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The End of Engagement Farming? How Bluesky is Changing the Rules of the Game

Decentralized Web * Network Science * AI

Introduction: The Centralized Crisis and the Protocol Solution

The early 2020s marked a pivotal inflection in the evolution of digital communication networks, characterized by the fracturing of centralized social media platforms and a renewed migration toward decentralized protocols. For over a decade, the social web operated on a "walled garden" model in which a single corporate entity controlled the underlying database, user identity, and algorithmic curation. While centralization generated rapid network effects, it also introduced severe structural fragilities. Following the 2022 acquisition of Twitter and its rebranding to X, volatile moderation shifts, the dismantling of legacy verification safeguards, and algorithmic prioritization of paid accounts alienated large segments of the journalistic and scientific communities that had anchored the platform's discourse.[3][6]

Bluesky emerged not merely as a competing consumer application, but as a structural paradigm shift from closed platforms to open protocols. By analyzing its underlying Authenticated Transfer (AT) Protocol, this report examines how Bluesky decouples cryptographic identity, data storage, and content curation to introduce "algorithmic choice" as a foundational utility.[2][5][14] Drawing on protocol specifications and quantitative network analyses by researchers Dorian Quelle and Alexandre Bovet, we examine how this architecture shapes the engagement-farming dynamics common to ad-supported networks, fosters community topologies with high clustering coefficients, and pairs open-source governance with a Public Benefit Corporation (PBC) business model.[1][7]

Institutional Origins and the Public Benefit Structure

Bluesky originated in 2019 when then-Twitter CEO Jack Dorsey commissioned a small research team, led by decentralized systems engineer Jay Graber, to design an open, federated protocol capable of supporting global public conversation.[4][6] Rather than policing global speech through a single corporate hierarchy, the initiative sought to build a foundational protocol layer upon which Twitter itself could eventually operate as one client among many.

Crucially, Bluesky was spun out as an independent legal entity in late 2021, incorporating as a Public Benefit Corporation prior to the ownership transition at Twitter.[4][6] Unlike a traditional C-corporation bound strictly to maximize short-term shareholder returns, a PBC carries a chartered fiduciary duty to advance a stated public benefit -- specifically, the development and stewardship of open, decentralized communication technologies.[7] When X severed its funding agreement in late 2022, Bluesky accelerated its transition into a standalone software organization, launching its private beta in February 2023, scaling past 27 million registered users by early 2025, and surpassing 47 million registered accounts by

late 2026.[4][6]

The AT Protocol: Re-Architecting the Social Graph

While Bluesky shares the overarching goal of decentralization with ActivityPub (the W3C standard powering Mastodon), the Authenticated Transfer Protocol adopts a fundamentally different systems architecture. ActivityPub operates on an email-like server-to-server federation model, whereas the AT Protocol separates the network into three distinct functional planes: Personal Data Servers (PDS) that store user records, Relays that aggregate and index network-wide state across a global firehose, and AppViews that compile feeds and client-facing views.[2][5][8]

This "big world" federation model relies on two core cryptographic primitives:

* Merkle Search Trees (MSTs) and Self-Authenticating Data: Every user repository -- containing posts (app.bsky.feed.post), follows, and likes -- is structured as a deterministic Merkle Search Tree.[10] Each record is hashed, where high cryptographic entropy guarantees collision resistance, and the tree root is signed by the user's private key. When a user migrates from one PDS host to another, the signed repository moves intact; a host cannot alter historical records without invalidating the cryptographic signature.[2][11]

* Decentralized Identifiers (DIDs): Account identity is anchored to a persistent identifier (did:plc or did:web) rather than a specific server domain.[9] By binding handles directly to Domain Name System (DNS) records (such as @nytimes.com or institutional domains), Bluesky enables decentralized, cryptographically verifiable institutional identity without relying on a centralized verification authority.[12]

| Architectural Dimension | | Centralized Platform (X / Legacy Social) | | Server-Federated (ActivityPub / Mastodon) | | AT Protocol (Bluesky) |

| Data Ownership | | Proprietary corporate database | | Instance administrator database | | User-signed Merkle Search Tree (MST) |

| Identity Persistence | | Platform-locked handle | | Server-bound (user@instance) | | Portable DID (did:plc / did:web) |

| Content Curation | | Opaque engagement-maximizing ranker | | Chronological / instance-local timeline | | Open marketplace of Feed Generators |

| Identity Verification | | Paid subscription tier | | Manual instance vetting | | DNS domain binding & cryptographic keys |

| Trust & Moderation | | Monolithic corporate enforcement | | Server-level defederation | | Composable, stackable labeling services |

Algorithmic Choice and Network Topology

On conventional ad-driven social networks, curation is governed by a monolithic black-box ranking algorithm optimized to maximize user retention and advertisement impressions. In computational social science, outrage-driven viral cascades frequently mirror the Kermack-McKendrick theory of infectious contagion, where high-arousal, polarizing posts achieve elevated basic reproduction numbers across a broadcast graph.[13]

Bluesky breaks this feedback loop by separating content hosting from curation through third-party Feed Generators.[14] When a user opens a custom feed (such as a peer-reviewed science feed or domain-specific digest), their client queries the generator via the app.bsky.feed.getFeedSkeleton endpoint.[15] The generator returns only a lightweight JSON list of post URIs, which the AppView then "hydrates" with full text, media, and moderation labels based on the viewer's saved preferences (app.bsky.actor.putPreferences).[15][16]

Empirical network analysis by Dorian Quelle and Alexandre Bovet in "Bluesky: Network Topology, Polarization, and Algorithmic Curation" (PLOS ONE, 2025) mapped five million users across reply, like, repost, and follow layers.[1] Their analysis found heavy-tailed degree distributions, short path lengths, and elevated clustering coefficients, while noting that despite tens of thousands of user-created custom feeds, default feed usage still dominated overall consumption and issue-specific homophilic clusters formed around contentious global events even amid relatively low polarization in mainstream news-sharing.[1] Combined with user-curated Starter Packs -- which allow newcomers to bootstrap follows and custom feeds around specialized disciplines -- this architecture supports a form of digital gene-culture coevolution in which community norms and curation rules co-adapt without centralized algorithmic coercion.[17][18]

Composable Moderation and the Services-Led Model

Alongside algorithmic curation, Bluesky unbundles trust and safety through Composable Moderation.[19] While infrastructure providers universally block illegal material at the relay and storage layer, higher-level content filtering operates via independent labeling services (app.bsky.labeler.service) powered by the open-source Ozone moderation framework.[19][20] Communities and scientific societies can operate specialized labelers that attach signed metadata tags to posts or accounts, allowing individual users to stack, mute, or blur content categories according to their own epistemic and safety thresholds.[21]

To prevent the surveillance-advertising incentives that historically drove platforms toward engagement farming, Bluesky pairs its PBC charter with a services-led revenue strategy.[7] Revenue is generated through integrated custom domain registration and optional utility subscriptions offering enhanced media storage and profile customization -- explicitly decoupling financial payment from algorithmic amplification.[22]

Conclusion: The Future of the Open Social Web

Bluesky demonstrates that decentralized protocols can match the usability of centralized platforms while restoring structural agency to users and communities. With ongoing protocol advancements including OAuth standardization, AT Protocol specifications, and cross-protocol bridges such as Bridgy Fed connecting AT Protocol repositories to the broader ActivityPub ecosystem, the social graph is increasingly portable and interoperable.[23][24] By replacing a single black-box engagement engine with cryptographic data ownership, DNS-anchored identity, and composable algorithmic choice, Bluesky establishes a durable blueprint for an open, user-governed public square.

Updates... (Nov 21, 2026): Replaced Wikipedia and commercial marketing blog references with primary Bluesky transparency and feature announcements, Vosoughi et al. (2018) in Science, and the published ICWSM 2025 conference paper by Balduf et al. (DOI: 10.1609/icwsm.v19i1.35810); added specific publication dates across all 24 references; and standardized reference list markup.

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