

Towards a Constitutional Model for Digital Ownership

From Application Feature to Verifiable Constitutional Capability

Wayne Glass
Auctoritas Systems
September 2026

Working Paper

Abstract

This paper proposes that ownership should be treated as a constitutional capability, independent of the technology that implements it. Evidence, provenance and delegated authority are examined as its supporting pillars, and — where a working implementation realises each — the mechanism that makes it verifiable is described.

This paper describes a working, source-verified implementation. The specification was extracted from the code, not the code derived from it.

Note on method: this paper is grounded in a reference implementation whose behaviour was independently verified from source. Where earlier versions of this paper spoke of capabilities in the abstract, this version cites the mechanisms that realise them. The specification was extracted from the implementation; the implementation was not derived from the specification.

1 Introduction

This paper explores whether ownership should be treated as a constitutional capability rather than an application feature.

Earlier versions of this paper introduced that possibility in the abstract.

This version examines it against a working implementation.

The distinction matters, because a constitutional model is only as credible as the mechanisms that preserve it.

2 Problem Statement

Ownership is one of the oldest and most fundamental concepts within human society.

Despite this, digital systems frequently reduce ownership to application-specific permissions, database records or contractual relationships maintained by individual platforms.

These approaches may function successfully within isolated systems but often become increasingly difficult to reconcile across organisational boundaries.

Ownership records become fragmented.

Evidence becomes application specific.

Historical continuity becomes difficult to preserve.

Delegated authority becomes inconsistent.

The resulting complexity is not necessarily caused by inadequate technology.

It may instead arise because ownership has rarely been treated as an architectural principle in its own right.

This paper investigates whether ownership should instead be considered a constitutional capability upon which diverse digital systems may be constructed.

3 Background

The rapid growth of digital services has significantly increased the importance of trustworthy ownership relationships.

Digital assets now extend beyond media and software to include manufactured products, credentials, research data, financial instruments and emerging forms of programmable

infrastructure.

Although these systems frequently exchange information successfully, they often represent ownership, authority and historical evidence using independent application models.

The result is a landscape in which interoperability typically concerns technical integration rather than shared constitutional understanding.

This paper argues that ownership itself should become the common constitutional abstraction upon which diverse implementations may be constructed.

4 Proposed Constitutional Model

This paper proposes that ownership should be regarded as a constitutional capability rather than an application feature.

Within this model, ownership exists independently of the technologies used to implement it.

Evidence provides verifiable support for ownership.

Provenance preserves constitutional continuity through time.

Delegated authority enables constitutional participation without transferring ownership itself.

Together these capabilities establish a constitutional model capable of supporting diverse digital systems while remaining independent of individual applications or implementation technologies.

The sections that follow examine each capability, and — where the reference implementation realises it — the mechanism that makes it verifiable.

5 The Grammar of Ownership

The reference implementation suggested a distinction that clarified the entire model.

The constitutional core supplies the enduring nouns of ownership: the ownership licence, authority, delegation, escrow, settlement, royalty, evidence and provenance.

Individual modules supply the verbs: the conditions, the workflow, the participants, the timing and the domain policy.

The core does not enumerate every kind of transaction.

It provides a finite set of constitutional elements from which external modules may compose valid transaction forms.

A fixed vocabulary of nouns can express an unbounded set of sentences.

This observation explains how a constitutional model may remain small and stable while the systems built upon it grow without apparent limit.

Ownership, under this interpretation, is not a feature to be extended.

It is a grammar to be composed.

6 Constitutional Ownership

Ownership is commonly expressed through legal, commercial and social relationships rather than through particular implementation technologies.

Methods of recording ownership have evolved considerably throughout history.

The constitutional relationship itself has remained comparatively stable.

This paper therefore proposes that digital ownership should likewise be treated independently of its implementation.

Within this interpretation, implementation technologies provide the mechanisms through which ownership is realised.

They do not redefine ownership itself.

In the reference implementation this separation is not merely conceptual.

The core that defines ownership is reachable only through a single orchestration boundary, and every system built upon it derives its ownership behaviour from that core rather than defining its own.

The constitutional relationship is therefore preserved by construction, not by convention.

7 Evidence Before Trust

Of the constitutional capabilities, evidence proved the most consequential.

A system may ask its participants to trust that an action occurred.

Alternatively, it may provide something that can be independently verified.

The reference implementation consistently chose the second.

Rather than trusting that a transaction achieved its intended result, the implementation reconstructs the result it expected and compares it against the settled record produced by the underlying ledger.

Only a verified result is treated as real.

Evidence, in this interpretation, is not a document that accompanies ownership.

It is a reproducible comparison that anyone may perform.

A claim that can be verified requires no authority to stand behind it.

This distinction — evidence before trust — appears throughout the implementation and may be the model's most practical contribution.

8 Provenance and Delegated Authority

Provenance preserves the historical continuity of ownership.

Each ownership record carries a reference to its own origin, and the settlement record from which it arose may be independently re-verified after the fact.

Continuity is therefore not asserted; it is reconstructable.

Delegated authority permits participation in ownership without transferring it.

In the reference implementation, a delegation is honoured only after the owner's own authorisation has been cryptographically verified.

Authority is never assumed from a claim.

It is established from a signature and then evaluated against the constitutional rules.

Provenance and delegated authority therefore extend the same principle that governs evidence: the system prefers what it can verify to what it is asked to accept.

9 Observed Behaviour

Review of the reference implementation suggested that ownership remained comparatively stable despite continued architectural evolution.

Operational capabilities expanded.

Additional engines emerged.

Application domains increased.

The constitutional interpretation of ownership required comparatively little revision.

Evidence, provenance and delegated authority likewise remained stable throughout continued implementation.

Notably, the core that expresses these capabilities remained small even as the surrounding ecosystem grew to many modules.

These observations suggest that ownership may be more appropriately treated as a constitutional capability than as application-specific behaviour.

10 Implications

Treating ownership as a constitutional capability changes the role of implementation technology.

Implementation becomes responsible for realising constitutional relationships rather than defining them.

Different technologies may therefore provide equivalent constitutional behaviour despite differing operational characteristics.

This interpretation also provides a consistent conceptual foundation for evidence, provenance and delegated authority without requiring those capabilities to be redefined for each individual application domain.

The constitutional model therefore seeks to preserve stability while allowing operational diversity.

11 Limitations

This paper introduces a constitutional interpretation of digital ownership.

It does not attempt to establish that every ownership model should be reconstructed according to these principles.

Nor does it propose that constitutional ownership replaces existing legal, commercial or institutional frameworks.

The observations presented throughout this paper are derived from a single reference implementation, presently operating against a test network rather than in production.

Certain capabilities are implemented ahead of deployment.

Further implementation, independent evaluation and practical deployment will provide additional opportunities to evaluate the generality of the proposed model.

12 Future Research

Several opportunities remain for further investigation.

Independent implementations would provide valuable evidence regarding the generality of the proposed constitutional model.

Comparative studies could examine constitutional ownership alongside existing digital ownership frameworks operating within different technical and institutional environments.

Additional research may also investigate constitutional relationships beyond ownership, including broader questions concerning authority, identity, governance and digital public infrastructure.

The constitutional model presented throughout this paper should therefore be regarded as the beginning of an ongoing research programme rather than its conclusion.

13 Conclusion

This paper has explored the possibility that ownership may be more appropriately understood as a constitutional capability than as an application-specific feature.

Review of the reference implementation suggests that separating ownership from implementation technology provides a stable conceptual foundation upon which evidence, provenance and delegated authority may be consistently expressed.

It further suggests that these capabilities become most credible when they are not merely asserted but verified — reconstructed and checked against an independent record.

Whether this constitutional interpretation proves broadly applicable will depend upon continued implementation, independent evaluation and future research.

The question remains open.

Perhaps digital ownership begins not with technology, but with the constitutional relationships technology seeks to preserve.