AI: Evolution or Extinction for Software Lending?

MONROE CAPITAL

Executive Summary

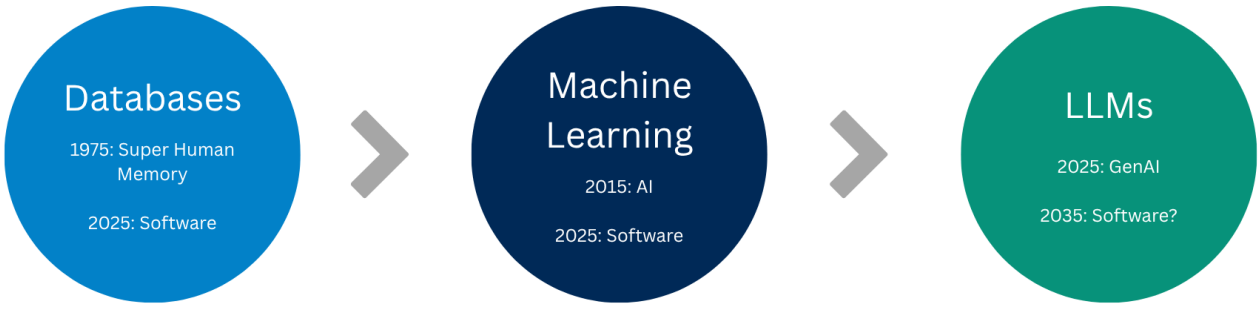
As generative artificial intelligence ("GenAI") reshapes the software landscape, enterprise software remains the mission critical layer of global productivity. Rather than displacing existing platforms, AI is enhancing incumbent applications, unlocking new automation capabilities, expanding monetization potential, and driving margin efficiencies. Lenders who understand the evolving risk spectrum and can identify embedded, defensible software businesses are well-positioned to generate attractive risk-adjusted returns in resilient businesses.

This white paper explores the attributes of enterprise software companies that are well-positioned to deepen their value proposition in the age of AI and those more at risk of disruption, and how the most successful credit managers are strategically positioned to identify, underwrite, and support the next generation of software leaders.

Key Takeaways:

- **AI is a critical component of best-in-class software:** Most enterprise platforms are already embedding GenAI to augment product features, improve development speed, and strengthen customer retention.
- **Proprietary data moats and regulatory complexity create defensibility:** Businesses with unique data access and compliance driven workflows are difficult to displace and highly attractive as credit investments.
- **Specialized lenders can underwrite through complexity:** With deep domain knowledge, dedicated diligence capabilities, and strong sponsor alignment, software credit offers recurring revenues, margin upside from AI, and structural downside protection.
- **Enterprise software is essential infrastructure:** Enterprise resource planning ("ERP"), customer relationship management ("CRM"), vertical workflow tools, and cybersecurity platforms underpin modern business operations and exhibit durable demand, high switching costs, and contractual revenue visibility.
- **Experienced lenders are positioned to lead:** With decades of software credit experience, strong sponsor relationships, and a rigorous bottom-up approach to AI diligence, seasoned managers are well-equipped to back the next generation of resilient, AI-augmented enterprise platforms.

Software's Never-Ending Evolution



AI is the Next Evolution, Not an Extinction Event

The AI revolution (especially generative AI and Agentic AI) marks the next major inflection in computing, akin to the rise of cloud delivery and mobile. But unlike prior platform shifts, GenAI is not displacing software, it is augmenting it.

This integration trend is not theoretical. It is already playing out across Private Credit portfolios and the broader software ecosystem. As incumbent platforms incorporate GenAI into their core offerings, they are unlocking faster innovation cycles, deeper customer engagement, and new monetization layers:

- **Accelerate product development:** AI assisted engineering can improve developer productivity by ~30%,[1] enabling faster feature rollout.
- **Boost product stickiness:** Agentic tools, like AI assistants or workflow bots, automate tasks and drive user engagement.
- **Drive monetization:** Vendors are successfully introducing AI powered modules as premium add-ons, with customers willing to pay for enhanced capabilities.

AI's most powerful impact lies in its integration into existing enterprise workflows. Rather than building standalone AI applications and attempting the difficult task of displacing incumbent software solutions that serve mission critical functions, successful companies are folding GenAI into their existing systems, transforming software into smarter platforms. The long-term effect is to increase user dependence and switching costs, deliver new insights, amplify the productivity gains and ROI for customers, while further expanding the already-high margins earned by best-in-class enterprise software companies.

AI Enhancements to Software

AI Hype vs. Monetization Reality

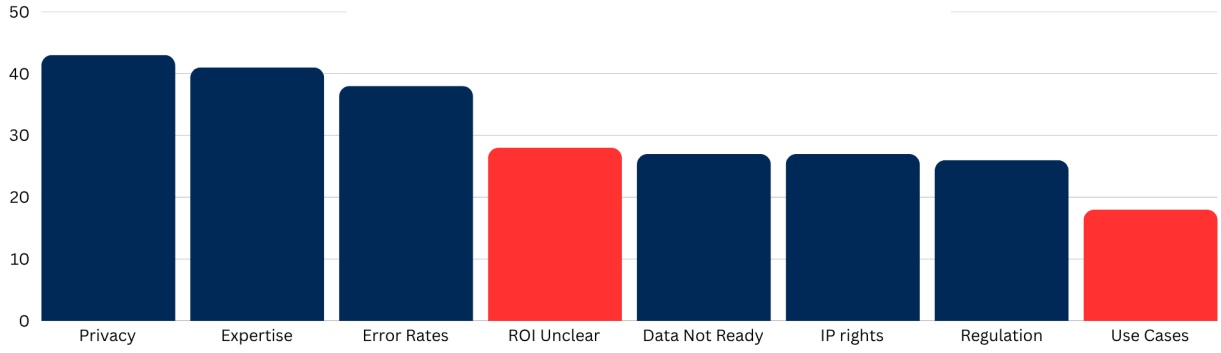
Despite $106 billion in global GenAI venture funding in 2024,[2] the market for AI applications is still in its infancy. Revenue from GenAI applications is estimated at only $21 billion,[3] a fraction of the $600 billion in infrastructure investment needed to support the broader ecosystem.[4] **According to Gartner, spending on GenAI software is expected to grow at a 48% CAGR through 2028,[5] yet even then, it will represent just 5% of total software spend.**

To date, most near term adoption of AI has been concentrated in consumer and SMB segments, where acquisition costs and customer switching costs are lower, risk tolerance is higher, and use cases are relatively simple. In contrast, enterprise adoption, especially in regulated sectors like healthcare, finance, and government, has been more measured due to requirements around explainability, auditability, and compliance.

Corporate Hesitation

For enterprises, use cases are easier to see but hard to implement.

Reasons Enterprise Delay LMM Deployment %



Source: Bain (December 2024): Top three choices

This divergence in adoption of new technology mirrors the dynamics that have made enterprise software resilient for decades, including during past platform shifts such as cloud and mobile. The software industry has always evolved alongside technological change and so has the underwriting playbook. Specialized lenders are adept at distinguishing between commoditized tools and truly mission critical enterprise software, where switching costs are high and the ROI from change must be exceptionally compelling.

While new AI-native competition will undoubtedly emerge across sub-verticals, the fundamentals of sound software underwriting remain unchanged. This persistent gap between AI hype and real enterprise adoption presents a compelling opportunity for credit investors: **rather than betting on unproven disruptors, lenders can back incumbents with embedded workflows and proprietary data that are already harnessing AI to deepen their defensibility and expand their profitability.**

AI Risk Spectrum: Differentiated vs. Displaceable Software

AI will not disrupt software uniformly. The impact will depend on the defensibility of the platform, the criticality of the workflow, and the proprietary nature of the data.

Software AI Risk Spectrum

Lower-Risk Categories

These are areas where the software's role remains indispensable or where unique data/regulatory complexity forms a moat.

Examples:

- Vertical industry suites (healthcare, manufacturing software) that leverage proprietary industry data
- Compliance-driven solutions (financial or medical regulatory software)
- Core ERP platforms
- Cybersecurity products

Higher-Risk Categories

These are areas where AI can more easily substitute the software.

Examples:

- Basic content tools (e.g. low-end copywriting, SEO optimization, rudimentary design)
- Generic dashboards or reporting tools
- Legacy on-premises software

In these cases, AI can either eliminate the need for the software or provide cheaper/better alternatives outside the original product.

Credit investors must differentiate between deeply embedded platforms with proprietary data moats and generic tools vulnerable to substitution. The former offer attractive risk-adjusted returns; the latter require heightened scrutiny and may face extinction from new AI-native tools.

Software that Utilizes AI through Proprietary Data Sets Win

Large language models (“LLMs”) like ChatGPT’s GPT-4 are trained on publicly available data sources, including open web content, digital books, and forums. While these models can be fine-tuned to improve performance, they lack access to proprietary datasets such as transaction records, workflow histories, or internal knowledge bases that are critical to enterprise environments. Without exposure to these differentiated data assets, LLMs are limited to general predictions, which can lead to incorrect responses masked by confident language. This phenomenon is often referred to as "false precision.“

For mission-critical enterprise functions, educated guesses are unacceptable. Accuracy, auditability, and reliability are paramount. Incumbent enterprise software platforms, by contrast, are already trusted systems of record and have privileged access to proprietary customer data. These platforms are uniquely positioned to embed GenAI into their products in ways that drive true business intelligence. By leveraging their proprietary datasets, they can fine-tune AI models to deliver precision insights, automate complex workflows, and surface decision making tools that improve retention and expand pricing power.

Unlike general-purpose LLMs, enterprise SaaS vendors can apply GenAI to differentiated, high signal use cases through natural language interfaces, agentic automation, and advanced analytics. These AI-enhanced systems become more valuable with every user interaction, delivering compounding utility over time.

Furthermore, in regulated industries such as healthcare, transportation and financial services, software platforms must meet high standards for accuracy, compliance, and transparency. For example, the general public has been shocked to learn in recent months about the decades-old technology that still powers the country’s air traffic control systems utilizing Windows 95 and floppy disks. While better technologies exist and are clearly badly needed, the requirement for complete confidence in decision making within the air traffic control industry (coupled with slow decision making across certain industries, including government) has resulted in the stickiness of an outdated mission critical technology. In other industries, errors can lead to punitive fines or legal liability, which insulates these platforms from displacement by off the shelf GenAI tools. Leading vertical SaaS providers spread the cost of compliance across a broad user base, making them more cost effective and defensible than in-house solutions. In effect, they serve as outsourced compliance engines with GenAI only enhancing their ability to deliver value in complex, regulated workflows.

Lending Framework for AI-Era Software

Embrace AI Adoption	**Protect and Exploit Data Moats**	**Manage AI Infrastructure Dependencies**	**Prioritize Agentic Workflows**	**Selective and Thematic Approach**

For credit investors evaluating software companies, several strategic principles emerge:

- **Embrace AI adoption:** Companies that proactively build AI into their products will likely pull ahead. Investors should favor companies whose roadmaps include AI features and automation tools. Scaling AI profitably requires rethinking cost structures (especially R&D, S&M and hosting) and treating AI as a catalyst for efficiency. Management teams that view AI as an R&D and S&M accelerant (rather than solely as a threat) can innovate faster, increase sales conversion and expand margins.
- **Protect and exploit proprietary data moats:** The software winners will be those with exclusive or hard to replicate pools of data. Proprietary data not only creates barriers to entry but also feeds better AI models. Investors should value data centric workflows (e.g. industry-specific datasets, IoT sensor streams, and proprietary customer histories) as a competitive edge. A software firm that hoards unique training data and trains in-house models effectively raises the bar for any native AI competitor. This reinforces why mission critical vertically-built software remains attractive. The initial moat comes from the data and the moat is deepened when the software leverages that data with AI to provide real business intelligence.
- **Manage AI infrastructure exposure:** AI can also create new cost layers (notably GPU/inference costs for models). Companies that optimize hosting architectures and negotiate cloud contracts thoughtfully will be better positioned to capture AI's margin upside.
- **Prioritize agentic workflows:** The next wave of enterprise software innovation will come from "AI agents," or systems that execute tasks autonomously across systems. Businesses that design or program such tasks and workflows (often through natural language or visual interfaces) will command premium valuations. Enterprise software that evolves into an agentic platform can deliver outsized ROI by orchestrating entire processes.
- **Be selective and thematic:** Focus on market leaders, niche category owners, and platforms that deliver mission critical services with high switching costs to diversified customer bases, especially in the lower AI risk categories identified above. It does not pay to lend to "storied" software companies or models in transition. Hardware and chipmakers have seen a surge in AI driven growth, but the bigger prize will be in the software and services layer. The economic value of AI will accrue largely to those who **build AI into useful applications** for end customers.

Experienced Technology Investors Will Benefit from the Evolution of Enterprise Software

Experienced managers are well positioned to capitalize on AI tailwinds in enterprise software. Drawing on long track records of underwriting software businesses with high recurring revenue, mission-critical functionality, and strong customer retention, these managers are leveraging their expertise to navigate a rapidly evolving landscape. Enterprise software lending remains a complex and specialized segment, requiring deep sector knowledge to prudently assess technology-specific risks and opportunities. Top managers focus on identifying businesses with durable demand profiles and scalable unit economics to drive alpha generation. Those without the requisite industry expertise are likely to avoid the large and rapidly growing sector due to the risks stemming from AI, or worse yet, invest in companies that are facing extinction.

Strong, long-standing relationships with technology-focused private equity sponsors further enhance origination and deal access. These sponsors provide strategic support and operational guidance, while trusted lenders are often selected as preferred capital partners for their ability to deliver customized financing solutions with speed and certainty.

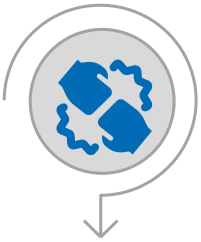
Investment Evaluation Criteria

Technical diligence

In-depth evaluation of product architecture, roadmaps, and AI integration strategies

Data moat analysis

Focused assessment of proprietary datasets and embedded workflow utility



Sponsor partnerships

Alignment with leading software-focused private equity sponsors

Innovation is not solely a disruption risk, but it is a lever for enhanced enterprise value. With disciplined underwriting, thematic focus, and the ability to offer flexible capital, experienced credit managers with expertise in technology are well positioned to support and scale the next generation of AI-augmented enterprise platforms.

Conclusion

Just as cloud infrastructure transformed enterprise IT, AI is poised to reshape how software delivers value. However, the fundamental thesis of successful technology lending remains unchanged: **software is the operating system of modern business, and AI is an accelerant, not a substitute.**

The most successful platforms will embed AI into workflows, leverage proprietary data for insights, and evolve into orchestrators of decision making and automation. Lenders who understand this transition and who can evaluate AI execution, product defensibility, and data differentiation can capture outsized returns in a changing landscape.

In this environment, LPs should prioritize managers with deep domain expertise, robust sponsor networks, and a proven ability to assess evolving technology risk. The most successful managers will be those financing the platforms that define the AI era in enterprise software.

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Monroe's Software & Technology Track Record

18 Years	>50	172	$12B	10
Track Record[6]	Unique Tech Sponsors Relationships	Investments	Invested Capital	Dedicated Investment Professionals

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Endnotes

1. Benedict Evans – May 2025
2. Crunchbase 1Q'2025: Global Fund to QI, by Quarter
3. BCCResearch: Genarative AI : Global markets (January 2025)
4. Sequoia Capital – 2024 Estimates
5. Gartner - March 2025:GenAI IT Spending, 2023-2028, Worldwide
6. Monroe's Track Record as of 3/31/2025

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