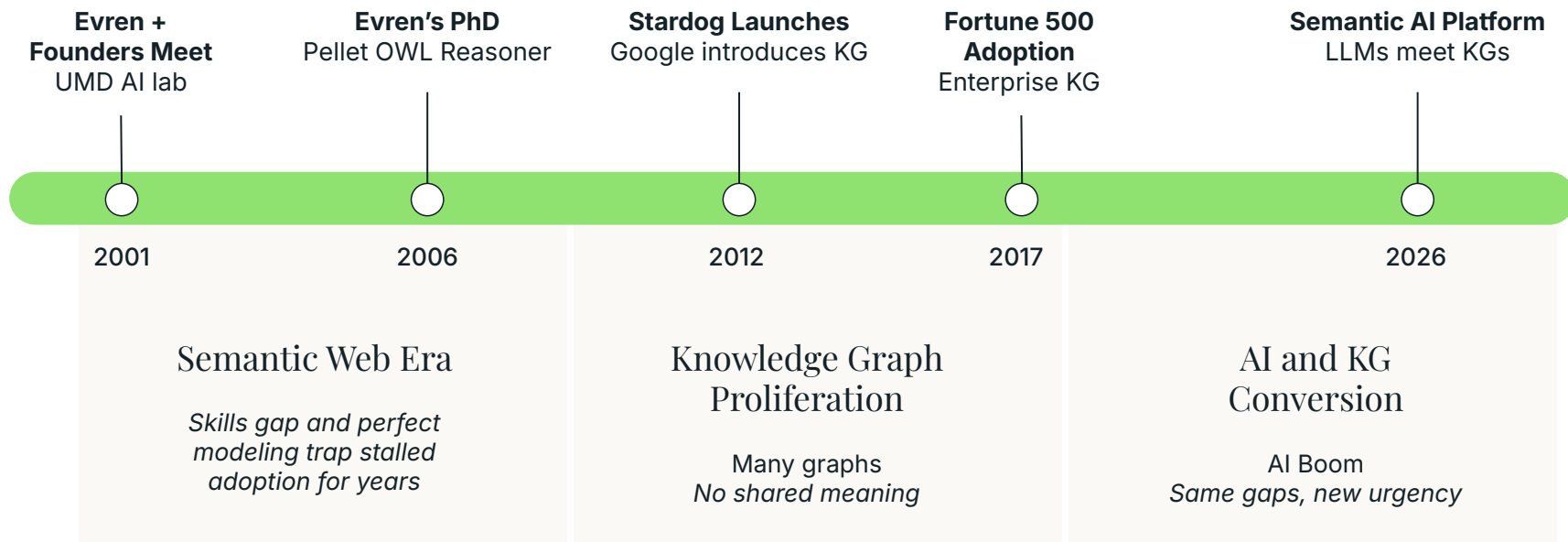

Building the Cognitive Backbone of the Enterprise

Evren Sirin

Stardog CTO and Co-Founder



25 Years in Semantics



Now, **everyone** has a
knowledge graph,
context layer,
semantic layer,
knowledge layer ...

but no one knows
what they really are.



Graph Database $\neq$ Knowledge Graph

One stores data. The other encodes meaning.

A graph database

tells you *how* data is stored

is a *storage engine*

has labels (strings)

provides nodes and edges

A knowledge graph

tells you *what it means*

is a *model of meaning*

has things (identifiers)

provides entities, relationships,
constraints, and inference rules



THE PROBLEM

Knowledge
cannot be
~~STORAGED~~.



SALES Policy VALUES Strategy
Risk AI Agents Legal Department
Human Workers FINANCE

Agents are
only as good
as what you
feed them.

Data is fragmented,
siloeed, constantly changing

Meaning is scattered,
fuzzy, constantly changing

But hallucinations are not
the only risk.

When interpretation diverges,
organizations fragment.

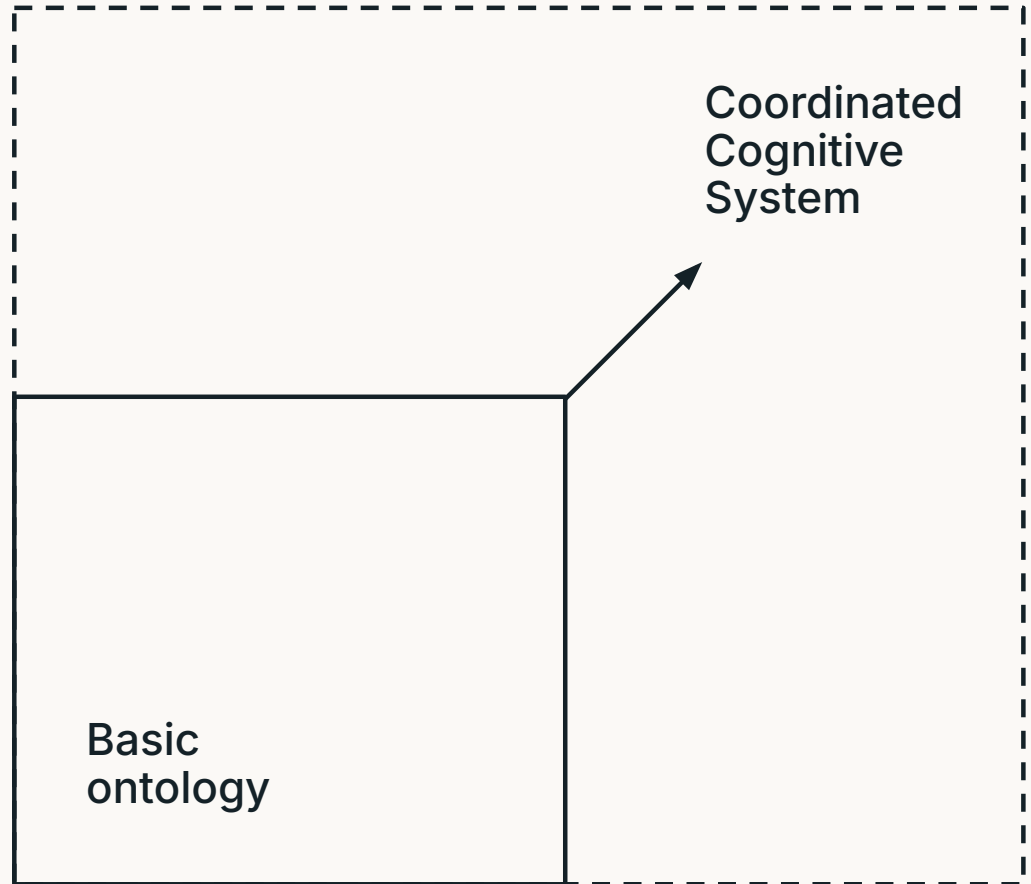
Not structurally.

Cognitively.

Invisible ambiguity and
misalignment become
operational risk.



The real world is infinitely more complex than a pilot sample.



Every cognitive system depends on one thing:

Shared Understanding.

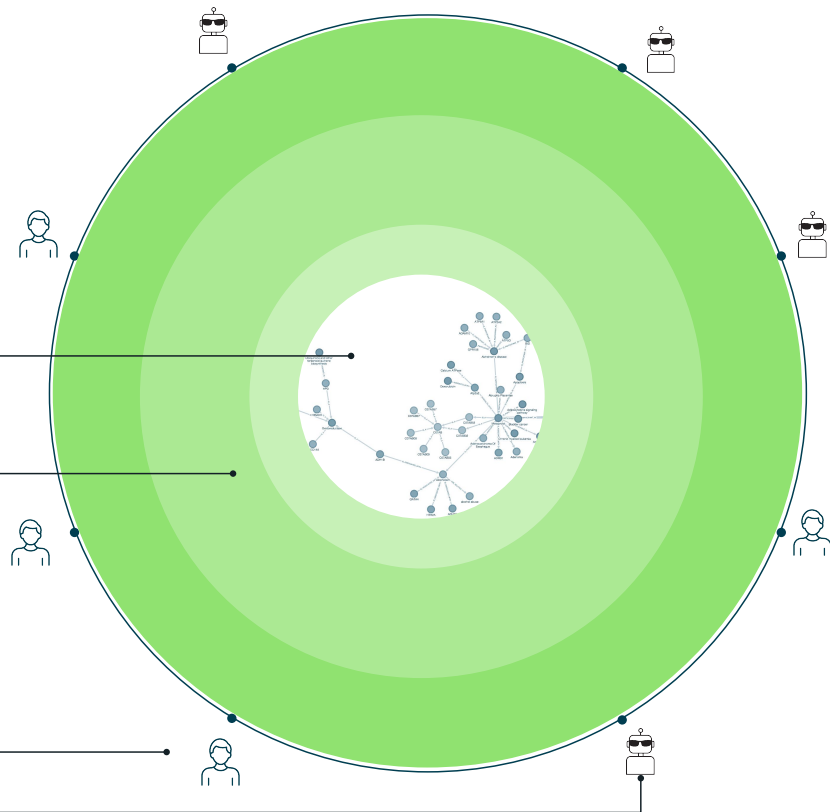


The Semantic Stack in the Agentic Era

Knowledge Graph at the foundation/core

Dynamic context layer organizes ontologies across business lines

Infrastructure that enables humans and AI agents to work together





Ph.D ontologist in the background
designing schemas and
maintaining logical consistency.



A domain embedded "meaning
steward" working alongside AI agents
to maintain a shared reality.

- how agents interpret
- when they escalate
- what they approve
- what they reject
- what they prioritize

We are all ontologists now.

They are not
modeling
~~situations.~~

They are not
maintaining
~~coherence.~~



Humans and agents co-author enterprise meaning.



A.I. agents

Observe patterns at scale

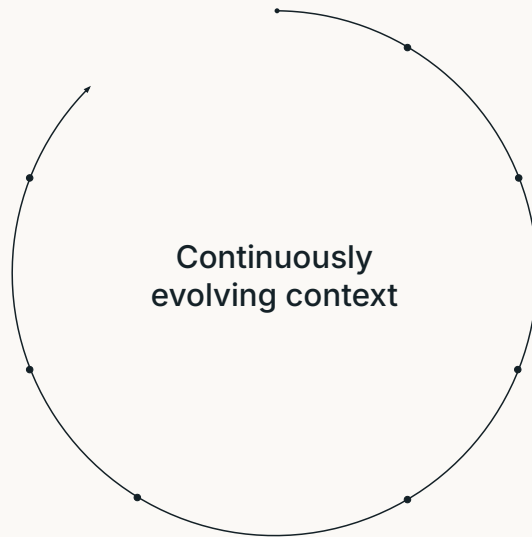
- Observes decisions
- Detects anomalies
- Proposes semantic adjustments
- Simulates impact



Knowledge engineers

Provide human guardrails

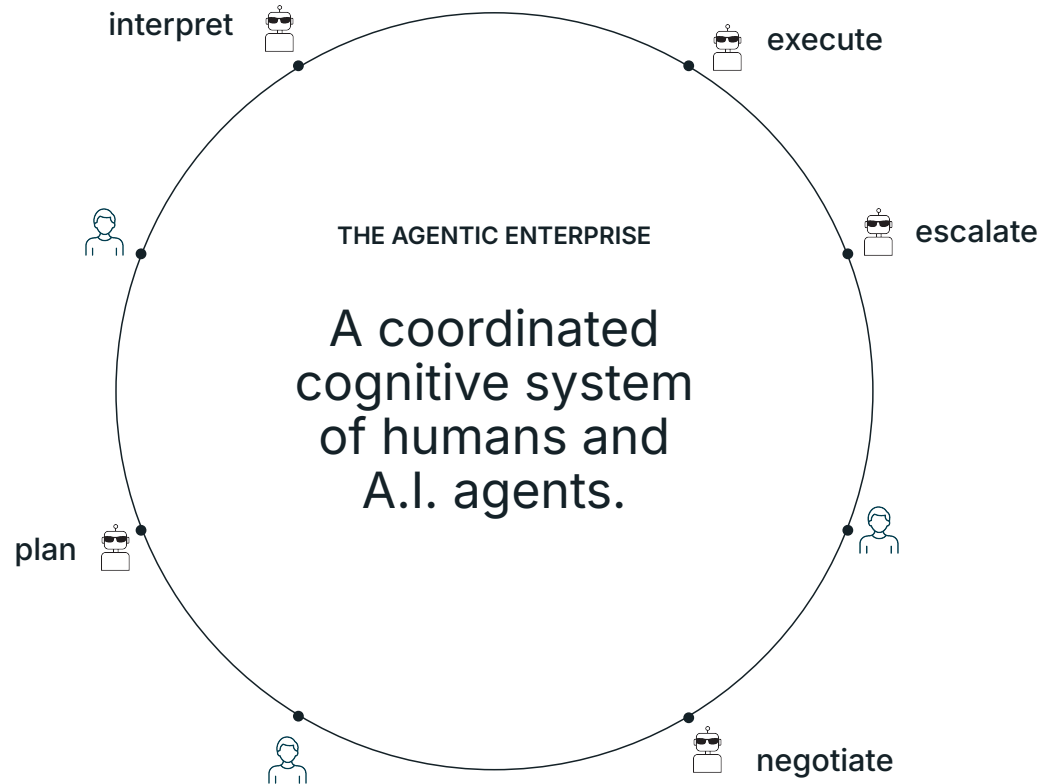
- Interprets context
- Understands policy nuance
- Resolves ambiguity
- Encodes organizational intent
- maintains accountability



The knowledge layer becomes a **living system**.



The Next 25 Years: Agentic Enterprise



We are building the cognitive backbone of work.

Not better chatbots. Or faster automation.

We are building the shared semantic foundation that allows
humans and AI agents to reason together.





Artificial intelligence strengthened by human intelligence.