

Demystifying Ontologies

Simplifying Complexity for Every User



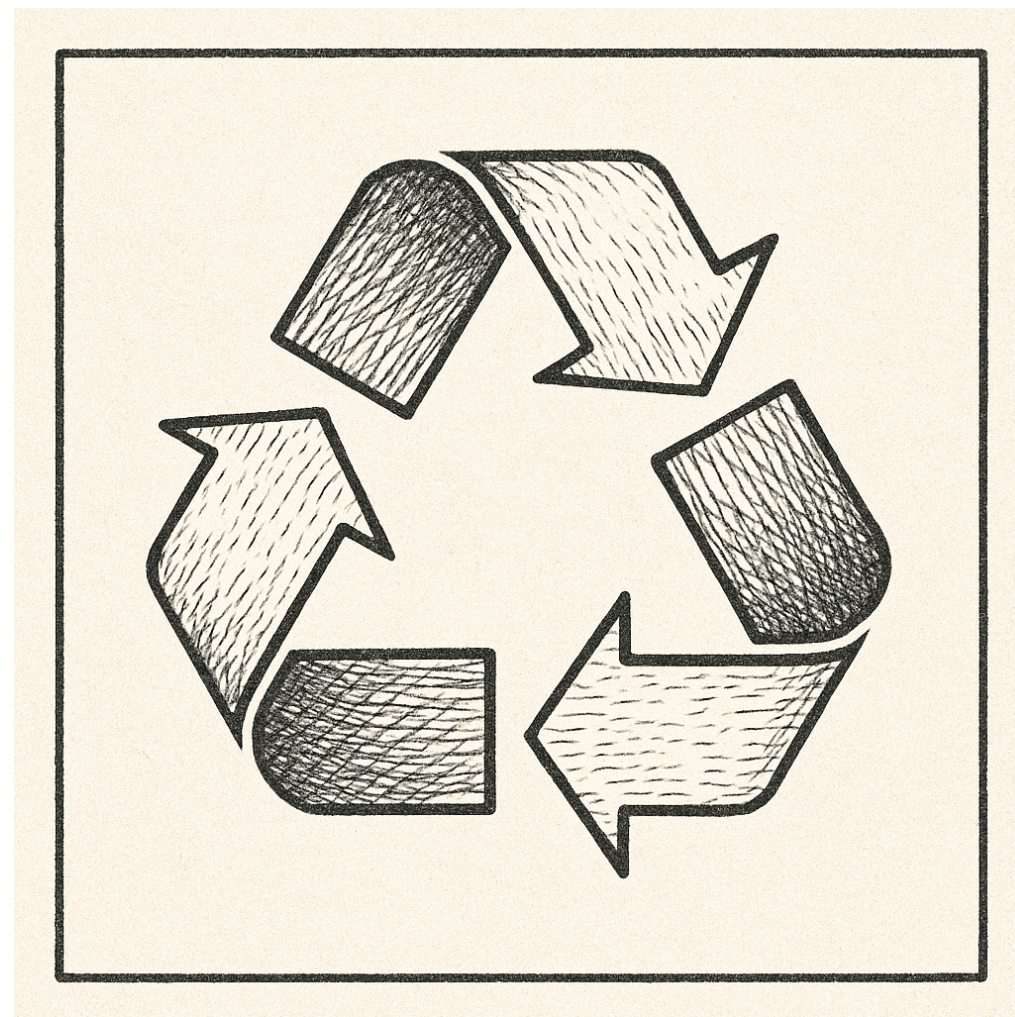
Andy Frank

Founder



Why Ontologies Matter

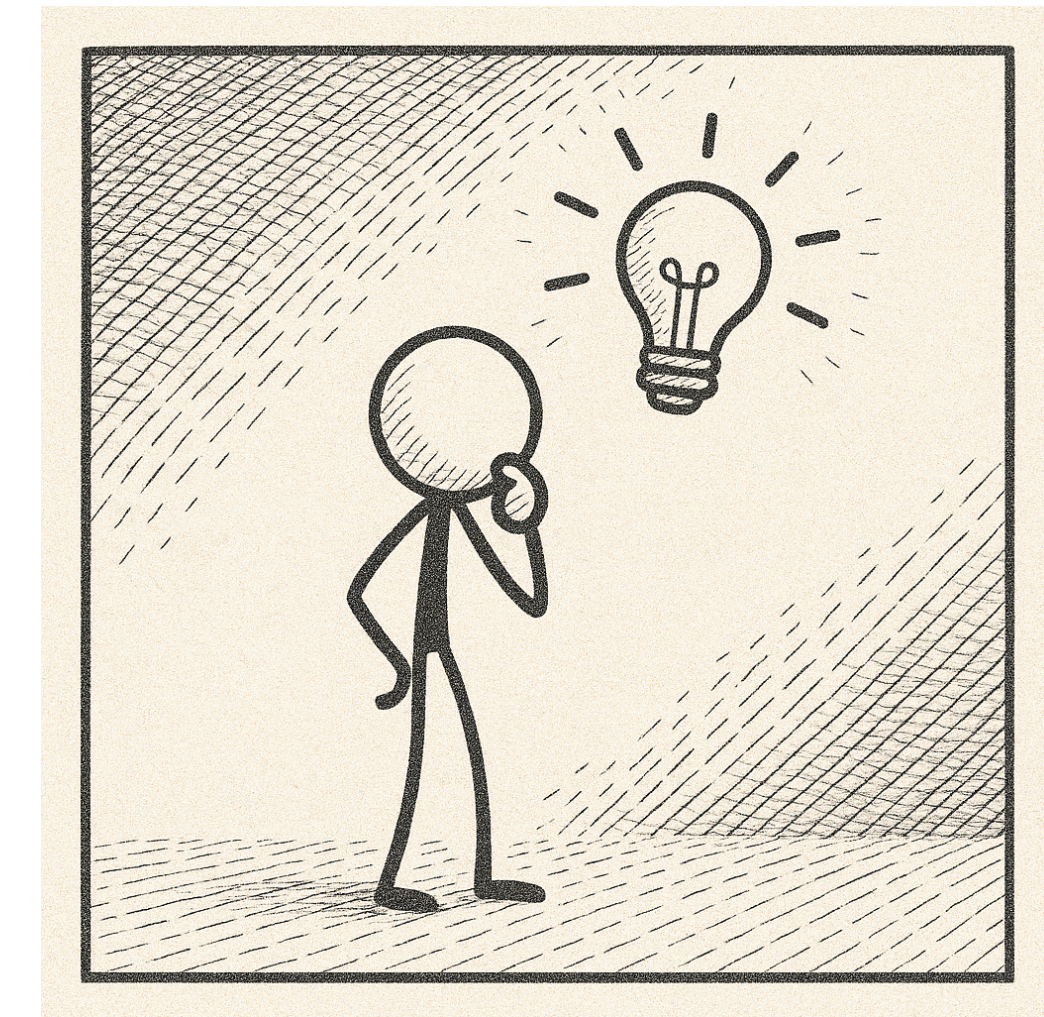
Ontologies are structured frameworks for organizing data and relationships, which turn siloed data into usable, connected knowledge.



Reuse and Efficiency



Cost Savings

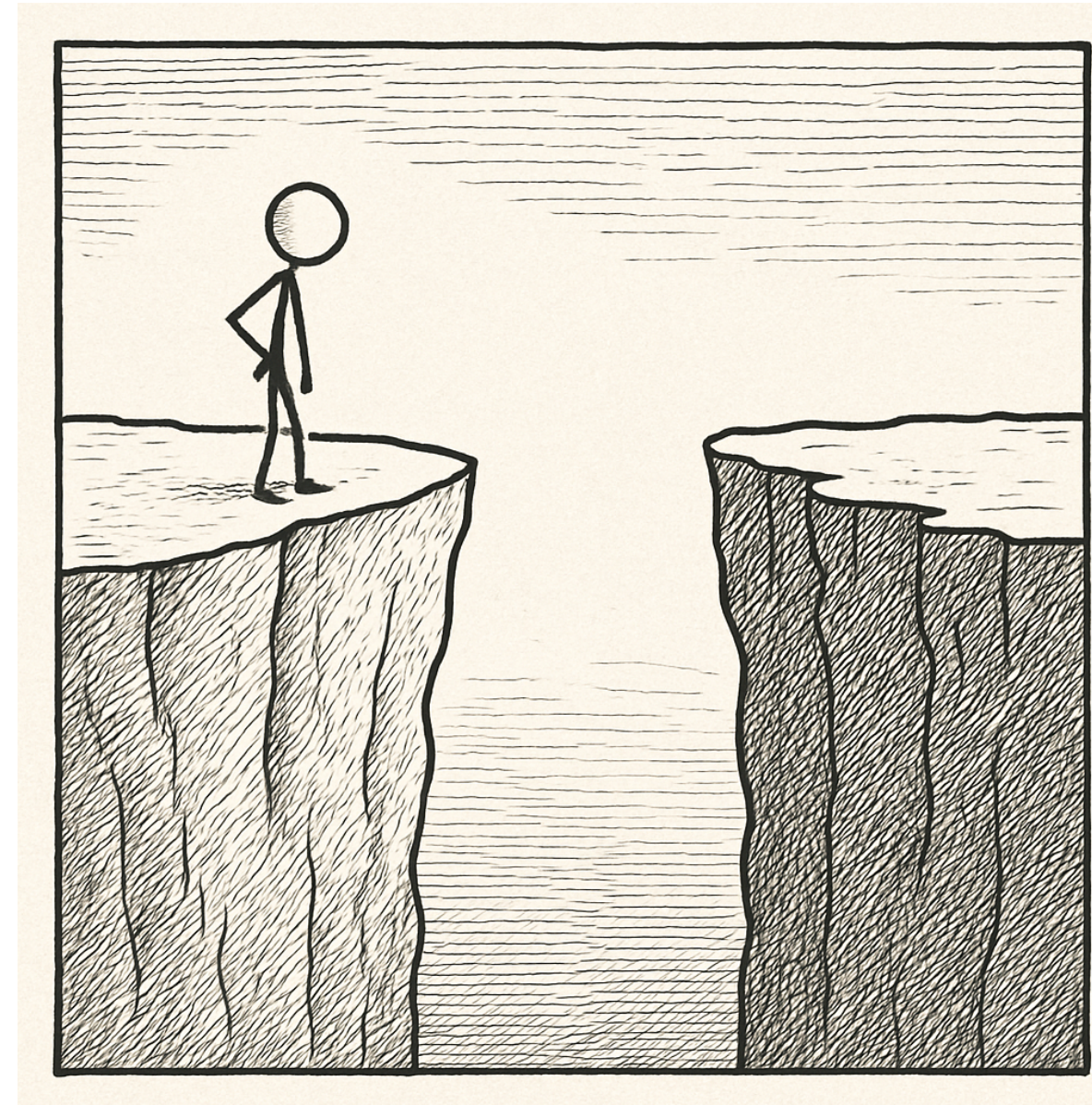


Better Decision-Making

The Promise vs. Reality

The Promise

- A single, shared model of meaning
- Seamless data integration across systems
- Smarter automation and decision-making



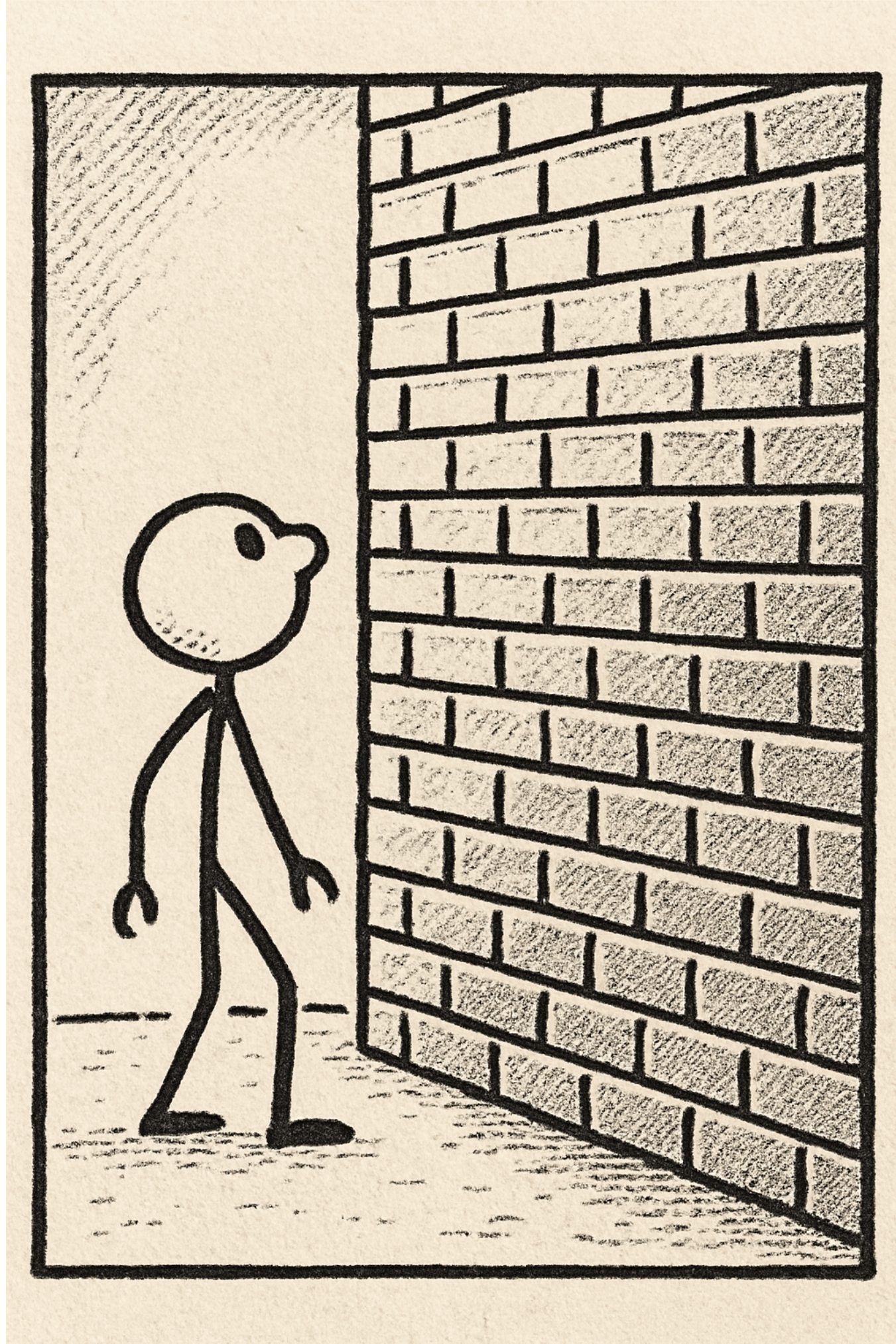
The Reality

- Complex tools with steep learning curves
- Hard for non-experts to navigate or apply
- Often underused or abandoned after deployment

The Gap

Powerful in theory — inaccessible in practice

Common Challenges



Steep Learning Curves

Hard for newcomers to get started or contribute

Poor Tooling & UI

Interfaces built for engineers, not everyday users

Technical Jargon

Confusing terms alienate non-experts

Lack of Immediate Value

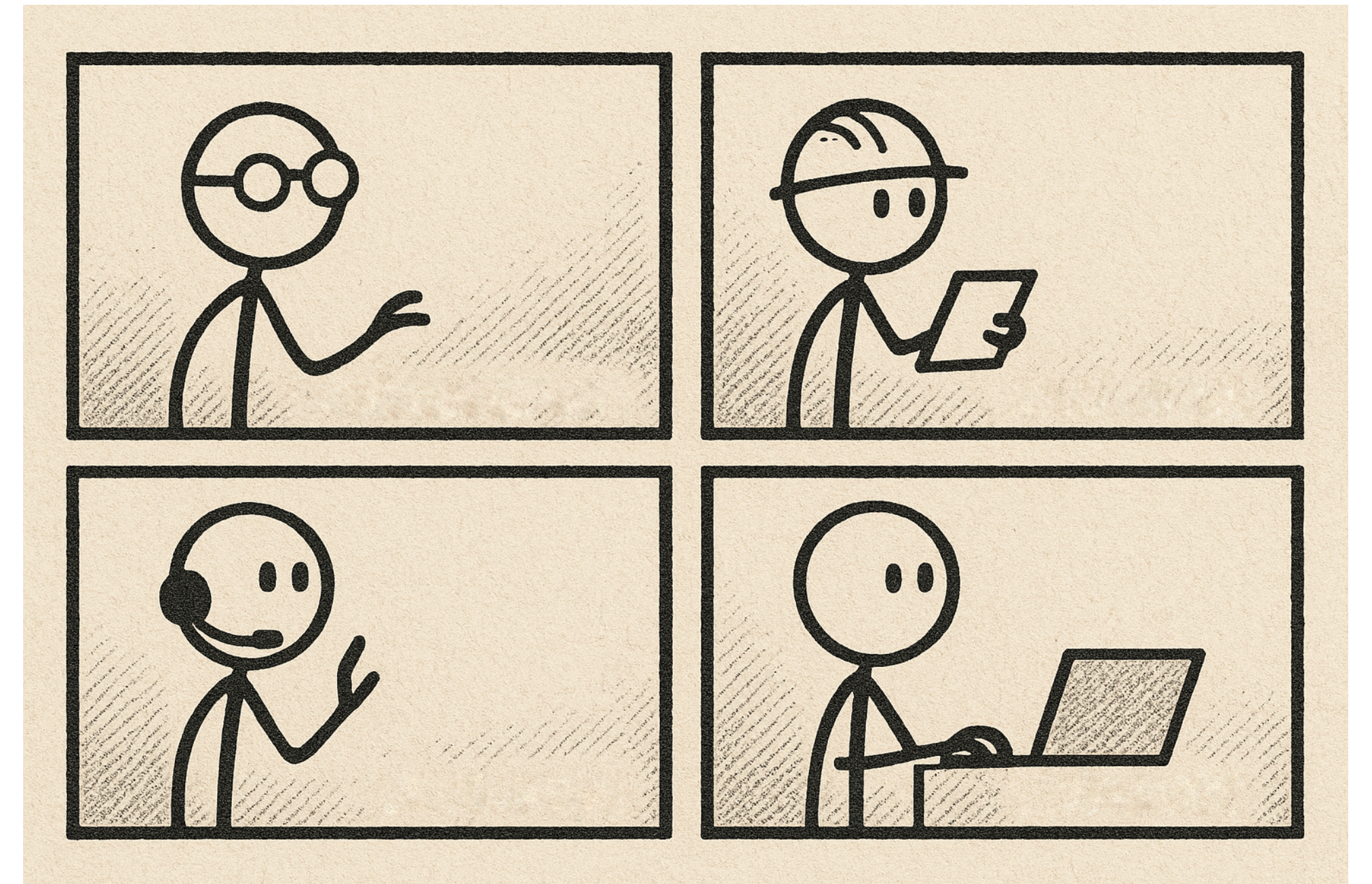
End users don't see clear benefits early on

Result: *Ontologies remain niche, despite their potential*

Who Are the Users?

- Domain experts (non-technical)
- Engineers
- Operators
- Analysts

Importance of designing for **all** of them



Designing for Inclusion



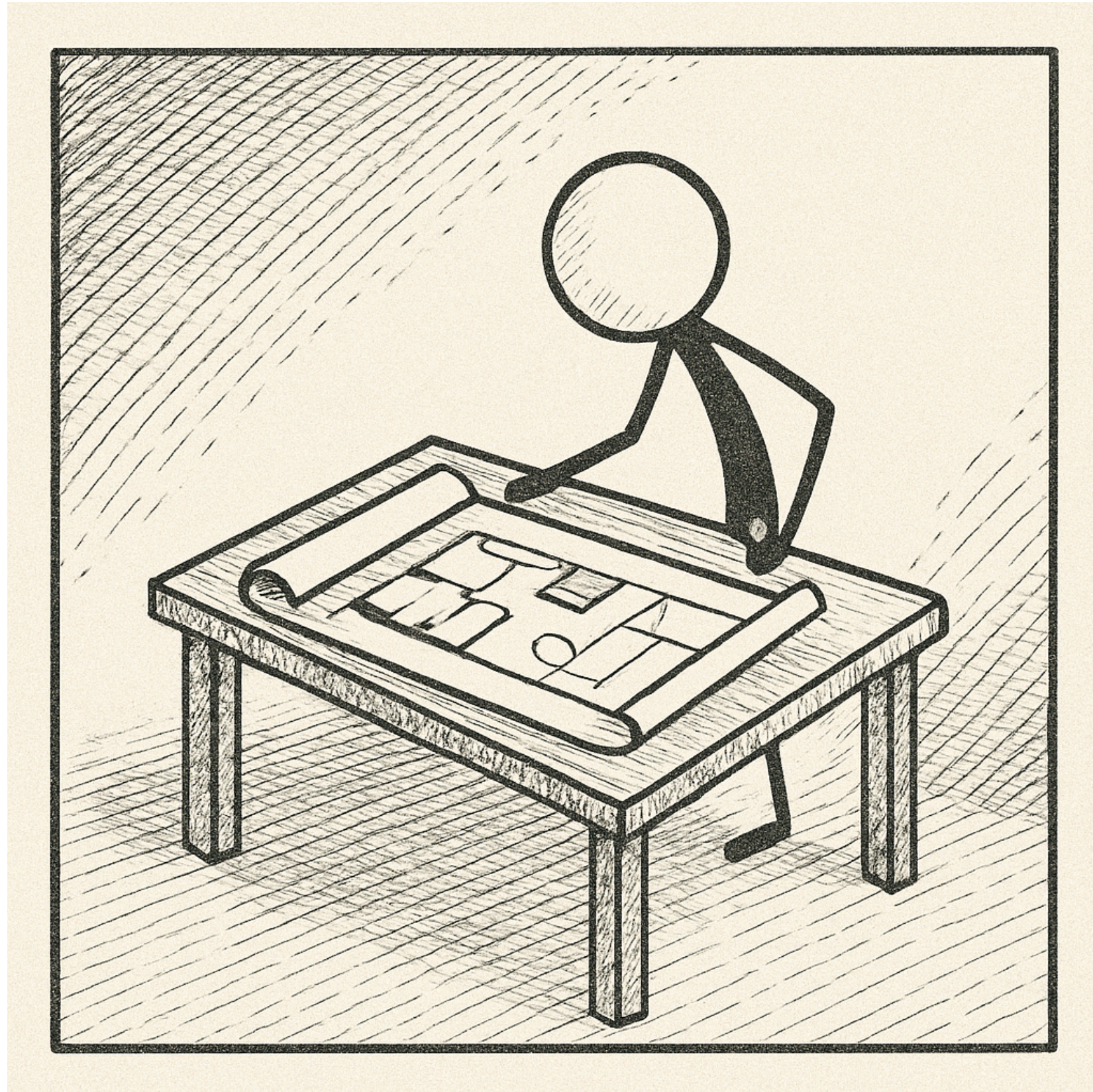
- Avoid assuming technical fluency
- UX and UI must invite participation
- Start with use cases, not schema diagrams
- Empower non-technical domain experts
- Design for collaboration across roles and skillsets

The Power of Intuitive Interfaces

- Visual-first navigation
- Human-readable labels
- Real-world metaphors (spaces, assets, relationships)
- Language users already know
- Limit new concepts



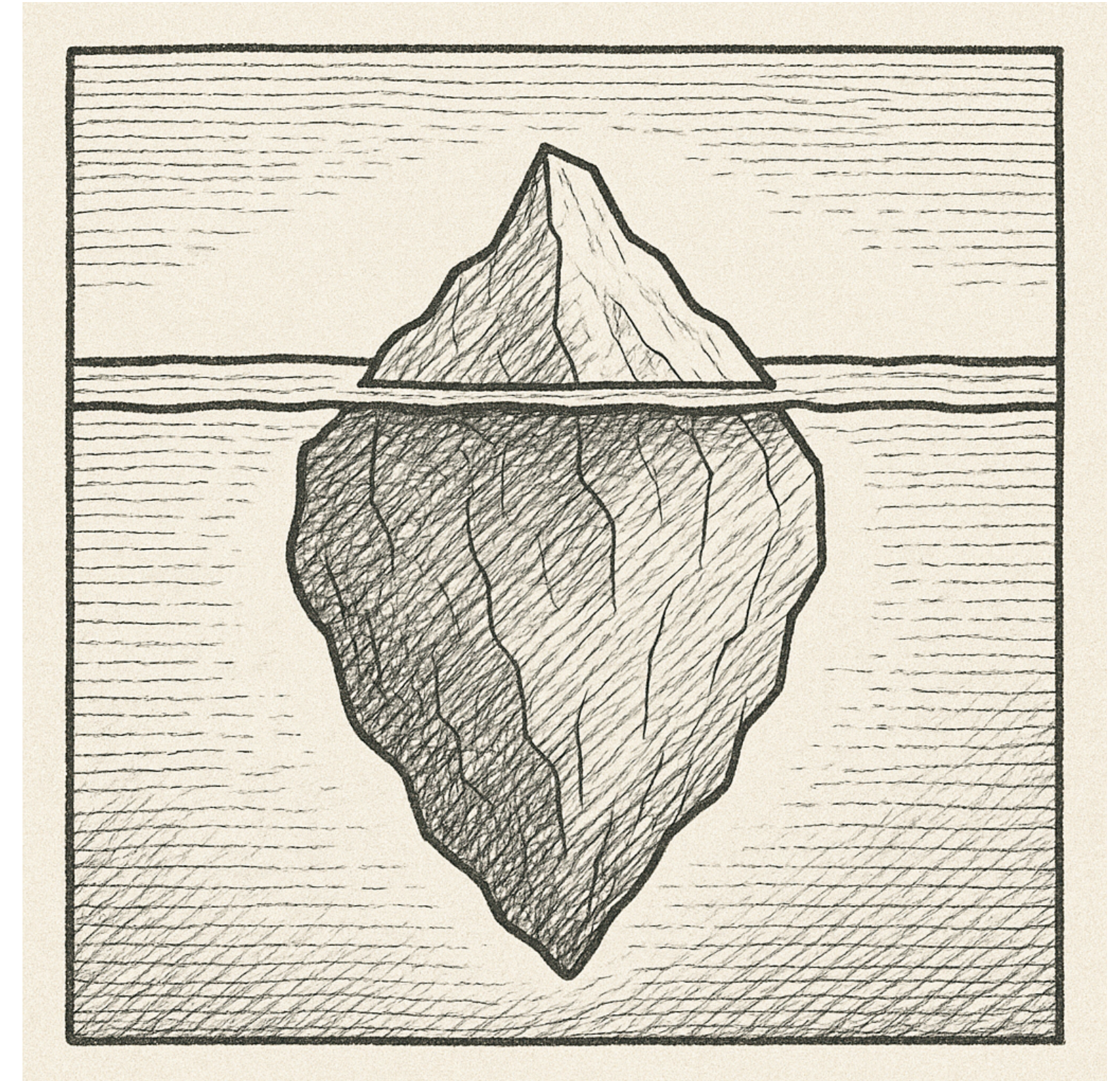
Templates and Reuse



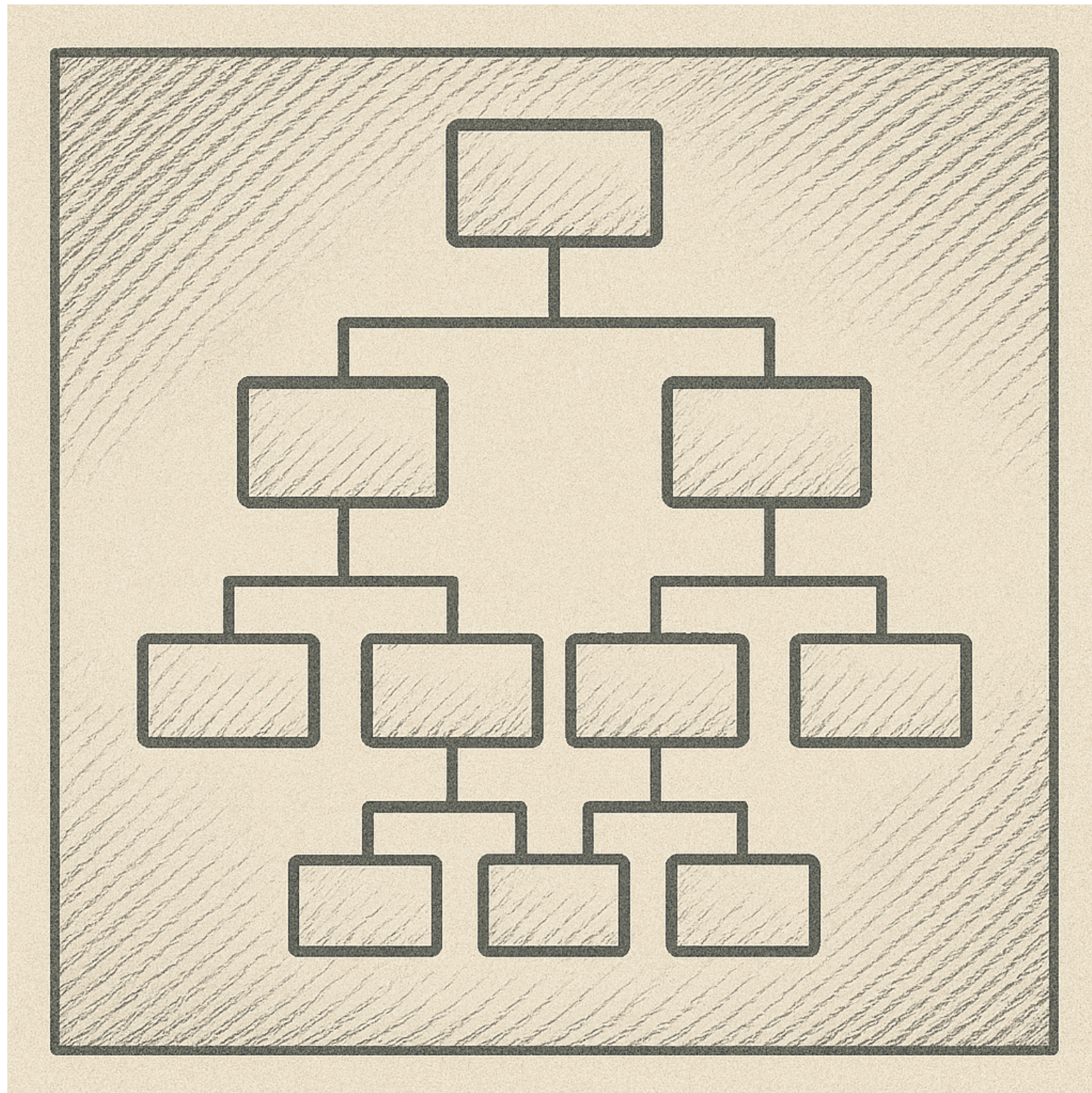
- Many components are the same or very similar across projects
- Pre-built templates for common devices and systems
- Patterns users can copy, extend, remix

Progressive Disclosure

- Show users only what they need at first
- Reveal complexity as they grow
- Seeing “everything” at once is overwhelming
- Do users *need* to see every detail?



Visual Relationship Mapping



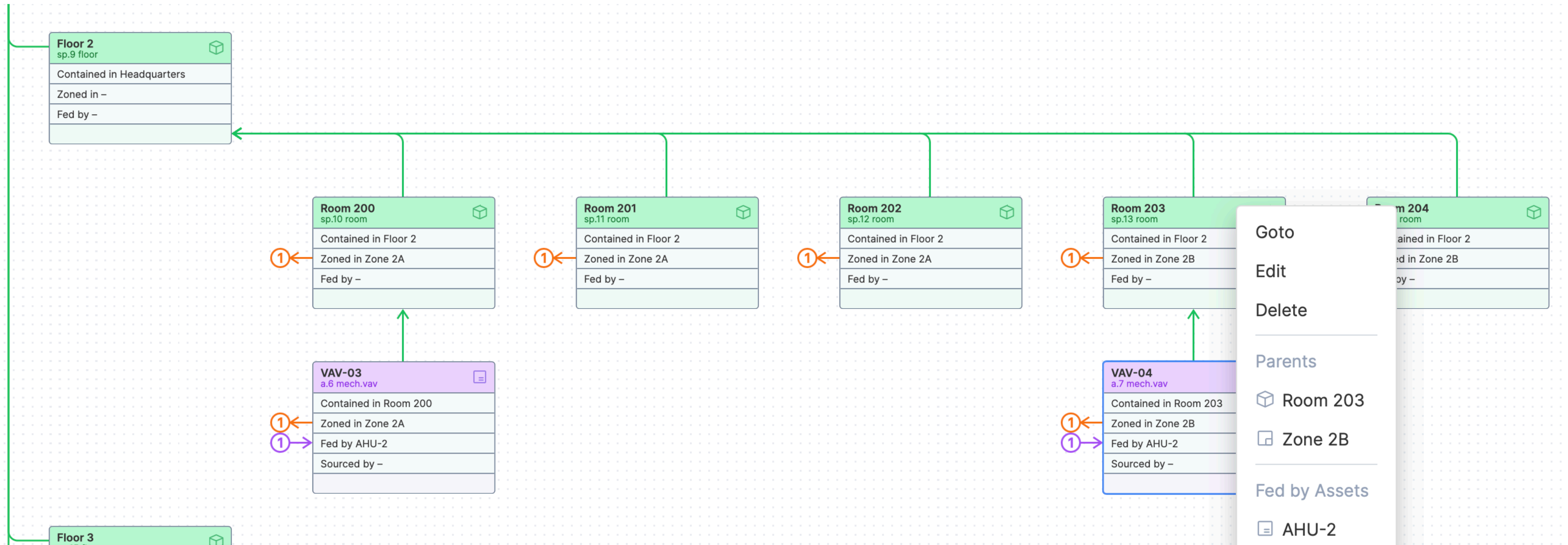
- A picture is worth 1000 words
- Node/edge graphs (Block diagrams, Tree views)
- Spatial hierarchies and equipment flows
- Users “see” the logic

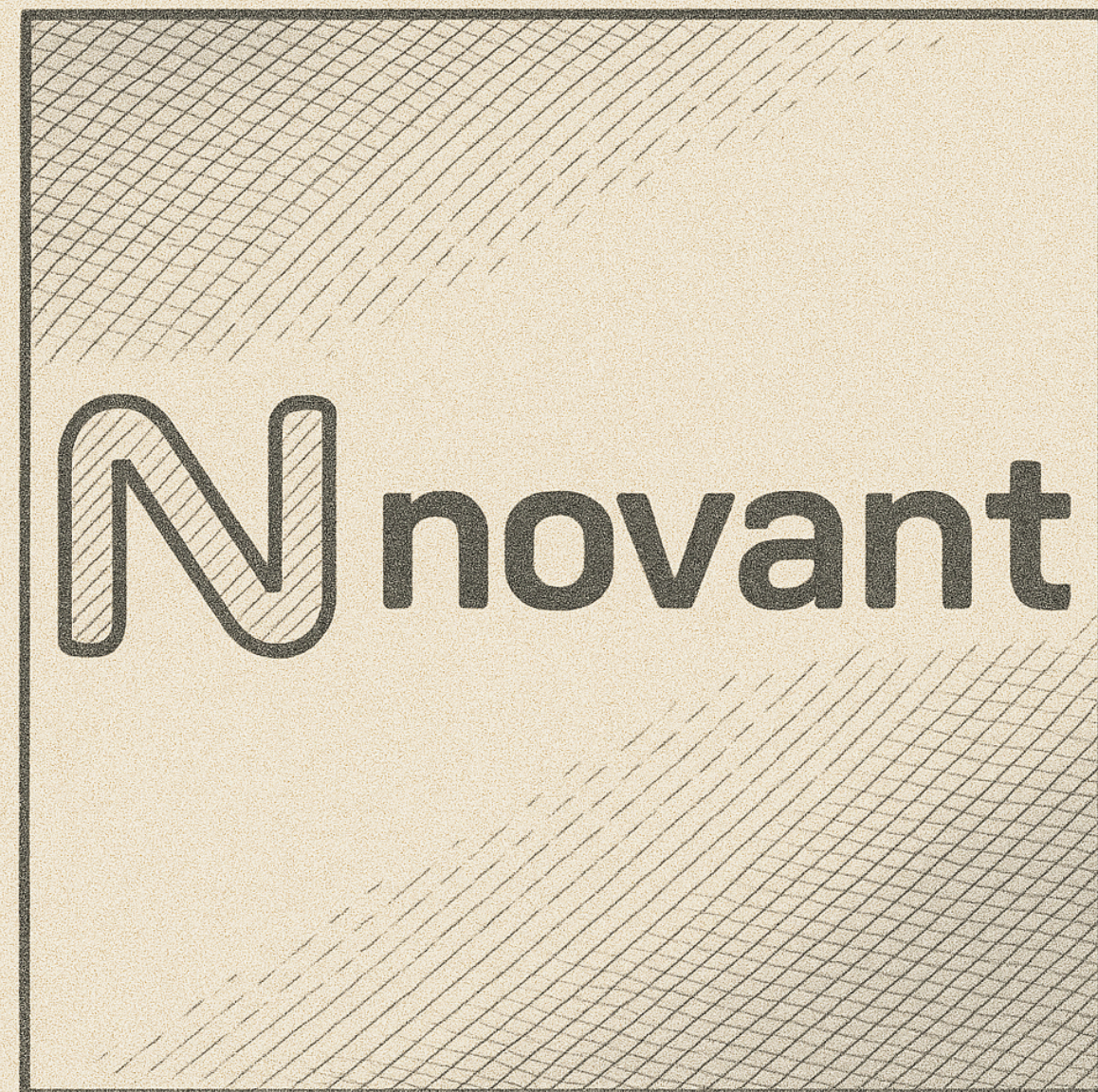
Ontologies as User Empowerment

- Well-designed ontologies reduce support burden
- Make downstream tools (analytics, dashboards) more powerful
- If anyone can create and consume ontologies, the user base explodes
- New ideas come “outside the circle”



Real-World Example





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