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What Counts as a User? The Changing Nature of Network Effects

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INTRODUCTION

Think about the last time you scrolled through TikTok, Instagram, YouTube, or X. Perhaps you noticed identical comments, recently created accounts with generic usernames, or replies that felt oddly disconnected from the discussion. At first, it seems like nothing more than internet noise. But after seeing it repeatedly across different platforms, a question naturally emerges: how much of what we interact with online is actually created by real people?

For years, digital platforms have become more valuable as more people joined them. More users meant more conversations, more creators, and more opportunities for meaningful interactions. This self-reinforcing cycle became one of the key drivers behind the success of modern digital platforms and is known as network effects. Yet this principle rests on an assumption that has rarely been questioned: that the participants driving these network effects are genuine human users. As bots and AI agents account for an increasing share of online activity, this assumption deserves to be reconsidered.

THE EVOLUTION OF AUTOMATED PARTICIPATION

It is important to recognize that this issue did not begin with the rise of generative AI. Long before tools such as ChatGPT, Claude, and Gemini became widely available, digital platforms were already dealing with spambots, fake accounts, and automated scripts. Social media platforms routinely removed bot accounts that artificially boosted engagement or spread misinformation, while e-commerce platforms struggled with fake product reviews designed to manipulate purchasing decisions (Fuadi et al., 2023). These

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bots were never valuable participants in the ecosystem. Instead, they exploited the very mechanisms that platforms relied on to measure growth and engagement.

What has changed is not the existence of bots, but their capabilities. Traditional bots were often repetitive, easy to detect, and limited to performing simple tasks. Today, AI agents can hold natural conversations, generate convincing content, bypass CAPTCHAs, and interact autonomously with other systems (Hamidah et al., 2024). In other words, automated participation is evolving from simple scripts into increasingly autonomous digital actors.

This shift is no longer theoretical. In June 2026, Cloudflare reported that automated traffic had surpassed human traffic for the first time across the websites it monitors, with bots accounting for approximately 57% of requests (NBC News, 2026). The company attributed this milestone largely to the rapid growth of AI agents capable of navigating and interacting with the web autonomously.

NOT ALL AI AGENTS ARE THE SAME

Before going further, it is worth being precise about what is being questioned here. The concern is not automated participation as such, but automated participation that pretends to be something it is not. Customer service bots, accessibility assistants that read and summarize content for users with visual or cognitive impairments, research agents that gather and synthesize information, and coding assistants that help developers ship software all rely on automation, and all of them add genuine value without deceiving anyone about their nature. Not all AI agents reduce value. Some improve efficiency and accessibility. The challenge is determining when automated participation enhances user experience and when it undermines trust, and that distinction, disclosed automation that helps versus undisclosed automation that manufactures the appearance of human consensus, is the one that matters for network effects.

WHEN ACTIVITY NO LONGER MEANS VALUE

As automated participation becomes an increasingly common feature of the internet, it is worth asking whether traditional ideas about network effects still hold. Imagine two platforms, each reporting one hundred million monthly active users. On paper, they appear equally successful. But what if one platform is driven mostly by genuine users, while the other allows bots and AI agents to freely generate posts, comments, and other forms of engagement? Traditional metrics such as monthly or daily active users, engagement rates, and impressions would likely place both platforms on equal footing. In reality, however, they offer very different experiences to their users.

This distinction matters because the value of a platform goes beyond activity alone. People do not log on simply to consume content. They want trustworthy information, meaningful conversations, and recommendations that reflect real opinions rather than automated responses. AI-generated comments and fake product reviews may increase activity, but they also reduce confidence in what users see. For decades, platform operators treated activity as a proxy for value. The rise of AI-generated participation suggests that this relationship may no longer hold: when engagement can be manufactured at near-zero cost, higher activity no longer guarantees greater value, and in some cases it actively works against it.

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TREATING AUTHENTICITY AS MORE THAN MODERATION

As a result, platform operators need to treat authenticity as more than just a content moderation issue. Many platforms already invest in bot detection, identity verification, and content moderation, while governments have introduced regulations aimed at improving transparency and accountability for AI-generated content, including labeling requirements that took effect in the European Union in 2026 (C2PA, 2026). Yet AI agents continue to evolve rapidly, making it increasingly difficult to determine how they should participate without weakening user trust.

The rise of AI agents does not invalidate the idea of network effects. Instead, it forces us to reconsider one of its underlying assumptions: that additional participants contribute meaningful value simply by joining the network. As automated participation becomes more common, platforms may no longer compete solely on the size of their user base, but also on their ability to preserve authentic interactions.

COMPETING ON AUTHENTICITY

If authenticity is becoming a genuine axis of competition, it is worth sketching what that competition might look like in practice. A first mechanism is verified identity, letting users optionally confirm they are a real, unique person without necessarily revealing who they are, an approach sometimes called proof-of-personhood. A second is authenticity or trust scoring, in which platforms surface a visible signal of how likely an account or piece of content is to originate from a genuine, disclosed source, similar in spirit to existing credit or reputation scores. A third is AI content labeling, building on provenance standards such as C2PA, which is now used by major camera manufacturers, publishers, and AI developers to attach a verifiable record of how a piece of content was created and edited (C2PA, 2026). A fourth is reputation systems that weight a user's history and consistency over time rather than treating every account as equally credible from the moment it is created (Pangaribuan et al., 2020). A fifth is human-only spaces, communities or verification tiers that explicitly restrict participation to confirmed humans, trading scale for trust. None of these mechanisms is a complete solution on its own, and each carries its own privacy and accessibility trade-offs, but together they point toward the kind of infrastructure that a network-effects model built on genuine participation will likely need.

CONCLUSION

In the years ahead, the platforms that succeed may not be those with the largest user base, but those that can preserve genuine interactions while embracing new technologies responsibly. Growth will always matter, but growth alone is no longer enough. If users begin to question whether the people they interact with, the reviews they read, or the discussions they join are authentic, the foundation of network effects begins to weaken. In an internet where automated participation is becoming increasingly common, authenticity may become just as important as scale in determining whether a platform continues to create value.

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