

Technology Observer

March 2026

Moat Ratings Guidebook Amid AI Disruption; Ratings Updates, Winners/Losers, and Top Picks

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We Re-Evaluated 132 Companies Amid the Artificial Intelligence Boom; AI Does Not Uniformly Destroy Moats, and We See Opportunities to Carefully Sort Through the Indiscriminate Selling

We have seen a lot of indiscriminate selling across sectors amid AI-related fears, with correlations among many otherwise seemingly unrelated companies increasing. Getting moats right is a key part of our long-term, focused methodology, and to ensure we are getting our calls as right as possible, we reviewed 132 companies that seemed most susceptible to AI disruption. After this extensive review, we do not think AI is a universal destroyer of moats. Rather, we see opportunities to sift through the wreckage and buy resilient businesses at reasonable prices after recent selloffs. We find that network effects are the most resilient moat source, while design software, cybersecurity, and several one-off sectors (such as travel networks or music rights) should also be resilient. We even think that, while horizontal software is subject to greater risks, current market perceptions are overly bearish on several firms.

AI Is Not a Universal Moat Destroyer; Investors Still Need to Sort Through Specific Companies

Of the 132 companies reviewed, we downgraded 22 wide moats (20 to narrow, two to none) and 18 narrow moats (from narrow to none). However, we maintained the moat rating for most of the companies we reviewed, and we even upgraded two narrow-moat companies to wide-moat (CrowdStrike and Cloudflare) due to their positioning in the infrastructure layer and their network effects. Does AI create risk? Absolutely. Are those risks equal across all companies, and are there no software firms with moats remaining? Absolutely not.

Disclosure

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Exhibit 1 AI Moat Review Results

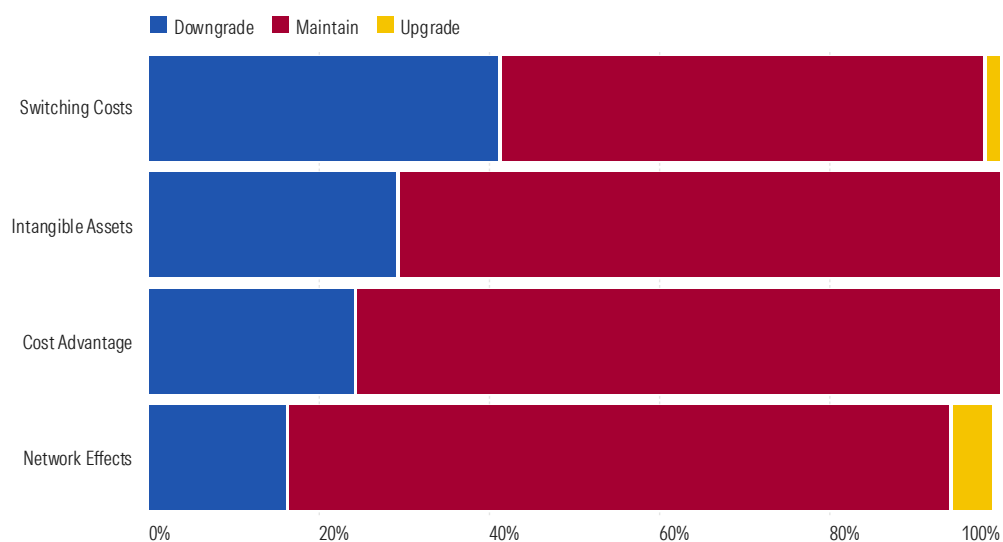
Original Moat Rating		Updated Moat Rating		Downgrades	Maintains	Upgrades
None	18	None	18		100%	0%
Narrow	60	None	18	30%	67%	3%
		Narrow	40			
		Wide	2			
Wide	54	None	2	41%	59%	
		Narrow	20			
		Wide	32			

Source: Morningstar

Network Effects Most Resilient Moat Source; Switching Costs Still Matter, but More Threatened

Companies with network effects saw the fewest relative number of downgrades, while Switching Costs saw the largest relative percentage. Network effects are about the strength of the network, not the technology itself, which makes us more skeptical that AI will disrupt this moat source. Regarding switching costs, while we still think many aspects of them are not purely technological (think regulatory lock-in or risk aversion in mission-critical processes), AI does increase the uncertainty around switching costs at the margin (data transfers or threats to seat-based retention, for example).

Exhibit 2 AI Moat Review Outcome Distribution

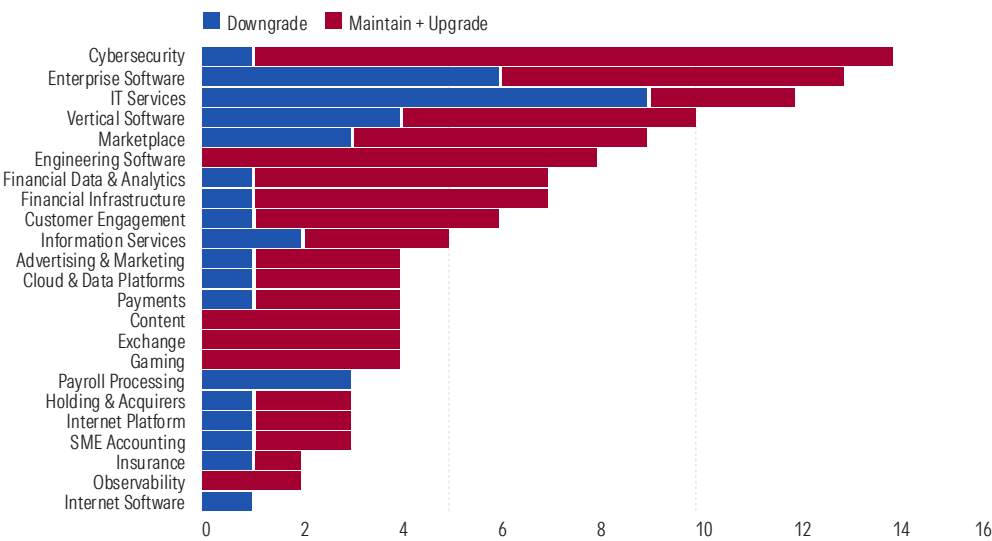


Source: Morningstar.

Cybersecurity, Design Software, Financial Infrastructure and Exchanges, Content: Most Resilient Sectors. Enterprise Software and IT Services Most Threatened

Payroll services, IT services, and enterprise software were the groupings that saw the most pressure from moat downgrades, negative revaluations, and increases in uncertainty. This makes intuitive sense, given that AI disruption tends to hit hardest when companies monetize human labor, simple workflow automation, and seat-based software licenses. Cybersecurity, design software, and financial infrastructure and exchanges were among the most resilient sectors, with characteristics such as complex workflows, being part of the “infrastructure stack,” or benefiting from network effects all working in their favor.

Exhibit 3 Enterprise Software and IT Services Had the Most Downgrades

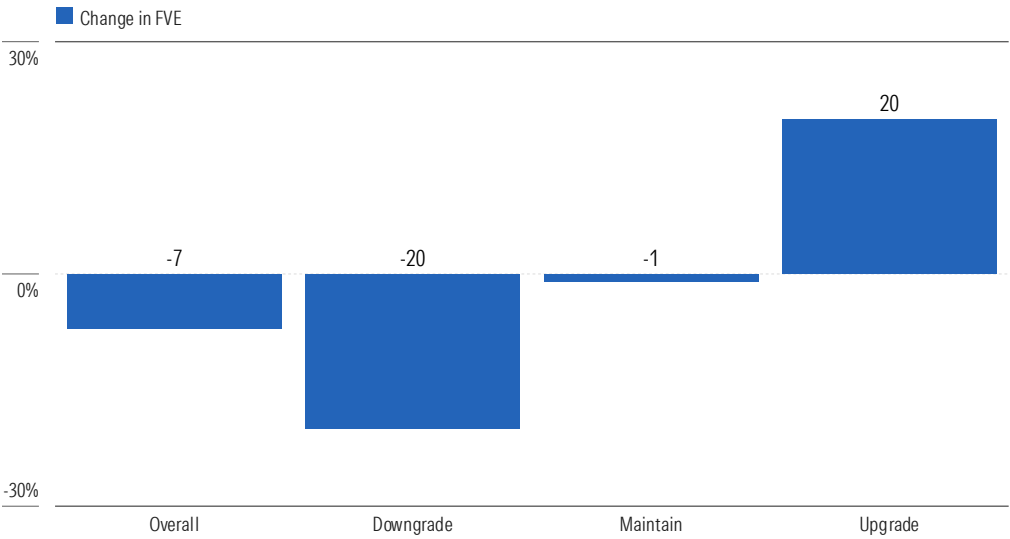


Source: Morningstar.

Moat Downgrades and Valuation Resets Were Correlated, but the Broader Universe Was Not Marked Down Indiscriminately

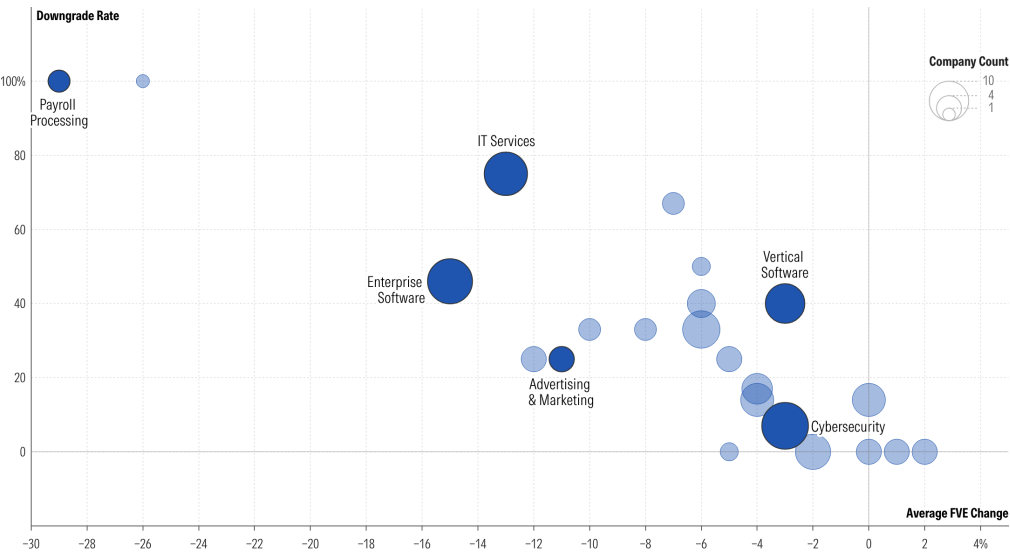
Forty-seven companies experienced fair value estimate cuts, while 69 remained unchanged and 16 saw increases. The average fair value estimate change was approximately negative 6.6%, and the median showed no change, indicating that the declines were concentrated in companies we considered more at risk. Again, we do not think AI is a universal destroyer of moats or of stock valuations.

Exhibit 4 Most Downgraded Companies Saw a Decrease in Fair Value



Source: Morningstar. Note: Data covers fair value changes from Feb. 10 to March 9, capturing fair value estimate updates that may have occurred during earnings season.

Exhibit 5 Software, IT Services, Payroll Were Harder Hit; Cyber, Vertical SaaS, Design Software More Insulated



Source: Morningstar. Note: Data covers fair value changes from Feb. 10 to March 9, capturing fair value estimate updates that may have occurred during earnings season.

We Still Like Many Companies After This Review; We Think Sorting Through the Selloff Will Be Key for Investors as Dispersion Increases and the Market Fails to Differentiate Winners and Losers

- ▶ We have seen a lot of correlations increase indiscriminately across sectors and firms that the market is worried about.
- ▶ We still think many moats that are likely to be resilient, and many companies where we think the selloff is overdone.
- ▶ We see many cheap financial companies where we think the market is overestimating the threat of AI.
- ▶ We like heavily entrenched design software and enterprise resource planning firms.
- ▶ We think the market is misunderstanding the network effects of Booking Holdings.
- ▶ We now see some undervaluation in cybersecurity companies, which we expect to benefit from AI.
- ▶ We like firms that own irreplaceable content, including Universal Music Group.
- ▶ We think Microsoft has sold off too far, and we expect it to be a net beneficiary of AI, both through its cloud offerings and being a key source of infrastructure and distribution into the enterprise market.
- ▶ Finally, for investors willing to bear a bit more risk, we think many core software-as-a-service firms have sold off too far, and we do not need heroic assumptions for them to work from here.

Exhibit 6 Top Picks Amid AI Fear-Driven Selloff

Ticker	Name	P/FVE	Industry	Moat	Moat Action	Year to Date Return
Cheap Financials We Do Not See Being Threatened By AI						
BR	Broadridge Financial	0.68	Financial Infrastructure	Wide	Maintain	-15%
FICO	Fair Isaac	0.73	Financial Data & Analytics	Wide	Maintain	-15%
SPGI	S&P Global	0.79	Financial Data & Analytics	Wide	Maintain	-15%
MSCI	MSCI	0.84	Financial Data & Analytics	Wide	Maintain	-1%
MCO	Moody's	0.86	Financial Data & Analytics	Wide	Maintain	-9%
Wide Moat Design Firms at Attractive Valuations						
PAR:DSY	Dassault Systemes	0.70	Engineering Software	Wide	Maintain	-26%
Deeply Entrenched ERP Solutions						
SAP	SAP	0.65	Enterprise Software	Wide	Maintain	-19%
Misunderstood Network Effects in Travel Networks						
BKNG	Booking Holdings	0.86	Marketplace	Wide	Maintain	-17%
Undervalued Cybersecurity Basket						
PANW	Palo Alto Networks	0.73	Cybersecurity	Wide	Maintain	-10%
FTNT	Fortinet	0.77	Cybersecurity	Wide	Maintain	6%
NET	Cloudflare	0.83	Cybersecurity	Wide	Upgrade	2%
NAS:DDOG	Datadog	0.76	Observability	Wide	Maintain	-5%
Misplaced Fears for Human Created Music and Record Labels						
UMG	Universal Music Group	0.57	Content	Wide	Maintain	-24%
We Still Like Microsoft to Remain at Center of Enterprises in an AI World						
MSFT	Microsoft	0.68	Enterprise Software	Wide	Maintain	-15%
Less Risk Adverse Investors Should Consider Fishing in Beaten Down Software Names						
TEAM	Atlassian	0.38	Enterprise Software	Narrow	Maintain	-49%
HUBS	HubSpot	0.56	Customer Engagement	Narrow	Maintain	-29%
CRM	Salesforce	0.72	Enterprise Software	Narrow	Downgrade	-25%
NOW	ServiceNow	0.75	Enterprise Software	Narrow	Downgrade	-20%

Source: Morningstar, PitchBook, Data as of March 9, 2026

Moat Rating Frameworks and Updates Amid AI Disruption

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Our AI-Aware Moat Rating Framework

We have reevaluated the moat ratings for 132 companies across our coverage, where we felt AI could be disruptive and therefore warranted deeper analysis. We developed a proprietary seven-dimensional scoring framework to systematically evaluate how artificial intelligence affects moat durability. We designed this system primarily to evaluate software moats, and we made small adjustments to make it more applicable to other select industries, such as IT services and financial services. The framework is designed to capture both the threats AI poses to existing moats and the opportunities it creates for companies well-positioned in the AI value chain.

1. Layer Positioning

This dimension evaluates where a company sits in the technology stack. Infrastructure-layer companies (chip design tools, cybersecurity platforms, cloud providers, database engines) benefit from AI scaling because AI increases demand for their products. Application-layer companies, such as customer relationship management, scheduling, and basic productivity tools, face substitution risk as AI agents can increasingly replicate their functionality. Better-scoring companies were closer to pure infrastructure plays, with staying power in an agentic AI world, while lower-scoring companies were closer to a pure application-layer product facing direct AI replacement. Many companies admittedly have more of a “hybrid” positioning, and these nuances were evaluated in the total context of the final scoring and moat rating.

2. Data Moat

This measures the uniqueness and irreplaceability of a company’s proprietary data. Many companies have unique data assets. For example, Cadence and Synopsys have 30-plus years of semiconductor design data and are certified for specific foundry processes, or Guidewire, with its unique repository of nonpublic insurance data collected from clients. The lowest scores go to companies whose data is primarily customer-owned or can be assembled from public sources.

3. AI Demand

Does AI increase or decrease demand for the company’s product? High scores reflect businesses where AI directly drives more consumption: chip design tools (more complex chips require more EDA software), cybersecurity (more attack surface), and observability (more data to monitor). Low scores reflect products where AI could reduce demand: basic CRM (fewer employees needed), scheduling

software (AI handles coordination), contact management, or payroll firms (fewer employee seats needed and/or shift toward newer AI-native startups that may not use incumbent products).

4. Pricing Model

This evaluates whether a company's pricing structure is resilient to AI disruption. Per-transaction and usage-based models score highest because they are agnostic to headcount and may even benefit from increased machine-to-machine activity. Per-seat pricing models score lowest because AI-driven productivity gains reduce headcount, thereby reducing the number of seats purchased.

5. Workflow Complexity

Simple, repetitive tasks are easily automated by AI. Complex, multistep workflows embedded in regulatory frameworks that require heavy domain expertise and judgment tend to resist automation. We find design software firms tend to score well here. For example, semiconductor design firms help orchestrate some of the most complex design workflows in existence. Other examples include multicountry payroll processing and tax laws, which introduce complexity for payroll firms, and deep regulatory considerations requiring domain expertise, such as in insurance workflows. The lowest scores go toward more basic reporting and/or dashboards.

6. Switching Costs

The difficulty and risk of changing vendors, evaluated through an AI lens. Switching costs can come from a variety of sources, including high risks of failure, complexity driven by data transfers, regulatory lock-in, and network effects. Chip design tools score well because switching requires multiyear revalidation with foundries, and the risks of designing a chip that doesn't work or falling behind by a generation in your product development could be fatal. We think network effects also present strong, nontechnology-dependent switching costs. For example, we find Booking Holdings' travel network to be quite attractive and not easily disrupted by AI. Project management tools and basic SaaS score lowest.

7. Competitive Position

We look at market leadership, brand strength, and distribution advantages, adjusted for how AI changes the competitive landscape. We look for any current evidence of either being disrupted by AI (deteriorating growth and/or retention metrics) and harnessing AI for your own benefit (explicit revenue growth tied to AI monetization). We also consider that many incumbents will have a "right to win" for now, as many clients would simply prefer their current provider to "figure it out" regarding AI functionality. These are powerful advantages in distribution and market leadership. While they do not guarantee every incumbent will execute properly on the emerging AI paradigm, it at least gives many of them a fighting chance that should not be underestimated. We think distribution advantages are especially relevant here. For example, one of the key "value propositions" of the software business model was the execution of a "go-to-market function." This is not easy! In fact, many software firms with superior technology ultimately failed because they could not get the sales motion right. We do not think AI fundamentally changes the dynamics around getting people in the real world to adopt your product, and that controlling the existing distribution and sales channels and scaling new offerings across an existing client base will matter. Firms with large existing market share and client bases typically scored

higher here, whereas companies in fragmented markets or facing new AI-native competitors score lowest.

Exhibit 7 Key Dimensions for Thinking About Moats in an AI World

Dimension	Better Positioned	Worse Positioned
Layer Positioning	Economics come from infrastructure layer, AI can increase demand	More application layer economics, AI substitutes product
Data Moat	Unique, non-replicable, proprietary data assets	Generic, customer owned, or public data
AI Demand	AI directly increases consumption of your product	AI reduces need for product
Pricing Model	Per-transaction, value based, usage based	Per-seat, vulnerable to headcount cuts
Workflow Complexity	Multi-step, multi-module, significant domain expertise, regulated, high-stakes	Simple, repetitive, more easily automated
Switching Costs	High stakes for switching, many switching pain points, network effects, regulatory barriers	Lower friction, evidence that vendor swapping is more realistic
Competitive Positioning	Strong distribution advantages, evidence of AI monetization	Fragmented, more realistic that AI-native competitors can take share

Source: Morningstar

What Is Generative AI?

While this is not a comprehensive definition, we broadly think of generative AI as a system that can capture the internal logic of any data source it can be trained on, and where verifiable rewards reinforce that logic. This is “multimodal,” and can occur across text, images, video, and more.

The Generative AI Disruption Narrative Is Powerful

We think generative AI will increase the risks of disruption for anything where data is reasonably available, and where value is extracted by existing players by organizing/analyzing the internal logic of that data.

Coding is the most obvious example of something generative AI will be really good at. There are lots of coding training books and resources publicly available, and lots of production coding examples, and this is all “text-based logic,” where the value is derived from organizing the code’s logic.

Legal analysis also seems open to disruption, as legal case documents are often publicly available and key workflows of the legal profession involve connecting the internal logic of the law, which can be derived from the text corpus.

Much of the medical profession is about connecting the logic derived from publicly available textbooks and current academic research, and applying it to patient data to make diagnoses. It seems that, with sufficient patient data, AI could eventually make diagnoses better than any human, at far less cost.

You can apply this framework to any sort of knowledge profession where humans are trying to organize logical connections using a mostly publicly available text corpus, and where you can reinforce the “correct” answers.

The launch of Claude Opus 4.6, Claude CoWork, OpenAI Frontier, and OpenAI Codex all reinforce that AI keeps getting better and is gradually inserting itself directly into knowledge workflows. AI tools can now perform multistep, complex coding projects using multiple agents and are being integrated across more “apps,” “data sources,” and other “tools,” positioning AI platforms at the center of this new ecosystem. AI tools are now becoming so integrated into a PC that they can operate directly from the command-line interface, giving them access to the whole computer as if they were you. This is all being done at prices of \$20-\$200 per user per month.

The Great Generative AI Vs. Software Debate

Below, we lay out the key “points” and “counterpoints” we hear in the Great Generative AI vs. SaaS debate. One of our own key takeaways is that no one knows for sure. There are good points on both sides. At a very minimum, uncertainty has increased, which was a key reason we decided to review 132 companies under our coverage.

AI Lowers the Cost of Producing Code

AI is really good at coding and therefore lowers the economic surplus that companies can derive from “coding.” Whatever percentage of the value a software company adds from pure “coding,” once coding becomes less of a scarce resource, less of that value will accrue to the software providers.

Counterpoint

The value of SaaS is not just from the coding, it is also from other complex things that AI is not as good at, including: knowing business context, domain expertise on specific workflows, accounting for numerous edge cases, audit logs and reconciliations (that is, the schema, history, security, compliance, and trust are what matters), the semantic correctness and reliability of connection layers, implementing backups/failure modes, general ownership and monitoring, and more. Companies pay for SaaS because “it just works” at the end of the day, and just getting “the code” is only one piece of that complex puzzle. Related to this, open-source code has existed for decades, yet SaaS companies have built on these supposedly “free” offerings, creating significant value.

Software Is Often Built on ‘Per Seat’ Economics, Which Is Directly Threatened

AI should increase end-user productivity or even simply displace the end user. This should decrease employee turnover over time. If one person can do the work of two people, that could lead to 50% fewer seats. If agents simply replace human workers, this will also lead to fewer humans being needed.

AI could also lower the price of whatever it is you’re selling. If the price of “work” is reduced to \$20 per user per month, and your current pricing is more expensive than that, there could be price compression.

Counterpoint

Many SaaS companies already charge for “value” or “usage,” and those that do not will transition their pricing model to “charge for value” in an agentic world. This could be difficult in practice, but some may pull it off. If a company attempts this, it could still compress pricing if it were previously earning

economic rents disproportionate to the money/value-added that AI now offers, but it will fend off any of the more dire scenarios.

Further, one needs to account for future TAMs and additional demand. If workers become 50% more productive, historically this has not led to a severe contraction in the workforce; instead, companies use the same number of workers, and they are simply able to “do more.”

Generative AI Is Token Consumption-Based and Has Lower Gross Margins

AI is fundamentally a consumption-based model. You are consuming intelligence via consuming compute. Software's main strength was having essentially \$0 incremental distribution cost. That is all gone in a consumption-based world. The higher the percentage of your revenue stream that comes from consumption-based AI, the more your gross-margin profile will drift toward consumption-based gross margins. Software gross margins could go from 80% or more to 65% or less.

Counterpoint

The cost of AI keeps going down as new architectures and better hardware emerge, and the value produced by each new model per token keeps going up. The cost of improving inference will still allow for good gross margins, and companies will use model routers to apply appropriately priced tokens to relevant workflows. Further, AI products will be total addressable market expanders, thereby increasing the absolute dollar amounts that software firms can address. Finally, software firms can also increase their efficiency using AI, so any gross-margin pressure could be offset by operating efficiencies, leaving operating margins intact.

GenAI Lowers Barriers to Entry

If coding is “automated” to a large degree, then the barrier to creating things with code (like software) is becoming much lower. This means it is more likely that internal solutions that replace existing software will be created for simpler use cases, and any company with software engineers (or even small teams of engineers at AI native startups) will start creating products for additional verticals, which will increase competition. In this world, you have a larger number of competitors. Not only will you have more competitors, but your competitors will also accelerate their own product roadmaps, as AI improves product velocity.

Counterpoint

The true barriers to entry weren't just “producing the code.” It's all the other things that SaaS companies do (providing maintenance, security, complex coordination and implementations, executing a sales motion, and so on) that matter too. For example, actually selling your product was a key competency for any successful software firm. Owning existing client relationships and having a competent “go to market” motion still matter to get clients to adopt your offerings. AI does not magically solve these core “software competencies.”

AI Lowers Switching Costs

Wherever there were difficulties in switching software products due to technical hurdles (remapping your data, and so on), to the extent that AI makes those processes easier/more automated, it lowers switching costs.

Counterpoint

While AI arguably should be able to automate some aspects of data transfer, you still need the internal expertise to prompt/manage the AI when doing even moderately complex data migrations.

AI Changes the Basis of Competition and the Industry Architecture

Key bases of competition for software were your developers' talent, the product-market fit of your workflow tool for your clients' workflows, and executing a sales motion. If AI becomes central to future developer platforms, AI competency becomes a key basis for competition, with the potential to remap winners and losers.

The industry architecture could also change. If AI becomes the central "platform" through which workflows run, it has the potential to remap current winners and losers again. This industry architecture also introduces model providers as key new competitors in value extraction.

In this paradigm, as AI models/interfaces become central, more value will accrue to model providers than before (which was \$0 previously), and model providers can now "one-shot" different workflows as individual integrations within their models. As they integrate more workflows, the model only becomes more powerful, reinforcing the competitive advantages of the model companies

Counterpoint

Once again, software is about much more than "the code"—there's knowing business context, and domain expertise on specific workflows. There's accounting for numerous edge cases, audit logs and reconciliations, and the semantic correctness and reliability of connection layers, implementing backups/failure modes, general ownership and monitoring, actually selling and distributing your product, and so on.

Technology Shifts Introduce Uncertainty Into the System

At a minimum, AI developments are introducing significant change to the ecosystem. This means today's software companies will have to "figure it out" to thrive in the future. When a system is changing, it is hard to predict who "figures it out" and who does not. There are many reasons why incumbents have a harder time adjusting to changing paradigms, including technological debt and corporate inertia. Uncertainty has risen for everyone, bringing terminal value uncertainty into the debate for many companies that traded at high multiples. To many, this feels like trying to predict the "SaaS winners" back in 2001. It was not easy.

Counterpoint

There is no fundamental reason that incumbents cannot “figure it out” and benefit from AI. Incumbents could figure it out and turn AI services into a tailwind, not a headwind, by adopting AI and turning it into new features that generate revenue and maintain their place in the ecosystem. If anyone is in a position to use AI to their benefit, why not the incumbents with the existing clients, budget, and engineering talent? If developers become 10 times better, why shouldn’t that benefit companies with existing developers, making them even harder to disrupt?

One challenge here is that if the industry architecture changes, incumbents may have a harder time adapting than AI-native startups, and the distribution of AI talent is likely to be very uneven. It can still be very hard to tell who “figures it out” and who doesn’t.

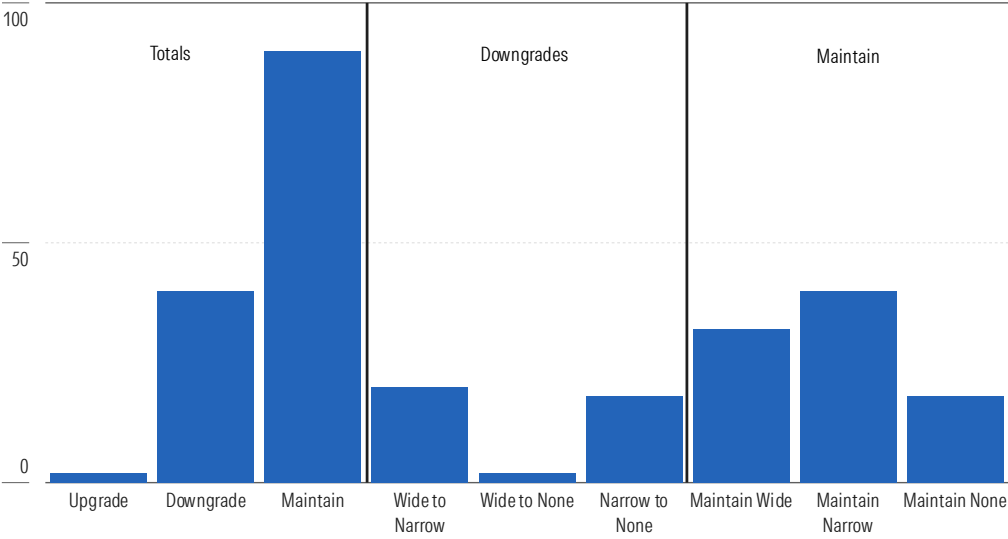
The Results: We Downgraded 22 Wide-Moat Firms, 18 Narrow-Moat Firms, and Upgraded Two

Exhibit 8 AI Moat Review Results

Original Moat Rating		Updated Moat Rating		Downgrades	Maintains	Upgrades
None	18	None	18		100%	0%
Narrow	60	None	18	30%	67%	3%
		Narrow	40			
		Wide	2			
Wide	54	None	2	41%	59%	
		Narrow	20			
		Wide	32			

Source: Morningstar.

Exhibit 9 AI Moat Review Outcome Distribution



Source: Morningstar.

We downgraded roughly 40% of the wide-moat firms we reviewed, with two firms (OBIC Tokyo and Baidu) seeing a double downgrade, from wide to none. We downgraded roughly 30% of the narrow-moat firms we reviewed. We also had two cybersecurity firms, both of which we upgraded to wide (Cloudflare and CrowdStrike).

Wide Moats, Firms We View as the Most AI-Resilient Businesses

Exhibit 10 The Wide-Moat Firms

Sector	Company	Company Ticker	Original Moat Rating	Updated Moat Rating	Network Effects?
Content	Universal Music Group	UMG	Wide	Wide	no
Internet Platform	Tencent Holdings	700	Wide	Wide	yes
Cybersecurity	Fortinet	FTNT	Wide	Wide	yes
Cybersecurity	Palo Alto Networks	PANW	Wide	Wide	yes
Cybersecurity	Cloudflare	NET	Narrow	Wide	yes
Cybersecurity	CrowdStrike Holdings	CRWD	Narrow	Wide	yes
Engineering Software	Cadence Design Systems	CDNS	Wide	Wide	no
Engineering Software	Synopsys	SNPS	Wide	Wide	no
Engineering Software	Autodesk	ADSK	Wide	Wide	yes
Engineering Software	Bentley Systems	BSY	Wide	Wide	no
Engineering Software	PTC	PTC	Wide	Wide	no
Engineering Software	Dassault Systemes	PAR:DSY	Wide	Wide	no
Enterprise Software	Microsoft	MSFT	Wide	Wide	yes
Enterprise Software	SAP (Business/Productivity Software)	SAP	Wide	Wide	no
Exchange	Deutsche Börse	DB1	Wide	Wide	yes
Exchange	Intercontinental Exchange	ICE	Wide	Wide	yes
Exchange	London Stock Exchange	LSE	Wide	Wide	yes
Financial Data & Analytics	Fair Isaac	FICO	Wide	Wide	yes
Financial Data & Analytics	Moody's	MCO	Wide	Wide	yes
Financial Data & Analytics	MSCI	MSCI	Wide	Wide	no
Financial Data & Analytics	S&P Global	SPGI	Wide	Wide	yes
Financial Data & Analytics	Verisk Analytics	VRSK	Wide	Wide	yes
Financial Infrastructure	Jack Henry & Associates	JKHY	Wide	Wide	no
Financial Infrastructure	Broadridge Financial Solutions	BR	Wide	Wide	no
Financial Infrastructure	Temenos Headquarters	SWX:TEMN	Wide	Wide	no
Gaming	Nintendo	7974	Wide	Wide	no
Information Services	RELX (Information Technology)	NYS:RELX	Wide	Wide	no
Marketplace	Booking Holdings	BKNG	Wide	Wide	yes
Observability	Datadog	NAS:DDOG	Wide	Wide	yes
Payments	Adyen	ADYEN	Wide	Wide	yes
Vertical Software	Guidewire Software	GWRE	Wide	Wide	no
Vertical Software	Tyler Technologies	TYL	Wide	Wide	no
Vertical Software	Veeva Systems	VEEV	Wide	Wide	no
Vertical Software	WiseTech Global	ASX:WTC	Wide	Wide	yes

Source: Morningstar, PitchBook.

The Downgrades: Firms We See as Potentially Disrupted

Exhibit 11 List of Moat Downgrades

Sector	Company	Company Ticker	Original Moat Rating	Updated Moat Rating
Enterprise Software	Adobe (Multimedia and Design Software)	ADBE	Wide	Narrow
Enterprise Software	Salesforce	CRM	Wide	Narrow
Enterprise Software	ServiceNow	NOW	Wide	Narrow
Enterprise Software	Oracle	ORCL	Wide	Narrow
Enterprise Software	Workday	WDAY	Wide	Narrow
Enterprise Software	OBIC (Tokyo)	4684	Wide	None
IT Services	Accenture	ACN	Wide	Narrow
IT Services	EPAM Systems	EPAM	Narrow	None
IT Services	Infosys	INFY	Wide	Narrow
IT Services	Tata Consultancy Services	TCS	Wide	Narrow
IT Services	Wipro	WIT	Narrow	None
IT Services	Nomura Research Institute	4307	Wide	Narrow
IT Services	Capgemini	PAR:CAP	Narrow	None
IT Services	Endava	NYS:DAVA	Narrow	None
IT Services	Globant	NYS:GLOB	Narrow	None
Vertical Software	Descartes Systems Group	DSG	Wide	Narrow
Vertical Software	Manhattan Associates	MANH	Wide	Narrow
Vertical Software	Hansen Technologies	ASX:HSN	Narrow	None
Vertical Software	TechnologyOne	ASX:TNE	Wide	Narrow
Software	Intuit	INTU	Wide	Narrow
Internet Software	Wix.com	NAS:WIX	Narrow	None
Internet Platform	Baidu	09888	Wide	None
Internet Platform	Naver	035420	Narrow	None
Marketplace	Sabre Corporation	SABR	Narrow	None
Marketplace	Shopify	SHOP	Wide	Narrow
Marketplace	REA Group	ASX:REA	Wide	Narrow
Payroll Processing	Automatic Data Processing	ADP	Wide	Narrow
Payroll Processing	Paychex	PAYX	Wide	Narrow
Payroll Processing	Paycom	PAYC	Narrow	None
Financial Data & Analytics	FactSet	FDS	Narrow	None
Financial Infrastructure	SS&C Technologies Holdings	SSNC	Narrow	None
Holding & Acquirers	Otsuka Holdings	4768	Narrow	None
Information Services	Thomson Reuters	NAS:TRI	Wide	Narrow
Information Services	Wolters Kluwer	AMS:WKL	Wide	Narrow
Insurance	FINEOS Corporation	FCL	Wide	Narrow
Payments	Nexi	NEXI	Narrow	None
Advertising & Marketing	The Trade Desk	NAS:TTD	Narrow	None
Cloud & Data Platforms	Elastic (Database Software)	NYS:ESTC	Narrow	None
Customer Engagement	NICE (Ra'anana)	NAS:NICE	Narrow	None
Cybersecurity	Tenable	TENB	Narrow	None

Stable Narrow Moat Ratings Stable: Narrow Moat Firms Where We Were Confident Enough to Maintain the Current Moat Rating

Exhibit 12 List of Maintained Narrow Moat Ratings

Sector	Company	Company Ticker	Maintained Moat Rating
Advertising & Marketing	AppLovin	NAS: APP	Narrow
Advertising & Marketing	Omnicom Group	NYSE:OMC	Narrow
Advertising & Marketing	Publicis Groupe	XPAR:PUB	Narrow
Cloud & Data Platforms	International Business Machines	IBM	Narrow
Content	Cloud Music	9899	Narrow
Content	Spotify	SPOT	Narrow
Content	Tencent Music Entertainment Group	1698	Narrow
Customer Engagement	HubSpot	HUBS	Narrow
Customer Engagement	Zoom Communications	ZM	Narrow
Cybersecurity	Check Point Software Technologies	NAS:CHKP	Narrow
Cybersecurity	F5 (IT Consulting and Outsourcing)	FFIV	Narrow
Cybersecurity	Qualys	QLYS	Narrow
Cybersecurity	Zscaler	ZS	Narrow
Engineering Software	Nemetschek Group	ETR:NEM	Narrow
Enterprise Software	Atlassian	TEAM	Narrow
Enterprise Software	Palantir Technologies	NAS:PLTR	Narrow
Exchange	Nasdaq	NDAQ	Narrow
Financial Data & Analytics	Iress	IRE	Narrow
Financial Infrastructure	Clearwater Analytics Holdings	CWAN	Narrow
Financial Infrastructure	Fidelity National Information Services	FIS	Narrow
Financial Infrastructure	Fiserv	FISV	Narrow
Gaming	Electronic Arts	EA	Narrow
Gaming	NetEase	NTES	Narrow
Gaming	Take-Two Interactive Software	TTWO	Narrow
Holding & Acquirers	Constellation Software	CSU	Narrow
IT Services	CGI Group	GIB.A	Narrow
IT Services	Cognizant Technology Solutions	CTSH	Narrow
Marketplace	Amadeus IT Group	AMS	Narrow
Marketplace	Carsales.com	ASX:CAR	Narrow
Marketplace	Recruit Holdings	TKS:6098	Narrow
Marketplace	Roblox	RBLX	Narrow
Marketplace	SEEK	ASX:SEK	Narrow
Observability	Dynatrace	NYS:DT	Narrow
Payments	Block	XYZ	Narrow
Payments	PayPal Holdings	PYPL	Narrow
SME Accounting	Sage Group	LON:SGE	Narrow
SME Accounting	Xero	ASX:XRO	Narrow
Vertical Software	China East Education Holdings Limited	00667	Narrow
Vertical Software	Objective Corporation	ASX:OCL	Narrow
Vertical Software	SiteMinder	ASX:SDR	Narrow

Overall Takeaways

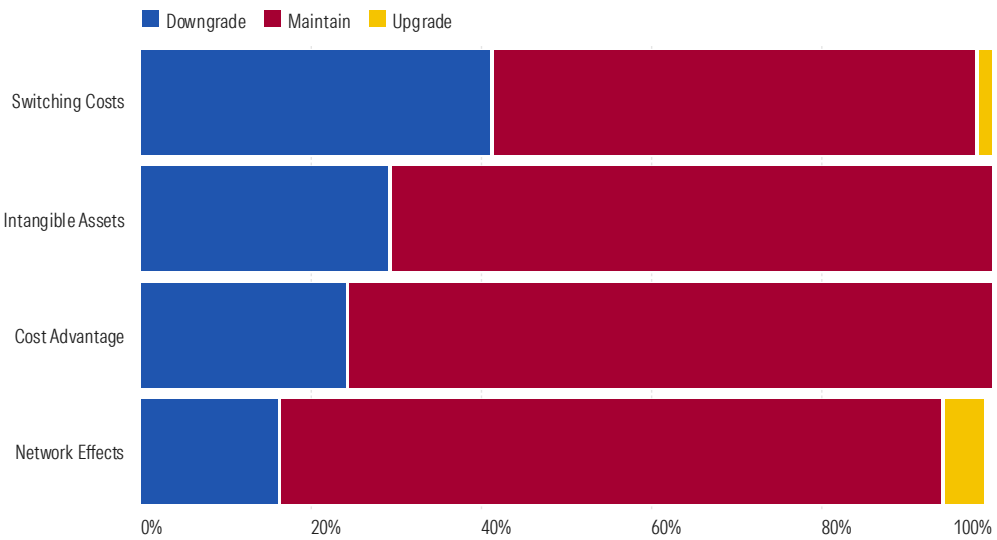
We Do Not Buy Into 'Everything Non-AI is Dead'; We View AI as a Sorting Mechanism

We do not think AI is a universal disruptor of all competitive advantages; instead, we view it as a sorting mechanism. Most companies' moats remained unchanged, but the number of downgrades was significant. AI will challenge companies whose strengths depend on workflow frictions, labor intensity, and application stickiness, while preserving—or even strengthening—businesses built around infrastructure, proprietary data, network effects, or specialized domain workflows.

Interestingly, many of the companies downgraded still have large installed bases, highly utilized products, and/or important customer relationships. In other words, it was not black and white, even for many of the downgraded companies. That said, we do think AI materially decreases long-term visibility and can weaken the durability of existing advantages by making parts of the workflow layer easier to replicate, automate, or less dependent on human seat growth.

Network Effects Was the Most Resilient Moat Source

Exhibit 13 AI Moat Review Outcome Distribution



Source: Morningstar.

Companies with network effects as a moat source saw the fewest relative number of downgrades. The intuition here is relatively straightforward: Network effects are not based on the product's technology; they are based on the strength of the network. Therefore, it stands to reason that even as technologies change, the network itself may still be hard to disrupt. Classic examples here included payment networks, exchanges, and even travel networks like Booking Holdings, where we thought the core of the business was reliant on the strength of the travel network and the ability to aggregate the long tail of hotel supply, something that technology innovations like AI do not necessarily solve for.

Exhibit 14 Actions Taken on Firms With a Network Effect Moat Source

Action	Ticker	Name	Moat Rating
Upgrade	NET	Cloudflare	Wide
	CRWD	CrowdStrike Holdings	Wide
Downgrade	DSG	Descartes Systems Group	Narrow
	ASX:REA	REA Group	Narrow
	CRM	Salesforce	Narrow
	BIDU	Baidu	None
	035420	Naver	None
	SABR	Sabre Corporation	None
Maintain	ADYEN	Adyen	Wide
	AMS	Amadeus IT Group	Narrow
	ADSK	Autodesk	Wide
	BKNG	Booking Holdings	Wide
	ASX:CAR	Carsales.com	Narrow
	09899	Cloud Music	Narrow
	NAS:DDOG	Datadog	Wide
	DB1	Deutsche Börse	Wide
	EA	Electronic Arts	Narrow
	FICO	Fair Isaac	Wide
	FTNT	Fortinet	Wide
	ICE	Intercontinental Exchange	Wide
	IRE	Iress	Narrow
	LSEG	London Stock Exchange Group	Wide
	MSFT	Microsoft	Wide
	MCO	Moody's	Wide
	PANW	Palo Alto Networks	Wide
	PYPL	PayPal Holdings	Narrow
	TKS:6098	Recruit Holdings	Narrow
	RBLX	Roblox	Narrow
	SPGI	S&P Global	Wide
	ASX:SEK	SEEK	Narrow
	00700	Tencent Holdings	Wide
	HKG:01698	Tencent Music Entertainment Group	Narrow
	VRSK	Verisk Analytics	Wide
	ASX:WTC	WiseTech Global	Wide
	ASX:XRO	Xero	Narrow
	ZM	Zoom Communications	Narrow
	ZS	Zscaler	Narrow

Source: Morningstar, PitchBook.

Network effects are also central to the two upgrades that emerged from this process: Cloudflare and CrowdStrike. We think that cybersecurity solutions will be in more demand than ever as AI proliferates

and opens up seemingly unlimited attack vectors (just imagine nefarious agents acting 24/7, limited only by the amount of compute available), and companies like Cloudflare and CrowdStrike have structural data and scale advantages they derive from their networks, which led to our moat upgrades

Most Software Firms Have Switching Costs; This Was Not Enough to Protect a Moat in All Cases

Switching costs were not as effective, and close to half of the downgraded companies were classified as having switching-cost moats at one point. In the current AI-focused environment, switching costs—historically used to support software moat ratings—require careful reassessment, especially as AI models become integrated into fragmented, complex enterprise technology stacks. AI could automate key technological processes that were historically sources of switching costs (like data transfers) and could hurt end-demand for certain software incumbents. The increase in uncertainty around what the future of software looks like in AI world made it difficult for us to have confidence in return structures more than 10 years out for many firms, leading to the highest concentration of downgrades.

Exhibit 15 Firms That Had Switching Costs but Were Downgraded

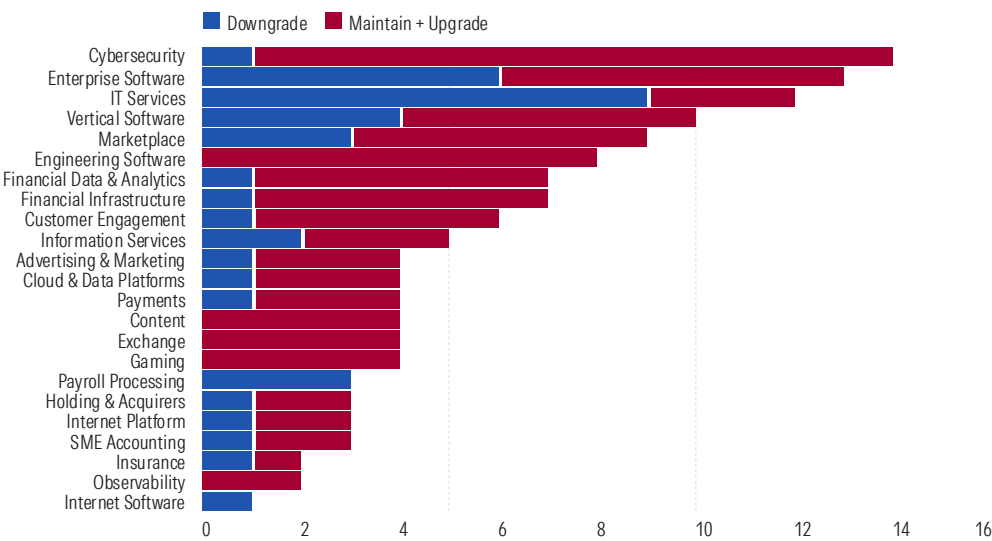
Ticker	Name	Moat Rating
ACN	Accenture	Narrow
ADBE	Adobe (Multimedia and Design Software)	Narrow
ADP	Automatic Data Processing	Narrow
DSG	Descartes Systems Group	Narrow
FCL	FINEOS Corporation	Narrow
INFY	Infosys	Narrow
INTU	Intuit	Narrow
MANH	Manhattan Associates	Narrow
4307	Nomura Research Institute	Narrow
ORCL	Oracle	Narrow
PAYX	Paychex	Narrow
CRM	Salesforce	Narrow
NOW	ServiceNow	Narrow
SHOP	Shopify	Narrow
TCS	Tata Consultancy Services	Narrow
ASX:TNE	TechnologyOne	Narrow
NAS:TRI	Thomson Reuters	Narrow
AMS:WKL	Wolters Kluwer	Narrow
WDAY	Workday	Narrow
PAR:CAP	Capgemini	None
NYS:ESTC	Elastic (Database Software)	None
NYS:DAVA	Endava	None
EPAM	EPAM Systems	None
FDS	FactSet	None
NYS:GLOB	Globant	None
ASX:HSN	Hansen Technologies	None
NEXI	Nexi	None
NAS:NICE	NICE (Ra'anana)	None
4684	OBIC (Tokyo)	None
4768	Otsuka	None
PAYC	Paycom	None
SABR	Sabre Corporation	None
SSNC	SS&C Technologies Holdings	None
TENB	Tenable	None
NAS:TTD	The Trade Desk	None
WIT	Wipro	None
NAS:WIX	Wix.com	None

Source: Morningstar, PitchBook.

Given the disparity between switching costs and network effects, we think it is likely that as workflows become more AI-driven, simple customer embedding (a precursor to switching costs) is likely to face pressure, but genuine network effects—where scale improves liquidity, relevance, content depth, telemetry, or ecosystem utility—are expected to increase in value. Meanwhile, intangible assets was in between switching costs and network effects, as there were many debates about which data sources in particular are truly proprietary and defensible.

Enterprise Software and IT Services Saw the Heaviest Concentration of Downgrades; Design Software, Platforms, and Cyber Were More Resilient

Exhibit 16 Enterprise Software and IT Services Had the Most Downgrades



Source: Morningstar.

Downgrades were concentrated among more horizontally focused enterprise software (such as CRM offerings), IT services, payroll processing, and select vertical-market SaaS and information services businesses. We found the most resilience in complex engineering software workflows, cybersecurity, financial infrastructure firms, and offerings with unique data and/or network effect assets. Half of the companies we rated as wide moat after this exercise exhibit network effects. Other key sources of resilience included regulatory barriers to change or other switching cost barriers, and unique data assets.

Sector Details and Key Debates

Cybersecurity: AI Increases Demand, Increases Value of Cyberfirms

We maintained wide moat ratings on Palo Alto Networks and Fortinet, and upgraded CrowdStrike and Cloudflare to wide. We believe Cybersecurity benefits from structural tailwinds that AI strengthens rather than undermines.

Unlike most software categories, cybersecurity operates in a constant arms race between attackers and defenders. AI makes both sides more capable, increasing the value of proprietary threat intelligence. Companies with larger installed bases experience more attacks and therefore build better defensive models, which is part of the network effects we see for these companies. This should increase demand for cybersecurity offerings and only increase the value of the data they are already collecting.

Cybersecurity benefits from compliance-driven spending floors. Regulatory requirements establish minimum spending thresholds that are unlikely to decline. As AI creates new attack vectors, we expect regulatory requirements to increase, not decrease.

Security platforms operate at the infrastructure layer. As AI increases the volume of data, endpoints, and cloud workloads, the demand for security increases proportionally.

Palo Alto Networks benefits from AI on both its XSIAM and Prisma platforms, with pricing models that reward consolidation and increased usage. Fortinet's core network security business is deeply embedded and AI-resistant, with diversification across network, endpoint, and cloud security.

Complex Design Workflows: Technical Design Software Should Be Safe From AI Threats

We maintain wide moat ratings on Cadence Design Systems and Synopsys. We see these firms benefiting from solid data assets and extreme workflow complexity, and we think AI increases demand for them.

Irreplaceable Data

Over 30 years of semiconductor design data, certified to specific foundry processes. This data cannot be scraped, replicated, or assembled from public sources. Each new process node generates years of additional proprietary data that competitors cannot access.

Extreme Workflow Complexity

Chip design is arguably the most complex engineering workflow in existence. EDA vendors must be validated with each foundry, so coordinating across multiple actors is tough, with chip failure as the downside risk. No rational chip designer would risk this switch to save on software costs.

AI Increases Demand

AI chips are among the most complex semiconductors ever designed. As AI proliferates, the world needs new chips, and increasingly complex chips. More complexity means more design software is needed, creating a direct tailwind for EDA tools. We also see the rise of physical AI as another driver of demand for chip design. The AI boom is a clear positive for Cadence and Synopsys.

The final point we liked for the EDA firms was that we are already seeing signs of AI monetization. There has been commentary of the ability to charge for the additional value that AI workflows provide, and these firms are already deploying agentic workflows.

We also maintained wide moat ratings on the broader engineering software companies: Autodesk, Bentley Systems, PTC, and Dassault Systemes. While these companies may not score as well as EDA tools, they benefit from proprietary data models, complex workflows, and high switching costs in their respective engineering domains. We think design software is one of the places that will do well even in an AI world.

Vertical Software: Regulatory Depth Protects Moats

Vertical software was a bit more mixed, as we saw some downgrades and some moat ratings were maintained.

We maintained wide moat ratings on Guidewire Software, Tyler Technologies, and Veeva Systems. These companies share a common trait: they serve highly regulated industries where the workflows are complex, industry-specific, and require domain expertise and regulatory backed adoption.

Guidewire provides complete ERP modules for core operations of the highly regulated P&C insurance industry. Its data is proprietary, aggregated from decades of policy and claims information across its client base, and its workflow automation is deeply embedded in regulatory compliance processes. Tyler Technologies operates similarly in the municipal government space, where procurement processes, regulatory requirements, and data security needs create barriers that AI-native entrants cannot easily overcome. Veeva Systems serves the life sciences industry with specialized clinical, regulatory, and commercial software that operates within FDA-regulated workflows.

Enterprise Software: Infrastructure Wins, Applications Struggle, 'Hybrids' Are a Tough Call

Among enterprise software companies, we maintained wide moats on Microsoft and SAP, while downgrading Salesforce, Workday, and others.

Microsoft's wide moat is reinforced by AI. The company operates across all layers of the technology stack, from Azure infrastructure to Dynamics ERP to the Office 365 productivity suite. Its database leadership, enterprise distribution, and role as a platform for AI development (through Azure OpenAI Service and Copilot) make it a clear beneficiary. While there are worries that Office 365 applications could be disintermediated by AI tools, we expect that Microsoft's apps will likely still operate as a sort of embedded layer, even within this stack (think AI tools working through excel, not without it), and Microsoft's cloud demand will also benefit.

SAP maintains its wide moat due to benefits from extreme switching costs and regulatory workflow complexity in its ERP business.

ServiceNow was a good example of the debates had on more application-focused CRM/ERP-style software, and many of these were close calls. For ServiceNow, three out of five voters favored a downgrade to narrow. We appreciate its deeper embedding in core IT, HR, and service workflows relative to peers. We also appreciate ServiceNow's 97%-plus retention rate, its role as an orchestration layer rather than a pure application, but we are unwilling to assign a wide moat to these types of firms

as AI raises uncertainty around seat growth, workflow simplification, and long-term excess returns. This simply reduced visibility into years 10-20 too much for us to maintain our wide moat ratings. Other downgrades included Adobe, Salesforce, Oracle, Workday, and OBIC.

IT Services: AI Could Create New Demand, But Billable Hours Model and Overall Value Add Could Be Under Pressure

IT services saw a flurry of downgrades across our coverage. We worry that AI could represent a direct threat to the billable hours service model (if AI reduces the number of hours needed to complete a project, this would directly impact revenue generation) and also threatens more automation-focused models like BPO (AI should help make these types of automations even easier to implement, again reducing the value extraction for incumbents). Finally, some services firms directly monetize the labor arbitrage between high-wage end markets (like the US) and lower-wage markets (like India). To the extent that AI helps disrupt this labor arbitrage, it again threatens the overall value that may accrue to IT services firms. These threats reduced our confidence in the return visibility for years 10-20 for Accenture, Infosys, Tata, and Nomura (downgraded to narrow from wide), and years zero through 10 for EPAM, Wipro, Capgemini, Endava, and Globant (downgraded to none).

Financial Infrastructure and Data: Exchange Moats Are Untouchable

We maintain wide moat ratings across financial exchanges (ICE, Deutsche Boerse, LSEG), financial data providers (MSCI, S&P Global, Moody's, Verisk, FICO), and financial technology infrastructure (Broadridge, Adyen, Jack Henry, Temenos). These companies share infrastructure positioning, proprietary data generation, and regulatory embedding.

Exchanges generate unique data from trading activity that cannot be replicated and benefit from strong network effects. Financial data providers like MSCI and S&P Global benefit from index licensing and credit ratings that carry regulatory significance where the value of the rating was never about the "technology" behind the rating. Broadridge serves as infrastructure for proxy voting and securities processing. In each case, AI increases the consumption of data and the volume of transactions, likely benefiting these infrastructure players more than it disrupts them.

Content Ecosystems Should Remain Valuable in an AI World

We continue to value engagement loops, content ecosystems, distribution advantages, and deep user networks in digital media and gaming. These companies are distinct from generic software products, whose interfaces could be easily replaced by an agent. NetEase and Cloud Music have maintained their positions because they benefit from strong content ecosystems, robust community features, and long-term engagement. Although AI may transform some tools and discovery methods, it does not eliminate the economic importance of content ecosystems and user engagement loops.

Advertising Ecosystems Should Still Have Value to Add Even as AI Becomes Prevalent

Advertising and marketing companies also provide a useful case study. Publicis and Omnicom, two traditional agencies, and AppLovin, an ad tech firm, were all maintained at narrow. We don't think AI can destroy agency and ad tech economics, but the moat review of these firms draws distinctions

around what is proprietary and what is valuable in an AI-first world. The agencies receive credit for the depth of persistent identity graphs despite an influx of AI generative tools that can compress production fees. AppLovin receives credit for its vertically integrated optimization engine since the engine is trained on proprietary auction win-loss data—something we believe a stand-alone AI model would have difficulty recreating. Broadly, we think AI can strengthen firms that sit in optimization loops and own a differentiated signal, even in sectors that are otherwise changing quickly.

Palantir, One of the Original AI Firms, Should Continue to Innovate

Palantir, maintained narrow, exemplifies an advantageous platform and workflow depth, as well as essential governance, without the certainty of a wide moat. Palantir doesn't technically own its customers' data, which would otherwise point us to wide. Instead, we remain impressed by Palantir's ontology and system of action depth, derived from its ability to orchestrate, structure, and operationalize enterprise (or government) data for automated decision-making. While an AI lab might attempt to create an ontology-like system in the future, Palantir's embeddedness in mission-critical, complex workflows reassures us of the durability of excess returns for at least the next decade.

Other Maintained Wide Moats

We also maintain wide moats on several other companies including Booking Holdings (dominant travel platform with network effects), Tencent (gaming and social platform with network effects), Universal Music Group (irreplaceable music catalog), Nintendo (unique IP portfolio), WiseTech Global (logistics software), RELX (scientific and legal data), and Datadog (observability platform with developer network effects).

Moats That Were Maintained Offer a Glimpse of What We Believe Is Still Durable in an AI World

Among the many firms that have maintained their competitive advantage, AI remains relevant and still introduces challenges related to interfaces, user workflows, and seat economics. However, the prevailing assessment, with regard to both wide-maintained and narrow-maintained, is that these pressures are insufficient to undermine the company's primary source of competitive strength.

A company's competitive advantage was usually secure when it benefitted from network effects, controlled infrastructure or proprietary data, had deep and complex ecosystems, operated within high regulatory barriers, or had unique domain logic. However, if a company mainly profited from workflow inefficiencies or user habits at the application level, its advantage tended to be less reliable.

The category of maintained-wide-moat companies conveys a clear narrative about the ownership of valuable AI-related assets, including specialized domain software with intricate workflows or unique data attributes that reinforce network effects. In contrast, maintained-narrow-moat firms present a more nuanced perspective. These narrow moats represent an important intermediate classification: areas where we consider excess returns to remain defensible at least for now, but where we had less confidence in the year 10-20 outlook. We do not view these narrow-maintained companies as untouched by AI; rather, we regard them as organizations whose existing safeguards are adequate to maintain

certain competitive advantages for now as they “figure it out” and adapt to an AI world.

We maintained a no-moat rating for some companies, which is significant in itself. In the case of MongoDB and Snowflake, there were interesting upgrade debates given that AI may actually drive more growth and relevance, but we elected to preserve the no-moat classification because growth potential is not the same thing as a durable moat. Additionally, AI can lower barriers to competition or lessen product offering differentiation, which would act as a headwind to said growth potential. Similarly, in Cybersecurity, Gen Digital, Rapid7, Sentinel One, and Varonis show that while AI should generally be good for security demand overall, this does not mean that every security company will benefit equally, even as we maintain confidence in the “best of breed” firms like Palo Alto Networks, CrowdStrike, and Cloudflare. Only the security firms with the deepest workflow integrations, differentiated data, infrastructural layering, and consumption-based pricing models should warrant a moat. Overall, AI tailwinds are not the same as moat creation.

A final important conclusion from our examination of maintained moat firms is that AI doesn't uniformly weaken or strengthen moats; instead, it forces a re-underwriting of where the moat actually sits. Again, we view AI as a “sorting mechanism,” not a universal destroyer of moats. If the moat sits in infrastructure, proprietary data, networks, regulated workflows, or specialized domain logic, it is likely to survive and potentially strengthen. If it sits in app-layer coordination, workflow habits, or human labor intensity, it's vulnerable.

Moat Source Details and Key Debates

AI Pressure Was Heaviest Where the Moat Sat at the Application or Workflow Layer

Many of the downgrades are businesses whose value proposition depends on organizing work, routing tasks, or sitting between the user and the underlying system. That made companies like Adobe, Salesforce, and Workday vulnerable to the emergence of AI agents with better backend integrations, since these agents should reduce the value of some traditional workflow layers. We don't see the products disappearing overnight, but the tech stack and workflow layers these companies monetize are becoming less differentiated as new AI tools move in.

Switching Costs Survived, but Often as Stickiness Rather Than Absolute Moat Protection

Many downgraded companies still appear sticky for now; we simply lost confidence in how sticky they will remain over the next decade plus. Customers are not going to rip out systems overnight. But there is a distinction between being hard to leave and being able to sustain excess returns for a very long time, especially as the newest AI models improve at a rapid pace. That is why firms like Workday could still feel embedded today, yet still get a lower moat rating. AI can reduce the economic importance of the frictions that once made these legacy systems so valuable.

Labor-Heavy and Services-Heavy Models Are Especially Exposed to AI Disruption

This is why IT services showed up so heavily in the downgrade list. For firms such as Accenture, TCS, Infosys, Wipro, and EPAM, the pressure point is not just software disruption. It is possible that AI may automate parts of coding, implementation, customization, maintenance, and routine digital

transformation work. These firms still have client relationships and scale, but if AI makes more of the work faster, cheaper, or less specialized, then some of the traditional moat logic around labor depth and delivery complexity weakens.

Seat-Based Economics Look More Fragile

A recurring downgrade idea was that if AI lets fewer people do more work, then per-seat monetization becomes less durable. That matters a lot for enterprise applications where historical growth and stickiness were tied to human user expansion. Even if the software stays important, the economic engine supporting the moat may not be as strong if seat growth slows or if value shifts from human users to agents, APIs, or outcome-based workflows.

We see this with a company like Nice, which operates customer service and contact center software. With AI generative models increasingly capable of automating interactions that previously required customer service representatives, the long-run economics look less durable as AI displaces labor and compresses the value of the interface layer.

Not All Data Is Treated Equally

We are much more comfortable maintaining moats where the company owns scarce, internally generated, mission-critical data than where the company's edge was more about packaging, workflow, or user-interface presentation. That is part of why more infrastructure- and data-centric companies held up better, while some software and information/workflow businesses faced more skepticism. The key question was: does the company own something AI needs, or is it mainly curating a layer AI can increasingly bypass?

We see this theme play out in ad tech, where we maintained AppLovin's narrow moat and downgraded The Trade Desk's moat from narrow to none. AppLovin is vertically integrated, owning supply-side relationships, demand-side relationships, and mediating transactions between the two. This vertical integration provides valuable, proprietary data for the training of its black-box advertising optimizer, Axon 2. The Trade Desk, on the other hand, is a pureplay demand-side platform and primarily orchestrates client data or collects a fee on third-party data sold on their platform, neither of which is especially proprietary.

Strong Current Business Performance Did Not Protect the Rating

Many downgraded companies still look fundamentally solid today. The downgrades were often about the uncertainty around the duration of excess returns, not near-term execution. The market is forward looking, and so are our moat ratings. We were willing to downgrade a company even if it still had good products, good growth, or a big installed base, if we believed AI makes the long-run moat source less robust than before.

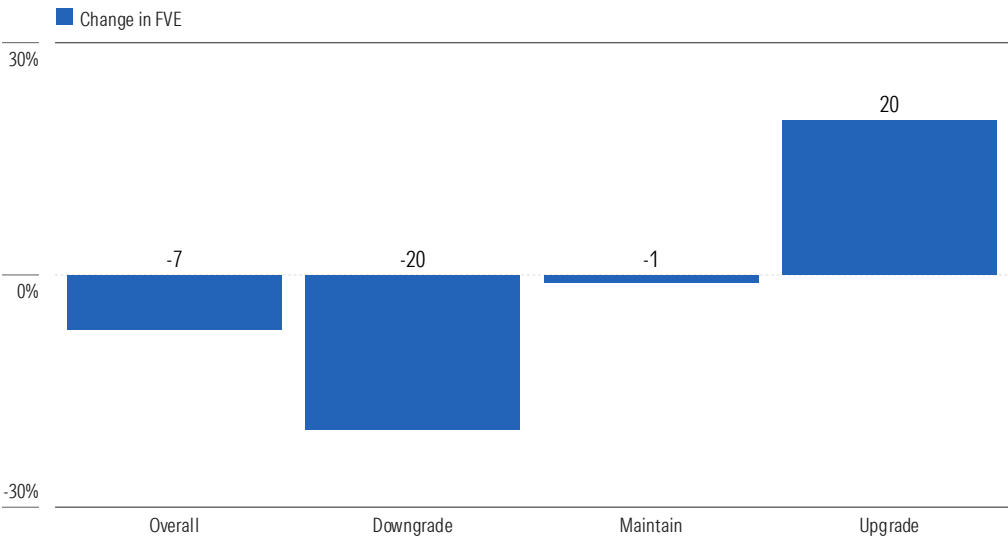
Companies such as Adobe, Salesforce, ServiceNow, Oracle, and Workday may face stronger competitive pressures than their current backward-looking performance indicators, like revenue retention, suggest. While their products remain relevant today, AI is increasingly capable of handling basic workflow tasks

and blurring distinctions between features, requiring these companies to continually demonstrate their value amid frequent AI advancements.

That said, we still think the incumbents have a “right to win” for now, and if they can “figure it out” in the next 12-24 months, we could see the narrative shift toward them being “AI beneficiaries” rather than being disrupted. Even though this is true, the lack of visibility into whether they will “figure it out” still led to moat downgrades.

Fair Value Estimate Updates: We Primarily Saw Fair Value Decreases as a Result of This Exercise

Exhibit 17 Nearly Every Downgraded Company Saw a Decrease in Its Fair Value



Source: Morningstar. Note: Data covers fair value changes from Feb. 10, 2026 to March 9, 2026, capturing fair value estimate updates that may have occurred during earnings season.

The average decline in our fair value estimates over the last several weeks was 7%; however, this was concentrated among downgraded firms, which saw an average decline of 20%. Our two upgraded companies, Cloudflare and CrowdStrike, have seen fair value estimate increases.

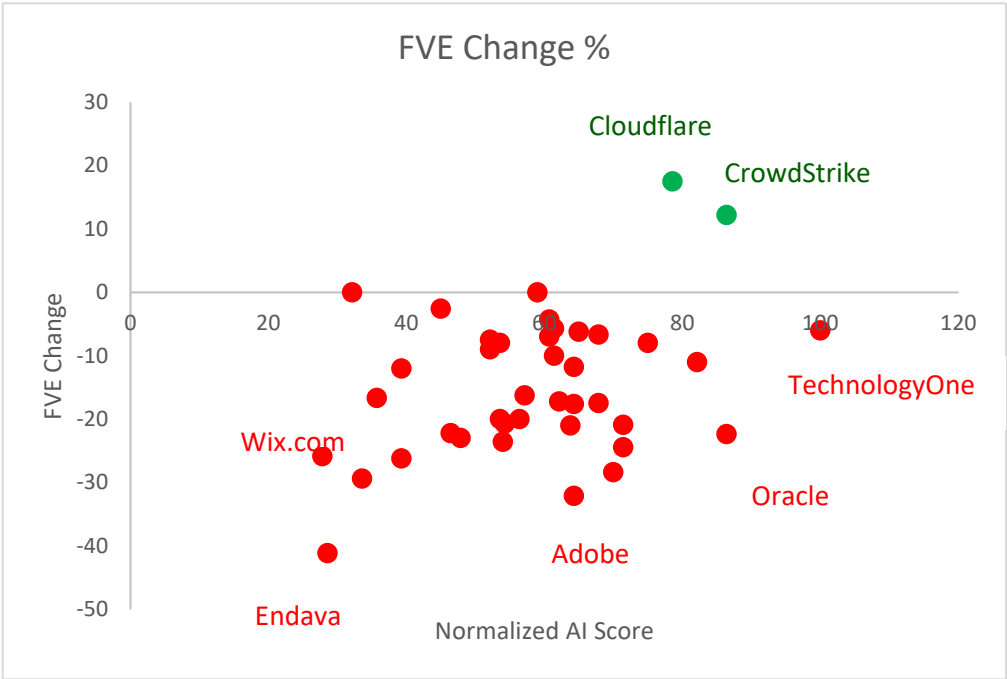
Exhibit 18 Companies With the Largest Fair Value Cuts

Company	FVE Change (%)
Rapid7	-55%
Workday	-50%
The Trade Desk	-45%
Endava	-41%
Paycom	-38%
Nexi	-37%
Elastic (Database Software)	-35%
Adobe (Multimedia and Design Software)	-32%
Intuit	-31%
TeamViewer Germany	-30%
Globant	-29%
Sabre Corporation	-28%
Paychex	-26%
Wix.com	-26%
Shopify	-25%
FactSet	-24%
Tyler Technologies	-23%
Otsuka Holdings	-23%
Oracle	-22%
Automatic Data Processing	-22%
Capgemini	-21%
Nomura Research Institute	-21%
Manhattan Associates	-21%
Tenable	-21%
OBIC (Tokyo)	-20%
Wolters Kluwer	-20%
HubSpot	-19%
Dassault Systemes	-18%
Thomson Reuters	-18%
FINEOS Corporation	-18%
ServiceNow	-18%
EPAM Systems	-16%
Salesforce	-14%
Baidu	-12%
Datadog	-11%
NICE (Ra'anana)	-11%
Adyen	-10%

Source: Morningstar.

Our internal AI threat scores correlated with changes in fair value estimates.

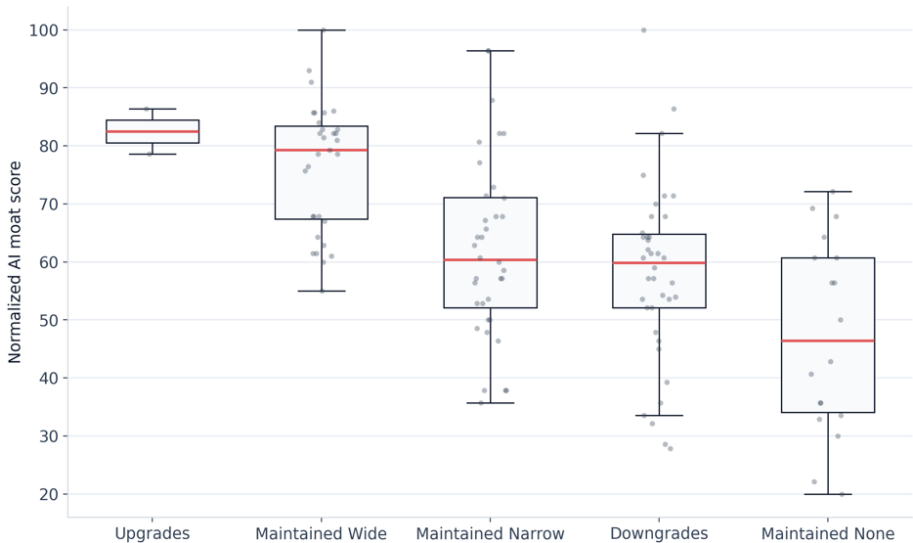
Exhibit 19 Our AI Scores Correlated With Eventual Changes in Fair Value Estimates



Source: Morningstar.

Our AI threat scores also correlated with final moat rating decisions, although there was heavy debate among firms on the edge of “narrow” versus “downgraded,” highlighting how challenging it is to sort future winners from losers.

Exhibit 20 Our AI Scores Correlated With Eventual Changes in Moat Ratings



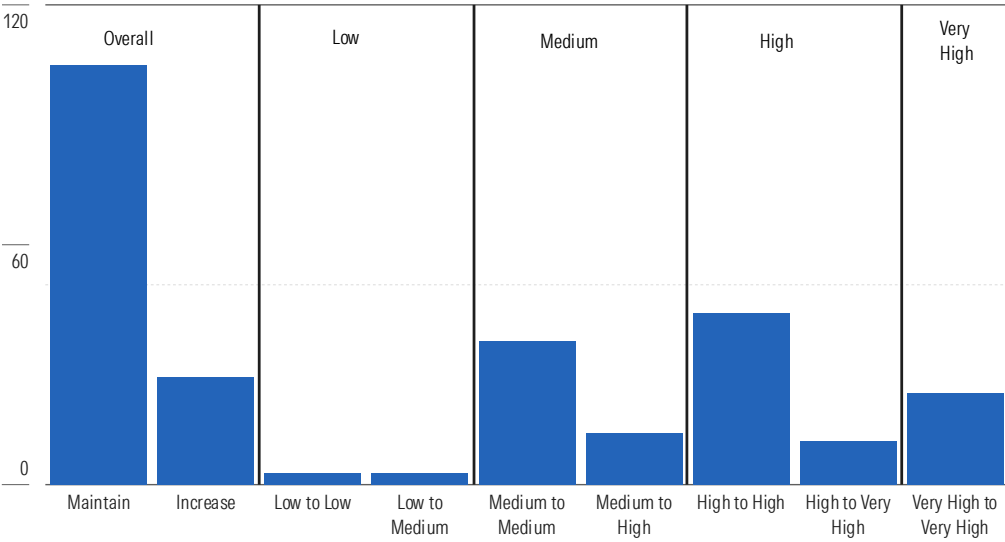
Source: Morningstar.

The box plot above suggests that our AI impact measurement (the normalized AI moat score) is effective. Companies that received upgrades or maintained their wide moats generally had higher scores, while those with no moat had lower scores. There is notable overlap between companies that maintained a narrow moat rating versus those that were downgraded. While our scoring supported thoughtful discussion, it alone did not prevent downgrades. Ultimately, the decision about a company's moat relied on in-depth qualitative analysis rather than simply applying a quantitative method, which we consider a better approach given the uncertain and far-reaching effects of future technological advancements.

We Increased a Meaningful Number of Uncertainty Ratings, as the Distribution of Potential Future Outcomes Likely Widens in an AI World

Out of the 132 companies reviewed, 27 companies had uncertainties—or distributions of potential outcomes—increased or “widened,” respectively, and all of the increases were “one-notch” moves, for example, Low to Medium or High to Very High. Pre- and postreview distribution of uncertainties both skew toward High, which is an increasingly appropriate demand for buffer when evaluating companies that may be impacted by AI. The increases were also concentrated within firms that also saw a moat downgrade.

Exhibit 21 Uncertainty Distributions: We Increased Uncertainty for 20% of the Companies Reviewed



Source: Morningstar.

The groupings with the highest numbers of High and Very High Uncertainty Ratings were cybersecurity, enterprise software, and vertical software. Cybersecurity is unique because we appreciate the infrastructural layer positioning, the positive feedback loops between data and product improvement, and AI's propensity to increase the attack surface (and in turn, increase demand for security solutions), but we note that not all cybersecurity firms are created equal. We continue to prefer undervalued, wide-moat companies like Cloudflare, CrowdStrike Holdings, and Palo Alto Networks over no-moat, Very High

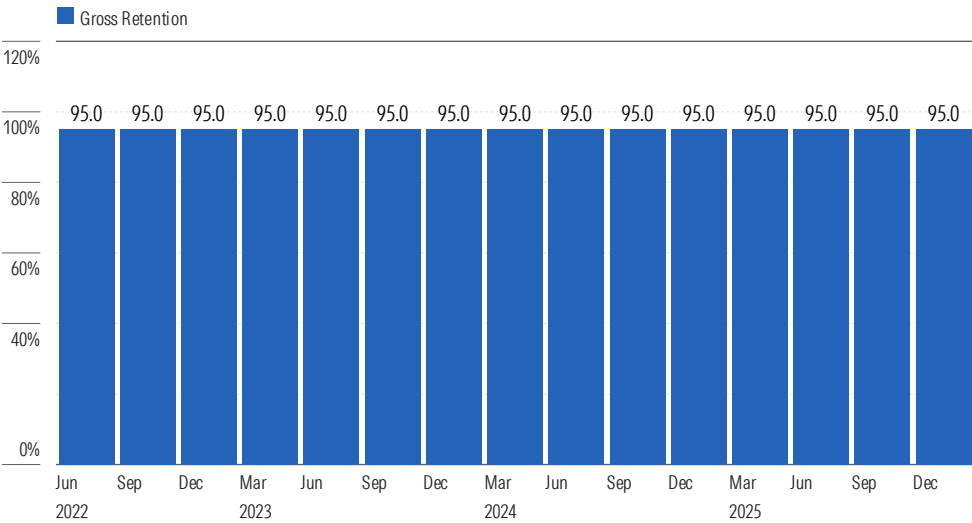
Uncertainty Ratings (Rapid7, SentinelOne, Gen Digital) because we believe the cybersecurity leaders are best positioned to enable AI infrastructure (either with inference-on-edge or agentic security offerings), and these firms also benefit from network effects.

Most of the 13 enterprise software companies already had High to Very High Uncertainty Ratings prior to the review, but Atlassian stands out, having increased from High to Very High. Atlassian’s core business revolves around software development tools, which, while currently accelerating, are also squarely in the crosshairs of the primary AI use case thus far. When combined with its customer base, which skews slightly more toward midmarket and small businesses, and its ongoing expansion into noncore areas through Jira Service Desk, we believe the uncertainty is heightened beyond that of a typical enterprise software vendor.

Approximately 40% of our vertical software companies—including Tyler Technologies, Hansen Technologies, TechnologyOne, and Descartes—experienced increases in uncertainty, all of which rose from Medium to High. We see the increase in uncertainty being driven by the companies generating revenue from the workflow layer, which ultimately makes them more vulnerable to AI, reducing the cost of copying features and increasing the risk of module-level competition from AI-native firms. While we don’t doubt their short-term importance, it is becoming increasingly challenging to underwrite their long-term pricing power or the durability of their returns.

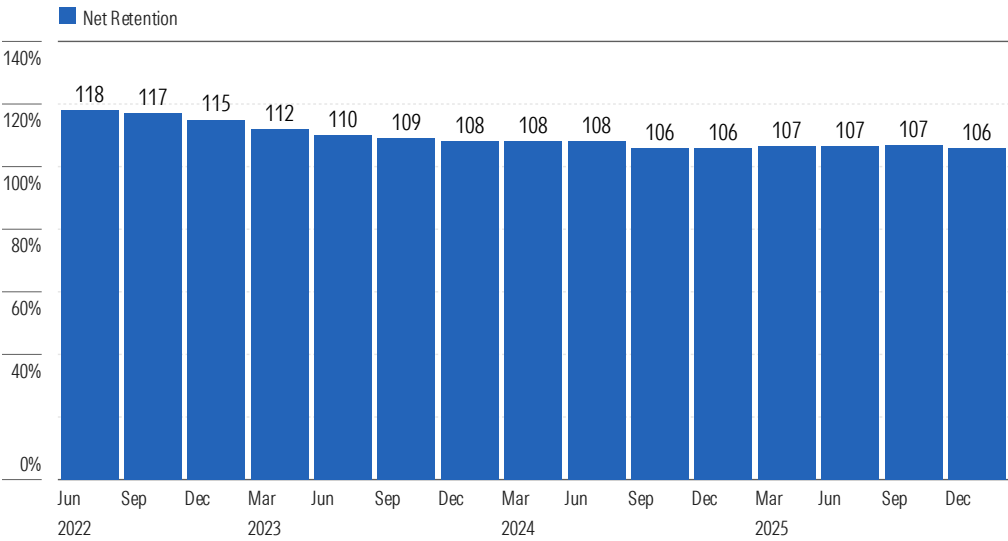
Sorting Through Software Wreckage, We Think Many Firms Have Sold Off More Than Justified
While we agree that the current debate should be forward-looking and therefore not simply based on historical results, it is worth noting that current software results are still generally “business as usual.” Revenue growth, billings growth, and retention rates still look fundamentally sound for the sector, even through the fourth quarter of 2025.

Exhibit 22 Gross Retention Rates Have Remained Stable for Our Software Coverage



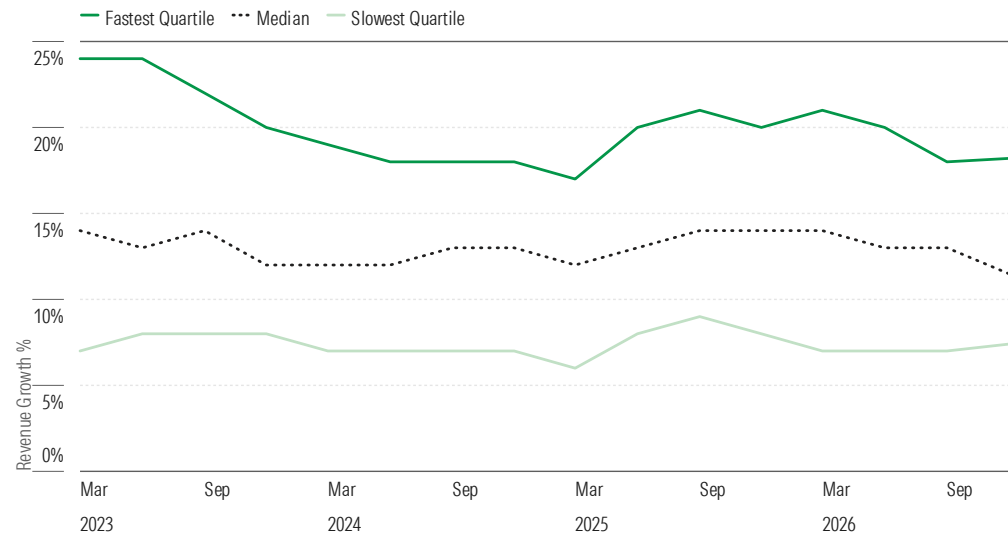
Source: Morningstar, PitchBook, and FactSet. Data as of March 9, 2026.

Exhibit 23 Net Retention Ratios Trended Down Slightly in Q4 2025, but Have Been Range Bound for Over a Year



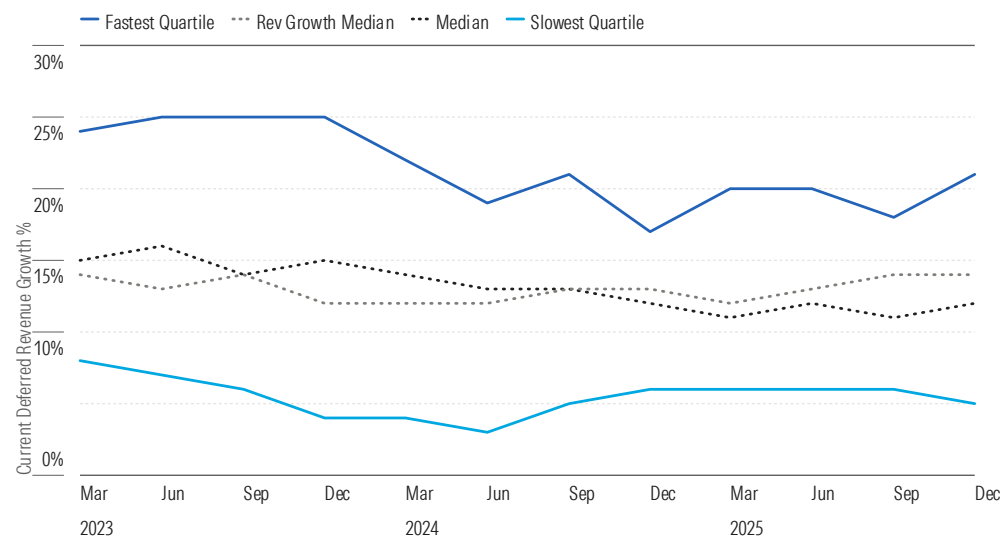
Source: Morningstar, PitchBook, and FactSet. Data as of March 9, 2026.

Exhibit 24 Revenue Growth Trends Were up in 2025, and the Forward Four-Quarter Consensus Is Generally Stable



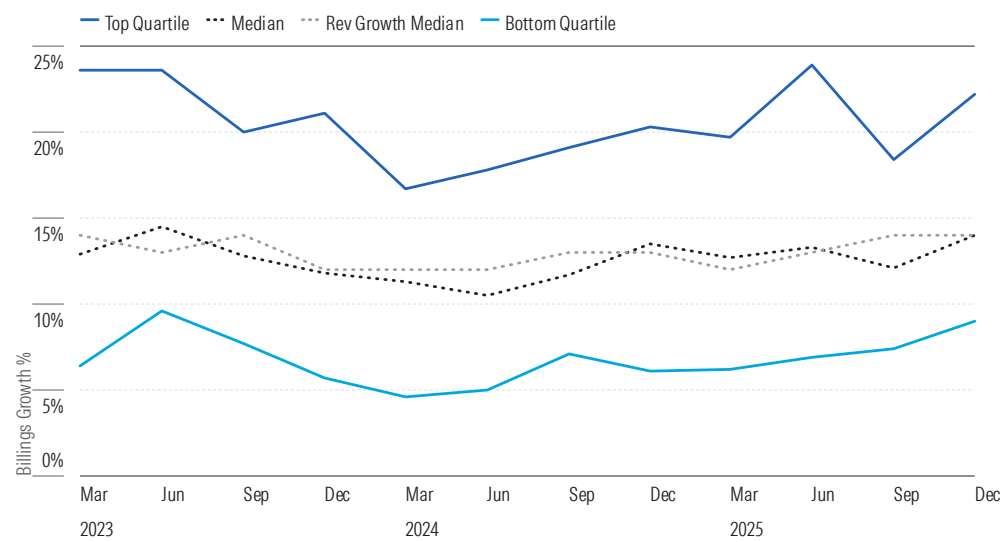
Source: Morningstar, PitchBook, and FactSet. Data as of March 9, 2026.

Exhibit 25 Deferred Revenue Growth Was Stable in Fourth-Quarter 2025



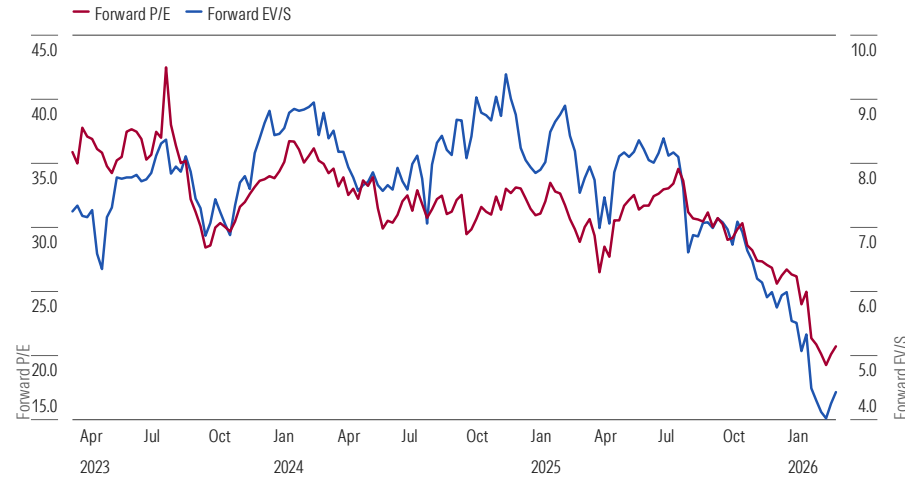
Source: Morningstar, PitchBook. Data as of March 9, 2026.

Exhibit 26 Billings Growth Was Stable to up in Fourth-Quarter 2025



Source: Morningstar, PitchBook. Data as of March 9, 2026.

Software firms are currently trading at historically depressed EV/sales and forward P/E multiples, highlighting the significant compression in multiples the sector has experienced over the past several months.

Exhibit 27 Multiples Have Compressed Materially to Multiyear Lows for Our Core Software Coverage

Source: Morningstar, PitchBook, and FactSet. Data as of March 9, 2026.

While we did downgrade a number of the moats and fair value estimates within our enterprise software coverage, we are finding that current market prices are pricing in a far more severe outcome than our current base case. We went through an exercise where we modeled two hypothetical scenarios. For our first scenario, we priced in 0% growth for our “stage 2” assumption, implying that these software firms essentially stop growing over the next five to 10 years. In this scenario, we often still arrive at a fair value estimate above the current market price, implying the market is pricing in not only a cessation of growth but also negative growth.

For our second scenario, we plugged in a stage 2 growth number such that the resulting fair value roughly approximated the current market price. As we show below, the market seems to be pricing in a material decline in growth for a number of these companies. In other words, severe AI disruption is already priced in. While we will admit the sentiment is pretty negative on many of these firms, and they do face some threats from AI, the current market prices seem overdone to us and offer some margin of safety. We do not think investors need heroic assumptions for many of these firms to eventually work out.

Exhibit 28 Even With Updated Moats and FVEs, We Find Much of Our Core Software Coverage Is Still Undervalued, Pricing in Severe Growth Contractions

Company	Stock Price	P/S C2027	Current			Stage 2 EBI Growth at 0%				Implied at Current Stock Price		
			FVE	Stage 2 EBI Growth	EV / Sales Multiple	FVE	EV / Sales Multiple	Hypothetical Change in FVE	Stock Price Relative to Hypothetical FVE	Stage 2 EBI Growth	EV / Sales Multiple	
ADBE	\$284	4.1	\$380	3.0%	5.8	\$349	5.3	-8%	23%	-8.0%	4.3	
CRM	\$202	3.7	\$280	4.2%	5.8	\$250	5.2	-11%	24%	-9.1%	4.2	
GWRE	\$169	8.0	\$220	13.5%	12.1	\$100	5.3	-55%	-41%	9.5%	9.3	
INTU	\$481	5.3	\$495	7.5%	6.3	\$314	4.0	-37%	-35%	6.1%	5.8	
MSFT	\$409	7.5	\$600	8.9%	12.9	\$378	8.0	-37%	-8%	1.7%	8.7	
NOW	\$124	6.9	\$165	13.0%	12.7	\$101	6.3	-39%	-19%	2.5%	7.7	
ORCL	\$153	4.2	\$215	8.2%	10.3	\$133	6.9	-38%	-13%	1.9%	7.6	
PANW	\$165	9.3	\$225	13.7%	15.4	\$120	8.1	-47%	-27%	7.6%	11.2	
PLTR	\$157	36.4	\$153	15.0%	52.6	\$64	21.3	-58%	-59%	14.7%	51.6	
SAP	\$201	4.5	\$265	7.0%	7.5	\$157	4.7	-41%	-22%	3.5%	5.9	
SHOP	\$130	9.4	\$120	14.4%	10.3	\$75	6.3	-38%	-42%	16.7%	11.2	
SNOW	\$180	8.4	\$223	15.0%	13.3	\$83	5.2	-63%	-54%	11.8%	10.6	
TYL	\$375	5.8	\$500	8.9%	8.3	\$321	5.3	-36%	-14%	3.5%	6.2	
WDAY	\$151	3.3	\$150	8.6%	3.4	\$92	2.0	-39%	-39%	8.0%	3.3	
Median				8.9%	10.3		5.3	-38%	-24%	4.8%	7.7	

Source: Morningstar, PitchBook. Data as of March 9, 2026.

Most Undervalued Companies on an Absolute Basis

Below we show a sorting of the firms we reviewed on a price/fair value basis, showing the “cheapest” stocks after this review, without regard to other factors, such as the moat rating. For investors willing to go deep value hunting and embrace higher levels of risk, this could be a good place to start.

Exhibit 29 Reviewed Companies Sorted on Price/Fair Value Trading at a 30% Discount or More to Our Fair Value Estimates

Ticker	Name	Price/FVE	Industry
ASX:SDR	SiteMinder	32%	Vertical Software
TEAM	Atlassian	38%	Enterprise Software
ASX:WTC	WiseTech Global	38%	Vertical Software
09899	Cloud Music	43%	Content
HKG:01698	Tencent Music Entertainment Group	47%	Content
NYS:CLVT	Clarivate	50%	Information Services
FISV	Fiserv	50%	Financial Infrastructure
DOCU	Docusign	54%	Enterprise Software
ZS	Zscaler	55%	Cybersecurity
NEXI	Nexi	56%	Payments
HUBS	HubSpot	56%	Customer Engagement
AMS:WKL	Wolters Kluwer	57%	Information Services
UMG	Universal Music Group	57%	Content
ADYEN	Adyen	57%	Payments
PYPL	PayPal Holdings	59%	Payments
NTES	NetEase	59%	Gaming
FIS	Fidelity National Information Services	61%	Financial Infrastructure
PAR:SOP	Sopra Steria Group	62%	IT Services
NYS:RELX	RELX (Information Technology)	63%	Information Services
00700	Tencent Holdings	65%	Internet Platform
SAP	SAP (Business/Productivity Software)	65%	Enterprise Software
ASX:SEK	SEEK	68%	Marketplace
BR	Broadridge Financial Solutions	68%	Financial Infrastructure
VEEV	Veeva Systems	68%	Vertical Software
MSFT	Microsoft	68%	Enterprise Software
NYS:DAVA	Endava	69%	IT Services
XPAR:PUB	Publicis Groupe	69%	Advertising & Marketing
ETR:TMV	TeamViewer Germany	69%	Enterprise Software
7974	Nintendo	69%	Gaming
NYS:ESTC	Elastic (Database Software)	70%	Cloud & Data Platforms
PAR:DSY	Dassault Systemes	70%	Engineering Software

Source: Morningstar, PitchBook. Data as of March 9, 2026.

Top Picks

For our top picks, we pick and choose based on several factors beyond just pure “cheapness,” including our overall confidence in the moat, general quality of the business, and the potential for AI to result in a demand increase.

Exhibit 30 Top Picks Amid AI Fear-Driven Selloff

Ticker	Name	P/FVE	Industry	Moat	Moat Action	Year to Date Return
Cheap Financials We Do Not See Being Threatened By AI						
BR	Broadridge Financial	0.68	Financial Infrastructure	Wide	Maintain	-15%
FICO	Fair Isaac	0.73	Financial Data & Analytics	Wide	Maintain	-15%
SPGI	S&P Global	0.79	Financial Data & Analytics	Wide	Maintain	-15%
MSCI	MSCI	0.84	Financial Data & Analytics	Wide	Maintain	-1%
MCO	Moody's	0.86	Financial Data & Analytics	Wide	Maintain	-9%
Wide Moat Design Firms at Attractive Valuations						
PAR:DSY	Dassault Systemes	0.70	Engineering Software	Wide	Maintain	-26%
Deeply Entrenched ERP Solutions						
SAP	SAP	0.65	Enterprise Software	Wide	Maintain	-19%
Misunderstood Network Effects in Travel Networks						
BKNG	Booking Holdings	0.86	Marketplace	Wide	Maintain	-17%
Undervalued Cybersecurity Basket						
PANW	Palo Alto Networks	0.73	Cybersecurity	Wide	Maintain	-10%
FTNT	Fortinet	0.77	Cybersecurity	Wide	Maintain	6%
NET	Cloudflare	0.83	Cybersecurity	Wide	Upgrade	2%
NAS:DDOG	Datadog	0.76	Observability	Wide	Maintain	-5%
Misplaced Fears for Human Created Music and Record Labels						
UMG	Universal Music Group	0.57	Content	Wide	Maintain	-24%
We Still Like Microsoft to Remain at Center of Enterprises in an AI World						
MSFT	Microsoft	0.68	Enterprise Software	Wide	Maintain	-15%
Less Risk Adverse Investors Should Consider Fishing in Beaten Down Software Names						
TEAM	Atlassian	0.38	Enterprise Software	Narrow	Maintain	-49%
HUBS	HubSpot	0.56	Customer Engagement	Narrow	Maintain	-29%
CRM	Salesforce	0.72	Enterprise Software	Narrow	Downgrade	-25%
NOW	ServiceNow	0.75	Enterprise Software	Narrow	Downgrade	-20%

Source: Morningstar, PitchBook. Data as of March 9, 2026.

Wide Moat Financial Firms Where We View Sell Off as Unjustified

We have seen a basket of financial services firms, which we view as largely resilient to AI risks, sell off. We still believe that credit ratings, credit scores, benchmarks, and embedded financial processes will prevail. We would highlight Broadridge, Fair Isaac, S&P Global, MSCI, and Moody's as undervalued.

For Broadridge, financial infrastructure, regulatory workflows, and hard-to-replace operational plumbing all point to AI resilience. This is not a story built around a flashy user interface or a light productivity layer. It is deeply embedded in processes that institutions really cannot afford to disrupt, which is why the moat still looks sturdier than the market gives it credit for.

We still like Fair Isaac, S&P, Moody's, and MSCI, which "own the underlying asset, not the shiny wrapper." Ratings, benchmarks, reference data, and embedded workflows are still highly valuable even if AI changes how end users search, summarize, or consume outputs. We think the real franchise value is tied to trusted inputs and benchmark status, not just to how the information is displayed

Dassault Systemes: Design Software With a Wide Moat, Complex Workflows, and an Attractive Valuation

We generally believe design software will be more resilient than most to AI disruption, and among the design firms, Dassault is the cheapest. We believe complex workflows with zero room for error will be resilient. The business is roughly half high-end CAD/PLM (CATIA, 3DEXperience), which we view as having low disruption risk. CATIA functions as the "system of truth" for the physical product. In aerospace, the model is the airplane before it's built, and regulatory certification references it as the authoritative source.

The data moat is formidable: customers accumulate product model libraries over decades in native Dassault format with no migration path. Switching costs in aerospace are essentially permanent because changing CAD would require recertification across 50-year-plus aircraft lifecycles, and OEMs require supply chains to standardize on their CAD platform.

Critically, we think AI is additive for the high-end business. Agentic AI that proposes thousands of design variants still needs CATIA to validate manufacturing feasibility and simulation to test each one, driving demand for Dassault's highest-margin products. The main vulnerability is SolidWorks (around 15% of sales), where AI could lower the skill barrier for simpler product design.

SAP: Deeply Entrenched ERP Platform Where the Offering Is About Much More Than 'The Code'

We think workflow complexity and the switching costs associated with deeply entrenched ERP solutions will be harder to disrupt than the market thinks. SAP ERP implementations embed years of process configuration, master data, and cross-system integrations into enterprise operations, making them among the stickiest software deployments in existence. SAP is a systems-of-record business rather than an app-layer business, and we expect this infrastructure-layer positioning to be far more resilient to AI disruption. There is some debate about whether AI narrows perceived product differentiation over time, but we think the migration friction and workflow complexity still anchor the moat.

AI may change how users interact with software, but that is different from replacing the ERP core that sits underneath finance, procurement, supply chain, and other core enterprise processes. The market narrative currently bakes in significant surface-level disruption, while the real question is whether the underlying process footprint remains sticky; we think it is.

Booking Holdings: Market Selloff Misunderstands the Network Effects

We understand the intuitive surface-level appeal of the AI bear case for Booking: “Why won’t AI agents just book travel directly in the future, disintermediating the networks?” However, when we dig into the power of Booking’s network and its ability to aggregate the long tail of supply (think getting a boutique hotel in a small European town, managed by two people, to sign up to your network, done a million times), we believe it will be resilient. We just do not see AI firms becoming travel agencies, making all the network connections, or wanting to go through the regulatory and infrastructure demands of order processing. We think the current selloff is unwarranted, and travel is not going anywhere.

Basket of Undervalued Cybersecurity Companies

We view cybersecurity as well-positioned in an AI world, where it functions as key infrastructure, often with unique data and network advantages, all while AI should increase demand, not decrease it. There is a basket of firms that we view as undervalued (Palo Alto, Datadog, Cloudflare, and Fortinet). Palo Alto is the leading security platform, well-positioned in AI and benefiting from the vendor consolidation trend, while Cloudflare’s moat was upgraded as part of this extended moat review process.

Universal Music Group: AI Will Not Erode the Value of Human-Created Music

Unless consumers are willing to give up access to human-created music, we don’t expect Universal’s business to be materially hurt by music AI generates. AI doesn’t materially change artists’ need for record companies, which generally control catalogs for music created under their labels for many years.

As the biggest of the three major global record companies, Universal has significant bargaining power over any platforms that include access to human music. No music streaming service that offers access to human-created music can realistically compete without Universal’s artists. Recently signed renewals with the leading music-streaming platforms ensure that AI music won’t diminish the revenue share human artists receive, and any AI-first music platform will similarly need the labels if they want access to the music Universal controls.

The same bargaining power holds for other uses of human music that could theoretically be displaced by AI, such as in film and television. If any current music buyer is willing to give up access to human music, Universal could have a problem. Until then, AI music could diminish some opportunities at the margins while also creating others, such as licensing deals Universal has signed that allow the use of its music—with artists’ permission—to facilitate AI songs on AI platforms.

Microsoft Benefits From Cloud Growth, and Will Likely Remain at the Center of Enterprise Workflows Even in an AI World

Microsoft still looks like one of the better-positioned companies in an AI world because the real value is not just the interface layer; it is the operating stack underneath it, the workflow embedment, and the fact that so much enterprise activity already runs through its ecosystem. The market keeps circling back to whether AI will eventually make software less sticky, but we don't view Microsoft as just a "software solution"; we expect it will become part of the infrastructure that AI agents run through to access the enterprise marketplace. Beyond Microsoft's applications, there is, of course, ownership in OpenAI and revenue from Azure growth. We see Microsoft coming out as a winner in the end, one way or another.

For Investors Willing to Take More Risk, Downgraded Enterprise Software Firms Are Still Cheap

We still see value in many of the hardest hit enterprise software companies, where we'll admit the risks are real, but we think the price reaction is overdone. These will be bumpy, battleground stocks, but we do not need heroic assumptions for these to still work out for investors over time. Here we highlight Atlassian, ServiceNow, HubSpot, and Salesforce. 

Research Methodology for Valuing Companies

Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, in-depth competitive advantage analysis, and a variety of other analytical tools to augment this process. We think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (mines, for example), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss short-term market-price movements), but we believe these negatives are mitigated by deep analysis and our long-term approach.

Morningstar's Equity Research Group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate in Morningstar terminology. Five-star stocks sell for the biggest risk-adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating:

- ▶ our assessment of the firm's economic moat.
- ▶ our estimate of the stock's fair value.
- ▶ our uncertainty around that fair value estimate.
- ▶ the current market price.

This process ultimately culminates in our single-point star rating.

Economic Moat

The Morningstar Economic Moat Rating is a structural feature that Morningstar believes positions a firm to earn durable excess profits over a long period of time, with excess profits defined as returns on invested capital above our estimate of a firm's cost of capital. The economic moat rating is not an indicator of the investment performance of the investment highlighted in this report. Narrow-moat companies are those that Morningstar believes are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those that Morningstar believes will earn excess returns for 10 years, with excess returns more likely than not to remain for at least 20 years. Firms without a moat, including those that have a substantial threat of value destruction-related risks related to environmental, social, and governance; industry disruption; financial health; or other idiosyncratic issues, are more susceptible to competition. Morningstar has identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Fair Value Estimate

Each stock's fair value is estimated by using a proprietary discounted cash flow model, which assumes that the stock's value is equal to the total of the free cash flows of the company is expected to generate in the future, discounted back to the present at the rate commensurate with the riskiness of the cash flows. As with any DCF model, the ending value is highly sensitive to Morningstar's projections of future growth.

Fair Value Uncertainty

The Morningstar Uncertainty Rating represents the analysts' ability to bound the estimated value of the shares in a company around the fair value estimate, based on the characteristics of the business underlying the stock, including operating and financial leverage, sales sensitivity to the overall economy, product concentration, pricing power, exposure to material ESG risks, and other company-specific factors. Based on these factors, analysts classify the stock into one of several uncertainty levels: Low, Medium, High, Very High, or Extreme. Our recommended margin of safety—the discount to fair value demanded before we'd recommend buying or selling the stock—widens as our uncertainty of the estimated value of the equity increases.

Market Price

The market prices used in this analysis and noted in the report come from exchanges on which the stock is listed, which we believe is a reliable source.

Morningstar Rating for Stocks

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A security's current investment performance may be lower or higher than the investment performance noted within the report. Morningstar's Uncertainty Rating serves as a useful data point with respect to sensitivity analysis of the assumptions used in our determining a fair value price.

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