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Why AI Has Not Solved the Hospitality Connectivity Problem

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Abstract

AI adoption in hospitality is accelerating. Business value is not. This paper explores why the gap between the two is widening, and why the answer lies not in the AI tools organisations choose, but in the infrastructure underneath them. Drawing on current data and real-world examples, it examines the three root causes holding most organisations back: AI literacy, data quality, and integration. It then sets out what it actually takes to build connectivity that works in a world where AI agents, not humans, are increasingly the consumer of your systems.

About the Author

Luis Weir is Chief Architect at **PolyAPI**, where he sets the technical direction for strategic client engagements spanning integrations, orchestrations, data pipelines, and AI services across hospitality, food and beverage, and retail.

Before joining PolyAPI, Luis served as **Head of Applied AI for Oracle's Hospitality** business. Prior to that, he played a central role in the commercialisation and scale-up of the **Oracle Hospitality Integration Platform (OHIP)** — a project originally conceived by PolyAPI CEO and founder Darko Vukovic. His broader career includes a range of senior architectural and technical leadership roles, most notably as CTO of the Oracle practice at Capgemini.

Introduction

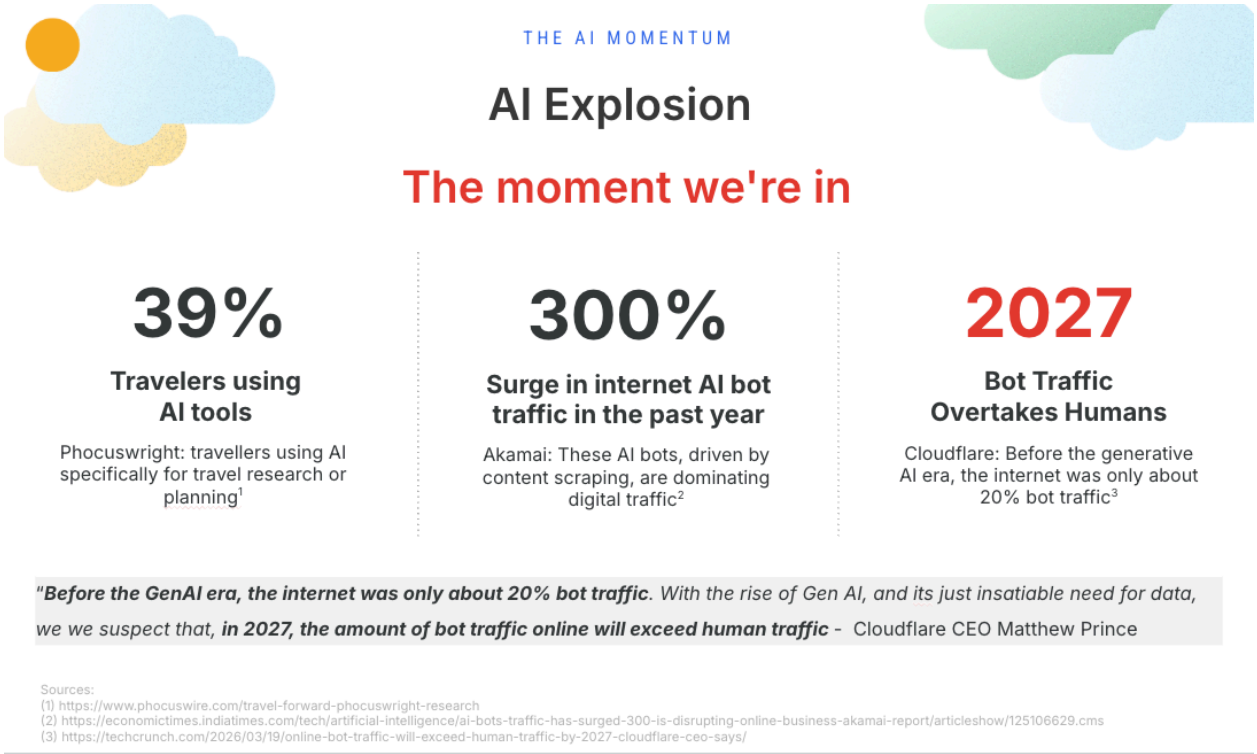
I recently delivered a masterclass for Raizup on a problem that is quietly holding back the realization of Gen AI's business value across the hospitality industry (and many other industries for that matter).

Much of the conversation in our industry to date has focused on adoption: which tools to use, which use cases to prioritise. What has received far less attention is the question of how exactly AI agents are able to connect to all the enterprise capabilities they require to deliver value, what is the architecture needed for this, and the underlying infrastructure to enable it. AI agents need clean data, clear context, and well-structured access to backend systems. Most hospitality stacks are not currently architected to support this paradigm shift.

What follows are the key takeaways:

1. Why this moment is different from previous technology cycles
2. Why high AI usage is not translating into measurable returns
3. What good connectivity actually looks like when AI agents are the consumer

If you are an organisation trying to figure out where to invest, or a technologist trying to turn pilots into impact, this is written for you.



Why this moment is different

The nature of who (or what) is interacting with your business is changing faster than most operators realise.

For context, before the rise of generative AI, bots accounted for roughly 20% of all internet traffic.[1] By 2024, automated traffic (bots, crawlers, and AI agents combined) had crossed 51% for the first time in a decade.[2] And the curve is not flattening. Akamai recorded AI traffic growth at over 300% in 2025 alone, and agentic AI, systems that do not just crawl but actively transact, grew nearly 8,000% year-on-year. By 2027, AI traffic alone is projected to exceed human traffic entirely.

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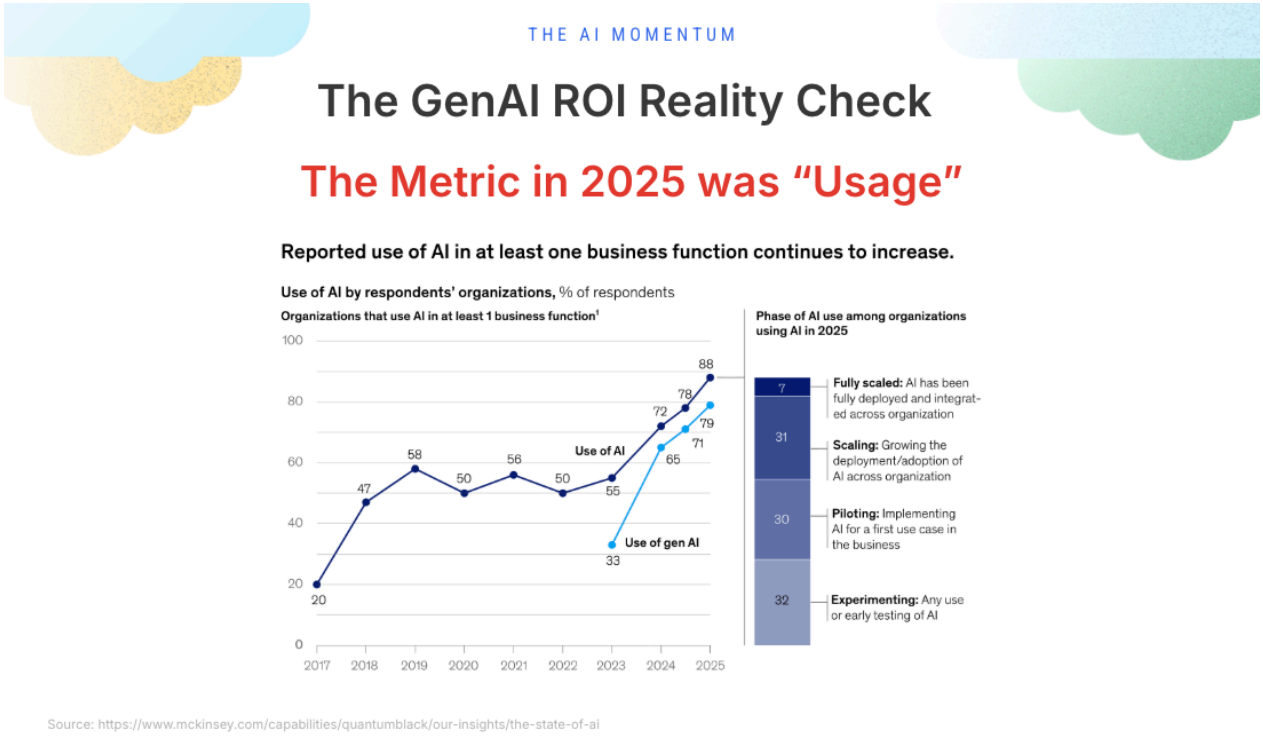
1 https://techcrunch.com/2026/03/19/online-bot-traffic-will-exceed-human-traffic-by-2027-cloudflare-ceo-says/

2 https://cpl.thalesgroup.com/about-us/newsroom/2025-imperva-bad-bot-report-ai-internet-traffic

What makes this directly relevant to hospitality is where that traffic is concentrated. Over 95% of AI-driven traffic in 2025 was in just three industries: retail, streaming, and travel and hospitality.[3] On the demand side, the shift is equally significant. 39% of travellers are already using AI to plan trips — 58% in the US, and 1 in 5 in the UK.[4]

Put those two factors together and the implication is clear: in the near future, the majority of "users" interacting with your business will not be humans. They will be agents; discovering inventory, comparing options, and making recommendations on behalf of travellers who may never visit your website directly. If your pricing, inventory, services, or content are not in a format that agents can reliably consume, you are not simply behind on a technology trend. You are invisible to a growing share of demand. And unlike a poorly designed website, there is no second chance to make an impression. Agents will move on to a competitor whose systems are visible to AI agents.



[3] https://www.benton.org/headlines/2026-state-ai-traffic-cyberthreat-benchmark-report
[4] https://www.phocuswire.com/travel-forward-phocuswright-research

Were we measuring the wrong thing?

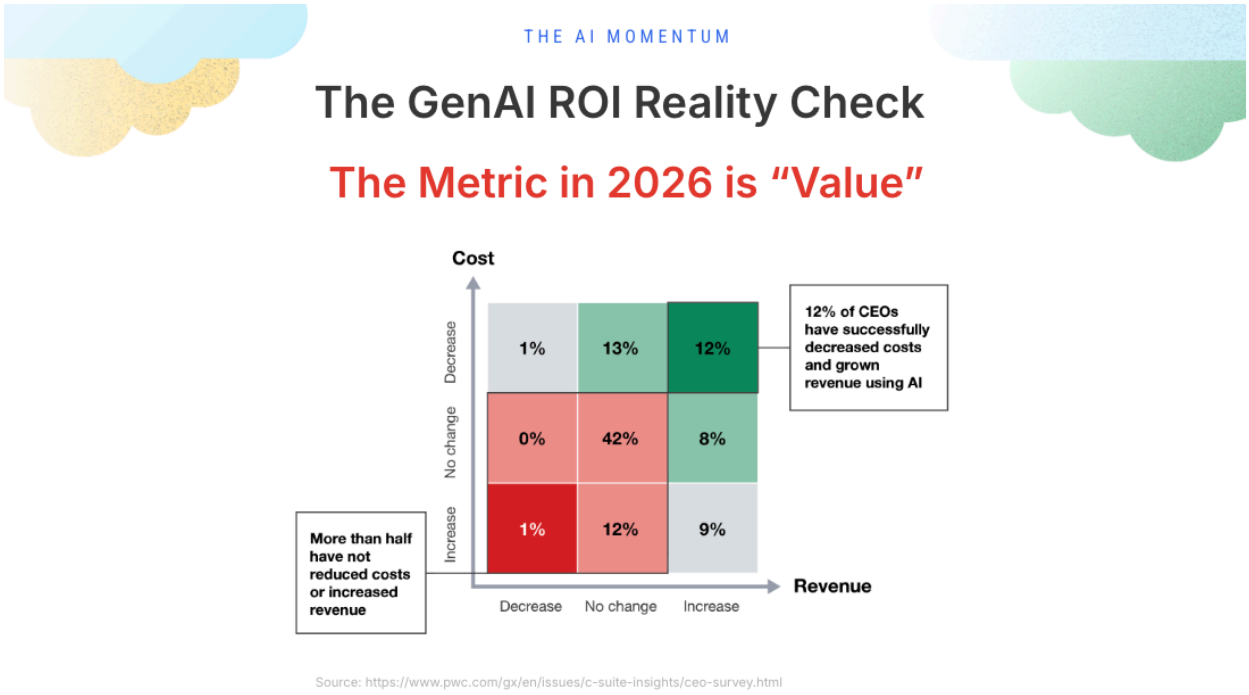
For most of 2025, the conversation in technology centred on adoption. 88% of businesses were already using generative AI.[5] 78% of hospitality chains had adopted it in some form.[6] Between 1.5 and 2 billion people interact with AI tools globally.[7] The numbers are impressive, and for a while, usage felt like a good benchmark for enterprise value creation.

But in 2026, the conversation has shifted explicitly from usage to value. Executives who spent the last two years approving AI budgets are now asking a simpler question: where is the return?

A recent PwC survey of 4,454 CEOs across 95 countries offers a sobering answer. 56% reported no measurable benefit in either cost savings or revenue growth. A further 33% saw gains in one area but not the other. Only 12% reported meaningful improvements in both.[8] That 12% is the number that matters. Not because it is discouraging, but because it tells us something important: AI is not failing because organisations lack access to it. The organisations seeing real returns are doing something structurally different from those that are not — and that difference is not which tools they chose or how many pilots they ran.

It comes down to three things: how well their people understand how to use AI effectively, how clean and accessible their data actually is, and how well their backend systems are connected. In hospitality, an industry with extreme system fragmentation and customisation, tackling these three focus areas is the challenge of this moment.

[5] https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai
[6] https://www.bcg.com/publications/2026/ai-first-hotels-leaner-faster-smarter
[7] https://www.quetext.com/blog/ai-usage-statistics-2026-how-many-people-use-ai
[8] https://www.pwc.com/gx/en/news-room/press-releases/2026/pwc-2026-global-ceo-survey.html



Three reasons most organisations are falling short

1. AI Literacy

Giving people access to AI tools is not the same as enabling them to use those tools effectively. Most organisations underestimate how steep the learning curve actually is, and the gap between average and expert usage is huge.

OpenAI's research on what they call the "capability overhang" makes this concrete: expert users can extract up to 7x more value from the same tools than non-experts.[9] That difference compounds quickly. Two organisations can run the same AI platform and get completely different outcomes — not because of the technology, but because of how well their people understand how to use it.

[9] https://cdn.openai.com/pdf/openai-ending-the-capability-overhang.pdf

In a world where access to AI is no longer a differentiator, the ability to use it well is. Organisations that invest in structured training and enablement will move faster, reduce costs, and capture more demand. Those that simply deploy tools and hope for the best will fall further behind because their competitors are using the same technology better.

2. Data Quality

AI does not fix bad data. It amplifies the effects of bad data. And in hospitality, bad data is a pervasive problem.

Hotel operations run across a fragmented stack, with each system holding a different version of the truth. The result is duplicated guest profiles, inconsistent data across properties, and limited visibility across the full guest journey. Nearly 49% of hoteliers report struggling to access the data they need[10], and some estimates suggest hotels miss up to 20% of potential revenue directly as a result of data fragmentation.[11]

Layer AI on top of that and the problem grows. Bad data gets used in automated processes. Wrong decisions get repeated. Poor guest experiences get systematised. And critically, when AI agents cannot trust your data, they will not recommend you. They will recommend a competitor whose data they can.

Data quality is no longer an internal operational problem. It is a revenue problem.

3. Integration

APIs have historically been built by and for human engineers, not agents. In a distributed stack, the work of pulling data together and making sense of it gets pushed to whoever needs to consume it. For engineers building deterministic integrations, this can be slow, but manageable. For AI agents, it is a fundamental design problem. Agents need clean, well-structured, purposefully designed access to data and business capabilities. Most hospitality stacks do not offer this today.

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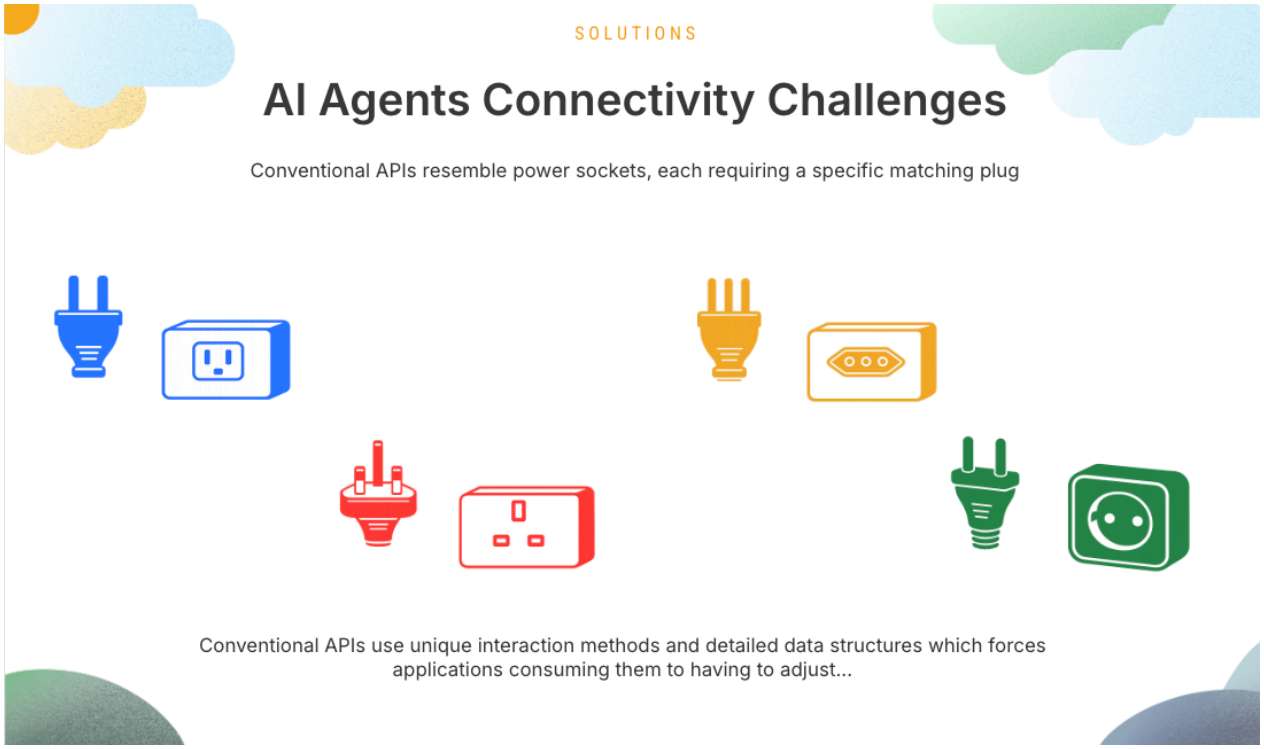
[10] https://www.phocuswire.com/fragmented-data-siloed-systems-how-hotels-move-forward

[11] https://www.hitec.org/news/4130913/hotel-groups-miss-out-20-of-guests-due-to-data-silos-new-ireckonu-data-shows

This is where the connectivity problem becomes an architecture problem — and why simply layering AI on top of existing infrastructure is not enough.



The MCP Fallacy

Most teams are approaching this the same way. "We already have APIs — let's just wrap them as MCP and expose them to AI." So they wrap REST, GraphQL, or SOAP through MCP, and assume they are done.

They are not.

Traditional APIs were built like power sockets — each one different, each one requiring a specific plug. That works for engineers because they can read documentation, handle errors programmatically, and build logic to reconcile inconsistencies. Agents operate differently. They reason over context, and when that context is incomplete or ambiguous, they fill the gaps with inference. The more complex the API surface, the more room there is for that inference to go wrong. When it does, that is what we call a hallucination.

This is why more endpoints does not mean better integration, and more data does not mean better outcomes. Every extra call increases latency, cost, and failure probability. Every complex payload increases token consumption. More ambiguity means more hallucination risk. The agent compensates by retrying, chaining calls, and building its own logic. The result is that you have pushed complexity, risk, and cost into the model.

Morgan Stanley encountered this directly. Their APIs were too chatty and too low-level, forcing agents into guesswork and retries.[12] The fix was not more APIs. It was a new abstraction layer that exposed high-level capabilities instead of raw data.

The opportunity is in the abstraction layer: translating what your backend systems do into capabilities that agents can discover, understand, and act on reliably. That means designing for token efficiency, exposing the right level of abstraction rather than raw data, and structuring capabilities around what agents need to accomplish.

But this is not purely an engineering exercise. Knowing what to expose, how to structure it, and what "good" looks like from a business perspective cannot be inferred from schemas or specs alone. It requires deep domain knowledge.

In a world where writing code is no longer a differentiator, domain expertise and critical thinking become the most valuable human skills. Organisations that recognise this, and combine the right tools with the right domain knowledge will move faster, operate more efficiently, and win.

[12] https://www.infoq.com/news/2026/03/morgan-stanley-apis-mcp-calm/

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What good connectivity actually looks like

Here are recommendations to build connectivity that actually works for AI agents:

1. Change your design intent. This may be the first product you've built that is designed to be consumed directly by a machine. Agents need capabilities that are unambiguous, purposefully scoped, and immediately actionable. That requires a different design intent than what most teams have done before.

2. Start with the outcome, not the API. Understand the business problem you are trying to solve and how you will measure success before touching any tooling. Define the task-based jobs to be done by the agent. If an agent cannot directly execute those tasks, you need to rethink the abstraction and/or approach.

3. Respect the token tax. Every extra field, call, or payload increases cost, latency, and hallucination risk. This is not a minor optimisation consideration — it compounds quickly at scale. Design for fewer calls, tighter payloads, and precise context.

4. Remember that the backend still matters. AI still does not replace integration and orchestration. MCP is just the last-mile interface for AI agents. It does not replace the integration work underneath. You still need clean, reliable connections between your PMS, CRS, CRM, RMS, ERP, and so on.

5. Measure what actually matters. Usage metrics and API call volumes tell you nothing about business impact. Define success in terms of revenue, conversion, cost-to-serve, and decision quality — and instrument for those from the start. Only then will you know whether your AI investment is delivering real returns.

The time to act is now

AI adoption is real and accelerating faster than any technological shift we have seen before. This is not a trend that will wait for you to finish your current roadmap. We are at the start of an inflection point, and the organisations that move now will be the hardest to catch.

The shift is not about whether AI works. The question is whether your systems are positioned to get the most out of it. Think of it like SEO. Search did not reward the organisations that had the best products. It rewarded the ones that made their products most accessible to search engines. AI is no different. Agents will not find the best hotel. They will find the most accessible one. Optimising for that is not a future consideration. It is a distribution strategy for today.

That means the organisations sitting on the sidelines, or running pilots that never reach production, are not just moving slowly. They are ceding ground in a channel that is growing faster than any before it.

Start with the foundations: clean data, a reliable approach to integration, and a team that knows how to use AI effectively. Everything else follows from there.

We have helped a number of clients navigate exactly this transformation over the last three years. If you would like to understand how we can help you do the same, do not hesitate to reach out directly or at hello@polyapi.io.

Thank you for reading.

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