# The Spreadsheet Industry: Current State and Future Trajectory

# **Current Industry Landscape**

## **Major Players and Market Share**

The spreadsheet software market is dominated by a few key players. **Microsoft Excel** and **Google Sheets** are by far the largest in user base. Microsoft Excel, part of the Office suite, has been used by hundreds of millions of people for decades – Microsoft reported over **1.2 billion Office users** (all of whom have access to Excel) as of 2019

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- . Recent estimates suggest Excel has **around 700 million monthly active users**, while **Google Sheets** a newer cloud-based entrant now reaches about **900 million monthly users** <u>patronum.io</u>
- . In other words, Google Sheets' user count has grown to roughly **200 million more monthly users** than Excel

#### patronum.io

, reflecting Sheets' rapid adoption especially among individual and small-business users.

Beyond these two giants, several niche and emerging players have significant footholds:

- Airtable: A hybrid spreadsheet-database platform launched in 2012. Instead of raw user count, Airtable reports usage in terms of organizations: by 2021 it had 300,000+ active customers, including usage in roughly 80% of Fortune 100 companies <a href="mailto:nira.com">nira.com</a>
  - . This indicates a strong presence in enterprise teams. (Airtable is privately held but notably reached a valuation around \$11 billion in 2021, underscoring its impact.)
- Smartsheet: A cloud work management tool with a spreadsheet-like interface, founded in 2005. Smartsheet has grown steadily in the enterprise segment, reporting about 10 million users as of 2022

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and over 76,000 organizations using it (including **96% of the Fortune 100** as of 2018) <u>expandedramblings.com</u>

. It's a public company with FY2023 revenue of \$766 million, reflecting its commercial success

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• Others: Apple's Numbers (part of iWork) and open-source LibreOffice Calc are also available, but their market share is small compared to Excel/Sheets. Niche products like

**Quip** (Salesforce), **Zoho Sheet**, and **WPS Spreadsheets** have modest adoption. Overall, Microsoft and Google command the lion's share of spreadsheet users, with newer players like Airtable and Smartsheet carving out growing segments in specialized use cases.

## **Use Cases and Distinguishing Features**

Each major spreadsheet platform has distinguishing strengths and typical use cases:

- Microsoft Excel "The power-user's tool." Excel is feature-rich and highly mature, first released in the 1980s. It's known for advanced capabilities such as pivot tables, macros/VBA scripting, data modeling (Power Pivot), and extensive functions. It excels (no pun intended) at handling large datasets and complex calculations in areas like finance, engineering, and analytics. Excel is deeply entrenched in corporate environments and is considered more powerful for heavy-duty needs. In fact, experienced analysts often prefer Excel for its robustness it can handle larger datasets and a wider range of functions than most competitors salesforceben.com
  - . Many "spreadsheet pros" consider Excel the gold standard for serious data work (sometimes even viewing Sheets as comparatively "lightweight" medium.grid.is
  - ). Excel's drawbacks have traditionally been limited real-time collaboration and its desktop-centric nature, though Office 365 has introduced collaboration features in recent years.
- Google Sheets "The cloud collaborator." Sheets is a web-based spreadsheet that emphasizes ease of access and collaboration. Its core appeal is that it's free (for consumers), cloud-native, and enables multiple people to edit simultaneously with minimal friction. This makes Sheets popular in education, startups, and teams that need quick sharing. Almost anyone with a Google account can use it, lowering adoption barriers. Sheets also integrates with other Google services (Forms, Drive, Google Apps Script) for extended functionality. However, Sheets has some limitations: very large or complex spreadsheets can be sluggish (it has a cap of 5 million cells per spreadsheet), and it lacks some advanced analysis features of Excel. In practice, younger users and "born-in-the-cloud" companies gravitate to Google Sheets for its convenience medium.grid.is
  - . Its distinguishing features include real-time multi-user editing, easy sharing via links, and built-in web connectivity. Google has been steadily adding more functions to Sheets, but it remains optimized for accessibility over raw power.
- Airtable "Spreadsheet as a database/app platform." Airtable positions itself as a blend
  of a spreadsheet and a database. Unlike Excel/Sheets, Airtable's "cells" can have rich
  types (attachments, checkboxes, links between tables) and it allows relational links
  between tables

#### en.wikipedia.org

. This makes it ideal for building simple **custom apps** – for example, project trackers,

CRMs, content calendars – without coding. Teams use Airtable when a traditional spreadsheet becomes too limiting or error-prone for relational data. Airtable's distinguishing feature is its ability to **treat spreadsheet rows as records in a database**, with multiple views (grid, calendar, kanban, forms) on the same data. It also offers automation integrations and a visual scripting interface. The main use cases are project management, content planning, inventory and workflow tracking, where users want an easy UI like a spreadsheet but more structure. Airtable's limitation is that it's less suited for heavy calculations; it's more about structured data storage and light computation. In summary, Airtable brings **database capabilities to end-users in a spreadsheet format** en.wikipedia.org

 Smartsheet – "Project management and workflow automation." Smartsheet looks much like a spreadsheet, but it is geared toward collaborative work management (think projects, tasks, Gantt charts, and reporting). Its interface and grid structure are familiar to spreadsheet users, but it includes features like task assignments, deadlines, reminders, and integrations for workflows

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. Typical use cases for Smartsheet are coordinating projects, tracking company processes, and other scenarios where a shared, updateable sheet is used as a lightweight project management tool. It appeals to operations and PMO teams that outgrow Excel for project tracking. The product's key features include automation rules, integrations with productivity tools, and templates for things like project plans or budgeting. In short, Smartsheet extends the spreadsheet concept to serve as an easy-to-use collaborative project management platform partner.microsoft.com

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• Others: Many other tools address specific niches. For example, Notion and Coda (discussed more below) blur the lines between documents, spreadsheets, and databases. Business intelligence (BI) tools like Tableau or PowerBI can handle data analysis that might start in spreadsheets. And domain-specific software (like ERP systems or dedicated budgeting tools) can replace certain spreadsheet uses. But in general, Excel and Sheets cover the majority of spreadsheet use cases: from simple lists and personal budgets to complex financial models. The newer platforms differentiate by adding database-like structure, easier app building, or workflow features on top of a spreadsheet UI.

# **Key Limitations of Traditional Spreadsheets**

Despite their ubiquity and flexibility, traditional spreadsheets (Excel, Sheets, etc.) have well-documented limitations in modern workflows:

- Automation Gaps: Spreadsheets largely rely on manual data entry and manual formula building. While Excel supports macros and Google Sheets has scripts, these require expertise and are not intuitive for average users. Excel does not offer robust automation out-of-the-box – many repetitive tasks (data cleaning, report generation, etc.) must be done by hand or with complex workarounds blog.insycle.com
  - . This lack of built-in automation leads to time-consuming processes and inconsistent results when done manually.
- Data Integration and Silos: Spreadsheets often become isolated "islands" of data. It's
  non-trivial to connect a spreadsheet to live databases or multiple data sources (users
  typically resort to CSV import/exports or copy-paste). According to one analysis,
  spreadsheets have limited integration capabilities and tend to become
  cumbersome data silos that block comprehensive insights
  knack.com
  - . In a business with many spreadsheets, keeping data in sync is a challenge. There's also no enforced single source of truth versions proliferate via email, etc., which complicates data consistency.
- Error-Proneness and Complexity: Perhaps the biggest critique of heavy spreadsheet use is the high potential for human error. Studies have found that up to ~90% of spreadsheets contain errors that can materially affect results knack.com
  - . Small formula mistakes or incorrect cell references can go unnoticed and lead to faulty analyses. As models grow complex, they become difficult to audit or troubleshoot. Additionally, using spreadsheets for complex tasks requires significant expertise new or less-skilled users can easily make mistakes. Maintaining large, complex workbooks often demands extensive documentation and discipline <a href="blog.insycle.com">blog.insycle.com</a>
- Collaboration and Version Control: Traditional file-based spreadsheets (like Excel prior to cloud co-authoring) suffer from poor multi-user collaboration. Only one person could comfortably edit at a time, leading to "locked" files or multiple copies. Excel historically lacked real-time collaboration and robust version control, causing situations where team members had conflicting copies or lost track of changes blog.insycle.com
  - . While Google Sheets solved simultaneous editing, version control (track changes, audit trails) is still basic. It's easy for a collaborator to overwrite something inadvertently. Managing permissions is also coarse often all editors have equal access, which can be risky in large teams. These collaboration pain points mean spreadsheets can hinder group workflows compared to purpose-built collaborative software.
- Scalability Constraints: Spreadsheets struggle with very large datasets or high dimensional data. Excel has a hard row limit (~1.048 million rows) blog.insvcle.com
  - , and performance degrades with thousands of formulas or data points (with possible crashes for extremely large files). Google Sheets also has limits on cells and will slow

down notably with lots of data or complex scripts. For "big data" analytics, spreadsheets are not feasible. They also lack the computational efficiency and memory management of databases or specialized tools. As businesses accumulate more data, **spreadsheets often hit a wall in terms of capacity and speed** blog.insvcle.com

Security and Control: By design, a spreadsheet is a wide-open grid – there's minimal
inherent structure to enforce data integrity or access control. Features like cell protection
or file passwords exist but are not robust security measures. It's easy for someone to
accidentally delete or modify data. Spreadsheets also lack role-based access controls
and detailed audit logs

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, making them risky for sensitive or regulated data management. In contrast, dedicated systems or databases can enforce user permissions down to field-level and keep an audit trail.

These limitations are widely recognized. They explain why many organizations seek alternatives or augment spreadsheets with other solutions (for example, using databases for large data storage, or using automation scripts to handle repetitive updates). In summary, while spreadsheets are highly flexible and familiar, they can be labor-intensive, error-prone, and ill-suited for complex, collaborative, or large-scale tasks. This sets the stage for new tools and improvements aimed at addressing these gaps.

# **Disruptors and Emerging Competitors**

Given the limitations above, it's no surprise that a wave of **new tools and platforms** has emerged to "disrupt" the traditional spreadsheet and offer modernized ways to handle tabular data and business processes. These disruptors range from **no-code database platforms** to **Al-powered spreadsheet assistants**. Below are some of the notable categories and players, and their impact on the market:

No-Code, Database-Backed Workspaces: Products like Notion and Coda represent a
fusion of documents, spreadsheets, and databases in an all-in-one workspace. They are
often used as alternatives to spreadsheets for organizing information and collaborative
workflows. Notion, for example, allows users to create pages that include databases
(tables) with relations and rich text – achieving many things people used to do with a
combination of Excel files and Word docs. Notion only launched in 2016, but by 2020 it
had over 1 million users, and it has since exploded in popularity to an estimated ~100
million users by 2024

#### super.so

. This astounding growth demonstrates how many individuals and teams are moving to integrated online tools. Notion's main use cases (note-taking, project tracking, knowledge bases) often replace what might have been a mess of spreadsheets and docs before. *Coda* (launched 2017) similarly combines the flexibility of a doc with the

power of a spreadsheet/database, emphasizing automation and integrations. Coda has seen rapid adoption in tech-forward companies (gathering tens of thousands of users in its first couple of years)

#### nira.com

- . The impact of Notion, Coda, and similar platforms is that they attract users who want a more **user-friendly, centralized way to manage data and content**, reducing reliance on standalone spreadsheets. They also introduced the idea that a "document" can have live relational tables and calculations embedded, changing how people think about spreadsheets (more as components of a larger workflow rather than separate files).
- Spreadsheet-Database Hybrids: Prior to Notion and Coda, tools like Airtable (discussed above) and Smartsheet were themselves disruptors to Excel. They showed that there's huge demand for more structured and collaborative spreadsheet alternatives. Airtable in particular proved that non-programmers were eager to build simple database applications once given an approachable interface. Its popularity (hundreds of thousands of organizations using it, as noted) validated a new category of software. Now, even Microsoft and Google have responded (e.g., Microsoft's Lists and the new Loop components, Google's AppSheet acquisition) to offer spreadsheet-database hybrids. The presence of these alternatives has somewhat eroded the usage of Excel/Sheets in scenarios like team task tracking or lightweight CRM many startups today might reach for Airtable or Notion as a first choice for those needs instead of defaulting to Excel.
- AI-Powered Spreadsheet Tools: Very recently, a new breed of spreadsheet
  alternatives has appeared, leveraging artificial intelligence as a core feature. For
  example, Rows.com is a modern online spreadsheet that includes a built-in AI assistant.
  Users can enter a prompt (using a special =ASK\_OPENAI formula in Rows) to have the
  AI summarize data, answer questions about the dataset, generate classifications, and
  more

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- . This reduces the manual effort of writing complex formulas or code for analysis. Another startup, **Equals**, offers an "Al-powered spreadsheet" aimed at analysts and developers it can generate SQL queries from natural language and even help debug formulas or code, by integrating GPT-4 directly into the spreadsheet environment gigasheet.com
- . The common theme is these products differentiate themselves by *automating insights* and formula writing using AI. There are also add-on tools like **Excelly-AI** or **Numerous AI** that bolt AI assistants onto Excel/Sheets to help generate formulas, perform translations, and summarize data <a href="mailto:qiqasheet.com">qiqasheet.com</a>

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. While still early, these Al-centric tools are starting to chip away at the tedious parts of spreadsheet use, attracting users who have repetitive analysis tasks or who lack advanced formula skills. They put competitive pressure on the incumbent platforms to integrate similar Al functionality (a trend discussed more below).

• Vertical-Specific and Workflow Alternatives: Spreadsheets have historically been the "Swiss army knife" used in every department – finance, marketing, operations, etc. Now, many software-as-a-service (SaaS) applications aim to replace specific spreadsheet uses. For instance, instead of juggling spreadsheets for accounting, a small business might adopt a dedicated accounting software; or a marketing team might move their campaign tracking from Excel into a project management tool like Trello/Monday.com. These aren't direct spreadsheet competitors in a features sense, but they erode spreadsheets' role by offering more tailored solutions. Over time, this has led to a slight decline in using spreadsheets as the default tool for everything. Automation platforms (like Zapier or workflow tools) also reduce the need to manually reconcile spreadsheets by connecting apps directly. In essence, as companies adopt more specialized cloud tools, the "all-purpose" use of spreadsheets can diminish. However, spreadsheets often remain the glue or fallback where other tools don't fit perfectly.

Impact on the Traditional Spreadsheet Market: The rise of these alternatives has forced Microsoft and Google to evolve their spreadsheet offerings. For example, Microsoft has added more collaborative cloud features to Excel (and even introduced a web-based lightweight spreadsheet called Excel Online to compete with Google). Google has been enhancing Sheets' capabilities (adding more advanced functions, linking it with BigQuery for big data, etc.) to appeal to power users. Moreover, seeing the popularity of Airtable/Notion, both companies are blurring lines between apps: Microsoft Loop and Fluid components allow a table to exist outside a file and be embedded in chats/docs, much like Notion's approach. Google integrated AppSheet (a no-code app builder) into Workspace, so a Sheets user can transition to a structured app if needed. The effect is that the traditional spreadsheet is gradually becoming more cloud-connected, collaborative, and extensible to fend off the new entrants.

**Adoption Trends:** Individuals and small teams are often the first to try new tools like Notion or Airtable (because they are easy to sign up for and often freemium). We see a **generational shift** – younger professionals are comfortable with cloud apps and will choose a modern tool over Excel if it saves time. As noted, many students today use Google Sheets through school and are less exposed to Excel until they enter large organizations

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. On the enterprise side, adoption of new platforms is cautious but steadily increasing. The fact that 80% of Fortune 100 companies had some Airtable usage by 2021 <a href="mailto:nira.com">nira.com</a>

speaks to how even big firms are experimenting beyond classic spreadsheets. These disruptors typically land in one department for a specific workflow, then expand virally if successful (often as "shadow IT" alongside official Excel use)

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. Surveys show that businesses are aware of spreadsheet limitations and are actively evaluating alternatives. Yet, it's also true that many companies *continue to rely on spreadsheets despite the availability of new tools*, due to inertia, familiarity, and the versatility of spreadsheets business-reporter.com

. The net trend is **growth in the overall market** (more users doing more data work than ever) with new tools capturing a share of that growth. The spreadsheet market isn't contracting; rather it's **expanding and segmenting**, with Excel/Sheets still growing in absolute users, while newcomers grow even faster from a smaller base.

In summary, the traditional spreadsheet is no longer the only choice for many tasks. **Disruptive newcomers have provided alternatives that excel in collaboration, structure, or automation**, drawing users away for specific use cases. This competitive pressure is pushing incumbents to innovate (e.g., integrating AI and databases) and could gradually redefine what a "spreadsheet" is in the coming years.

# Al Integration and Industry Evolution

One of the biggest forces reshaping the spreadsheet industry today is **Artificial Intelligence** (AI). From formula auto-completion to natural language questions, AI is rapidly being woven into spreadsheet software. Here we analyze the current state of AI integration, how it's enhancing spreadsheets, and the expected industry shifts over the short, medium, and long term due to AI.

## Al in Today's Spreadsheet Tools

Both Microsoft and Google have moved quickly to embed **generative AI** into their productivity suites, including Excel and Google Sheets. Microsoft's initiative is called **Microsoft 365 Copilot**, an AI assistant (powered by OpenAI's GPT-4 model) that can help users with Office apps. In Excel, Copilot can do things like generate formulas or insights based on a prompt – for example, a user can ask in natural language, "Analyze this sales data and highlight any interesting trends," and Copilot will produce answers or even create a new summary worksheet. Google, seeing this, launched **Duet AI for Google Workspace** to perform similar functions in Google Sheets (and Docs, Slides, etc.). Google announced Duet AI in 2023 to "keep up with competitors like Microsoft Copilot," acknowledging the need for an AI workspace assistant alongside its rivals

## uctoday.com

- . Duet AI can auto-generate content, answer questions about your spreadsheet, suggest formulas, help categorize data, and generally act as an intelligent assistant within Sheets <a href="https://doi.org/10.1007/journal.org/">uctoday.com</a>
- . Both Copilot and Duet AI are in limited release (as paid add-ons) as of late 2023, but they represent the cutting edge of built-in AI for spreadsheets.

Aside from these flagship offerings, AI is present in smaller ways too:

• **Formula Suggestions and Auto-fill:** Google Sheets has features like *Smart Fill* and *Suggested Formulas* which use pattern recognition to guess what formula or fill series the user might need, based on context (for instance, recognizing that two columns have a certain relationship and suggesting a formula to transform one into the other)

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- . Excel similarly has insights and suggestions (earlier branded as *Ideas* or *Flash Fill* for patterns).
- **Natural Language Queries:** Both Excel (with Power BI integration) and Google Sheets (via the Explore tool) have allowed users to ask questions in plain English (e.g., "Total revenue by year") and get answers or charts, using AI to interpret the query. This was an early form of AI in spreadsheets aimed at making data analysis more accessible.
- Third-Party Al Add-ons: As mentioned, tools like Excelly-Al, Numerous.ai, Arcwise, etc., can be plugged into spreadsheets to provide chatbot-like assistance – generating regular expressions, explaining complex formulas, cleaning data, etc.
   gigasheet.com

## pecan.ai

. OpenAl's own API is often used in creative ways (some users write custom scripts to call GPT from Google Sheets to, say, categorize text in bulk). While these are not native features, they show how keen users are to inject AI into spreadsheet workflows.

In summary, **the current state** is that Al is just beginning to be directly available inside mainstream spreadsheets. We are at the early adoption phase: pilot programs and add-ons are showcasing what's possible (automating formula writing, analyzing data on command, etc.), but most users are only starting to experience these capabilities. The next 1-2 years will likely see these Al features become widely available and heavily marketed in Excel/Sheets.

## **Al-Driven Automation and Analysis Enhancements**

Integrating AI addresses many of the long-standing pain points of spreadsheets. Some of the key enhancements AI brings include:

- Automating Tedious Tasks: Al can handle repetitive operations like data cleaning, formatting, or updating values based on criteria. For example, instead of manually cleaning a text column, one could prompt the Al to standardize capitalization or extract certain info from a text field across thousands of rows. This is akin to having a macro generated on the fly by simply asking. By automating data prep and formula creation, Al saves users from low-value grunt work pecan.ai
- Advanced Analysis & Pattern Recognition: All algorithms can detect patterns or outliers in data that a user might not notice. As one guide noted, All can sift through large datasets to identify non-obvious patterns and trends thebricks.com
  - . It can also perform **predictive analysis** using historical data to forecast future metrics (e.g., predicting next quarter's sales) something that would normally require building a statistical model or regression by an expert <a href="thebricks.com">thebricks.com</a>

- . Now a user can ask an AI in a spreadsheet to do the forecasting. This elevates spreadsheets from static data containers to tools for proactive insights.
- Natural Language Queries & Formula Generation: All makes interacting with data
  more intuitive. Instead of knowing the exact formula or pivot table to create, a user can
  ask questions in plain language and the All will translate that into spreadsheet actions.
  For instance, "What is the average growth rate month-over-month?" could be answered
  by the All calculating it across the sheet. This lowers the barrier for non-experts people
  not fluent in "spreadsheet-speak" can query data using normal language
  thebricks.com
  - . Similarly, writing complex nested formulas or lookup formulas can be done by AI from a description of the goal, which is immensely helpful for those who struggle with formula syntax.
- Decision Support and Recommendations: All can go beyond what's explicitly in the
  data and bring external knowledge or optimized suggestions. For example, an All might
  suggest: "Your sales dip in March stands out; consider checking marketing spend in that
  period," pulling in context that a formula alone wouldn't. It can also help in
  decision-making by running scenarios or providing explanations for numbers. This blurs
  the line between a spreadsheet and a consultant the All becomes a co-pilot that not
  only computes but also interprets and advises.

In short, Al features are transforming spreadsheets from passive tools that require manual effort into **active tools that assist and guide users**. Early user feedback indicates significant time savings. It's like having a junior analyst or assistant embedded in the software, doing initial analysis and heavy lifting.

# Short-Term (Next 2 Years) - Rapid Adoption of Al Features

In the next couple of years, we can expect **AI functionalities to become standard in spreadsheet software**. Microsoft and Google are likely to roll out Copilot and Duet AI broadly within 2024-2025. This means tens of millions of users will get exposure to built-in generative AI while using Excel or Sheets. Given that, a **short-term industry shift** will be: **widespread AI augmentation of spreadsheet tasks**. Users will increasingly delegate formula writing, chart generation, and data summarization to AI assistants.

Notably, businesses appear ready to embrace this. In one survey, 100% of companies polled said they intend to implement or expand use of data integration, workflow automation, and Al in their planning processes within 12-18 months

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. That indicates virtually all organizations recognize the need for smarter tools alongside spreadsheets, and they are actively planning for it *now*. We can interpret this as most companies integrating AI either into their existing Excel/Sheets usage or via new software, in the immediate future.

Concretely, in 2 years we expect:

- Copilot and Duet become mainstream: These AI assistants will likely be integrated
  into enterprise plans of Office 365 and Google Workspace (especially as they are being
  monetized as premium add-ons). We'll see case studies of companies reporting
  productivity gains from using them. It will become normal for an analyst to ask the
  spreadsheet AI to "explain the variance this month" and get a natural-language answer
  or a draft slide.
- Competition on Al capabilities: Microsoft and Google will compete on whose Al is "smarter" in spreadsheets. We might see rapid improvements e.g., better understanding of custom business context, or more accurate formula suggestions as the underlying Al models improve (with new versions like OpenAl's GPT-5 or Google's Gemini models). Both companies have huge investments here, and whichever provides a more useful assistant could gain an edge in user satisfaction. As of late 2023, Microsoft arguably has a head-start via its OpenAl partnership, but Google's massive Al research (and control of the whole stack) means the race will be tight.
- Al features trickle to all user segments: Even for free or lower-tier users who might
  not get Copilot/Duet immediately, we'll see more limited Al features (like enhanced
  autocomplete, or Al-powered templates) appear in Excel/Sheets. Third-party Al plugins
  might become very popular for individual users (for example, a Chrome extension that
  brings ChatGPT into Google Sheets for free). Essentially, Al in spreadsheets will not be
  a niche it will be commonly accessible to most users within 2 years.
- Training and new best practices: A short-term effect is also that users and organizations will need to develop new skills and guidelines. There may be training on how to effectively prompt the AI, how to validate AI-generated results, and how to maintain data privacy when using these cloud AI services. This is a cultural shift: spreadsheet users will need some data literacy to oversee the AI outputs (garbage-in, garbage-out still applies, and AI can make mistakes). We might see companies establishing policies for AI use in sensitive financial models, for instance.

Overall, the near term will see **enhanced productivity** in spreadsheet tasks. Repetitive chores will diminish, and analysts can focus more on interpreting results than on writing code or formulas. The market demand for spreadsheet software is likely to **increase** as Al makes it easier for novices to use these tools effectively (attracting new users). We may also see growth in premium subscriptions as companies pay for Al features, contributing to market growth.

# Mid-Term (Next 5 Years) – Deeper Integration and Evolving Roles

Looking 5 years ahead, by 2028-2030, Al's role in spreadsheets will deepen further. We can predict a few mid-term shifts:

Spreadsheets as Part of a Hybrid Solution: Rather than standalone files, spreadsheets will become more integrated with Al and cloud databases. The industry is likely to converge spreadsheets with business intelligence platforms. For example, a spreadsheet might seamlessly connect to live company databases, with an Al agent automatically updating and analyzing the data. The lines between a spreadsheet, a database, and an Al-powered analytics tool will blur. Companies are already

strategizing for this: they plan to connect spreadsheets to data integration pipelines and use AI for analysis, combining the user-friendly spreadsheet front-end with powerful back-end systems

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- New Analytical Workflows: In five years, an analyst's workflow might look very
  different. Instead of manually building a model, they might start by asking an AI to draft
  an analysis. The spreadsheet might auto-generate a set of pivot tables, charts, and
  conclusions, which the human then tweaks or validates. There will be more interactive
  "conversations" with your data through the spreadsheet interface akin to having a
  dialogue where the AI prepares material and the user corrects or drills down as needed.
- Shift in Required Skillset: Spreadsheet proficiency will likely include the ability to
  effectively use AI tools. Knowing how to write a perfect VLOOKUP may become less
  important than knowing how to formulate a clear natural-language prompt to the AI or
  how to combine AI outputs with personal expertise. The role of a spreadsheet user might
  evolve into more of a reviewer/strategist role overseeing AI outputs, addressing edge
  cases, and making judgments, rather than doing all computations manually.
- Enhanced Decision-Making: With AI handling much of the heavy analysis, spreadsheets (or their future incarnations) will be more about decision support. Mid-term, we could see features where the AI not only answers questions but also proactively identifies issues in your data and alerts you. For instance, the spreadsheet might notify: "These two departments have inconsistent budget numbers" or "This trend is statistically significant." This moves spreadsheets into the realm of augmented analytics, helping even non-analysts to make sense of data quickly.
- Collaboration with Al and Humans: We might also see improved collaborative
  environments where multiple users and Al agents all work on a dataset together.
  Picture a scenario where an Al agent is continuously keeping the spreadsheet error-free
  and updated, while humans focus on discussing the data right within the sheet (perhaps
  with chat/commentary that the Al can reference to refine analyses). The concept of
  version control might shift as Al can reconcile changes intelligently.

From an industry standpoint, by 5 years out, the core spreadsheet products might transform into something more powerful but still user-friendly. Microsoft and Google will likely incorporate more Al-driven automation (perhaps integrating things like scheduling, emails, or external data fetch directly from a spreadsheet via Al). **Startups** in this period might introduce entirely new paradigms – for example, a voice-driven spreadsheet where you literally ask questions and hear answers or see visualizations rendered on the fly. Some of these innovations may be acquired by the big players, further enriching Excel/Sheets.

We should also consider that in 5 years, **competition might intensify**. If Microsoft and Google execute well on AI, they will solidify their dominance (because switching away becomes harder when Excel/Sheets are AI-supercharged and integrated with the rest of Office/Workspace). On the other hand, if they stumble or move slowly, this opens the door for an outsider with a radically better AI-driven interface to gain ground. At this mid-term stage, it's likely the

**incumbents still hold the majority of market share**, but the way people use spreadsheets will have shifted noticeably towards Al assistance.

The net effect on the market: Spreadsheets will still be in high demand, potentially even more so, but the *value proposition* will be different – it's not just about a grid of cells, but about an intelligent analysis environment. The overall **spreadsheet software market is projected to keep growing** (one forecast estimates rising from ~\$11 billion in 2024 to ~\$15.7 billion by 2029

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). Al features could accelerate that growth by unlocking new use cases and users. We may also see pricing changes, where advanced Al functionality is a significant revenue driver (as an add-on service).

## Long-Term (Next 10+ Years) – Al-Transformed Landscape

Looking a decade out (2035 and beyond), we venture into more speculative territory, but current trends suggest a few possibilities:

- Al as the Primary User "Autonomous Spreadsheets": It's possible that in 10 years, Al will handle the majority of tasks that humans currently do in spreadsheets.
   Gartner made a bold prediction that by 2030, around 80% of project management work could be run by Al, taking over half of managers' workload trueprojectinsight.com
  - . Extrapolating that to spreadsheets, many routine analyses and reports might be entirely Al-generated with minimal human input. You might simply tell an Al your business goals or questions, and it builds and maintains a "spreadsheet" model dynamically over time, only alerting you when decisions or exceptions need human judgment. The spreadsheet of 2035 might not look like a grid at all, but rather an Al-driven dashboard that can morph into grid views when needed.
- Natural Language and Voice Interfaces: By 10 years, interacting with a spreadsheet might be as easy as having a conversation. Improvements in natural language processing and even voice recognition could allow users to just speak or write requests and navigate data without ever manually entering cells. The concept of "writing a formula" may become niche the AI will craft the needed logic behind the scenes. Visual and voice explanations from the AI ("Here is why this number changed...") could become routine, making the analytical process much more accessible to everyone.
- Integration of Adjacent Technologies: We'll likely see spreadsheets deeply integrated with other emerging tech. For example, integration with IoT (Internet of Things) for real-time data feeds, or using blockchain for audit trails in financial spreadsheets, or AR/VR for visualizing data in 3D (imagine manipulating a giant spreadsheet in virtual reality with hand gestures a far-out possibility). More concretely, no-code platforms and database technologies might merge with spreadsheets so completely that the term "spreadsheet" might broaden to mean any grid-based data interface, whether it's static

- or connected to a million-row database. The dominance of spreadsheet UI could extend into areas currently reserved for apps because grid models are very flexible, an AI could make them adapt to almost any structured task.
- Dominance vs. New Paradigms: The big question: will spreadsheets as we know them remain dominant, or will they be overtaken by something entirely new? It's plausible that spreadsheets will persist, but in a highly evolved form. The core idea of a table of data is not going away humans naturally understand rows and columns. Even if Al does 90% of the work, people may still want to see and manipulate the grid to verify and customize. Spreadsheets have a huge inertia of familiarity and trust. As one analysis put it, spreadsheets have strategic benefits in their convenience and the fact that employees already know how to use them, so replacing them entirely is difficult business-reporter.com

. In 10 years, we suspect spreadsheets (or their descendants) remain a fundamental tool, but the **dominance might shift to those tools that best integrate Al and automation**. If Microsoft and Google successfully transform Excel/Sheets with Al, they will likely still dominate. If they don't, perhaps an "Al-first" platform will rise and become the new Excel.

It's also worth considering the human factor: companies will not easily throw away decades of Excel-based processes overnight. Many critical financial models and operations still run on spreadsheets. Even in 2035, we will likely find departments that keep an Excel sheet for backup or familiarity. Thus, a realistic long-term scenario is **coexistence**: spreadsheets enhanced by Al will remain widespread, while purely Al-driven solutions also exist for those who prefer full automation. In essence, Al and adjacent tech will redefine spreadsheets rather than eliminate them.

Experts lean towards a future where **AI complements rather than outright replaces spreadsheets**. As one industry guide noted, *completely removing spreadsheets in favor of AI isn't practical for everyone; the ideal approach is to use AI to enhance spreadsheets' capabilities* 

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. We can imagine a symbiotic relationship: Al does the heavy lifting, and spreadsheets provide the interface for oversight, tweaking, and ad-hoc analysis. This combined approach offers the best of both worlds – efficiency plus user control.

To put it in perspective: **spreadsheets are likely to remain a dominant format for working with structured data in 2, 5, and even 10 years, but the nature of "working with a spreadsheet" will evolve dramatically due to AI.** Market demand for pure manual spreadsheets might decline, but demand for *AI-infused* spreadsheet solutions will grow. So the total usage of something that resembles spreadsheets will remain very high. The incumbents are already steering in this direction; if they succeed, we may not even distinguish between "spreadsheet" and "AI tool" – your spreadsheet will have AI in its fabric.

## Who is Best Positioned to Lead the Al Transformation?

All the major players are investing heavily to ride (and lead) the AI wave in spreadsheets, but some have more advantages than others. Here we compare the key companies and consider who has the edge in the AI-driven future of spreadsheets, as well as how startups factor in.

• Microsoft (Excel + Office 365): Microsoft appears to have an early lead in deploying AI at scale in spreadsheets. They invested billions into OpenAI and quickly integrated OpenAI's GPT-4 into Excel via Microsoft 365 Copilot. This partnership gives Microsoft access to cutting-edge AI models and the ability to fine-tune them for Office use cases. Moreover, Microsoft's sheer user base and enterprise penetration mean they can roll out AI to a massive audience rapidly. Remember, Microsoft Office (and thus Excel) reaches over a billion users, and Office 365 alone has ~270 million active paid users worldwide

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- . This user reach is a huge asset Microsoft can instantly put AI in front of hundreds of millions of Excel users, outpacing any smaller competitor. Early demos of Excel Copilot show it can create formulas, generate insights, and even draft analyses in response to prompts. Microsoft's longstanding relationships with enterprises also position it well: companies that trust Excel for critical work may be more comfortable adopting Microsoft's AI add-on than switching to an unknown tool. Additionally, Microsoft has complementary AI capabilities (Azure AI services, Power BI integration) that can bolster Excel. All this suggests Microsoft is strongly positioned to *lead the AI transformation* among spreadsheet software. In fact, its bold moves forced others to react Google's launch of Duet AI was explicitly to keep up with Microsoft's Copilot initiative uctoday.com
- . Microsoft's competitive advantage lies in integrating AI deeply into an already indispensable product (Excel) and doing so faster than others. If Copilot delivers on its promise, Microsoft could maintain Excel's dominance by making it the smartest spreadsheet around.
- Google (Google Sheets + Workspace): Google, on the other hand, is no stranger to AI

   it has world-class AI research (DeepMind, Brain team) and has been infusing AI across its products (Google Assistant, Gmail's Smart Compose, etc.) for years. For spreadsheets, Google's answer is Duet AI for Google Workspace, which brings generative AI into Sheets much like Copilot does for Excel uctoday.com
  - . Google's strengths include its expertise in AI (they have their own large language models like PaLM and the new Gemini) and the fact that **Google Workspace has over 3 billion monthly active users** (including many free users)

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. That indicates an even broader reach in some ways – many small businesses and individuals use Google's platform, so Google can propagate AI features to a vast and diverse user group. Google also controls the entire stack of Google Sheets as a web application, which might allow faster iteration and updates to AI features compared to

Microsoft's legacy compatibility constraints with Excel. However, one might argue Google was a step behind in rolling out a coherent AI assistant in Workspace. Now that Duet AI is launched (as of late 2023, for enterprise customers), Google is in the race and leveraging its **own AI models (like Bard, powered by Gemini)** for Workspace uctoday.com

- . Google's competitive advantage is its integrated ecosystem Sheets is tightly tied to Google's cloud and data services. They could potentially integrate Sheets' AI with Google's vast data troves or industry-specific models. Also, Google's culture of quick product updates (Sheets updates are continuous in the cloud) means AI improvements can roll out continuously. If any company can challenge Microsoft's lead, it's Google. The battle between Copilot and Duet AI will likely determine which one leads in user adoption and innovation. At this point, it's hard to say who "wins" Microsoft currently has more buzz in enterprise AI, but Google has immense AI talent and could catch up swiftly. For end-users, this competition is good news: both will push to offer the better AI experience in spreadsheets.
- Other Established Players: Outside of Microsoft and Google, the other spreadsheet players are smaller by orders of magnitude, so none of them alone is likely to "lead" the Al transformation industry-wide. However, it's worth noting their positions:
  - Airtable: Airtable has introduced "Airtable AI" features that allow users to add generative AI in their bases (for example, using AI to summarize text fields or generate content within a table)
     blog.airtable.com
    - . This is powerful within Airtable's domain (e.g., automating some text-heavy workflows), but **the scope is somewhat limited** one evaluation noted that Airtable's AI currently provides only row-level insights and cannot yet analyze across your entire base or answer broad questions coda.io
    - . Airtable is focusing on AI in the context of its no-code app framework, which could be compelling for certain use cases (like automatically categorizing data or triggering actions). They have a decent user base (especially in the Fortune 500), and if they develop unique AI-driven capabilities, they could strengthen their niche. However, Airtable doesn't have the AI research infrastructure of the big firms, so they are more likely to *apply* existing AI tech in creative ways than invent new AI. They may also partner with providers like OpenAI or others rather than build their own models.
  - Smartsheet: Smartsheet has begun integrating AI for smarter project management (like predicting project risks or automating updates), but as a public company their focus is narrower (work management). They are unlikely to lead on AI research, but will certainly adopt AI features to stay competitive in their segment.
  - Apple (Numbers): Apple's Numbers is a distant player in market share and there's no public information on significant AI features in Numbers. Apple tends to focus AI efforts on things like device experience (Siri, etc.) more than

- productivity software. It's safe to say Apple is not in the race to lead AI in spreadsheets.
- Open Source (LibreOffice, etc.): The open-source spreadsheet tools are even less resourced to develop AI features. They might benefit indirectly (for instance, someone could integrate an open-source AI assistant with LibreOffice Calc), but they won't be leaders.

In summary, the leadership in Al integration for spreadsheets will almost certainly lie with either Microsoft or Google – the two giants with both the user base and the Al investment. Microsoft has arguably the stronger hand *at present* due to its aggressive deployment of GPT-4 into Office and its first-mover advantage with Copilot. Google has the advantage of its vast data/Al expertise and a huge user ecosystem, and it is now fully engaged in this contest. It might end up that the two simply continue their long duopoly, each leading in different sectors (enterprise vs small business, for example). The concept of "who leads" could also vary geographically or by industry (some industries might standardize on Google's solution if they are already Google Workspace shops, whereas finance-heavy industries might stick with Excel).

• Startups and New Entrants: Startups play a crucial role as innovators and challengers. While no single startup is likely to unseat Excel or Sheets globally in the short term, they do introduce new ideas that shape the industry's direction. For instance, startups focusing on Al-first spreadsheets (like Rows, Equals, etc.) are pioneering features that the big players might not have developed yet. This can influence the major players to copy or acquire those innovations. A concrete example is Parabola, a startup that raised \$24 million with the explicit mission to "replace spreadsheets with Al" driven automation

#### voutube.com

. Parabola and similar tools let users build data flows and automation without spreadsheets, aiming at use cases like reporting and operations where people often hack together giant spreadsheets. Such startups address the pain point of non-technical teams wanting automation (which spreadsheets struggle with). If one of these tools achieved breakout success, it could change the landscape – but more commonly, their features get adopted by incumbents. For instance, if Parabola's approach is popular, Microsoft or Google might integrate similar automation flow capabilities into Excel/Sheets (or even acquire the company). Another startup, **Grid** (not to be confused with GRID mentioned earlier) works on making spreadsheets web-native and sharable as interactive dashboards easily. These ideas push the envelope of what spreadsheets can do.

In the context of AI, startups like those offering Excel plugins with GPT or entirely new AI spreadsheet apps are essentially *R&D* labs for the industry. They move fast and take risks on unproven ideas, and successful concepts often find their way into mainstream products. However, from a user's perspective, enterprises in particular will likely stick with the big trusted platforms unless a startup's product is clearly superior and mature. So far, we haven't seen an upstart dethrone Excel or Sheets in core usage – rather, they nibble at the edges or create new categories.

Who has the strongest Al-driven competitive advantage? If we have to pick, Microsoft appears best positioned to lead the Al transformation of spreadsheets, thanks to its combination of cutting-edge Al tech (via OpenAl), huge install base, and integration with enterprise workflows. Microsoft's CEO has made it clear they intend to embed Al across Office products, and Excel is a centerpiece of that strategy. Google is a very close second – its advantage in web-based delivery and consumer reach could translate to dominance in the broader market if they execute sharply. It might even turn into a scenario where Microsoft leads in enterprise Al spreadsheets and Google leads with small businesses/individuals (given the existing customer profiles of Office vs Workspace).

One should also not discount the possibility of **collaboration or interoperability** easing the competitive stance – for instance, OpenAI itself (or other foundation model providers) might offer services that any spreadsheet software can plug into. If AI becomes somewhat commoditized (multiple providers offering similar GPT-like models), then the competitive advantage shifts more to *data ownership and user experience* rather than raw AI capability. In that realm, Microsoft and Google again have an advantage (lots of user data and context they can harness to personalize AI results within spreadsheets, and control of the UI).

• The Role of Startups Moving Forward: Startups will continue to be a source of innovation – for example, we might see a startup create an AI agent that can perform multi-step business processes that span several spreadsheets and apps (like an "AI analyst" that works overnight on your data). If successful, such innovations could shift how people use spreadsheets or even abstract spreadsheets away for certain tasks. Established companies might partner with these startups to enhance their offerings quickly. We've already seen Google partner with companies like Ascensus (for Sheets add-ons) or Microsoft's support for an ecosystem of Office add-ins. In AI, a startup that excels in a niche (say, AI for financial modeling in spreadsheets) could get integrated as a feature in Excel via partnership or acquisition.

In conclusion, **incumbents have the clear edge** in leading the AI transformation due to resources, distribution, and existing technology ecosystems. Microsoft, in particular, with Excel + Azure + OpenAI, has assembled a formidable AI advantage and is poised to lead if they execute well

#### uctoday.com

- . Google is equally strong in AI and will be a major player in this transformation uctoday.com
- . Startups will continue to inject new ideas and might capture specific markets or functionalities, but they are more likely to *reshape the industry indirectly* by forcing the big players to evolve, rather than outright overtaking the giants in the near term.

# **Future Outlook and Market Predictions**

Bringing it all together, what will the spreadsheet industry look like in the near, mid, and long-term future? Here's a timeline outlook, considering the influence of Al and adjacent technologies on the market and the fate of spreadsheets:

## 2 Years From Now (2025–2026):

**Spreadsheets remain central, now Al-augmented.** In two years, Excel and Google Sheets will still be the dominant tools for data analysis and general productivity – you'll find them in use across almost all industries and at home. However, *how* they are used will be augmented by Al in day-to-day workflows. Expect to see features like "Explain this number" or "Generate a summary report" as commonplace options in spreadsheet menus. Many users will have gotten comfortable with asking an Al assistant to draft analyses or formulas. This will make spreadsheets more approachable to newcomers (driving increased adoption in some areas), and will make existing power users more efficient.

We will likely see **rising demand** for spreadsheet skills that include knowing how to use Al features. Conversely, purely manual spreadsheet skills might start to diminish in value for basic tasks (for example, being an expert in writing complex Excel formulas might be less critical if the Al can do it).

From a **market perspective**, the overall spreadsheet software market is expected to continue growing in the next two years. Market research forecasts an increase from around **\$10.8 billion** in **2024 to \$11.7 billion in 2025 in global spreadsheet software revenue** 

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. That's roughly 8% annual growth, indicating healthy demand. This growth will be fueled by cloud adoption (more people using Google Sheets/Excel online) and by new users in emerging markets. All might also contribute to revenue growth, as companies upsell All capabilities at a premium (e.g., Microsoft and Google charging extra for Copilot/Duet).

Adjacent technologies like automation and no-code tools in the short term will *complement* spreadsheets rather than replace them. Many businesses will link spreadsheets with RPA (robotic process automation) tools to handle repetitive tasks, or use no-code platforms to prototype solutions before maybe exporting data to Excel for final tweaking. Essentially, in 2 years, spreadsheets will still be the default "swiss army knife," but with more plugins and helpers around it.

Importantly, we do **not** anticipate spreadsheets being overtaken or rendered obsolete in this timeframe at all. The installed base is too massive and the tools themselves are evolving to meet new challenges. If anything, by 2025/2026 spreadsheets might enjoy a *renaissance* of sorts, as AI features spark renewed interest and new user groups (imagine more non-technical folks able to use spreadsheets because the AI helps them). Businesses will still be making critical decisions with the help of spreadsheets – only now those spreadsheets will be smarter and more connected.

## 5 Years From Now (2029–2030):

A more integrated ecosystem – spreadsheets as one node in a web of data tools. Five years out, the distinction between a "spreadsheet" and other data tools may blur. Spreadsheets will likely be deeply integrated with databases, BI dashboards, and AI decision systems. For example, a finance team in 2030 might work in a unified environment where the raw data lives in a database, AI algorithms generate forecasts, and a spreadsheet interface is just one view for fine-tuning and presentation.

**Market demand for spreadsheets** will still be strong, but the expectation of what a spreadsheet can do will be much higher. By this time, users might demand that any spreadsheet software they use comes with AI and automation baked in (much like today we expect cloud collaboration by default). The market could see some consolidation or stratification – perhaps some specialized spreadsheet-like tools (for specific sectors, like financial modeling or scientific data) gain more prominence alongside general tools.

Al and automation by 2029 will likely handle a substantial portion of what humans currently do in spreadsheets. Repetitive weekly reports, basic variance analyses, data cleaning – many of these might be entirely automated, freeing users to focus on interpretation and strategy.

No-code platforms and database solutions by then will also be more mature and may capture tasks that were once done in spreadsheets. For instance, instead of using Excel to manage a project budget, a team might use a no-code app that automatically updates and pushes data to a sheet for record-keeping. So spreadsheets could become a *backend or intermediate layer* in many workflows, rather than the front-end user interface for every task.

That said, **spreadsheets are likely to remain dominant for a significant class of work**. They are virtually irreplaceable when ad-hoc analysis and flexibility are needed. In 5 years, if a manager has a sudden question, it's quite possible they'll still reach for a spreadsheet (or open their BI tool that exports to a spreadsheet) to quickly slice data. The ease of trying "anything" in a spreadsheet – without needing to set up a whole new system – is a core strength that adjacent technologies will still struggle to beat. No-code tools and databases are great for structured, repeatable processes, but the *ad-hoc, improvisational analysis* is a spreadsheet's home turf.

We anticipate some changes in dominance possibly: It's conceivable that by 2029, **Google Sheets might have further closed the gap or even overtaken Excel in certain metrics** if cloud adoption continues and the younger workforce prefers Google's ecosystem. (Already, by some measures Sheets has more monthly users than Excel

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.) However, Excel is not likely to disappear – it might evolve into more of an enterprise power-user tool, while Sheets or others serve casual users. Also, Excel online could grow to be more like Sheets, blurring those lines.

Overall, in 5 years the "spreadsheet industry" may be part of a broader "connected data platforms" industry. But in terms of usage, spreadsheets will still be everywhere, albeit heavily enhanced by Al and more seamlessly connected to other systems. The **market size** is projected to grow (as noted, to ~\$15+ billion by 2029)

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, which suggests that even in the face of many new tech alternatives, spreadsheet software will continue to see *more* investment and spending, not less.

## 10 Years From Now (2035 and beyond):

**Spreadsheets reinvented, but conceptually still around.** In 10 years, we might not recognize spreadsheets at first glance – they could be holographic tables we manipulate in augmented reality, or AI agents conversing with us about quarterly numbers. But those futuristic interfaces would still trace their lineage to the grid of cells that Visicalc started in 1979.

By 2035, **AI will be deeply entrenched** in all productivity software. It's plausible that most routine analysis and reporting work will be handled by AI with minimal human intervention. If the optimistic predictions hold, AI might even be approaching a level of general intelligence that it can understand business contexts deeply. In that world, the *need* for a human to manually set up formulas or charts could diminish greatly. But humans will always need to define goals, constraints, and make final judgments – and spreadsheets (or their successors) will be a key medium for that interaction.

It's possible that by this time, some new paradigm *does* emerge that challenges spreadsheets. For instance, perhaps knowledge graphs or AI reasoning systems become a more natural way to store and query data than tables. It's hard to beat the simplicity of rows and columns for general use, but technology and user preferences can change radically in a decade. Could voice-driven analysis or fully automated pipelines make the manual spreadsheet obsolete? For certain repetitive tasks, yes; for free-form analysis, likely not entirely.

Will spreadsheets be overtaken by Al-driven tools? It depends on the definition of "overtaken." If we mean will Al tools completely replace the use of spreadsheets, the prudent answer is that *spreadsheets will likely endure*, *albeit as part of Al-centric workflows*. They may no longer be the sole or primary tool for all the things we use them for today. For example, a lot of dashboarding and reporting might be done by Al agents and not in spreadsheets at all. But for many other tasks, spreadsheets (with Al integrated) will still be the go-to interface. It's similar to how calculators are ubiquitous but we still use spreadsheet software; in the future Al will be ubiquitous but we'll still use the spreadsheet interface for certain interactions. In fact, one expert opinion emphasizes that the ideal future is one where Al enhances spreadsheets rather than eliminates them

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, allowing users to leverage Al's power while retaining control and familiarity.

We expect the **market demand** for spreadsheet-like capabilities to remain high in 10 years, though the revenue might be spread across hybrid products. Even if a company isn't selling "spreadsheet software" per se, they might be selling an AI platform that partially replaces some spreadsheet functions. But given how ingrained spreadsheets are in business, it's more likely that the major spreadsheet platforms simply transform and capture the new demand themselves by adding AI and integration features.

To illustrate endurance: even decades after databases and BI tools appeared, people still heavily use spreadsheets – not because spreadsheets are the best at everything, but because they are *good enough and extremely convenient*. The same logic will apply with AI: once every tool has AI, a spreadsheet will still be a handy, malleable thing to use when you need to play with data flexibly. Companies might finally minimize the risky mega-spreadsheets running entire budgets (replacing those with more robust solutions), but they'll continue to use spreadsheets for modeling scenarios, one-off analyses, and as a glue to integrate outputs from various systems.

In terms of industry leadership in 10 years: If Microsoft and Google continue investing and adapting, they are likely to still lead the market – essentially turning Excel and Sheets into the Al-powered data hubs of the future. If they were to falter, that could open room for a new player (maybe a future version of Notion, or an enterprise Al platform like some future iteration of Salesforce/Tableau) to claim the spreadsheet mantle. But historically, the spreadsheet market has been remarkably durable with its leaders (Excel has ruled for over 30 years). With Microsoft and Google both being extremely forward-looking on Al now, it's reasonable to assume they will navigate this transition and still be on top in 10 years, albeit offering very different products by then.

**Conclusion:** The spreadsheet industry is on the cusp of major evolution, primarily driven by AI, but also influenced by the rise of no-code tools and integrated data platforms. In 2 years, we will see smarter spreadsheets rather than fewer spreadsheets. In 5 years, spreadsheets will be deeply integrated with AI and other systems, shifting how we use them but not eliminating them. In 10 years, the essence of a spreadsheet – a flexible grid for modeling data – will likely persist within whatever new digital work environments exist, continually enhanced by AI. Spreadsheets have survived many predictions of demise (databases, ERP systems, etc., were all supposed to kill spreadsheets but didn't); the pattern suggests they will adapt and co-exist with AI as well. As a testament to their resilience, even if the form changes, the *spreadsheet mindset* – empowering end-users to work with data directly – will remain a dominant force in business for the foreseeable future

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