[AI] doesn't need more data. It needs better [context] based on actual usage

How data product marketplaces
deliver living usage-based context

[-]luwise

Usage-based context - the missing layer in AI-ready data

AI is now able to reason remarkably well. However, it can still hallucinate and give factually incorrect yet plausible answers when it doesn't understand the wider question and the environment around it. This isn't a question of feeding AI more data, but putting that data into context. Humans, particularly experienced employees, have built up their understanding of the context around specific data and processes. AI has not. AI is only as powerful as the context it is given.

With the rise of agentic AI, this lack of contextual insight has become business-critical. For agents operating autonomously understanding context is vital to deliver successful outcomes, minimize risk, and deliver ROI.

Context varies between organizations and use cases - it is living and dynamic, not static. That means providing effective context requires new approaches, with the data product marketplace acting as a central foundation, delivering context based on actual usage of your data products.

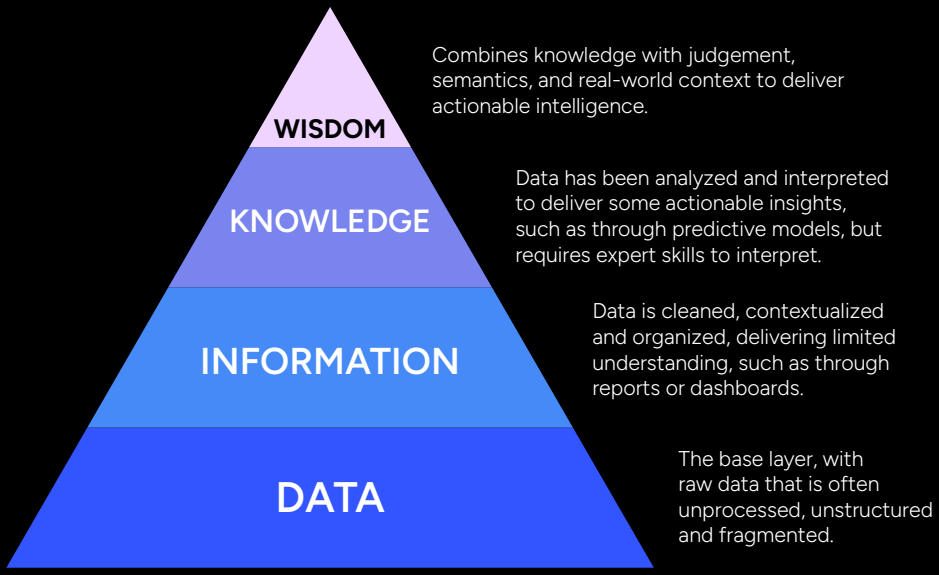
This ebook explains the vital importance of context to agentic AI success and the role of the data product marketplace in providing it.

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1 Understanding the process of turning data into value

Organizations are generating and accessing ever-greater volumes of raw data from a growing range of sources. However, raw data has limited value. It is only when it is cleaned, enriched and made available in understandable formats (such as data products) that it delivers real value. The Data, Information, Knowledge, Wisdom (DIKW) pyramid represents this process through four distinct levels.



Applying the pyramid to agentic AI, agents require **Wisdom** in order to act effectively and accurately.

2 Why semantics is no longer enough

As data is shared across organizations and beyond the teams that first created it, particularly when shared with AI agents, achieving **Wisdom** requires semantics and context.

Semantics looks at the meaning of the data itself, rather than just its format or structure. The semantics of particular datasets are normally clear to those working most closely with it. However, how specific terms are used across an organization will vary. For example, the term "customer" might mean one thing to sales, another to finance, and a third to marketing. All of this means that without agreed, shared semantics, every team operates from a different version of reality, leading to conflicting reports, failed analytics, and eroded trust in data.

When it comes to AI, this could mean agents or models misinterpreting information or trying to compare disparate datasets without understanding their underlying differences. At best, this means inaccurate decision-making – at worst, hallucinations, potential bias and legal and financial damage.

Building a semantic layer between the raw data and end users and applications delivers consistency. However, consistency alone isn't enough. A metric can be defined the same way everywhere and still mean different things depending on who's asking, what system produced it, whether the underlying data is fresh, and what policies govern its use. This is where context becomes vital.

3 The vital added-value of context to AI

Context goes beyond the semantic meaning of data, providing the information needed for humans and AI to interpret it correctly. It is specific to the organization, i.e. how it thinks, operates, and makes decisions. It is dynamic, changing as the data and circumstances evolve.

> *"As AI evolves into autonomous agentic systems, context is the ultimate focal point for success. Context layers are emerging as an architectural interaction plane that provides the necessary data and situational awareness required by AI agents to deliver reliable, trusted, and effective outcomes."*
>
> Christopher Long, Lydia Ferguson, Gartner

Humans naturally use their experience and knowledge to add context to the data in front of them. For example:

- **A finance analyst** knows that the Q4 revenue figure in the legacy system is two days behind the information in the data warehouse, so never uses it for end-of-quarter reporting
- **A risk manager** knows that a particular loan category is excluded from overall default rates due to a previous one-off regulatory reclassification and adjusts figures accordingly
- **A HR director** knows that if the results of a company survey is based on responses from 90% of employees, it is clearly more trustworthy than one where just 10% have answered
- **A sales director** reviewing sales data for a specific month will automatically bear in mind external factors that might cause a drop, such as multiple public holidays or a product outage

AI agents don't know any of this context. They simply act on the data, without taking into account the context around it. Given the autonomous and end-to-end nature of AI agents, small contextual misinterpretations can quickly snowball and cause major issues.
Failing to provide them with sufficient context leads to:

- Inefficiency in data management
- Greater financial costs
- Incomplete data governance
- Inaccurate, biased or hallucinatory decision-making, leading to legal and reputational damage

Providing context also helps less experienced staff take better-informed decisions as they benefit from the accumulated learning of their colleagues.

> *"Agentic AI outcomes depend on context including semantic representations of data. Without context – a clear understanding of the specific relationships and rules within an organization's data – AI agents cannot operate accurately and are far more likely to hallucinate, introduce bias and produce unreliable results."*
>
> Rita Sallam, Distinguished VP Analyst at Gartner

The context layer - bridging the context gap through usage knowledge

The context layer ensures the accuracy and machine-readability of data. Like the semantic layer, it sits between the data estate and AI agents, encoding business meaning, use-case-scoped definitions, lineage, quality signals, and governance policies into a live, queryable graph. To be effective, context needs to be based on knowledge of actual usage - which are the data products used most often, and by specific job roles in the business? This gives living, dynamic context for agents to act on confidently.

Normally stored as metadata, contextual details are specific to the data's situation and environment.

Context	What it tells you
Metadata	What the data field represents
Time	When it was collected/created
Location	Where it applies
Source/provenance	Where it came from, how it was produced and who is responsible for it
Relationships	How it connects to other data
Business definitions	What terms and metrics actually mean
Permissions	Who can access/use it and what policies govern its use
Quality	Whether it's complete, accurate, estimated, etc.
Purpose	Why the data was collected or is now being used

Unlike the semantic layer, which standardizes definitions, the context layer builds context that is bounded, testable, and specific to the data and how the organization actually operates. It is therefore at the heart of creating value from data and making it usable by autonomous AI agents.

Understanding the differences between context and semantics

At first glance, context and semantics can be easily confused, as they both relate to the meaning of data. Analysts can include context in their definition of semantic layers, and vice-versa. For example, Gartner explicitly describes context as including semantics and metadata, while also emphasising relationships and rules. In an enterprise AI architecture, semantics is one of the foundations from which context is assembled.

	Semantics	Context
Core question	**What does it mean?**	**How should I interpret/use it here?**
Concerned with	Definitions and meaning	Circumstances and relationships
Example	"Revenue means recognised sales revenue."	"This revenue is for Q2, US, excluding state taxes, according to Finance."
Usually	More stable	More dynamic
Scope	Often attached to a concept/field	Can span datasets, users, time, processes, systems

4 Context engineering - the foundation of AI agent-ready data

Providing agents with the right, contextualized data requires three key pillars:

[1] Connectivity

Agents need to be able to easily find and connect to data in order to take actions. Standards such as Model Context Protocol (MCP) and APIs provide this seamless, automated access.

[2] Business value

Organizations need to ensure that their AI agents are delivering real value to the business by using the most relevant data. Making this available as data products helps as they provide semantic and contextual information as standard. Ensuring that agents are able to pick the best data product for their needs, based on context and usage, maximizes business value.

[3] The context layer

Building a context layer requires a new approach to how data is managed across the technology stack. Rather than simply looking at data quality, context engineering starts by asking "What does this agent need to know to perform this task correctly?"

This covers not just high-quality data, but metadata, data products, APIs, lineage, and governance to give a complete view to AI agents. Context is dynamic and changes all the time. For example, a customer may leave, an employee may change role, or policies may evolve. This means that the context an agent uses must be as current as the decision it is making and the period it is looking to cover.

5 The data product marketplace: at the heart of living context

Data product marketplaces centralize high quality, AI-ready and contextualized data assets, making them available seamlessly to humans and AI. With an intuitive, e-commerce style experience they enable agents to discover, connect, and consume relevant data products through interfaces such as MCP servers.

Contextual intelligence is at the heart of the data product marketplaces, with the context layer built from two complementary sources:

- **What already exists in the information system**: Data semantics (schemas, business glossaries, categories, metadata) and governance (licenses, owners, access rules, lineage). The context layer retrieves this information in a structured way—without starting from scratch.

- **Usage signals from the data marketplace**: Who are the users? What are their roles? How do they search? What do they consume? Are they satisfied? These signals continuously enrich context with actual usage.

The result is a context layer that updates **in real time** with every interaction. It is not a static snapshot of the catalog—it is a living representation of the data marketplace and its users. This sets it apart from other contextual information, which is often static and unchanging, meaning it soon becomes stale and unrepresentative.

6 How Huwise delivers dynamic data context for AI agents

As part of its drive to increase data consumption by humans and AI, Huwise enables businesses to understand and build their enterprise context layer through its data product marketplace.

Built-in analytics and lineage capabilities support this usage-based, living and context-aware approach. They mean data teams can understand which data is used, by whom, in which context. They can see where it has come from and any transformations or changes made during its journey. They can see how this changes and evolves over time.

Importantly, this usage intelligence signposts which data has value for specific use cases, highlighting which data products that AI agents should use. For example, if there are two, similar data assets, which is the most used and recommended by the business? These contextual signals help guide agents when searching for information, leading them to data products that they can trust and consume. Factors such as governance, provenance, usage, and behavior all fit into this context layer.

Through this usage intelligence, the data marketplace captures business context around data products. It highlights which assets the business trusts, which queries get run, and which definitions hold in practice. As it is dynamically updated by every interaction, human or AI, it provides a real-time, living record that continually enriches the enterprise context layer. Context is granular - not just which data product is used most, but who the users actually are. This means context is not based on correlations or recommendations, but deep understanding of usage.

Context Components	Huwise Features
Usage knowledge	Draws on marketplace usage signals (searches, drop-off points in the user journey, views, or consumption actions) collected through the conversion funnel, built-in analytics, and data lineage, which identifies the most highly connected assets within the ecosystem.
Semantics (semantic layer)	Relies on elements such as the business glossary, metadata entered in product pages, and any other information that helps users understand what the data represents.
Business rules and context	Can be derived from documentation associated with data products, business rules, and content entered directly by users in the marketplace.
User knowledge	Relies on information such as users' roles, profiles, statuses, or certain attributes retrieved through SSO, enabling agents to better understand who is making the request and in what context.

All of this drives greater business performance. AI agents can confidently understand and use the right information, optimizing their impact and results in terms of efficiency, decision-making and overall performance. It prevents hallucinations and bias, and ensures that AI projects scale effectively from pilot to production.

An interoperable context layer for the data ecosystem

The context we are building at Huwise is based on current industry standards so that it remains usable beyond our platform. These standards are evolving rapidly, meaning we closely monitor them on an ongoing basis. This approach is reflected in our collaboration with data catalog solutions, which see Huwise as a key partner for capturing usage intelligence and contributing to the development of a more dynamic context layer.

7 Delivering the right context to drive effective agentic AI

What businesses require from data quality has changed. Good data is no longer simply accurate, accessible and well-governed. It must also be meaningful, connected, current, relevant and actionable in **context** if it is to be used by AI agents.

Without sufficient context, AI agents can misinterpret even the highest quality data. This means that creating an end-to-end context layer is therefore an increasing business priority for Chief Data Officers (CDOs).

Data product marketplaces act as a foundation of effective context layers, providing deep understanding of usage and consumption, and integrating this with the wider tool stack. This helps deliver end-to-end, dynamic context that powers effective AI agents, maximizing their efficiency and minimizing risk.

Huwise

Huwise helps data leaders transform their data into a source of knowledge, innovation, and performance.

We design a SaaS data product marketplace solution tailored to business teams and non-expert users, making data accessible, actionable, and value-generating. With Huwise, organizations provide employees and partners with secure, self-service access to their data products through a single platform.

In just a few weeks, we can deploy any type of data product marketplace, whether internal or external.

Today, more than 350 clients across 25 countries rely on Huwise to accelerate their data initiatives, with over 3,000 platforms already deployed worldwide. Backed by 15 years of expertise in data management, we deliver tailored support to address the concrete use cases of our clients.

Data made yours.

www.huwise.com