Data notebooks have evolved to adapt to emerging AI/ML needs

v0 ***2000s*** v1 ***2014+*** v2 ***2021+***

Closed Environments

Through command line or within closed-source environments, R, IPython notebook files

- ✕ **Static & Inflexible**
- ✕ **Limited Interactivity**

Jupyter Notebooks

Universal, open-source solution that combines code, text, and output in a single document

- ✅ **Open-Source**
- ✅ **Integrated Environment**
- ✕ **Limited Real-Time Support**

Modern Notebooks

Moving from individual experimentation to collaborative, production-ready applications

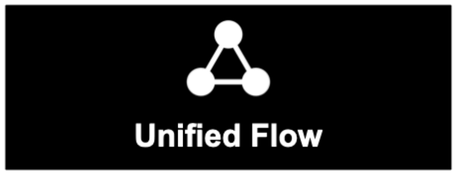
- ✅ **Multi-Player Collaboration**
- ✅ **Seamless Version Control**
- ✅ **No-Code/Low-Code Features**

Optimizing the human engine that leverages data notebooks can unlock massive productivity gains for ML work streams

Efficiency Gains

Replaces "Run All" with a DAG that only runs modified cells, cutting iteration by up to 10x.

Converts code into interactive apps instantly, enabling broader consumption.



Chains SQL and Python natively, streamlining data processes for applications.

No-code automation serves as a force multiplier for users who lack Python skills.

Technology Insights

Core Office Reality - For Data Scientists, data notebooks are the primary workspace (70% of work time); friction reduces time to value

Productivity Multiplier - Large-scale Enterprises manage impactful human engines; small efficiency gains don't just save seconds, they reclaim tangible value in capacity from associates locked in the tool

Mainstream Hub - Notebooks have evolved from a niche tool into a foundational engineering hub, with non technical and technical workers contributing directly to AI/ML outcomes

Takeaways

1. By transitioning from static, linear Jupyter environments to a modern notebook, teams can realize over 25% efficiency gains in data workflows
2. Modern notebooks scale data analysis far beyond specialized Data Scientists, unlocking mission-critical efficiency for a broader pool of workers

Jupyter notebooks have gaps which hinder model development velocity; modern data notebooks are built with capabilities to address those limitations

	Jupyter Notebooks	Modern Notebooks
Productization	❌ Deployment and automation ❌ Code structure and modularity ❌ Testing and debugging	**AI-native** ✅ *Build AI apps on notebooks* ✅ *Integrated compute scheduling*
Collaboration	❌ Difficult version control ❌ Reproducibility issues ❌ Dependency management	**Collaboration** ✅ *Multi-user editing; Git-friendly* ✅ *Improved transparency, tracking*
Performance	❌ Complex scaling infrastructure ❌ Lack of reactive execution	**Improved Performance** ✅ *Reactive execution* ✅ *Large workload environments*

Case Studies

Kong

Time Savings
Hex saves Kong 4 hours on dashboards that are built internally.

Notion

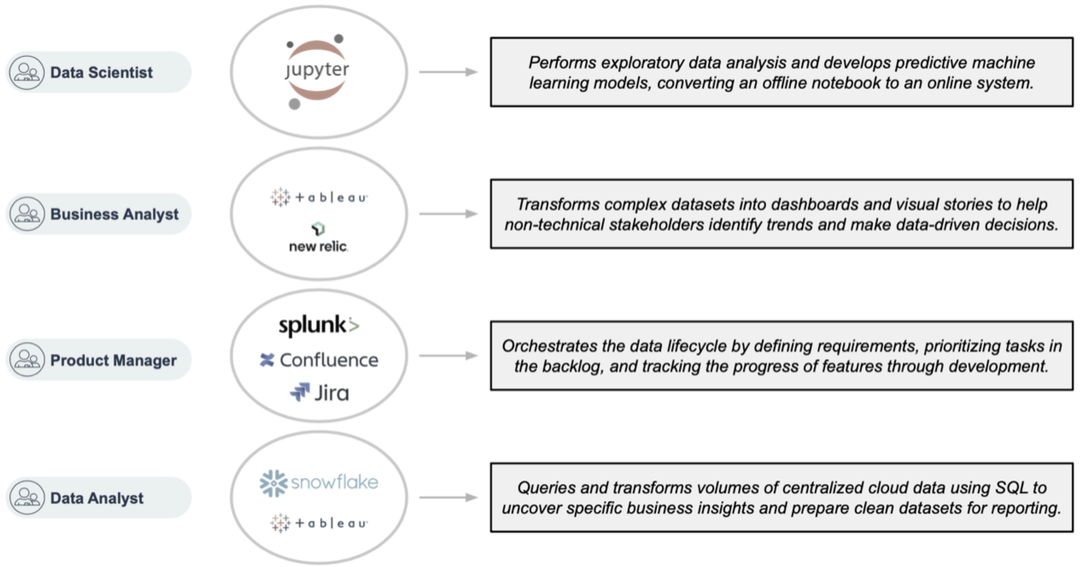
Flexibility
Hex handles tasks from exploratory analysis to complex data science.

DNB

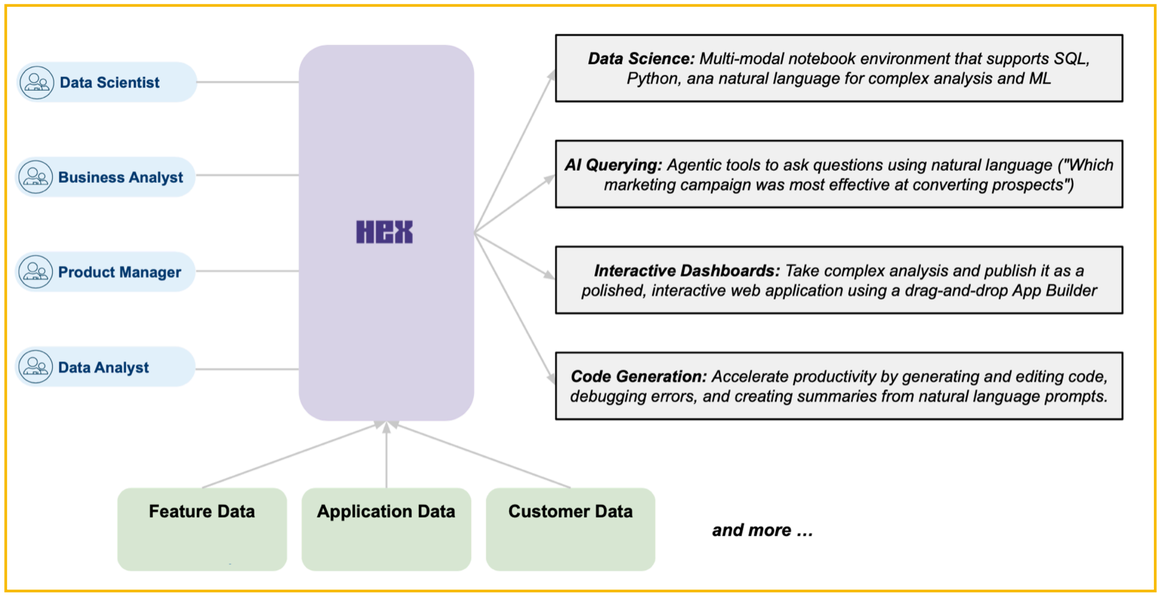
Real-time
Marimo ensures that all parameter updates are reflected downstream.

Next-gen notebooks like Hex will be the single source of truth for data teams to create, modify and use data applications, from models to agents

OLD



NEW



Increased Application Velocity

Reducing time-to-production is a direct competitive advantage in commercial applications

Improved Governance Tooling

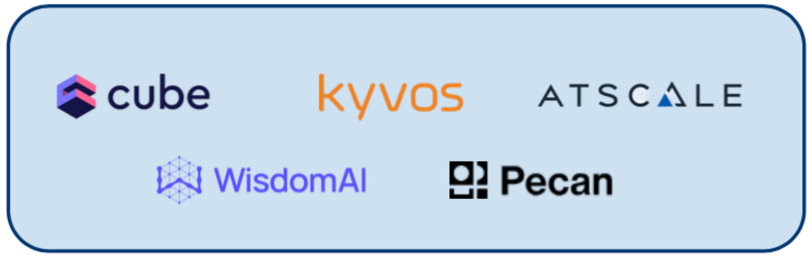
Model decisions must be cataloged to expedite validation, review, and regulatory audit processes

Talent and Retention

Top-tier data practitioners expect modern, high-productivity tooling to accelerate modeling tasks

Market Perspective: There is a strategic "land grab" happening between Semantic Layer companies and Notebook platforms

Semantic Layers



Codifies and centralizes all business metrics, relationships, and logic. Semantic layers **create a single, reliable source of truth** that feeds all reports and data tools, including models and AI applications.

Modern Notebooks

Built for modern teams with features like **real-time co-authoring, version control, and one-click deployment**. Offer **no-code interfaces for non-technical users** to safely interact with and customize models.

Semantic Layer Strategy: Displacing the Notebook

Headless Logic: By centralizing metrics in a "headless" layer, they turn notebooks into interchangeable viewers rather than the source of truth.

AI-Direct Access: They provide semantic APIs that allow AI agents to query data directly via natural language, bypassing manual coding in a notebook.

Notebooks Strategy: Integrating the Semantic Layer

Native Modeling: Modern notebooks are building internal, version-controlled modeling layers to define metrics directly within the workspace.

End-to-End Governance: By absorbing the semantic layer, notebooks eliminate need for external tools, keeping analysis in a single environment.

Hex unifies the entire analytics workflow in a single, collaborative workspace

Core Capabilities

Polyglot Logic View: A notebook interface where users can seamlessly chain together SQL, Python, and R in the same project.

No-Code Building Blocks: Includes built-in UI-driven cells for filtering, pivoting, and visualization, allowing less-technical users to contribute without writing code.

Hex Magic (AI): Integrated AI agents help generate, edit, and debug code, as well as automate the creation of entire analyses and visualizations.

Drag-and-Drop App Builder: Instantly converts notebook logic into polished, interactive web applications that stakeholders can use to self-serve insights.

"Workplace Integration" Model

Eliminates tool switching by housing the entire workflow, data integrations to business reports, in one platform.

"Data as a Team Sport"

Features real-time multiplayer editing, versioning, and comments, similar to modern software environments.

Enterprise-Grade Scale

Built for the modern data stack with native integrations for Snowflake, BigQuery, dbt, and Databricks

About Hex

Founding Story

- **Solving the "Last Mile" Problem:** Founders Barry McCardel, Caitlin Colgrove, and Glen Takahashi launched Hex in 2019 to bridge the gap between technical data work and business impact, replacing fragmented workflows where results were often manually pasted into static slides.

- **The Palantir Pedigree:** Having worked together at Palantir, the founders experienced firsthand the friction of siloed data tools and the lack of real-time collaboration, leading them to build the "team sport" environment they wished they had.

- **A "Selfish" Design Philosophy:** The company was built on the mission to create a unified, cloud-native workspace that integrates the entire analytical lifecycle—from raw code to interactive, shareable data apps—within a single platform.

Funding History

- Total raised: $171.5M
- Series C round: $70M in May 2025
- Investors: Sequoia, a16z, Redpoint, Snowflake, Databricks

Team

- Founded in 2019 and grown to 201 employees
- Headquarters: San Francisco, CA
- Founders: Barry McCardel (CEO), Caitlin Colgrove (CTO), and Glen Takahashi (Chief Architect); founding team is all ex-Palantir

2019 – Founding: Established by former Palantir employees to address fragmented data workflows and poor collaboration.

2020 – Launch & Seed: Raised **$5.5M** to build a cloud-native, collaborative data workspace.

2021 – Series A & Version 2.0: Raised **$16M** and introduced a **reactive compute model** alongside first-class SQL support.

2022 – Hypergrowth & Series B: Quadrupled revenue and secured **$52M** in funding backed by Snowflake and Databricks.

2023 – Generative AI: Launched the **Hex Magic** beta, integrating AI-assisted SQL and Python generation directly into the workflow.

2025 – The Agentic Era:

- **May:** Raised **$70M (Series C)** to accelerate AI product innovation and market reach.
- **October:** Launched **Threads**, a conversational analytics interface powered by autonomous AI agents.
- **December:** Released **Notebook Agent Act II**, enabling AI to auto-organize code and style charts.