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Shaping AI Impacts Through Licensing

Illustrative Scenarios for the Design Space

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Abstract

Licensing already structures how code, data and models circulate in AI, yet it is rarely treated as a governance instrument. Building on a companion paper that develops six "Commons" logics for impact-oriented AI licensing—Value, Transparency, Sustainability, Access, Reciprocity and Governance—this article turns that design space into concrete scenarios. It shows how clause families could function in practice and spread through procurement, open-source projects, industry consortia and reputational competition.

Licensing is presented as a repeatable, enforceable and system-specific layer within the broader governance landscape. The article addresses issues of measurement, standardisation and interactions with competition, data-protection and sectoral rules, and clarifies its use of "Commons" in the digital-commons tradition: small sets of reusable profiles that accumulate into shared resource layers.

The contribution is to demonstrate that, once licensing is treated as societal infrastructure, concerns about value, transparency, sustainability, access, reciprocity and governance can be translated into tractable clause families for real deployments.

1. Introduction: From Framework to Scenarios

The companion paper, *Impact-Oriented Licensing for Artificial Intelligence: A Conceptual Framework for a New Domain of AI Governance* (Lenartowicz, 2025), argues that licensing is part of the societal infrastructure of AI governance: licence terms embed obligations and incentives early in the value chain. On that basis, it introduces six governance logics—Value, Transparency, Sustainability, Access, Reciprocity and Governance Commons—each isolating a dimension of systemic impact.

This paper develops the framework through concrete scenarios and provides a catalogue of clause patterns and adoption pathways. It shows how value-sharing, transparency, ecological accounting,

access conditions, reciprocity mechanisms and governance hooks can be written into licence and service terms without departing from established contracting practice.

Licences are treated as one of the few points in the value chain where detailed conditions are already negotiated and where distributive and procedural commitments can be embedded at scale. The “licensing layer” is used broadly, covering standalone IP licences and licence-like clauses in MSAs, cloud agreements and subscription terms; the relevant actor may be a developer, platform operator, client or public procurer.

The paper proceeds as follows. Section 2 examines systemic effects of open-source and Creative Commons licensing. Section 3 presents short scenarios for the six Commons logics. Section 4 explains why the licensing layer is a distinct intervention point. Section 5 clarifies the digital-commons lineage. Section 6 outlines limits and scope. Section 7 concludes.

2. Systemic Impacts of Licensing: The Cases of Open Source and Creative Commons

Before turning to new scenarios, it is useful to consider licensing schemes that have already reshaped societal impacts at scale. Two families are particularly important: Creative Commons (CC) licences for content and data, and open-source software licences for code and, increasingly, model weights. Together, they still provide most of the practical “off-the-shelf” options available to AI developers who wish to orient their systems towards broader societal benefit.

Creative Commons licences were introduced in the early 2000s to give rightsholders standardised ways to pre-authorise use, adaptation and redistribution of their works within a bounded set of conditions (Creative Commons, n.d.; Dusollier, 2006). A CC licence asserts copyright and then waives selected exclusive rights through boilerplate permissions. Their systemic effects are clearest in open education and open access. Prior to CC, reuse of teaching materials and scholarly outputs imposed high transaction costs (Butcher, 2011). Institutions and funders had to negotiate bespoke permissions or rely on narrow exceptions.

CC licences made it possible for institutions and funders to adopt simple rules such as “all materials from this programme must be released under CC BY”. This supported the growth of open educational resource repositories, collaborative textbooks and open-access journals that rely on CC BY or CC0 for legal interoperability and large-scale text-and-data mining (Butcher, 2011; Creative Commons, 2012; Margoni & Schirru, 2023). In these domains, licensing shifted the default from closed to open and enabled knowledge commons built from many local decisions.

Open-source software licences have a parallel history on the code side. Licences such as GPL, LGPL, MIT, Apache 2.0 and BSD define standardised conditions under which source code may be used, modified and redistributed, with differing approaches to reciprocity and patent rights (Rosen, 2004; von Hippel & von Krogh, 2003). They have enabled distributed development models, lowered barriers to entry and created shared technical infrastructures on which both commercial and non-commercial actors build (Benkler, 2006).

In AI, these licences now govern libraries, training code and many released model weights. When developers publish tooling or models under permissive or copyleft terms, they turn them into infrastructural components that others can audit, adapt and integrate without negotiation. This supports open-model ecosystems in which more actors can fine-tune, compose and redeploy systems.

These licensing choices already have systemic effects. They reduce legal and transactional friction for reusing models, code and corpora, making it feasible for smaller actors—start-ups, academic groups, civil-society organisations—to develop systems without bespoke agreements. They support decentralised AI marketplaces and strengthen expectations of transparency and auditability.

For the purposes of this paper, the combined CC and open-source landscape serves as a calibration point. It shows that standardised licence families can materially change patterns of access, reuse, collaboration and competition without new statutes or technical primitives. At the same time, these instruments remain geared towards the open sharing of upstream artefacts—code, models, datasets and documentation. They offer limited leverage over value distribution, impact monitoring or ongoing oversight.

In practice, they reshape who can build and adapt systems, but leave largely untouched who captures value, how impacts are monitored and who has standing in ongoing oversight. These are the dimensions that the six Commons logics introduced in Section 3 are designed to engage: value distribution, transparency in use, ecological performance, access conditions, reciprocity along contribution chains and governance structures that extend beyond individual contracts.

3. The New Design Space: Licensing Logics for AI

The six Commons logics—Value, Transparency, Sustainability, Access, Reciprocity and Governance—outline a design space for impact-oriented AI licensing. Each asks what can be done at the licensing layer given existing power geometries and contractual practice.

“Commons” is used in the digital-commons sense: families of standardised licence or service-agreement profiles whose repeated use can build shared resource layers. These logics extend that intuition beyond upstream artefacts. They target downstream layers where access, routing, distribution and oversight are decided and where compatible contracts could, over time, accumulate into shared infrastructures.

Each designates a dimension of AI’s systemic footprint where many individual contracts could build a shared resource base. A Value Commons channels portions of automation gains into shared funds and infrastructures. A Transparency Commons accumulates reusable documentation and evaluations. A Sustainability Commons gathers ecological accounting and constraints. An Access Commons supports shared infrastructures and conditions of meaningful access. A Reciprocity Commons encodes patterns for recognising contributions along the AI value chain. A Governance Commons explores how licensing terms might create durable multi-stakeholder oversight above individual contracts.

These logics can be read as a second generation of digital-commons design. Creative Commons and open-source licences shifted the default for upstream artefacts from closed to reusable but left access to compute, deployment infrastructures and value flows to proprietary arrangements. The proposed Commons logics apply the same design intuition downstream: licences and service agreements become places where conditions of access, distribution and oversight can be standardised and allowed to accumulate.

This section introduces the six logics through short hypothetical examples. The aim is to show how clause patterns could function in recognisable deployments and why actors might adopt them. The scenarios illustrate reusable patterns and adoption pathways, not bespoke contractual proposals.

3.1. Value Commons: Sharing Automation Gains

The Value Commons logic targets the distribution of economic gains from AI-enabled automation. It asks whether licence terms can help channel part of those gains towards workers, communities or shared infrastructures that, under conventional licensing, would be excluded from meaningful participation in the productivity gains their work, data and environments help generate.

The focus on the licensing layer is deliberate. The licence sits at the boundary between providers and deployers. It is routinely renegotiated in procurement. It can be standardised and reused across contracts. It travels with the system as that system is integrated into wider processes. It is therefore one of the relatively rare points in the lifecycle where powerful actors come together to define conditions of use and where distributive obligations can be embedded in a scalable and legally enforceable way.

The following scenarios illustrate different ways in which Value Commons clauses could be formulated.

Example 3.1.1: Large Consultancy and Infrastructure Client

A global consultancy firm secures a multi-year modernisation contract with a major European infrastructure provider. The aim is to automate large parts of the client's software development and maintenance pipeline. Historically, upgrades of this kind required several hundred person-years of work across internal teams and external vendors. With the new AI-based toolchain, a small human team orchestrating a swarm of agents can deliver comparable change with an order-of-magnitude reduction in effort and calendar time.

Under a Value Commons logic, the master licence and services agreement does not treat this efficiency gain as a purely bilateral matter. The parties adopt a Value Commons licence profile in which a portion of documented cost savings is contractually channelled into a "transition and innovation fund" for affected staff across both organisations. Above an agreed baseline of historical spend, a fixed percentage of annual savings on development and maintenance is paid into the fund for the duration of the contract.

The licence profile defines eligible uses of the fund—retraining into higher-skill roles, internal mobility programmes, early-retirement packages and worker-led innovation projects that explore new uses of the AI tooling. Governance provisions require that representatives of affected staff sit on the fund's steering group alongside management from both organisations, and that annual summaries of contributions and disbursements are made available to staff and, where appropriate, regulators or works councils.

The consultancy accepts this structure because it stabilises industrial relations, reduces the risk of industrial action and strengthens its reputation for "responsible automation", which is valuable in future bids. The client accepts it because the fund lowers internal resistance to the AI programme and provides a visible, auditable response to concerns about job loss. The Value Commons profile thus shifts part of the automation surplus into a shared resource, using the licensing layer that already shapes the commercial relationship.

Example 3.1.2: A Foundational AGI Ecosystem for Poverty Reduction

A research collective develops a family of large-scale language and reasoning models based on a novel cognitive architecture. The project is grounded in long-standing work on collective intelligence and aims explicitly at general-purpose capabilities, not only narrow task performance. The community believes that, on this trajectory, their models have a realistic chance of becoming a foundational layer for future AI systems, including major enterprise deployments.

The code and model weights are released under permissive open-source licences. Governance is decentralised, with decisions taken through a foundation and working groups drawn from the scientific community. A market analysis shows that most current users value the project's mission and ethos. In practice, however, most use cases are still routine productivity tasks in existing jobs: drafting emails, generating social media posts, writing code snippets, preparing presentations. The productivity gains remain largely inside existing corporate and platform structures.

Community members start to ask whether, by making the models open and collectively governed, they have already done all they can. The gains from everyday use flow to clients and employers. The project itself struggles to fund ongoing research, evaluation and hosting at the scale required for advancing this alternative AGI trajectory. A line of higher-tier paid services emerges—managed hosting, enterprise support, bespoke fine-tunes for large organisations—and some contributors worry that the project is drifting towards a standard commercial profile.

Under a Value Commons logic, the community decides to use licensing to hard-wire a visible division of cashflows that matches its scientific ambitions. The core models remain free and open for individual and non-profit use under existing open-source terms. Commercial customers who take up higher-tier products and services do so under a separate Value Commons commercial licence. That licence includes a value-sharing clause: a fixed percentage of all sales revenue from these offerings is automatically redirected into a global basic-income scheme for economically vulnerable populations.

The project frames this scheme as a concrete contribution towards Sustainable Development Goal 1 on poverty eradication within the current decade. The licence specifies the governance structure of the scheme, the payment mechanisms and the transparency requirements. Allocation decisions are taken by a dedicated entity that includes representatives of affected communities, development economists and members of the model community. Local partners administer payments in selected regions, with a portfolio that expands as revenues grow. Regular, independently audited impact reports are published and linked from the project's main site.

As the models improve and begin to anchor enterprise-scale deployments, the Value Commons profile becomes part of their identity. Downstream users know that when they deploy this family of models to automate document processing, customer service or software development, a defined share of the resulting revenue flows, by contract, into basic-income streams for people whose livelihoods do not otherwise feature in the AI value chain. For organisations, this becomes part of the value proposition: by choosing this model family over technically similar alternatives, they back an AGI trajectory that is bound to a concrete, traceable redistribution mechanism.

The combination of scientific ambition and explicit value-sharing attracts attention from funders, policymakers and the wider public. The project gains visibility as a serious technical contender that links its cognitive architecture to a global Value Commons commitment. As adoption spreads, the volume of value flowing through the licence clauses grows. The model family does not on its own solve global poverty. It does, however, demonstrate that the foundational layers of an advanced AI

ecosystem can be coupled, through licensing, to systematic streams of support for those who would otherwise be left outside the gains of automation.

Example 3.1.3: AI-Generated Music on a Streaming Platform

A global music streaming platform licenses catalogues from record labels, independent artists and collecting societies. It also begins to integrate AI-generated music. Several technology vendors offer generative music engines and pre-composed AI tracks under standard licensing deals. The platform tests these tracks in background playlists, mood channels and functional music (focus, sleep, retail environments). Listener data show that AI-generated music performs well in many of these contexts.

Under the conventional model, revenues are pooled and distributed to rights-holders according to existing licensing agreements. For human artists this involves the familiar complex of label contracts, performance rights organisations and direct deals. AI-generated catalogues are treated in the same way as any other rights catalogue: the platform pays the AI vendors their negotiated share and retains the rest. As the volume of AI music grows, human artists begin to worry that their share of total streams, and thus of total revenue, will be eroded by catalogues that involve no human musicians at all.

Under a Value Commons logic, the platform and AI vendors decide to structure AI-generated catalogues differently. Human-made music continues to be licensed and remunerated under the existing arrangements. AI-generated tracks, by contrast, must be delivered under a “Value Commons for Music” licence profile as a condition of distribution on the platform. This profile sets the commercial terms between platform and AI vendors, but also includes a Value Commons clause. The clause stipulates that a fixed percentage of all net revenues attributable to AI-generated tracks on the platform is paid into a dedicated “human artists’ treasury”.

The licence profile defines how the treasury is governed and distributed. An independent foundation, with a governing board that includes representatives of artists’ unions, independent musicians and youth music organisations, administers the funds. The distribution formula gives a baseline share to all registered human artists on the platform and an increased weighting for stipends and grants to young and emerging artists. Part of the treasury supports mentorship schemes, recording bursaries and touring support for early-stage musicians.

Transparency requirements are built into the licence terms. The platform must publish, at regular intervals, statistics on total streams of AI-generated tracks, gross and net revenues from those streams, contributions to the treasury and the categories of disbursement. Basic audit rights allow the foundation, or an agreed auditor, to verify that revenue attribution and contributions follow the contract. AI vendors accept these terms because access to the platform’s global audience is essential to their business, and because association with the Value Commons profile supports their own claims of “artist-friendly” AI.

The platform adopts this structure because it reduces conflict with human artists, mitigates reputational risk associated with AI-generated music displacing human livelihoods and differentiates its brand from competitors that treat AI catalogues primarily as a cost-saving device. For listeners and enterprise customers, the Value Commons profile makes the trade-off explicit: using AI-generated music in playlists, shops or apps does not simply undercut human musicians; by contract, a defined share of that revenue flows into a shared treasury that supports the next generation of human artists.

3.2. Transparency Commons: Standardised Evidence of Behaviour

The Transparency Commons logic targets the visibility of how AI deployments operate in practice. It asks whether licence terms can require deployers to generate and contribute standardised transparency artefacts—documentation, evaluations, operational metrics, incident reports, distributional statistics—to shared repositories that regulators, affected groups and researchers can access under appropriate safeguards. The aim is to ensure that, above defined thresholds of scale and risk, there is a minimally adequate and reusable record of what deployments are doing, where they are used and how they fail.

Across domains, these obligations fall into a small set of recurring building blocks. Documentation duties concern design-time artefacts such as model and system cards that describe inputs, intended uses and known limitations. Evaluation duties concern test suites and performance profiles that show how deployments behave under defined conditions, often with basic breakdowns across languages, regions or groups. Operational metrics duties concern aggregate traces of how systems are actually used once live, including volumes, distributions and key outcomes. Incident duties concern the logging of serious harms and near misses in a structured way. Change-log duties concern the registration of significant model, data and policy updates over time. Access duties concern who can see which artefacts, under what conditions, through which shared hubs or registries. A concrete Transparency Commons profile combines some of these building blocks into a clause pattern that can be attached to many licences in a domain, rather than reinvented in each contract.

The following scenarios illustrate how such profiles could function in domains where opacity is particularly consequential.

Example 3.2.1: Platform Content-Moderation AI

Large social-media platforms rely on AI systems to flag hate speech, harassment and disinformation. Some models are built in-house. Others are licensed from specialist vendors. Choices about training data, thresholds and escalation rules sit in internal systems and private contracts. Civil-society groups, users and regulators mainly see outcomes and high-level policy pages.

Regulation in several jurisdictions now demands “appropriate transparency” for recommender and moderation systems. These rules set expectations, yet leave wide discretion over what artefacts platforms produce, in which format, and how they share them. Under a Transparency Commons logic, regulators and platforms use the licensing layer to make these duties concrete and reusable. They support a cross-platform Moderation Transparency Hub and adopt a Transparency Commons licence profile for high-volume moderation deployments. Any platform that wants to display a recognised transparency seal commits to governing its moderation AI under this profile. For external systems, vendors must offer a Transparency Commons version if they want large platform contracts. For in-house systems, platforms license the models to themselves under the same profile and publish the internal obligations.

The profile leaves commercial terms untouched. It adds defined transparency duties that travel with the model wherever it is deployed on these terms. Covered moderation deployments must maintain a standard transparency pack: a structured description of the model and its role in the moderation stack; summaries of training and evaluation data sources; evaluations and red-team results with basic breakdowns by language and region; operational metrics such as volumes and regional patterns of flags, appeal and reversal rates; and notable failure modes in each major category of content. Significant incidents in which moderation failures cause material harm are logged with short explanatory notes and linked to the relevant model versions in a change log. Above agreed thresholds of user scale or content volume, richer logs and more frequent reporting become mandatory.

These artefacts are deposited in the Moderation Transparency Hub under access rules built into the profile. Supervisory authorities and accredited auditors see detailed material. Civil-society organisations and researchers access more aggregated views. The public sees comparative dashboards across platforms and over time. This access regime turns the artefacts into a shared resource rather than private compliance reports. Vendors and platforms accept the profile because it becomes a standard route to regulatory comfort and to large-scale deployment, and because clause patterns can be reused across systems and jurisdictions. The politics of content moderation remain contested, yet a shared evidential base appears because the licence terms that govern access to moderation models require platforms and vendors to generate, structure and share transparency artefacts in a consistent way.

Example 3.2.2: Scientific Discovery and Drug-Design AI

A consortium of laboratories develops an AI platform that proposes small-molecule drug candidates. Pharmaceutical firms, biotech start-ups and universities license the platform on standard commercial and discounted terms. The system screens chemical spaces, suggests modifications and helps prioritise compounds for pre-clinical and early clinical work. Existing regulation already requires sponsors to document development pathways for individual candidates, but it does not produce a shared, cross-project record of how AI tools are used or where they repeatedly fail.

Under a Transparency Commons logic, the consortium and major funders set up a Drug Discovery Transparency Registry and adopt a Transparency Commons licence profile for the platform. Commercial access terms remain unchanged. Any organisation that licenses the platform under this profile agrees that, when an AI-suggested compound enters pre-clinical or clinical development, it will generate a standard transparency pack and deposit a compressed provenance record in the Registry. The record notes, in abstracted form, the model version used; key input data types; the main AI-driven design steps; points where human experts overrode or refined proposals; and whether the candidate was progressed or abandoned and why. Identifiers and masking techniques allow patterns to be studied without revealing full recipes or confidential business strategies.

The Registry is governed by a foundation that includes the consortium, public funders, regulators and patient representatives. Drug agencies and independent reviewers receive confidential access to detailed records. Academic researchers and method developers can query aggregated views to see where AI-supported discovery tends to succeed or fail across compound classes, indication areas and model versions. Firms accept the Transparency Commons profile because it becomes a condition of participating in publicly supported discovery programmes and of receiving certain forms of de-risking capital, and because in return they gain access to an otherwise unavailable pool of structured negative results and cross-project benchmarks. The transparency layer exists because the licence that governs access to the AI platform requires users to leave a standardised trace once candidates move beyond the laboratory.

Example 3.2.3: AI-Supported HR Analytics and Pay Equity

A vendor offers an AI-supported HR analytics platform to large employers. The system ingests payroll data, performance reviews, promotion histories and training records. It forecasts turnover risk, highlights “high potentials” and proposes salary bands and bonus pools. Equalities law already prohibits discrimination and, in some jurisdictions, requires pay-gap reporting. These duties are usually implemented through bespoke spreadsheets and one-off audits. There is no shared, cross-firm structure for understanding how AI-assisted decisions relate to pay and progression outcomes over time.

Under a Transparency Commons logic, the vendor and a group of anchor clients agree to govern the platform under a Transparency Commons licence profile for HR analytics. Commercial terms remain unchanged. Employers that opt into this profile accept additional transparency obligations once they deploy the system above defined thresholds of workforce size and automation. The licence requires the vendor to provide a clear, structured description of the system as part of a transparency pack: which input data are used, how performance and “potential” scores are computed, how recommendations for pay and promotion are generated, and which parameters clients can tune.

Employers, as deployers, commit to generate aggregate metrics that relate AI-supported recommendations to outcomes at regular intervals. They produce distributions of base pay, bonuses, promotion rates and performance scores by gender, age cohort and other legally recognised categories, where the collection and use of such data for equalities monitoring is authorised, broken down by job family and level. The profile specifies minimum sample sizes and anonymisation rules so that metrics are informative without revealing individuals. A simple change log records significant alterations to scoring algorithms, weightings and thresholds and links them to subsequent reporting periods. Where internal or external reviews identify serious disparities that plausibly relate to AI-supported decisions, the employer logs an incident summary and a short account of remedial steps. These documentation, operational metrics, incident and change-log duties do not fix pay or promotion policies, yet they create a consistent view of how AI-supported recommendations correlate with observed outcomes over time.

Access to the resulting artefacts is defined by the same profile. Works councils, equalities officers and recognised unions receive access to detailed internal dashboards based on the standard metrics. Sectoral regulators and equalities bodies can request the standard package under confidentiality. Investors and the wider public may see high-level indicators in sustainability or governance reports, presented in a format that is comparable across firms using the profile.

Employers accept the Transparency Commons profile because it helps them evidence compliance with equal-pay and non-discrimination duties and gives HR and legal teams a clear template for what to measure. The vendor accepts it because large clients begin to require recognised transparency profiles in procurement and because supporting one standard is easier than addressing many bespoke requests. The licence functions as a cross-firm implementation device for existing equalities obligations, in a form that can be reused across clients and jurisdictions. The regime does not replace equal-pay statutes or collective bargaining. It adds a reusable evidential layer around AI-supported HR decisions that exists because access to the analytics platform is conditioned on generating and sharing salary and progression metrics in a structured, comparable way.

3.3. Sustainability Commons: Ecological Accounting and Routing

The Sustainability Commons logic targets the material footprint of AI deployments: the energy they consume, the emissions they drive, the hardware they run on and the infrastructures that host them. It asks whether licence terms can require providers and deployers to measure, disclose and improve the ecological costs of AI workloads, and whether these obligations can travel with models and services as they are adapted and redeployed across contexts. The focus extends beyond raw carbon accounting to routing workloads towards lower-impact resources and building shared reference datasets on AI-related energy use and emissions.

The Sustainability Commons uses the licensing layer because that is where rights to run large workloads are granted, capacity is reserved and service levels are negotiated. Licences can require standardised energy and emissions reporting on a shared template, with clear system boundaries and basic intensity metrics summarised in a public S sheet. They can extend sustainability duties

upstream to infrastructure providers and downstream to commercial products, commit deployments to simple efficiency and reduction targets, and switch on stronger conditions once usage or revenue crosses agreed thresholds. Basic metrics and lessons learnt feed into a common registry that supports benchmarking, procurement and oversight. The following scenarios explore how Sustainability Commons clauses could be formulated in AI deployments that rely heavily on distributed compute and data centres.

Example 3.3.1: A Distributed Compute Network with Sustainability Commons Onboarding

A decentralised compute network allows owners of servers, GPUs and edge devices to offer spare capacity for AI workloads. A protocol matches compute buyers and sellers and routes tasks across a global pool of machines. AI developers and enterprises license access to the network as a service; device operators sign separate participation agreements. Under baseline terms, pricing reflects capacity, latency and reliability. Information about energy sources and carbon intensity is limited. Jobs chase the cheapest or fastest nodes, regardless of ecological cost.

A Sustainability Commons logic treats these access agreements as a governance lever. The network operator introduces an AIC-S profile for the network and for node operators that wish to participate. Buyers can continue under baseline terms, or opt into the AIC-S-enabled pool. If they opt in, their access licence includes concrete ecological accounting and improvement obligations. The operator, in turn, commits to provide the data and controls needed to honour those obligations.

On the supply side, nodes that seek AIC-S status must complete a standard S template that records basic energy metadata—grid region, approximate energy mix or the use of on-site renewables, hardware type and typical utilisation ranges—and accept simple metering or estimation rules for power use. The network maps these declarations into a small set of standard categories and publishes an S sheet for the network that summarises the footprint and boundary choices. On the demand side, AIC-S workloads agree that a defined fraction of their jobs will run on nodes in preferred categories such as renewable-heavy grids, surplus-capacity data centres or clusters that meet agreed efficiency benchmarks. Above a usage threshold, the licence commits the network to tighten routing preferences or to require node operators in the AIC-S pool to adopt simple efficiency and reduction targets over a multi-year horizon.

Measurement is kept deliberately simple. The licence refers to a shared formula for estimating energy use per job based on hardware type, utilisation and runtime. The network aggregates these data and provides AIC-S customers with periodic reports: total compute, estimated emissions, share of work routed to preferred categories and progress against declared intensity targets. Core metrics are deposited, in aggregated form, in an external Sustainability Commons registry that supports cross-network benchmarking. Because the same AIC-S profile applies across buyers and operators, ecological clauses do not need to be renegotiated in each bilateral contract.

Example 3.3.2: Hyperscale Cloud “Sustainability Commons – Training” Profile for Large Models

A major cloud provider offers specialised GPU clusters for training large models. Access to these clusters is governed by reserved-capacity service agreements rather than pure pay-as-you-go. Training jobs above a defined threshold of compute or spend must be booked under named service profiles. Under a Sustainability Commons logic, the provider introduces a “Sustainability Commons – Training” profile as one of these options.

The Training profile leaves core commercial terms intact, but adds ecological accounting and improvement duties that attach to each covered training run. Customers who opt in agree that large training jobs will, where feasible, be scheduled in regions that meet basic criteria on energy mix and efficiency, unless latency or data-localisation requirements make this impossible. The service terms commit the provider to publish an S sheet for the Training profile and to expose, for each covered run, a standardised estimate of energy use and associated emissions, based on hardware type, runtime and regional grid factors. Above a higher threshold of annual Training-profile usage or emissions, the profile requires the customer and provider to adopt simple intensity or reduction targets for future runs and to subject the reporting process to periodic independent assurance.

For runs that cross defined thresholds, anonymised training-run metadata—model size bands, total compute, estimated energy and region—are deposited in a shared Training Footprint Registry maintained by an independent body. That Registry forms part of the broader Sustainability Commons registry, and supports benchmarking and policy analysis across firms and sectors. Public funders, corporate sustainability programmes and some regulators begin to require that publicly supported or high-risk large-model training runs use a recognised Sustainability Commons profile or explain why they do not. For the cloud provider, the profile becomes a standard product line that responds to these demands and allows ecological accounting to be handled once in the service terms rather than through individual side letters. For customers, it offers a concrete, auditable way to back “responsible AI training” claims.

Example 3.3.3: Logistics Optimisation SaaS with AIC-S Routing and Reporting

A software vendor licenses an AI optimisation platform to large retailers and logistics firms. The system plans delivery routes, allocates loads across vehicles and depots, and balances cost, delivery time and service levels. Enterprise customers contract through long-term SaaS agreements with usage-based billing. Under standard terms, the optimiser is free to choose any feasible routing that minimises monetary cost or time. Environmental impact remains an internal matter for each client.

Under a Sustainability Commons logic, the vendor offers an alternative “Sustainability Commons – Logistics” licence profile based on AIC-S. Clients who choose this profile keep the same core functionality and pricing model, but accept additional ecological accounting and routing rules once optimisation volumes cross defined thresholds. The licence requires the platform to estimate, for each covered optimisation run, energy use and emissions using standard factors linked to vehicle type, fuel, distance and load. It also requires the optimiser to treat emissions as a constrained objective: where two routing plans fall within an agreed band of cost and delivery time, the lower-emission option is selected by default, unless the client explicitly overrides this choice and records a short explanation.

Each client maintains an S sheet that summarises system boundaries, estimation methods and basic intensity metrics, for example emissions per parcel or per tonne-kilometre in covered segments. The profile mandates that anonymised, aggregated metrics—total distance, modal split, estimated emissions by corridor and customer segment, progress against simple intensity targets—be deposited at regular intervals into the Sustainability Commons registry for participating firms. Access rules, defined in the same profile, grant sectoral regulators, city authorities and accredited researchers access to these aggregates, while firms retain control over fine-grained operational data. Public procurement frameworks and some investors begin to recognise participation in such AIC-S profiles as evidence of responsible logistics practices.

For clients, the profile provides a ready-made structure for reporting and for modestly constraining the environmental impact of AI-optimised operations, with a built-in expectation of gradual improvement over time. For the vendor, it is a reusable clause pattern that meets converging regulatory and customer expectations without bespoke side agreements, and that connects the platform to a broader Sustainability Commons in which footprint data and improvement trajectories can be compared across firms and sectors.

3.4. Access Commons: Conditions of Meaningful Use

The Access Commons logic targets who can, in practice, make meaningful use of advanced AI capabilities and on what terms. Formal openness of code or model weights does not by itself ensure that under-resourced actors can deploy, adapt or govern these systems. Barriers arise from infrastructure costs, expertise, legal risk and the need for context-specific support. Access Commons clauses ask whether licence terms can carve out predictable access conditions for defined groups: public-interest users, research institutions in low-resource settings, civil-society organisations or small firms working on specific problems.

Here the licensing layer is where price, volume, support and technical modalities of access are negotiated. Licences can specify tiers and segments, reserve slices of capacity for particular user groups, cap prices for certain categories of use or require that some forms of access be channelled through shared platforms with common support arrangements. The following scenarios illustrate how Access Commons profiles might work in AI-as-a-service, marketplace and infrastructure settings. In all three cases, the Access Commons profiles do not replace open-source or Creative Commons licences on upstream artefacts. They sit alongside them, extending the digital-commons logic from reusable works of authorship to the contractual conditions under which advanced AI capabilities and compute are made available.

Example 3.4.1: Foundation-Model API with a Public-Interest Tier

A company offers large language and vision models through a commercial API. Most customers are firms that integrate the API into products, internal tooling and analytics. The standard licence sets usage-based prices, support levels and service guarantees. Public-interest users—civil-society organisations, small public institutions, research groups in low-resource settings—face the same terms and often cannot afford sustained use.

Under an Access Commons logic, the provider introduces a distinct Access Commons profile for the API. Commercial customers keep the standard licence. Eligible public-interest users can instead contract under the Access Commons terms. These terms reserve a defined slice of total capacity for the Access Commons tier, set a stable, near-cost price band for a clear usage envelope, and guarantee basic support rather than “best-effort” access. Eligibility rules and accreditation are defined in an annex, co-designed with public funders and civil-society networks.

The profile is part of the standard API licence library. It can be switched on whenever funders or governments make support available, without rewriting contracts from scratch. For the provider, the profile makes it easier to respond to procurement rules and funding schemes that require demonstrable public-interest access. For public-interest users, it creates predictable, medium-term access conditions to frontier models, backed by contractual commitments rather than one-off discounts or pilots.

Example 3.4.2: AI Services Marketplace with an Access Commons Pool

A platform operates a marketplace where independent developers offer specialised AI services: document analysis, speech recognition, translation, forecasting. Each service is licensed to end-users under the platform's standard marketplace terms. Prices are set by providers; the platform takes a percentage fee. Civil-society organisations and small public actors can technically use the marketplace, but face the full commercial tariff and fragmented support.

Under an Access Commons logic, the platform introduces an Access Commons profile that service providers may opt into. Providers that select this profile keep their usual commercial terms for most users. They also agree to contribute a small fraction of gross marketplace revenue from their service into an "Access Commons pool" managed by the platform under defined rules. In exchange, their services become visible in a curated "public-interest catalogue".

Accredited public-interest users access this catalogue through a separate interface. For them, the marketplace licence applies different terms: zero or reduced marginal prices up to a defined usage cap, and shared support channels maintained by the platform. The Access Commons profile guarantees non-discriminatory access to this interface for accredited users and a minimum stability period for the subsidised terms. The pool created by small contributions from many services finances the subsidy and common support.

The platform adopts this structure because some public buyers and funders begin to require evidence of inclusive access conditions in procurement and grant schemes, and because it can manage the Access Commons pool centrally rather than negotiating discounts service by service. Providers opt in because presence in the public-interest catalogue brings reputation benefits and occasional funded projects, while the financial contribution remains modest and standardised.

Example 3.4.3: Shared Research Compute Facility with Reserved Capacity

A regional research consortium operates a shared compute facility for AI training and large-scale simulations. Universities and public research institutes sign participation agreements that give them reserved capacity and access to support staff. Institutions in wealthier systems can afford substantial allocations; smaller universities and institutes in lower-income settings are often priced out or relegated to ad hoc, low-priority queues.

Under an Access Commons logic, the consortium amends its participation agreements to include an Access Commons profile. Institutions that join the facility with significant reserved capacity agree that a defined share of their allocation—say, five to ten per cent—is pooled into a common Access Commons queue. The service terms for this queue cap usage fees at a low, standard rate and guarantee a minimal level of technical support and training.

Eligibility for the Access Commons queue is limited to accredited low-resource institutions and doctoral programmes that meet criteria set by the consortium and funders. These institutions sign a light-weight access agreement that mirrors the technical and support conditions of the main facility, but only for jobs submitted through the Access Commons queue. The same clause pattern is used when new institutions join, so rules and expectations remain stable over time.

For well-resourced members, the profile is the price of participation in a publicly supported facility and aligns with funders' expectations around capacity sharing. For low-resource institutions, it creates a predictable route to meaningful use of high-end compute, rather than occasional favours. The Access Commons here is instantiated in a family of participation and access terms that reserve capacity

bands and support conditions for defined user groups, instead of leaving access entirely to ability to pay or informal arrangements.

3.5. Reciprocity Commons: Recognising and Rewarding Contributions

The Reciprocity Commons logic targets the many contributions that enable AI systems but rarely receive structured recognition or a share of downstream value. These contributions include open-source code, community-curated datasets, domain expertise, annotation labour, evaluation exercises and safety red-teaming. Reciprocity Commons clauses ask whether licence terms can embed patterns for acknowledging these inputs and routing part of the value generated by AI systems back along the chains that produced them.

The focus on the licensing layer reflects the fact that it is at this boundary that commercial use of a system is authorised and where payment flows are defined. Licences can be written to require that certain classes of contributors be recorded, that revenue shares or bonuses be routed through defined mechanisms, and that high-level information about these flows be visible to others. The following scenarios explore how Reciprocity Commons profiles could function in AI marketplaces and platforms that already track usage and payments at scale.

Example 3.5.1: An AI Services Marketplace with On-Chain Reciprocity

A network of companies builds speech-to-text and translation models for public helplines, call centres and accessibility tools. Many contributions sit upstream: open-source libraries, small labs curating language data, accessibility organisations providing speech corpora, call-centre agents annotating errors, independent red-teamers. Once the models are wrapped into profitable SaaS products, most of these contributors see none of the downstream revenue.

The models are deployed through a blockchain-based marketplace used to register AI systems, log usage and route payments. Under a Reciprocity Commons logic, the marketplace introduces a standard Reciprocity Commons licence profile for models traded on the network. Model owners retain their intellectual property and set prices as before, but by opting into this profile they accept additional obligations on how contributions are recorded and how some revenues are shared.

The licence requires that any model registered under this profile include, as on-chain metadata, a contribution graph. The graph lists classes of contributors—upstream library projects, data-curation teams, accessibility NGOs, red-teaming groups—each with an agreed share of a reciprocity pool. When institutional clients license the model's API or on-premise version, their contracts incorporate the same profile. A fixed percentage of gross usage fees is routed, via a smart contract, into the model's reciprocity pool and then split according to the contribution graph. High-level inflows and outflows are visible on-chain; allocation within each class is governed by off-chain arrangements agreed by those contributors.

Adoption rests on demand. Public bodies and platforms that procure speech and translation services announce that they will favour models offered under a recognised Reciprocity Commons profile. For model owners, accepting these terms becomes the route into those contracts and a way to signal "fair" AI practices. For contributors, the contribution graph and reciprocity pool create a channel through which their efforts can attract a share of downstream value, without each needing separate bargaining power. The Reciprocity Commons exists here as a family of licence profiles that require marketplace participants to acknowledge contributions and route part of the resulting cashflows through a shared, auditable mechanism.

Example 3.5.2: Publisher-Level AI Features with Author Dividends

A large academic publisher licenses its journal portfolio and platforms to universities and research institutes. It also offers AI features on top of standard access: literature search, summarisation, citation suggestions and drafting support within the publisher's own interface. These tools rely heavily on the publisher's corpus and on continuous feedback from users. Subscription and platform revenues flow to the publisher. Individual researchers whose articles anchor the corpus receive no additional benefit when their work is repeatedly surfaced, summarised or used as training material for the AI features.

Under a Reciprocity Commons logic, the publisher introduces a Reciprocity Commons licence profile for institutions that subscribe to the AI-enhanced platform. Access rights and baseline subscription prices remain in the usual range. The profile adds a commitment on the publisher's side: a defined percentage of its revenues from AI features is allocated to an "author dividends pool" administered under transparent rules. Institutions that select this profile can report their expenditure on AI features as contributing to a recognised author-support scheme, which some funders and assessment bodies begin to value.

The licence requires the publisher to maintain an author-level usage register linked to the AI tools. For each article, the register tracks, in aggregated form, how often it is retrieved, summarised or cited through AI features. Usage indicators are approximate rather than perfect, but they provide a stable basis for allocation across a large portfolio. At regular intervals, the author dividends pool is distributed to eligible authors in proportion to these indicators, with a floor payment to ensure that less frequently surfaced but still active contributions are recognised. Authors participate under simple terms notified at acceptance, which confirm their eligibility to receive dividends from the pool without changing the underlying copyright transfer or licence to the publisher.

Universities adopt the Reciprocity Commons profile where funders and evaluation frameworks begin to ask how institutions using AI-assisted publishing platforms support the researchers whose work underpins those tools. For the publisher, the profile differentiates the platform from competitors and helps pre-empt conflict over AI training and secondary use of articles. For authors, the usage register and dividends pool do not replace salaries or core funding, but they create a direct, recurring channel through which intensive AI-mediated use of their publications generates supplementary income, anchored in the licensing terms that govern institutional access to the AI-enhanced platform.

Example 3.5.3: Image-Generating Platform with Style-Linked Artist Dividends

A large image-generating platform licenses its models and APIs to agencies, brands and design teams. Users generate images by prompt, often asking for results "in the style of" named artists or using prompts that clearly evoke recognisable styles. The models have been trained on vast image corpora scraped from the web and from curated sets. Revenues from subscriptions, API calls and enterprise licences flow to the platform. Artists whose work and styles have informed the models receive no structured recognition or share of this income.

Under a Reciprocity Commons logic, the platform introduces a Reciprocity Commons licence profile for customers who use its generative features at scale. Core commercial terms remain in place. The profile adds a commitment on the platform's side: a defined percentage of its revenues from image generation under this profile is allocated to an "artist dividends pool" administered under transparent rules. Customers who select the profile can represent their use of AI-generated imagery as aligned with a recognised artist-support scheme, which some brands, public buyers and cultural funders begin to value.

The licence requires the platform to maintain a style-level usage register. Artists who wish to participate opt in and register their identity and portfolio references. The platform uses style-attribution techniques to link prompts and generated images to style clusters that can be mapped, with conservative thresholds, back to registered artists or collectives. It also records how often prompts explicitly mention artists by name. These indicators are approximate rather than perfect, but they provide a workable basis for allocation across many participants. At regular intervals, the platform distributes the artist dividends pool in proportion to these usage indicators, with floor payments for emerging artists and caps to avoid extreme concentration. Opt-in terms explain how style attribution works, how shares are calculated and how artists can contest or update mappings, without rewriting existing copyright rules or standard licensing for non-AI uses.

Clients adopt the Reciprocity Commons profile where procurement rules, brand policies or ethical guidelines begin to demand evidence that AI-enabled image workflows support living artists rather than treating their styles as a free raw material. For the platform, the profile distinguishes its generative services from competitors that ignore provenance and reduces pressure around consent and ownership of training inputs. For artists, the style-linked register and dividends pool do not resolve every authorship dispute, but they create a concrete, recurring channel through which intensive AI-mediated use of their visual styles generates supplementary income, anchored in the licensing terms that govern access to the platform's generative capabilities.

3.6. Governance Commons: Hooks for Ongoing Oversight

The Governance Commons logic targets how AI systems are steered once they are deployed: who can change their parameters, authorise new use cases, respond to incidents or decide when systems should be constrained or withdrawn. Earlier Commons logics already contain local governance elements. Value Commons funds or Transparency and Sustainability registries will often require steering groups or bodies. Access and Reciprocity pools rely on allocation rules and basic procedures. These arrangements govern specific funds, registries or queues within a given Commons profile.

Governance Commons refers to a further layer. It asks how ongoing oversight of AI systems, and of their combined value, transparency, sustainability, access and reciprocity profiles, can be institutionalised beyond any single bilateral contract or single Commons mechanism. In this sense, it differs from familiar open-source governance, which concentrates on the codebase and project community: release cadences, contribution rules, technical roadmaps and, at most, broad statements on acceptable use. Governance Commons focuses instead on the socio-technical system in deployment. It centres questions such as which domains of use are permitted, which populations may be targeted, how error trade-offs are set, and under what conditions particular capabilities must be constrained or withdrawn.

The licensing layer is the point at which deployers can be required to recognise such oversight as binding. Open-source governance depends on control of repositories and the possibility of forking. Governance Commons depends on licence and service-agreement profiles that make recognition of specific governance arrangements a condition of access. Licences can stipulate that certain decisions be taken or ratified by multi-stakeholder councils that include affected groups and regulators, that incident response and dispute-resolution follow agreed procedures, or that high-risk uses and significant model changes be subject to review by specified bodies or on-chain mechanisms. These obligations can then travel with the system as it is sublicensed, embedded or white-labelled, so that governance does not fragment across separate deals. The following scenarios examine how Governance Commons profiles might anchor this kind of shared, durable oversight in different parts of the AI ecosystem.

Example 3.6.1: Neighbourhood Camera System with a Residents' Board

A company sells an AI-enabled camera system to housing associations and gated communities. The system spots intrusions, damaged property and fires. It can also, if configured, recognise faces and follow people across multiple entrances. The standard service contract gives the housing association full control over settings. Residents only find out what the system does when something goes wrong or appears in the news.

Under a Governance Commons logic, the service contract takes a different form. The housing association licenses the system under a Governance Commons profile that requires a residents' board. The contract names the board, sets a simple composition rule (for example, residents, a representative of the association, and one external privacy expert) and says that some decisions cannot be taken without the board.

The licence lists those decisions in plain language: whether facial recognition is allowed at all; whether footage may be shared with police; how long video is kept; which areas may be monitored. Any change in these settings must be proposed by the association or the vendor, discussed at the board and minuted. The licence says that the vendor will only implement high-impact changes once the board has recorded a decision. If a serious incident occurs, the licence also gives the board the right to demand an external audit and to require the association to switch off some features until the audit is done.

Residents do not become parties to the commercial deal. However, because the Governance Commons profile is written into the licence, the vendor and the housing association are contractually bound to recognise the board and its role. The camera system travels, but the governance hooks travel with it.

Example 3.6.2: AI Homework Helper in Schools with a Parent–Teacher Council

An education company licenses an AI "homework helper" to schools. Pupils can ask questions, get explanations and receive feedback on essays. The system also collects detailed learning data and can suggest targeted interventions for individual students. Under a normal licence, the school decides which features to turn on. Parents and pupils have to accept whatever the school and vendor have agreed.

Under a Governance Commons logic, the licence for the homework helper includes a simple governance clause. The school agrees to create a small parent–teacher council for the system. The licence states that some choices are reserved for this council: whether the helper is allowed to grade work directly, whether it may send nudges to pupils outside school hours, what kinds of data may be shared with third parties, and when pupils must be clearly told that they are interacting with an AI system.

The vendor agrees, in the same licence, that it will only activate these features once the school has confirmed that the council has approved them. If the vendor releases a major update that changes how the helper works, the licence requires the vendor to provide a clear summary to the school and to wait for confirmation that the council has reviewed it before the update goes live. The licence also gives the council a defined channel to report incidents and to request that a feature be temporarily switched off.

The homework helper remains a commercial product. However, the Governance Commons profile ensures that a basic, multi-party oversight structure is in place and that it has a formal role in the life

of the system, rather than leaving all decisions to bilateral discussions between vendor and school leadership.

Example 3.6.3: Blockchain-Based AI Trading Bots with On-Chain Oversight

A blockchain platform hosts many AI trading bots. Users deposit funds and choose bots that follow different strategies. The bots are developed by separate teams and run on top of smart contracts that handle custody and settlement. Changes to bot strategies and risk limits can have significant consequences for thousands of users, but under a straightforward model these changes are made by developers and reflected only in technical release notes.

Under a Governance Commons logic, the platform introduces a Governance Commons profile for bots that wish to be listed in a “trusted” section. The smart contract for each such bot includes a simple on-chain governance hook: certain changes cannot take effect unless they are approved by a token-holder council. The platform’s user terms, which form the service agreement with traders and bot developers, refer to this profile and state that joining the trusted section means accepting the council’s role as binding.

The profile defines which actions need approval. These include raising maximum leverage, expanding into new asset classes, or changing fee structures above a stated threshold. When developers want to make such a change, they must submit a proposal on-chain. Token holders who meet basic participation criteria vote. If the proposal passes, the smart contract unlocks the new parameters; if not, the old settings remain. The same profile gives the council the right to trigger an emergency pause in trading for a bot if predefined risk indicators are breached.

In this setting the Governance Commons is not a vague ideal. It is realised through a specific profile in the platform’s terms and a set of smart-contract rules. Developers accept these constraints in exchange for access to the trusted section and its user base. Users gain a clear, shared mechanism for steering how high-impact changes are introduced, rather than having to trust each developer individually or to exit entirely when strategies shift in ways they dislike.

4. Why Licensing as an Intervention Point?

The argument developed in this paper treats licensing as one governance instrument among several. Public regulation, taxation, competition policy, labour law, technical standards, professional ethics and corporate governance all shape AI development and deployment. Each, however, faces structural limits when it comes to directing concrete value flows, access conditions and accountability relationships in specific AI deployments. This section explains how licensing sits among these instruments, how impact-oriented clauses might be adopted, and how familiar issues of measurement, standardisation and legal interaction can be handled.

4.1. Comparative position among governance instruments

Statutory regulation is typically slow, general and prohibitive. To remain technology-neutral, it tends to define floor standards and bans rather than the positive obligations through which automation gains might be shared, ecological performance documented or affected communities given durable roles in oversight. Taxation and social protection can in principle redistribute value generated by AI, but they operate at the level of national fiscal policy and macroeconomic aggregates. They do not follow the trajectory of particular systems or attach to specific contractual relationships.

Standards and certification schemes provide guidance on safety, robustness and documentation. In some sectors they act as proxies for regulatory compliance. Yet they usually remain voluntary and only weakly coupled to the financial and organisational dynamics of deployment (Blind, 2004; Blind, 2013). Voluntary ethical frameworks and ESG commitments, while increasingly prominent in AI, rely on self-discipline and reputation rather than on enforceable duties tied to concrete transactions. Labour law and collective bargaining can set constraints and compensation structures, but they are unevenly distributed across sectors and often struggle to reach the transnational, multi-actor settings in which AI systems are developed and deployed.

Licensing occupies a different position. It is the layer at which powerful actors already negotiate detailed rights and obligations around use, modification, deployment and support. It is routinely revisited in procurement and partnership cycles. Clause patterns can be standardised, shared and adapted across organisations and jurisdictions. Once agreed, licence terms form part of the private-law infrastructure that courts and arbitral bodies are willing to enforce, including in transnational settings. In that sense, licensing functions as a form of “code” in Lessig’s broad sense: an architectural constraint that shapes behaviour alongside law, norms and markets.

Crucially, licence terms can be written to travel with an AI system as it is embedded in wider products and services. They provide a legal mechanism through which certain obligations and benefits must be preserved downstream. For concerns about value distribution, transparency, sustainability, access, reciprocity and governance, the licensing layer is therefore one of the few points in the AI value chain where concrete, system-specific obligations can be specified, negotiated and made legally binding at scale.

4.2. Adoption pathways and incentive compatibility

A standard critique is straightforward: why would powerful actors accept licence clauses that redirect part of their surplus to workers, communities or shared infrastructures? The answer depends on where, and by whom, such clauses are introduced.

The scenarios in Section 3 point towards several plausible adoption pathways. Public procurement and large funders already use conditions in tenders and grants to steer technology development and deployment. They can require that AI systems procured for public functions or supported with public money adopt specific impact-oriented licensing profiles, much as some now require open-access publication or open-source releases. Open-source and commons-oriented projects, which already use open licences and collective governance to differentiate themselves from proprietary competitors, can adopt Value or Transparency Commons terms as part of their mission; for them, embedded value-sharing or documentation obligations deepen, rather than dilute, their core identity.

Industry consortia, professional associations and standard-setting organisations provide a further route. They can articulate model licences or licence addenda that embody impact-oriented logics. Adoption can then become part of membership, certification or best-practice regimes. In parallel, reputational and competitive dynamics matter. In markets where technical performance converges, firms may compete on governance profiles and societal impact. Clear, auditable value-sharing or transparency commitments can support brand differentiation and trust in ways that mere slogans cannot.

In all of these settings, impact-oriented clauses do not appear as unilateral concessions. They are introduced as part of broader incentive structures. They can reduce resistance to automation, open access to new markets, satisfy political or regulatory expectations, or enable participation in

prestigious programmes and consortia. The configuration is contingent and must be designed, but it is not implausible.

4.3. Measurement, metrics and enforceability

Another critique concerns measurement and enforceability. Value Commons clauses rely on notions such as “documented cost savings” or “percentage of revenues”. Sustainability Commons clauses may refer to energy use or emissions. A sceptical reader may ask whether this would create an accounting and litigation playground.

Complex contractual metrics of this kind are not new. Royalty arrangements, revenue-sharing contracts and “fair, reasonable and non-discriminatory” FRAND commitments in standard-essential patent licences have long required parties and courts to grapple with valuation, apportionment and auditability. The FRAND literature shows that such arrangements can be contentious, but also that they can be governed through a combination of standard clause patterns, arbitration and regulatory guidance (Contreras, 2015; Lemley & Shapiro, 2007).

Impact-oriented licence clauses can build on these existing practices rather than invent new measurement infrastructures from scratch. Minimal viable metrics can be chosen for each context. In the consultancy scenario, for example, the relevant baseline and savings can be anchored in agreed categories of IT spend that the parties already track. In sustainability-oriented clauses, metrics can align with established reporting frameworks or regulatory requirements. Audit hooks can be limited and proportional, avoiding excessive intrusion while still allowing basic verification.

At the same time, there is a need to avoid the pathologies of opaque boilerplate. Critiques of standard-form contracts warn that consent to complex terms is often nominal, and that rights can quietly vanish in the fine print (Radin, 2013). The proposal here is to surface value-sharing and transparency obligations as visible features of licence profiles, with simplified summaries and governance documentation. In the Reciprocity Commons examples, allocation of dividends is explicitly approximate: the aim is to create stable channels through which upstream contributions attract some share of downstream value, not to achieve perfect micro-accounting for every marginal use.

4.4. Standardisation, clause families and transaction costs

A further concern is fragmentation. If every actor drafts bespoke impact-oriented clauses, the result may be a patchwork of incompatible terms that undermines the interoperability which has made Creative Commons and open-source licensing powerful.

The design space proposed in this paper is not intended to encourage idiosyncratic drafting. The aim is closer to the pattern seen in Creative Commons and open-source licences: a small number of standard profiles, each with clear semantics and recognisable iconography, which can be combined or adapted within understood limits. Over time, one might imagine families of “Value Commons-light”, “Value Commons-strong”, “Transparency Commons-minimal” and similar variants, much as there are now different profiles for attribution, share-alike and non-commercial use.

The economics of technical standardisation suggests that such families can reduce transaction costs, support network effects and still leave room for competition and diversity (Blind, 2004; Blind, 2013; ISO, 2013). Similar dynamics already exist in software licensing. The proposed clauses would sit alongside familiar licence types, rather than replacing them, and could in practice be packaged as addenda that attach to existing open or proprietary licences.

4.5. Interaction with other legal regimes

Impact-oriented licensing cannot float free of surrounding legal regimes. Reviewers are right to worry about potential tensions with competition law, data-protection law, consumer protection and sector-specific regulation.

Value-sharing funds or joint governance structures could, if poorly designed, resemble collusive arrangements among competitors. FRAND debates illustrate how commitments made in and around standard-setting can raise antitrust concerns. Any Value Commons or Governance Commons structures would therefore need to be assessed under existing competition frameworks and, where necessary, designed to avoid anti-competitive information sharing or exclusionary effects.

Transparency obligations and data flows must comply with data-protection and confidentiality rules. In some cases, Transparency Commons clauses may need to rely on synthetic or aggregated information, or to use trusted intermediaries, to avoid exposing personal data or trade secrets. Work on accountability and explainability in data-protection law offers a starting point for such arrangements. Sector-specific rules—for example in finance, health or education—already impose their own governance constraints. Impact-oriented licence clauses should be compatible with those regimes and, where appropriate, used to implement or exceed them, rather than to circumvent them.

Within these boundaries, licensing can complement statutory, regulatory and institutional tools. It provides a tractable layer at which concerns about value, transparency, sustainability, access, reciprocity and governance can be written into the concrete agreements that already structure AI deployment.

5. Why “Commons”?

The “Commons” language used throughout this framework is deliberate. It is inspired first by the digital-commons tradition of Creative Commons and open-source licensing, and only later, in the Governance Commons logic, by more classical work on commons governance. In the digital-commons tradition, individual rightsholders do not pool ownership or set up shared management bodies. They retain control, but adopt standardised licences that allow many separate decisions to accumulate into a large, interoperable pool of material that anyone can access and reuse (Lessig, 1999; Boyle, 2003; Hess & Ostrom, 2007).

The commons arises from repeated, compatible licensing choices that shift the default from closed to reusable and that serve public interest in a positive-sum, win–win–win way. The knowledge commons literature underlines that what matters is not only the openness of individual artefacts, but the institutional patterns that allow a shared resource base to emerge and to be maintained over time.

The six impact-oriented licensing logics proposed here extend this digital-commons idea beyond works of authorship. Each “Commons” designates a dimension of AI’s systemic footprint where many individual contracts could, if written in compatible ways, build up a shared resource layer that benefits more than the immediate parties to the deal. A Value Commons channels portions of automation gains into shared funds and infrastructures. A Transparency Commons accumulates reusable documentation, evaluations and incident reports. A Sustainability Commons gathers ecological accounting and constraints. An Access Commons supports shared infrastructures and conditions of meaningful access to capabilities. A Reciprocity Commons encodes patterns for recognising and rewarding contributions across the AI value chain.

The Governance Commons adds a further layer that resonates more directly with the classical literature on commons governance. It explores how licensing terms can create hooks for durable, multi-stakeholder oversight bodies and decision procedures that sit above individual contracts and have some authority over them. In this sense, the first five logics focus on building CC-style shared resource layers through repeated clause patterns, while the sixth explicitly addresses the institutional question of how those shared layers are monitored, contested and steered over time.

In all six cases, the commons is instantiated through licensing. It does not exist as an abstract ideal, but emerges when multiple actors adopt clause patterns that do more than settle bilateral bargains and that, in aggregate, thicken the public-interest resource base around AI systems.

6. Limits and Scope of Licensing

It is important to be clear about the limits of what licensing can achieve. The proposal in this paper concerns a particular governance lever in a particular part of the AI value chain. It does not claim universality.

First, licensing presupposes contractual relationships. Many socially significant uses of AI occur in informal, domestic or small-scale settings where no formal licence is ever negotiated. End-user licence agreements and platform terms of service may apply, but they are often non-negotiated boilerplate. In such contexts, public regulation, consumer protection, data-protection law and competition law remain the primary levers.

Second, licensing is least effective where AI systems are developed and used purely internally, within a single organisation, and where the main issues are structural: concentration of infrastructure ownership, large-scale data extraction, geopolitical competition in AI capabilities and long-term labour-market shifts. In such cases, internal governance, labour law, corporate regulation and macro-level policy instruments become more important. Licensing can redirect some surplus, improve transparency, widen access and support better governance processes. It cannot, on its own, resolve deeper issues of distribution or geopolitical power.

Third, licensing depends on enforceable contract law. In settings where legal institutions are weak, where enforcement is costly or arbitrary, or where geopolitical tensions disrupt legal cooperation, the reach of any licensing strategy will be limited.

Within these boundaries, treating licensing as societal infrastructure opens a tractable design space for small families of clause profiles that translate concerns about value, transparency, sustainability, access, reciprocity and governance into concrete contractual terms in specific AI deployments.

7. Summary and Conclusions

This paper has taken an instrument that usually sits in the background of AI practice—licensing—and moved it to the foreground as part of the societal infrastructure of AI governance. Starting from the calibration cases of Creative Commons and open-source licences, it has shown that standardised licence families can already reshape patterns of access, reuse and collaboration at scale, even without new statutes or technical primitives. At the same time, these familiar schemes remain focused on upstream artefacts and leave value flows, ecological performance, access conditions, contribution chains and ongoing oversight largely to separate arrangements.

Against that backdrop, the paper has revisited the six Commons logics developed in the companion framework—Value, Transparency, Sustainability, Access, Reciprocity and Governance Commons—and has populated them with concrete scenarios. Each set of examples illustrates how short clause patterns could channel a share of automation gains into shared funds, generate reusable transparency artefacts, create light-weight ecological accounting and routing rules, reserve capacity and support for under-resourced users, route part of downstream income back along contribution chains, or anchor multi-stakeholder oversight bodies in licence and service terms. The aim has not been to prescribe one "correct" template, but to show that these concerns can be articulated at the licensing layer in ways that fit recognisable procurement, platform and service relationships.

The analysis of licensing's position among other governance instruments has situated this design space in a broader toolkit. Regulation, taxation, standards, labour law and corporate governance remain central. Licensing does not replace them. It offers a complementary layer where powerful actors already negotiate system-specific rights and obligations, and where terms can be written to travel with models and services as they are embedded and re-used. The discussion of adoption pathways has indicated how public procurement, open-source and commons-oriented projects, sectoral consortia and reputational dynamics can provide realistic routes for impact-oriented profiles, rather than relying on unilateral concessions.

Concerns about measurement, enforceability and fragmentation are real. The paper has argued that they can be addressed by building on established practice in revenue-sharing and FRAND-style commitments, by working with minimal viable metrics anchored in existing accounting categories and reporting frameworks, and by converging on small families of standard profiles rather than bespoke drafting in each deal. The Reciprocity Commons scenarios have made explicit that allocation rules are approximate by design: the goal is to open stable channels through which upstream contributions attract some share of downstream value, not to pursue perfect micro-accounting.

The discussion of "Commons" has clarified that the term is used in a digital sense. Individual rightsholders or service owners retain control but adopt standardised profiles whose repeated use can build shared resource layers around AI systems: funds, registries, queues, access tiers and governance bodies that benefit more than the immediate parties to a single contract. The Governance Commons logic then extends this intuition to the institutional question of who holds durable decision rights over high-impact systems once they are in deployment, and how recognition of such bodies can be written into licence architectures.

The limits of licensing are clear. Many socially significant uses of AI occur in settings where no negotiable licence is present. Some of the most pressing issues in AI relate to internal deployments, infrastructure concentration, large-scale data extraction and geopolitical competition, which lie only partly within the reach of private contracts. Licensing strategies also depend on enforceable contract law and on legal cooperation across jurisdictions. Within these boundaries, however, treating licensing as societal infrastructure opens a tractable space for design.

The contribution of this paper is to show that, once licensing is treated in this way, it becomes possible to design small families of clause profiles that make value, transparency, sustainability, access, reciprocity and governance concerns more tractable in concrete deployments. Future work can move in three directions. First, empirical research can map where similar clauses already exist in practice, even in ad hoc form. Second, model profiles, iconography and clause libraries can be developed and tested with procurers, platforms and open-source communities. Third, consulting playbooks and tooling can translate the Commons logics into repeatable methods for AI projects and legal teams. Together, these steps would move impact-oriented AI licensing from a conceptual proposal to an operational layer in the wider governance stack.

References

Benkler, Y. (2006). The wealth of networks: How social production transforms markets and freedom. Yale University Press.

Blind, K. (2004). The economics of standards: Theory, evidence, policy. Edward Elgar Publishing.

Blind, K. (2013). The impact of standardization and standards on innovation. NESTA Working Paper No. 13/15.

Boyle, J. (2003). The second enclosure movement and the construction of the public domain. Law and Contemporary Problems, 66(1–2), 33–74.

Butcher, N. (2011). A basic guide to open educational resources (OER). Commonwealth of Learning; UNESCO.

Contreras, J. L. (2015). A market reliance theory for FRAND commitments and other patent pledges. *Utah Law Review*, 2015(2), 479–558.

Creative Commons. (2012). Creative Commons and open educational resources. Creative Commons Wiki. https://wiki.creativecommons.org/wiki/Creative_Commons_and_Open_Educational_Resources

Creative Commons. (n.d.). A history of Creative Commons. Creative Commons. https://creativecommons.org/timeline/

Dusollier, S. (2006). The master's tools v. the master's house: Creative Commons v. copyright. *Columbia Journal of Law & the Arts*, 29, 271–293.

Elkin-Koren, N. (2005). What contracts can't do: The limits of private ordering in facilitating a creative commons. Fordham Law Review, 74, 375–422.

Hess, C., & Ostrom, E. (Eds.). (2007). Understanding knowledge as a commons: From theory to practice. MIT Press.

ISO. (2013). Economic benefits of standards: ISO methodology 2.0. International Organization for Standardization.

Lemley, M. A., & Shapiro, C. (2007). Patent holdup and royalty stacking. Texas Law Review, 85(7), 1991–2049.

Lenartowicz, E. M. (2025). Impact-Oriented Licensing for Artificial Intelligence: A Conceptual Framework for a New Domain of AI Governance. SSRN – Social Science Research Network.

Lessig, L. (1999). Code and other laws of cyberspace. Basic Books.

Margoni, T., & Schirru, L. (2023). The role of licensing in data FAIRization. In J. Schöpfel & C. Kosmopoulos (Eds.), Publier, partager, réutiliser les données de la recherche: Les data papers et leurs enjeux. Presses Universitaires du Septentrion.

OECD. (2020). The AI value chain and policy implications. In *OECD Digital Economy Outlook 2020*. OECD Publishing.

Radin, M. J. (2013). Boilerplate: The fine print, vanishing rights, and the rule of law. Princeton University Press.

Rosen, L. (2004). Open source licensing: Software freedom and intellectual property law. Prentice Hall.

Srnicek, N. (2016). Platform capitalism. Polity Press.

von Hippel, E., & von Krogh, G. (2003). Open source software and the “private-collective” innovation model: Issues for organization science. Organization Science, 14(2), 209–223.

Zuboff, S. (2019). The age of surveillance capitalism: The fight for a human future at the new frontier of power. Profile Books.