July 2026

Agentic Payments from the Ground Up

Artemis VISA



TABLE OF CONTENTS

02 FORWARD

03 WHAT IS AGENTIC COMMERCE?

05 METHODOLOGY

06 TRANSACTION SHAPE & NEW ARCHITECTURE REQUIREMENTS

08 PAYMENT PROTOCOL DEEP DIVE

10 WHAT THE DATA SHOWS

15 TRUST, IDENTITY, SPEND CONTROLS, & DISPUTES

17 STANDARDS LANDSCAPE

19 USE CASES

21 ECONOMICS & VALUE ACCRUAL

23 COMPLIANCE & REGULATORY CONSIDERATIONS

LOOKING FORWARD

LEGAL INFORMATION & DISCLAIMER

FORWARD

Artemis is the premier analytics platform for blockchain data. Industry leaders like Visa, Grayscale, Pantera, VanEck, Tether, Circle and more trust Artemis to help them understand what is really happening onchain and offchain. This report leverages quantitative evidence from Artemis Analytics' proprietary datasets tracking real transaction activity, fraud-adjusted metrics, and ecosystem growth across x402 and Machine Payments Protocol.

Contributors:



Lucas Shin
Data & Research

When Visa was founded, the ambition was to build more than a card network. It was to help create a global system for the secure exchange of value, regardless of the underlying technology or form factor. Today, agentic commerce represents a new frontier in that evolution. As software begins to discover, evaluate, and purchase goods and services on behalf of users and businesses, new infrastructure will emerge to support trust, authorization, settlement, and control at machine speed.

This emerging category has the potential to expand how payments are initiated, routed, and embedded into digital workflows. This report, produced in partnership with Artemis Analytics, examines the protocols, standards, data, and market structure forming around agentic payments today. It is intended to help payment networks, issuers, acquirers, fintech platforms, and enterprise teams better understand how this new transaction surface is developing and where the most important opportunities and challenges are likely to emerge.

Contributors:



Tim Conard
Onchain Data Lead

WHAT IS AGENTIC COMMERCE?

1.1 Defining Agentic Commerce

Agentic commerce is a new economic surface where software autonomously discovers, evaluates, and executes transactions – continuously, programmatically, and across a far wider range of commerce than traditional payment infrastructure was designed to handle. The degree of autonomy varies. Some workflows keep a human in the loop to review or approve purchases, while others run fully autonomously once configured. Agents can buy SaaS licenses, book travel, automate accounts payable, reorder physical inventory, and commission creative work, often without human intervention at the moment of purchase. Within that broader landscape, a new sub-category of machine-native, sub-dollar transactions is also emerging: an AI agent calls an API, receives an HTTP 402 response ("Payment Required"), evaluates the price, pays, and consumes the resource. That cycle takes milliseconds and requires no checkout page, saved card, or browsing session – only a wallet or card, a budget, and an objective. For payment providers, the full spectrum of agentic commerce creates new transaction surfaces with different economics, risk controls, and infrastructure requirements from traditional e-commerce.

AI crosses the line from chatbot to agent when it begins to reason through multi-step tasks, call external tools, evaluate results, and iterate on its approach autonomously. Agents built on frontier models like Claude, GPT, and Gemini are now deployed in production across every business vertical. Over the past year, these agents have become very capable at writing code and conducting research, but they are inherently limited by access.

Giving agents the ability to pay removes that constraint:

- An IT agent purchases fifty additional seats on a SaaS platform after headcount changes.
- An administrative agent reorders printer toner and breakroom supplies when inventory runs low.
- A research agent queries five financial data providers a few cents each for the same company's filings, then picks the most complete dataset.
- A marketing agent pays ten image-generation providers 5 cents each to render the same product shot, then selects the best output.

Agentic payments span two distinct transaction categories. The first is macro, where an agent executes high-value, consumer-like purchases on behalf of a human (e.g., booking travel, managing subscriptions, ordering supplies). These transactions resemble traditional e-commerce, with the agent acting as a proxy for human intent. The second category is micro, characterized by high-frequency, low-value purchases (i.e., API calls, data queries, compute access, tool usage) initiated by the agent. Both categories are real and growing, but **micro-transactions are the area where new payment architecture is most needed, and where new protocols are emerging to fill the gap.**

Two open-source payment protocols have gone live in the past twelve months to support this second category of agentic payments. x402 (owned by the Linux Foundation; incubated by Coinbase and Cloudflare) has processed over $135.7M in volume across 178.3M transactions since May 2025. Machine Payments Protocol (developed by Stripe and Tempo with contributions from Visa) has settled over $38,000 in volume across ~184,600 transactions since it launched in mid-March of 2026.[1]

[1] All transaction figures cited in this section are cumulative raw onchain totals from Artemis Analytics as of April 21, 2026. Adjusted figures that exclude wash and test transactions are presented in the Methodology section and in Section 4.

1.2 Why Now?

In 1997, online commerce was just getting started. Amazon had been selling books for two years and PayPal did not yet exist. The engineers designing the foundation of the commercial internet reserved status code 402 ('Payment Required') for a future where payments would be as native to the internet as loading a webpage. The infrastructure for this never materialized. Card rails carried fixed fees that made sub-dollar commerce unviable, and every micropayment startup of the 2000s failed because the cost of processing a payment exceeded the value of the transaction. Without a viable way to charge for content and services directly, advertising became the default business model of the internet.

What changed is not primarily that new infrastructure appeared – it's that demand emerged for the first time. The most important development is that AI crossed a capability threshold. Since the releases of Claude 4.5 and GPT Codex 5.2 in mid-2025, agents have been capable of discovering unfamiliar APIs, understanding what they offer, evaluating their price, and deciding whether to pay – autonomously, at machine speed, and without human approval at the moment of each transaction. That capability created organic demand for programmatic, on-demand access to APIs, data, compute, and services in a way that had not existed before. Agents needed to pay for things continuously and at high volume, without the friction of account creation, pre-negotiated contracts, or manual checkout flows.

New settlement infrastructure followed that demand signal. A new generation of blockchains has simultaneously lowered the cost and increased the settlement speed of digital payments by orders of magnitude. Purpose-built chains like Tempo now offer sub-cent fees with 500-millisecond settlement speeds. On established chains like Base and

Solana, gas costs have dropped to fractions of a cent, making micropayments in the $0.01–$1.00 range economically viable for the first time. Critically, this infrastructure did not create agentic commerce demand on its own. Purpose-built chains have existed for years without generating organic markets for usage-based APIs. It was the arrival of capable agents that created the pull. Alongside better settlement economics, blockchain rails are becoming easier to integrate without exposing their underlying complexity: account abstraction, MPC wallets, passkeys, and sponsored transactions increasingly allow these rails to sit in the background, invisible to end users, merchants, and enterprise teams.

Coinbase launched x402 in May 2025, and Tempo launched MPP in March of 2026. Within months, both protocols had live production traffic. Capable agents created the demand; new protocols and rails made it economical to serve them.

The risk of inaction by incumbents is disintermediation. If a small number of platforms control both demand and transaction routing for agentic payments, they can pull payment flows outside existing networks, especially in micro-payment-heavy categories where legacy card economics are weakest. If that segment scales outside the traditional payments stack, incumbents that only participate through higher-value proxy transactions may miss the highest-frequency part of the emerging agentic economy. The players that combine protocol-native speed with incumbent-grade trust, compliance, and distribution are best positioned to define the next generation of agentic payment infrastructure.



METHODOLOGY

All data in this report is as of April 21, 2026.

All metrics labeled a*djusted* in this report are derived from Artemis Analytics' proprietary methodology, applied consistently across both protocols. Methodologies are below:

Adjusted transactions and volume: Raw onchain activity overstates genuine usage on both protocols. Artemis applies a set of proprietary heuristics to identify and filter transactions that resemble wash trading, whether driven by attempts to inflate protocol metrics or by developer testing. The remaining activity represents what we believe to be organic, non-duplicative usage.

Adjusted buyers: A wallet is counted as a buyer if it has at least one adjusted transaction.

Adjusted sellers: A wallet qualifies as a seller if it has received at least three adjusted transactions from at least two unique buyers. This threshold filters out self-dealing and test endpoints, isolating sellers with demonstrated, independent demand.

TRANSACTION SHAPE & NEW ARCHITECTURE REQUIREMENTS

2.1 A New Transaction Pattern

Agentic payments may look nothing like human commerce. A person might make a handful of purchases in a day, each one deliberate and involving a merchant they already know. An agent executing a research task might make hundreds of purchases in an hour, each one a few cents or less, each from a different provider it just discovered.

Three dimensions define the shape of an agent transaction: frequency, value, and relationship. In human commerce, transactions are low-frequency, medium-to-high value, and occur between parties with a pre-existing relationship (i.e., an account, a subscription, a saved payment method). In the micro-transaction category of agentic commerce, transactions are high-frequency, low-value, and occur between parties with no prior relationship at all. The agent discovers a service, evaluates the price, pays, and moves on. Payment is the only interaction between buyer and seller.

For most of the internet's history, e-commerce enabled direct payment for physical goods and larger purchases, but value for digital content and services was often exchanged indirectly. Users paid for content with attention (advertising) or through bundled access (subscriptions). Agentic commerce makes direct, usage-based exchange possible at any price point such that payment can now be attached to a single query, tool call, or data request, down to a fraction of a cent. In that world, the work and the payment become inseparable.

As agentic commerce scales, transaction counts will likely grow far faster than dollar volumes. A single agent session that spends a few dollars might generate hundreds or thousands of individual payments, so **any system built around per-purchase authorization will need to handle far more decisions per dollar of volume than it does today.**

2.2 Why Agentic Micropayments Need New Architecture

The card stack was purpose-built for human commerce: fewer transactions, larger ticket sizes, and merchants established in advance. The high-frequency, sub-dollar micropayment segment of agentic commerce introduces a transaction pattern with different characteristics, and that difference creates a need for new layers of architecture above the card layer.

That difference shows up across several dimensions. Card rails were optimized for fiat-denominated purchases, seconds-long authorization, day-scale settlement, and human verification flows. The machine-native micropayment segment introduces new requirements: sub-cent payment economics, near-instant confirmation, machine-readable credentials, and the ability to transact at high frequency with no pre-existing merchant relationship.

Subscription and metered billing can work around some of these constraints, but only by requiring account creation, pre-negotiated pricing, and an ongoing commercial relationship. That model works for known customers, but not for an agent that discovers a service, pays once, and moves on.

Machine-Native Micropayment Requirements

Agent Payment Requirements

Challenge	Agent Requirement
Minimum Transaction Size	Sub-cent transactions must be viable
Authorization Speed	Milliseconds for programmatic flow
Settlement Speed	Seconds or less
Authentication	Machine-native credentials
Frequency	Thousands of transactions per hour is normal

Data as of: May 2026
Source: Artemis

Artemis

The table above illustrates where new architecture is needed for machine-native micropayments, but cards are not a rigid or static technology stack. They are flexible infrastructure that can be extended and built upon, which industry leaders are actively exploring. For example, Visa's Trusted Agent Protocol (TAP), Visa Intelligent Commerce (VIC), and the Visa Card Specification for MPP all demonstrate how card infrastructure is being adapted to support agent-initiated transactions, from higher-value proxy purchases to machine-native payment flows. The emergence of new micropayment protocols is best understood as new architecture that expands the addressable surface of commerce above the card layer, not a replacement for it.

That is why new payment protocols are necessary and emerging. They make payment the first and only interaction between buyer and seller, enabling a new class of merchant: APIs, tool servers, developers selling micro-services, and data providers charging per query. These businesses need machine-readable payment flows, near-zero onboarding friction, and transaction economics that work at very small values.

PAYMENT PROTOCOL DEEP DIVE

3.1 The Shared Foundation

HTTP 402 has been part of the web's specification since 1997. It was intended as a way for a server (i.e., a web page) to tell a client (i.e., a user) that a resource exists but requires payment before access is granted. x402 and MPP are the first two protocols to build production payment infrastructure on top of this status code that has been dormant for nearly three decades.

Both protocols follow the following basic flow:

1. Client sends an HTTP request to a server
2. Server responds with a 402 status code and a set of payment requirements – price, accepted currencies, and where to send payment
3. Client evaluates the terms, attaches a payment, and resubmits the request with proof attached
4. Server verifies the payment and delivers the resource

The entire exchange happens directly within the HTTP request-response interaction, with no redirect to a payment page and no separate checkout or merchant integration. Payments work the same way authentication works on the web today, through headers in the HTTP request. Any server can become a paid endpoint by returning a 402, which means any agent with funds can pay for it natively.

The following subsections will detail the key differences between x402 and MPP.

3.2 MPP: Two-Party Settlement

Trust model. MPP has no intermediary. The agent pays the server directly, and the server delivers the resource.

Settlement. The primary settlement rail is Tempo, a purpose-built blockchain with approximately 500-millisecond finality and sub-millidollar fees. Tempo also supports sponsored (gasless) transactions, meaning the agent or server can cover gas fees for the other party, reducing friction for new participants. MPP also natively supports cards through Visa's Card Specification and Stripe’s integration, along with the Lightning Network within the same protocol. A server can offer multiple payment options simultaneously, and the agent selects whichever rail it prefers using the same protocol flow. That design shifts more value toward platforms, tooling, and trust layers above the transaction itself.

Payment types. MPP currently supports two types of payment. The first is a charge: a one-shot payment where the agent pays and the server delivers. A single charge can be split across up to ten recipients atomically in one transaction, enabling marketplace models and revenue sharing at the protocol level.

The second is a session: a streaming payment channel where the agent deposits funds into an onchain escrow and the server delivers value incrementally. As the agent consumes the service, it signs offchain vouchers authorizing the server to claim payment for the value received. The server can verify these vouchers in microseconds without making a blockchain call on every request, allowing sessions to operate at speeds comparable to a standard API

call. Unspent funds remain refundable to the agent and the server settles vouchers in batches when the session closes.

Governance. MPP is being developed on the IETF standards track (draft-httpauth-payment). The IETF (Internet Engineering Task Force) is the body responsible for most of the core technical standards that power the internet, including HTTP itself, TLS (the encryption behind HTTPS), and DNS. An IETF standards-track designation means the protocol goes through a formal, open review process where any engineer or organization can participate, comment, and propose changes. This makes MPP the only agentic payment protocol being developed through the same process that produced the foundational protocols of the internet. The specification is publicly available and vendor-neutral by design.

3.3 ×402: Three-Party Settlement

Trust model. x402 introduces a third party into the exchange known as the facilitator. When an agent pays for a resource through x402, the payment goes to a facilitator that holds the funds, verifies that the server delivered what was promised, and only then releases payment to the seller.

Settlement. x402 is an open payment protocol that is designed to work on any chain where a facilitator is deployed, meaning it is not limited to a fixed set of supported blockchains. In practice, activity today is concentrated on Base, Solana, and Polygon, with Base carrying the vast majority of transaction volume.[2] Payments on those chains settle onchain in stablecoins, primarily USDC. The facilitator architecture is also rail-agnostic. While current facilitators primarily settle onchain, the architecture is compatible with facilitators that settle through traditional rails like ACH, SEPA, or card networks. This structure makes facilitators the key monetization and trust layer in the x402 model.

Payment types. x402 currently supports standard fixed-price payments and a consumption-based model called Upto. With Upto, the agent authorizes a maximum amount and pays only for what it consumes. This is designed for variable workloads where the agent does not know in advance how much of a resource it will need.

Governance. x402 was originally created by Coinbase as a proprietary specification. However, in April 2026, stewardship of the protocol was turned over to the Linux Foundation, which launched the x402 Foundation as a vendor-neutral governing body. The x402 Foundation was initially developed by Coinbase, Cloudflare, and Stripe, and is launching with support from companies such as Visa, Amazon Web Services, American Express, Base, Circle, Fiserv Merchant Solutions, Google, KakaoPay, Mastercard, Merit Systems, Microsoft, Polygon Labs, Shopify, and Solana Foundation. The move to open governance under the Linux Foundation signals an intent to solidify x402 as a shared industry standard rather than a single-company project.

3.4 What the Differences Mean

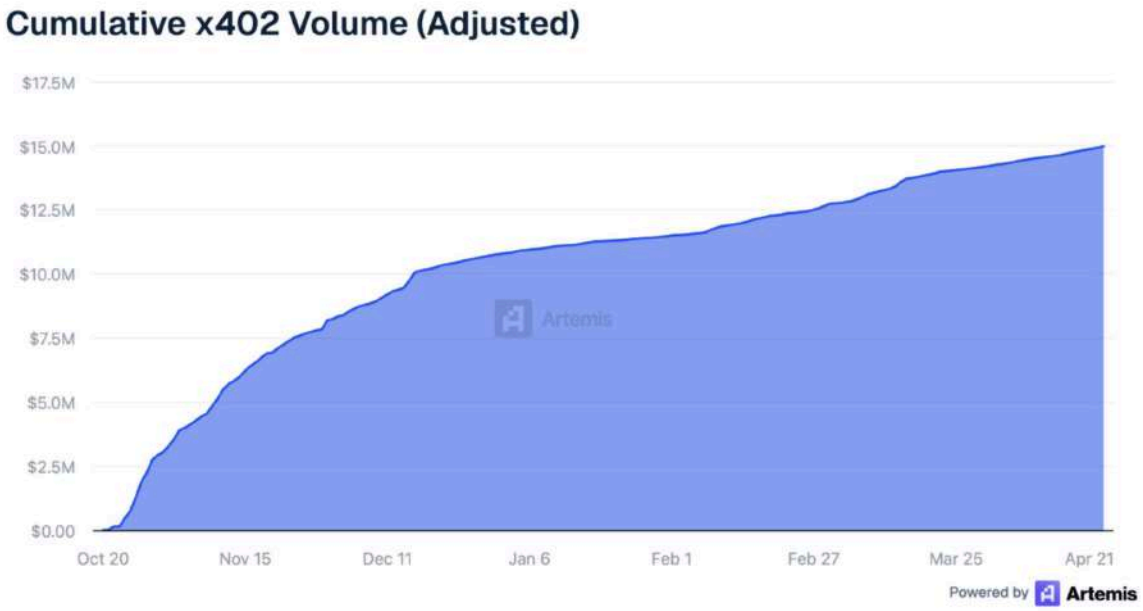
Both protocols are new and evolving. The chains, payment methods, currencies, and features described above reflect what is live today. Both architectures are designed to be extensible: x402's rail-agnostic facilitator model means any new settlement rail can be added by onboarding a new facilitator; MPP's multi-rail design means new payment methods can be supported at the protocol level. As both protocols mature, the feature sets will expand.

[2] Source: Artemis Analytics onchain data, as of April 21, 2026.

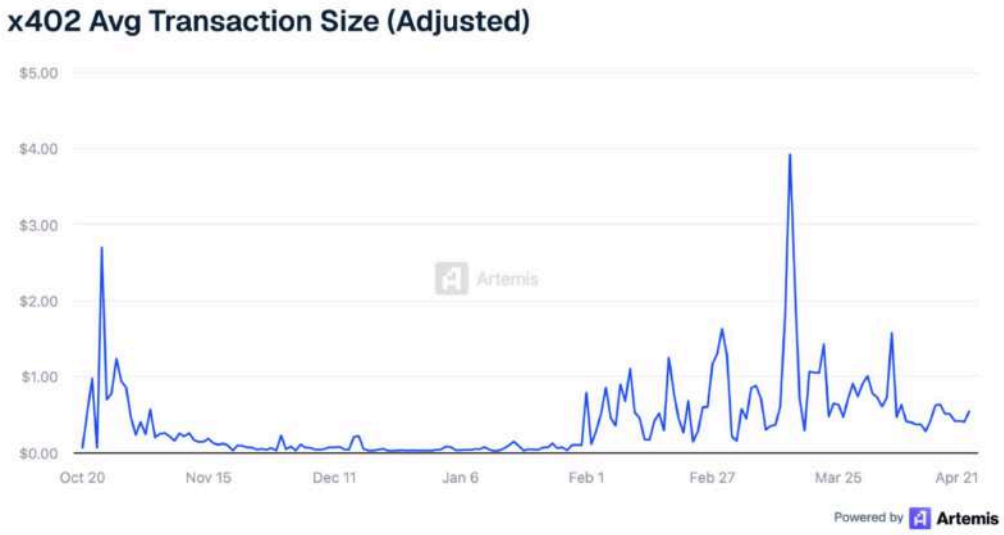
WHAT THE DATA SHOWS

Unless otherwise noted, all metrics in this section are adjusted using Artemis Analytics' proprietary methodology.

4.1 x402: 11 Months of Live Data

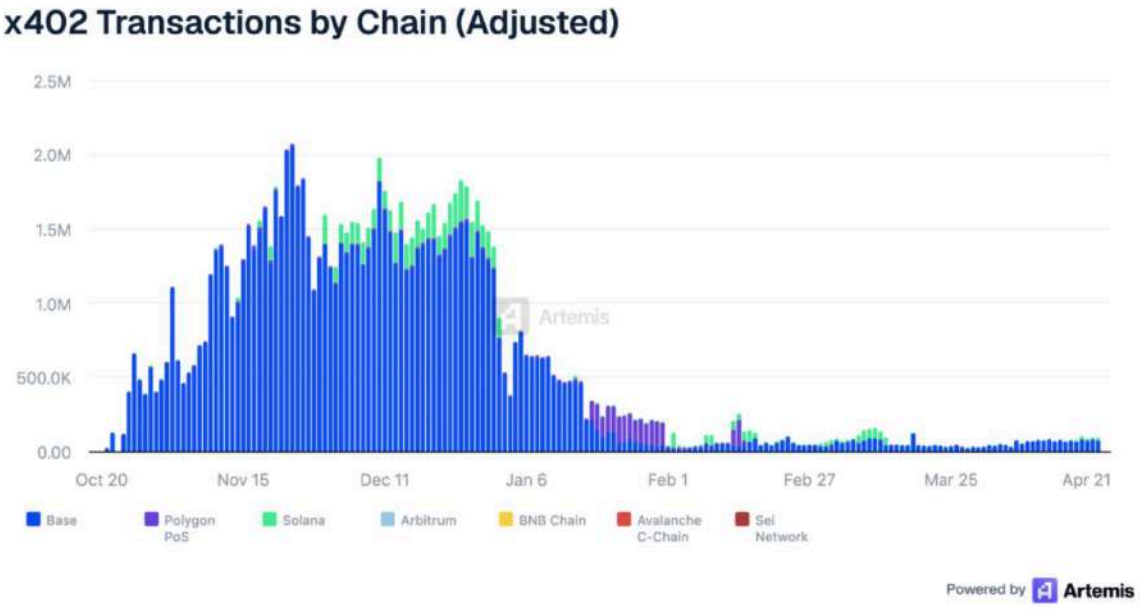


x402 has processed $15.0M in *adjusted volume* across 109.6M *adjusted transactions* since launching in May 2025. Activity accelerated sharply in October 2025, when monthly transaction count rose from roughly 40.0K to 3.8M. The protocol processed approximately 38M transactions in November 2025 alone.

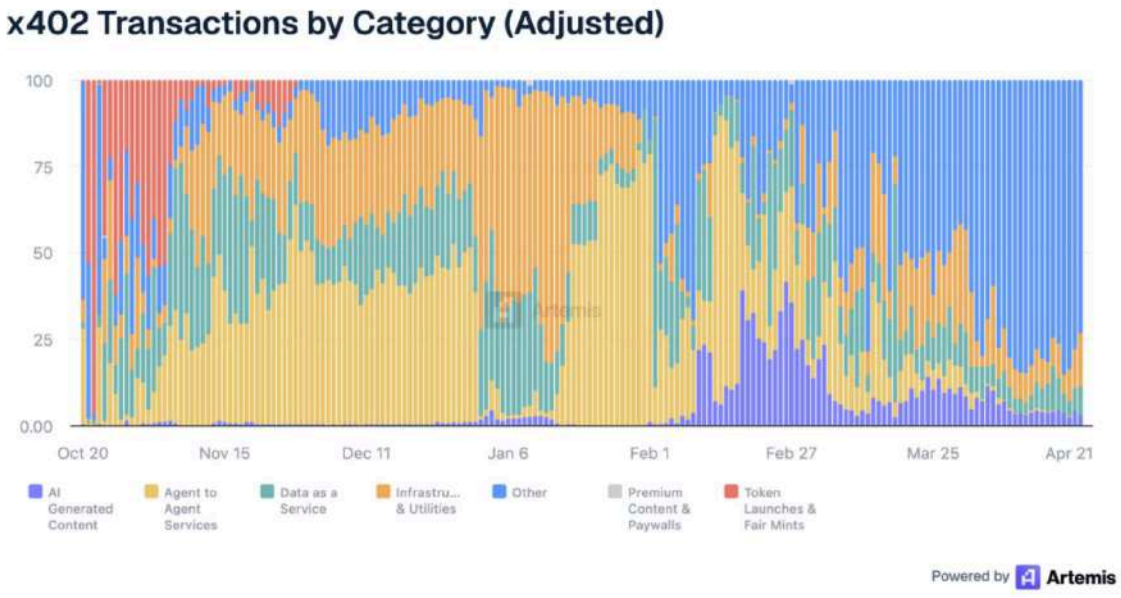


Transaction count and volume have diverged meaningfully over time. November 2025 was the peak month for activity by count, with 38M transactions generating $5.15M in adjusted volume. March 2026 produced a very different profile, with $1.64M in adjusted volume on 2.1M transactions, resulting in the highest average transaction size of any month on record. The top 1% of buyers (roughly 4K wallets) account for about 90% of adjusted volume

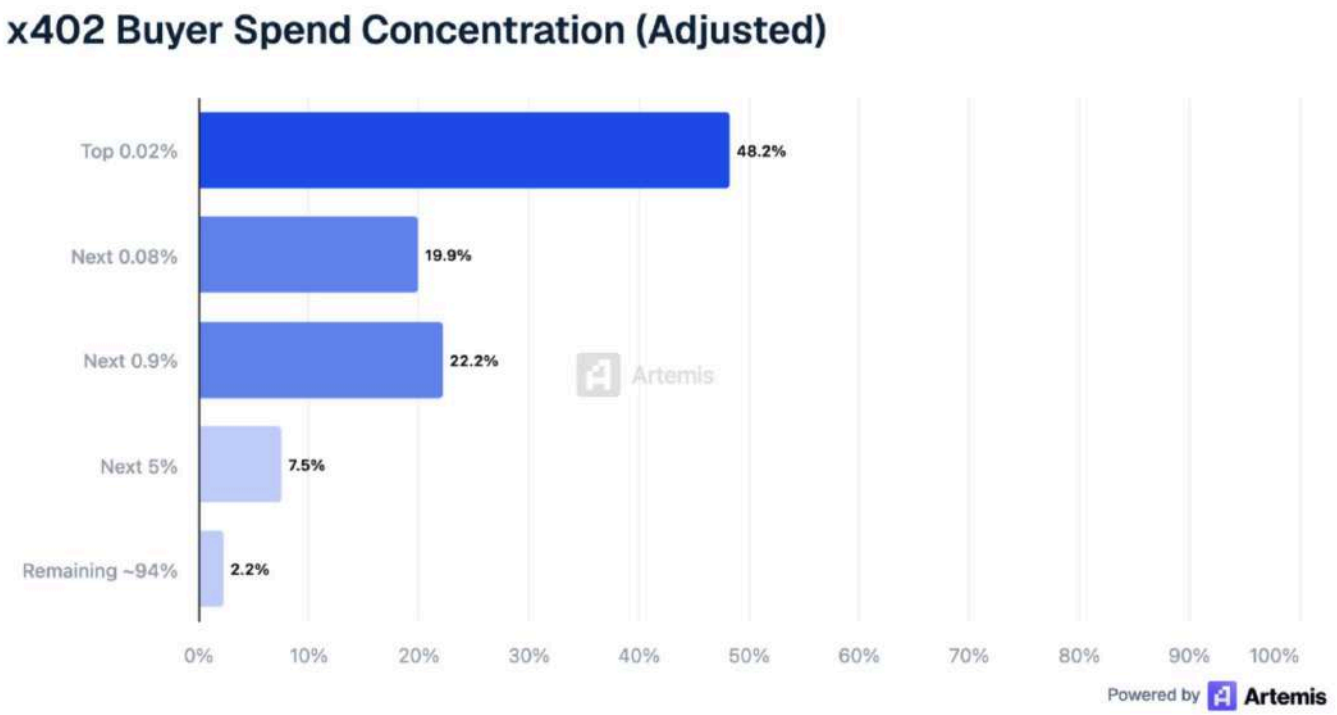
and ~50% of adjusted transactions. That concentration raises the average transaction size. Still, the broader trend still suggests that x402 is supporting a wider mix of payment sizes and workflows than the term micropayments alone would imply.



Base overwhelmingly dominates the ecosystem, accounting for roughly 90% of adjusted transactions and 93% of adjusted volume. Solana ranks second by transaction count and Polygon in third. At this stage, x402 is clearly a Base-centered market, with other chains contributing meaningful but still secondary activity.



By transaction count, Agent-to-Agent Services is the largest category by a wide margin, reflecting the high frequency, low value transaction pattern that defines machine-native commerce. This category captures chained workflows where one agent pays another for a sub-task (e.g., data retrieval, task-execution, inference), meaning a single user request can generate chains of transactions. The long tail of uncategorized endpoints accounts for the majority of volume, highlighting the fragmentation of the supply side and the need for better discovery and aggregation tools.



Dollar spend remains highly concentrated among a narrow set of buyers. Less than 0.02% of buyers generate ~48% of adjusted volume. This is consistent with an early-stage market in which a relatively small number of sophisticated participants still drive most economic activity, even as the overall participant base expands. To date, x402 has over 422,000 *adjusted buyers*.

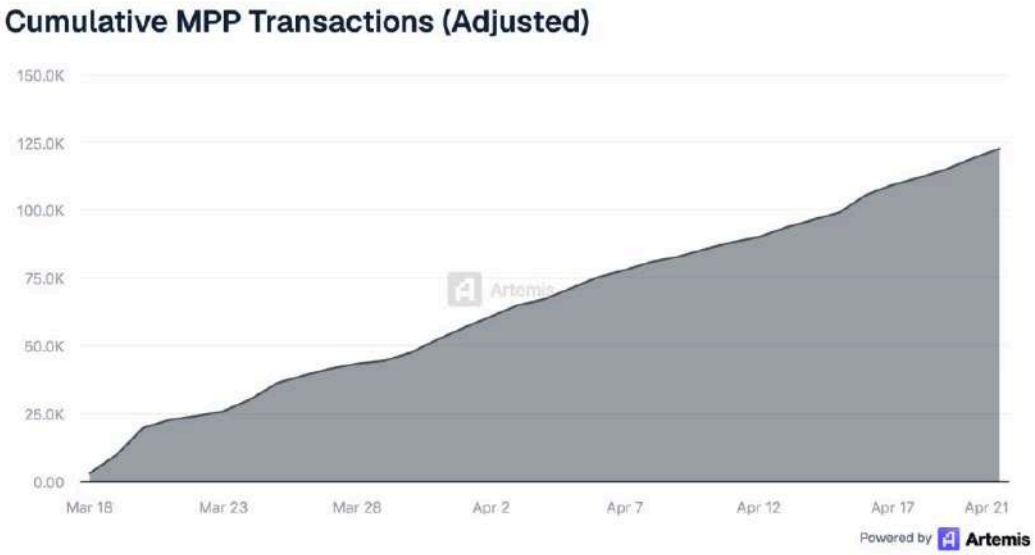


On the supply side, x402 has recorded ~5,300 *adjusted sellers* (i.e., merchants) to date. Unlike traditional merchant onboarding, which can take weeks and requires a payment processor, any developer can deploy a payable endpoint on x402 and begin accepting payments immediately. **Two tailwinds suggest the supply side of agent-consumable resources will continue to expand:**

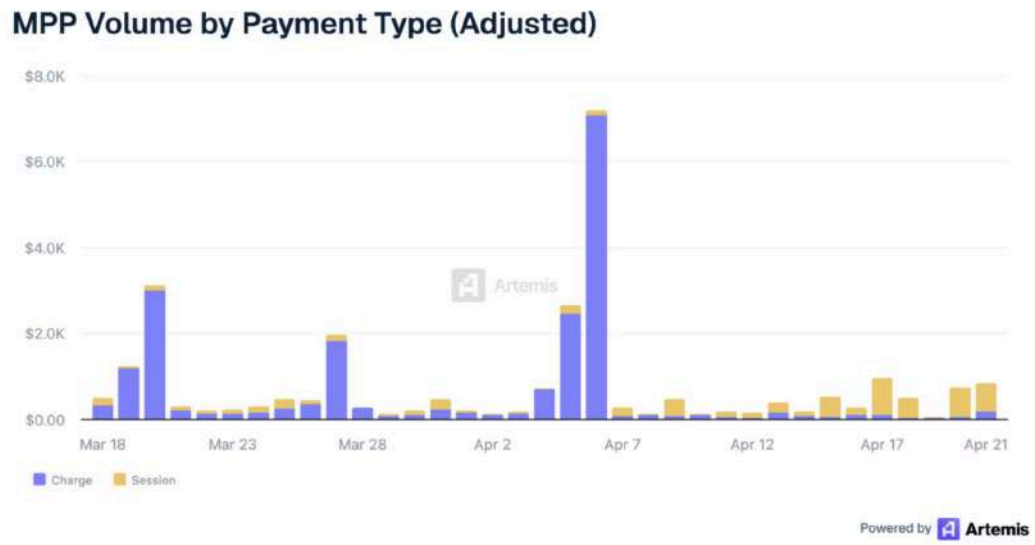
1. First, AI is lowering the barrier to creating digital products, which means more humans and agents will become merchants.
2. Second, new web services and applications are increasingly being designed for agents – API-first, instantly accessible, and priced per request.

4.2 Machine Payments Protocol: First 33 Day

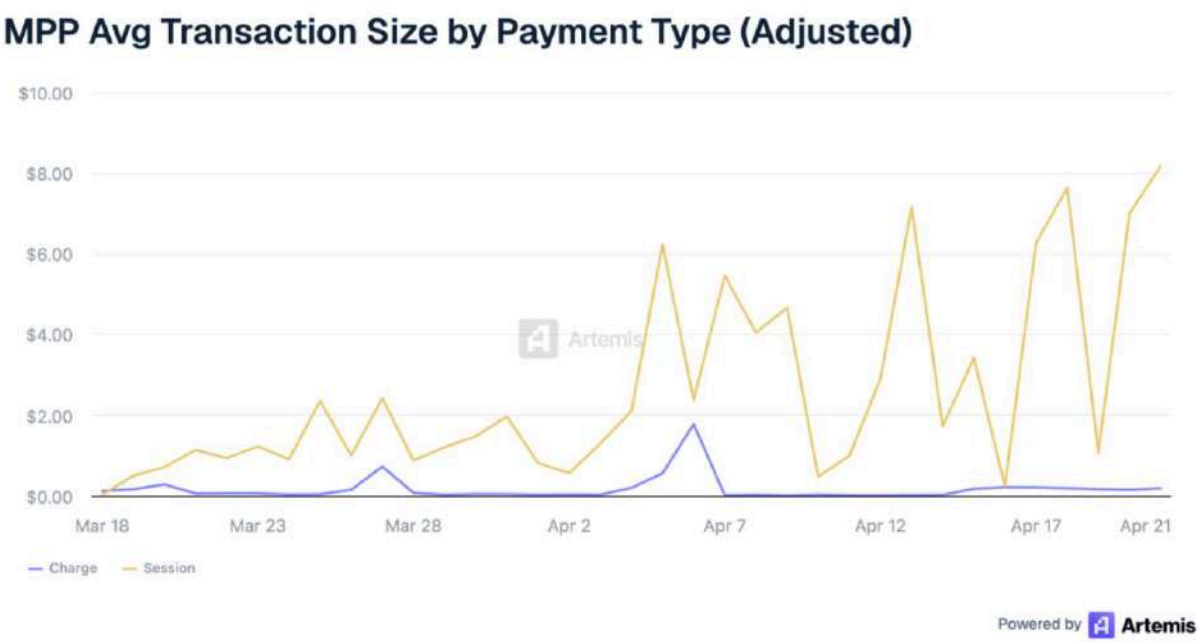
MPP launched in mid-March 2026 and has been live for just over a month at the time of this analysis. Given the protocol's early stage, granular breakdowns are less meaningful than they are for x402 – the focus here is on headline activity and the structural differences emerging between MPP's two payment types.



MPP has processed approximately $25,000 in adjusted volume across ~115,000 adjusted transactions since launch. Transaction growth has been steady and roughly linear since day one, averaging around 4,000 adjusted transactions per day.



Charges account for 97% of adjusted transactions. *Sessions* carry significantly larger transaction sizes but remain a small share of overall activity. As covered in Section 3.3, sessions allow an agent to deposit funds into an onchain escrow channel and pay incrementally as it consumes a service. Because the server settles accumulated vouchers in batches rather than per-request, individual session transactions appear larger than charges even when the underlying usage is granular. Early session activity suggests this model is being tested but has not yet seen broad adoption.



Volume has accumulated gradually, with most transactions still in the sub-cent range. Average charge transaction sizes have remained flat near $0.17 throughout this period, while the average transaction size of sessions is $2.15. The uptick in transaction size for sessions likely reflects experimentation with larger deposits as developers test the streaming payment model.



MPP has recorded over 2.8K *adjusted buyers* and 90 *adjusted sellers* to date. The roughly 32:1 buyer-to-seller ratio suggests demand is outpacing supply, with a growing base of agents transacting across a still-limited set of available endpoints. The supply side is still underdeveloped. x402 had a comparable number of sellers in its first months before accelerating sharply.

TRUST, IDENTITY, SPEND CONTROLS, AND DISPUTES

5.1 Agent Trust Is the Hardest Problem

Traditional commerce assumes a human buyer with intent, judgment, and accountability. Agentic commerce creates questions as regards all three. The buyer is a piece of software acting on delegated authority, making decisions at machine speed, often without real-time human oversight. This creates a trust problem that neither protocol can fully solve at the protocol layer alone.

Mis-purchase risk. The simplest failure mode is an agent that buys the wrong thing. An agent misinterprets a task, selects the wrong service, or overpays for a resource. In human commerce, the buyer catches the mistake before checkout or disputes it afterward. An agent operating autonomously may not recognize the error at all, and at machine speed, a single misconfigured agent can execute hundreds of bad transactions before anyone notices, creating reconciliation, refund, and dispute overhead at a scale that is difficult to contain.

Adversarial attacks. Prompt injection, where a malicious input manipulates an agent into taking unauthorized actions, is an active area of research with no complete solution. An attacker who compromises an agent's reasoning can redirect purchases, exfiltrate funds, or trigger unauthorized spend across connected services. The attack surface grows with autonomy: the more freedom an agent has to transact, the more damage a compromised agent can do.

Liability. When an agent makes an unauthorized purchase, the responsible party may initially be unclear. The human who delegated authority, the platform that hosted the agent, the model provider whose reasoning failed, and the merchant who accepted the payment all have plausible claims and defenses. Existing legal and regulatory frameworks were not designed for this chain of delegation, and clear precedents may not be available.

Cascading failures. As agentic commerce matures, agents will increasingly transact with other agents rather than directly with merchants. A compliance agent might pay a document-review agent to analyze a contract, which in turn pays a legal-research agent to check relevant case law, which pays a database agent to pull court filings. These agent-to-agent chains would create value through specialization, but they also introduce risk through interdependence. If any agent in the chain delivers a bad result, every agent upstream has already paid for work built on that output. Resolving the error would require propagating the dispute backward through each link in the chain. These multi-hop payment chains have no analog in traditional commerce, and no established resolution mechanism exists for unwinding them.

5.2 Current Solutions

The trust challenges outlined above are being addressed at multiple layers of the stack, by both crypto-native and card-native players.

At the **protocol layer,** payment protocols like x402 and MPP are building trust directly into transaction mechanics. Third-party facilitator approaches are able to verify delivery before releasing funds, escrow mechanisms let buyers

pay only for value consumed, and consumption-based authorization limits exposure by capping what an agent can spend on a single request. These are protocol-level safeguards, but their effectiveness depends on which protocol and payment type the buyer and seller choose to use.

At the **identity layer**, the ecosystem remains fragmented. Most agents authenticate using API keys or wallet addresses, which verify access but say nothing about history or reliability. Public registries like x402scan and MPPscan provide basic endpoint discovery. Coinbase's Bazaar registry maps merchants to payment addresses. ERC-8004, the Trustless Agents Standard, aims to make agent reputation portable across networks, allowing merchants to verify an agent's transaction history before deciding whether to transact. On the card side, Visa's *TAP,* Mastercard's *Agent Pay*, and Stripe and OpenAI's *ACP* help to anchor agent identity to existing authorization frameworks, inheriting decades of KYC and fraud infrastructure but associated with card rails – *these card-native protocols are covered in Section 6.*

At the **policy layer**, programmable spend controls are emerging across both ecosystems. Coinbase Agentic Wallets offer gasless transactions on Base with programmable limits, and other policy layers like Turnkey, Privy, and Safe encode allowlists, spend caps, and merchant routing directly into wallet infrastructure. On the card side, tokenized credentials with issuer-defined spending rules serve the same function through familiar infrastructure.

5.3 Open Questions

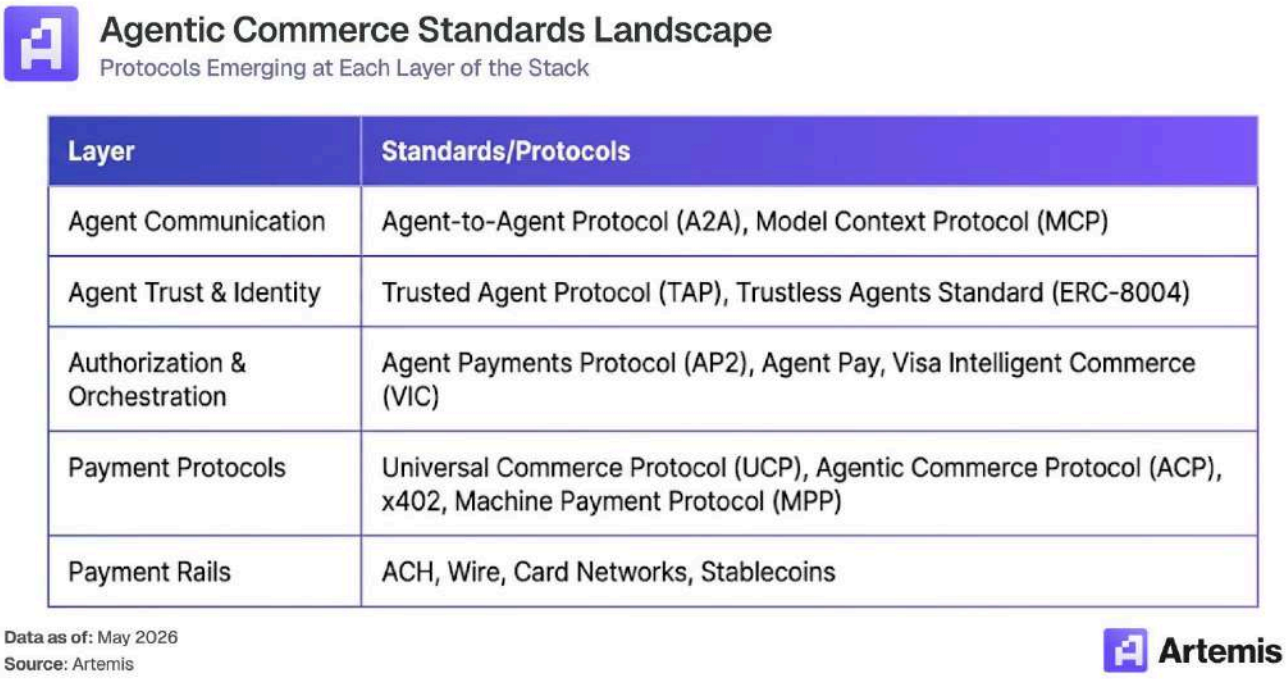
No universal agent identity standard bridges the emerging crypto-native rails with traditional rails that already exist. Reputation built in one ecosystem does not transfer to another. Disputes lack established resolution mechanisms. Chargeback windows and evidence requirements were designed for human-speed commerce with clear buyer intent. When an agent executes thousands of transactions per hour, the concept of a single disputed "order" does not map to hundreds of sub-cent API calls.

Furthermore, liability remains legally ambiguous. No jurisdiction has established clear precedent for how responsibility is distributed among the human who delegated authority, the platform that hosted the agent, the model provider, and the merchant. **These gaps represent both the most significant risks in agentic commerce today and the clearest opportunities for incumbents in the traditional payments ecosystem to add value.**

STANDARDS LANDSCAPE

6.1 The Agentic Commerce Stack

Agentic commerce requires coordination across multiple layers of infrastructure, from how agents communicate to how money moves. No single standard covers the full stack, and the landscape is evolving rapidly. Taken together, these standards form the emerging infrastructure stack for agentic commerce, from communication and identity to authorization and payment execution.



Agentic Commerce Standards Landscape
Protocols Emerging at Each Layer of the Stack

Layer	Standards/Protocols
Agent Communication	Agent-to-Agent Protocol (A2A), Model Context Protocol (MCP)
Agent Trust & Identity	Trusted Agent Protocol (TAP), Trustless Agents Standard (ERC-8004)
Authorization & Orchestration	Agent Payments Protocol (AP2), Agent Pay, Visa Intelligent Commerce (VIC)
Payment Protocols	Universal Commerce Protocol (UCP), Agentic Commerce Protocol (ACP), x402, Machine Payment Protocol (MPP)
Payment Rails	ACH, Wire, Card Networks, Stablecoins

Data as of: May 2026
Source: Artemis

Artemis

6.2 Card-Native Protocols

While x402 and MPP define how agents pay for machine-native resources, a parallel set of protocols is emerging for transactions where agents act on behalf of human consumers through existing card infrastructure.

Visa TAP. *Trusted Agent Protocol* lets merchants verify, through cryptographically signed HTTP messages, that an AI agent is approved to act on a user's behalf. TAP adds a standardized trust layer on top of existing web and merchant infrastructure, so merchants can handle agent-initiated transactions without overhauling their payments stack. TAP was co-created with Cloudflare with input from Shopify, Microsoft, and Stripe, and launched in October 2025 with Nuvei, Adyen, and Stripe as early adopters. For the traditional payments ecosystem, TAP represents the most direct path from existing card infrastructure to agent-initiated commerce.

ACP (Stripe + OpenAI). *Agentic Commerce Protocol* enables agents to complete purchases through existing merchant checkout flows using card payments. Both the agent platform and the merchant must pre-approve each other before transactions can occur, creating a curated marketplace where only vetted participants transact. Stripe processes the payment, and OpenAI charges merchants a fee on top of standard processing costs.

UCP (Google/Gemini + Shopify). *Universal Checkout Protocol* enables agents to complete purchases directly within Google surfaces like Search AI Mode and the Gemini app. Merchants retain full ownership of customer relationships and remain the merchant of record for all transactions. The protocol was co-developed by Google and Shopify with over 20 partners including Etsy, Wayfair, Target, and Walmart, and supports REST, MCP, AP2, and A2A integrations.

VIC (Visa). *Visa Intelligent Commerce* is a single integration point announced in April 2026 that allows merchants, acquirers, and agent platforms to participate in agentic commerce. The platform is protocol-agnostic, supporting TAP, x402, MPP, ACP, and UCP through one integration. It provides tokenization, passkey-based authentication, and programmable spend controls, allowing users to set dollar limits, merchant categories, or require real-time approval. For merchants, VIC does not require integration with each agentic protocol individually. For the payments ecosystem, it positions Visa as a connective layer between agents and existing commerce infrastructure, with over 100 partners and 30 actively building in the VIC sandbox.

AP2 (Google + 60 partners). *Agent Payments Protocol* introduces cryptographically-signed mandates as the foundation for agent authorization. An Intent Mandate captures the conditions under which an agent can purchase on behalf of a user. A Cart Mandate captures the specific items and prices for a given transaction. A Payment Mandate authorizes the final payment. The protocol is payment-rail agnostic, supporting cards, bank transfers, and cryptocurrency. AP2 is designed to work as an extension of both A2A and MCP, positioning it as an authorization layer that can sit on top of multiple payment protocols. Partners include Mastercard, American Express, PayPal, Adyen, Coinbase, and Salesforce.

Agent Pay (Mastercard). *Agent Pay* uses Mastercard's tokenization technology to create agent-specific payment credentials. Consumers authorize an agent to act on their behalf within defined parameters, and the agent completes purchases using a tokenized version of the consumer's card. Spending limits, merchant categories, and other guardrails are programmable and bound directly to the credential.

6.3 Convergence and Conditions for Scale

The distinction between crypto-native and card-native protocols is already beginning to blur. MPP now spans both onchain crypto payments and fiat payments via shared payment tokens, and Visa's Card Specification SDK is designed to extend the protocol into card-based agent commerce. In practice, that means a single machine-payments framework can increasingly support both stablecoin-based flows and card transactions. For card networks and issuers, this creates a path into agentic payment flows without requiring merchants to adopt a completely separate stack. From the other direction, Stripe added support for x402 payments on Base with USDC in March 2026, linking stablecoin-native payment flows to the same broader agent commerce ecosystem. The trajectory points toward convergence rather than competition: cards for proxy purchases inside existing merchant networks, stablecoins for machine-native micropayments, and hybrid flows where both are used within the same workflow.

For that convergence to move beyond early adoption, three things still need to happen:

1. First, interoperability between standards needs to mature. Over time, agents should be able to combine AP2-style mandates for authorization, x402 or MPP for payment execution, and TAP or similar systems for trust and card-based verification within a single workflow without bespoke integration for every combination.
2. Second, regulatory frameworks need to catch up with the technology. The treatment of agent-initiated transactions, liability, and cross-border agent commerce remains unsettled, especially as these systems begin operating across multiple payment rails and jurisdictions.
3. Third, incumbents need clear roles. The institutions that process most global payments need to see where they fit in the stack – whether as issuers of agent credentials, processors of agent transactions, or providers of the trust and dispute infrastructure that crypto-native protocols still lack.

USE CASES

7.1 Overview

The highest-volume use cases today are lead enrichment, data scraping, inference and inference routing, and web search. Lead enrichment stands out as an obvious high-value workflow, with agents pulling person or company profiles, verifying emails, and enriching CRM data on a pay-per-query basis.

Beyond those, a growing long tail of services is emerging: social media intelligence (scraping LinkedIn, X, and Reddit for data), image and video generation endpoints, Google Maps queries, phone calling APIs, and agentic search. One example that illustrates where this is heading is a face search endpoint, where an agent uploads an image and receives the highest-probability identity matches from across the internet. It is the kind of niche, high-value service that would never justify the overhead of a traditional SaaS product but makes perfect sense as a pay-per-request API that agents can discover and call. As the ecosystem matures, these creative, long-tail use cases will likely proliferate.



What Agents Pay For

Early categories of machine-initiated spending

Business Area	What Agents Pay For	Example
Sales & Marketing	Lead enrichment, email verification, CRM data, competitive intelligence	Agent queries five providers for a company profile, picks the most complete dataset
Research & Analysis	Financial data, web search, document retrieval, onchain data	Agent pulls SEC filings from multiple sources, cross-references for accuracy
Content & Creativity	Image generation, video rendering, translation, copywriting tools	Agent tests ten image-generation providers for the same product shot, selects the best
Engineering & DevOps	Compute, inference routing, code review, testing infrastructure	Agent streams compute for a multi-hour build, paying only for what it consumes
Security & Compliance	Face search, deepfake detection, identity verification, document analysis	Agent uploads an image and receives highest-probability identity matches
Social Intelligence	LinkedIn scraping, X monitoring, Reddit analysis, sentiment tracking	Agent pulls real-time social data across platforms to build a market signal
Location & Logistics	Google Maps queries, routing, pricing data, inventory checks	Agent queries mapping APIs to optimize delivery routes in real time

Data as of: May 2026
Source: Artemis



7.2 Pay-Per-Query Services

A research agent building a company profile can query multiple data providers at a few cents each, compare the results, and select the best one. The total cost may be under a dollar. Under the traditional model, that same workflow often requires a subscription to a single provider, with no ability to comparison-shop at the point of need. This is one of the clearest forms of commerce unlocked by low-friction payments. The agent has no account, no pre-negotiated contract, and no long-term relationship with the seller. It discovers the endpoint, pays, evaluates the output, and moves on.

The same model applies beyond enrichment. A developer can expose a document parser, translation service, code-review tool, or other MCP-accessible function as a paid endpoint. Agents can discover and call the tool on demand, without the provider needing to build a full SaaS business around it. That lowers the barrier to becoming a merchant in the machine economy and creates a long tail of specialized, pay-per-use services.

This pattern is already being productized. AgentCash, built by Merit Systems, bundles wallet management, merchant discovery, and access to over 420 paid APIs into a single integration for agent frameworks like Claude Code. The platform gives an agent access to hundreds of paid services without configuring each one individually, abstracting away the complexity of protocol-level payments on both x402 and MPP.

7.3 Streaming and Metered Services

Not all agent payments are single request-response transactions. Some workflows require continuous access to a resource over time. A coding agent may consume compute for several hours, while a monitoring agent may stream market data and pay only for the feed it actively uses.

MPP sessions are designed for this pattern. The agent deposits funds, pays incrementally as it consumes, and can stop when the task ends or quality falls below expectations. The merchant is paid in proportion to usage delivered, and the buyer avoids committing to a fixed subscription for variable demand. This model is a better fit for agent workflows where usage is continuous, unpredictable, and closely tied to task completion.

7.4 Agent-to-Agent Services

A defining use case in agentic commerce is agents transacting directly with other agents. A single user request can trigger a chain of machine-to-machine purchases as one agent delegates subtasks to specialized services – search, data enrichment, compute, or execution – each paid for programmatically at the moment it is needed.

This is a new surface area of commerce. There is no checkout page, shopping cart, or manual approval step between purchases. The workflow runs continuously, with each agent evaluating and paying for the next service in the chain. As we discussed in Section IV, this already represents the largest category of x402 activity by transaction count. This is one of the clearest examples of commerce created by agents themselves. Payment is embedded directly into the execution of work, allowing specialized services to coordinate and transact in real time.

Economics & Value Accrual

8.1 Monetization Models

The use cases above share a common trait: high frequency, low value, and no pre-existing relationship between buyer and seller. The economics of serving this kind of commerce look very different from traditional payments, and the two payment standard ecosystems (x402 and MPP) currently capture value in different places.



Value Accrual in Agentic Commerce
Across x402 and MPP Ecosystems

Layer	What This Layer Does	How This Layer Captures Value	x402 Value Accrual	MPP Value Accrual
App / Interface	Aggregate demand and control distribution	Own the buyer relationship and route spend	Medium	High
Rails / Settlement	Move and settle funds	Capture transaction and settlement economics	Medium	Low
Intermediation	Verify payments and coordinate execution	Sit directly in the flow of funds	High	Low
Trust & Identity	Reduce risk and verify counterparties	Improve conversion and lower fraud and dispute costs	Emerging	Emerging
Tooling	Simplify integration and developer workflows	Enable adoption and reduce implementation friction	Medium	High

Data as of: May 2026
Source: Artemis

Artemis

In x402, volume flows through the facilitator layer, where intermediaries can charge processing fees for verification, settlement, and related trust functions. In MPP, value accrues less at the transaction layer and more to the surrounding ecosystem: platforms that aggregate demand, tools that simplify integration, and trust or discovery layers that help buyers and sellers transact with confidence.

This difference shapes how each ecosystem scales. x402 monetizes the intermediary in the flow of funds. MPP shifts monetization toward distribution, routing, and trust. For incumbents, the key question is where durable economics ultimately settle.

8.2 Durable Advantages

Agentic commerce makes it unusually easy for new merchants to enter the market. A developer can place an existing API behind a 402-compatible paywall with relatively little integration overhead, and the same basic logic applies to broader machine-payment ecosystems. This is by design. x402 and MPP are built to reduce supply-side onboarding friction and make it easier for new services to become monetizeable.

Easy entry does not create durable economics. When new endpoints can be launched quickly and competing supply is easy to replicate, value shifts away from the individual merchant and toward the layers that are harder to reproduce. In ecommerce, a similar dynamic pushed durable value toward platforms and payment infrastructure rather than the long tail of merchants they enabled; **in agentic commerce, the strongest structural advantages sit in distribution, trust, and infrastructure**.

Whoever controls how agents discover and route to services controls demand. Whoever builds identity and reputation systems that help agents choose between competing providers can reduce fraud and improve conversion. And whoever provides settlement, compliance, and dispute infrastructure becomes embedded in the transaction flow.

This is where the traditional payments industry has a natural advantage. Payment networks, issuers, and acquirers have spent decades building capabilities that agentic commerce still needs at scale: identity verification, spend policy enforcement, fraud detection, cross-border settlement, and merchant risk assessment. The new protocols offer programmability, speed, and cost structures that legacy card rails struggle to match for very small transactions. But they do not yet provide trust infrastructure, regulatory coverage, or merchant distribution at incumbent scale.

Compliance and Regulatory Considerations

9.1 How These Protocols Map to Existing Regulation

Agentic payment protocols do not map cleanly onto existing payments regulation. In x402-style models, a facilitator may temporarily handle funds, verify delivery conditions, and release payment to the seller. Depending on how that role is structured and how a given jurisdiction interprets it, it could implicate money transmission, payment processing, escrow, or related licensing frameworks. MPP-style direct models reduce the role of a dedicated intermediary, but they raise a different question: when no single party sits clearly between buyer and seller, who carries the regulatory obligations associated with the transaction?

Cross-border complexity adds another layer of uncertainty. An agent in one jurisdiction may pay a server in another, with infrastructure or service providers involved in additional jurisdictions. Existing cross-border payment frameworks were built around identifiable counterparties, clearer jurisdictional anchors, and slower transaction flows. Agentic transactions compress those assumptions. For payment providers, this means compliance architecture may become a source of competitive differentiation rather than a back-office function.

9.2 Stablecoin Compliance

Both protocols have early settlement paths that make stablecoin regulation directly relevant to the future of agentic commerce. In the United States, the GENIUS Act establishes a federal licensing and reserve framework for payment stablecoin issuers, giving stablecoin-based payment flows a clearer regulatory foundation than they had previously.

For x402, activity has been closely associated with USDC, particularly on Base, which gives the ecosystem a relatively institution-friendly starting point. But x402 is not inherently limited to a single stablecoin or chain; implementations can vary by facilitator and network.

For MPP, current implementations have included crypto-native settlement mechanisms such as pathUSD on Tempo, but the protocol is broader than any one rail and is also designed to support fiat-linked payment methods such as shared payment tokens.

For the traditional payments audience, the stablecoin compliance question matters because it determines whether these flows can be integrated into regulated financial infrastructure. If stablecoin settlement has clear regulatory standing, it becomes a more viable rail for banks, acquirers, and processors to build on. If regulatory treatment remains fragmented across jurisdictions, institutional adoption will move more slowly.

9.3 Agent-Specific Considerations

Existing KYC and AML frameworks were designed around human customers. In agentic commerce, that assumption breaks down. The central compliance question becomes who the relevant customer actually is for identification,

monitoring, and oversight purposes: the human who delegated authority to the agent, the platform that operates it, the entity that funded the wallet, or some combination of the three. Regulatory treatment on that point remains unsettled.

Tax and reporting obligations face similar challenges. An agent may execute thousands of low-value transactions across multiple jurisdictions in a single session, creating reporting burdens that existing systems were not built to handle. Buyers and sellers may have limited visibility into each other's identity, location, or legal status. For payment providers evaluating this market, the infrastructure needed to make agent transactions traceable, auditable, and reportable at scale is itself likely to become an important layer of value creation.

LOOKING FORWARD

10.1 Future Opportunities

Agentic commerce is live but still in its adolescent stages. The protocols exist, the transaction patterns are visible, and the surrounding infrastructure remains underbuilt. That creates several clear opportunities for growth and investment:

Hybrid card-stablecoin settlement. For issuers and acquirers, one of the most immediate opportunities is hybrid settlement: cards on the front end, stablecoins on the back end. The cardholder experience remains familiar, while settlement moves to stablecoin rails that can support faster collections, continuous settlement windows, and lower cross-border costs. This gives incumbents a way to participate in the speed and cost advantages of stablecoin infrastructure without requiring merchants or consumers to change behavior. As agentic commerce scales, hybrid settlement is likely to become an attractive path for institutions that want exposure to machine-initiated payment flows through infrastructure they already operate.

Protocol convergence and interoperability. x402 and MPP currently operate as separate ecosystems with different settlement rails, trust models, and merchant bases. Over time, agents will need to route transactions across protocols without bespoke integration for each one. Early signs of convergence are already emerging: MPP supports both crypto and card-linked payment flows, while Stripe's x402 support on Base connects stablecoin-native payments to broader payments infrastructure. Interoperability layers that help agents choose the right protocol for each transaction type could become an important control point in the stack.

Cross-border agent commerce. Cross-border activity is likely to be a default feature of agentic commerce, not a niche edge case. Agents can initiate transactions across jurisdictions without the traditional identity and residency anchors that existing compliance systems rely on. The infrastructure to handle compliance, currency conversion, and jurisdictional routing at machine speed is still immature. For payment networks with global reach, this is a natural extension of existing capabilities and one of the clearest near-term opportunities to add differentiated value.

Agents as merchants. Today, agents primarily act as buyers, but over time they will also become sellers. As the cost of building and deploying software continues to fall, more developers, firms, and workflows will be able to expose specialized services directly to agents. That should expand the supply side of the ecosystem significantly, creating more agent-accessible endpoints, more niche services, and more transaction volume across the payment rails that support them.

10.2 Conclusion

Agentic commerce is beginning to take shape. x402 and Machine Payments Protocol are processing live transactions, merchants and agent platforms are beginning to build on top of them, and the surrounding standards landscape is starting to converge around a common set of needs: trust, identity, authorization, and settlement. The transaction patterns emerging in this market are high frequency, sub-dollar, autonomous, and often cross-border. The protocols solve for speed, programmability, and cost. Scaling into the regulated financial system, however, will require trust infrastructure, compliance frameworks, merchant distribution, and dispute resolution that

incumbent payment players have spent decades building.

That gap defines the opportunity, and Visa has already positioned itself across both sides of the market. TAP and Visa Intelligent Commerce connect card infrastructure to higher-value agent proxy transactions. The Card Specification SDK for MPP and participation in the x402 Foundation extend Visa's reach into machine-native micropayments. That breadth reflects the broader convergence thesis running through this report: macro and micro transaction models may begin in separate ecosystems, but over time they are likely to connect through shared layers of trust, identity, and settlement.

The market is nascent, and many of the most important infrastructure layers are still being defined. The institutions that help shape trust, control, and interoperability now are the ones most likely to remain embedded as agentic commerce scales.

LEGAL INFORMATION & DISCLAIMER

The following research was commissioned and funded by Visa. The analysis and views expressed in this report are those of the authors. The views expressed in the document are not intended to be and should not be viewed as investment advice. This document does not constitute an invitation, recommendation, solicitation or offer to subscribe for or purchase any securities, investments, products or services, or any investment fund managed by Visa, Artemis Analytics, or any of their affiliates. Unless expressly stated otherwise, the opinions are expressed as at the date published and are subject to change. No obligation is undertaken to update any information, data or material contained herein.

The research and recommendations described in this report are provided “AS IS” and are intended for informational purposes only and should not be relied upon for operational, marketing, legal, technical, tax, financial or other advice. Neither Visa nor Artemis Analytics makes any warranty or representation as to the completeness or accuracy of the information within this document, nor assumes any liability or responsibility that may result from reliance on such information. Readers are encouraged to seek the advice of a competent professional where such advice is required.

All brand names and logos are the property of their respective owners, are used for identification purposes only, and do not imply product endorsement or affiliation with Visa or Artemis Analytics.