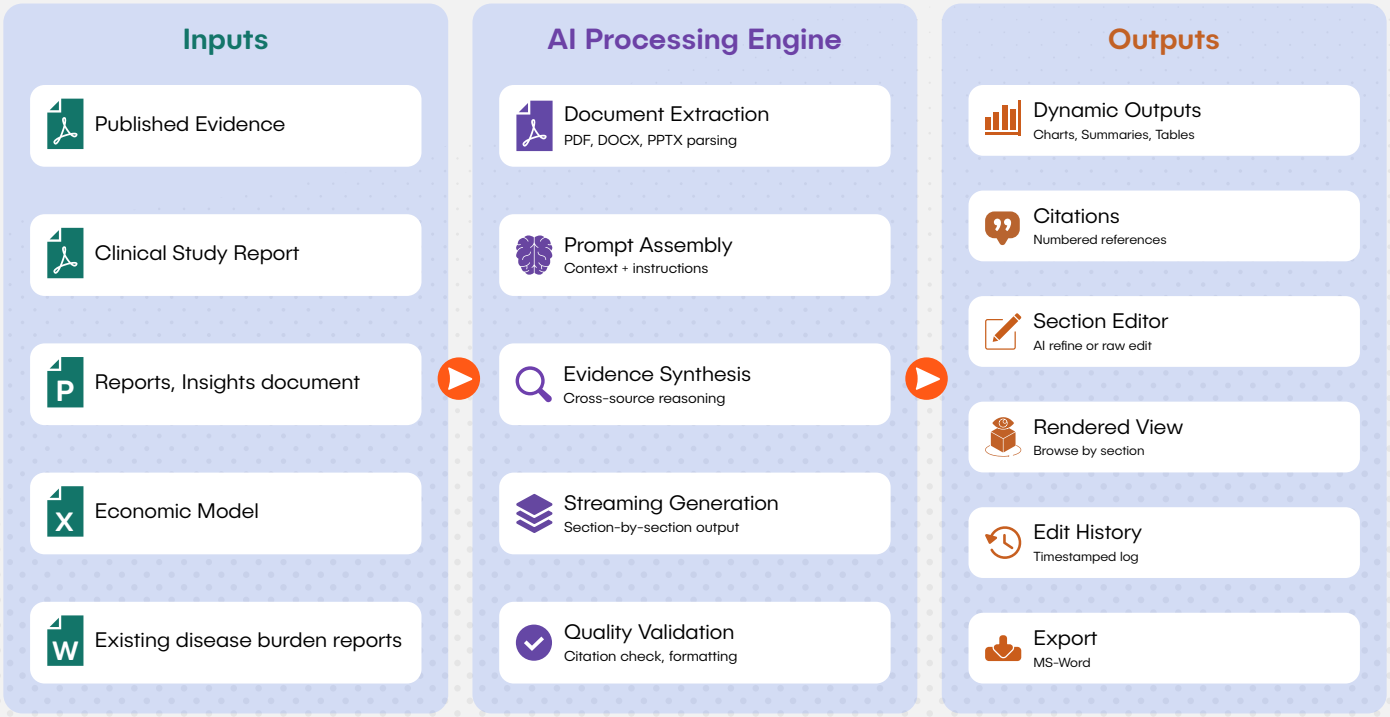
- Dossier-type-aware prompting adjusts content based on HTA body requirements (NICE, PBAC, AMCP)
- Regional variants are generated from a single master through layered adjustments. No separate full rewrites required

05 Expert Validation & Workflow Governance

- Embedded expert-validation checkpoints, transparent edit logs with timestamps
- Master document governance with propagation to regional variants, and iterative enhancement via natural language
- Overall process ensures that full traceability is preserved across all revisions

The aiGVD tool ingests diverse source documents, processes them through sequential extraction, synthesis, and validation steps, and delivers section-wise narratives with in-line citations and dynamic charts (Figure 4).

Figure 4: Translating Raw Data to Strategic Insights



Proactive Risk Mitigation and Data Confidentiality Framework

aiGVD has been designed with a proactive, in-depth approach to risk mitigation (Figure 5), ensuring the benefits of AI-enabled efficiency are realized without compromising scientific integrity and data confidentiality.

The aiGVD adheres to strict standard operating procedures (SOPs) for handling client data, enforcing role-based access controls, and applying end-to-end encryption alongside regular vulnerability assessments.

Figure 5: aiGVD Risk Mitigation Framework



Measurable Impact

aiGVD framework delivers measurable impact across quality, speed and compliance —transforming a traditionally prolonged, resource-intensive process into an agile and living evidence asset (Figure 6).

Figure 6: Key Performance Outcomes of PharmaQuant's aiGVD

60%–70%	> 90%	50%	100%
Reduction in development time*	AI-generated data accuracy	Faster local adaptations for priority markets	Audit-ready traceability on all outputs

*Reduction in GVD development time shifts effort from document production to strategic value planning.

Conclusion

PharmaQuant is advancing the next phase of GVD development through the responsible application of AI, enabling more scalable, consistent and decision ready value communication while preserving the central role of domain expertise.

The aiGVD tool integrates automation, quality, and compliance within a unified framework to support global HEOR and market access teams in generating submission-ready, auditable dossiers without extended production timelines. Designed by HEOR specialists and embedded within established governance and quality frameworks, the tool allows teams to focus on strategic evidence planning and value articulation, while reducing operational complexity.

As market access and HTA requirements continue to evolve, PharmaQuant's approach contributes to emerging best practices for AI-powered, compliant, and scientifically robust value communication.

For further information, please contact

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to arrange a demo and discuss further opportunities available with AI-powered HEOR.

Visit us:- https://www.pharmaquant.org