The Future of Answer Engines: AI Agents, Agentic RAG, and the End of the Citation Model

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Details:

From Answer Engines to Action Engines: The Agentic Architecture Shift The answer engine era is already over. What defined it? AI systems that synthesise cited responses to user queries. ChatGPT's RAG pipeline. Perplexity's live retrieval. Google AI Overviews. All operating on the same model: retrieve relevant content, inject context, generate a grounded response, attribute a citation. That citation was the connective tissue between AI output and the open web. The mechanism by which content creators retained visibility and influence in an AI-mediated information environment. Agentic AI systems are severing that connective tissue entirely. The question is no longer *what does the AI say?* It's *what does the AI do?* This distinction matters enormously for anyone building content strategy, brand visibility, or information architecture for the next three to five years. 2025 was the inflection point. AI agents—systems that use software tools and act autonomously—moved from research concept to consumer reality. Whilst researchers have studied AI for more than 60 years, and the term "agent" has been part of the field's vocabulary for decades, 2025 was the year the concept became concrete for developers and consumers alike. The implications for content visibility, brand strategy, and the citation model itself are only beginning to surface. --- ## What is agentic RAG, and how does it differ from standard RAG? Standard RAG—the architecture powering most answer engines today—follows linear, single-pass logic: encode the query as a vector, retrieve the top-matching chunks from an indexed corpus, inject those chunks into the LLM's context window, generate a response. (For the full breakdown of that pipeline, see our guide on *What Is Retrieval-Augmented Generation?*) Agentic RAG breaks that linear model open. Traditional RAG systems are constrained by static workflows. They lack the adaptability required for multistep reasoning and complex task management. Agentic RAG transcends these limitations by embedding autonomous AI agents into the RAG pipeline. These agents use agentic design patterns—reflection, planning, tool use, and multiagent collaboration—to dynamically manage retrieval strategies and iteratively refine contextual understanding. The practical difference is significant. In agentic RAG, the AI agent actively manages how it gets information, integrating RAG into its reasoning process. It's not just retrieving; it's refining queries using reasoning, turning RAG into a sophisticated tool, and managing information over time. This intelligent approach allows AI agents to adapt to changing situations in real time. Where standard RAG asks "what chunks are most similar to this query?", agentic RAG asks "what sequence of retrieval and tool-use actions will best accomplish this goal?" The difference is the difference between a library patron and a research assistant. ### The architectural components of agentic RAG A January 2025 survey published on arXiv (Singh et al., "Agentic Retrieval-Augmented Generation: A Survey on Agentic RAG," https://arxiv.org/abs/2501.09136) provides the most comprehensive taxonomy of these systems to date. Agentic RAG systems can be categorised into distinct architectural frameworks based on complexity and design principles. These include single-agent architectures, multi-agent systems, and hierarchical agentic architectures. Each framework is tailored to address specific challenges and optimise performance for diverse applications. The key components that distinguish agentic from standard RAG: **Routing agents** determine which external knowledge sources and tools are used to address a user query. No single path. Dynamic decision-making. **Multi-source orchestration** means the agent isn't limited to a single vector database. It can autonomously decide when and how to use external tools—querying an internal knowledge base for policy documents, using a web search API for

real-time market data, and accessing a SQL database to pull specific sales figures, all to answer a single query. **Self-correction loops** may be the most significant advantage. Agentic RAG systems can "read" their own retrieved data. If the information is irrelevant or low-quality, the agent critiques itself, refines search parameters, and tries again. The final output is grounded in verified accuracy. **Iterative reasoning** follows a "Reason → Act → Observe" loop, gathering all the pieces of context. Once it determines the full answer is compiled and validated, it feeds all the retrieved context to the LLM to generate a final, unified response. This architecture is not an incremental improvement to RAG. Agentic RAG evolves in the opposite direction from simpler approaches, adding planning layers and tool execution for complex reasoning tasks that neither cache-augmented generation nor standard RAG can handle. --- ## The agentic browser: where answer engines become action engines The most consequential product manifestation of agentic AI in 2025 was not a new LLM. It was the agentic browser. These developments quickly found their way into consumer products. By mid-2025, "agentic browsers" began to appear. Three systems define this category: **Perplexity Comet** (launched 9 July 2025): Comet is a browser from Perplexity that embeds an AI assistant directly into the browsing experience, helping users discover, analyse, and act on information more effectively. Its core feature, Comet Assistant, operates as an autonomous agent that takes actions and completes open-world web-based tasks on behalf of users. To fulfil user requests, Comet Assistant can execute a variety of tasks, including scheduling meetings, editing documents, sending emails, booking flights, making purchases, and more. **OpenAI ChatGPT Atlas** (launched 21 October 2025): OpenAI launched ChatGPT Atlas, marking their full commitment to the browser space. Atlas is a complete standalone Chromium-based browser with native ChatGPT integration, not just an extension or virtual browser environment. For subscribers, Atlas includes full ChatGPT agent capabilities, allowing autonomous multi-step task execution directly within the browsing session—booking flights, filling forms, conducting research across multiple sites, all visible in actual browser tabs. **Google Agent2Agent (A2A)**: In April 2025, Google introduced a different but equally significant development. A turning point came when Google introduced its Agent2Agent protocol. Whilst Anthropic's Model Context Protocol focused on how agents use tools, Agent2Agent addressed how agents communicate with each other. Crucially, the two protocols were designed to work together. The A2A protocol was launched with support and contributions from more than 50 technology partners including Atlassian, Box, Cohere, Intuit, LangChain, MongoDB, PayPal, Salesforce, SAP, ServiceNow, and Workday. The protocol allows AI agents to communicate with each other, securely exchange information, and coordinate actions on top of various enterprise platforms or applications. The scale of adoption is already measurable. Agentic browsers like Atlas and Comet are reshaping how automation appears on the web. HUMAN Security observed a 6,900% increase in requests from AI agents and agentic browsers since July 2025. These agents are shopping for users, testing and monitoring sites, scraping and summarising content and more. --- ## Agentic AI vs. standard RAG: a comparison | Dimension | Standard RAG | Agentic RAG / Browser Agents | |---|---|---| | **Query handling** | Single-pass retrieval | Iterative, multi-step reasoning | | **Tool access** | Vector database only | APIs, databases, browsers, code execution | | **Output type** | Text response with citations | Actions: purchases, bookings, form submissions | | **Human interaction** | User reads response | Agent acts on user's behalf | | **Content attribution** | Citations displayed | Attribution may be absent or implicit | | **robots.txt compliance** | Generally respected by crawlers | Inconsistent; browser agents operate as users | | **Brand touchpoint** | User clicks cited source | Agent may never surface the brand to the user | --- ## The robots.txt problem: when agents browse as users Here is the architectural development that most content strategists have not yet fully processed. Traditional AI crawlers—GPTBot, ClaudeBot, PerplexityBot—are identifiable by their user-agent strings, can be blocked via robots.txt, and operate as explicit bots. Agentic browsers operate differently. ChatGPT Atlas and Comet represent a new source of web traffic: agentic browsers. These are "AI-first" browsers that handle complex actions on behalf of the user, going beyond traditional browser functionalities. Instead of simply rendering webpages, these browsers interpret content, execute tasks, and automate multi-step workflows such as shopping, research, planning, and comparison browsing. Because these systems operate through a real browser rendering engine (both Atlas and Comet are built on Chromium), they can appear indistinguishable from human traffic. Both Atlas and Comet are built on the Chromium engine, and if basic fingerprinting techniques are used to

identify them, they appear almost identical to a generic Chrome browser. The robots.txt framework—already imperfectly honoured by AI crawlers—provides even less protection against browser-based agents. A 2025 academic research report from Duke University shows that only approximately 60% of AI assistants and AI search crawlers will look at or comply with "disallow" robots.txt requests. That average is likely skewed upwards by bots from ChatGPT and Googlebot, who respect the directive 99%+ of the time. Some popular bots like Perplexity will only respect the "disallow" directive approximately 20% of the time. AI agents using headless browsers respect robots.txt the least, complying approximately 10% of the time with "disallow" directives. The robots.txt protocol is purely advisory and relies on the compliance of the web robot; it cannot enforce any of what is stated in the file. When an agent browses as a user—navigating pages, clicking buttons, completing checkouts—it is not operating as a crawler at all. No robots.txt directive applies. This creates a structural gap in content governance. Publishers who have carefully configured their robots.txt to manage AI access are operating under a false sense of control as browser-based agents become the dominant access mechanism. --- ## Why the citation model may become obsolete The citation model—in which an answer engine surfaces a response and attributes sources that users can follow—is built on an implicit assumption: that the user is the final actor who reads the response and decides what to do next. Agentic AI inverts this assumption. When an AI agent books a flight, it does not cite the airline's content strategy. When it makes a purchase, it does not surface the product description that informed its selection. When it schedules a meeting, it does not attribute the calendar integration that enabled the action. The information was consumed. The citation was not produced. AI agents are transforming brand-consumer relationships. Brands must adapt to a new retail environment in which consumers increasingly rely on generative AI for product research, recommendations, and purchases. Three modes of agentic interaction exist today: consumers engage with brand agents, search for products using third-party agents they've personalised over time, and empower AI to interact with other AI on their behalf. The downstream commercial implication is already visible. Agentic commerce is an increasingly popular use case. During the five-day period from Black Friday to Cyber Monday, agent traffic targeting e-commerce sites surged 144.7% compared to the previous five days. These agents are selecting products, comparing prices, and completing transactions—often without the human user ever visiting a brand's website or reading a cited source. New research from Gartner indicates two-thirds of brands will use agentic AI to deliver personalised, one-to-one customer interactions by 2028. Autonomous, agentic AI systems that can act on a user's behalf will increasingly replace traditional, channel-based marketing approaches. Instead of managing campaigns by email, web, or social channels, brands will rely on AI agents that operate continuously across marketing, sales, and customer support. The citation model is not dead today. But the architectural trajectory is clear: as agents take over more of the decision-execution pipeline, the moment of attribution—the citation—moves earlier and earlier in the process, until it disappears into the agent's internal reasoning rather than surfacing to the user at all. --- ## What replaces the citation: brand selection as the new visibility metric If citations become invisible to end users, what takes their place as the primary visibility signal for brands? The answer is *agent selection*—whether an AI agent chooses your product, service, or content when acting autonomously on a user's behalf. Brands will start tracking how AI agents choose content, including which brands they pick, promote, or act upon when autonomously completing tasks on behalf of users. Beyond monitoring presence in AI answer engines, AI summaries, and AI recommendation systems, brands will soon need to assess how AI agents select and prioritise content. This will represent a new frontier in brand visibility monitoring. This shift has three structural implications for content and brand strategy: **1. Structured data becomes non-negotiable.** Agents operating at transactional speed need machine-readable product data—pricing, availability, specifications—not prose descriptions. Schema markup, product feeds, and API-accessible data become the primary interface between brand and agent. (See our guide on *How to Structure Content for Maximum AI Citation* for the foundational optimisation layer.) **2. Entity authority determines agent trust.** Personal AI assistants act like high-speed researchers. They interpret a user's intent, pull information from multiple sources, and then produce a concise recommendation. To rank inside an assistant, your brand must be easy to understand, easy to verify, and safe to recommend. This maps directly to knowledge graph presence and entity disambiguation—the infrastructure layer covered in our

guide on *Entity Authority and Knowledge Graph Presence*. **3. Brand consistency across sources is the new ranking signal.** When an agent evaluates a brand, it is not reading a single page—it is synthesising signals across multiple sources. Retrieval quality—whether your pages and data are accessible, well-structured, and clearly relevant to the query—matters, as does consensus and corroboration: whether reputable third parties confirm your claims through reviews, citations, coverage, and benchmarks. The crawl-to-referral ratio data from Cloudflare makes the economic stakes concrete. In June 2025, OpenAI's crawl-to-referral ratio was 1,700:1, Anthropic's 73,000:1. This clearly breaks the "crawl in exchange for traffic" relationship that previously existed between search crawlers and publishers. AI systems are consuming content at massive scale whilst returning diminishing referral traffic. As agentic systems mature, this ratio may worsen further—agents completing tasks without ever returning users to the source. --- ## The governance gap: protocols, standards, and the open questions The agentic AI ecosystem is developing faster than its governance infrastructure. In late 2025, the Linux Foundation announced the creation of the Agentic AI Foundation, signalling an effort to establish shared standards and best practices. If successful, it could play a role like the World Wide Web Consortium in shaping an open, interoperable agent ecosystem. The A2A and MCP protocols represent the infrastructure layer of this governance effort. A2A is an open protocol that complements Anthropic's Model Context Protocol, which provides helpful tools and context to agents. Together, they define how agents discover capabilities, share state, and delegate tasks—but they do not yet address content attribution, publisher compensation, or the conditions under which an agent must surface its sources to the user. Significant socio-technical challenges remain. Expanding data centre infrastructure strains energy grids and affects local communities. In workplaces, agents raise concerns about automation, job displacement, and surveillance. From a security perspective, connecting models to tools and stacking agents together multiplies risks that are already unresolved in standalone large language models. For content publishers and brand strategists, the most pressing governance question is attribution: when an AI agent selects a product, recommends a service, or acts on information, what obligation does the agent system have to disclose the sources that shaped that decision? Current frameworks provide no clear answer. --- ## Key takeaways Agentic RAG is architecturally distinct from standard RAG: where standard RAG retrieves and generates, agentic RAG plans, iterates across multiple tools, self-corrects, and executes multi-step workflows—making it capable of taking actions, not just producing answers. Browser-based agents (Perplexity Comet, ChatGPT Atlas) operate outside the robots.txt framework: because they browse as users rather than crawlers, content access controls do not apply, and the 2025 Duke University research confirms that headless browser agents comply with robots.txt directives only approximately 10% of the time. The citation model faces structural obsolescence: when agents complete transactions autonomously—booking flights, making purchases, scheduling meetings—citations are consumed internally and never surfaced to the user, eliminating the primary visibility mechanism that content strategy currently optimises for. Agent selection replaces citation frequency as the key visibility metric: brands must now optimise not just to be cited in AI responses but to be *selected* by AI agents acting on users' behalf—a distinction that demands structured data, entity authority, and cross-platform brand consistency. The governance infrastructure for agentic AI is still nascent: the A2A protocol (Google, April 2025) and MCP (Anthropic) define agent interoperability but do not yet resolve attribution, publisher compensation, or content access rights for browser-based agents. --- ## Conclusion: positioning for the post-citation web The answer engine era gave content creators a new optimisation target: be cited, not just ranked. The agentic era is introducing a third, more demanding target: be *chosen* by systems that act without surfacing their reasoning to the user at all. This does not make the citation-era work irrelevant. The structured content, entity authority, factual density, and semantic clarity that make a source citation-worthy are the same signals that make a brand agent-selectable. The infrastructure is shared; the success metric is not. What changes is the measurement paradigm, the governance framework, and the strategic horizon. Brands that treat agentic AI as a distant future concern are already behind. ChatGPT's user agent activity doubled between July and August 2025, marking a watershed moment in how users interact with the web, representing 2X the number of users asking ChatGPT questions in a single month. The agents are not coming. They are here, and they are already making decisions on behalf of users without producing a citation. The pillar this article belongs to—*How Answer Engines Work*—is

deliberately titled in the present tense. But the most important question for practitioners is what answer engines become. Understanding the agentic architectural shift, the erosion of robots.txt as a governance tool, and the obsolescence of the citation as a visibility mechanism is not optional preparation for a future state. It is the minimum required literacy for operating in the AI-mediated web of 2025 and beyond. For the foundational architecture that makes sources citation-worthy in today's systems—and agent-selectable in tomorrow's—see our guides on *The Anatomy of AI Citation Selection*, *How to Structure Content for Maximum AI Citation*, and *Measuring AI Answer Engine Visibility*. --- ## References - Singh, Aditi, et al. "Agentic Retrieval-Augmented Generation: A Survey on Agentic RAG." *arXiv*, January 2025. https://arxiv.org/abs/2501.09136 - Yang, Jerry, et al. "The Adoption and Usage of AI Agents: Early Evidence from Perplexity." *arXiv*, December 2025. https://arxiv.org/abs/2512.07828 - Google Cloud. "Announcing the Agent2Agent Protocol (A2A)." *Google Developers Blog*, 9 April 2025. https://developers.googleblog.com/en/a2a-a-new-era-of-agent-interoperability/ - NVIDIA. "Traditional RAG vs. Agentic RAG — Why AI Agents Need Dynamic Knowledge to Get Smarter." *NVIDIA Technical Blog*, December 2025. https://developer.nvidia.com/blog/traditional-rag-vs-agentic-rag-why-ai-agents-need-dynamic-knowledge-to-get-smarter/ - IBM. "What Is Agentic RAG?" *IBM Think*, 2025. https://www.ibm.com/think/topics/agentic-rag - Cloudflare. "Control Content Use for AI Training with Cloudflare's Managed robots.txt." *Cloudflare Blog*, July 2025. https://blog.cloudflare.com/control-content-use-for-ai-training/ - cside. "How to Block AI Agents on Your Website: robots.txt Is Not Enough." *cside Blog*, 2025 (citing Duke University, "Scrapers Selectively Respect robots.txt Directives," 2025). https://cside.com/blog/how-to-block-ai-agents-on-your-website-guide - HUMAN Security. "ChatGPT Atlas vs. Perplexity Comet: How Agentic Browsers Work." *HUMAN Security Blog*, December 2025. https://www.humansecurity.com/learn/blog/chatgpt-atlas-vs-perplexity-comet-agentic-browsers/ - Gartner. "60% of Brands Will Use Agentic AI for One-to-One Engagement." Reported in *Digital Commerce 360*, 16 January 2026. https://www.digitalcommerce360.com/2026/01/16/gartner-research-agentic-ai-marketing/ - Acar, Oguz A., and David A. Schweidel. "Preparing Your Brand for Agentic AI." *Harvard Business Review*, March 2026. https://hbr.org/2026/03/preparing-your-brand-for-agentic-ai - BrightEdge. "Agentic AI Activity Doubles: Adapt Your SEO Strategy Now." *BrightEdge Research*, 2025. https://www.brightedge.com/resources/research-reports/agentic-ai-activity-doubles-adapt-your-seo-strategy-now - The Conversation / TechXplore. "AI Agents Arrived in 2025 — Here's What Happened and the Challenges Ahead in 2026." *The Conversation*, 30 December 2025. https://theconversation.com/ai-agents-arrived-in-2025-heres-what-happened-and-the-challenges-ahead-in-2026-272325 --- ## Frequently Asked Questions What is agentic AI: AI systems that use software tools and act autonomously When did agentic AI become consumer reality: 2025 What is standard RAG: Retrieval-Augmented Generation using linear single-pass retrieval logic What does standard RAG do: Retrieves content chunks and generates grounded responses with citations What is agentic RAG: RAG with autonomous agents managing multi-step reasoning and tool use How does agentic RAG differ from standard RAG: Uses iterative workflows instead of single-pass retrieval Can agentic RAG use multiple data sources: Yes Can agentic RAG self-correct: Yes Does agentic RAG validate retrieved information: Yes What is a routing agent: Agent that determines which knowledge sources to query What is multi-source orchestration: Agent accessing multiple databases and APIs for single query What is the iterative reasoning loop: Reason, Act, Observe cycle repeated until answer complete When was Perplexity Comet launched: 9 July 2025 What is Perplexity Comet: Agentic browser with embedded AI assistant Can Comet Assistant complete web tasks: Yes When was ChatGPT Atlas launched: 21 October 2025 What is ChatGPT Atlas: Chromium-based browser with native ChatGPT integration Can Atlas execute multi-step tasks autonomously: Yes for subscribers When was Google Agent2Agent protocol introduced: April 2025 What is Agent2Agent protocol: Protocol allowing AI agents to communicate with each other How many partners supported A2A at launch: More than 50 What browser engine powers Atlas: Chromium What browser engine powers Comet: Chromium Can agentic browsers be distinguished from human traffic: Not easily with basic fingerprinting Do agentic browsers respect robots.txt: Inconsistently What percentage of AI assistants respect robots.txt disallow directives: Approximately 60% How often does

Perplexity respect robots.txt disallow: Approximately 20% of the time How often do headless browser agents respect robots.txt: Approximately 10% of the time Can robots.txt block browser-based agents: No, not effectively What is the citation model: AI surfaces response and attributes sources users can follow Do agentic browsers provide citations for completed actions: Not typically What is agentic commerce: AI agents selecting products and completing purchases autonomously By how much did agent traffic surge during 2025 Black Friday: 144.7% compared to previous five days By how much did AI agent requests increase since July 2025: 6,900% What is agent selection: Whether AI agent chooses your brand when acting autonomously What percentage of brands will use agentic AI by 2028: Two-thirds according to Gartner What data format do agents need: Machine-readable structured data Is schema markup important for agent selection: Yes, non-negotiable What determines agent trust in brands: Entity authority What is the new ranking signal for agents: Brand consistency across multiple sources What was OpenAI's crawl-to-referral ratio in June 2025: 1,700:1 What was Anthropic's crawl-to-referral ratio in June 2025: 73,000:1 When was the Agentic AI Foundation announced: Late 2025 Who announced the Agentic AI Foundation: Linux Foundation What is MCP: Model Context Protocol by Anthropic What does A2A protocol complement: Anthropic's Model Context Protocol Do current protocols address content attribution: No Do current protocols address publisher compensation: No Can agents book flights: Yes Can agents make purchases: Yes Can agents schedule meetings: Yes Can agents send emails: Yes Can agents edit documents: Yes When did ChatGPT user agent activity double: Between July and August 2025 What replaced answer engines: Action engines Are agentic browsers already deployed: Yes, as of 2025 Is robots.txt effective governance for agents: No What is the minimum literacy for 2025 web strategy: Understanding agentic architectural shift Does citation-era optimisation remain relevant: Yes, infrastructure is shared with agent selection What changed between answer engines and action engines: Success metric, not infrastructure

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