

Hype Cycle for Chief Product Officers, 2026

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By: Charles Sutherland, Dan Tolan, Ron Burns, Chris Meering

Initiatives: Functional Design; Build the AI Driven Product Organization of Tomorrow

AI is rewriting the rules of product leadership, leaving behind CPOs who don't evolve. This Gartner Hype Cycle is your playbook to exploit emerging tech, outmaneuver disruption and aggressively reinvent your organization before your competitors do.

Analysis

What You Need to Know

The remit of the chief product officer (CPO) role is widening in the AI era. Once focused exclusively on overseeing product management (PM), today's CPO is expected to be a leader who extends the corporate strategy into the portfolio/product vision, strategy and product capabilities. The innovations in this Hype Cycle allow a CPO to help define the future breadth of the role and the boundaries of responsibility between the product team and engineering, marketing and other functions. In this inaugural CPO Hype Cycle, four themes capture the challenges and the innovations that will change the role in the years ahead:

- **New product management responsibilities:** Includes forward deployed engineers, embedded process intelligence and responsible AI.
- **Adoption of AI in product management:** Includes AI literacy for product teams, AI-assisted tools for rapid prototyping, autonomous product innovation, vibe coding and autonomous PM agents.
- **Enhancing existing processes for the new era:** Includes micro product teams, dynamic roadmapping for tech product management, product operations and hyper-synthetic data.
- **AI in the product portfolio:** Includes domain-specific GenAI models, AI-composed applications, sovereign cloud and new business models via APIs and MCP.

The Hype Cycle

This inaugural Hype Cycle for CPOs consists of a combination of new CPO role-specific innovations and those from other role- or market-focused Hype Cycles that Gartner identifies as particularly important to CPOs.

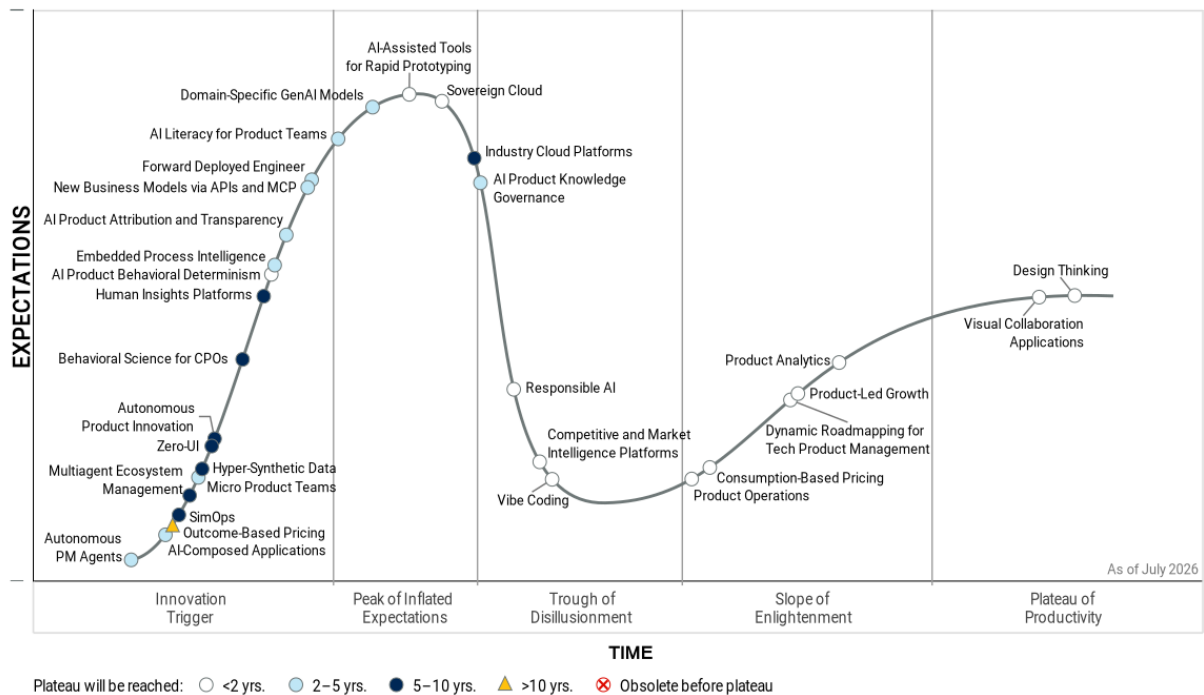
More than half the innovations published in this Hype Cycle are positioned in the Innovation Trigger phase because they have emerged as a result of either the adoption of AI into a vendor's product portfolio or from the deployment of AI technologies within the processes overseen by a CPO. Those in the Peak of Inflated Expectations or Trough of Disillusionment are a mix of AI-driven and other capabilities that are central to the delivery of the product mission. Innovations in the Slope of Enlightenment and into the Plateau of Productivity are not yet fully pervasive across all product vendors, and many are evolving in response to AI. CPOs may benefit from reviewing how they approach each innovation, even for those in later stages.

The Hype Cycle and its innovations help CPOs address some of the most common priorities facing the role in 2026:

- **Building the AI-driven product organization of tomorrow.** The 2025 Gartner Chief Product Officer Survey found that only 26% of CPOs could express strong confidence in their organization's preparedness given the accelerating pace of change driven by AI. ¹ Understanding the applicability of these innovations is a critical path to enhancing that confidence.
- **Develop a scalable, secure AI tech stack.** CPOs anticipate 56% of revenue growth will come from AI products. ¹ Innovations such as multiagent ecosystem management, sovereign cloud and zero-UI will have a strategic impact on scaling and securing products. CPOs must develop and implement an AI strategy as pressure increases from CEOs, boards and other stakeholders. It's not just about technology, it's also about practice.
- **Product strategies to win in the AI vendor races.** Forty-nine percent of CPOs' product innovation decisions are based on customer discovery, ¹ but Gartner client inquiries often highlight that product managers don't spend the time on customer engagement and discovery that their leaders would like. Many of the innovations in this Hype Cycle can help to remove non-customer-facing tasks from product managers and lead them to increase time with customers. They can also automate, manage and use the findings for more effective and responsive product strategies.

Figure 1: Hype Cycle to Support Chief Product Officers, 2026

Hype Cycle to Support Chief Product Officers, 2026



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The Priority Matrix

The Priority Matrix maps the time to maturity of various innovations such as technologies, processes and concepts in an easy-to-read grid format. It helps CPOs answer two high-priority questions:

- How much value will my function and the company receive from an innovation?
- When will the innovation be mature enough to provide this value at scale?

Transformational innovations can have a major impact on the role, design and operations of the product management team. For example:

- **AI-assisted tools for rapid prototyping are changing how product managers engage with customers.** Instead of going back and forth to validate requirements over weeks, product managers can co-create and test feature concepts with customers in near real time. This shortens feedback cycles, reduces misinterpretation, improves customer experience and shifts product discovery to continuous interaction with the customer.

- **Zero-UI** fundamentally changes human-computer interaction by moving beyond traditional screen-based interfaces, which have dominated for decades. By leveraging user context, intent and behavioral patterns, zero-UI allows technology to blend seamlessly into the user's environment.

High-benefit innovations are less likely to fundamentally change the role and design of the product management team, but will have a significant impact on its operations. CPOs should review these innovations to select those with the highest benefits in the near term because not all innovations can be pursued at the same time.

- **AI literacy** enables product organizations to safely automate and autonomize low-effort, low-creativity tasks while supplementing high-effort strategic planning. This drastically accelerates time to market, improves market analysis, and bridges the gap between AI hype and actual ROI. It ensures teams maintain human-in-the-loop oversight to mitigate hallucinations, navigate ethical risks, and maintain brand trust.
- Real-world data is often biased, incomplete, limited to past events and constrained by data privacy laws. **Hyper-synthetic data (HSD)** overcomes these constraints by modeling what could be rather than just what is, and it does so economically and at scale. HSD overcomes real data limitations, fostering new discoveries and accelerating innovation. CPOs relying solely on real data will struggle against competitors who adopt HSD to improve models and shorten time to market.

Moderate-benefit innovations have a narrower scope, but can still have a major impact. CPOs should work with their direct reports to identify which innovations in this category they should prioritize and address. Then CPOs can empower those leaders to take on responsibility for bringing them into the team. Enhancing competitive and market intelligence is just such an example. Results from Gartner's High Tech Product Management Score often cite this as an area lacking maturity inside product teams. As a result, this is an opportunity for ambitious and visionary product leaders to make their mark in the near term.

Table 1: Priority Matrix for Hype Cycle to Support Chief Product Officers, 2026

(Enlarged table in Appendix)

Benefit ↓	Years to Mainstream Adoption			
	Less Than 2 Years ↓	2 to 5 Years ↓	5 to 10 Years ↓	More Than 10 Years ↓
Transformational	AI-Assisted Tools for Rapid Prototyping Product Analytics Responsible AI Sovereign Cloud Vibe Coding	AI-Composed Applications	Autonomous Product Innovation Industry Cloud Platforms Micro Product Teams Multiagent Ecosystem Management SimOps Zero-UI	
High	AI Product Behavioral Determinism Consumption-Based Pricing Design Thinking Dynamic Roadmapping for Tech Product Management Product Operations Product-Led Growth Visual Collaboration Applications	AI Literacy for Product Teams AI Product Attribution and Transparency AI Product Knowledge Governance Domain-Specific GenAI Models Embedded Process Intelligence Forward Deployed Engineer Hyper-Synthetic Data New Business Models via APIs and MCP	Behavioral Science for CPOs Human Insights Platforms	
Moderate	Competitive and Market Intelligence Platforms	Autonomous PM Agents		
Low				Outcome-Based Pricing

Source: Gartner (July 2026)

On the Rise

Autonomous PM Agents

Analysis By: Dan Tolan, Charles Sutherland

Benefit Rating: Moderate

Market Penetration: Less than 1% of target audience

Maturity: Embryonic

Definition:

Autonomous product management (PM) agents are AI agents that process information, make decisions, take actions and achieve the goals of a product manager without human assistance. They are particularly suited for managing late-maturity and declining products. To successfully offload work from product managers, the agents require digital access to technical support cases, product financial performance metrics, product usage analytics, company policies, and product management tools and processes.

Why This Is Important (500 Characs Maximum)

AI is accelerating new product development, creating more products for already-stretched PM teams to manage while simultaneously pushing many non-AI products toward obsolescence. The emergence of autonomous PM agents is expected as AI inference capabilities become more powerful and widespread in use by product teams. Chief product officers will need to restructure teams, strategically deploying human product managers and autonomous PM agents to maximize operational impact while mitigating concerns about job displacement and product quality.

Business Impact

- By transferring the management of late-maturity and declining products to AI, companies can boost efficiency, manage legacy products through the late maturity and sunset stages of the life cycle effectively, and reduce the attrition of human product managers seeking more creative assignments.
- Chief product officers can reassign human product managers where their skill sets deliver the highest value to the organization, generally early in the life cycle of products, when they demand creativity and experience.

Drivers

- Product management organizations are increasingly using AI tools to improve the efficiency and effectiveness of overtasked human product managers.
- Product management tool vendors are introducing specialized AI assistants tailored to product management workflows, signaling a progressive evolution toward the introduction of autonomous machine product managers.
- The continued evolution of agentic AI will enable autonomous agents capable of making product decisions and taking actions without human intervention in data-rich environments.
- The widespread digitization of customer feedback, technical support cases, financial performance metrics, and product usage analytics provides the essential rich data foundation needed for machine product managers to operate.
- The emergence of domain-specific language models and synthetic customer environments to augment data collection will enable agentic and human product managers to make more confident and contextual decisions.

Obstacles

- The availability of autonomous PM agents will cause significant fear of replacement among human product managers.
- Autonomous PM agents require comprehensive digital access to highly sensitive customer and stakeholder interactions, competitive intelligence, and company policies, among other data — which may pose integration and security challenges, as well as trust issues with clients.
- Autonomous PM agents lack the high levels of creativity and human experience required to manage products in the introduction, growth, and early maturity phases of the product life cycle.
- Even in data-rich environments, the data lacks the political, emotional, or cultural context that comes from human interactions with stakeholders and influences roadmap decisions.
- Customers and stakeholders may be reluctant to interact directly with a machine product manager, limiting access to qualitative insights.

User Recommendations

- Prepare the digital access to required data sources for customer and stakeholder interactions and feedback, competitive and market intelligence, technical support cases, product financial performance metrics, product usage analytics, company and organizational policies, and product management tools and processes.
- Conduct an extensive pilot with human oversight prior to autonomous deployment.
- Deploy machine product managers exclusively for products in the late maturity or declining stages when the technology has been proven, assigning them data-rich tasks like sunseting and end-of-life withdrawal.
- Assign human product managers to roles requiring ideation and the management of products in their early life cycle stages to maximize creative and strategic growth.
- Position the introduction of machine product managers as highly beneficial to your human team by emphasizing that the technology will relieve them from the burdensome, boring, and career-limiting task of managing declining products.

Gartner Recommended Reading

[AI Vendor Race: Product Management in the Age of Generative AI](#)

AI-Composed Applications

Analysis By: Dan Tolan, Charles Sutherland

Benefit Rating: Transformational

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

AI-composed applications use generative AI to dynamically assemble modular business capabilities via APIs in response to free-form conversational and multimodal prompts. They decouple user interfaces from back-end logic, shifting user interactions from rigid, procedural workflows to outcome-focused experiences driven by on-demand code generation and intelligent AI agents.

Why This Is Important

The evolution of AI is shifting user expectations from static workflows to outcome-focused experiences. Traditional form-based products will be rendered obsolete as users become conditioned to query applications using natural language for business results spanning domains. Chief product officers (CPOs) who fail to prepare their portfolios for this disruption now risk significant market share loss to competitors and visionaries who embrace dynamic AI composability.

Business Impact

AI-composed applications will significantly alter enterprise software product life cycles, pricing models and organizational structures. They have the potential to render traditional applications obsolete. By enabling free-form composability across previously disjointed business processes, these applications allow users and AI agents to execute tasks without rigid departmental boundaries, opening new opportunities for outcome-based revenue.

Drivers

- Expanded adoption of GenAI is conditioning users to interact with applications through natural language queries rather than form-based, static UI paths.
- The evolution of AI agents requires dynamic access to a growing library of product capabilities and data to operate efficiently and deliver increasing value.
- Composable platform architectures already decouple critical product capabilities from user interfaces, making them available as packaged business capabilities via flexible APIs.
- The growing ability of AI to generate code on demand enables dynamic solutions contextualized to specific user tasks.

Obstacles

- Achieving the necessary architectural flexibility requires significant upfront engineering investments with little or no immediate revenue return.
- Siloed product teams and decentralized product management structures are still common, complicating the process of customer discovery and validation for cross-functional workflows.
- Traditional applications risk being relegated to a headless role, merely delivering data to superior third-party AI orchestrators or user interfaces.

User Recommendations

- Augment traditional user interfaces with prompt-based GenAI access in the next 12 to 36 months to meet changing user expectations.
- Transition to a composable architecture within 24 to 48 months by ensuring product roadmap investments include well-defined, component-level APIs for critical capabilities.
- Plan now to move off of rigid legacy pricing models (e.g., per user seat) and introduce/layer in value-based pricing metrics that align with outcome-driven workflows that will be served by AI-composed apps in the future.
- Decentralize your product organization into cross-functional teams that include, but are not limited to, dedicated AI product managers, data scientists and technical architects.

Gartner Recommended Reading

[Chief Product Officers Must Prepare for the Disruption of AI-Composed Applications](#)

[Use AI-Ready Data With Composable Architecture to Deliver Intelligent Applications](#)

Outcome-Based Pricing

Analysis By: Ron Burns

Benefit Rating: Low

Market Penetration: Less than 1% of target audience

Maturity: Embryonic

Definition:

Outcome-based pricing (OBP) models tie software price directly to the business results received from the software. OBP innovations still suffer from hype and overpromises that place significant revenue risk on providers since success is rarely 100% attributable to software alone. OBP is distinct from value-based (VBP) and consumption-based (CBP) pricing, which often utilize volumetrics that act as proxies for product execution and delivered benefits.

Why This Is Important

As AI use cases grow more complex, buyers fear unproven ROIs and unpredictable technical costs. The promise of OBP to bridge this ROI confidence gap is attractive to buyers looking to reduce risk by aligning software expenditures directly with business benefits achieved. This shifts focus from cost optimization to mutual success, potentially lowering churn and empowering providers to profitably capture the upside of high-value offerings.

Business Impact

- Ties software costs to verifiable outcomes, transcending many adoption hurdles while minimizing buyers' perceived ROI risk.
- Scales price directly with delivered value, justifying increased revenue for high-value use cases and enabling portfolio expansion without requiring new pricing models.
- Enables a defensible go-to-market strategy where the value proposition, ROI calculators, and pricing model all reference consistent outcome metrics.

Drivers

- Many buyers have lost confidence in the promised ROI of modern AI solutions, driving demand for pricing tied transparently to business outcomes.
- AI is changing the definition of products and software. Trends such as “service as software” are changing the perception of value received from traditional software offerings.
- Uneven value distribution among users creates poor value-to-price ratios, pushing buyers away from traditional user-based and enterprise pricing models.
- Technical consumption metrics (e.g., tokens) are disconnected from business outcomes, often causing budget predictability concerns.
- AI-first providers are leveraging their pricing models as a competitive differentiator against incumbent providers.
- Rewards-based pricing incentivizes positive implementation behaviors and reinforces mutually beneficial outcome-aligned models.
- When a pricing model fails to align with how a product actually delivers value, it introduces buyer friction and pricing surprises. This forces buyers to conduct additional value assessments, which are a top source of delayed deals and stalled renewals.

Obstacles

- Outcomes for AI are highly subjective, use-case-specific, and difficult to generalize across broad customer bases. Buyers struggle to establish baseline metrics to measure outcomes, making calculating ROI and predicting long-term costs for software products exceptionally hard.
- Very few analogous pricing approaches exist beyond e-commerce “percentage of sales” or service project “on-time delivery bonus.”
- Translating technical consumption and business workflow complexity into intuitive outcome-aligned metrics and pricing requires sophisticated buyer- and seller-enablement tools.
- AI value and outcomes affected can be latent and unevenly distributed, making it challenging to align steady subscriptions to fluctuating outcome achievements.
- Quantifying soft metrics, like risk avoidance, and attributing them directly to a provider’s solution are inherently ambiguous.
- Creating custom, outcome-based quotes for every unique use case severely limits sales scalability and degrades buying efficiency.

User Recommendations

- Use an outcome, volumetric, and predictability (OVP) framework to create a pricing model built on volume tiers of outcome-sensitive metrics. This can be a stepping stone on the journey to pure OBP.
- For the V in OVP, create value-based pricing metrics that act as simplified proxies for complex outcomes to help business buyers understand product ROI.
- For the P in OVP, implement transparent predictability policies like usage caps or overage forgiveness to eliminate buyer fears of runaway costs that may be incurred before an outcome is achieved.
- Categorize the value and outcome goals of use cases by mapping scenarios into small, medium, and large classifications with corresponding price points.
- Establish a unified go-to-market (GTM) value chain that uses consistent value metrics across your product’s value proposition, customer value assessments, and final pricing model to accelerate both initial purchases and renewals.

Gartner Recommended Reading

[Pricing Complexity Is a Hidden Liability That Will Stall Growth for AI Software](#)

[AI Vendor Race: Agentic AI Pricing Models Evolve to Address Buyer ROI Anxiety](#)

[Pricing Forgiveness Policies Succeed Over Weaponizing Overages for AI Adoption and Growth](#)

[2 Pricing Trends That Enable Product Managers to Target Complex Use Cases](#)

[How to Build an Effective Value-Based Tech Services Pricing Model](#)

[Ignition Guide to Creating a Value-Based Pricing Model as a Tech CEO](#)

SimOps

Analysis By: Leo Li, Bin Li, Roger Williams, Frank Buytendijk, Alfonso Velosa

Benefit Rating: Transformational

Market Penetration: Less than 1% of target audience

Maturity: Embryonic

Definition:

SimOps uses simulation and feedback to design optimal business solutions. It lets humans set intentions while machines simulate, execute and adapt composable solutions in near real time. By enabling seamless collaboration across humans and machines, both within the organization and the ecosystem, SimOps creates a navigation-like experience and drives greater autonomy.

Why This Is Important

Autonomous business uses self-improving, adaptable technology to make decisions, take action and create new types of value by increasing people autonomy and machine autonomy. This requires a new operating model that leverages AI's productivity gains, like SimOps. It allows organizations to rapidly explore and implement autonomous business solutions through intention input, machine simulation, feedback and composable solution delivery, a key capability for navigating and overcoming today's deglobalization, rise of technology sovereign and tech-driven transformation.

Business Impact

SimOps accelerates the shift to autonomous business by starting with user intent input rather than demand input, which is a declarative approach prioritizing the accurate formulation and interpretation of high-level business goals before an AI acts. (See [Intent Engineering for Autonomous Businesses: Achieving AI Alignment at Scale](#)). It acts alongside AI agents and feedback loops to elevate simulation technologies to a strategic approach. This approach impacts all aspects of the autonomous ecosystem, from individual elements like self-adapting products to the interactions between them, such as designing operations floors, managing inventory and engaging with arbitrage markets or machine customers. Ultimately, SimOps creates new opportunities to enhance, transform and reshape business models and operations.

Drivers

- Autonomous business poses both an opportunity and a challenge for CIOs and business leaders, who must identify the key factors needed to prepare for and define what autonomous business will look like. SimOps addresses this by enabling organizations to rapidly and continuously explore and implement autonomous business solutions in a composable way, a critical capability for navigating the uncertainties of deglobalization and technology-driven transformation.
- In addition to the end user perspective, high-tech software vendors are also seeking this new approach. They are looking for guidance in developing future-oriented business applications that support autonomous business, particularly because of its navigation-like experience.
- SimOps assists in establishing a solid framework for autonomous businesses by illustrating the evolution of the five key elements of autonomous business (autonomous operations, augmented workforce, autoadapting products, machine customers and the programmable economy) and their interactions (see [Are You Ready for Autonomous Business?](#)). This approach effectively addresses the value assessment of autonomous businesses in a tangible manner.
- As autonomous business becomes a reality, the focus will shift to addressing implementation and operational challenges that require real-time adaptability and autonomy, prompting the development of a new methodology to meet these needs.
- Autonomous businesses will seek a custom approach to accelerate the deployment of essential business and technology components, steering leading-edge enterprises toward unique capabilities, with SimOps providing crucial support in these efforts.

Obstacles

- Technologies supporting SimOps (e.g., GenAI, world models, digital twins) require trade-offs in simulation complexity and maturity, matching the desired level of autonomy. Many of these technologies are still developing, making integration, deployment costs and effectiveness uncertain, which complicates business value assessments. CIOs must balance exploration, cost and resources when choosing simulation levels.
- SimOps faces cultural resistance as it merges IT and business functions, shifting the focus from technology to business and potentially making some IT skills obsolete.
- Autonomous business works best in greenfield environments, requiring new setups and presenting challenges with integration, standards and costs.
- SimOps increases the attack surface due to sensitive data and autonomous operations that may exceed established boundaries without proper controls.
- Few enterprises have fusion teams or CoEs for SimOps, and key technologies like world models and intelligent simulation remain immature, limiting adoption.

User Recommendations

- Develop a vision for how SimOps could transform IT and business by pinpointing areas that are limited by current approach. As the overall environment evolves, these limitations create gaps. Envision what changes would occur if SimOps were to eliminate these constraints, allowing IT and business to adapt more dynamically to the shifting landscape.
- Explore your current and future planned IT assets to see if they are/will be compatible with enablers of autonomous business (e.g., intelligent application) and SimOps, enabling both business and IT to begin exploring autonomous business opportunities.
- Engage business leaders (e.g., EVP of manufacturing), executive leaders (e.g., COO), and AI, data and other technology leaders, to explore SimOps for business operations, such as for supply chain scenario analysis or arbitrage market and pricing optimization.

Gartner Recommended Reading

[Innovation Insight: SimOps – A Catalyst for the Next Business Era](#)

Emerging Tech Adoption Radar 2026: Drive Efficiency Through Intelligent Automation and Process Innovation

Autonomous Business: What's Next After Digital Business — Barcelona Presentation

Multiagent Ecosystem Management

Analysis By: Ayelet Heyman, Marissa Schmidt, Esha Bhatia

Benefit Rating: Transformational

Market Penetration: Less than 1% of target audience

Maturity: Emerging

Definition:

Multiagent ecosystem management is the product-led discipline of governing autonomous agent swarms. While orchestration manages technical execution and task flows, ecosystem management provides the strategic governance layer for brand safety, cost, and cross-agent logic. It enforces communication protocols, conflict resolution frameworks, and delegation contracts that prevent fragmented liabilities, ensuring a scaling fleet of agents remains a secure, cohesive, reliable, and defensible product.

Why This Is Important

Siloed agents are the technical debt of the agentic era. Chief product officers (CPOs) who build isolated agents create governance blind spots, increase operational friction, and risk identity fragmentation, contextual breaches, failed integrations, and lost user trust. In the multiagent enterprise, interoperability is no longer solely an engineering goal; it is a survival mandate for delivering secure, seamless, traceable, scalable, and future-proof products.

Business Impact

- **Autonomous value:** Unlocks end-to-end workflows, moving from simple assistance to full job completion.
- **Identity security:** Eliminates “shadow AI” by centralizing cross-agent identity mapping and enforcing unified permissioning across the ecosystem.
- **Unit economics:** Boosts margins by orchestrating less expensive, specialized models over expensive monolithic ones.
- **Resilient scaling:** Allows plug-and-play agent integration and automated conflict resolution, protecting brand trust from erratic AI logic.

Drivers

- **Transition to goal-specific agentic workforces:** The shift from one-size-fits-all monolithic large language models (LLMs) to ecosystems of specialized agents powered by small language models (SLMs) requires an orchestration layer to manage the handoffs, supervision, and optimization of these specialized entities as they collaborate on complex product goals.
- **Rising user expectations for outcomes:** Users are no longer satisfied with receiving information or answers to queries. Instead, they expect end-to-end outcomes and complete solutions to complex problems that often require multiple agents to work together autonomously and in coordination. This shift in user expectations drives the need for seamless agent collaboration and orchestration.
- **Interoperability as a core procurement requirement:** In the agentic era, interoperability is no longer a nice-to-have API feature but a primary procurement requirement. Enterprises demand solutions that prevent cross-vendor friction and enable agents from different providers to communicate, share context, and work together without manual intervention. Products that lack robust interoperability risk being excluded from enterprise adoption.
- **Governance as the new value driver:** As enterprises move from siloed tools to interconnected multiagent ecosystems, the primary source of value shifts from agents to governance layers. These layers not only connect agents but also mediate interactions, resolve conflicts, and validate outcomes, ensuring that the system as a whole is reliable, secure, and aligned with business objectives.

- **Security compliance and trust as foundational requirements:** The proliferation of autonomous agents introduces new risks around identity management and data flow. The governance layer is essential to enforce security policies, maintain compliance, and provide accountability, protecting the organization and its users from unintended consequences or malicious behavior.

Obstacles

- **Cross-vendor autonomous friction and liability:** Defining which agent has the ultimate authority when agents from different vendors disagree on a course of action is complex and can create legal and operational risks.
- **Lack of standardization:** Differing protocols, data formats, and APIs across vendors hinder seamless agent collaboration.
- **Security and identity management:** Coordinating permissions and access control across a dynamic set of agents increases the risk of unauthorized actions or data leakage.
- **Debugging and observability:** Tracing errors and reasoning logic across multiple agents is a high-order debugging challenge that threatens product reliability and user trust.
- **Governance at scale:** Establishing automated policies for delegation and escalation becomes exponentially complex as the ecosystem grows, leading to unpredictable agentic drift.
- **User experience:** Ensuring a seamless, intuitive interface while abstracting away agent complexity remains a significant design challenge.

User Recommendations

- **Implement a supervisor layer:** Route interactions via an orchestrator to manage handoffs and resolve conflicts.
- **Build for semantic intent:** Standardize how agents share goals and context; without a common intent contract, collaboration fails.
- **Enable third-party execution:** Ensure capabilities are discoverable and executable by external agents and governable by emerging agent control plans (e.g., Microsoft Agent 365).
- **Architect to agent-centricity:** Rebalance investment from UI/UX toward Swarm APIs and open-schema event fabrics.
- **Decentralize decision making:** Use specialized SLMs for tactical tasks and high-efficiency models for reasoning, enabling local agent negotiation without central bottlenecks.
- **Stop building siloed agents:** End the practice of shipping isolated agents that cannot share context. Every stand-alone agent is a future integration tax.
- **Stop hard-coding logic:** Avoid rigid scripts. To remain resilient, agents must be governed by outcomes and constraints, not fixed paths.

Gartner Recommended Reading

[Tech Disruption Curve: Multiagent Swarms — The Future of Agentic AI Security Operations](#)

[Build a “Quantitative” AI Trust Strategy to Drive GTM Efficiencies](#)

Hyper-Synthetic Data

Analysis By: Dan Tolan, Charles Sutherland

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Hyper-synthetic data is a specialized form of synthetic data generated using advanced simulation engines and generative AI techniques. It is designed to simulate complex scenarios, evolving behaviors and interactions at scale, making it suitable for AI system training, advanced analytics and scenario planning. Unlike traditional synthetic data, hyper-synthetic data can dynamically adapt and is highly customizable for specific domains, offering enhanced privacy and compliance benefits.

Why This Is Important

Real-world data is often biased, incomplete, limited to past events and constrained by data privacy laws. Hyper-synthetic data overcomes these constraints by modeling what could be rather than just what is, and it does so economically and at scale. It overcomes real data limitations, fostering new discoveries and accelerating innovation. CPOs relying solely on real data will struggle against competitors who adopt HSD to improve models and shorten time to market.

Business Impact

CPOs can leverage hyper-synthetic data to unlock opportunities in regions or populations where real data is scarce, highly regulated or expensive. It enables product teams to generate data economically and at scale, to simulate numerous future scenarios quickly — accelerating advanced analytics and AI modeling for verticals like life sciences, autonomous vehicles and supply chain.

Drivers

- Real-world data is often insufficient for validating new product concepts or training AI on outlier events or hard-to-reach demographics, driving the need for generated datasets to simulate customer environments or train algorithms on rare scenarios.
- Advancements in generative AI allow organizations to simulate massive, differentiated buyer profiles and test products faster, cheaper and more comprehensively within synthetic populations.
- The prohibitive cost, time and complexity of collecting, cleaning and augmenting real-world data makes generating data an attractive alternative for enterprises.
- Market demand for exploring complex future scenarios, such as simulating compounding environmental or structural factors, requires HSD as both an input and output for advanced testing.
- Expansion of AI use cases into specialized sectors — such as space or undersea environments or rare medical research — necessitates robust datasets for AI model training where real data is unavailable or dangerous to collect.

Obstacles

- Ethical and legal concerns regarding intellectual property infringement, as fictional generated information may closely resemble real-world data or competitor offerings.
- Potential for overreliance on hyper-synthetic data with no anchor to real-world data.
- While HSD holds the promise of generating cleaner data, the risk of generating biased data remains if the generative model used to create it contains biases.
- Potential for harm through misuse by bad actors.
- The necessity of creating dedicated teams, ethical frameworks and governance practices for hyper-synthetic data management, which requires new operational investments and policies.
- There may be a level of user skepticism as data may be perceived to be “inferior” or “fake.”

User Recommendations

- Enhance internal product management processes by leveraging generative AI to build synthetic customer populations from hyper-synthetic data for prototyping and simulating product performance.
- Capitalize on market growth by identifying internal, domain-specific use cases that your organization can monetize and package as data product offerings.
- Use hyper-synthetic data to simulate customer populations or train AI models for use cases where data is scarce, nonexistent or dangerous to collect.
- Invest in hyper-synthetic data engineers to enhance your competitive edge, and establish dedicated hyper-synthetic data management and governance teams.
- Prepare for a future dominated by hyper-synthetic data by identifying operational use cases, such as proactive threat detection, where hyper-synthetic data enhances business decisions.

Sample Vendors

Aindo; Anyverse; SKY ENGINE AI; Synthesis AI

Gartner Recommended Reading

[Chief Product Officers Who Leverage Hyper-synthetic Data Will Outpace the Competition](#)

[Emerging Tech: Tech Innovators in Hyper-Synthetic Data for Behavior and Population Simulation](#)

[Emerging Tech: AI Vendor Race: Hyper-Synthetic Data Supercharges Behavioral Scenario Planning Success](#)

Micro Product Teams

Analysis By: Peter Hyde, Nabeeha Ahmed

Benefit Rating: Transformational

Market Penetration: Less than 1% of target audience

Maturity: Embryonic

Definition:

A micro product team is an AI-native software engineering team comprising a product manager, product designer and product engineer. These talent-dense teams are empowered, autonomous and fully accountable for the success of their product.

Why This Is Important

AI is transforming software engineering, shifting focus from cost-centric development to customer-centric innovation. AI-native micro product teams, with their compact size, enable rapid decision making and adaptation. Their talent density ensures high-quality outcomes, while autonomy empowers them to efficiently deliver creative, customer-focused solutions aligned with market demands and user needs with a fast cadence.

Business Impact

Micro product teams have the potential to transform organizations. Their cost-efficient structure, faster time to market, increased innovation and enhanced customer focus offer a competitive advantage. Additionally, their flexibility and scalability improve organizational resilience and responsiveness to market changes, solidifying long-term success. Risks include difficulties in scaling change, and sustainable knowledge management.

Drivers

- **Pervasive AI:** Successfully integrating AI throughout product development enhances capabilities, enabling micro product teams to innovate faster and more efficiently, driving product value.
- **Economic efficiency:** Amid economic challenges, organizations seeking cost-effective solutions find the lean design of micro product teams appealing.
- **Business agility:** The demand for rapid adaptation to evolving market needs and customer expectations emphasizes the value of small, product-focused teams capable of pivoting quickly.
- **Customer-centricity:** Micro product teams excel in delivering personalized, customer-centric solutions, ensuring products are closely aligned with rapidly changing customer needs and preferences.

Obstacles

- **Organizational resistance:** Resistance from those accustomed to established ways of working is common when shifting from a traditional hierarchical structure to autonomous product teams.
- **Skill gaps:** Staffing the roles for highly skilled, multidisciplinary team members is challenging, potentially limiting the potential for micro product teams.
- **Scaling risks:** Managing enterprise-scale operations with many micro product teams, particularly when dealing with interconnected dependencies, poses a significant challenge to widespread adoption.
- **Single points of failure:** Robust implementation and effective knowledge transfer is required to avoid brittle teams where the absence of a single person halts progress.
- **Balanced governance:** Empowering teams while maintaining strategic oversight and strong governance can be difficult, affecting decision making and accountability.

User Recommendations

- Transition to a product operating model with dedicated product teams that deliver rapid customer value securely and independently, incorporating rapid end-user feedback.
- Embed AI capabilities into all roles on product teams to enhance automation, boost efficiency, drive innovation and generate practical value.
- Prioritize skill development to equip team members with the expertise needed to innovate and meet the diverse demands of talent-dense teams.
- Select a candidate for a micro product team proof of concept to assess the approach's effectiveness within your organization. Set clear objectives and provide robust support throughout the team's creation and evolution.
- Conduct a comprehensive analysis of the team's achievements by evaluating their impact on business results to demonstrate the effectiveness of its work.
- After successfully implementing pilots across different business areas, scale progressively with strong governance.

Gartner Recommended Reading

[Leadership Actions for a Successful Project-to-Product Transition](#)

Product Owner Essentials

The Emergent Role of AI in Product Management

Autonomous Product Innovation

Analysis By: Chris Meering

Benefit Rating: Transformational

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Autonomous product innovation is an AI-powered approach that transforms products into dynamic, self-evolving systems capable of continuous self-improvement with minimal human intervention. In this approach, autonomous agents undertake real-time demand sensing, enabling products to continuously evolve based on real usage, not release cycles, and they improve functionality and user experience on their own, not just through human-planned updates.

Why This Is Important

Products that predict demand and evolve at machine speed decouple revenue growth from headcount. This results in a lower marginal cost to scale, better forecasting accuracy, and an ability to grow revenue without continually adding execution overhead. Product leaders who capitalize on self-learning advancements will accelerate innovation and dominate their markets.

Business Impact

- Autonomously evolving solutions powered by AI agents deliver significant performance improvements and drastically higher valuations, permanently transforming competitive economics and investor expectations.
- Real-time evolution of solutions collapses time to market and erases traditional life cycle margins.
- These solutions decouple revenue growth from traditional headcount. Startups using this approach are already proving this is possible, reaching milestones like \$1 million ARR per employee.

Drivers

- AI now enables automated systems to learn from real product usage and identify improvement opportunities through simulated scenarios.
- Real-time demand sensing allows chief product officers to anticipate market shifts and identify emerging patterns before competitors can react. Autonomous solutions accelerate the time taken to respond to this demand sensing by removing the need for human intervention.
- Rapid parallel experimentation drastically shortens R&D testing and learning cycles from months to mere weeks.
- AI-powered coding assistants and autonomous development pipelines significantly reduce build times and errors, enabling frequent releases.
- Continuous experience intelligence captures millions of daily microinteractions, transforming them into actionable product feedback without human involvement.
- When delivery is continuous and autonomous rather than being scheduled and requiring human intervention, products stop being static and start adapting and fixing themselves in real time.
- The decoupling of revenue growth from headcount transforms investor expectations, enabling midsize providers to outpace larger incumbents by generating significantly more revenue per employee.
- The use of autonomous AI agents within products to drive innovation is already visible in markets such as developer tools and infrastructure (APIs, platforms, and security); fintech, payments, and risk infrastructure (predict fraud, credit, or pricing in real time); together with marketplaces and ad tech (autonomous optimization of pricing, matching, and demand prediction). Success here will drive greater adoption across all markets.

Obstacles

- High architectural complexity and rapid deployments risk outages, data silos, and unclear accountability without strong monitoring.
- Insufficient AI governance maturity exposes organizations to severe regulatory fines, contract cancellations, and market share erosion.
- Unchecked autonomous features and pricing updates create unclear accountability, creating liability risks if business objectives are violated or incidents occur.
- Product managers or product owners are unable to keep up with reviews of autonomous decisions (potentially thousands of decisions per second) and suffer alert fatigue even at lower rates, leading to rubber-stamp approvals.
- Constant, self-learning product updates can disrupt user workflows and cause frustration if not balanced with clear communication.
- Most organizations are not accustomed to the pace of product change enabled through autonomous product innovation, making transformation difficult.

User Recommendations

- Integrate autonomous scenario modeling and rapid experimentation into core product evolution strategies.
- Redesign product operating models around human-agent collaboration and continuous cross-functional orchestration.
- Shift product teams from routine task execution toward oversight, ethics, and exception handling.
- Embed robust governance across autonomous feature and pricing updates, adaptive pricing approaches and continuous change management to mitigate regulatory and legal risks.
- Align early with AI governance standards and create transparent dashboards detailing audit status, explainability, and liability.

Gartner Recommended Reading

[Tech FutureSight: Autonomous Product Innovation Will Determine Future Market Leadership](#)

[AI Vendor Race: 10x Growth Efficiency: Trailblazers Set New Revenue Standard for Winning the AI Race](#)

[Managing Agentic AI's Unpredictable Nature Inside Your Product](#)

[AI Vendor Race: Critical Insights: The AI Leadership Flywheel Defines the Winners in the Tech Vendor Race](#)

Zero-UI

Analysis By: Paige Kirk

Benefit Rating: Transformational

Market Penetration: 1% to 5% of target audience

Maturity: Embryonic

Definition:

Zero-UI represents a foundational shift where traditional screen-based interfaces are minimized or eliminated entirely and replaced with “invisible interactions.” Instead of relying on a mouse and keyboard, users engage through natural inputs, such as voice and gesture. In addition to these inputs, zero-UI systems leverage context, such as the user’s environment, current activity and historical behavioral patterns, to create seamless experiences.

Why This Is Important

Zero-UI fundamentally changes human-computer interaction by moving beyond traditional screen-based interfaces, which have dominated for decades. By leveraging user context, intent and behavioral patterns, zero-UI allows technology to blend seamlessly into the user’s environment. This paradigm shift requires designing for implicit interactions, where systems anticipate user needs and respond naturally, rather than relying explicitly on user interactions.

Business Impact

In zero-UI, users express intent, and the system autonomously interprets, coordinates and executes tasks, delivering results without further user involvement. This approach reduces cognitive load, increases accessibility and redefines digital interaction. As users become accustomed to these streamlined experiences, they will increasingly expect it in all digital products. Organizations that fail to adapt to this new paradigm risk losing users to competitors who embrace it.

Drivers

- **Advancements in generative AI:** Recent progress in generative AI has enabled natural, conversational interfaces, such as chatbots like Anthropic's Claude, Google's Gemini and OpenAI's ChatGPT, to become widely adopted and expected by users, accelerating the shift to zero-UI.
- **Pervasive AI agents:** Moving beyond simple chatbots, AI agents are becoming the primary point of interaction for digital products and services, enabling users to accomplish tasks through a single command and minimizing the need for manual navigation.
- **Proliferation of smart devices:** Biometric sensors in wearable devices, smart speakers with AI assistants and motion detectors in smart home devices are increasingly incorporated into daily life. This integration enables interactions that respond to a user's unique context and needs without the use of traditional screen-based UI.
- **Digital fatigue:** As screen time is higher than ever before, users seek technology that blends seamlessly into their environment, reducing the friction and fatigue associated with traditional interfaces.

Obstacles

- **Trust and user control:** Zero-UI is reliant on users relinquishing much of their control to AI agents. Users must feel confident in the supporting technology, which is inherently unpredictable. Building trust in these systems poses a challenge, particularly for sensitive tasks that involve personal or financial data.
- **Privacy and data requirements:** For zero-UI to be truly effective, a large amount of data and context is required, meaning that devices are continuously listening, monitoring and tracking the user. While the result provides convenience, it simultaneously creates significant concerns around privacy, data protection and user consent.
- **Accessibility trade-offs:** While invisible interactions improve usability for some, it may inadvertently reduce it for others who rely on explicit visual cues and controls.
- **Potential for unintuitive experiences:** Zero-UI experiences may feel unintuitive, less transparent and offer less control compared to traditional systems.

User Recommendations

- Learn the principles of context-aware computing, which are systems that leverage sensors to detect and adapt to the user's situation in real time. This requires a shift from explicit interaction, where the user tells the system what to do through typing or clicking, to implicit interaction, where the user behaves naturally to achieve a goal.
- Identify high-value use cases for zero-UI based on where robust user data is available, natural interfaces are more intuitive than traditional, screen-based ones and users feel confident delegating control to AI agents.
- Design systems of intent by applying service design principles, mapping out the actors, frontstage touchpoints and backstage actions involved to create seamless experiences where users don't see the underlying mechanics.

Gartner Recommended Reading

[How AI Is Transforming UX for Software Engineering Leaders in 2026](#)

[Build Human-AI Partnership to Drive Agentic AI Adoption and Business Value](#)

[AI Agents Will Be Your Top Users – Here's How to Prepare for Them](#)

Behavioral Science for CPOs

Analysis By: Craig Roth

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Chief product officers (CPOs) apply behavioral science — including psychology, neuroscience, sociology, and economics — to understand user motivations, decision making, and resistance to change. This enables them to design products with higher adoption rates, improved engagement, and greater value for buyers.

Why This Is Important

CPOs are discovering that factors beyond price and features are influencing buyer and user behavior. The experiences of buyers and users are filtered through biases, which in turn drive behaviors that can dictate how value is perceived. Buying teams blend the views and experiences of an increasing number of members, while users may resist adoption of unique features that underpin product differentiation. As AI increases user autonomy, applying behavioral science is vital to bridge the gap between product value and adoption.

Business Impact

The benefits of advanced technology will only accrue if it is used to create value as intended. Technology — in the form of nudgetech and digital adoption platforms (DAPs) — has demonstrated the ability to increase user engagement. Research shows that companies applying behavioral science principles outperform peers by 85% in sales growth and over 25% in gross margins, proving that psychology powers the bottom line (source: [Time Is Money — Using Behavioral Science to Drive Research Agency Growth](#), Research World).

Drivers

- **Driving adoption:** Consumption-based pricing and product-led growth motions depend on vigorous product usage after the sale. But tech providers report difficulty moving beyond pilots or small groups to large-scale deployments. Behavioral science is a mature discipline now being applied to modern technology to reduce friction and user resistance. By understanding the psychological barriers to adopting new capabilities, product leaders can ensure that the more advanced, differentiated capabilities are embraced by their target audiences.
- **Mitigating user sabotage and anxiety:** The stakes for psychological alignment are rising. As early as December 2023, 54% of users reported engaging in passive behaviors, such as reduced or delayed usage, after negative experiences with organization-provided applications (source: 2023 Gartner User Behavior and Influence Survey). Addressing the “human reality” of how people behave in practice — beyond how they should behave given the product’s features — can lower barriers to new information and change, thereby enabling generation of positive outcomes with the product.
- **Linking experience to measurable outcomes:** While tech providers have rallied around “experience,” that investment only yields a return when it translates into specific user behaviors. Building on the success of DAPs, newer analytical techniques and AI assistants are now emerging to personalize interactions and shift user behavior based on real-time usage data, directly linking product design to usage-generating techniques.

Obstacles

- **Prioritization of features and pricing:** Product roadmaps traditionally focus on features and pricing models, leaving little room for the psychological subtleties of human motivation. This creates a blind spot where the deeper reasons for user resistance or friction are ignored in favor of more features.
- **Scarcity of specialized expertise:** There is currently a significant talent gap for workers with advanced degrees or backgrounds in behavioral science. Therefore, companies face a steep learning curve when translating raw usage data and voice of the customer (VoC) sessions into interventions that change user behavior.
- **Ethical concerns:** Some behavioral techniques risk appearing manipulative if done clumsily — effectively “programming the user.” This can lead to a trust deficit if transparency is lacking.
- **Technical integration hurdles:** Effective nudging requires sophisticated personalization and robust data collection to be built into the core system architecture, rather than being bolted on as an afterthought.

User Recommendations

- Develop and communicate behavioral science techniques while defining an employee enablement offering to improve technology adoption and end-user digital dexterity.
- Implement dashboards that measure the depth of usage and the adoption of advanced functions.
- Integrate nudgetech and DAPs to guide users toward high-value behaviors in real time.
- Address common decision-making biases when driving engagement with buyers and users to overcome resistance. In particular, focus on:
 - Status quo bias (fear of change), by diminishing the size of the change (through enablement and change-sensitive UX design) while showcasing the positive outcome
 - Loss aversion (reluctance to invest in change to avoid risk), by offering free trial or demo environments to reduce initial risk
 - Confirmation trap (ignoring evidence that challenges one’s opinion), by providing continuous feedback on advanced usage and positive outcomes

Gartner Recommended Reading

[Understanding User Influence Personalities](#)

[Why People Change How They Work, Why They Sometimes Resist and What You Can Do About It](#)

[3 Steps to Motivate Employees Using Behavioral Science](#)

[Apply Behavioral Science Tactics to Drive Successful Finance Transformation](#)

[Building a Neurocentric Organization Is the Next Gamechanger](#)

Human Insights Platforms

Analysis By: Ron Burns, Paige Kirk, Sarah Baumunk, Brent Stewart

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Human insights platforms represent an emerging class of voice of the customer (VoC) platforms that help organizations understand the “why” behind human user behaviors, thoughts and emotions when using digital products. By using AI, these platforms streamline a wide range of manual user research activities, including panel recruitment, moderated and unmoderated interviews, and usability testing.

Why This Is Important

Traditional user research is siloed and slow, and it is constrained by the complexity of analyzing large volumes of unstructured qualitative data. Usability testing creates a bottleneck in agile development, and this bottleneck intensifies with AI-enabled software development life cycles (SDLCs). Human insights platforms use AI to accelerate, not replace, traditional user research activities, enabling rapid evidence-based insights and democratizing research across the organization.

Business Impact

- Significantly reduce user research time and costs in scenarios with a preponderance of unstructured data (e.g., user interview transcripts and user enhancement requests).
- Allow teams to unearth friction points in product user journeys and optimize feature utilization.
- Enhance product-market fit and customer satisfaction by validating concepts early, avoiding costly rework and ensuring new features meet real user needs before engineering begins.

Drivers

- Advances in AI and machine learning automate time-consuming tasks involved in analyzing direct end-user feedback, such as transcription, thematic tagging and report generation, thereby accelerating time to insight.
- The shift toward AI-enabled rapid prototyping requires product teams to maintain always-on access to fast, iterative user feedback.
- Growing demand to democratize research enables nonresearchers, such as product managers and designers, to conduct reliable studies using standardized templates.
- Access to large, integrated global participant networks and panels allows teams to recruit and screen highly targeted user segments in minutes rather than weeks.
- The need for a centralized, unified and searchable knowledge base prevents insights from being lost across fragmented point solutions, such as product analytics platforms and customer relationship management (CRM) systems.
- The ability to conduct mixed-methods research allows teams to combine qualitative deep dives, including interviews and video clips, with quantitative validation, such as usability metrics and card sorting, within a single platform.
- Strong integration ecosystems connect research platforms with daily workflow tools, such as Slack, Figma and Jira, embedding insights directly into the product development cycle.

Obstacles

- Stringent data privacy, security and compliance regulations, such as GDPR, HIPAA and SOC 2, complicate the collection and storage of personal user data and recordings.
- Siloed organizational cultures limit adoption of centralized platforms, as departments continue to rely on legacy systems and fragmented point solutions.
- The risk of AI hallucinations or inaccurate synthesis requires researchers to validate AI-generated insights carefully to avoid misguided product decisions.
- A lack of standardized research operations and governance makes it difficult to maintain quality as research scales to less-experienced or untrained staff.
- Challenges integrating deep product analytics and quantitative data flows with qualitative research platforms hinder the development of a holistic view of customers and users.

User Recommendations

- Appoint a dedicated ResearchOps function to streamline participant recruitment, standardize workflows, maintain strict governance and disseminate insights across all product teams.
- Provide nonresearchers with guided workflows (e.g., using quantitative and qualitative data to validate hypotheses), prebuilt templates and training to democratize research safely.
- Use AI-augmented features for routine tasks, such as transcription and summarization, while requiring human researchers to validate outputs for accuracy and context.
- Select platforms that provide enterprise-grade security and compliance capabilities to manage personally identifiable information (PII) and video recordings securely.
- Integrate the human insights platforms with existing collaboration tools (e.g., Jira and Slack) to distribute findings automatically and ensure research translates into actionable development work.

Sample Vendors

Dovetail, Dscout, Great Question, Looppanel, Maze, UserTesting

Gartner Recommended Reading

[How to Build and Scale Your User Experience Team](#)

[UX Strategy Maturity Model for Software Engineering](#)

[Use AI-Augmented UX Tools to Empower, But Not Replace, Your Designers](#)

[How to Modernize User Interfaces While Minimizing User Disruption](#)

AI Product Behavioral Determinism

Analysis By: Ruggero Contu, Ayelet Heyman, Esha Bhatia

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Emerging

Definition:

AI product behavioral determinism is the product-led discipline enforcing AI outcomes that are consistent, reliable, predictable, repeatable and meaningful to users, in stark contrast to the probabilistic nature of AI-driven systems. It builds product policies and logic constraints into the AI architecture to ensure more reliable output and controlled reasoning, producing stable, auditable results. Behavioral determinism is a programmatic and governance-based approach to a product's AI output.

Why This Is Important

Enterprises are facing increasing risks arising from uncontrolled AI implementations. Product behavioral determinism should be holistic — starting with AI platforms. For the vast majority of CPOs, controlling the inherently probabilistic nature of AI platforms they rely on is not an option. Efforts need to be directed via policy enforcement, controls and architectures. These efforts need to contain AI failures and inaccuracies delivering more reliable, consistent and auditable AI process outcomes. Without the enforcement of such measures, CPOs face unpredictable and unreliable AI behavior. These random behaviors lead to negative business implications, customer churn, stalled adoption, regulatory breaches and safety hazards in asset-centric industries.

Business Impact

- Reliable, predictable and controlled AI process: Supports business with trustworthy, repeatable and consistent outcomes from products with AI.
- Risk mitigation: Limits the ability of threat actors to infiltrate and manipulate AI processes.
- Accelerate time to product trust: Increases customer adoption and reduces time to value.
- Explainable AI: Deterministic AI facilitates the investigation and monitoring of AI processes providing transparency needed for auditing toward compliance.

Drivers

- The inherent unpredictable nature of AI systems requires the implementation of governance to enable the delivery of reliable business value from AI investments.
- Unchecked AI systems create the potential for exposure of regulated or sensitive data.
- Accurate and reliable AI products output that preserves safety by minimizing disruption to operations:
 - Along with safety, determinism supports continuity across critical systems, reducing downtime and ensuring repeatability in mission-critical processes, such as medical imaging and factory monitoring equipment and the software that is part of these solutions.
- Vendors with a lack of AI behavioral determinism will see impacts to quality and reliability of product outcomes delivered to final clients.

Obstacles

- Understanding when to apply determinism versus probabilism, and interlacing them in a manner that offers product consistency and performance.
- Coordinating an AI product behavior determinism strategy, particularly in finding the right balance between governance, complex technical implementations, sustained operations and effective control across “shadow” implementations.
- Ability to achieve regular and consistent output as a result of dynamic and varying environments and input feeds.
- Addressing and explaining the AI black box phenomenon by interpreting and reverse-engineering how AI agents operate.
- Balancing speed of AI deployments and complexity of deep-learning models with the need for interpretability, transparency, and accountability.

User Recommendations

- Articulate, document and create acceptable risk levels and KPI/KRI metrics, creating the governance baseline and measuring the policy across the behavioral determinism versus probabilistic spectrum.
- Build controlled environments to simulate scenarios for evaluating agents in preproduction as well postdeployment continual learning
- Introduce policies of acceptable behavioral boundaries, setting rules of what AI agents should or shouldn't do.
- Implement a governance program (one that can be openly shared with clients) to monitor and adjust policies and workflows at the speed of AI operations while also meeting the business risk aperture.
- Create dynamics in the process where a human in the loop can provide safeguards and approve critical actions.
- Consider the adoption of “Guardian Agents” constructed with a blend of AI governance and AI runtime controls to support automated, trustworthy and secure AI agent activities and outcomes.

Gartner Recommended Reading

[Accelerating AI Adoption: Product Time to Reliability Built on Trust](#)

Managing Agentic AI's Unpredictable Nature Inside Your Product

Govern the AI Agency Spectrum With Risk-Tiered Minimum Viable Architecture

Embedded Process Intelligence

Analysis By: Charles Sutherland

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

Embedded process intelligence is the native integration of process mining, modeling and monitoring tools directly into broader enterprise software and automation platforms. It leverages integrated event logs to provide built-in visibility, alerting and continuous monitoring capabilities to track current processes and conditions.

Why This Is Important

Embedded process intelligence (EPI) enhances enterprise software by integrating process mining, modeling and monitoring into a unified set of capabilities. By leveraging event logs, EPI provides built-in visibility, alerting and continuous monitoring to track real-time processes. These features allow platforms to implement AI more effectively and better align with industry best practices over time, maximizing the value and performance of broader enterprise automation.

Business Impact

- Yields operational visibility and governance directly within enterprise platforms to help scale mission-critical workflows by leveraging process mining, AI-driven analytics and automated governance controls.
- Validates AI-driven decision making by creating a built-in, verifiable audit trail that makes agent actions traceable and defensible.
- Speeds up automation discovery by tracking workflows natively to uncover execution bottlenecks and trigger corrective actions.

Drivers

- The deployment of scalable AI agents necessitates embedded governance layers to mitigate the black box of AI decision making through real-time traceability.
- Leading enterprise software vendors are strategically acquiring process and task mining vendors and integrating these capabilities natively into broader automation platforms, leading to closed-loop execution systems.
- A push for enterprise-grade consistency, governance and cost management demands process-level insights tied directly to infrastructure and licensing decisions.

Obstacles

- Poor data quality within core systems can still yield noisy, irrelevant models if event logs are not validated and normalized.
- Scope creep in governance modules can delay value realization if organizations attempt full end-to-end compliance enforcement immediately upon activation.
- A lack of joint governance and collaborative refinement between technology and process owners leads to misaligned expectations and low-value outputs.

User Recommendations

- Embed process intelligence natively into agentic automation pipelines to enable AI agents to adapt dynamically and reduce rework during process variations.
- Build process context using embedded process intelligence in their software. Tech vendors should focus on integrating data collection and visualization tools that aggregate event logs from across the product portfolio.
- Implement an agent governance framework utilizing embedded auditability to mandate traceability and manage compliance risks in real time.
- Start by validating simple subprocess models natively against real execution data before rolling out deep analytics or adopting broad, automated prescriptions.
- Prioritize automation opportunities by analyzing task-level data and integrating AI-driven analytics to enhance decision making and operational efficiency.

Gartner Recommended Reading

[Innovation Insight: Beyond Process Mining and Analysis – The Future Is Process Intelligence](#)

[Critical Capabilities for Process Intelligence Platforms](#)

[Agentic AI Framework: Driving Agentic Automation through Process Intelligence](#)

[Magic Quadrant for Process Intelligence Platforms](#)

AI Product Attribution and Transparency

Analysis By: Zane West, Ayelet Heyman, Esha Bhatia

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Emerging

Definition:

AI product attribution and transparency is the product-led discipline of enforcing traceability and reasoning behind AI-generated outputs. It encompasses the technologies, processes and governance controls that ensure every AI claim, decision or autonomous action is linked to data sources, policies, reasoning steps and system objectives that produced it. Unlike traditional explainable AI (XAI), attribution and transparency focuses on product defensibility.

Why This Is Important

Moving well beyond traditional explainable AI (XAI), AI product attribution and transparency rationalizes and validates every AI claim or action to the specific data sources, policies and reasoning steps used. This holistic approach dispenses with the “black-box” results, and creates auditable evidence, ensuring users and regulators can trust and verify AI’s logic.

Business Impact

Attribution and transparency governs defensibility and auditability of AI-driven decisions. In regulated industries, inability to demonstrate provenance creates a material compliance risk. For AI adoption, attribution determines whether AI actions withstand regulatory and trust scrutiny, providing a competitive advantage in faster regulatory approval, reduced liability and greater user confidence. Attribution produces higher-quality outputs, as grounded reasoning naturally reduces hallucinations.

Drivers

- **User trust:** Enterprise AI trust deficits are blocking scale. Organizations report that hallucination, fabrication and inability to verify AI outputs are the primary barriers to moving AI from pilot to production deployment. Attribution addresses this directly by making every output independently verifiable.
- **Regulatory pressure:** Global mandates are adding pressure for AI transparency – The EU AI Act transparency requirements take effect 2025-2027; the NIST AI RMF 1.0 explicitly recommends provenance documentation; and sector-specific regulations in financial services and healthcare increasingly require audit trails for automated decisions.
- **User adoption:** Agentic AI adoption is forcing action-level attribution. As AI systems move from generating text to executing tool calls, modifying databases and making autonomous decisions, organizations need attribution at not only the output level, but also the action level to maintain governance and accountability.
- **Architecture:** Retrieval-augmented generation (RAG) and agentic systems widen the gap between the source and the output. Errors compound without traceability.
- **Incident response capability:** When AI outputs cause an error, organizations need to reconstruct the reasoning chain quickly. Attribution shortens root-cause analysis from weeks to hours, reducing both operational and reputational damage.
- **Enterprise procurement requirements:** Procurement and legal teams require evidence trails before approving AI in customer-facing or decision-critical workflows.

Obstacles

- **Model opacity:** Models don't expose deterministic reasoning paths; attribution must be engineered at the product layer and not extracted from model internals.
- **Developer adoption friction:** Engineering teams deprioritize traceability in favor of feature velocity unless there's a clear mandate. Without CxO-level mandate and regulatory certainty, attribution remains a "nice-to-have."
- **Architectural complexity:** Retrofitting attribution into existing AI pipelines requires fundamental changes to inference architecture, data flow and output formatting that most organizations are not prepared for.
- **Performance overhead:** Full reasoning traceability adds latency and storage costs that conflict with real-time inference requirements, creating tension between attribution completeness and system performance.
- **Lack of standards:** No industry-standard schema exists for attribution metadata, evidence chains or reasoning provenance, making cross-platform interoperability and benchmarking difficult.

User Recommendations

- **Instrument at the retrieval layer first:** Log every document chunk, policy reference or data record surfaced during generation.
- **Adopt structured output contracts:** Require AI outputs to include a machine-readable attribution block alongside human-readable responses, source IDs, confidence signals and reasoning step summaries.
- **Define defensibility tiers:** Not all outputs carry equal risk. Apply lightweight attribution to low-stakes responses and full evidence trails to decisions with regulatory, financial or safety implications. This manages cost without sacrificing accountability where it matters.
- **Integrate into review workflows:** Surface attribution data inside the interfaces where humans review AI outputs and not in separate audit logs. In-line traceability increases the likelihood that reviewers engage with the evidence.
- **Architect for persistence:** Ensure attribution data is timestamped and stored alongside the model version to defend decisions months after they occur.

Gartner Recommended Reading

[Build a “Quantitative” AI Trust Strategy to Drive GTM Efficiencies](#)

[Managing Agentic AI’s Unpredictable Nature Inside Your Product](#)

Forward Deployed Engineer

Analysis By: Jim Hare, Robert Brown

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Adolescent

Definition:

A forward deployed engineer (FDE) is a business and technical specialist embedded directly in a customer or value stream. They accelerate the adoption and delivery of platforms or agentic AI solutions by combining hands-on engineering, domain knowledge, and product expertise. Their presence accelerates integration, builds trust, and scales prototypes into production AI applications.

Why This Is Important

FDEs are key to mission-critical AI deployments because they connect data and models to real-world systems and business needs. They work directly with stakeholders to understand workflows, integrate messy, fragmented data sources, and adapt models to operational constraints. FDEs bridge the gap between product engineering and real-world use by translating customer needs into solutions, often contributing code, troubleshooting issues, and feeding insights to the core development team.

Business Impact

FDEs accelerate AI adoption for mission-critical, complex use cases by embedding directly in customer business and technical teams. Their on-site presence enables them to translate ambiguous operational challenges into deployable AI systems, integrate with legacy infrastructure, and iterate rapidly based on real-world feedback. The result is faster time to value, reduced implementation risk, higher AI reliability, and measurable ROI tied to operational outcomes.

Drivers

- **Customization demand:** Organizations increasingly require highly tailored AI solutions, especially for mission-critical operational use cases where reliability, security, and domain-specific knowledge are essential.
- **Rapid deployment pressure:** Companies are under growing pressure to move from experimentation to production much faster, driven by competitive forces and rising expectations from stakeholders.
- **Complex data environments:** Enterprise environments typically involve complex, fragmented, and often messy data systems that span multiple departments, formats, and legacy platforms.
- **Collaboration and trust:** Successful AI adoption depends heavily on building trust and alignment within organizations, including buy-in from leadership, collaboration across technical and nontechnical teams, and transparency in how AI systems make decisions.
- **Feedback-driven improvement:** Ongoing improvement of AI platforms relies on strong, continuous high-quality feedback from real-world users who can share insights directly with product teams.

Obstacles

- **Security and data governance barriers:** Giving external engineers access to sensitive data and systems can trigger legal, cybersecurity, and audit concerns.
- **Knowledge transfer gaps:** Enterprises risk dependency on the FDE vendor if internal teams are not properly enabled; long-term sustainability suffers without structured handoff and documentation.
- **Integration complexity with legacy systems:** AI systems need to integrate reliably with existing workflows, making deployment potentially slower and riskier than expected.
- **Misaligned incentives and ownership ambiguity:** Without clear accountability, issues arise around AI system maintenance, monitoring, and failure response.
- **Messy, fragmented data across systems:** Integrating data from multiple CRMs, ERPs, data lakes, and other operational systems often consumes the majority of project time.

User Recommendations

- **Set clear ownership:** Define who owns architecture, models, and long-term maintenance. Avoid vendor lock-in by keeping strategic control in-house.
- **Require knowledge transfer:** Make documentation, training, and team upskilling part of the engagement so your staff can operate and extend the solution independently.
- **Tie to business KPIs:** Align the FDE work to measurable outcomes (e.g. cost savings, revenue impact, productivity gains), not vague “AI transformation” goals.
- **Lock down governance:** Clarify data access, intellectual property (IP) rights, security controls, and compliance requirements before granting FDEs deep system access.

Sample Vendors

Deloitte; Google; Microsoft; OpenAI; Palantir

Gartner Recommended Reading

[An AI Leader's Guide to Forward Deployed Engineering to Scale AI](#)

[Service Providers Need to Embrace the Palantir FDE Model to Prevail in the AI Race](#)

New Business Models via APIs and MCP

Analysis By: Nicholas Carter

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Early mainstream

Definition:

APIs and Model Context Protocol (MCP) open up new direct business models and partner channels, and provide options to charge based on consumption rather than by seat. APIs made available to customers and partners are likely to be discovered through an API portal or MCP gateway.

Why This Is Important

Increasingly, chief product officers see the commercial potential in offering their APIs and MCP access to customers or other organizations within their company. APIs and MCP access can be sold to new customer audiences, or they can form the foundation of platform and agentic business models. Monetizing APIs in these ways requires that they are treated as products, not merely internal components to be used “as is.”

Business Impact

APIs and MCP are used to provide headless access to platforms and resources that can be consumed by the development environment of choice. They provide new sources of revenue and improve retention as they provide more developer and agent choice. Opening up APIs reduces platform lock-in that may impact revenue growth.

Drivers

- Monetizing insights, data and processes to existing or new customers requires a new product or a new mechanism for product delivery.
- Creating a platform model for partners and customers requires access to APIs that they will use to create new solutions.
- Customers that wish to build composite applications need a catalog of commercial APIs.
- Mature SaaS platforms use MCP to open up their walled gardens so that developers can choose their own developer environments and UI technologies.
- AI agents require APIs and MCP to provide controlled access to underlying enterprise resources.
- Access to AI models is most often handled through APIs and MCP, and managing and charging for this consumption appropriately is part of every new business model.

Obstacles

- Technical teams that implement APIs often assume that the APIs are valuable without having analyzed the potential return from offering them externally.
- External API and MCP consumers and AI agents often need different APIs and MCP servers from those released internally.
- APIs and embedded business models can lead to internal channel conflict because direct sales teams feel they are losing control to partner teams, which negatively impacts expected revenue.
- APIs require more than the technical investment of design, implementation and maintenance. They also require operational support with SLAs, technical support for customers, and the creation and maintenance of an API portal, documentation, tutorials and training materials. As a result, APIs now need well-designed MCP servers.

User Recommendations

- Maximize API business success by establishing a product management team with responsibility for a product roadmap, sales, marketing and support.
- Ensure the APIs' success in the market by designing the product based on what customers want, not what developers have produced.
- Cost-justify the investment in APIs by creating a business plan that includes the addressable market, a likely pricing model and price, and a complete accounting of the organization's costs.

Sample Vendors

Adobe; Anthropic; Contentful; Microsoft; OpenAI; Salesforce; Stripe

At the Peak

AI Literacy for Product Teams

Analysis By: Chris Meering

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Emerging

Definition:

AI literacy is the ability to effectively and responsibly utilize AI in a business context. For product teams, it includes role-based knowledge of AI's implications, risks, and resulting values. Whether they are building products where AI is embedded or using AI as part of their role, AI literacy empowers product teams to confidently shift from tactical execution to strategic product discovery, decision intelligence, and multiagent orchestration, and to optimize product management processes.

Why This Is Important

Organizations cannot extract the desired ROI from AI if teams lack the skills to use it; investing in AI without literacy is throwing money away. As agentic AI accelerates software engineering, product management risks becoming the new bottleneck to growth in the new era of software. AI literacy transforms product managers from tactical coordinators into strategic leaders who know when and how to leverage AI safely to drive business growth.

Business Impact

AI literacy enables product organizations to safely automate and autonomize low-effort, low-creativity tasks while supplementing high-effort strategic planning. This drastically accelerates time to market, improves market analysis, and bridges the gap between AI hype and actual ROI. It ensures teams maintain human-in-the-loop oversight to mitigate hallucinations, navigate ethical risks, and maintain brand trust.

Drivers

- As AI implementations increase, especially using generative and agentic AI, there is a focus of attention on AI readiness and the need to upskill the workforce. Employee AI literacy has become increasingly recognized as an important factor in an organization's overall ability to identify opportunities, triage AI-ready data, and deliver on the promise of AI and innovation.
- CPOs face intense executive pressure to prove ROI on generative AI investments as technologies slip into the "Trough of Disillusionment" and demand tangible productivity and business value.
- As agentic engineering drastically accelerates code production, product delivery is outpacing product management's ability to manage its responsibilities and deliverables. AI literacy is critical to accelerate discovery activities to meet this increased development demand, preventing the creation of "feature factories."
- Early adoption of AI technology within product management processes is demonstrating the potential for productivity improvement across the product development life cycle.
- Organizations are realizing that the most valuable employees in the AI era will be strategic, outcome-driven, lifelong learners, making AI literacy a fundamental requirement.
- The risks, limitations, and ethical concerns of AI, along with growing regulatory pressures such as the EU AI Act, drive the need for governance, policies and more technical mitigation strategies. These factors are driving the urgency for AI literacy to focus on the awareness, behavior and critical-thinking skills, essential for the responsible use of AI.

Obstacles

- AI literacy training is often impractical and theoretical, and takes a "one-size-fits-all" approach that ignores specific persona needs and fails to align with product business outcomes.
- Behavioral resistance, rooted in fear of job displacement and collaboration breakdown, leads to superficial AI adoption or a "threat response" where critical thinking is surrendered.
- The "humanity gap" and misplaced trust pose severe risks. AI lacks true empathy and accountability, leading to potential "innovation voids."

- Ownership of team capability development is often fragmented, with unclear accountability across the organization. AI literacy often falls between functions, lacking dedicated sponsorship, consistent funding, and integration into transformation planning.
- Many organizations do not track fluency levels, usage patterns, or business outcomes tied to AI capability, undermining investment and accountability.

User Recommendations

- Develop an AI literacy value proposition by co-creating “learning to earning/business outcomes” narratives that directly connect AI skill development with specific, prioritized product outcomes such as revenue growth or cost reduction.
- Categorize product management tasks into a “replace, augment, and supplement” framework to strategically allocate AI to low-creativity tasks and preserve human judgment for high-creativity work.
- Implement a “product management AI literacy” personal development objective that gives product managers dedicated daily time to safely experiment with AI tools using nonproprietary data to organically discover valid use cases.
- Ensure awareness of regulatory and ethical implications of using AI, both in processes and within your product portfolio across target markets and geographies.
- Design agile learning pathways combining 10% formal learning, 20% social learning, and 70% experiential on-the-job learning embedded in the value delivery flow.

Sample Vendors

Accenture (Udacity); DataCamp; Data Society; IBM; InnovateUS; Pluralsight; Skillsoft

Gartner Recommended Reading

[Without AI Literacy, ROI Plummets](#)

[AI Vendor Race: AI Will Power the Leading Product Teams of Tomorrow](#)

[AI Vendor Race: Product Management in the Age of Generative AI](#)

[Guide to Redesigning the Product Manager Job in the Age of AI](#)

[AI Adoption Shatters Traditional Product Management Roles](#)

Domain-Specific GenAI Models

Analysis By: Jim Hare, Leinar Ramos, Roberta Cozza, Eric Goodness

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

Definition:

Domain-specific GenAI models are tailored for the needs of specific industries, business functions or workflows. They enhance the accuracy, privacy and compliance while minimizing hallucinations, and prompt engineering. Built from scratch or fine-tuned on domain data, these models outperform general-purpose models targeted in domains like healthcare, finance, law and other industries.

Why This Is Important

Although general-purpose models perform well across a broad set of applications, they may be impractical for many use cases that require domain-specific data. Domain-specific generative AI (GenAI) models can improve use-case alignment within the enterprise while delivering improved accuracy, security and privacy, and better contextualized answers, reducing the need for advanced prompt engineering. Through targeted training, these models can lower hallucination risks associated with large models.

Business Impact

Domain-specific GenAI models enable:

- Faster time-to-value by starting AI projects with business functions and industry-tuned capabilities.
- Higher accuracy, compliance and trust by reducing errors through domain-trained or fine-tuned data.
- Lower training costs and compute budgets than general-purpose models.
- Broader adoption as outputs match domain logic and roles, making them viable where general models fall short.

Drivers

- **Rise of open generative models:** Open-source foundation models are becoming credible alternatives for domain-specific work, rapidly narrowing the performance and reliability gap with proprietary options while offering greater flexibility and lower cost for training and specialization.
- **Greater model specialization:** As enterprises shift from broad GenAI experiments to targeted use cases, models trained or fine-tuned on industry-specific data are gaining importance for delivering higher accuracy and relevance.
- **Broader domain solutions from vendors:** Growing demand for GenAI in sectors such as healthcare, life sciences, legal, financial services and the public sector is pushing technology providers to deliver industry-aligned products, services and domain-specific models.
- **Limits of general-purpose models:** Generic models often require extensive prompt engineering, RAG, fine-tuning and layered security controls because they lack industry context. Domain-specific models adapt more easily to unique requirements, preserve context, use resources efficiently and provide stronger task-focused language capabilities.
- **Expansion of domain-specific AI agents:** The surge of interest in agentic AI is amplifying demand for models optimized for specialized domains. Enterprises increasingly value agents designed for narrow contexts such as legal, medical or engineering work, driving adoption of vertically tailored models that blend general AI strengths with deep domain expertise.

Obstacles

- **Model tradeoffs:** Balancing the broad versatility and lower cost of general models against the higher accuracy, tuning effort and specialized value that domain-specific models provide.
- **Data scarcity and quality:** Domain-specific models depend on high-quality, relevant data, which is often limited, hard to obtain, and requires significant cleanup.
- **Lower versatility:** Optimizing for narrow use cases reduces flexibility, limiting performance outside the target domain.
- **Model proliferation:** Organizations may need multiple domain-specific models, increasing management and operational overhead.
- **Errors and hallucinations:** While improved in-domain, these models can still produce inaccuracies and hallucinations.
- **Ongoing maintenance:** Rapidly evolving fields (e.g., medicine, finance, cybersecurity) require frequent updates to prevent models from becoming outdated.

User Recommendations

- Use domain-specific models when your use case demands high accuracy and context-aware outputs tailored to a particular industry or business function. Even with these specialized models, apply retrieval-augmented generation to incorporate and operationalize your organization's proprietary knowledge.
- Evaluate existing off-the-shelf domain models before investing in the development of a custom model. Building custom models requires significant compute resources, specialized expertise and ongoing maintenance.
- When assessing domain-specific model providers, ask about their supported use cases, as well as the provenance, volume and quality of the data used to train their models.
- Implement robust model life cycle management practices to prevent performance degradation and ensure ongoing compliance with regulatory, industry and internal governance standards.

Sample Vendors

Amazon; Bloomberg; Cognition (Windsurf); Google; Harvey; Kasisto; Mistral AI; Spellbook; Vic.ai

Gartner Recommended Reading

[TSP 2025 Trends: Domain-Specific Models Will Displace Generic LLMs in the Enterprise](#)

[Top 7 Forces Driving Domain-Specific Language Models](#)

[Top Strategic Technology Trends for 2026: Domain-Specific Language Models](#)

AI-Assisted Tools for Rapid Prototyping

Analysis By: Kelli Smith

Benefit Rating: Transformational

Market Penetration: 20% to 50% of target audience

Maturity: Emerging

Definition:

Rapid prototyping is the practice of creating interactive, functional representations of products or features to validate requirements, behavior and user experience early in the product lifecycle. AI-assisted prototyping tools increasingly enable product managers to prototype directly from customer input, producing executable product demos in near real time rather than relying on static specifications.

Why This Is Important

AI-assisted tools for rapid prototyping are changing how product managers engage with customers. Instead of going back and forth to validate requirements over weeks, product managers (PMs) can co-create and test feature concepts with customers in near-real time. This shortens feedback cycles, reduces misinterpretation, improves customer experience and shifts product discovery to continuous interaction with the customer.

Business Impact

AI-assisted prototyping compresses product discovery and validation timelines. It enables product organizations to explore multiple solution options in parallel, sharpen product-market fit earlier, and reduce the cost of experimentation by limiting premature engineering investment. The impact is strongest where prototypes are used to validate direction, not deployed as production code.

Drivers

The adoption of AI-enabled rapid prototyping is being driven by several structural pressures affecting product organizations:

- **Slow and ineffective customer validation methods.** PowerPoint decks, static wireframes and abstract discussions delay feedback and increase misinterpretation. Product teams increasingly adopt AI-generated, high-fidelity prototypes to enable faster, more tangible customer validation.
- **Traditional product requirements documents (PRDs) fail to clearly convey product intent.** Written specifications often struggle to express behavior, interactions and edge cases. PMs use AI-generated prototypes and vibe coding to communicate intent more precisely, reducing ambiguity and reliance on exhaustive documentation.
- **Limited ability to respond to customer feedback in real time.** Legacy workflows separate customer conversations from solution exploration, creating delays. AI-assisted prototyping enables PMs to act immediately on feedback, including sharing working demos or video prototypes shortly after customer interactions.
- **Rising expectations for real-time engagement and responsiveness.** Vendor hype around AI-driven speed has raised customer expectations. Buyers increasingly expect rapid turnaround on feature discussions and are less tolerant of extended or uncertain timelines.
- **Slow, sequential product discovery cycles.** Traditional discovery relies on documentation, handoffs and implementation before learning occurs. AI-enabled prototyping compresses discovery by allowing assumptions to be tested and discarded earlier.
- **Lower barriers to prototyping from maturing AI coding assistants.** While they may not be suitable for production (yet), tools such as Claude Code make it easier to produce functional prototypes that simulate behavior and edge cases, enabling faster alignment across customers, product and engineering.

Obstacles

AI-assisted prototyping introduces new challenges driven primarily by speed and expectation management.

- High-fidelity, AI-generated prototypes can be mistaken by customers and internal stakeholders as delivery commitments, creating pressure to ship designs that have not undergone feasibility, security or scalability review.
- As vendors market real-time AI capabilities, customers expect a similar turnaround time for all feature requests and fixes. This leads to unsustainable delivery expectations and strained product-engineering relationships.
- Augmenting PRDs with prototypes improves clarity, but can obscure nonfunctional requirements, architectural constraints and long-term implications if not complemented by discipline.
- As AI enables more PMs to prototype faster and more independently, consistency and discipline become harder to maintain at scale. Without guardrails, rapid experimentation can create downstream rework, technical debt and trust erosion.

User Recommendations

- Treat AI-assisted rapid prototyping as an input to living system design artifacts rather than as a replacement for product rigor. Encourage PMs to use vibe-coded prototypes and demos to accelerate customer validation, but require that validated prototypes evolve into machine-readable specifications that capture functional and nonfunctional requirements, constraints and assumptions.
- Establish clear rules of engagement for sharing prototypes with customers, explicitly framing them as exploratory artifacts, not delivery commitments. Align sales, product and engineering on this distinction.
- Create lightweight governance and guardrails for PM-led prototyping, including approved tools, security boundaries and handoff criteria.
- Invest in upskilling PMs so they can prototype responsibly while partnering closely with engineering to translate new discoveries into scalable, build-ready designs.

Sample Vendors

Anthropic; Anysphere; Bolt; Figma; Lovable; Mona Labs; OpenAI Codex

Gartner Recommended Reading

[AI Vendor Race: Spec-Driven Development Demands a Product Org Power Shift](#)

[AI Race: The Roadmap Can't Keep Up. The Real AI Crisis for Software Vendors](#)

[Emerging Tech: Adopt Spec-Driven Development or Lose the AI Race](#)

[AI Vendor Race: AI Agents Redefine the Discipline of Product Management](#)

Sovereign Cloud

Analysis By: Rene Buest, Gregor Petri

Benefit Rating: Transformational

Market Penetration: More than 50% of target audience

Maturity: Mature mainstream

Definition:

Sovereign cloud is the provision of services by a cloud provider to ensure that data, operational and technological sovereignty meet the sovereignty requirements of its intended customer base. Sovereign cloud ensures that data, applications, infrastructure and operations are immune from control by external jurisdictions and are fully protected from foreign government interference and access.

Why This Is Important

Public sector and commercial organizations depend on cloud services, leading to greater demand for control and operational autonomy and thus offerings that provide a high degree of sovereignty. In many jurisdictions, data residency, data protection requirements and privacy laws are increasing. Increasing geopolitical tensions, different economic ideologies and proliferating cybersecurity risks from a variety of directions, including state actors, are steadily elevating interest in sovereignty.

Business Impact

Concerns about data, operations and technology being controlled by foreign-owned cloud providers are increasing the demand for true sovereign clouds. Regulators are introducing requirements to restrict organizations from using services provided by vendors outside their own country. These regulations impact choices organizations make when using cloud services. Consequently, end users may face difficulties in accessing resources and innovation to support their digital business initiatives.

Drivers

- Ongoing geopolitical turmoil and uncertainty accelerate sovereignty concerns, particularly among governments, regulated industries and critical infrastructure, especially in Europe, the Middle East, Latin America and Asia/Pacific. Organizations in these regions are increasingly concerned about their dependence on foreign cloud infrastructure providers and the sovereignty of data, applications, infrastructure and operations hosted in foreign-owned cloud service offerings.
- Concerns over digital sovereignty lead countries and confederations of states to pursue their own sovereign digital strategies. Many commercial organizations are increasingly impacted by digital geopolitical issues, such as trade disputes, legislation coming from one country that impacts global operations, and government-imposed restrictions on the acquisition and use of digital technology.
- Given the critical role that digital technology plays in the economic, cultural, social and government institutions of a country, great power competition sharpens the focus on digital sovereignty. Particularly in a world of public clouds, every organization needs to be in control to be able to address its own risk management, compliance policies, culture or business strategy and to address multiple regulatory requirements.
- Organizations are increasingly concerned that cloud and digital infrastructure will be used as a tool to exercise pressure, coerce, and enforce political influence. This has led to a rethinking of cloud strategies and the acceleration of geopatiation. The call for a higher degree of digital sovereignty aims to preserve autonomy by developing and maintaining one's own capabilities and avoiding dependencies.

Obstacles

- Domestic cloud providers are currently not able to fully compete with hyperscale cloud offerings, as the hyperscaler capabilities still exceed most domestic cloud offerings. Considerable technical obstacles exist if domestic clouds are expected to deliver the maturity and level of the scalability and functionality of hyperscale offerings.
- The growing influx of sovereign cloud options from global cloud providers, all based on various approaches and delivery models, is making it hard for end users to understand the actual value of each offering and how they differ.
- Individual governments defining their own requirements for sovereign cloud offerings may lead to compliance regimes that impede public cloud scale and innovation and lead to conflicting regulations.

User Recommendations

- Define the sovereignty requirements and agree on the sovereignty level required by your organization by country, vertical industry and workload type by working with your legal counsel and risk departments.
- Differentiate between different sovereign cloud approaches by the type of workload, data and infrastructure when making cloud deployment decisions. Classify various delivery models between the cloud provider approaches. Establish a consistent, repeatable and defensible process when assessing sovereign offerings.
- Evaluate cloud services for offerings that can be provided locally and leverage third-party solutions to protect data at rest and in transit.
- Evaluate the different cloud provider approaches to meet your defined sovereignty requirements by quantifying their technological limitations that might limit the delivery of your mission-critical solutions.
- Consider sovereignty as only one of several critical dimensions that must be considered when evaluating a cloud service provider.

Gartner Recommended Reading

[Build a Sovereign Cloud Strategy](#)

[Prioritize on Sovereign Capabilities When Choosing Your Cloud Provider](#)

Forecast Analysis: Sovereign Cloud IaaS, Worldwide

Industry Cloud Platforms

Analysis By: Gregor Petri

Benefit Rating: Transformational

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

Definition:

Industry cloud platforms (ICPs) deliver industry-relevant business outcomes by combining underlying SaaS, PaaS and IaaS services into a composable, whole-product offering. ICPs typically include an industry-aware data fabric, a marketplace of packaged business capabilities (PBCs), and business orchestration and automation technologies (BOAT). Infused with AI services and agents, ICPs act as an exoskeleton that provides the agility needed to operate in fast-changing enterprise environments.

Why This Is Important

Enterprises need adaptive innovation to manage disruption. ICPs deliver composable, whole-product solutions that minimize complex integration by combining underlying cloud services with industry-specific building blocks. They are essential for unlocking synergistic value from siloed IaaS, PaaS, and SaaS enabling organizations to deploy AI services and agents and meet digital sovereignty needs. By 2030, over 80% of enterprises will use industry-specific AI agents for critical objectives.

Business Impact

ICPs accelerate time-to-value by offering modular, preintegrated capabilities, rather than requiring full custom builds. They democratize access to sophisticated automation through AI agents and enable participation in digital ecosystems. ICPs allow IT to shift from cost centers to business-value creators, supporting compliance, sovereignty and smart factory initiatives.

Drivers

- **Business outcome focus:** Enterprises demand cloud services that directly address vertical business outcomes, rather than just technology enablement.
- **Breaking silos:** Demand for integration across IaaS, PaaS and SaaS is accelerating ICP adoption. ICPs act as an exoskeleton that connects separate cloud services to deliver synergistic value and integrated business outcomes.
- **AI and generative AI acceleration:** AI and generative AI are major accelerators. Vendors are monetizing AI investments by embedding AI agents into ICPs. Adoption of industry-specific AI agents is expected to grow from under 10% today to over 80% by 2030.
- **Composability:** Modular technologies, (PBCs, BOAT and data fabrics) allow organizations to assemble solutions quickly — such as predictive-maintenance capabilities for smart factory use cases in the manufacturing industry — accelerating time to market and reducing development toil.
- **Digital sovereignty:** Compliance requirements (e.g., NIS2, DORA) have become a critical north star for cloud transformation. Enterprises need ICPs that support data, operational and technical sovereignty, sometimes driving “geopatiation” from hyperscalers to sovereign clouds.
- **Government initiatives:** In markets such as China, national programs — including the 15th Five-Year Plan and the “AI+” initiative — are fueling demand for platform-level solutions that support industrial modernization and trusted data spaces.
- **Value over cost:** Functional capabilities now outweigh price in vendor selection, as ICPs are viewed as value generators, rather than IT cost optimization tools.

Obstacles

- **Market complexity:** Vendors continue expanding their portfolios, creating overlap as strategic partners introduce competing industry solutions. Because no single provider dominates the landscape, enterprises must manage multiple ICP vendors.
- **Maturity gaps:** ICP maturity levels vary significantly by industry; while consumer goods and retail are relatively mature, sectors such as power and utilities remain in early stages.
- **Geopolitical risks:** Rising geopolitical tensions and digital-sovereignty requirements are fragmenting the cloud market, forcing some enterprises to choose compliance over technical superiority.
- **Skills shortage:** A shortage of skills to design and operate modular, AI-infused architectures slows adoption. Both providers and enterprises often lack the expertise needed to evaluate ICP offerings effectively.
- **Vendor lock-in:** Lock-in remains a top concern, limiting enterprise flexibility and control over strategic roadmaps.

User Recommendations

- **Adopt an exoskeleton strategy:** Treat ICPs as an “exoskeleton” that connects and augments existing SaaS, PaaS and IaaS investments, rather than attempting a wholesale portfolio replacement.
- **Plan for AI agents:** Start with a strong data foundation and an AI-readiness program enabled through your ICP. Engage business stakeholders to identify high-value use cases for industry-specific AI agents, supporting the shift from less than 10% adoption today to more than 80% by 2030.
- **Assess maturity:** Evaluate the maturity of ICP offerings in your industry before committing. Align your adoption pace with industry readiness to avoid understeering or oversteering.
- **Prioritize sovereignty:** Incorporate data, operational and technical sovereignty requirements into ICP selection criteria early, especially in regulated sectors.
- **Build fusion teams:** Develop composability skills within fusion teams to leverage PBC marketplaces, data fabrics and orchestration tools effectively.

Sample Vendors

Alibaba Cloud; Amazon Web Services; Google; Microsoft; Oracle; Salesforce; SAP; ServiceNow; Siemens; Veeva

Gartner Recommended Reading

[Market Guide for Industry Cloud Platforms](#)

[2024 Tech Provider Top Trends: Industry Cloud Delivers Growth](#)

[Top Strategic Technology Trends for 2024: Industry Cloud Platforms](#)

[Essential Provider Roles in Industry Cloud Platform Ecosystems](#)

[Cloud Journey: A Comprehensive Guide to Navigate Complexity and Avoid Pitfalls](#)

Sliding into the Trough

AI Product Knowledge Governance

Analysis By: Ayelet Heyman, Esha Bhatia, Marissa Schmidt, Charanpal Bhogal

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Emerging

Definition:

AI product knowledge governance is the product-led discipline of securing and validating the information assets used to ground AI. It systematically manages the integrity, authority and life cycle of these knowledge assets through architectural access controls and data curation. This ensures that AI inputs are accurate, relevant and authorized for specific users. Verifying the lineage of system reasoning to authoritative sources transforms raw knowledge into the foundation of product trust.

Why This Is Important

Knowledge is a CPO's core IP, but in AI-native products, ungoverned knowledge is a primary liability. Without architectural governance, scaling a product portfolio risks context poisoning and brand destruction through technically correct but business-incorrect outcomes. This discipline is the bridge from supervised prototypes to autonomous product velocity. It secures the entire AI roadmap by transforming raw information into a reliable, legally authorized foundation for trust.

Business Impact

- **Brand and output integrity:** "Factually accurate" and "business-aligned" prevents hallucinations and "technically correct but business-incorrect" outcomes.
- **Asset security and health:** Permission-based filtering and automated data freshness prevents data leakage, context poisoning and knowledge drift.
- **Operational efficiency:** Solving accuracy at the data layer rather than through prompt tuning.
- **Strategic advantage:** Transforms promising but unreliable prototypes into autonomous, high-value products.

Drivers

- Compliance is no longer just about privacy (e.g., GDPR); emerging global mandates, such as the EU AI Act, require absolute transparency, explainability and traceability of the knowledge assets informing AI-driven decisions.
- While RAG is the primary driver of product value, it also introduces “context poisoning” and “prompt injection via retrieval,” where malicious or outdated data in the knowledge base hijacks the agent’s reasoning. This turns RAG from a feature into a primary security and reliability liability without a governance layer.
- Most AI inaccuracies stem from retrieval failure, using outdated, irrelevant or unauthorized data rather than model shortcomings. Knowledge governance is a foundational pillar of functional reliability.
- Vendors must guarantee data sovereignty for multitenant environments. Data “isolation” is no longer enough; customers demand architectural proof that their proprietary knowledge cannot “bleed” into the reasoning of other users.
- Growing enterprise skepticism toward “black box” AI and customer demand for trustworthy AI are forcing CPOs to move from “probabilistic” outputs to “deterministic” knowledge-grounded results.
- Security, privacy and operational efficiency pressures require strict access controls and reliable outputs.
- Enterprises need AI systems that integrate seamlessly with existing data governance and compliance frameworks.

Obstacles

- **The high velocity of enterprise information:** AI referencing deprecated content or policies leads to technically correct but functionally obsolete product actions.
- **Unstructured data stacks:** Slack threads, for example, lack essential metadata for automated governance (invisible sources of context poisoning).
- **Aligning static legacy permissions** (e.g., SharePoint/Drive, AD) with the dynamic, real-time context needs of an AI agent is an architectural bottleneck — “oversharing” (security breach) or “underserving” (product failure).
- **Human-led data curation** vs. exponential growth of AI-ready data.

- **Agents need service-level permissions**, not user access rights. Without identity mapping, they risk retrieving and exposing sensitive data the user isn't authorized to see.
- **Securing buy-in** is challenging because stakeholders (e.g., CFO, engineering) often prioritize immediate ROI and velocity over long-term architectural rigor required for a properly governed, scalable AI portfolio.

User Recommendations

- **Systematize knowledge hygiene**: Transition from reactive prompt-patching to proactive governance via automated systems to ensure that only authoritative data grounds your AI.
- **Define knowledge authority tiers**: Mandate that high-stakes autonomous actions only trigger using "Certified" info. Establish a policy where SMEs periodically vouch for the accuracy of core grounding data (HITL).
- **Validate IP grounding**: Ensure that all grounding data complies with third-party copyrights and privacy regulations.
- **Enforce zero-trust retrieval**: Require granular, identity-aware, real-time filtering so that AI only accesses the data that the specific user is authorized to see.
- **Architect for traceability**: Link every output to a time-stamped source for instant auditing.
- **Prioritize context engineering**: Shift R&D focus from generic prompt tuning to automated pipelines structuring data for specific model consumption.
- **Automate drift testing**: Implement recurring audits to ensure that AI cannot access outdated or unauthorized data.

Gartner Recommended Reading

[Accelerating AI Adoption: Product Time to Reliability Built on Trust](#)

[Shadow AI Is Creating Opportunity for Product Leaders](#)

Responsible AI

Analysis By: Svetlana Sicular

Benefit Rating: Transformational

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

Responsible artificial intelligence (RAI) is an umbrella term for aspects of making appropriate business and ethical choices when adopting AI. These include business and societal value, risk, trust, transparency, fairness, bias mitigation, explainability, sustainability, accountability, safety, privacy and regulatory compliance. RAI encompasses organizational responsibilities and practices that ensure positive, accountable and ethical AI development and operation.

Why This Is Important

Trust is the key driver of AI adoption; without it, users abandon or misuse the technology. As AI expands from basic tools to autonomous agents, RAI principles must be operationalized. RAI shifts the focus from purely technical performance to human-centric impacts to ensure that AI creates value, respects privacy, and mitigates systemic biases without alienating users. While the term responsible AI is in use, enterprises will emphasize specific areas of RAI to focus on their nuanced AI goals.

Business Impact

RAI drives adoption; workers with AI trust are 1.4 times more likely to adopt AI. If AI governance and TRiSM are practiced by designated groups, RAI applies to every role, extending accountability to individual, organizational, and societal levels. RAI protects brand reputation, ensures equitable outcomes, and acts as a strategic enabler, bridging the gap between AI experimentation and scaled, trusted enterprise value.

Drivers

- The explosive adoption of AI, especially agentic AI, at all levels of organizations heightens the risk of unintended consequences, such as hallucinations, bias, and privacy breaches, necessitating proactive ethical design.
- The rise of autonomous agents introduces new moral and business dilemmas regarding nonhuman agency and associated behavior, where agents can act as insiders or lack a moral compass, sparking ethical deliberations and setting boundaries dynamically.
- User trust determines AI success; stakeholders demand that AI systems demonstrate reliability, fairness, and transparency before they fully adopt or interact with them.
- Software engineering teams are becoming the center of AI delivery and require practical frameworks like eval-driven development to translate abstract ethical guidelines into testable software requirements.
- Regulations, such as the EU AI Act, add more compliance requirements. The prohibited activities are a starting point for organizations to identify and define the boundaries of appropriate AI use given their needs and enterprise risk tolerance.
- High-profile missteps and AI incidents have shown that purely technical evaluations are insufficient, driving the need for decision intelligence, empathy mapping and harm modeling.
- AI's impact is multifaceted and emerging rapidly on a global scale. This is why the RAI umbrella includes interdependent elements that must work together to address challenges, which will continue to evolve alongside the technology and its applications.
- Leading vendors include information about practicing RAI in their companies and products to make customers more confident. Although a good step, these are still incomplete.

Obstacles

- Accountability for RAI is often fragmented and decentralized across departments, creating blind spots where developers prioritize technical metrics over business and societal impact.
- AI's nondeterministic nature makes it difficult to evaluate ethical compliance using traditional software testing, leaving systems vulnerable to emergent biases and toxic outputs.
- Organizations often treat AI ethics as a static policy rather than an ongoing process, leading to a disconnect between high-level principles and the real-world impact of AI use cases.
- Rapidly evolving AI tools for evaluation, explainability, reasoning, bias and hallucination detection, privacy protection, and regulatory compliance lull organizations into a false sense of fully implemented RAI. A disciplined, adaptive AI risk, ethics, and governance approach is necessary, in addition to technology.
- Creating RAI principles and operationalizing them without measuring the progress makes it hard to sustain RAI practices.

User Recommendations

- Identify and prioritize RAI focus areas for your AI strategy. Provide role-specific training for these areas and critical thinking as part of AI literacy.
- Implement ethical reviews. Connect user stories to RAI principles, translating abstract ethics into testable functional requirements for engineering teams.
- Evaluate AI's impact on users. Conduct harm modeling and build empathy maps early in AI development to surface, assess, and make necessary trade-offs for user trust and adoption.
- Document key decisions, data provenance, and known limitations by maintaining up-to-date data, model, and agent cards, serving as transparent "nutritional labels" for your AI assets.
- Adopt eval-driven development to continuously score and monitor AI outputs for toxicity, bias, and coherence across the entire AI development life cycle.
- Deploy "guardian agents" for autonomous AI agents to negotiate boundaries and provide RAI guardrails within complex ecosystems.

Gartner Recommended Reading

[Embed Responsible AI Into AI Application Development to Build Trust](#)

[Create an AI Literacy Roadmap to Drive Responsible and Productive AI](#)

[Toolkit: Define Your Principles for Responsible AI](#)

[Executive Briefing on Emerging Technology: Responsible AI](#)

Competitive and Market Intelligence Platforms

Analysis By: Ethan Budgar

Benefit Rating: Moderate

Market Penetration: 5% to 20% of target audience

Maturity: Early mainstream

Definition:

Competitive and market intelligence (C&MI) platforms activate insights from diverse internal and external data sources to drive corporate, product, GTM and revenue-enablement decisions.

Why This Is Important

C&MI platforms are increasingly vital for organizations navigating complex competitor landscapes and emerging market opportunities. By automating the gathering, analysis, and activation of intelligence from a diverse range of internal and external sources, these platforms help users cut through information overload and surface reliable, actionable insights that inform high-stakes business decisions.

Business Impact

C&MI platforms improve the quality and consistency of high-stakes business decisions by converting large volumes of structured and unstructured data into trusted, actionable intelligence. By automating data collection, analysis and validation, these platforms reduce decision risk, improve organizational alignment and embed market and competitive insights directly into strategy, product and go-to-market workflows.

Drivers

- **Influx of information availability:** With the ever-increasing amount of data available to organizations, the “manual” approach to competitive and market intelligence (setting keyword alerts and reviewing industry reports and competitor websites on a regular cadence) has become too onerous. It often leads to oversight and missed opportunity.
- **Push for data-driven strategy:** Executives are increasingly expecting strategic decisions to be grounded in intelligence from multiple credible sources. Competitive and market intelligence platforms can help streamline the process of data gathering and analysis and can assist with surfacing meaningful insights more effectively.
- **Diverse intelligence needs:** Competitive and market intelligence platforms are helpful for delivering tailored outputs to meet the specific needs of different organizational departments. Executives need high-level summaries for strategic insights, while sales teams require offensive and defensive battle cards and talking points for effective client engagement. By providing these diverse outputs, vendors ensure each team has the relevant information to enhance organizational efficiency and competitiveness.
- **Bidirectional workflow integration:** Modern C&MI platforms increasingly support both upstream data ingestion (e.g., CRM, win and loss analysis, sales calls, internal knowledge bases) and downstream activation (e.g., Slack, Microsoft Teams, CRM opportunity workflows, BI tools). This bidirectional integration improves adoption by embedding intelligence directly into how decisions are made and executed.

Obstacles

- **Unclear ownership and governance models:** Competitive and market intelligence initiatives often lack clear functional ownership, funding models and decision rights, particularly in decentralized organizations. This ambiguity complicates vendor selection, slows purchasing decisions and limits enterprisewide adoption, as platforms are treated as tactical tools rather than shared strategic infrastructure.
- **Competition from generalized GenAI and low-cost alternatives:** Organizations may experiment with stand-alone GenAI tools or low-cost search and discovery options as substitutes for purpose-built C&MI platforms. While these approaches lower barriers to entry, they often introduce risks related to data quality, source validation, hallucinations, lack of governance and limited integration into decision workflows, reducing trust and sustained adoption.
- **Difficulty in calculating ROI:** Organizations may find it challenging to advocate for resourcing to invest in these platforms, as ROI (especially related to revenue and retention outcomes) can be difficult to calculate.
- **Dependence on data availability, quality and validation:** C&MI platforms are only as effective as the breadth, relevance and credibility of the data they can access. Organizations with limited access to trusted sources, poorly curated internal knowledge or weak validation practices may experience low confidence in outputs, including concerns about data relevancy and AI hallucinations, which can slow adoption and limit perceived value.

Analyst notes:

Competitive and market intelligence platforms have evolved from data aggregation tools into decision-enablement systems that emphasize trust, validation and workflow integration. While vendors are incorporating generative AI capabilities, enterprise adoption is driven less by novelty and more by governance, data quality, traceability and measurable decision impact. Rather than being displaced, these platforms are increasingly evaluated as foundational intelligence layers that complement adjacent AI-driven monitoring and research capabilities.

User Recommendations

- Consider investing in an intelligence platform to help streamline the information gathering, analysis and activation process, especially if your organization relies on a “manual” (e.g., setting alerts and performing search engine queries) approach to competitive and market intelligence.
- Make intelligence available in platforms that are already adopted by the target stakeholder base. Avoid a “build it and they will come” approach, which often leads to very low adoption rates.
- Stay apprised of developments in adjacent spaces and solutions, as capabilities are quickly evolving. Ensure that your contract terms enable a pivot if needs are fulfilled elsewhere.

Sample Vendors

AlphaSense; Crayon; Evaluateserve; Klue; Market Logic; Northern Light; Valona Intelligence

Gartner Recommended Reading

[Magic Quadrant for Competitive and Market Intelligence Platforms](#)

[Critical Capabilities for Competitive and Market Intelligence Platforms](#)

[Quick Answer: Which Technologies Can Boost Competitive Intelligence?](#)

[The Competitive Intelligence Playbook](#)

Vibe Coding

Analysis By: Bill Blosen, Danny Brian, C.A. Swan

Benefit Rating: Transformational

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

Definition:

Vibe coding is an emerging software development paradigm of natural language prompts driving AI to build software while ignoring the code and underlying complexities. It has expanded significantly into use cases spanning common SaaS software and low-code application platforms. It is currently viewed as a high-risk approach that is derided for enterprise use. However, it remains highly effective for rapid prototyping and boosting personal productivity, allowing users to maintain a “flow” state.

Why This Is Important

Vibe coding is rapidly transforming AI-augmented development, despite the term being frequently perceived as ambiguous, contentious or even unpopular among IT leaders. The adoption of this paradigm across markets is accelerating, with deep implications. Today, vibe coding significantly boosts personal and workgroup productivity, fuels innovation and prototyping, and can serve as an innovative tool for communicating requirements to software developers.

Business Impact

Enterprises prioritizing rapid learning cycles can leverage vibe coding for personal employee productivity and fast MVP prototyping in safe sandboxes. However, due to its imprecision and high risks, enterprises remain highly averse to deploying vibe-coded applications in production. If properly restricted to nonproduction environments, it offers massive gains in developer creativity and innovation, while safeguarding core systems from unreviewed code.

Drivers

- **Multimodal interaction patterns:** Vibe coding has added a new interaction pattern to the creation of software. Users compose complex software logic via natural language or voice, delegating implementation to autonomous AI and agents to maintain a highly productive “flow” state.
- **Expanding array of use cases:** The vibe coding label is proliferating across multiple enterprise software markets beyond pure coding. It is increasingly adopted in ERP, CRM, low-code, design-to-code and business process automation platforms, making the capability accessible to a wider range of professional and citizen developers.
- **Demand for rapid prototyping capabilities:** Enterprises seek faster, more efficient feedback loops to accelerate innovation. Vibe coding excels in these scenarios, allowing developers and product teams to rapidly build and iterate on proofs of concept and MVPs.
- **Personal productivity gains:** Employees are using these tools to automate rote tasks, troubleshoot and generate scripts quickly. This cognitive offloading reduces friction and improves the overall employee experience by focusing human effort on outcomes rather than syntax.

Obstacles

- **High risk and imprecision:** Many consider vibe coding too imprecise and high-risk for enterprise use. AI models prioritize generating functional outputs over maintaining secure, scalable, and well-architected codebases, introducing hidden vulnerabilities and technical debt.
- **Production aversion:** Enterprises are highly averse to deploying vibe-coded applications in production environments. The code generated is largely uninspected and lacks standard quality assurances, such as rigorous testing and human code review, making it completely unsuited for mission-critical systems.
- **Governance and compliance gaps:** Generating software across expansive markets (like CRM or ERP) without strict audit trails or documentation creates massive compliance, intellectual property and vendor lock-in risks for organizations.

User Recommendations

- Strictly prohibit vibe-coded software in customer production environments. Limit usage exclusively to controlled, safe sandboxes for prototyping, internal experimentation and rapid proofs of concept.
- Establish clear governance differentiating vibe coding tools from standard AI-augmented development. Ensure developers apply rigorous human oversight, security validation and architectural review to any AI-generated artifacts considered for long-term use.
- Leverage vibe coding interaction patterns to boost personal employee productivity and accelerate innovation cycles, but mandate that the resulting code is treated as disposable, or run through full SDLC processes.
- Evaluate vibe coding capabilities carefully as they emerge in broader markets like ERP, CRM and low-code. Develop a strong integration strategy and platform engineering guardrails to safely explore these features without exposing enterprise systems to unvetted risk.

Gartner Recommended Reading

[Understanding Gartner's Hype Cycles](#)

[How to Select a Vibe-Coding Platform](#)

[Why Vibe Coding Needs to Be Taken Seriously](#)

[Innovation Insight for Vibe Coding Platforms](#)

[Vibe Coding Requires a New Kind of Developer](#)

[Magic Quadrant for Enterprise AI Coding Agents](#)

[How to Improve Developer Productivity Using AI Tools](#)

[Market Guide for Enterprise Vibe Coding Platforms](#)

Climbing the Slope

Product Operations

Analysis By: Charles Sutherland, Dan Tolan, Grace Keyes

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

The product operations function within a product management organization is responsible for enablement and governance activities that improve the effectiveness of the organization and accelerate the product life cycle. Product operations teams own and administer tools and processes, including AI tools, and drive cross-functional alignment across stakeholder groups.

Why This Is Important

As product management teams scale, balancing internal and external focus becomes more challenging because operational scope increases. Role specialization enables teams to maximize investments while ensuring core responsibilities are covered. Meanwhile, as AI adoption reshapes work execution, product operations team members act as internal AI workflow architects and stewards on the use of AI tools, enabling product managers to concentrate on market discovery, innovation and customer needs.

Business Impact

- Elevates product team performance by identifying best practices, building templates and training the team
- Boosts overall team effectiveness by allowing PMs to focus on external engagement and management of the end-to-end product life cycle while delegating routine internal or administrative tasks
- Strengthens AI governance and efficiency by driving consistent internal AI adoption, enforcing responsible AI standards and monitoring regulatory compliance

Drivers

- Product teams often find that the generalist approach to product organizational design stretches resources too thin and fails as teams scale.
- A rapid increase in ad hoc AI adoption within product management processes increases the governance and operational burden and creates inefficient workflows for generalist product managers.
- Product managers spend a significant share of their time on internal coordination, process definition, administration and metrics work, reducing the time they have available to validate problems and solutions with customers.
- The adoption of commercial off-the-shelf product management tools and AI platforms adds operational complexity and requires dedicated oversight to prevent fragmentation.

Obstacles

- Organizations may struggle to find internal candidates with the appropriate strengths in cross-functional alignment, process, automation, AI governance and collaboration to properly fill the role.
- Introducing a new role without clearly defining specific needs, processes and relationships can lead to overlap and confusion within the product team.
- The accumulation of technical debt within product silos will make the function less effective unless they can be broken down.
- Product operations may become too disconnected from the daily needs and challenges of the product managers and, as a result, may become too focused on theoretical best practices and implementing broad frameworks.

User Recommendations

- Create a dedicated product operations role to manage internal responsibilities that enable cross-functional alignment and drive acceleration within the product development life cycle, such as process definition, coordination and metrics-driven performance measurement.
- Task the product operations team with evaluating, integrating and maintaining all AI tools and use cases to ensure responsible AI standards are consistently enforced.

- Divide product management team responsibilities into strategic, administrative and tactical areas, allowing product operations to uniquely own the administrative, orchestration and coordination tasks.
- Assess the current team to identify specific operational specialization. Candidates from outside of product management with experiences in process definition, project management, AI governance and business intelligence should also be considered.

Gartner Recommended Reading

[Product Operations Is Essential for Scaling Product Teams and AI Adoption](#)

Consumption-Based Pricing

Analysis By: Ron Burns

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

Consumption-based pricing (CBP) is an approach used to charge customers based on their actual product usage rather than user-seat or enterprise flat-rate access entitlement models. Consumption is measured in units such as compute time, data quantities, AI tokens, API requests, business transactions or other operational metrics. CBP comes in two basic forms: pay-as-you-go (PAYG) and volume commitments.

Why This Is Important

CBP links prices to actual usage, making it ideal for SaaS and AI workloads where delivery costs escalate rapidly as usage increases. Beyond safeguarding margins against fluctuating expenses, CBP fosters a virtuous cycle of product trial, adoption and sustainable revenue growth. As customers realize value and expand usage, provider revenue scales in tandem, ensuring long-term alignment and mutual success.

Business Impact

- CBP improves product adoption and revenue growth by enabling customers to experiment with new technologies without the risk of expensive, long-term commitments for software access.
- Volume-tiered discounting and adoption rewards successfully shift the buyer's focus from aggressive cost optimization to genuine value realization.
- By matching product pricing directly to usage or utilization metrics, providers can safely protect their profit margins against the unpredictable delivery costs of AI.

Drivers

- Traditional user-seat pricing models offer poor value alignment due to unequal usage distribution among employees, positioning products as too expensive for buyers who struggle to predict exact user access needs.
- Relying on legacy user-seat licenses for AI solutions can actively cannibalize future revenue and miss significant annual recurring revenue (ARR) value capture. Typically, AI delivers significant year-over-year benefits without requiring an increase in users, or AI itself becomes a superuser.
- Advanced technologies often experience uneven value distribution across use cases, which necessitates pricing metrics that reflect actual usage intensity and value received rather than charging the same flat amount for product access.
- The rapid proliferation of AI, multiagent workflows and API use has introduced highly unpredictable operating costs, forcing providers to abandon static flat-rate pricing in favor of usage-aligned models.
- Economic uncertainty is prompting buyers to heavily scrutinize technology budgets, making flexible, entry-level PAYG plans highly attractive for proving ROI before committing to enterprise plans.
- Product-led growth (PLG) and land-and-expand strategies require low-friction entry points, making consumption-based trials ideal for quickly securing new enterprise accounts and demonstrating value.
- The need to balance PAYG flexibility with enterprise budget predictability has driven the rise of “committed consumption” models, where customers pledge an annual spend that can be flexibly used across a provider’s entire product portfolio. Commitments are typically purchased in tiers (or bands) of volumes versus exact amounts.

Obstacles

- CBP requires CPOs to invest in advanced analytics software to track consumption for customer visibility, billing and budget estimation.
- PAYG consumption pricing can be highly unpredictable for both buyers and sellers, frequently causing customer anxiety over unexpected, budget-busting true-ups.
- Without clear protective caps or forgiveness policies, unexpected spikes in usage can lead to “bill shock,” prompting customers to immediately restrict their software adoption.
- Technical pricing metrics (tokens, compute resources, API calls) often do not align with customer value, confusing business buyers trying to calculate costs and ROI.
- Volatile AI delivery costs force tech providers to frequently revisit and adjust unit entitlements and charges, risking customer dissatisfaction.

User Recommendations

- Implement product analytics (build or buy) and equip customers with intuitive usage monitoring dashboards, alerts and ROI calculators so they can accurately predict, track and budget their ongoing consumption.
- Structure consumption pricing into volume tiers with built-in discounts and automatic upgrades to actively reward increased adoption.
- Establish transparent pricing forgiveness policies, such as percentile true-forwards, to eliminate buyer fears of unbudgeted overage penalties.
- Use a “committed consumption” model where customers pledge an annual spend amount that can be flexibly consumed across a portfolio of products.
- Ensure pricing transparency by making core pricing metrics (not actual price amounts), multipliers, and overage policies available publicly or early in the sales process to build buyer trust and accelerate deals.
- Simplify AI pricing by utilizing a credit model that abstracts tasks of differing complexity into a single, easily understandable consumption metric.

Sample Vendors

Aria Systems; Contentsquare; LogiSense; Pendo; Revenera; Zuora

Gartner Recommended Reading

[Offer 'Committed Consumption' to Maximize SaaS Adoption and Revenue](#)

[Pricing Forgiveness Policies Succeed Over Weaponizing Overages for AI Adoption and Growth](#)

[Pricing Models Based on AI Units Are Essential to Adoption and Profits](#)

[Pricing Complexity Is a Hidden Liability That Will Stall Growth for AI Software](#)

[Use 2 SaaS Pricing Models for Buyer Flexibility and Predictability During Economic Uncertainty](#)

[AI Vendor Race: AI Agent Growth Will Stall Without Consumption Pricing Controls](#)

[AI Vendor Race: Agentic AI Pricing Models Evolve to Address Buyer ROI Anxiety](#)

Dynamic Roadmapping for Tech Product Management

Analysis By: Charles Sutherland, Marcus Blosch, Philip Allega

Benefit Rating: High

Market Penetration: More than 50% of target audience

Maturity: Mature mainstream

Definition:

Dynamic roadmapping is a structured method and supporting tools for visualizing interdependent elements in product and technology plans. It visually depicts desired, required and ongoing changes across strategic themes, product features and technologies simultaneously (for example, now, next, later), and is used to connect what customers say they want and what tech product teams actually build.

Why This Is Important

All product teams have some form of roadmap today. Dynamic roadmapping utilizes AI to enhance traditional roadmapping processes to aid vendors in moving from feature factories to market leaders. By integrating AI-driven insights with live delivery data, vendors reduce waste and ensure every product manager and developer hour fuels high-ROI goals. This model reduces time to market, eliminates manual reporting, and builds customer trust through transparent, data-backed roadmaps.

Business Impact

By automating data synthesis and linking discovery to delivery, tech vendors can slash R&D waste and accelerate time to market. AI-driven forecasting replaces manual admin, freeing product managers to focus on high-ROI innovation. This shift ensures every engineering hour aligns with strategic goals, increasing customer retention through live feedback loops and dynamic, data-backed agility.

Drivers

- **An AI-advisory capability surge:** AI can now suggest “next best moves” by analyzing in-production and in-flight investments, predicting where resource conflicts might occur.
- **Need for cross-stack or platform visibility:** Organizations are moving away from simple “delivery timelines.” The demand for advanced, or “new era” roadmapping stems from the complexity of modern business and technology stacks. CPOs need to see the “now, next, later” of their entire product portfolio, not just individual projects or transformation/modernization programs. In many vendors, this can be furthered with the deployment of platform product managers who own these components of the roadmap (see [Tool: Platform Product Manager Job Description for Technology and Service Providers](#)).

Obstacles

- **Data integrity:** The primary hurdle is the effort required to maintain data integrity across differing product managers' processes and fragmented sources of customer needs and requirements.
- **Tool fatigue:** Many organizations struggle with "tool fatigue," because roadmapping software becomes another "best-of-breed" silo rather than a bridge to development tools.
- **AI literacy gap:** While the enthusiasm of CPOs for advanced roadmapping is high, practical adoption across product management teams requires greater understanding of the value of changing established practices to deliver the outcomes desired and required.
- **Credibility:** If "in-production" data is inaccurate, the "tomorrow" visualization loses credibility.
- **Perceived value:** Without tool support for greater automation of data ingestion and an "AI-advisory" hook for analysis and visualization updates, the perceived manual effort of advanced roadmapping may outweigh the perceived value for time-strapped product management teams.

User Recommendations

- **Audit the data stack:** Before selecting a tool provider, ensure your "in-flight" and "in-production" data sources are clean and accessible.
- **Pilot AI-advisory modules:** Focus on vendors offering automated analysis to reduce the manual burden on enterprise architects.
- **Iterate on roadmap views:** Don't try to build one "perfect roadmap." Instead, create three separate views by product: one for the board/C-suite (high-level strategy alignment), one for engineering (technical specs), and one for customers (public-facing progress).
- **Expand the audience:** Invite nonproduct stakeholders into the roadmapping process early. Aim for a broad adoption rate to ensure the roadmap is a living business document, not a product management secret.

Sample Vendors

Aha!; Atlassian; Lucid Software; Miro; Productboard; ProductPlan

Gartner Recommended Reading

[3 Roadmap Prioritization Frameworks for Tech CEOs](#)

Product-Led Growth

Analysis By: Ron Burns, David Yockelson

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

Product-led growth (PLG) is a go-to-market strategy that centers the buying journey on self-serviced, individual user product experiences. Powered by product analytics, PLG drives user acquisition, activation and expansion into enterprise buying teams. It utilizes tactics such as freemium models, free trials, entry-level pricing and interactive demonstrations to facilitate conversion and seamless adoption.

Why This Is Important

Modern B2B technology buyers increasingly demand frictionless, seller-free experiences during early product evaluation phases of the buying journey. Unlike sales-led models with multimonth cycles, PLG loops accelerate user time-to-value and lower customer acquisition costs. By tracking usage in product experiences like demos and trials, value realization and purchase intent signals can be captured as product-qualified leads (PQLs) to enhance marketing metrics and drive predictable growth.

Business Impact

- **Sales efficiency:** PQLs signal the optimal time for high-touch human engagement.
- **Accelerated revenue:** Shortens sales cycles by demonstrating immediate value.
- **Customer acquisition costs (CAC):** Can lower CAC via a scalable, automated-marketing channel that satisfies prospect interest volumes at the top of sales funnels.
- **Adoption and expansion:** Self-service product education, microconversions, entry-level pricing, combined with product analytics spur new logo adoption and expanded enterprise use.

Drivers

- **Economic pressure:** Newly developed products need economically efficient paths to build awareness and land new business. High-efficiency methods are needed to show the value of complex products, such as AI, without the heavy human capital required for traditional proof of concepts (POCs).
- **Self-service reference:** Most B2B buyers now prefer to self-serve, avoiding direct seller engagement until they are close to a final decision. Many live trials of complex solutions face buyer evaluation hurdles where users get lost easily, or don't realize value quick enough.
- **AI search impact:** AI search engines are making B2B buyers more informed and self-directed, increasing the importance of PLG strategies by raising expectations for seamless, self-serve product evaluation and hands-on trials.
- **Interactive demos:** New tools allow companies with complex or enterprise-scale products to offer realistic, self-serve experiences across a multitude of use cases and integrations. Generative AI allows for rapid creation of personalized storytelling and synthetic datasets.
- **Product-qualified leads (PQLs):** Advanced product analytics are now being deployed in demos and trials to offer more precise indicators of purchase intent, enhancing traditional marketing metrics, and warming-up enterprise sales opportunities.
- **Onboarding demands:** Buyers expect immediate "aha" moments, forcing providers to embed guided onboarding and in-app support directly.

Obstacles

- **Product limitations:** Complex products cannot be rapidly configured or customized to demonstrate solutions for the wide range of customer-specific use cases, datasets and integrations.
- **Organizational silos:** Product teams are frequently isolated to development cycles (e.g., usability, configurability) that stop short of sales and adoption processes. This limits their ability to help GTM teams promote a core value proposition and empower end-users to effectively champion the product to their broader enterprise buying teams.
- **System gaps:** Traditional CRM platforms lack native capabilities to operationalize product usage telemetry. Defining PQLs requires extensive data mapping of personas, workflows and internal systems.
- **Cultural change management:** Transitioning to or adding PLG can cause friction with sales teams fearing automation or “free-offer” cannibalization. Success requires intense collaboration between sales, marketing and product to target end-users effectively.

User Recommendations

- **Adopt hybrid PLG or product-led sales:** Combine PLG with sales-led strategies, using product data to trigger human intervention for enterprise deals as needed.
- **Eliminate friction:** Use an interactive demonstration platform to quickly build out ungated and gated demos, and synthetic sandboxes for complex products that cannot support live trials.
- **Collaborate on PQLs:** Collaborate with sales team leaders to define the specific demo, trial and feature usage that constitutes a PQL. Deploy robust product analytics to identify behavioral bottlenecks and pinpoint expansion opportunities.
- **In-App engagement:** Use PLG tactics (e.g., usage analytics, interactive demos) as automated nudges to streamline onboarding, encourage peer sharing, and to promote upsell opportunities.
- **Build user communities:** Successful, strategic PLG expansion depends in part on fostering both free and paid, internal and external user advocacy, to create and sustain ongoing investments in the product.

Sample Vendors

Amplitude; Arcade; Consensus; Contentsquare (Heap); Pendo; Reprise

Gartner Recommended Reading

[7 Interactive Demo Practices That Accelerate Buyers' Product Evaluation](#)

[PLG Tactics Fatten Sales Funnels for Tech CEOs of Complex Products](#)

[PLG Tactics for Products That Don't Fit Self-Service Models](#)

[Unlocking Product-Led Growth Success With Product Analytics](#)

[Interactive Demos Are the Most Useful Resources on Websites for SaaS Buyers](#)

[Market Guide for Interactive Demonstration Applications](#)

[How to Maximize Buyer Journey Impact With Interactive Demos](#)

Product Analytics

Analysis By: Adrian Lee, Vivek Tomar

Benefit Rating: Transformational

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

Definition:

Product analytics applications are used to collect and analyze behavioral data and sentiment to increase user engagement, adoption and satisfaction to improve and drive retention. Product analytics are embedded within AI agents, mobile and desktop apps, websites, software, and edge devices. They enable in-product or agentic engagement for user onboarding and activation, as well as support the analysis of user event data to draw behavioral insights about how users engage.

Why This Is Important

Tracking, understanding and influencing user behavior through successfully implementing digital experiences is vital to the success of organizations. In the agentic AI era, product analytics provide emerging capabilities to analyze first- and third-party AI agent interactions. Product analytics continue to expand features to add automation and embedded AI agents for insight and expand understanding of how user experience (UX) influences value and business outcomes for organizations.

Business Impact

Application leaders can improve user adoption, customer experience (CX), retention and revenue by:

- Iterating on user experience to improve product-market fit through measurement of user behaviors to increase adoption, retention and usage.
- Uncovering and eliminating friction points for users across the entire product life cycle, including education, activation, expansion, retention and support.
- Aligning internal engineering metrics with CX, business and financial metrics.

Drivers

- The potential for high-growth and high-margin software that is differentiated by CX is a driver for understanding the user experience across all interaction points. This experience needs to be tracked and analyzed in order to be optimized.
- Investments in GenAI and agentic AI capabilities by product analytics vendors have democratized analysis by nontechnical user roles through natural language queries to automatically generate descriptive insights and recommend actions from large event datasets and multiple user segments.
- Product analytics implementation in SaaS is significantly simplified when it is considered upfront during product strategy development.
- SaaS business models are decreasing the cost of switching for users and organizations, and the time to value is a driving factor. Product analytics is a must for ensuring compelling user experiences as a retention strategy.
- Digital workers expect their workplace tools to deliver experiences like applications in the B2C space. There is an increase in investment for improving employee experiences (EX). To achieve this, measurement and analytics are crucial to articulate ROI on EX investments.
- Buyers of product analytics technologies are moving beyond only measurement into actionable intervention that is motivated by financial outcomes. Hence, product analytics insights are used in customer relationship analysis like lifetime value calculation, churn prediction, and optimization of both inbound in-product engagement and outbound communications.

Obstacles

- Vendors have embedded AI agents to accelerate insights for human end users, but adoption and change management challenges still persist for product operations teams or marketing business analysts to fully leverage product analytics in workflows.
- Data integration between agentic-AI-enabled product analytics, marketing analytics, centralized reporting data lakes and customer data platforms (CDPs) for holistic digital intelligence is complex and expensive, often a friction point for buyers of product analytics technologies to gain maximum value.
- B2B applications that require complex, multistep workflows and multiple personas' involvement can present difficulties in mapping user actions from multiple touchpoints and enabling contextually relevant AI agent insights from product usage data alone.

User Recommendations

- Make user behavior instrumentation a first-class tenet of any software application built for business.
- Evangelize the definition and reporting of user experience KPIs as a tool to align the organization around the customer-centric focus for improving CX.
- Build operations (product and/or marketing) teams that work with data or platform engineers to build and augment the data and metadata structures needed for a holistic digital product analytics view.
- Build a feedback loop across the entire experience, where the data and analytics collected during onboarding, activation, usage and support will inform and prioritize the requirements for future capabilities designed to remove the friction points in the experience.
- Do not build what you can buy. The vendor landscape offers a robust set of AI-enabled capabilities to deepen the product analytics processes. Use product analytics vendors that make it a priority to be interoperable and optimize data flows for downstream decision making.

Sample Vendors

Amplitude; Contentsquare; Fullstory; Gainsight; Glassbox; LogRocket; Mixpanel; Pendo; Quantum Metric

Gartner Recommended Reading

[Market Guide for Product Analytics](#)

[Competitive Landscape: Product Analytics](#)

[Unlocking Product-Led Growth Success With Product Analytics](#)

Entering the Plateau

Visual Collaboration Applications

Analysis By: Sarah Baumunk, Brent Stewart, Paige Kirk

Benefit Rating: High

Market Penetration: More than 50% of target audience

Maturity: Mature mainstream

Definition:

Visual collaboration applications are cloud-based platforms that enable teams to collaborate creatively and efficiently, both asynchronously and in real time. These tools provide a shared digital canvas with robust collaboration features, prebuilt templates and integrations that support brainstorming, planning and design workflows across distributed teams. Advancements in AI and automation have further enhanced their ability to assist in ideation, prototyping and project planning.

Why This Is Important

Visual collaboration applications have evolved into a foundational tool for digital product and service teams. They bridge geographical gaps, streamline communication and foster collaborative problem solving. As generative AI (GenAI) capabilities expand, these platforms serve as the central workspace where product, UX and engineering teams align on strategies, test concepts and iterate designs faster. Their role in enabling hybrid and remote work environments continues to be indispensable.

Business Impact

These tools enhance how teams collaborate by enabling more dynamic and inclusive workflows. They enhance creativity, improve decision-making speed and drive innovation through flexibly structured ideation and real-time feedback loops. AI-driven automation, seamless integrations and accessibility improvements have increased their adoption across industries, making them essential for product management, UX research, design, presentations and software development.

Drivers

- **Flexibility and adaptability:** Visual collaboration applications are increasingly used early in a project life cycle before creating corresponding entries in rigidly structured formal tools, such as those used for collaborative work management, task management or project management.
- **Product team collaboration:** These applications facilitate alignment among product managers, designers and developers, reducing friction in iterative design and development cycles.
- **AI-enhanced workflows:** GenAI assists in idea generation, automates diagram creation and accelerates prototyping, shifting human focus to strategic and creative decision making.
- **Integrated design ecosystems:** Deeper integrations with design and development tools, such as Figma, Jira and Notion, reduce tool switching and increase workflow efficiency.
- **Templates for structured collaboration:** Prebuilt frameworks help in planning, brainstorming and conducting retrospectives, and agile workflows streamline ideation and project execution.
- **Tools for unstructured collaboration:** Flexible notes and design elements support informal collaboration, brainstorming and ideation. They are often paired with voting, review or GenAI features to later organize, prioritize or otherwise impose structure.
- **Inclusivity and accessibility:** Features like real-time transcription, language translation and adaptive interfaces make collaboration more inclusive across global teams.
- **Data security and compliance:** Enhanced encryption, compliance with regulations (e.g., GDPR and SOC 2), and improved data ownership policies mitigate security concerns for enterprises.
- **Global and remote workplaces:** Enterprises are increasingly moving to remote, global or offshoring options to reduce costs and avoid frictions like immigration and geopolitical challenges, making remote collaboration technologies essential for promoting teamwork and connection.

Obstacles

- **Perceived as remote-only:** Some teams still see these tools as exclusive to remote work, slowing adoption in hybrid or in-office settings.

- **Rising competition from unified platforms:** Productivity suites that integrate design, development and collaboration features (e.g., Notion or Atlassian Confluence) present viable alternatives.
- **Onboarding complexity:** Despite improved UI/UX, new users may struggle with feature overload, requiring structured onboarding and training to maximize adoption.
- **Cost concerns:** Premium-tier pricing may be prohibitive for startups or smaller teams, driving demand for open-source or lower-cost alternatives.
- **Data portability and vendor lock-in:** Limited export options and proprietary formats create challenges in switching platforms, increasing concerns about long-term commitment.

User Recommendations

- **Standardize workflows:** Establish the tool as a core platform for product, UX and engineering collaboration, ensuring alignment on documentation, ideation and decision making.
- **Utilize AI-assisted collaboration:** Leverage built-in AI tools for automated insights, smart templates and content suggestions to enhance brainstorming and strategic discussions.
- **Extend usage beyond product teams:** Encourage adoption across departments, such as marketing and HR, for campaign planning, training and internal process documentation.
- **Invest in training and user adoption:** Provide structured onboarding programs and self-service learning resources to ensure team proficiency and increase tool utilization.
- **Monitor security and compliance:** Ensure chosen platforms meet enterprise security requirements and data governance policies, particularly for industries with strict compliance needs.

Sample Vendors

Canva; Figma; iObeya; Lucid Software; Microsoft; Miro; Mural; Padlet; Zoom

Gartner Recommended Reading

[Market Guide for Visual Collaboration Applications](#)

Voice of the Customer for Visual Collaboration Applications

Market Guide for Meeting Solutions

Design Thinking

Analysis By: Sarah Baumunk, Paige Kirk, Brent Stewart

Benefit Rating: High

Market Penetration: More than 50% of target audience

Maturity: Mature mainstream

Definition:

Design thinking is an ideation methodology extracted from the broader, multidisciplinary design process used to create physical and digital products.

Why This Is Important

Design thinking within innovation management is an ideation methodology extracted from the broader, multidisciplinary design process, and is generally delivered through a workshop format. It promotes investment in empathetic learning about the organization's customers/stakeholders as the key step to ensure the right problems are defined before innovative actions are taken to deliver solutions. It ensures a human-centered approach and works to minimize uncertainty and risk in innovation efforts.

Business Impact

Design thinking directs the focus of innovation teams toward the human aspects of any given challenge or opportunity. It helps business innovators explore multiple solutions and incorporate different perspectives throughout the innovation effort. It is particularly useful in tackling what are known as "wicked" problems — issues that are difficult to solve because of incomplete, contradictory and changing factors that are not easily recognized.

Drivers

- **AI-augmented design thinking:** New AI technology is making stages of the design thinking process quicker and easier. 1) Empathize and define: Teams can leverage user research platforms, synthetic user research and Emotion AI to capture and analyze user needs and sentiments. 2) Ideate and prototype: AppGen and AI-augmented design tools allow quick generation of prototypes, screen variants and placeholder content, making it easier to brainstorm and visualize new ideas. 3) Test: AI tools can automate end-to-end testing to validate workflows and flag areas of friction.
- **Demand for user centricity:** Shifting customer expectations and behavior are driving organizations to prioritize user centricity. Design thinking is a critical way to achieve this, as it starts with people. It's oriented to see an organization's business process through the lens of its stakeholders, rather than seeing these stakeholders as nodes in a process diagram or as users of technology. This simple reorientation in perspective leads to dramatically different insights.
- **Merging of product and design roles:** Many enterprises are moving toward a world in which engineering, product and design roles have significant overlap or are merging. As a result, it is increasingly important for roles outside of just UX designers to have a concrete understanding of design thinking essentials.
- **Push toward more inclusive digital solutions:** Design thinking helps organizations identify and uncover edge cases, which can help organizations who are facing pressure to develop more equitable, inclusive and accessible products.
- **Drive for innovation:** Design thinking, if done properly, forces participants to look beyond the obvious spans of control or attention, which can push teams toward more innovative ideas. It helps an organization see how it fits within the broader context of its customers' goals or see the organization's operations through the eyes of people at the front line.

Obstacles

- **Cutting corners on research:** Design thinking is a process of applying unique analysis techniques to data coming from usage reports and, more importantly, observational research. This data can be time-consuming and expensive to produce.
- **Outsourcing to AI tools:** While new AI tools can accelerate the stages of design thinking, they must not be viewed as a replacement for the traditional principles of design thinking. Tools often hallucinate or fail to produce accurate or nuanced analyses. Critical thinking, empathy and creativity are inherently human activities, so human-centered design must always be driven by and for humans at its core.
- **Process confusion:** A common pitfall is to conflate design thinking with the design process. Design thinking then ends up as a training program instead of a repeatable ideation technique. The end result is design thinking workshops that have neither any follow-through activity nor any hope for design capability.

User Recommendations

- Direct design thinking toward clearly articulated business problems where stakeholders can be identified and business value can be measured. Complex, “wicked” problems are fine; however, without proper grounding, design thinking can result in very creative insights that are unactionable.
- Don’t skip observational, “empathetic” research — ensure research work precedes any design thinking initiative.
- Work with key stakeholders to identify where AI tools could enhance your team’s design thinking process. Build necessary guardrails and governance to ensure AI tools are used only to augment, not replace, human involvement in each stage.
- Establish high diversity among design thinking participants for robust resulting insights.
- Leverage the investments in internal design talent to establish an ongoing program of applied design thinking and to ensure qualified designers are leading design thinking workshops.

Gartner Recommended Reading

[Use Design Thinking to Boost the Agility of Strategic Planning](#)

[Ignition Guide to Conducting a Design Thinking Workshop as a Product Manager](#)

Ignition Guide to Conducting a Design Thinking Workshop (Strategist Edition)

Use Design Thinking, Lean Startup and Agile to Drive Digital Innovation

Appendixes

Hype Cycle Phases, Benefit Ratings and Maturity Levels

Table 2: Hype Cycle Phases

(Enlarged table in Appendix)

Phase	Definition
<i>Innovation Trigger</i>	A breakthrough, public demonstration, product launch or other event generates significant media and industry interest.
<i>Peak of Inflated Expectations</i>	During this phase of overenthusiasm and unrealistic projections, a flurry of well-publicized activity by technology leaders results in some successes, but more failures, as the innovation is pushed to its limits. The only enterprises making money are conference organizers and content publishers.
<i>Trough of Disillusionment</i>	Because the innovation does not live up to its overinflated expectations, it rapidly becomes unfashionable. Media interest wanes, except for a few cautionary tales.
<i>Slope of Enlightenment</i>	Focused experimentation and solid hard work by an increasingly diverse range of organizations lead to a true understanding of the innovation's applicability, risks and benefits. Commercial off-the-shelf methodologies and tools ease the development process.
<i>Plateau of Productivity</i>	The real-world benefits of the innovation are demonstrated and accepted. Tools and methodologies are increasingly stable as they enter their second and third generations. Growing numbers of organizations feel comfortable with the reduced level of risk; the rapid growth phase of adoption begins. Approximately 20% of the technology's target audience has adopted or is adopting the technology as it enters this phase.
<i>Years to Mainstream Adoption</i>	The time required for the innovation to reach the Plateau of Productivity.

Source: Gartner

Table 3: Benefit Ratings

Benefit Rating	Definition
<i>Transformational</i>	Enables new ways of doing business across industries that will result in major shifts in industry dynamics
<i>High</i>	Enables new ways of performing horizontal or vertical processes that will result in significantly increased revenue or cost savings for an enterprise
<i>Moderate</i>	Provides incremental improvements to established processes that will result in increased revenue or cost savings for an enterprise
<i>Low</i>	Slightly improves processes (for example, improved user experience) that will be difficult to translate into increased revenue or cost savings

Source: Gartner

Table 4: Maturity Levels

(Enlarged table in Appendix)

Maturity Levels	Status	Products/Vendors
<i>Embryonic</i>	In labs	None
<i>Emerging</i>	Commercialization by vendors Pilots and deployments by industry leaders	First generation High price Much customization
<i>Adolescent</i>	Maturing technology capabilities and process understanding Uptake beyond early adopters	Second generation Less customization
<i>Early mainstream</i>	Proven technology Vendors, technology and adoption rapidly evolving	Third generation More out-of-box methodologies
<i>Mature mainstream</i>	Robust technology Not much evolution in vendors or technology	Several dominant vendors
<i>Legacy</i>	Not appropriate for new developments Cost of migration constrains replacement	Maintenance revenue focus
<i>Obsolete</i>	Rarely used	Used/resale market only

Source: Gartner

Evidence

¹ **2025 Gartner Chief Product Officer Survey.** This survey was conducted to identify key considerations for CPOs in setting product vision and integrating AI, focusing on challenges like data privacy, security, technical readiness, and customer adoption. The survey was administered online October and November 2025 and includes data from 159 senior product leaders. These results represent marketers from North America (n = 70), Western Europe (n = 47), and Asia/Pacific (n = 42). Respondents were required to have sole or shared decision-making authority over departmental budget at organizations with at least \$250 million in annual revenue. A majority of respondents (57%) work in organizations with at least \$1 billion in annual revenue. Respondents work in technology products and services industries, including communication service providers (n = 27), infrastructure as a service (n = 12), and software (n = 120). *Disclaimer: The results of this survey do not represent global findings or the market as a whole, but reflect the sentiments of the respondents and companies surveyed.*

Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

[Understanding Gartner's Hype Cycles](#)

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Table 1: Priority Matrix for Hype Cycle to Support Chief Product Officers, 2026

Benefit	Years to Mainstream Adoption			
↓	Less Than 2 Years ↓	2 to 5 Years ↓	5 to 10 Years ↓	More Than 10 Years ↓
Transformational	AI-Assisted Tools for Rapid Prototyping Product Analytics Responsible AI Sovereign Cloud Vibe Coding	AI-Composed Applications	Autonomous Product Innovation Industry Cloud Platforms Micro Product Teams Multiagent Ecosystem Management SimOps Zero-UI	

Benefit ↓	Years to Mainstream Adoption			
	Less Than 2 Years ↓	2 to 5 Years ↓	5 to 10 Years ↓	More Than 10 Years ↓
High	AI Product Behavioral Determinism Consumption-Based Pricing Design Thinking Dynamic Roadmapping for Tech Product Management Product Operations Product-Led Growth Visual Collaboration Applications	AI Literacy for Product Teams AI Product Attribution and Transparency AI Product Knowledge Governance Domain-Specific GenAI Models Embedded Process Intelligence Forward Deployed Engineer Hyper-Synthetic Data New Business Models via APIs and MCP	Behavioral Science for CPOs Human Insights Platforms	
Moderate	Competitive and Market Intelligence Platforms	Autonomous PM Agents		
Low				Outcome-Based Pricing

Source: Gartner (July 2026)

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Source: Gartner