

Ownership Cycles

Every era settles its primitives. The structure either matches the scope, or it gets replaced.



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Foundational primitives in communications and computing have always generated ownership cycles. A new primitive appears, is named at some point along the way, and then the question of how it gets owned becomes a question the era has to answer. The following cycle is determined by what the primitive actually is. A network is not owned the way a chip architecture is. A standards-essential patent is not owned the way a codec pool is organized. A transaction-authority layer is not owned the way a piece of hardware is. The structure either matches what the primitive can carry or is replaced by one that does.

The historical record is the record. It teaches the pattern by repetition.

Bell and the telephone

The Bell Telephone patent was the foundational claim around a new communications medium. The cycle that formed was concentrated by default. Bell and its successor companies built the network, owned the endpoints, controlled the interconnects, and operated as a single integrated system. The economic position was real. It was also structurally unstable at the scale it reached. The medium became too important to be controlled by one company, and the structure that produced AT&T was the same one that eventually led to its breakup. Concentration at that scale draws a structural response. The dispersion was not designed by the holder. It was imposed by antitrust.

AT&T and the minute

For most of a century, AT&T priced the unit that fit the underlying behavior of dedicated circuits. The minute was the right unit for the technology that produced it. When packet-switched IP arrived, the unit became wrong. The technology had changed beneath the pricing model, and the holder of the legacy unit had no path to the new economic surface without dismantling the existing one. The carriers spent two decades resisting the transition and lost most of their long-distance revenue to companies that priced the packet. The ownership cycle did not end because the company was poorly run. It ended

because the structure that fit one primitive could not be retrofitted to another.

Bell Labs and the transistor

The transistor was one of the foundational primitives of the modern world. It was developed within a concentrated industrial structure, and the holder did not get to keep it that way. Antitrust pressure in the 1956 consent decree forced Bell Labs to license the technology broadly and at low cost. The result was a flourishing semiconductor industry that did not exist before, and no durable rent for the inventor. The pattern repeats: a primitive of civilizational scope, held in a concentrated structure, was dispersed because the scope and the structure did not match. The dispersion happened by mandate rather than by design.

IBM and the mainframe

IBM's vertical integration around the mainframe was, for a long time, the most successful structure in computing. The company owned the hardware, the operating system, the peripheral protocols, and the software stack. The structure matched the era when computing was something institutions bought as a whole system from a single provider. When the PC arrived and open standards were organized around it, the structure that had succeeded against every competitor in its category was routed by a category change. The mainframe business did not collapse. It became a layer beneath a different surface. The lesson is that integrated ownership of a primitive does not defend against a layer change above it.

Qualcomm and the cellular standard

Qualcomm offers a different pattern. The company did not own a network in the Bell sense. It owned patents that were essential to the implementation of cellular standards. The ownership cycle that formed was a licensing position embedded in the economics of every device that touched the standard. The structure was not concentrated in the network. It was concentrated in the patent position, dispersed across

every implementer who paid to use it. The result was decades of royalty leverage that survived multiple generations of underlying technology because the standards continued to depend on the patents. The ownership cycle endured because the structure matched the way the primitive was actually deployed.

ARM and the architecture license

ARM designed dispersion into the model from the start. The company did not build chips. It licensed the architecture and allowed licensees to build at every node, in every category, for every customer base they could reach. The ownership cycle scaled through licensees rather than through a network or a product line. ARM endured because the structure recognized what the primitive was: a description that others would implement at scales no single company could reach on its own. The holder gave up operational ownership and kept architectural ownership. That trade was the structure that fit the primitive.

MPEG-LA and the codec pool

Codecs are a useful case because no single party owned the whole primitive. Many patents held by multiple holders were essential to implementing the standard. The structure that emerged was pooled access mediated by an administrator. Implementers paid a single license fee, the administrator distributed royalties to the patent holders, and the friction of separately negotiating with dozens of parties disappeared. The ownership cycle worked because the structure matched the underlying reality: fragmented essential patents organized into a single access framework. Concentration was not available even in principle. Dispersion was the only structure the primitive could carry.

Visa and the four-party model

Visa is the longest-running example of a primitive at a civilizational scope held in a structure designed from the start to be multi-party. The network does not issue cards. It does not run bank accounts. It does not provide goods. It does not own merchants. It mediates the

transaction. The four-party model is the structure. Issuers, acquirers, merchants, and consumers all participate; none of them controls the network alone, and the network captures rent on every settlement that crosses it. The structure has survived three generations of underlying technology and roughly sixty years of continuous operation. Every technology shift that has made commerce faster, cheaper, or more accessible has increased the number of transactions the network must process. The ownership cycle endured because the structure recognized the scope of what the primitive governed and dispersed ownership across the categories it touched.

The pattern

Eight cases. One pattern is observable across them.

Foundational primitives of cross-industry, cross-jurisdiction, cross-supplier scope get dispersed one way or another. The question is whether the holder designs the dispersion before the cycle forces it.

Bell did not design the dispersion. Antitrust imposed it. Bell Labs did not design the dispersion. A consent decree imposed it. AT&T did not design a path out of the legacy unit before packet switching made it inevitable. IBM did not design for a layer change above the mainframe before open standards organized one. In each of those cases, the structure was concentrated to a degree where it could not hold, and the dispersion came from outside.

Qualcomm, ARM, MPEG-LA, and Visa designed the dispersion before the cycle forced it. Each one matched its structure to what the primitive could actually carry. Qualcomm dispersed through standards-essential licensing across every implementer. ARM dispersed through architecture licenses across every category of device. MPEG-LA dispersed through pooled access across fragmented holders. Visa dispersed through a four-party model across every bank, every merchant, every jurisdiction, and every consumer. The structures are not identical. They are not interchangeable. What they share is that the holder recognized the

scope of the primitive and built a structure that matched it before the cycle forced one.

The structures that endured at this scale were always dispersed. The structures that were concentrated either got broken up, got routed around, or got replaced by the layer above. The pattern is older than any specific technology. It will be older than whichever technology comes next.

Why the pattern repeats

A primitive that touches many industries cannot be governed by one industry. A primitive that crosses jurisdictions cannot be held under one jurisdiction's authority. A primitive that mediates between competing suppliers cannot be held by one of those suppliers without the others routing around it. The structural reasons are not preferences. They are conditions imposed by the scope of what the primitive does.

The cases where holders tried to concentrate ownership on this scope produced one of three outcomes. Antitrust dispersed the structure. Competitors organized around the structure, making it irrelevant. The layer above the structure captured the value that the holder had tried to retain at the wrong layer. None of these outcomes was unusual. They were the predictable response of a system to a structure that did not match the scope of what it was trying to hold.

In cases where holders designed dispersion, one of two outcomes resulted. The structure scaled with the primitive and generated rent for decades. Or the structure organized access to a primitive that no single party could have held, and the pooled position became the durable surface. Both outcomes endured because they matched the scope from the start.

What this implies about the next cycle

The pattern does not tell us which primitive will define the next era. It tells us what the ownership cycle for such a primitive will have to look

like.

A primitive that mediates among multiple suppliers, multiple authorities, multiple jurisdictions, and multiple compute environments cannot be owned the way a network is. It cannot be owned the way a chip architecture is owned. It cannot be owned the way a codec pool is administered, because the participants are not symmetric and the events being governed are not single transactions. The structure that fits has to be designed for the scope, which means multi-industry in composition, multi-jurisdiction by necessity, and built to hold for decades because the primitive itself will hold for decades.

The historical record shows that this structure exists and can be built. Visa is sixty years of evidence. Standards bodies have decades of evidence. Patent pools are decades of evidence. None of them is identical to what the next era will require. The point of the pattern is not that an exact template is available. The point is that the structural requirement is known. The cycles where the holder designed dispersion in advance endured. The cycles where the holder did not.

The structure either matches the primitive or is replaced. That has been true for every era. There is no reason it would stop being true now.