

AI, blockchain and identification

Numeraire Future Trends: A digital product passport for cultural assets

Founded by a team with backgrounds at MIT, Stanford, and leading global financial and cultural institutions, Abu Dhabi-based Numeraire Future Trends addresses a critical challenge facing the art world today: preserving and protecting cultural assets from AI-driven, ultra-precise digital reproduction. The company provides a future-ready infrastructure for trust, stewardship and long-term cultural value in an increasingly digitized and decentralized landscape.

At the core of the platform is the DPP, a next-generation, biometric digital identity for physical objects. Using proprietary AI-powered image recognition, the technology discreetly captures microscopic surface details of each artwork to create a unique and immutable identifier: a “biometric fingerprint”. This non-invasive process ensures that a physical object, once registered, can be immutably recognized.

This verifiable identification plays a vital role in preserving authenticity and enabling more robust insurance coverage, better risk assessment and secure asset tokenization.

While authentication remains the domain of human experts, identification provides the technological foundation for documenting and preserving authenticity. For contemporary works, the unique identifier is linked to a certificate of authorship signed by the artist and issued via an independent third party. In doing so, the DPP becomes a new generation digital certificate of authenticity, combining authorship, material identity and verified metadata in a single, digitally secured and easily transferable format.

Each DPP also incorporates all relevant artwork information, including provenance, exhibition history, creator statements, ownership records and technical metadata. Numeraire’s technology is already trusted by leading private art foundations in Europe, prominent collections across the Gulf Cooperation Council, international galleries, and major photography fairs.

Whether protecting a centuries-old manuscript or a contemporary editioned work, Numeraire offers a robust solution for institutions and collectors alike.

Introduction

The convergence of technology and the art market is no longer a future concept; it is a present-day transformation reshaping how art is created, owned, managed and valued. Persistent challenges like opacity, illiquidity and authentication have long hindered the art ecosystem. Now, a new era of technological innovation—from blockchain-based provenance tools to AI-assisted valuation models—is unlocking tangible solutions for all stakeholders, from artists and galleries to collectors and wealth managers.

This section explores how technological tools, once peripheral, are becoming essential infrastructure for integrating art into broader wealth management. Collection management platforms are at the heart of this shift, acting as a gateway for aligning cultural assets with estate planning, risk management and financial reporting. As discussed in Section 3 and specifically in the Speakart article (page 242), these tools form a critical foundation for treating art as a managed asset within HNW portfolios.

The journey has been incremental but clear. From the 1980s’ digital design experiments to the 2000s’ rise of online marketplaces and the 2010s’ explosive impact of non-fungible tokens (NFTs), each decade has layered new possibilities onto the art market. Most recently, the rise of multimodal AI, blockchain-enabled digital product passports, and secure asset tokenization platforms signals a maturing infrastructure poised to rival that of other luxury collectible sectors.

The key question is no longer about the tools themselves, but about their adoption. The EU’s Digital Product Passport (DPP) initiative has spurred interesting developments, such as the Aura Blockchain Consortium in Switzerland, which uses blockchain to standardize authenticity, enable secondary sales, and track sustainability. Today, more than 50 member brands and more than 50 million luxury objects are on the Aura blockchain.²⁹⁹

Could the visual arts develop a parallel system? Innovators such as Numeraire Future Trends in Abu Dhabi are already testing this possibility, using non-invasive AI fingerprinting to create immutable digital identities for physical artworks.

The promise of this technology is not only to safeguard cultural value but to future-proof it, bridging the worlds of art and finance through better data, secure ownership models, and scalable infrastructure. As younger, digitally native collectors gain influence and global wealth management seeks new asset classes, the integration of technology into art wealth management is not just inevitable; it is foundational to the future of both industries.

Technology has been transforming the art market for years, as illustrated in Figure 179’s detailed timeline of the art market’s phases of technological development.