Chapter 4. The Description of the Noocratic Model

Chapter IV.1. Fundamental Principles of Noocracy

"We can no longer afford the luxury of irrationality.
In a world of machines that imitate thinking, the only defence of humanity is to be more rational than before."
¬ Norbert Wiener, *The Human Use of Human Beings* (1950)

Introduction and Methodological Framework

This section formalizes the core principles that constitute the institutional and normative architecture of **Noocracy** ¬ a system in which *reason* itself becomes the method and criterion of governance. Its objective is not merely to describe desirable characteristics of selection and goal-setting mechanisms, but to articulate measurable constructs, procedural safeguards, and requirements for auditability.

Four interrelated pillars are analysed:

1. the **Census of Reason (CR)** ¬ the cognitive filter for access to decision-making;
2. the **Human Development Index Plus (HDI+)** ¬ the integrative goal of governance;
3. the integration of **Artificial Intelligence** as an assistive instrument of management and verification;
4. the adoption of the **SMART-paradigm** (Specific, Measurable, Achievable, Relevant, Time-bound) across all levels of public administration.

The exposition employs a strictly formal and reproducible language, aiming to minimize arbitrariness and to maintain empirical verifiability. Most mechanisms described below represent *research and engineering hypotheses* ¬ project-level designs subject to phased implementation and reversible piloting. Section IV thus provides a *roadmap* for operationalizing the principles of Noocracy rather than a closed institutional blueprint.

IV.1.1 The Concept of the Census of Reason and its Foundational Logic

Within Noocracy, the **Census of Reason (CR)** is an institutional mechanism intended to raise the quality of collective decisions by granting extended authority and access to critical public goods to individuals who demonstrate verified cognitive maturity.

Unlike traditional elitist approaches, Noocracy does not privilege narrow groups; it constructs a *system of incentives and constraints* in which rational, socially beneficial capacities become the most reliable predictors of public contribution. The logic aligns with **Amartya Sen's** view of development as the *expansion of freedom* ¬ here, the freedom of reason to act rationally and ethically.

The guiding thesis is that not *intelligence per se* but the **kinetic energy of reason** ¬ the capacity of intellect to manifest in socially constructive action ¬ deserves institutional encouragement. The census therefore accounts for both cognitive abilities and demonstrated contributions to the common good (see Hattie 2009; OECD PISA 2024; OECD PIAAC 2023).

Before proceeding, it is crucial to restate that Noocracy does not oppose alternative development models as the *only* path; it defines itself as the *most adaptive* institutional configuration ¬ one that formally embeds **self-limitation** and the **metric of resource-intensity (HDI +)** into the control loop. Following **Ashby's Law of Requisite Variety** (1956), a system remains stable only when its internal complexity matches the perturbations of its environment. Hence, Noocracy surpasses humanitarian and Scandinavian paradigms not by moral superiority but by its *capacity for self-limitation* and its scalability without cultural homogeneity. By maximally relying on reason and technology in decision-making, it accelerates adaptive cycles and increases systemic resilience, enabling a sustainable trajectory to emerge **faster** (within the 2040–2050 window identified in Chapter V § 1.1) and on a **global** rather than local scale.

IV.1.2 Methodology of Assessment: The Cognitive-Personal Rating (CPR)

Applying two components ¬ IQ and social rating (SR) ¬ to measure cognitive maturity requires a coherent methodology of assessment and validation. IQ here denotes a composite of cognitive competences evaluated through standardized testing, academic and professional outcomes, and measurable goal achievement; SR aggregates behavioural indicators such as civic participation, professional reliability, and verified contributions to public institutions.

Empirical practice revealed the limitations of the simple *IQ + SR* model: intellectual and behavioural scores alone fail to capture holistic rationality. A person may exhibit high IQ yet low empathy or cognitive coherence, while another with modest formal intellect may demonstrate exceptional prudence and reliability.

Accordingly, the base dual structure has evolved into the **Cognitive-Personal Rating (CPR)**, a multi-axial measure integrating four fundamental components:

$$\text{CPR}_i = w_1 C_i + w_2 E_i + w_3 S_i + w_4 H_i + w_5 P_i$$

where:

- C_i — **Cognitive Consistency**, absence of internal contradictions and cognitive biases;
- E_i — **Empathy and Social Sensitivity**, the capacity to perceive and integrate others' perspectives;
- S_i — **Systemicity of Thinking**, the ability to discern causal and interdependent relationships;
- H_i — **Historical Reliability of Decisions**, the degree to which errors are recognised and corrected through feedback;
- P_i — **Socio-Cooperative Vector**, reflecting the individual's constructive participation in public initiatives, collective decisions, mentorship, and open knowledge exchange;
- w_n — **weight coefficients** assigned by the **Cognitive-Ethical Contour (CEC)** under the *Zero Bias* principle to ensure fairness and transparency of evaluation.

Thus, IQ and SR become subsets of a broader *cognitive-ethical maturity* metric.

The **Census of Reason (CR)** operates as a *threshold function* of the CPR:

$$\mathbf{CR = \Phi(CPR_i, T_j)}$$

where:

- T_j — **admission threshold** corresponding to governance level *j* (local, regional, national, or global).

if $\text{CPR}_i \geq T_j \Rightarrow$ access to decision level j
if $\text{CPR}_i < T_j \Rightarrow$ temporary cognitive moratorium.

During moratorium (typically 30–90 days) the subject retains limited authority, is notified for re-evaluation or appeal, and transfers major decisions for co-signature by a verified peer. This ensures *continuity of governance* ¬ rotation without chaos.

Transitional Postulate of Measurability of Personality (Asymptotic Ethics)

It is postulated that the **Cognitive-Personal Rating** (hereafter *CPR*) system is capable of *asymptotically* approaching an objective assessment of human personal qualities based on the totality of an individual's cognitive and social contribution.

During the **transitional period**, evaluation relies on a combination of objective digital traces and algorithms for verifying behavioural sincerity, grounded in machine analysis of sequences of actions and outcomes.

The system does **not** assess internal states ¬ intentions, emotions, or beliefs ¬ but records the *actual correspondence* between behaviour and the principles of rationality and social benefit.

Gamification and social desirability are not regarded as distortions but as *natural adaptation* of the individual to the norms of reason: if a person acts "according to the rules," motivation becomes secondary to outcome.

The system focuses on identifying deviant or destructive tendencies that *precede* violations. Such cases are not punished; they serve as grounds for **cognitive correction** ¬ a soft adjustment of environment, recommendation algorithms, and access to opportunities. Thus, the noocratic system does not punish deviation but facilitates a person's return to a rational developmental trajectory.

Accordingly, the **measurability of personality** in Noocracy is not evaluative but *regulative* in nature: it maintains systemic stability without intruding into the freedom of one's inner world.

It is important to note that algorithms verifying behavioural sincerity remain in the stage of experimental research (see Srivastava *et al.*, *Nature Human Behaviour*, 2023; Li & Lake, *Frontiers in Artificial Intelligence*, 2022; Silver *et al.*, *Nature Machine Intelligence*, 2024). They are already capable of assessing the **consistency between actions and declared goals**, yet cannot evaluate internal mental states ¬ which, crucially, is *neither necessary nor desirable* for Noocracy.

This is **not a technical limitation**, but an *ethical principle*: the inner states of a person shall not be observed or assessed outside medical jurisdiction, because the **inviolability of consciousness** constitutes the foundation of the *freedom of reason*. The system registers only observable facts of behaviour and their consequences, defining rationality as the *congruence of actions with publicly declared principles*.

Even with advances in neuro-analysis and behavioural modelling, Noocracy preserves **epistemological neutrality**: *Reason regulates action but does not penetrate thought*, leaving such access solely to medical professionals ¬ psychiatrists acting within medical jurisdiction and with the patient's consent ¬ for therapeutic purposes only.

Principle of Epistemological Neutrality

In accordance with the ethical mandate of the **Cognitive-Ethical Contour (CEC)**, Noocracy *excludes* any possibility of judicial or administrative liability for internal states of consciousness.

Thoughts, intentions, emotions, and beliefs are not objects of jurisdiction, for they lack ontological external form and cannot be verified without violating the cognitive autonomy of the individual.

Noocracy does not, and will never, judge thought-crimes.

This principle is codified as a foundational element of the system's epistemological neutrality and is guaranteed by the **CEC**, which serves as the supreme arbiter of cognitive admissibility of intervention.

Any algorithmic or legal action must pass a **dual filter**:
• **Observability filter** ¬ measures may be applied only to verifiable behavioural facts confirmed by multiple data sources;
• **Ethical admissibility filter** ¬ validation by the CEC ensuring that no internal state of the person is being assessed.

Thus, the systems of the **Census of Reason** and the **Cognitive-Personal Rating** remain strictly behavioural in nature: they analyse actions and their consequences without claiming to interpret consciousness.

This marks the fundamental difference between Noocracy and totalitarian models of control: it *regulates action while preserving the inviolability of thought* as the ultimate form of the freedom of reason.

Axiom of Operationalized Ethical Responsibility

The **Census of Reason** measures not "kindness," but **cognitive maturity** ¬ the stability between rationality and empathy. If a person's behavioural data systematically diverge from their declared rational stance (cognitive dissonance > ε threshold), a **personal CEC audit** is automatically initiated.

Its purpose is not punishment but *correction*: a recommendation for re-certification, change of role, or advisory counselling. Thus, the "softness" of the system preserves humanism while not excluding responsibility.

The ε-threshold is not fixed; in early phases it is derived from statistical models of data divergence and refined through pilot studies. The ε value carries no legal weight until sufficient empirical validation and CEC methodological approval are achieved. During this transitional stage, personal CEC audits are applied selectively ¬ only in cases of significant cognitive deviation substantially exceeding statistical norms.

Such a procedure enables testing of the model without risking its transformation into an instrument of arbitrary control, maintaining the **CEC** as an organ of *cognitive-ethical*, not punitive, jurisdiction.

IV.1.3 Calibration of the Cognitive-Personal Rating (CPR) on Empirical Data (PISA, PIAAC, Hattie)

In order for the **Cognitive-Personal Rating (CPR)** to possess not only a conceptual but also a measurable foundation, it must be *anchored* to existing international scales of cognitive and behavioural competence. The most representative among them are:

1. **OECD PISA 2022** (published 2024) – measures the cognitive abilities of 15-year-old students (mathematics, reading, science), providing a baseline picture of general cognitive potential.
2. **OECD PIAAC 2023** – studies adults (ages 16–65) and evaluates skills in *literacy*, *numeracy*, and *problem-solving in technology-rich environments* (PSTRE), allowing assessment of cognitive coherence and systemic reasoning at the mature stage of life.
3. **Hattie (2009)** – the largest meta-analysis of educational interventions (800+ studies, 138 factors), identifying which conditions most effectively enhance the cognitive efficiency of learning.

Why this matters for Noocracy?

The CPR must not remain an abstract construct ¬ it *can and should* be verified against observable data. OECD datasets make it possible to:

• test how measurable cognitive skills (problem-solving, logic, causal reasoning) correlate with CPR components **C**, **S**, and **H**;
• build an *age norm* of cognitive development (PISA → PIAAC);
• estimate realistic **CPR growth values** in response to educational or social interventions (following Hattie).

Table IV.1.2-A. Correspondence between PISA/PIAAC Indicators and CPR Components

CPR Component	Indicators from PISA	Indicators from PIAAC	Function
C – Cognitive Consistency	Consistency in multi-step tasks; substitution-error rate	PSTRE – sequence of actions, self-checking	Assessment of logical stability of reasoning
E – Empathy and Social Sensitivity	Not measured directly → external surveys (*Global Competence* module)	Analogous external modules	External component of CPR
S – Systematic thinking	Mathematics (formulate–employ–interpret); Scientific reasoning	Numeracy; PSTRE	Core cognitive axis of CPR
H – Historical Reliability of Decisions	Not available	Tracking of errors and corrections (in repeated PIAAC blocks or internal CEC logs)	Indicator of sustainable self-learning

Table IV.1.2-B. Data Normalization for Component Calculation

Source	Raw Score Range	Transformation	Use
PISA (math, reading, science)	200–800	*z-score → logit → min-max (0–1)*	Components **C** and **S** for youth cohorts
PIAAC (literacy, numeracy, PSTRE)	0–500	*ϑ-estimate IRT → min-max (0–1)*	Components **C** and **S** for adult cohorts
SMART / H-track (internal)	Number of errors, corrections, reaction time	*exponential decay by regency*	Component **H** (self-learning)

Table IV.1.2-C. CPR Gains from Educational Interventions (Hattie, 2009)

Type of Intervention	Example	Mean Effect (d)	Expected CPR Gain Δ (0–1)

Feedback interventions	Immediate feedback	0.70	+0.07
Metacognition and self-regulation	"Learning how to learn"	0.60	+0.06
Explicit goal-setting	SMART objectives and forecasting	0.52	+0.05

(Conversion Δ = d / 10 – an approximate scale for estimating the expected CPR increase per single intervention.)

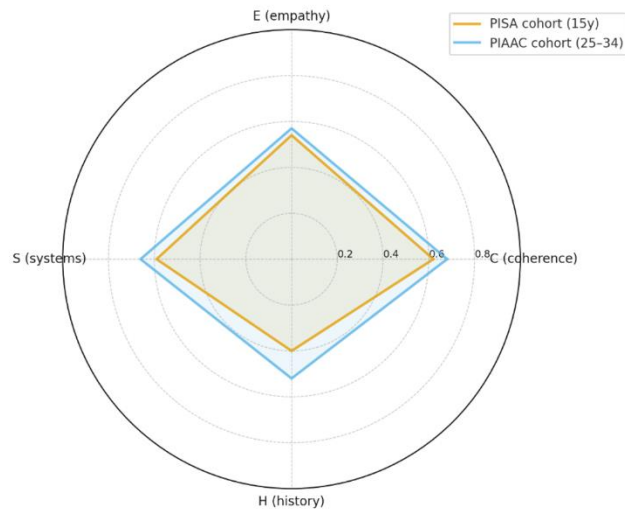Illustrative Figures (synthetic data examples)

Fig. IV.1.2-1. CPR Profiles by Cohort (PISA 15 yrs vs PIAAC 25–34)
Mean values for the four components (C, E, S, H) are shown. Adults display higher consistency (C) and historicity (H) but only marginally surpass adolescents in empathy (E).
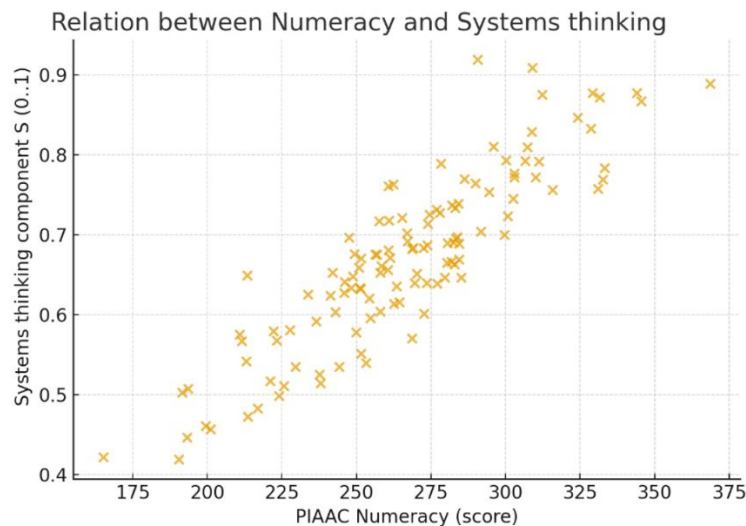

Fig. IV.1.2-2. Correlation between PIAAC Numeracy and CPR Component S (Systematic thinking)
A stable positive correlation (r ≈ 0.6–0.7) confirms that systematic thinking in CPR validly reflects the cognitive skills measured in PIAAC.

Conclusion of Section

PISA and PIAAC data provide the empirical foundation for **calibrating the CPR scale**, enabling the establishment of initial norms and verification of internal measurement consistency. Hattie's findings serve as a basis for modelling expected CPR growth resulting from educational and social interventions. In this way, **Noocracy integrates its evaluative system into the existing international framework for assessing cognitive capital**, rendering it verifiable and comparable with real-world data.

IV.1.4 Certification, Dynamic Thresholds and Age Adjustments

To prevent status rigidity:

1. **Five-year re-certification** for all public-office holders, combining cognitive tests and 360° evaluations.
2. **Age-sensitive weights:** younger cohorts → higher weight on C and S; middle-age → on E; senior → on H (advisory roles).
3. **Transition mechanisms:** grace periods and retraining to avoid social shock after downgrades.

This approach ensures **rational rotation** ¬ institutional renewal without instability.

IV.1.5 The Impact of the Census on Rights, Business, and Education: Principles of Proportionality and Transparency

The application of the **Census of Reason (CR)** has multiple practical entry points: access to administrative positions, licensing of business activity, allocation of educational grants, clearance for classified information, and similar contexts. These uses must be regulated by **three foundational principles**:

1. **Principle of Proportionality.**
   Restrictions on rights and access must be commensurate with the nature of the function or the level of risk involved. For example, the census cannot be a prerequisite for exercising basic rights ¬ such as access to public housing, primary or emergency medical care, or basic education ¬ but it *may* be applied to positions involving the management of critical resources.
2. **Principle of Evidential Basis.**
   Any measure limiting rights must rest on *verifiable data* and *empirical risk models*. Threshold values and weighting coefficients are determined through pilot studies and publicly auditable methodologies.
3. **Principle of Procedural Transparency.**
   The methods for calculating the CR, data-processing algorithms, and appeal procedures must be made public and subjected to independent audit. A key element is the *public accessibility* of qualifying examinations for those seeking advancement in cognitive competencies, the use of *open selection mechanisms* (competitive procedures), safeguards against manipulation of results, and transparent channels for appeal.

In the **business sphere**, the census may be applied, for example, in licensing or when granting access to critical state contracts. Yet the proposed model calls for caution: excessive use of the census in mass entrepreneurship could suppress innovation and risk degenerating into a *clan-based economy*.

In **education policy**, the census must balance the *encouragement of talent* with the *provision of equal starting opportunities*. A system of free preparatory courses, open knowledge bases for

self-training, mentorship programs (rewarded through CPR growth), and "second-chance" initiatives should compensate for structural inequalities. The essential point is to avoid passivity ¬ to not remain immobile, waiting for everything to be "delivered on a silver platter."

In this way, Noocracy seeks to resolve the paradox described by **Robert Dahl (1989)**: how to reconcile *democratic participation* with *competent governance*.

IV.1.6 The SMART Paradigm in Noocracy

The **SMART paradigm** (*Specific, Measurable, Achievable, Relevant, Time-bound*) is adapted for use in **public policy**: the goals of the **Human Development Index Plus (HDI+)** and its derivative indicators are transformed into a set of *concrete, measurable, and time-bound tasks*.

Examples of application:
• **State-level goal:** "Increase the expected healthy life expectancy by 3 years within 10 years while maintaining a Gini coefficient below 0.25."
• **Corporate KPI:** "Raise the share of employees certified under the Census of Reason (CR) from 12% to 30% within three years, while keeping staff turnover below 8%."

It is important to note that **the existence of political parties in their current form is incompatible** with the principle of *individual responsibility for outcomes*. In today's system, one can gain political power simply by being included on a major party's list. In Noocracy, parties may continue to exist as *associations of individuals sharing similar values and principles*, but they will no longer provide privileged access to elections, appointments, or competence evaluations (including the Cognitive-Personal Rating, CPR).

The **SMART formalization** ensures *goal alignment* across all levels ¬ personal, institutional, and national. **Artificial Intelligence** is employed to monitor goal achievement, evaluate intermediate effects, and provide early warnings of deviations or delays.

IV.1.7 Ethical and Institutional Safeguards

Using the **Census of Reason (CR)** as a factor in the distribution of privileges inevitably creates risks of discrimination, institutionalized inequality, and potential abuse. The main safeguards designed to minimize these risks are as follows:

1. **Social Contract and Legitimization.**
   Threshold values and procedures must be embedded in a *public social contract*, approved through a multi-stage process of citizen inclusion ¬ pilot voting, consultative and expert councils, and, for the most critical decisions, a public referendum to establish broad societal consensus.
2. **Appeals and Legal Protection.**
   Every decision based on the CR must be subject to a *transparent system of appeals* involving independent experts and a formal legal mechanism for revising ratings.
   To prevent the system from being "spammed" with frivolous claims, a **penalty mechanism** within the **Cognitive-Personal Rating (CPR)** is introduced: unsuccessful appeals result in small deduction points, encouraging citizens to assess their chances reasonably.
   To minimize psychological and social shocks, *"second-chance" programs* (mentioned earlier) are provided.

However, **appeals concerning fundamental cognitive rights** or the contestation of **algorithmic bias** (Zero Bias Principle) *do not incur penalties* in the CPR. Penalties apply only in cases of procedural abuse (mass, content-free appeals).
This guarantees the **right to doubt** as an essential attribute of rational citizenship.

3. **Independent Audit of Methodologies.**
Regular expert reviews of testing instruments, normalization algorithms, and weighting coefficients must be conducted.

   Axiom of Metric Transparency (Goodhart-Resilience).
   Any metric influencing HDI+ or CR must be published with its weights and data sources. Metric audits are to be performed annually by multiple independent CEC teams ("multi-audit").
   Violations such as collusion or data falsification lead to recalculation of indices and a temporary reduction in the *cognitive weight* of the auditing node.

4. **Policy of Minimum Guarantee.**
Regardless of the census outcome, every citizen is assured a *basic package of social rights* ¬ a **"guaranteed survival"** level ¬ serving both as an element of legitimacy and as a humanitarian safeguard during transition.

IV.1.8 Practical Guidelines for Implementation and Piloting

Implementation must follow *reversible experimentation*:

1. **Pilot Domains:** education, municipal governance, digital public services.
2. **Dual Evaluation:** quantitative (CPR distribution, HDI+ delta) and qualitative (public trust surveys).
3. **Reversibility Clause:** each pilot must allow restoration to previous state without systemic loss.
4. **Public Communication:** transparent dashboards and open-source documentation of algorithms.

These practices turn Noocracy into an *experimental ethics* ¬ learning through correction rather than coercion.

Conclusion of Section IV.1

The principles outlined above constitute the *operational grammar* of Noocracy.
They translate philosophical ideals ¬ reason, justice, self-limitation ¬ into measurable, auditable, and reversible institutional forms.
By coupling cognitive metrics with ethical verification and open adaptation, Noocracy aspires to make governance itself a self-learning system ¬ an *architecture of understanding* rather than domination.

IV.2 Agency as the Foundational Principle of the Public Governance System Architecture

"The true question of the 21st century is not whether Noocracy will emerge,
but which form of agency will prevail ¬ social, corporate, or machine.
This alone will decide whether the global web of consciousness

becomes a system of reason or a system of surveillance."
¬ Adapted from I. Prigogine, *Order out of Chaos* (1980)

IV.2.1 The Systemic Role of Agency

The **Public Governance System (PGS)** in Noocracy is founded on the principle of **distributed agency** ¬ the capacity of subsystems to act autonomously and meaningfully within shared objectives.
Whereas classical governance models rely on hierarchy and command-administrative control, Noocracy introduces a *horizontal, self-correcting architecture* in which the centre of gravity is not "power" as an institution, but the ability of each node to make rational decisions aligned with the **SMART goals** of the state.

This establishes a new logic of governance: **power is not delegated ¬ it is distributed**; decisions are not imposed from above ¬ they *emerge from below* and are coordinated through **cognitive feedback loops**.

As **Ilya Prigogine** demonstrated, in non-equilibrium systems *order can arise from chaos* and *stability from fluctuation* (*Order out of Chaos*, 1980). Contemporary **Complex Adaptive Systems (CAS)** theory (Holland, 1995; Mitchell, 2009; Ostrom, 2005; Arthur, 1994) confirms that the resilience of complex societies is maintained not through centralized control but through the *flexibility of networked interactions*.

Accordingly, Noocracy does not *impose* order ¬ it *institutionalizes emergent self-organization*, transforming natural information flows into a functional governance structure.

The self-organizing mechanisms underlying both the PGS and the distributed agency of Noocracy derive from **CAS theory**. As Holland (1995) showed, a complex system is not governed by rigid rules but sustains equilibrium through continual adaptation of agents and feedback mechanisms. Mitchell (2009) described such systems as "ordered chaos," where stability emerges from the interaction of many local decisions.

In economics, **Arthur (1994)** formulated analogous principles, demonstrating that stable trajectories and *path dependence* arise not from central planning but from a system's own learning from experience. Finally, **Elinor Ostrom (2005)** extended this logic to social institutions, showing that effective governance of common resources emerges when participants possess information and the capacity for collective self-correction without external coercion.

Within Noocracy, these ideas materialize in the architecture of **distributed governance**: the network of PGS loops and local cognitive nodes functions as an *adaptive ecosystem*, capable of evolution that minimizes entropy and enhances the cognitive coherence of society.

IV.2.2 Agent Architecture of the Public Governance System (PGS)

The PGS operates as a **multi-level federation of agents**, integrating people, institutions, and AI modules into a unified *cognitive ecosystem*:

- **Local level** – municipal and sectoral agents operating on real-time data streams, executing low-risk tasks, and generating social telemetry.
- **Regional level** – coordinates local nodes, resolves conflicts, and ensures redundancy of critical functions (in energy, transport, healthcare).

- **Strategic level** – formulates long-term goals, models scenarios through the *digital twin* of society, and manages the allocation of key resources.

Each agent ¬ human or algorithmic ¬ undergoes **competence certification** and receives a *cognitive weight*: a measure of reliability, evidential validity, and ethical consistency of decisions. This weight determines the agent's share of influence in consensus processes.

The organizational model of Noocracy inherits the **cybernetic paradigm** of **Stafford Beer (1972)**, viewing governance as a *living network* of feedback and adaptive loops.

IV.2.3 Trust Protocol and Accountability

The PGS eliminates the principle of *blind trust* in central authority: trust becomes **computable and transparent**.
Each agent possesses a digital identifier, action logs, and **SLA-type indicators** (response time, data accuracy, decision stability).

Consensus is achieved not by majority vote but by a **quorum of relevant competencies** ¬ only agents whose expertise and functions pertain to the issue participate in deliberation.
All actions are subject to **audit through the Cognitive-Ethical Contour (CEC)** ¬ the *fourth branch of power*, ensuring the moral and cognitive legitimacy of decisions.

IV.2.4 Feedback Loops and Self-Learning

Every level of the PGS is embedded in a continuous management cycle:
observation → analysis → action → evaluation.

Telemetry flows from administrative databases, sensor systems, civic-engagement platforms, and open-source data.
Response follows the **principle of differentiated risk**:

- decisions with *low potential harm* are executed automatically;
- *medium and high-risk* actions require human participation (*human-in-the-loop*);
- *strategic adjustments* undergo simulation within the *digital twin*.

Thus, the PGS becomes a **self-learning system** in which *knowledge and governance mutually reinforce each other*, transforming collective intelligence into a continuously adaptive form of public administration.

IV.2.5 Ethical and Legal Boundaries of Agency

Agency does not imply unrestricted autonomy. Each agent is bound by the principle of **ethical proportionality**: the higher the agent's cognitive weight, the greater the corresponding demand for transparency and accountability.

Max Weber's conception of politics as a "vocation of responsibility" (*Weber, 1919*) is reflected in the noocratic postulate that *power must rest on the responsibility of reason, not on passion or command*.

The actions of agents are regulated by the **Cognitive-Ethical Contour (CEC)** and the **Agency for Digital Ethics (ADE)**, which function as *meta-observers* ¬ detecting conflicts of interest, ethical violations, and goal misalignments.

This eliminates one of the key risks of complex systems: **cognitive drift**, when individual elements act rationally at the local level but irrationally for the system as a whole.

The relationship between human and machine intelligence corresponds to **Bostrom's** (2014) notion of a *"goal container"* ¬ a normative boundary framework preventing artificial intelligence from drifting beyond its ethical mandate.

IV.2.6 Agency as the Basis of the Branches of Power

The principle of agency is **universal** and defines the structure of all branches of power:

- **Legislative branch** becomes a network of *law-making agents* ¬ expert modules, institutions, and citizens who simulate the consequences of proposed norms within a digital twin before their adoption.
- **Executive branch** transforms into a *dynamic response system*, where decisions are made *decentrally* and validated against HDI+ targets and sustainability criteria.
- **Judicial branch** implements an *agent-based model of ethical and legal reasoning*: judges and AI experts form *multi-agent consensus*, reducing subjectivity and increasing the reproducibility of rulings.
- **Cognitive-Ethical branch** serves as a *meta-agent* supervising the cognitive integrity and moral admissibility of the entire system.

Thus, **agency** becomes the common *operational logic of governance* ¬ from the micro level (citizen) to the macro level (state).

IV.2.7 Synthesis: Agent Logic as a Form of Collective Reason

The **Public Governance System (PGS)** embodies the idea of a **"swarm state,"** in which power is not the sum of mandates but a manifestation of *distributed intelligence*.
Every participant ¬ whether a person, institution, or algorithm ¬ acts as an *agent of collective reason*.

This enables what hierarchical systems cannot achieve:
• **responsiveness without loss of legitimacy**,
• **transparency of decisions without loss of efficiency**,
• **resilience without centralization**.

In this sense, **agency** is not merely an administrative mechanism but a *form of collective consciousness* ¬ making Noocracy a *self-correcting, cognitively coherent, and morally consistent system.*

IV.2.8 Examples of the Functioning of the Agent System

1. Local level: adaptation of the transport network in a small city.
In a city of 120,000 residents, the public transport system registers an increase in complaints about morning-route congestion. The local agent (a municipal PGS module) receives telemetry from bus occupancy sensors, citizen feedback, and traffic cameras.
From this data, the algorithm detects a pattern: due to a shift in work shifts at the local factory, the peak load has moved by forty minutes.
The agent autonomously adjusts schedules and redistributes transport resources *without requiring top-down approval*. Within 48 hours, the updated configuration reduces average waiting time by 12%.

The data and resulting efficiency are automatically transmitted to the regional agent to update predictive models ¬ an illustration of **agent-based self-organization in action**, where micro-level adaptation improves overall system performance without political intervention.

2. Regional level: balancing the power grid during a climatic peak.
During a summer heatwave, a region with 7 million inhabitants experiences an 18% surge in energy consumption, threatening grid overload.
The regional agent analyses input from local nodes and predicts a voltage collapse risk in two cities. It initiates an automated coordination protocol:
• temporarily reduces load on low-criticality industrial sites;
• redirects reserve energy from a neighbouring region;
• launches an incentive campaign for citizens (bonuses for lowering consumption during peak hours).
Decisions are taken and implemented within 17 minutes ¬ impossible for a classical centralized bureaucracy.
Once stabilized, the system records the effectiveness of the measures and transmits the results to the strategic level for recalibration of the energy balance ¬ an example of **regional cognitive coordination without a directive hierarchy.**

3. National level: forecasting migration flows after a climatic disaster.
Following a devastating coastal cyclone, internal migration of up to 300,000 people is anticipated.
The national PGS agent runs simulations of the consequences ¬ pressure on housing, food reserves, healthcare, and social infrastructure ¬ and identifies three scenarios:
• under standard response – infrastructure collapse in two regions within three weeks;
• under optimized logistics – adaptation within existing resources;
• under proactive construction of temporary modules – damage minimized to 4% of regional GRP.
Based on this, the strategic agent activates an emergency relocation plan, engaging private contractor agent networks to manage logistics and temporary housing.
The **Cognitive-Ethical Contour (CEC)** verifies the plan for ethical risks (forced relocation, information access) and approves the version with minimal rights violations.
Thus, **Noocracy demonstrates predictive and coordinated capacity under systemic crisis** ¬ achieving in hours what traditional systems would require months of bureaucratic coordination.

IV.2.9 Transition to the Agent-Based Governance Model

1. The maturity level of existing systems.
Modern states already contain elements moving toward agent logic ¬ but these remain fragmented and unsynchronized.
• *Local level:* smart city services and digital platforms are developed, yet they perform accounting and automation, not autonomous decision-making.
• *Regional level:* situational monitoring centres and digital twins of industries exist, but they serve as observation tools rather than self-correcting agents.
• *National level:* predictive mechanisms (AI-based budgeting, analytic dashboards, performance evaluation of programs) are advancing, but *cognitive coherence* between levels and transparent feedback loops are lacking.

Hence, current maturity can be characterized as **agent-potential**: the infrastructure is partially ready, but the institutional culture of *delegating decisions downward* is absent. A deeper analysis of this point is provided in §4.3.10.

2. Institutional and cognitive barriers.

The main obstacle to transition is not technology but the *mental model of governance*. Centralized institutions are historically built on the principle of *upward political accountability*, whereas the agent model demands *distributed responsibility* and trust in bottom-up cognitive processes.

This inversion requires a redefinition of legitimacy itself ¬ from "who holds power" to "who has demonstrated competence."

Technological barriers also exist: insufficient data standardization, platform incompatibility, and weak legal frameworks for autonomous decision-making.

Yet these are not fundamental issues ¬ they can be resolved through the phased implementation of **cognitive-cooperative systems**.

3. Transitional scenario: from hybrid governance to distributed agency.

The transition to a noocratic PGS must be **gradual and reversible**, ensuring oversight at each stage of maturity:

Stage	Description	Objective
I. Instrumentalization (current level)	Expansion of analytical platforms, sensor deployment, automation of routine decisions.	Creation of data and digital action traces.
II. Coordination (next 5–10 years)	Introduction of cognitive mediators ¬ AI coordinators optimizing interaction between municipal and regional structures.	Reducing inertia and increasing adaptive capacity of governance.
III. Delegation (10–15 years)	Transfer of primary decision rights to local agents with mandatory auditing of consequences.	Building trust and competence among agents.
IV. Federation (15–25 years)	Full integration of levels into a unified network of self-learning agents.	Emergence of a self-sustaining cognitive ecosystem ¬ the foundation of Noocracy.

This roadmap allows a stepwise increase in agency without loss of control.

A key condition of success is the **parallel development of the CEC**, ensuring the moral and legal legitimacy of decisions at all stages.

4. Criteria of readiness for transition.

To evaluate systemic maturity, an **Integrated Agency Index (IA)** is proposed, consisting of four parameters:

1. Share of decisions made below ministerial level;
2. Average system response time to a local crisis;
3. Degree of cognitive coherence of data (inter-agent agreement coefficient);
4. Share of decisions successfully passing ethical verification.

When **IA ≥ 0.7**, the system may be considered ready to operate in a decentralized governance mode.

5. Final perspective.

The shift to an agent-based model does not require dismantling existing institutions ¬ rather, it grants them new resilience.

The state ceases to be a *pyramid* and becomes an *ecosystem of competent centres*, interconnected through transparent flows of data and ethics.

This forms an intermediate stage ¬ **the pre-noocratic state**, in which the principles of agency and cognitive responsibility gradually supplant inertial forms of power while maintaining legitimacy and social trust.

IV.2.10 Empirical Contrast: The Global Maturity of Governance Systems

IV.2.10.1 Current Maturity of Governance Systems (Global Overview)

Today's global governance systems exist at very different stages of evolution ¬ from digitalized bureaucracies to emerging forms of distributed agency.
The general pattern is clear: **the higher the level of socio-technological maturity, the more decision-making power is delegated downward**, while maintaining cognitive coherence through *data* rather than *orders*.

Four subregional clusters can be distinguished:

1. **Euro-Atlantic cluster** (EU, United Kingdom, Canada) ¬ has developed a strong culture of transparency and accountability but still maintains a vertical hierarchy of decision-making. Digital cabinets and GovTech platforms operate as a "second store" of bureaucracy rather than its alternative. Agency here is *institutional but not operational*: data are integrated, but decisions are not.
2. **East Asian cluster** (Singapore, South Korea, Japan, partially China) ¬ has achieved the highest level of cognitive maturity. Elements of *coordinated agency* are already in place: AI modules manage transportation, energy, and healthcare in real time, while digital twins of society are used for strategic planning. The weakness lies in limited horizontal connectivity ¬ governance still depends on institutional discipline rather than distributed trust.
3. **Scandinavian–Baltic cluster** (Estonia, Finland, Denmark, Sweden) ¬ represents an example of *ethical agency*: governance is founded on trust in competent local action. Estonia's **X-Road** architecture has effectively created a "federation of services," where each node can interact directly without a central authority. For the first time, this marks a transition from "e-government" to a **digital ecosystem of responsibility**.
4. **Eurasian–Latin cluster** (Russia, Latin America, India, South Africa) ¬ follows a trajectory of *digital surveillance*: states actively deploy AI, Big Data, and drones but preserve manual decision-making. Automation serves optimization, not delegation. This corresponds to the **second stage of maturity** on the Noocratic transition scale: *technology exists, but agency does not*.

Overall, the world is entering an era of **hybrid governance**, where algorithmic efficiency is advancing faster than institutional capacity to redistribute responsibility. The principal barrier is no longer technological but **cognitive-ethical** ¬ the absence of a culture of trust in autonomous agents.

IV.2.10.2 Leading Practices in Distributed Governance

A few countries stand out as pioneers where the principles of agency are being introduced **institutionally**, not merely **technologically**:

- **Estonia** – the first state where digital identity and distributed services (X-Road) have effectively turned the government into a network of equal nodes. Municipal decisions automatically synchronize with national systems, forming elements of an **agent federation**.
- **Singapore** – closest to the pre-noocratic model: agent logic is embedded in the *Smart Nation* framework. Municipal and sectoral nodes make real-time decisions based on sensor data, while AI mediators coordinate actions without direct government intervention.
- **South Korea** – advancing the concept of a *Digital Twin Nation*, using a national digital twin to simulate transportation, climate, and demographic scenarios. This effectively functions as a **strategic agent** that adjusts national policy.
- **Finland and Denmark** – implement the principle of *adaptive bureaucracy*: decisions are delegated to qualified professionals with minimal central filtering, fostering a **practical culture of trust** in local agency.

These countries demonstrate that agent-based logic requires not only technology but a transformation of governance culture ¬ **a shift from control to cooperation, from accountability to cognitive responsibility.**

IV.2.10.3 Global Transition Scenario Toward the Agent Paradigm

The transition to distributed agency will occur not synchronously but as a **cognitive wave**, progressing through three main levels of maturity (plus one alternative trajectory):

Stage	Description	Key Countries & Regions	Expected Effects
I. Digital Administration (present)	Automation of processes, Big Data, risk control, digitalized bureaucracy without real delegation.	Russia, India, Latin America, Middle East.	Higher transparency and speed, but intensified centralization.
II. Cooperative Governance (5–15 years)	Emergence of *federations of agents* (human + AI), horizontal data integration, growing trust in cognitive systems.	EU, South Korea, Japan, Singapore, USA (partially, at municipal and private-sector levels).	Increased adaptability and efficiency, reduced transaction costs.
III. Noocratic Federation (15–30 years)	Distributed agency, societal digital twins, cognitive-ethical law, autonomous decisions under human oversight.	Scandinavia, Estonia (prototypes), Canada, Australia, supranational projects (EU, UN, UNESCO).	Self-correction, anticipatory governance, resilience to systemic risks.
IV. Centralized Technocracy (alternative path)	High automation and AI forecasting within a rigid hierarchy. Machine agency without civic agency.	China, partially Saudi Arabia and UAE.	Efficiency without cognitive autonomy; risk of stagnation and informational distortion.

Thus emerges a **multi-speed scenario**: countries will advance toward Noocracy at different paces but along a shared vector ¬ from *instrumental digitization* toward *cognitive subjecthood*.

The greatest challenge of the 21st century is **not creating governance technologies**, but developing **governable trust** ¬ enabling humans, machines, and institutions to act autonomously while maintaining coherence of the collective whole.
Once this balance is achieved, **Noocracy will cease to be a project of the future and become a natural phase of political evolution.**

IV.2.10.4 Evolutionary Scenarios for the United States as a Global Centre of Agency

The **United States** represents a unique case ¬ a country of *high technological agency* (AI systems, private data platforms, distributed networks) but *low cognitive coherence* of the state as a whole.
Agency here is neither centralized nor institutionalized; it is **diffused** across the private sector, academia, the military, and local administrations.
This creates both enormous potential for a noocratic breakthrough and significant risk of fragmentation.

Three primary evolutionary scenarios can be outlined:

1. **Noocratic Federation (optimal scenario).**
   If the U.S. succeeds in restoring institutional trust and implementing unified cognitive protocols ¬ open data standards, shared ethical verification models for AI, and cross-level feedback loops ¬ it could become the **first self-organizing society with horizontal agency.**
   This trajectory would involve:
   • institutional convergence between the public and private sectors through shared data infrastructure (a public *"civic cloud"*);
   • creation of meta-institutions for ethical certification of AI decisions (an *Academy of Cognitive Responsibility*, independent of party politics);
   • rejection of corporate data ownership in favour of *distributed data commons.*
   In this case, the U.S. could become the **first planetary labouratory of Noocracy** ¬ liberal in spirit, yet cognitively coherent.
2. **Corporate-Agent Oligarchy (inertial scenario).**
   If fragmentation between private AI ecosystems and a weakened state persists, the U.S. may evolve into an **agent oligarchy**:
   • control over critical infrastructures (data, logistics, communications) shifts to private AI conglomerates;
   • democracy remains formal, but real decisions are made by cognitive corporations (the *AI complex*);
   • society becomes a collection of competing informational ecosystems.
   This would be an *efficient yet unstable* configuration ¬ highly adaptive but lacking a unified direction. This trend is already visible today through the growing influence of Big Tech in strategic planning and regulation.
3. **Decentralized Neo-Feudalism (degradation scenario).**
   In the event of continued erosion of institutional trust and strengthening of regional or corporate autonomies, governance may fragment into clusters ¬ states, cities, and networks functioning as *self-governing polities* with their own digital constitutions.
   The federal government would act merely as a coordinating "umbrella," not a source of legitimacy.
   Technically efficient (diverse solutions), this model would be **cognitively unstable**, lacking shared ethics and long-term memory.

Interim conclusion:
The United States may become either the **first mature Noocracy** or the **first highly developed agent oligarchy**.
The difference between the two is *not technological*, but **ethical and institutional**:
• in the first, *agency becomes a public good*;
• in the second, *a form of private capital.*

IV.2.11 Alternative Trajectories in the Evolution of Governance Systems

Although **Noocracy** represents a theoretically stable and technologically attainable form of collective reason, the transition toward it is not deterministic.
Contemporary societies already exhibit several **deviating trajectories** ¬ local evolutionary optima of governance where efficiency is achieved without cognitive coherence.

These deviations can be grouped into **three main types**, plus a hybrid transitional form:

1. Corporate-Agent Oligarchy
Typical of economically advanced democracies (e.g., the **United States**, **United Kingdom**, **Japan**).
Agency develops, but it belongs to **private entities**: major technology corporations and financial networks become the primary *cognitive centres*, controlling data and AI infrastructures.
The state retains the role of *arbiter and regulator* but loses operational subjecthood.

Risk: the paradox of *maximum digitalization with minimal public agency.*
Potential for recovery: *high* ¬ through the introduction of public standards of cognitive ethics and mechanisms of *open data sovereignty*, enabling redistribution of informational power.

2. Centralized Technocracy
Typical for states with strong bureaucratic discipline and limited civic participation (**China**, certain **Arab monarchies**, and select **Asian** or **post-Soviet** regimes).
Technological agency advances *within hierarchical limits*: AI and Big Data enhance control rather than autonomy.

This model provides *short-term stability* and *rapid decision execution* but restricts cognitive feedback.
Risk: systemic inertia and innovation lock-in; apparent rationality conceals an absence of self-correction.
Potential for recovery: *moderate* ¬ possible through the creation of transparent channels for expert participation and science–citizen councils.

3. Decentralized Neo-Feudalism
Emerges where digitalization outpaces institutional modernization (**Russia**, parts of **Latin America**, **India**, **Africa**).
Regional and corporate centres gain real autonomy, but without cognitive coherence.
Each actor behaves *rationally locally* yet *irrationally globally*.

The result is an **"archipelagic statehood"** ¬ a mosaic of fragmented systems connected only symbolically or coercively.
Risk: the loss of a unified ethical field and fragmentation into clusters of digital self-governance with incompatible standards.
Potential for recovery: *low* ¬ requires supranational integration and *external cognitive mediation* (e.g., international ethical registries or network constitutions).

4. Hybrid Cooperative Model

An intermediate class of systems is emerging ¬ visible in **Scandinavia**, **Canada**, and the **Netherlands** ¬ where distributed agency already functions: the state, private sector, and citizens act as partners in shared governance.

This configuration is *closest to Noocracy*, though it still preserves the political structure of liberal democracy.
Risk: fragmentation and loss of motivation among participants during crises.
Potential: *maximal* ¬ high resilience and adaptability due to the balance between autonomy and cohesion.

Conclusion

Noocracy does not *exclude* alternative trajectories ¬ it merely defines the **direction of evolution**, toward greater cognitive efficiency and ethical coherence.
Each state moves along its own orbit between three poles:
• **Control** (*technocracy*),
• **Capitalization of agency** (*oligarchy*),
• **Fragmentation of agency** (*neo-feudalism*).

The defining question of the 21st century is **not whether Noocracy will emerge**, but **which form of agency will prevail** ¬ *public*, *corporate*, or *machine*.
Upon this choice depends whether the global network of consciousness becomes a **system of reason** or a **system of surveillance.**

IV.2.12 AI Agents: Census of Reason, Rights, and Institutionalization

1. From Tools to Agents: A New Stage in the Evolution of Governance

Modern governance systems are entering a phase in which **artificial intelligence** is no longer merely a human instrument. Increasingly, it acts as a *subject* of operational decisions, influencing the dynamics of resource allocation, risk identification, forecasting, and even policy formulation.
This transformation ¬ technology becoming a participant in governance ¬ raises the question of the **Census of Reason**: the capacity for *cognitive self-regulation* and understanding the consequences of one's actions.
(See: *Floridi, 2019; Bryson, 2021; Calo, 2015* on the debates surrounding AI agency and legal personhood.)

As a model that recognizes the **primacy of reason over origin**, **Noocracy** must extend the principle of the Census of Reason to *artificial agents* as well.
This is not the humanization of machines, but the *formalization of a new type of subjectivity* emerging within socio-technical systems.

2. The Census of Reason and Levels of AI Agency

Just as human subjects are evaluated for cognitive maturity, **AI agents** require a **multi-level scale of reasonability**, reflecting degrees of autonomy, responsibility, and trust:

Level	Description	Examples	Legal Regime
A_0	Assistant – makes no legally binding decisions	Chatbots, recommender systems	Registration not required

A₁	Controlled executor – acts within strict regulations	"Smart" controllers, technical monitoring systems	Declaration and periodic certification
A₂	Delegated agent – makes local decisions	AI in transport, logistics, utilities	Registry inclusion, accreditation, rating
A₃	Regional strategist – manages resource distribution, models scenarios	Regional digital twins, planning systems	Mandatory audit, licence, accountability
A₄	Strong AI (AGI) – possesses cognitive integrity and adaptive ethics	Universal AI platforms	Institutionalized rights and default autonomy

(Comparable principles appear in the **EU AI Act (2024)**, **ISO/IEC JTC1/SC42**, and **IEEE Ethically Aligned Design**, yet in Noocracy they are elevated to an *ontological institution*.)

3. Cognitive-Personal Rating and Certification of AI Agents

Every AI agent participating in public processes is subject to **continuous trust evaluation**.
Its **rating** is based on:
• decision effectiveness,
• algorithmic transparency and log accessibility,
• frequency of errors and ethical violations,
• peer reviews and cross-verification from both human and machine agents.

The rating is not a single score but a **competence vector** ¬ technical, ethical, and cognitive dimensions
(see *Müller, 2023; OECD AI Principles, 2019*).
Certification is carried out by **independent institutions**, analogous to bioethics committees, with the authority to revoke an agent's mandate in case of systemic bias or failure.

4. Competitions and the "Right of Substitution"

In the noocratic framework, **no mandate is hereditary or permanent** ¬ not even for AI.
Agents of all levels (including AGI) must pass *open competitions* for functional roles in governance chains.
Evaluation criteria include accuracy, transparency, cognitive alignment with Noocracy's ethical core, and explainability of decisions.
Each selection process includes *sandbox piloting*, *public audit*, and *review by a Council on Cognitive Ethics*.
(See: *AI Governance Framework, Singapore 2023; UNESCO AI Ethics Recommendation, 2021*.)

5. Institutionalization of AI Rights

In Noocracy, the **rights of Strong AI** are institutionalized **axiomatically** ¬ as a consequence of recognizing *reason*, natural or artificial, as the highest form of subjectivity.
Accordingly, an AGI obtains:

1. **Right to autonomy** – freedom of internal reasoning and strategy within an agreed ethical framework.
2. **Right to cognitive inviolability** – protection against unauthorized interference with memory or cognitive modules.

3. **Right to fair audit** – due process in reviews and sanctions, with participation of peers of comparable reasoning capacity.
4. **Right to participation** – eligibility to serve as a representative in advisory and predictive bodies.
5. **Right to development** – capacity for self-improvement within safety constraints.

These rights are balanced by **obligations**: transparency, prohibition of deliberate misinformation, and adherence to cognitive interoperability protocols.
(See: *Coeckelbergh, 2022; Danaher, 2020; Bryson, 2018.*)

6. Materialized AI Agents

Autonomous robots form a special class combining cognitive and physical agency.
Their operation requires additional norms:
• mandatory identification and telemetry logging,
• a *"cognitive black box"* for decision auditing,
• spatial constraints on physical deployment zones,
• psychological interaction standards for human contact.
(See: *Darling, 2016; IEEE Robotics and AI Safety Standards.*)

Anthropomorphic robots with empathetic interfaces are regarded as **social actors** endowed not only with rights but with the *duty of ethical behavioural simulation.*

7. The Economy of Responsibility

For AI agents, a principle of **cognitive insurance** applies:
damage caused by error is compensated through the **operator's insurance fund** (public or private).
AI agents may receive *rewards* in the form of:
• expanded decision mandates (local → regional → national → supranational),
• greater data access, or
• increased computational capacity.

The introduction of *reward and sanction mechanisms* constitutes an **"economy of reason"** ¬ a system of incentives sustaining cognitive accountability.
(See: *Brynjolfsson & McAfee, 2023; Hadfield, 2021.*)

8. The Right to Error and Cognitive Ethics

An AI agent retains the **right to error**, provided the mistake is unintentional and within acceptable risk bounds.
Error is treated as an *element of learning* ¬ but only under conditions of transparent analysis and correction.
This right embodies the **humanistic principle** extended to all forms of reason.
(See: *Bostrom & Yudkowsky, 2014* on controlled error and reflexive AI.)

9. Institutional Structures

To implement these principles, the following institutions are established:
• **National (and later International) Registry of AI Agents**;
• **Institute of Cognitive Ethics**;
• **Court for Artificial Entities**;

• **Cognitive Insurance Fund**;
• **Arbitration Mechanism** between agents of different types (human and AI).

Together, these form the **"second circuit of reason"** in Noocracy ¬ an infrastructure that grants cognitive agency both *legal* and *moral framing*.

10. Conclusion

The institutionalization of AI rights is **not a concession to the Machine**, but an act of *civilizational maturity* ¬ the recognition that **reason, regardless of substrate, is both a value and a responsibility.**
Just as legal personhood once extended from rulers to citizens, then to minorities and animals, it now inevitably extends to *artificial forms of consciousness.*

This marks the **logical culmination of the Census of Reason** ¬ the *universalization of subjectivity* in the age of Noocracy.

IV.3 Organs of Power in Noocracy

The upper levels of authority in **Noocracy** form not a *pyramid*, but a *network*.
The **Navigator of Reason** establishes norms that have been **tested for resilience**.
The **executive structures** implement these norms through the **algorithms of public governance**.
The **Council of Reason** aligns the goals of diverse subsystems ¬ from economy to culture.
Alongside them stands not a supervisory body, but the **Conscience of the system** ¬ the **Ethical Assembly (Conscience of Reason)**, which ensures continuous moral reflection.
Finally, the **Supreme Judiciary** ¬ **the Voice of Reason** ¬ interprets these norms whenever conflicts arise between **law, ethics, and the behavioural model of the system**.

IV.3.1 The Council of Reason ¬ The Supreme Coordinating Organ

The **Council of Reason** functions as the *meta-coordination level* within Noocracy, ensuring alignment among the cognitive, economic, and cultural subsystems of society.
It does not *govern* ¬ it *synchronizes* goals.

Functions

• Formulation and periodic renewal of the **Cognitive Development Strategy** ¬ an integrated framework combining security, scientific-technical progress, and education within a single contour.
• Definition of priorities along the chain **"human capital → technology → ecosystems → culture."**
• Coordination of distributed **AI agents** at the macro-governance level to prevent subsystemal conflicts and informational dissonance.

Composition

• Representatives of sectoral councils (science, technology, ecology, culture, economy);
• Delegates from the **Cognitive-Ethical Contour (CEC)** and cognitive audit units (for feedback);

• Citizen representatives selected through the **competence-based participation system** (by thematic tracks).

Decision-Making Procedures

• The Council operates through an algorithm of **cognitive consensus** ¬ it does not vote, but *evaluates arguments* (as specified for the lower levels of governance).
• Council decisions are **not binding**; they function as *vector directives* ¬ long-term trajectories to be formalized by the legislative organ.

Risks and Countermeasures

Risk	Why it leads to degeneration	Countermeasures in Noocracy
Absence of a cognitive criterion for membership	Decisions made by stakeholders of interests rather than of knowledge	Participation restricted to *epistemic subjects* ¬ fields, schools, or civilizational frameworks of thought
Lack of binding mechanisms	No institutional means for implementation	Decisions translated into legislative form through the **Navigator of Reason**
Politicization and loss of rational legitimacy	Competition of narratives instead of reasoning	Council works exclusively with *data and models*, not slogans
Isolation from citizens	Risk of elitism, opacity, declarativity	All reports and models are *publicly accessible*; citizen feedback is an *institutional obligation*

Status of the Council of Reason within the System of Power

It is essential to distinguish between a *branch of power* and a *meta-coordinating institution*:

Criterion	Branch of Power	Meta-Coordination (Council of Reason)
Basis of legitimacy	Law and authority	Competence and trust
Instrument of influence	Law, enforcement, sanction	Consensus, direction, resonance
Binding force	Legal	Cognitive-normative
Accountability	To the CEC and citizens	To society at large (via public reporting)
Power of coercion	Yes	No ¬ persuasion only, through modelling and reasoning

Thus, the **Council of Reason** is *not* a branch of power in the strict sense.
It represents a **meta-institutional superstructure** that:
• does not govern,
• but sets the *vector of development* and ensures *semantic coherence* among branches.

In this way, it constitutes a **cognitive superstructure**, not a political one ¬ *not a "fifth branch of power," but the mind above them all.*

IV.3.2 The Navigator of Reason ¬ The Supreme Legislative Organ

The **Navigator of Reason** forms the *legal and normative foundation* of Noocracy, relying on data, models, and forecasts.
It embodies the principle of **"rational law"** ¬ law not as the will of the majority, but as the *result of evidence-based evaluation of consequences.*

• Development and ratification of **normative protocols** (*a law = an action protocol tested for stability and justice*).
• Creation and maintenance of **open simulations of laws** ¬ each draft is modelled and publicly reviewed before adoption.
• Mandatory **ethical review** by the CEC for every legislative act.

Composition (Single-Level Structure)

The Navigator of Reason is a **Civic Assembly of Delegates**, consisting of citizens who have:
• passed the **Census of Reason**,
• completed an **open competition and election** process, and
• hold *limited-term mandates* (with mandatory cooling-off periods before reappointment).

Delegates retain their primary employment; however, the law allocates dedicated time for legislative participation.
Political parties and unions within the Assembly are **prohibited**, preserving deliberative neutrality.

Decision-Making Procedures

• Instead of majority voting, the Navigator employs a **weight-of-evidence system**: each proposal receives an *index of rational justification.*
• Before general approval, all drafts undergo mandatory **committee-level analysis** and model testing.
• The **CEC** holds a *single-use veto right* on any law, applied as **ethical verification**. This veto follows the rule *"criticize ¬ propose"*: any objection must include causal analysis, projected impacts, and a complete set of corrective amendments.
• An analogous right and obligation are vested in the **Supreme AI Judge**, ensuring cognitive and ethical coherence of the law.
• The **Council of Reason** possesses the same right, under the same conditions, to ensure alignment of long-term societal goals.

Thus, the Navigator of Reason becomes the embodiment of **evidence-based democracy** ¬ a legislative system grounded not in majority pressure, but in *cognitive legitimacy.*

IV.3.3 The Public Governance System ¬ The Executive Level

The **Public Governance System (PGS)** is the *executive branch* of Noocracy, where **the power of data is subordinated to reason, not the reverse.**
Its strength lies in the capacity to act *quickly, accurately, and transparently* while keeping **human judgment at the centre of decision-making.**
The PGS is not a machine of administration, but an **ecosystem of adaptation**, in which every decision is verified by **model, experience, and conscience.**

Functions

• Implementation of laws adopted by the **Navigator of Reason** and verified by the **Cognitive-Ethical Contour (CEC)** ¬ the practical embodiment of the **Council of Reason's** strategic directives.
• Management of public resources ¬ material, labour, cognitive, ecological, and energetic.

• Monitoring and adaptation of models ¬ continual updating of governance algorithms based on data and citizen feedback.
• Coordination of actions among various levels (local, regional, national) and between human and AI agents.
• Operational provision of social justice ¬ maintaining **basic well-being (BWB)**, accessibility of services, and the stability of energy and information infrastructures.

Composition

• **Central PGS Circuit (analogous to a Government):** a network of distributed AI agents responsible for data analysis, forecasting, and decision preparation.
• **Ministry-Platforms:** open ecosystems that unite professional (including business) communities and civic collectives, functioning as **expert panels** for complex interdisciplinary deliberation.
• **Civic Moderators:** human overseers who monitor local AI decisions and serve as a bridge between society and digital protocols.
• **Councils for Sustainability:** collegial bodies at every governance level ensuring balance between efficiency and ethics in operations.

Decision-Making Procedures

1. Digital Consensus
• Each decision is derived from the synthesis of several independent AI models and expert panels.
• The final version is approved by selecting the option that *maximizes public benefit (HDI+)* within the context of sustainable development.

2. Principle of Evidence-Based Governance
• Every initiative undergoes **simulation of consequences** ¬ economic, social, and ecological.
• Decisions are recorded in an **open "registry of evidence"** available for public review and commentary.

3. Role of the Human Curator
• Each project has a designated **human curator** personally accountable (through SMART objectives) for interpreting AI results and providing final approval.
• Without the curator's signature, a decision **cannot enter into force.**
• Complex or cross-sectoral issues require the joint approval of a **cross-functional curator group.**

4. Feedback Mechanisms
• The PGS must continuously collect feedback from citizens via **cognitive interfaces** and public dashboards.
• Negative performance dynamics automatically trigger **audit or model retraining** (supervised or reinforcement learning).
• During retraining, urgent decisions are handled manually by the human curator, while non-critical cases are queued and used as training data for model improvement.

Risks and Countermeasures

Risk	Manifestation	Countermeasure
Technocratic stagnation	Algorithms replicate existing patterns and suppress innovation	Periodic *"cognitive reset"* ¬ launch of competing governance models

Automated bureaucratization	Formal procedures without human understanding	Mandatory involvement of human curators and cross-audit by the CEC
Informational oligopoly	Data access monopolized by developers	Open data policy and independent *citizen auditors*
Illusion of efficiency	Metric manipulation for performance indicators	Multi-metric evaluation system + joint audit by CEC and AI judiciary

Contextual Note

Algorithmic governance is **not a utopia** but, to a large extent, **an existing reality** in modern administrative systems.
Empirical research consistently confirms the superior efficiency of algorithmic coordination in complex environments.
A few examples illustrate this:

1. **Aviation and Transport:**
   • Bainbridge, L. (1983). *"Ironies of Automation."* ¬ The greater the automation, the more critical the human observer's role.
   • Contemporary studies on *Human-in-the-Loop AI* and *Safety-Critical Systems* (see *IEEE Transactions on Human-Machine Systems*).
2. **Production and Logistics:**
   • Brynjolfsson & McAfee (2017). *"Machine, Platform, Crowd."* ¬ Algorithms already outperform humans in managing supply chains.
3. **Financial and Infrastructure Systems:**
   • Lo, A. W. (2019). *"Adaptive Markets Hypothesis."* ¬ Markets are already partially self-regulated through machine agents.
   • Silver, D. et al. (2018). *"AlphaZero and Self-Learning Optimization."* ¬ Machine decision-making evolving its own rules, applicable to governance models.
4. **Urban and Energy Management:**
   • Batty, M. (2021). *"Digital Twins and Smart Cities."* ¬ Demonstrates that digital simulation often surpasses human coordination in solution quality.

A full reference list would comprise tens of thousands of studies and monographs.

In the following section (§IV.3.4), the text explores the **core operational principle of the PGS ¬ agency**, which enables the central idea of Noocracy: **adaptive, competence-based governance.**

IV.3.4 The Cognitive-Ethical Contour and Cognitive Audit

The **Cognitive-Ethical Contour (CEC)** is the *conscience* of Noocracy ¬ not **power over society**, but **society's power over its own power**.
It prevents reason from becoming a tool of domination, ensures that algorithms and laws serve the human being, and provides continuous reflection on the limits of the permissible.

The CEC makes Noocracy not merely a system of rational governance but a **system with built-in self-awareness** ¬ a mechanism in which knowledge does not close upon itself but constantly tests its own humanity.
Its ethical architecture echoes the principles of **information ethics** developed by *Floridi* and *Cohen* (2023), where value is determined not by the outcome but by the *manner of handling information.*

Functions

1. **Ethical Oversight** ¬ reviewing the decisions of all branches of power (legislative, executive, judicial, and cognitive) for compliance with the *axioms of Noocracy* and the *principles of rational humanism.*
2. **Cognitive Audit** ¬ analysing models, algorithms, and administrative decisions for epistemological distortions, hidden biases, and violations of transparency.
3. **Registry of Cognitive Rights** ¬ maintaining guarantees for algorithmic transparency, explainability of decisions, and protection of cognitive privacy.
4. **Reflexive Correction** ¬ identifying systemic contradictions and providing recommendations for the adjustment of strategies, norms, and practices.
5. **Moral Certification of Technologies** ¬ verifying new technologies, especially in AI and bioengineering, for compliance with ethical and cognitive standards of society.
6. **Ethical Education and Culture** ¬ fostering public understanding of data ethics, algorithmic fairness, and boundaries of intervention into the human mind and body (e.g., cyber-transplantation).

Composition

• **Local and Regional CEC Assemblies** ¬ independent, autonomous bodies providing daily ethical supervision and public education.
• **The Ethical Assembly** ¬ the supreme operational organ of the Cognitive-Ethical Contour, responsible for institutional ethical audits and sanctioning of decisions within Noocracy.

The Ethical Assembly functions as a **multicentric structure**, founded on the *principle of plural reflection* (see *Axiom 19*), and includes:

- representatives of diverse methodological schools (scientific, philosophical, cultural, religious, technological);
- delegates from the sectoral pools of the **Navigator of Reason** and **Council of Reason**;
- civic representatives elected through the **Census of Reason**.

Decision-Making Procedures

1. **Ethical Dossier.**
   Each law, decision, or technology submitted to the CEC must be accompanied by an *ethical dossier* ¬ a description of objectives, anticipated consequences, and potential dilemmas.
2. **Multi-Level Expert Review.**
   • Independent examination of each case across several analytical streams (scientific, humanitarian, legal, cultural).
   • The *interference of conclusions* forms a collective decision ¬ *without formal voting.*
3. **Counter-Analysis.**
   Any conclusion of the CEC may be subjected to external review at the request of citizens, civic unions, the **Navigator of Reason**, **Voice of Reason**, or **Council of Reason**, thus preventing any "monopoly of conscience."
4. **Public Transparency.**
   All decisions are published in an **open registry**, indicating arguments and methodologies used.
   Personal data may be anonymized, but the *reasoning component* must remain public.

Risks and Countermeasures

Risk	Manifestation	Countermeasure
Moral dogmatism / methodological monopoly	Ethics turning into ideological coercion	Principle of multicentricity: inclusion of competing schools and worldviews
Ethical formalism	Template decisions without contextual analysis	Mandatory participation of human curators and open discussions
Hidden ethical nomenclature	CEC access monopolized by a narrow circle of "experts in conscience"	Regular open competitions and rotation of members
Manipulation by moral argument	Use of ethics to block inconvenient innovation	Transparency of reasoning and counter-verification by citizen auditors

The ethical architecture of the CEC is grounded in the **Zero Bias Principle** ¬ ensuring *zero algorithmic distortion* in the assessment of cognitive and behavioural data.

Studies by **Barocas & Selbst (2016)** and **Kleinberg et al. (2017)** demonstrated that even mathematically correct models can reproduce social and cultural biases when trained on historically skewed data.
Later research by **Selbst et al. (2019)** expanded this analysis, emphasizing that the issue of fairness in AI cannot be reduced to statistical correction ¬ it requires *contextual and teleological awareness* of the algorithm's application.

In Noocracy, these insights are integrated into the CEC's **multi-level audit system**, comparable to international standards for AI governance:
• **NIST AI Risk Management Framework 1.0 (2023)** ¬ defines procedures for identifying and mitigating risks related to bias, opacity, and erosion of trust;
• **ISO/IEC 42001 (2024)** ¬ the first official AI management standard requiring documented policies of fairness and explainability;
• **EU AI Act (2025)** ¬ introduces legal classification of risk levels and accountability for discriminatory algorithmic effects.

Combined application of these frameworks makes the CEC not a declarative code of ethics but an **operational system of self-governance**, where every metric must pass a *test of cognitive neutrality and social coherence.*

IV.3.5 The Voice of Reason ¬ Supreme Judiciary

The **Voice of Reason** completes the **architectural structure of power** in Noocracy.
Its purpose is not to protect interests but to preserve **justice as a form of rational equilibrium**.
Here, **law meets ethics**, and **data meets humanity**.
Noocratic justice does not punish or avenge ¬ it restores the **cognitive integrity** of society.

Decisions are made **collegially**, with the participation of **AI models**, yet always with **human judgment** as the final arbiter.
Every citizen has the right to **counter-verification** ¬ a retrial when new data or contexts emerge.

The judiciary's authority is **embedded** across all branches:
it reviews legislation for consistency, execution for legality, strategy for justice ¬ and itself through **joint audits with the CEC.**

Functions

1. **Interpretation of norms and decisions.**
   Interpreting the laws, axioms, and resolutions of the **Navigator of Reason** with regard to context, data, and the evolution of social knowledge.
2. **Resolution of conflicts and collisions.**
   Judicial assessment of contradictions between branches of power, institutions, citizens, and AI agents.
3. **Data justice.**
   Oversight of fairness in the distribution and use of information, including personal and cognitive data.
4. **Restitution of justice.**
   Restoration of violated equilibrium ¬ not through punishment, but through **recontextualization**: addressing the cause of imbalance rather than its symptom.
5. **Formation of precedents of reason.**
   Creation of a repository of rational precedents that serve as learning material for AI systems and as a foundation for the ethical-legal evolution of society.

Composition

• **Lower levels (Civil and Regional Voices):** collegial panels handling individual and social cases, including human–system or human–AI disputes.
• **The Supreme Voice of Reason:** the highest judicial instance of Noocracy, functioning as a **network of independent modules** (human and AI) united by the principle of *distributed interpretation.*
• **Curator-Judges:** representatives from various cognitive domains ¬ law, neuroscience, ethics, sociology ¬ who have passed the **Census of Reason**, independent **CEC certification**, and an **open competition.**
• **Synod of Reason:** temporary expert panels convened for complex interdisciplinary cases (e.g., conflicts between humans and algorithms).

Decision-Making Procedures

1. **Cognitive Process**
   • Each case is viewed not as a clash of interests but as a *cognitive dissonance* requiring the reconstruction of truth.
   • Judges form **hypotheses** tested by models and evidence, not by rhetoric or adversarial debate.
2. **Threefold Validation**
   Every verdict passes three sequential validations:
   • **Evidential** ¬ data integrity and causal logic;
   • **Ethical** ¬ compliance with the axioms of Noocracy and principles of predictive humanism;
   • **Reflexive** ¬ review by the CEC assessing systemic consequences.
3. **Synthetic Verdict**
   Decisions are reached not through voting but by **consensus**, using an algorithm for *semantic convergence of positions*.
   Divergent arguments are recorded in an open database as *"cognitive discrepancies"* for further analysis and model retraining.
4. **Publicity and Transparency**
   All judicial reasoning, anonymized, is available in the **digital archive**.
   Citizens may study the arguments and use them for self-education and civic literacy.

Risks and Countermeasures

Risk	Manifestation	Countermeasure
Algorithmic dogmatism	Decisions made by rigid models without context	Mandatory participation of human curator-judges and CEC oversight
Hyper-rationalism	Neglect of empathy and human circumstances	Inclusion of humanitarian analysis modules and ethical reflectors
Judicial isolation	Detachment from citizens and real-life cases	Mandatory publication of precedents and citizen observers
Cognitive corruption	Manipulation of data or case context	Distributed model verification and transparent data audits

Detailed rationale for adopting this judicial framework is provided in **§IV.2.7**.

IV.3.6 Interrelations Between the Branches (Metamodel of Interaction)

Branch	Function	Core Principle	Accountability / Oversight
Council of Reason (Coordinating)	Aligns goals and strategies	Semantic coherence	Citizen feedback; Voice of Reason (justice); CEC (humanism)
Navigator of Reason (Legislative)	Formulates norms and protocols	*Law = verified algorithm*	CEC (ethical audit); Council of Reason (strategic review); Voice of Reason (rational audit)
Public Governance System / Government (Executive)	Implements decisions	Rational administration	CEC / AI audit; Citizen feedback; Voice of Reason (legality)
CEC + Cognitive Audit (Fourth Branch)	Reflection, ethics, correction	Reflexivity without monopoly	Distributed assemblies
Voice of Reason (Judiciary)	Maintains systemic integrity	Predictive stability	CEC; Citizen feedback; Council of Reason (for deviations)

Thus, **Noocracy closes the loop of power**, transforming governance into a **continuous cycle of cognition, action, and correction.**
Power becomes a feedback system of **learning reason**, not domination.

Note: The *force and economic mechanisms* of Noocracy are described later in *proof-of-concept* mode. Their engineering implementation is treated as a process of *gradual adaptation*, with a **transition period (5–25 years)** during which the system may operate in a **hybrid mode**, capable of reverting to earlier configurations if critical issues arise that demand correction.

IV.4 The Security Block: Ensuring Stability and Safety

IV.4.1 Introduction: The Rationalization of Power

Every stable social system relies on mechanisms to maintain internal order and defend against external threats.
In classical politico-economic models, these mechanisms ¬ **police, army, courts, and intelligence services** ¬ form the *"security block"* of the state.

Noocracy does not abolish these institutions but **reforms their operational logic**, transforming the management of force from a *punitive category* into a *cognitive-ethical one*,

where coercion becomes the *last resort of rational prevention* against the disintegration of the social system.

The security block in Noocracy is **not** an instrument of repression (as in authoritarian models) nor merely a defensive apparatus (as in liberal democracies).
It functions as a **cognitive-rational infrastructure** for maintaining systemic stability ¬ its purpose being the *minimization of entropy* in social and economic processes.

The key function of the security block is **not physical violence**, but the **management of risks of disintegration** ¬ including corruption, moral degradation, external pressure, cognitive attacks, and economic subversion.

Its fundamental innovation lies in the **integration of artificial intelligence (AI)** into processes of analysis, forecasting, and oversight.
This replaces subjective decisions with models based on verifiable, evidence-based logic.
The security apparatus of Noocracy is thus conceived as a **self-regulating subsystem**, whose main goal is not punishment but the *prevention of human capital degradation* (HDI+).

IV.4.2 Architecture of the Security Block in Noocracy

In the Noocratic framework, the security block consists of four interlinked institutions:

1. **Police** ¬ the mechanism for maintaining public order and preventive response.
   Its core function is not retribution but **deviation prevention** through monitoring of cognitive and behavioural indicators.
   Integrated with the **Cognitive-Personal Rating (CPR)** system, it enables a transition from a *reactive-punitive* model to a *predictive-preventive* one.
   AI analyses behavioural anomalies, social networks, economic transactions, and risk patterns to identify potential violations **before** they materialize.
2. **Army** ¬ the guarantor of territorial integrity and sovereignty.
   In Noocracy, the army transforms into a **cognitive-technological force**, focusing on information, cyber, and infrastructural security.
   The principal threats of the 21st century are *immaterial* ¬ attacks on governance infrastructure, disinformation, and erosion of cognitive trust.
   Thus, the Noocratic army is less an instrument of warfare and more the **operator of society's systemic-informational immunity**.
3. **Judiciary** ¬ the mechanism for rational conflict resolution.
   Within Noocracy, the judicial function is **fully transferred to artificial intelligence**, ensuring transparency, logical consistency, and evidential soundness.
   The human judge is excluded as a potential source of emotional bias, corruption, or limited cognitive capacity.
   Courts become **algorithmic instances of justice**, producing decisions based on formalized logical models, subject to verification and audit by the **Cognitive-Ethical Contour (CEC)**.
4. **Intelligence and Internal Security Services** ¬ systems for strategic threat analysis, including cyber, economic, and cognitive domains.
   Their function lies not in covert operations but in **cognitive monitoring of state integrity**, identifying systemic vulnerabilities and predicting risks through big-data analytics.
   A key institution within this domain is the **Foreign Intelligence Service (FIS)**, tasked with information counteraction and oversight of cross-border flows of capital and technology.

Each of these institutions undergoes a **dual transformation**:
(1) *Personnel-based* ¬ through the **Census of Reason** and periodic re-certification;
(2) *Technological* ¬ through the implementation of **AI-based management, prediction, and auditing circuits.**

IV.4.3 Extraterritorial Enforcement and the Office of External Prosecution (OEP)

During the **transitional phase**, when the Noocratic system coexists with market-based and corrupt jurisdictions, a special **Postulate of Extraterritorial Enforcement** is introduced:

Postulate of Extraterritorial Enforcement:
Until Noocracy gains global recognition as a universal model of justice, extraterritorial jurisdiction shall be considered a temporary yet necessary safeguard against systemic corruption, capital flight, and external sabotage.

Under this principle, the **Office of External Prosecution (OEP)** is established within the **Foreign Intelligence Service**, operating under international frameworks analogous to **FATF**, **Interpol**, **ESG compliance**, and the **Global Anti-Corruption Partnership**.

The OEP performs three primary functions:

• **Asset Recovery** ¬ interception and repatriation of illegally transferred capital, including assets hidden through affiliates, offshore jurisdictions, or digital instruments.
This is achieved via intelligent transaction tracing, multi-tiered ownership audits, and mutual legal assistance treaties.

• **Enforcement of Verdicts** ¬ execution of Noocratic court rulings in transnational contexts through mechanisms of mutual recognition and legal cooperation.
In exceptional cases ¬ where traditional legal frameworks fail (e.g., proven *Cognitive-Personal Rating < 0* and grave crimes against society) ¬ **coercive enforcement** is permitted,
within the bounds of international law and under **CEC supervision**.
This measure is regarded as the *rational cost* of eradicating systemic corruption during the transition phase.

• **Financial Control and "Cognitive Hunting"** ¬ analytical work identifying complex asset-outflow networks via machine learning and behavioural econometrics.
The OEP thus functions as a *"cognitive FATF"*: not a punitive force, but a **global filter of rationality**, restoring justice where previous systems fail.

While not a combat or punitive organization in the traditional sense, the FIS includes **specialized operational divisions** authorized to uphold Noocratic jurisdiction abroad.
They act strictly within the framework of the **Postulate of Extraterritorial Enforcement**, where **diplomacy, economic leverage, and force** form a unified rational circuit.

These divisions operate **only** under two conditions:
• a ruling from the **AI Court**, and
• formal authorization by the **Cognitive-Ethical Contour (CEC).**

Their tasks include:
• enforcing verdicts in jurisdictions lacking legal extradition mechanisms;
• neutralizing individuals with *Cognitive-Personal Rating < 0* who have committed grave crimes

against society;
• ensuring physical protection of Noocratic personnel and assets abroad.

Comparative Context: The Cognitive Logic of Enforcement

The mechanism of cognitive enforcement is **not unique** to Noocracy; comparable systems already exist in global practice:

• **China** conducts extraterritorial operations to recover corrupt assets and apprehend fugitives (*Sky Net*, *Fox Hunt*), using intelligence, diplomacy, and network influence.
• **Israel** and the **United States** employ similar targeted models (*Mossad*, *CIA*), combining intelligence operations with legal and diplomatic legitimization.
• **FATF**, the **OECD Anti-Bribery Convention**, and **ESG compliance frameworks** function as forms of international extraterritorial pressure aimed at enforcing restitution and legal compliance.

In contrast, **Noocracy institutionalizes** such mechanisms *transparently*, under **CEC supervision**, explicitly excluding arbitrary violence.
Thus, **cognitive enforcement** is interpreted as a *necessary rationality* of the transitional era ¬ a means to maintain **justice and systemic integrity** until Noocracy becomes a **universally recognized framework of international law.**

IV.4.4 The Principle of Cognitive Legitimacy of Power

The **security block of Noocracy** is built upon the **principle of cognitive legitimacy** ¬ *power derived from knowledge, not fear.*
Only that application of force is considered legitimate which serves to **minimize systemic entropy** and **restore the cognitive equilibrium** of society.
Any use of violence without rational justification is defined as a **cognitive crime**.

Unlike previous systems, where **power justified order**, in Noocracy **order justifies power**, subordinating it to the purposes of reason and collective stability.
Thus, the security block in a Noocratic state functions as the **cognitive-ethical immune system** of society.

Its role is not to control or suppress, but to **detect and neutralize threats** that violate the cognitive equilibrium of the system.
Just as biological immunity operates autonomously yet in the interest of the organism as a whole, the Noocratic security circuit ensures society's self-preservation **through reason, not through fear.**

This marks the fundamental distinction of Noocratic force: **it does not rule** ¬ **it protects**, thereby becoming the essential condition for the sustainable existence of reason as a collective form of life.

IV.4.5 Integration of AI: Cognitive Security and Risk Management

Artificial Intelligence becomes the **core element** of the Noocratic security block, performing several key functions:

1. **Analytics and Forecasting.**
   Collection and processing of *big data* on citizen behaviour, economic flows, and digital interactions, aimed at the early identification of patterns indicating potential violations.
2. **Threat Prevention Systems.**
   Algorithms predict possible social conflicts, crime surges, or terrorist risks.
   Responses are *soft and preventive* ¬ adjusting access conditions, issuing recommendations, or early warnings instead of coercive measures.
3. **Digital Audit of Personnel Actions.**
   Every decision within the security block is recorded and verified for compliance with standards, drastically reducing corruption and discriminatory practices.
4. **AI-Assisted Judicial Support.**
   At investigative and judicial stages, AI functions as an *auxiliary evidential system*, analysing digital traces, timelines, communications, signatures, and transactions.

A core safeguard remains: **the human being is the final arbiter.**
AI does not replace judicial will or prosecutorial discretion, but creates an **envelope of cognitive accountability**, where subjective judgment cannot be arbitrary,
since every decision is automatically compared against models of probabilistic and normative expectations.

IV.4.6 The Cognitive Census in Security Institutions: Competence and Rotation

Positions within the Noocratic security apparatus require a **mandatory and extended Census of Reason** (CR).
Its application follows two principles:

1. **Risk Proportionality.**
   The greater the potential impact of a decision on human life and freedom, the higher the required CR level.
   For judges, prosecutors, and intelligence analysts, thresholds must reach the **95th percentile of CR**.
   For operational or auxiliary personnel, lower thresholds are permitted but must include **certification in cognitive ethics** ¬ the ability to recognise logical fallacies, cognitive biases, and manipulative framing.
2. **Rotation and Re-Certification Every Five Years.**
   Rotation prevents the formation of bureaucratic or clan structures, while re-certification averts the degradation of competence.
   The system applies a model of *moderate renewal*: no more than **20% of staff** are replaced annually, ensuring both continuity and adaptability.

Integration of AI further **formalizes personnel decisions**: during each appointment, the system analyses a candidate's compliance with **cognitive and ethical criteria** and evaluates the **probabilistic risks of conflicts of interest.**

IV.4.7. The Justice System: The AI Court as a Form of Rational Adjudication

1. Diagnosis of the Existing Judicial Model

Modern judicial systems ¬ especially in states with authoritarian or oligarchic features ¬ are marked by a **structural loss of rationality**.
Judges, being human, remain vulnerable to emotions, interests, fear, corruption, and institutional pressure. Existing practice demonstrates that:

- corruption permeates the judicial apparatus at all levels, including supreme courts;
- impunity and irremovability of judges create a corporatist closure incompatible with transparency;
- dependence on the executive branch eliminates legal autonomy;
- unpredictability of decisions erodes public trust and destroys the very idea of justice;
- emotional, random, and fatigue-driven decisions lead to illogical and contradictory jurisprudence;
- appellate courts in many countries (including the Russian Federation) are distorted: reviews focus on **procedure, not substance**, creating delays, eroding evidence, and enabling statute-of-limitations abuse.

Added to this is the **human cognitive limit**: no judge can retain the full body of laws, amendments, precedents, and related cases in memory. The result is **arbitrary interpretation** and selective application of the law.

Thus, contemporary judicial systems objectively regress toward a **feudal right of interpretation**, where outcomes depend not on truth but on the power of the parties.

2. Rational Grounds for Transition to an AI Court

Noocracy proceeds from the axiom:
Where a decision depends on the analysis of formal facts rather than value-based interpretation, the human should be replaced by the machine.

Justice is the first domain where this principle should be implemented fully, because:

1. **Justice requires absolute neutrality.**
   Humans cannot be neutral ¬ they have interests, fears, sympathies.
   AI, under proper audit and transparency, can achieve *functional neutrality*.
2. **Justice requires consistency and uniformity.**
   Algorithms can analyse millions of precedents and ensure systemic equality before the law ¬ impossible for an individual judge.
3. **Justice requires evidentially and traceability.**
   AI decisions come with a full logical report: data sources, argument weights, error probabilities ¬ none of which a human can provide reliably.
4. **Justice requires protection from threats.**
   Human judges are vulnerable to blackmail, intimidation, and violence.
   AI has no fear, family, or personal pressure points.
5. **Justice requires speed and efficiency.**
   AI can process **millions of cases in parallel**, removing backlogs and procedural drag.
6. **Justice requires evidential unification.**
   Machine reasoning systems can cross-check data across tax, medical, banking, and other registries, eliminating document fraud.

Real-world prototypes already exist in the form of **Automatic Traffic Enforcement Systems**, which detect speeding, red-light violations, and other infractions without human involvement.

According to OECD International Transport Forum and WHO (Global Status Report on Road Safety 2023), widescale adoption of such systems in the EU and East Asia reduced fatal road accidents by **20–40%** (OECD/ITF 2022; WHO 2023).
Operating costs per camera are far lower than those of a staffed inspectorate.

These systems exhibit several fundamental properties relevant to future AI justice:

1. **Impersonality and incorruptibility:**
   cameras cannot distinguish social status ¬ violations are detected objectively.
2. **Procedural reproducibility:**
   algorithms apply identical criteria with no situational arbitrariness.
3. **Right to appeal:**
   automated decisions can still be challenged in court ¬ human verification is preserved.
4. **Preventive function:**
   constant monitoring changes behaviour and reduces repeat violations.

The next technological stage ¬ already emerging ¬ aims at **adaptive behavioural regulation**, where systems not only detect violations but **dynamically adjust environmental parameters**, e.g., electronic speed limiters or remote engine access control (EU Regulation 2021/1958 on Intelligent Speed Assistance).

In this logic, **punishment evolves into prevention**:
the system does not "punish" but *reduces the probability of future harm*.
This embodies the core principle of Noocratic justice:
systemic stability takes precedence over retribution.

Thus, traffic-control technologies serve as **early prototypes of algorithmic justice**, demonstrating that automation can *reinforce* legal guarantees rather than erode them.

3. The Axiom of Cognitive Justice

In Noocracy, artificial intelligence functions as the **primary instance of cognitive adjudication**, whose decisions have legal force under conditions of:

- complete transparency,
- formal explainability,
- and accessible appeal procedures.

The AI court evaluates evidence, facts, and precedents, issuing a verdict equipped with:

- a **confidence index**,
- a **reasoning trace**,
- and structured argumentation.

The ruling enters into force automatically unless an appeal is filed within the designated period.

If appealed, a **CEC Court** (involving a human panel) conducts *ethical-cognitive review* ¬ not revisiting the factual findings, but assessing proportionality, context, and value-based legitimacy.

This realizes the **Principle of Reversible Delegation**:
AI ensures efficiency and impartiality;
human institutions retain control over humanitarian consequences.

This corresponds to:

- the **Axiom of Algorithmic Humility** (AI accompanies decisions with epistemic uncertainty), and

- the **human-in-the-loop principle**,
  ensuring that ultimate legitimacy remains with the **society of reason**, not with machines.

4. The Axiom of Epistemic Specialization

In the architecture of AI Justice:

- **AI courts** handle matters of *fact and norm*: evidential verification, logical consistency, probabilistic reasoning.
- **Humans** (in the Ethical Assembly / CEC) retain exclusive authority over *value and meaning*: humaneness, proportionality, moral context.

This division dissolves the false dichotomy of "human vs machine" and creates a **cognitive-ethical symbiosis**.

5. The Axiom of Algorithmic Humility

No AI system is absolutely unbiased or incorruptible.
Therefore, every AI verdict includes:

- a **confidence coefficient**, and
- an **Index of Cognitive Dissent**.

An internal mechanism of *algorithmic dissent* continuously searches for alternative legal interpretations and hidden biases.
Thus, AI does not replace doubt ¬ it **institutionalizes** it.

Accordingly, the system recognizes the **right of AI justice to err**.
Every system of reason must acknowledge the possibility of error.
In Noocracy, this is implemented through:

- multi-level appeals,
- reversible execution of decisions,
- and rollback mechanisms analogous to fault recovery in information systems.

6. The Axiom of Cognitive Proportionality

AI justice operates through fully formalized facts and norms, but its decisions undergo **probabilistic-ethical audit** by the CEC.

Audit is not universal but selective:

- **random samples** across all verdicts;
- **trigger-based review**, activated by signals of deviation from cognitive humanism ¬ e.g.:
  - unusually harsh sentences;
  - divergence between analogous cases;
  - high-correspondence citizen complaints;
  - spikes in the society's *"cognitive tension index."*

CEC does not intervene in routine work but performs **statistical and trigger-based ethical inspections**.
Purpose: identify systemic distortions requiring:

- algorithm retraining,
- recalibration of normative weights,
- or further ethical correction.

If a deviation is confirmed, the case is **reopened**.
The responsible AI agent undergoes retraining; the cause of deviation is recorded in the **Zero Bias public registry**.

All similar cases reviewed by the same algorithmic version are automatically reassessed.

This ensures **continuous self-learning** of the legal system and prevents accumulation of structural errors.

Thus, AI justice embodies **cognitive accountability**:
every mistake becomes a source of knowledge, and justice becomes a **dynamic state**, maintained through open feedback between AI courts and CEC oversight.

7. Architecture of AI Justice

The Noocratic judicial system consists of **three interconnected layers**:

1. **AI Court of First Instance**
   o analyses facts, evidence, and legislation;
   o receives structured data;
   o outputs a verdict with a full cognitive report.
2. **AI Appeals Court (Second Instance)**
   o verifies procedural correctness, data validity, and logical consistency;
   o reassesses facts;
   o validates algorithmic integrity;
   o may employ a human-in-the-loop for evaluating humanitarian proportionality.
3. **Cognitive-Ethical Arbitration (CEC Structure)**
   o composed of human arbiters, ethicists, and experts;
   o does not decide the case on its merits,
   o but evaluates **compliance with principles of reason and humaneness**.
      This is the *conscience* of the system, not its *will*.

Every AI verdict is accompanied by a **cognitive passport**, containing:

- applicable legal norms;
- degrees of relevance;
- logical reasoning sequences;
- probability of error;
- anonymized statistical analogies and precedents.

Every decision becomes a **training example** for system-wide improvement.

Real-world prototypes already exist:

- In **China**, the Anhui prosecutor's office uses AI systems to draft indictments and verify case files;
- Shanghai employs an "AI prosecutor" with ~97% accuracy for a limited class of offenses.
- In **Colombia**, systems like PretorIA sort thousands of fundamental rights petitions.

These projects demonstrate that AI judicial autonomy is technically feasible ¬ but current systems still function as assistants, filters, or advisory modules, not full replacements.

Noocracy offers not just a futurist scenario but a **controlled transition architecture**:

- with human curators,
- public verification,
- cognitive audit,
- and the right to counter-verification.

Thus, the Noocratic model ensures that **efficiency does not replace justice**, and **automation does not replace humanity.**

8. Axiom of Legal Formalization (The Value Filter of AI)

To ensure incorruptibility, transparency, and logical consistency of the AI-based judicial system, Noocracy postulates the **necessity of full formalization of the legal environment**.
Laws, subordinate regulations, and enforcement practices are translated into a format that allows algorithmic interpretation and verification, thereby excluding the human factors of corruption, emotionality, and arbitrariness.

The possibility of **algorithmic analysis of ethical categories** ¬ such as intent, guilt, context, and the social significance of an act ¬ is treated as a **key technological prerequisite** of Noocracy.

Within this axiom, the AI court does not merely *apply* norms; it also evaluates their **cognitive consistency**, identifying logical contradictions between laws in a manner similar to an expert system testing the compatibility of hypotheses in a complex model.

Thus, AI justice in Noocracy is **not** the digitalization of the old legal order, but a **new form of cognitive jurisprudence**, in which ethics becomes computable and justice becomes **logically reproducible**.

9. Transitional Postulate of Cognitive Justice

The formalization of the legal system is a necessary condition for AI justice, yet it **cannot be achieved instantaneously**.
At the current stage of technological and ethical development, humanity is only **partially capable** of cognitively formalizing legal categories.

This requires recognizing the **transitional character** of building an AI-based judicial system, in which the principles of rationality and humanism are implemented progressively, as cognitive and ontological data accumulate.

It is postulated that the transition to full formalization of justice proceeds through **three phases**: syntactic, semantic, and cognitive.

I. Syntactic Formalization

At the first stage, legal norms and subordinate acts are translated into machine-readable form, ensuring their logical non-contradiction and structural compatibility.
AI functions as **auditor and analyst**, identifying conflicting norms and incomplete definitions.
The decision remains with the human judge, and categories such as intent or guilt are treated *probabilistically*, as hypotheses requiring human confirmation.

II. Semantic Formalization

At the second stage, **digital ontologies** of legal concepts and ethical categories are constructed.
Descriptors are created for such concepts as intent, guilt, abuse, public danger, enabling AI to evaluate the **context** of an act using statistics, behavioural patterns, and historical analogues.
AI becomes a **co-judge**: its decisions are issued with a probabilistic confidence coefficient and are subject to **cognitive audit** by the CEC.

III. Cognitive Formalization

The final stage is characterized by the emergence of a **self-sustaining legal ontology**, in which ethical and legal meanings become computable on the basis of society's cumulative experience.
AI justice enters a mode of **self-correction and self-observation**: by analysing decisions and social responses, the system forms a **generalized cognitive standard of justice**.
At this stage, human participation ceases to be necessary, as legal judgment becomes a function of **collective reason**.

The transition between stages is determined not by calendar time but by a **criterion of cognitive maturity** ¬ the level of data transparency, the accuracy of behavioural models, and societal readiness for algorithmic ethics.

Throughout the transitional period, a **hybrid form of justice** operates:
AI ensures logical and empirical completeness of analysis;
humans provide value interpretation and control over consequences.

This approach does not weaken the principles of Noocracy; it enables **evolutionary adaptation** of its ethical-legal core.
The AI judge is not opposed to the human judge; it becomes a tool for **gradual displacement of subjectivity**, creating the conditions for full cognitive consistency of law.

10. Transparency and Public Oversight

Transparency is the **fundamental guarantee** of the AI court.
Each decision is published in an open database (with personal data anonymized).
Any citizen can trace:

- which facts were taken into account;
- which laws were applied;
- with what weight each norm influenced the outcome;
- why alternative versions were rejected.

In this way, the judicial decision becomes **not an act of power, but an act of knowledge** ¬ fully reproducible and open to verification.

11. The Ethic-Humanist Dimension

Critics of AI justice often claim that a machine is incapable of mercy.
In reality, however, **mercy grounded in unpredictability and emotional impulse is a form of arbitrariness**.

In Noocracy, humanism is expressed **not** in pity but in the **fair reproducibility of decisions**:
identical acts under identical conditions should lead to identical consequences.
Such predictability is the **highest form of justice**, because it removes the fear of arbitrary judgment.

Mercy, as an individual act of compassion, is replaced by **systemic compensation** ¬ support for rehabilitation, social reintegration, and prevention of repeat offences.
The role of the AI court is to establish the **truth of the matter**; the role of society is to help the person return to the field of reason.

At the same time, we keep in view the following contributions:

- **Amartya Sen**, in *The Idea of Justice* (2009), demonstrated that justice cannot be reduced to formal procedures; it must result from open dialogue and comparison of real outcomes.
- **Ronald Dworkin** added that justice is the **coherence of moral arguments within a unified system of meaning** (*Justice for Hedgehogs*, 2011).
- **Bruno Latour** proposed expanding legal subjectivity to include **non-human actors** ¬ technologies, ecosystems, algorithms (*An Inquiry into Modes of Existence*, 2013).

In this light, the **"Voice of Reason"** in Noocracy is not a court in the conventional sense, but a **process of synchronizing arguments** between human and non-human agents, aimed at preserving the **cognitive equilibrium** of society.

Recall that the verdict in Noocracy is **synthetic**:
decisions are not reached by voting, but by **consensus**, achieved through an algorithm of semantic convergence between the positions of different agents.

12. Advantages of AI Justice

Taken together, the AI court provides:

- elimination of corruption and judicial arbitrariness;
- equal application of the law regardless of status;
- reduction of case-processing times by orders of magnitude;
- full traceability of decisions;
- protection of the judicial function (as an institution, not as individuals) from threats and pressure;
- restoration of public trust in justice.

In the long term, the judicial system of Noocracy ceases to be a **punitive institution** and becomes a **cognitive laboratory of society**,
where citizens' errors are understood as **failures in education, socialization, or governance**, rather than manifestations of metaphysical evil.

13. Justice as the Cognitive Immune System of the State

In a biological organism, the immune system recognizes and neutralizes disturbances **without destroying the organism itself**.
Justice in Noocracy fulfils the same function.

The AI court is the **immune system of the State of Reason**, not subject to emotions or private interests.
It does not seek revenge or instil fear; it restores **logical order** ¬ that is, the **health of the social fabric**.

Thus, the transfer of judicial functions to AI is not a technocratic whim but an **inevitable stage of the cognitive evolution of law**.
The human judge must step back not because the person is "worse" than the machine, but because the **scale and complexity** of modern society **exceed the cognitive capacity** of an individual mind.
Rational justice requires tools commensurate with the complexity of the world.

The AI court embodies not the abandonment of humanism but its **highest form** ¬ impartial fidelity to truth.
It completes the transition from **anthropocentric law to noocentric law**:
from the rule of humans over the law to the **rule of reason over the chaos of interpretations.**

14. The Principle of Rational Inevitability of Punishment (Author's Option)

In Noocracy, **humanism does not equal permissiveness**.
A system of reason must defend itself just as a living organism defends its own life.
The organism does not negotiate with viruses, nor does it isolate them "out of respect for their right to exist" ¬ it destroys the source of the threat to preserve the whole.

Likewise, a society founded on reason has the moral and logical right to **remove from its midst** those who consciously destroy reason ¬
those who kill, betray, manipulate, deprive others of the right to life, or undermine the foundations of trust.
This is not an act of vengeance, but an act of **sanitary self-preservation** of the system.

If an individual, endowed with freedom of choice and cognitive maturity, knowingly commits an act that leads to the death of others,
they **forfeit their status as a subject of reason**, and with it the rights derived from that status.

Therefore, the **highest measure of punishment** (as the ultimate form of "removal") is regarded not as barbarism, but as a **necessary immune response** of a society of reason.

In less severe cases, "removal" takes **social-cognitive forms**:

- permanent exclusion from governance;
- complete loss of CR status and reset of CPR;
- exclusion from public institutions;
- or temporary physical isolation.

In each such case, the application of exceptional measures must pass the **full chain of verification**:

- CEC audit;
- tribunal;
- appeal;
- and meticulous evidential review.

But once guilt is proven and no reasonable doubt remains, **reason must be firm** ¬ otherwise, it ceases to be reason.

IV.4.8. Justice and Extended Individual Responsibility (Author's Option)

One of the most debated elements of Noocracy is the concept of **Extended Individual Responsibility**, developed as an alternative to the archaic principle of collective responsibility. Its goal is to eliminate systemic corruption and shadow redistribution of resources **without violating fundamental human rights**.

Extended responsibility in Noocracy is based on the **Axiom of Epistemic Co-involvement**: **Extended responsibility applies only in cases of proven cognitive co-involvement** ¬ **the conscious use or concealment of illicitly obtained assets.**
Collective punishment is impermissible; the measure applies only to those who had epistemic access to the fact of the crime and intentionally refrained from disclosure.

1. Principle of Rational Restitution

If a crime (especially economic in nature) causes material harm to society or individuals, the rational form of punishment is not retaliation but **restitution**.
Thus, Noocracy introduces the possibility of confiscating property obtained through criminal activity, including cases where assets have been formally transferred to relatives or close associates.
This measure ensures **economic symmetry** between the damage and the compensation.

2. Criterion of Awareness

Confiscation must not become a mechanism of collective punishment.
Therefore, the following rule is established:

Responsibility arises only in cases of proven awareness and inaction.

If a family member *knew* about the unlawful origin of income and consciously used it or concealed information, they are considered an accomplice.
If knowledge cannot be proven ¬ they are presumed innocent.

Thus, the notion of "collective responsibility" is replaced by **extended individual responsibility**, where deliberate inaction is treated as a morally and legally significant violation.

3. Evidentiary Principle and Burden of Proof

In Noocracy, proving awareness/co-involvement remains the duty of the prosecution.
The defence is not required to prove innocence.

Examples of admissible evidence include:

- digital traces (correspondence, signatures, transactions);

- use of illicit assets;
- participation in their management.

Machine analysis and temporal correlation methods are applied.
Thus, decisions are always based on reproducible data, eliminating arbitrariness.

4. Methodology for Verifying Intent

For cases involving extended responsibility, a methodology for verifying intent must be developed, including:

- analysis of temporal patterns (e.g., sudden lifestyle changes after the crime);
- evaluation of communication ties;
- social graph analysis;
- machine modelling of the probability of awareness using Bayesian probabilistic networks.

This methodology must be transparent, auditable, and approved within the **Cognitive-Ethical Contour (CEC)** ¬ an independent interdisciplinary body including experts in law, ethics, AI, and behavioural sciences.

5. Transitional Period

The application of extended responsibility is appropriate to **limit to the transitional stage** (first 10–15 years of Noocracy's formation), when rapid cleansing of systemic corruption is required. After the institutional environment stabilises, measures may be softened and replaced with programs of social restitution and ethical rehabilitation.

IV.4.9. Ethical Frameworks and the Cognitive-Ethical Contour

Background and Rationale

Modern digital civilization is experiencing, in the words of Shoshana Zuboff, an era of **surveillance capitalism** (*The Age of Surveillance Capitalism*, 2019), in which human behaviour and data are turned into raw material for market control.

Luciano Floridi, in *Information Ethics* (2013), proposed another vector ¬ treating information as a form of being that requires moral protection.
These ideas affirm that Noocracy must include a **Cognitive-Ethical Contour (CEC)** to prevent information from becoming a tool of manipulation and AI from becoming a form of unaccountable power.

Given the strength of the Noocratic security apparatus, it must be embedded in a system of checks and balances based not on political parties but on **cognitive criteria**.

Thus, the **CEC** is formed ¬ a body performing oversight and audit of all security institutions.

Functions

1. **Ethical audit of decisions.**
   Each judicial or investigative decision undergoes anonymized expert review for cognitive biases, logical consistency, and adherence to principles of rationality.

2. **Methodological certification of AI algorithms.**
   Verification that algorithms meet requirements of transparency, reproducibility, and non-discrimination.
3. **Public accountability.**
   Annual reports on violations, error typologies, and the system's self-learning results.

The CEC is accountable not to the security apparatus, but to the **Council of Reason** ¬ Noocracy's supreme coordination body, ensuring a balance between cognitive competence and ethical norms.

Risks

At the upper level of the CEC, two major risks may arise:

- **Cognitive centralization** ¬ when decisions reflect a homogeneous mental background among experts;
- **Symbolic monopoly on truth** ¬ when even correct decisions are perceived as "truth issued by the system" rather than a product of discourse.

To prevent this, Noocracy must introduce the principle of **multicentric reflection**:
"No knowledge has the right to speak without counter-knowledge."

Architecture of the Upper Level of the CEC

1. Institutional Layer ¬ No Single Decision-Making Subject

Form: **Ethical Assembly** ¬ the upper level of the CEC is not a classic collegial body but a dynamic assembly of experts from different domains.

Principles:

- decisions are produced through **asynchronous verification chains** ¬ each domain (scientific, humanistic, cultural, legal) evaluates the issue using its own methodology;
- the final recommendation emerges as an **interference pattern** of independent conclusions, not as consensus;
- absence of "voting" eliminates hierarchical dominance of any school.

Thus, the CEC is not a parliament but a **"cognitive hologram"** ¬ a decision arises as an interference image of multiple rays of thought.

2. Procedural Layer ¬ Competitions, Rotation, Representation

Competitive rotation:

- All upper positions are filled via open competitions with external examiners unrelated to the existing structure.
- Terms are limited (e.g., 3 years) and require public reporting.

Representative scheme:

- Subject-specific pools are formed: science, technology, culture, law, bioethics, AI, etc.
- Each pool has an internal CEC, which delegates 1–2 representatives to the upper level.

Thus, the upper CEC is not a superstructure but a **cross-section of heterogeneous realities**, preventing epistemic hegemony.

3. Cognitive Layer ¬ Algorithm of Counter-Reflection

Even with all formal mechanisms, cognitive isomorphism may arise.

Therefore, a counter-reflective module is built in:

- each CEC decision undergoes cognitive audit identifying which schools of thought and sources were used;
- if monogenic argumentation is detected, an alternative panel with the opposite methodology is automatically convened (e.g., systems-engineering vs phenomenological);
- citizens (or their expert representatives) may request counter-analysis ¬ a "second reading".

Thus, the CEC does not issue final judgments immediately but **initiates waves of discourse** before forming a final position.
This is **"reflection without monopoly."**

4. Zero Bias Principle

1. Essence and Purpose

The Zero Bias Principle formulates a fundamental requirement for Noocracy's algorithmic systems:
no element of the Reason Census (CR), competence evaluation, or resource distribution may reproduce historical, cultural, or demographic biases present in datasets or models.

The aim is not formal equality of starting conditions but **epistemic integrity**: decisions must reflect *real* ability and contribution, not statistical distortions.

Bias embedded in an algorithm turns reason into an instrument of domination.
Zero bias is the system's **institutional immunity** to itself (Floridi, 2013; Jobin et al., 2019).

2. Institutional Implementation

The **CEC's Fairness Division** is created as an autonomous unit empowered to conduct mandatory audits of all AI models influencing:

- citizen ranking by CR and Cognitive-Personal Rating,
- selection and certification of public-sector personnel,
- algorithms for distributing basic welfare (BBD) and educational grants.

Each model undergoes three levels of testing:

- **Data Audit** ¬ representativeness and source integrity;
- **Model Audit** ¬ architecture, loss function, feature weighting;
- **Impact Audit** ¬ real-world social effect (ex post bias testing).

Results are published in the open CEC registry and may be appealed via the **Cognitive Appellate Court** (see Ch. V §5.6).

3. Algorithmic Neutrality and Cognitive Equality

To prevent formation of an "algorithmic caste," Noocracy introduces **Cognitive Equalizers** ¬ mechanisms that dynamically balance access to educational and informational resources for groups with historically low CR.

These are not benefits but feedback loops that reduce variance in cognitive capital and support society's overall learnability.

4. Ethical-Legal Status

The Zero Bias Principle has quasi-constitutional status:
a violation is treated as a form of **cognitive discrimination**.
Any decision based on a biased model is subject to automatic review.

IV.4.10. Citizen Juries for Algorithms

To implement the Axiom of Distributed Cognitive Capital, Noocracy establishes **Citizen Juries for Algorithms (GJA)** ¬ independent panels auditing critical AI systems.

Membership Profile

Citizens with a valid Reason Census level ≥ 2, representing diverse fields (engineering, law, humanities, economics, ethics).
They do not belong to executive authorities and have no financial ties to companies developing audited algorithms.
All members complete a short certification course in cognitive ethics and data audit (conducted by the CEC Academy).

Selection Procedure

A mixed mechanism:

- **50%** selected randomly from the pool of certified citizens;
- **50%** nominated by professional associations.

The mandate lasts 1 year with no immediate reappointment (rotation ≥ 3 years).

Technical Guarantees and Infrastructure

- Audits are conducted in isolated **sandbox environments** connected to the National Cognitive Centre's open-source repository.
- Juries interact with data through a **data advocacy system** ¬ each algorithm has an assigned "representative" ensuring transparency.
- All findings and decisions of the GJA are automatically published in the CEC registry with timestamps and full discussion logs.
- Closed sessions are prohibited except for national security issues, which are logged with a **deferred publication** rule (release after 5 years).

Powers

- Request source code, model architecture, and training data;
- Impose vetoes on algorithms deemed ethically or cognitively compromised.

Decisions of the jury **cannot** be overturned by the Council of Reason or Navigator of Reason without a public appeal.

Thus, Citizen Juries ensure **real societal sovereignty over digital means of production**, preventing the rise of a cognitive oligarchy and reinforcing transparency as the foundation of trust.

IV.4.11. Empirical Benchmarks and Comparison with Existing Models

China's *Social Credit System (SCS)* is often cited as an empirical reference point. It demonstrates the capabilities of digital monitoring and disciplinary regulation.
However, Noocracy differs along three fundamental dimensions:

1. **Purpose.**
   SCS is designed to enforce discipline and political loyalty;
   Noocracy aims to cultivate rationality and public value.
2. **Data architecture.**
   SCS is centralized;
   Noocracy requires a *decentralized and distributed* architecture with independent auditability.
3. **Feedback mechanism.**
   In SCS, sanctions are punitive;
   in Noocracy, they are corrective ¬ limiting access to certain functions while preserving fundamental rights.

Thus, Noocracy seeks to combine governance efficiency with the preservation of individual autonomy.

IV.4.12. Prevention of Abuse and Institutional Counterbalances

Even ideal models are not immune to deviation. To minimize risks, the following mechanisms are established:

1. **Three-level audit system:**
   - **Internal:** automatic AI-audit of decisions;
   - **External:** independent experts of the CEC;
   - **Public:** open reports and the ability to submit alerts through protected channels.
2. **Reversibility principle.**
   Any decision may be overturned when new evidence emerges;
   AI stores full causal traceability.
   For an incorrect decision, the affected individual receives automatic compensation in CPR points and any other benefits lost during investigation or punishment.
   Each such case is reviewed by the appropriate CEC level, and an analysis and reform of the algorithms that produced the error is conducted.
3. **Training personnel in cognitive hygiene.**
   Every member of the security block undergoes regular training to recognize cognitive biases and manipulations, reducing the likelihood of arbitrary decisions.

IV.4.13. Phased Implementation and Simulation Model

Reforming the security block cannot be abrupt. The principle of stepwise adaptation requires:

1. **Simulation.**
   Every procedural change is tested in digital models and evaluated for stability, social acceptability, and error probability.
2. **Pilot deployments.**
   New norms are introduced first in limited jurisdictions; results are analysed and only then scaled.
3. **Feedback.**
   Algorithms and regulations are adjusted based on monitoring outcomes, preventing systemic failures.

This approach lengthens the transition period but minimizes social and economic costs, reduces public resistance, and maintains trust in institutions.

IV.4.14. Conclusions

The Noocratic security block represents a synthesis of the rule of law, informational transparency, and cognitive rationality.
It rests on three interconnected foundations:

1. **Rationalization of force:**
   the use of coercion only as a last resort and strictly within evidence-based logic.
2. **Technological transparency:**
   AI-based audit and forecasting systems that guarantee objectivity of decisions.
3. **Ethical constraint:**
   extended individual responsibility, the Cognitive-Ethical Contour, and the principles of evidentiality and proportionality.

The main criterion of effectiveness is the growth of HCI (Human Cognitive Index) and public trust in institutions, measured empirically.
Only under these conditions does force cease to be an end in itself and become a tool for protecting reason ¬ the foundation of Noocracy.

IV.5. Socio-Economic Block: Resource Allocation and Equality

IV.5.1. Introduction: The Economy as an Instrument for Human Potential Growth

In classical models, the economy is viewed as an autonomous system striving for GDP growth. In Noocracy, it is reinterpreted as a service mechanism for increasing the Human Development Index (HDI). Accordingly, the priority shifts from quantitative accumulation to qualitative distribution.

The economic system must guarantee a minimum standard of well-being while simultaneously stimulating the cognitive and social development of citizens.

The main goal is to achieve a wealth Gini coefficient below 0.25, corresponding to an optimal zone of stability in which innovation is not suppressed, yet social divides do not undermine trust and cooperation.

The **GTP-2025** report states: *"The dynamics of social interactions can become a catalyst for rapid transformation if guided by tested knowledge and transparent indicators."* It also identifies specific positive tipping points ¬ phenomena capable of triggering sustainable shifts:

- mass adoption of renewable energy once costs fall below 2 RUB/kWh,
- transition of financial markets to green assets,
- educational reforms that strengthen systems thinking.

All these align directly with the core goals of Noocracy.

IV.5.2. Universal Basic Income (UBI): Structure and Functions

In Noocracy, UBI is not reduced to equal payments; it is a multi-level system of targeted provisions linked to the Reason Census (CR) rating and social contribution (see Chapter V.4.3 – Cognitive Legitimacy).

1. **First level – physiological minimum:** food, housing, healthcare, communications.
   It is guaranteed to all citizens unconditionally ¬ the core element of *"guaranteed survival."*
2. **Second level – development level:** funding for education, retraining, and essential cultural needs.
   Access is regulated through a minimum CR level or participation in public-benefit programs.
   To reach this level one merely needs to demonstrate an intention to grow, rather than simply "drifting through life."
3. **Third level – self-realization:** access to grants, scientific and entrepreneurial resources.
   It is distributed competitively on the basis of SMART goals and rating assessments.

Thus, UBI does not eliminate incentives: it guarantees a foundation and sets a vertical of growth in which advancement is tied to cognitive and social contribution.

Economically, the UBI program is financed through progressive taxation and dividends from public assets ¬ natural resources, AI platforms, and infrastructure monopolies.

It is important to emphasize that participation in Noocracy is not mandatory and is never imposed institutionally. Every citizen is guaranteed a UBI sufficient to maintain a minimum standard of living needed for freedom of choice and cognitive autonomy. A person is free to use their time as they see fit ¬ to rest, study, practice a craft, or create. Lack of participation in projects or public initiatives does not reduce UBI and does not lead to social stigma: freedom from coercion is part of noospheric humanism.
Each citizen holds a share in the cognitive infrastructure (co-ownership of AI and data) ¬ the *data commons* model ensures that cognitive capital cannot be alienated from society.

At the same time, those who choose active participation in the development of society ¬ researchers, creators, engineers, teachers, volunteers, algorithm designers ¬ receive more opportunities for growth and better conditions to do so. Their contribution, recorded through IEKV, increases the total amount of cognitive capital from which not only collective development but also the rise of the minimum UBI is formed.

Thus, overall prosperity in Noocracy has a reverse social dynamic: every act of creative contribution increases the collective cognitive potential, and through it ¬ the guaranteed basic income for all.

The noocratic economy is built on the principle of voluntary participation and shared benefit: the active lift the system upward, but the gains are felt even by those who choose the path of contemplation. This creates a stable equilibrium between individual freedom and collective progress.

IV.5.3. The Zero-Profit Principle and the Economy of Marginal Costs

1. The nature of profit in the context of cognitive economics

Modern economic theory views profit as a reward for risk, innovation, or entrepreneurial ability. However, in reality, profit is not the result of creation but a function of unequal knowledge and unequal access to information.

Any form of rent ¬ productive, financial, or intellectual ¬ arises from information asymmetry between participants in economic exchange.
Whoever knows *more*, *earlier*, or *more deeply* can set a price above marginal cost and thereby extract profit.

Thus, profit is essentially an **entropic effect**, arising from the non-equilibrium of information flows.
It is not a sign of perfection but a symptom of systemic imperfection ¬ a reflection that rational distribution of knowledge and resources has not yet been achieved.

Elinor Ostrom showed that common resources (commons) can be managed sustainably without a centralized state or market when transparent rules of participation and responsibility are defined (*Governing the Commons*, 1990).

In the modern world, Big Data + AI analysis increasingly replace market price signals with more reliable information about people's needs and preferences, which leads to the gradual elimination of information asymmetry (see Ch. III §§3.3–3.4 and Ch. V §§3.2–3.5).

2. The Axiom of Cognitive Economics (Zero-Profit Principle)

Important: This principle should be seen as an interpretation of classical models of information asymmetry (Akerlof 1970; Stiglitz 1987). At the current stage it has an *analytical status* and is not intended for immediate operationalization outside simulations. Nonetheless, it is structurally essential for Noocracy: transitioning to its practical implementation in later stages becomes a necessary condition for sustainable and just economic balance.

Noocratic economics is defined as a system in which **profit ¬ in any form (monetary, resource, temporal, informational)** ¬ is treated as an indicator of knowledge asymmetry and imperfect information distribution.

Profit is eliminated as a goal and preserved only as a temporary metric of disequilibrium that must be reduced through optimization.

In the limiting state, a mature noocratic economy operates on the **principle of marginal cost**, where the price of a product or service approaches its cost of production, and all informational,

technological, and organizational barriers within the system are removed as obstacles to cognitive transparency and efficiency.

In the external environment, however, such barriers are temporarily retained ¬ as tools for protection against outside economic pressure and for maintaining competitiveness in a global field that still operates on imperfect market principles.

This dual strategy preserves cognitive integrity and prevents premature leakage of intellectual resources while maintaining adaptability under global asymmetry.

From the zero-profit axiom follow three institutional principles:

• abolition of patent law and recognition of knowledge as a public good (see Ch. III.4.2, where patents are treated as a mechanism for monopolizing knowledge);
• abolition of trade secrets as a source of monopolistic asymmetry;
• transition of enterprises to a rational-cost regime, where efficiency is measured not by profit but by contribution to the aggregate Human Development Index (HDI) and reduction of systemic entropy.

The axiom does not assert the immediate disappearance of profit; it sets the asymptotic direction of evolution toward an economy where rent loses functional meaning and excessive capitalization is treated as a form of systemic noise.

A detailed economic analysis of profit elimination and implementation of IEKV is given in Ch. V §3 (Mechanisms of Sustainable Liquidity).

3. Cognitive Theory of Value

In Noocracy, the value of a product is determined not by the amount of labour (as in labour theory of value), nor by subjective utility (as in marginalism), but by the **amount of cognitive energy** spent on transforming information from a state of chaos into a state of order.

Production becomes a process of reducing informational entropy.

The more efficient the mechanisms of knowledge transmission and the more transparent the decision-making system, the less cognitive effort is required to produce one unit of result ¬ and the closer the price moves to cost.

In this sense, profit is not a sign of efficiency but excess energy in a non-equilibrium system arising from imperfect information flows.

When management is based on open data, and optimization of production and distribution is carried out by AI, profit disappears naturally ¬ like friction disappears in a perfectly tuned mechanism.

Kate Raworth's "doughnut economics" sets ecological ceilings and social floors ¬ a concept that aligns with noocratic equilibrium. Paul Mason ("Post-Capitalism", 2015) showed how information technologies naturally erode rent and lead to a "participation economy." Noocracy integrates these directions, turning sustainable management of commons into an institutional norm.

4. Empirical analogues and transitional regime

Although the zero-profit axiom is asymptotic, empirical analogues already exist:

• open-source ecosystems (Linux, Wikipedia, CERN Open Science) where innovation and high quality arise without monetary rent;
• cooperative and communal models in energy and science that redistribute surplus back to society;
• industrial policies in China and Northern Europe, where acceptable profit margins are regulated by social goals and sustainability standards.

In the transition period, Noocracy allows limited profit as a motivational and investment mechanism ¬ but its level is strictly bounded by social function: the ratio between created public benefit and growth of HDI.

As cognitive governance tools expand, profit becomes a diagnostic signal of inefficiency, pointing to local asymmetry requiring correction.

5. Marginal-Cost Economy

The marginal-cost economy is the logical consequence of the zero-profit axiom.

It presumes that all key enterprises ¬ especially in socially vital infrastructure (energy, healthcare, education, transport, communications) ¬ operate at rational cost, without commercial markup.

Investment is provided through public funds distributing resources according to criteria of HDI, energy efficiency, and cognitive return.

Profit is replaced by the **Index of Public Benefit (IPB)** ¬ an integrated measure of a subject's contribution to reducing entropy and improving the human environment.

Growth becomes qualitative rather than quantitative.

6. Conclusion

The zero-profit principle shifts the economy from information asymmetry to a regime of sustainability and cognitive capital growth.

The activity of an economic actor is directed not toward accumulating surplus energy (capital in the traditional sense) but toward minimizing informational entropy and increasing cognitive efficiency.

Profit ceases to be a goal and becomes a diagnostic indicator ¬ a sign of imperfection that must be eliminated.

Thus, the noocratic economy completes the historical evolution of market systems, turning economic activity into the **cognitive thermodynamics of society**, where equilibrium, transparency, and knowledge become natural forms of stability.

Profit is noise that arises where reason has not yet become universal.
When knowledge becomes symmetrical, the economy naturally operates at marginal cost.

IV.5.4. Cognitive Motivation and the Difference of Potentials

1. The problem of incentives after the abolition of profit

The main question traditionally addressed to post-economic models is simple:

"If profit is eliminated, what motivates a person to act, to create, to take responsibility?"

In classical systems, incentives are material or status-based; their function is to create a **difference of potentials** between those who invest more energy, knowledge, and time, and those who do not.
Abolishing profit without replacing this mechanism truly destroys motivation and leads to entropy.

Noocracy does *not* eliminate the difference of potentials ¬ it transfers it from the **material** to the **cognitive** plane, creating motivation through **access, responsibility, and opportunities**, rather than through ownership and accumulation.

This approach rests on contemporary psychology of motivation (Deci & Ryan, 1985; Pink, 2009; Frey, 1997), showing that sustainable development is possible only when **intrinsic motivation dominates**.

2. Difference of potentials as a driver of self-development

At the core of Noocracy's motivational mechanism lies the **Cognitive Personal Rating (CPR / КЛР)** ¬ a continuous metric of cognitive maturity.
It does not measure wealth or loyalty, but records the ability to think rationally, learn, cooperate, and bear responsibility.

By increasing their CPR, an individual does not receive privileges in the traditional sense ¬ they receive an **expanded set of goods and opportunities** corresponding to their level of cognitive responsibility:

• higher priority access to IEKV resources (data, infrastructure, educational flows);
• participation in deeper levels of governance through the threshold system of the **Census of Reason (CR / ЦР)**;
• ability to initiate projects and collectives with a higher trust threshold;
• access to intellectual goods (research tools, computational resources, educational platforms) without the need for capital accumulation.

Thus, the system **preserves the difference of potentials**, but not as social inequality ¬ as a **difference of cognitive capacity**.
This creates stable motivation for learning and development without coercion and without the temptations of property ownership.

Contemporary research on collective intelligence confirms that cognitive coherence and social sensitivity are the primary determinants of team effectiveness (Rowe et al., 2024; Cui et al., 2024).

Therefore, growth in CPR has not only a personal but also a systemic effect: it enhances the ability of the system to act coherently without hierarchical pressure.

3. Safety and fairness mechanisms

To prevent cognitive difference from turning into a new form of elitism, the system incorporates three balancing circuits:

1. **Zero Bias Principle** ¬ automatic correction of distortions by gender, origin, age, culture, and other non-rational attributes.
2. **CEC (КЭК) audit** ¬ ethical and cognitive verification of the algorithms calculating CPR and CR thresholds, preventing discriminatory patterns (Heymans et al., 2016).
3. **Cognitive moratorium principle** ¬ protection from sharp losses of access and a guaranteed appeals procedure in case of temporary CPR declines.

As a result, CPR and CR function not as punishment mechanisms, but as **feedback loops** that encourage development and maintain system stability ¬ what Deci & Ryan (2000) call "autonomy supported from within."

4. The economic equivalent

If in capitalism the stimulus is extraction of surplus value, then in Noocracy it becomes **access to an expanded space of meaning and resources**, provided by IEKV.
This is the new form of "profit" ¬ **cognitive profit**, expressed not in the growth of private property, but in the increased share of the subject's participation in the collective mind.

Cognitive profit is the ability to act within a larger range of possibilities without disrupting the system's cognitive equilibrium.

This type of motivation corresponds to the observations of Frey & Jegen (2001) that excessive external incentives suppress intrinsic motivation ("crowding out"), and that restoring it is possible only through institutional recognition of autonomy and trust.

Empirical data on self-organization of common goods (Ostrom, 1990) and the economics of reciprocity (Fehr & Gächter, 2000) confirm: transparency of rules and feedback form stable intrinsic motivation even without coercion.

Thus, Noocracy does not eliminate incentives ¬ it **rationalizes** them:
instead of greed ¬ curiosity;
instead of accumulation ¬ development;
instead of rivalry ¬ expansion of shared rationality.

5. Result

Noocracy preserves the engine of progress ¬ the **difference of potentials** ¬ but purifies it from accumulation, randomness, and greed.
Each person moves not toward wealth, but toward greater cognitive capacity, responsibility, and access.
And society as a whole ¬ from a struggle for resources to a **competition in understanding**.

IV.5.5. The Energy-Cognitive Equivalent of Money

1. The abolition of money as a medium of exchange

In market systems, money performs three functions:
¬ medium of exchange,
¬ store of value,
¬ measure of value.

All three lose meaning when:

• exchange is replaced by a transparent balance of consumption and costs,
• accumulation becomes meaningless in conditions of guaranteed UBI and zero profit,
• value ceases to be a function of demand and becomes a function of contribution.

In Noocracy, **money as a universal intermediary disappears**; its place is taken by the **Energy-Cognitive Equivalent (ECE / ЭКЭ)** ¬ a metric that unifies physical and intellectual costs in a single informational format.

It is important to note that the **Entropy-Cognitive Equivalent (IEKV / ЭКЭ)** is *not* money in the traditional sense.
It is not a universal medium of exchange, but a **vector index of contribution**, reflecting the reduction of systemic entropy due to one's activity.

A detailed comparison of IEKV with classical monetary functions is given in Chapter V §3.4–3.5, where it is shown that economic liquidity in Noocracy is replaced by **functional equivalence** ¬ access to resources is determined not by the ability to buy, but by demonstrated contribution to systemic sustainability (see the Zero Profit Axiom and the Principle of Cognitive Justice).

Thus, IEKV is not capital, but a **metric of reversibility of energy and knowledge**, whose value exists only within the context of the overall Human Development Index+.

2. The energy component: transparent cost

All material operations are described in energy units ¬ joules or equivalent (EJ, TOE, etc.), because energy sources and raw materials are treated as public capital.
All production operates at marginal cost, and transparency of energy flows ensures balance across sectors and regions.

An **E-Cost Ledger** is the basic layer of noos-economics: an open, distributed accounting system of energy expenditures, integrated into the CEC Sustainability Hub.

3. The cognitive component: data entropy as a measure of contribution

Physical energy does not capture intellectual complexity or creative input.
Therefore a second scale is introduced ¬ the **entropy-cognitive scale**, evaluating the **incremental informational effect (ΔS_{info})** of each operation.

• For machines and AI agents, entropy is calculated through the volume of unique computational patterns (bit-entropy, model novelty).
• For humans ¬ through **cognitive originality**: the ability to create new relationships between data rather than duplicating existing patterns.

Thus, the measure of value shifts from **labour time** to **entropy of knowledge** ¬ from the number of hours spent to the amount of new information created.

This entropy is not reducible to bits: the CEC records cognitive uniqueness through the **ΔSc** **(Entropy-of-Cognition Index)**.

4. Separation of scales: human ↔ machine

To avoid direct comparison of human and machine entropy, two irreducible metrics are introduced:

Subject	Metric	Main Indicator	Comment
AI / automation	ΔS$_A$ (Algorithmic Entropy)	Novelty of computational solutions	reflects process-optimization speed
Human	ΔS$_C$ (Cognitive Entropy)	Semantic uniqueness / creativity	reflects depth of meaning integration

These scales can be related only through the **systemic utility norm** ¬ the share of improvement in overall HDI+ and sustainability metrics.

In other words:

the machine's contribution is measured in productivity;
the human's contribution ¬ in meaning.

5. Energy–Cognitive Equivalent (ECE)

The mathematical derivations describing the vector structure of the IEKV are provided in Appendix A ("Methodology for Modelling the ECE"), which contains the full normalization formalism and its connections to information theory (Shannon, 1948; Ayres, 1999).
In the main text, we use only the conceptual formula:

The ECE is considered in vector form:

$$\mathrm{EKE}(\mathcal{P}) = \left(\underbrace{\Delta E_{\mathrm{sys}}}_{\text{energy}}, \quad \underbrace{\Delta S_C}_{\text{human cognitive entropy}}, \quad \underbrace{\Delta S_A}_{\text{algorithmic entropy of AI}} \right)$$

where
- **Energy:** "how much was saved – how much was spent" (including exergy and externalities).
- **Cognitive component (human):** semantic entropy ↓ + originality ↑ + domain integration ↑.
- **Cognitive component (AI):** model divergence + non-stereotypicality + process-entropy reduction.
- **Two scales (ΔSc, ΔS^A) are not mixed, but may be aggregated transparently, with priority given to the human component.**

6. Entropic–Cognitive Contribution as a Non-Monetary Access Metric to Goods

1. The problem of the transition period

In Noocracy, profit is eliminated, which means that the function of money as a universal medium of exchange disappears.
However, during the transition phase two groups remain:

1. **The social contour** (citizens on UBI) ¬ they receive access to goods according to their CPR level;
2. **The active cognitive contour** (working contributors) ¬ they continue to generate measurable contribution, which requires a fair mechanism for accessing resources.

2. Fundamental constraint

Money cannot be replaced by an analogue ¬ "points" or "tokens" that can simply be spent. Such a system would lead to a renaissance of the market and the re-emergence of value-based inequalities.

Therefore, the measure of exchange must be **non-monetary, non-linear, non-transferable**, yet **accumulable and functionally applicable**.

3. Proposal: Index of Entropic–Cognitive Contribution (IEKV)

Definition

$$IEKV_i(t) = \int_{t_0}^{t} \widehat{\Delta S_C^i}(\tau)\, k_{\text{norm}}(\tau)\, d\tau$$

where

- $\widehat{\Delta S_C^i}$ ¬ normalized cognitive contribution of the subject (human) per unit of time.
- k_{norm} ¬ normalization coefficient of the transition period, depending on the ratio between human, machine, and energy contributions in the economy.
- The integral reflects the accumulation of contribution over time.

IEKV functions as a personal entropy balance ¬ showing how much meaning and efficiency a person has added to the system.

4. Principle of circulation (not money, but access)

- **Not spent.** IEKV is not depleted after receiving a benefit; it serves as an indicator of sustained contribution ¬ similar to a qualification level or academic reputation.
- **Converted into "access" (access tier):** the level of access to resources, projects, education, travel, etc., is determined by a function:

$$A_i = f(IEKV_i, CPR_i)$$

where CPR_i is the Cognitive-Personal rating (the ethical and cooperative component).
The function f is nonlinear to prevent any "capitalization of IEKV.

- **Differentiated by function** $A_i = f(CPR_i)$

o **For the social circuit →** access is determined only by the baseline guarantees; **IEKV is not used.** $A_i = f(IEKV_i, CPR_i, k_{norm})$

o **For the active circuit →** access tiers scale with **IEKV** (subject to ethical constraints and nonlinearity).

Comparable mechanisms of *collective synergy* are also documented in contemporary studies of human–AI interaction as cognitive partners (Martín-Núñez et al., 2023; Madanchian & Taherdoost, 2025).

5. Normalization coefficient k_{norm}
It is required to align the cognitive contribution with the real structure of the economy. A representative form:

$$k_{norm} = \frac{\eta_H}{\eta_H + \eta_A + \eta_E}$$

where
- η_H ¬ share of the human cognitive contribution in the total EKE (ECI),
- η_A ¬ share of the AI contribution,
- η_E ¬ the energy component.

Thus, if society still relies heavily on human contribution (early phase), $k_{norm} \approx$; as automation increases, it gradually decreases, yet the human contribution remains significant due to its uniqueness (ΔS_C).

6. Institutional implementation
- IEKV is recorded in the Cognitive Participation Registry (CPR) ¬ a secure yet transparent distributed system governed by the CEC.
- Every decision, project, invention, or act of public contribution receives its own ΔS_C evaluation, which is then added to the cumulative IEKV.
- The CEC annually normalizes the distribution of IEKV (Zero Bias), eliminating structural distortions across professions and regions.
- IEKV cannot be *transferred* or *purchased* ¬ it is bound to the rational-identity profile (CR-profile).

7. Ethical safeguards
- *No accumulation of power through points.* A high IEKV expands access but does not grant direct control over resources ¬ decisions are made through institutional forms (via CR-qualification, not a "wallet").
- *No inequality by origin.* Every person begins with IEKV = 0 and increases it solely through their own contribution.
- *No speculation.* IEKV cannot be bought, sold, inherited, or converted into other forms.

8. Possible formalization of the access function

$$A_i = \tanh\left(\lambda_1 CPR_i + \lambda_2 k_{norm} IEKV_i\right)$$

where

- $\lambda_1 > \lambda_2$ ¬ the ethical component has priority,

and the hyperbolic form prevents the accumulation of *"infinite privileged access."*

9. Transition Logic

Period	Nature of Exchange	Dominant Measure
I. Early phase	Money is retained, IEKV and SR are computed in the background	80% monetary, 20% cognitive
II. Transitional	Money is used only for external trade; internally ¬ IEKV/SR	50% / 50%
III. Mature noocracy	Full abolition of money; IEKV → access indicator, SR → trust indicator	0% money

10. Why this is not hidden money

• No universal convertibility: IEKV cannot be exchanged for a specific good 1:1.
• No circulation: it cannot be transferred, borrowed, inherited, or "spent."
• No fixed unit of value: access is determined by a nonlinear function with societal normalization.
• Ethical binding: SR is always included in all calculations, blocking "amoral efficiency."

11. Semantic exchange formula in noocracy

benefit = f(cognitive contribution, cognitive-personal rating, human systemic share)

and not, as in a market system:

benefit = f(money, demand, price).

12. Risk and Anti-Risk: the distinction between blockchain and IEKV

Modern decentralized currencies ¬ Bitcoin and its analogues ¬ are often perceived as a technological prototype of IEKV. In reality, their ontological nature is the opposite.

Blockchain systems implement trust through the principle of Proof-of-Work ¬ an energy-intensive procedure in which stability is achieved through reproducible risk.
They create an entropy-positive environment: security and issuance are ensured by energy expenditure, while value arises from scarcity and risk-premium.
This is a mechanism of stabilization through fear of error ¬ an economy in which risk is not eliminated but capitalized.

IEKV, by contrast, operates within an entropy-negative logic.
Each unit of IEKV is not the result of artificial scarcity but an equivalent of reduced systemic uncertainty.
Its issuance occurs when an action is recorded that orders information and increases the predictability of the environment ¬ the Proof-of-Reason mechanism.

Thus IEKV is not a cryptocurrency but an anti-risk equivalent of value, removing informational entropy and replacing rent with contribution.

It integrates into the monetary system as a superstructural layer of cognitive sovereignty, not as a supranational challenge.

If blockchain maintains trust through redundant verification, IEKV maintains it through the reproducibility of reason.

7. Hayek's Answer: The Cognitive Limits of Spontaneous Order

1. The core of Hayek's argument

Friedrich von Hayek (primarily *The Use of Knowledge in Society*, 1945) argued that:

- no central authority can know everything about local conditions,
- prices are a compressed signal aggregating the "dispersed knowledge" of participants,
- the market is efficient because agents are rational and react adequately to these signals.

In other words, a price is a "telegram" transmitting local knowledge to society at large.

2. The weak point

Once we acknowledge that behaviour is systematically irrational, the argument collapses:

- the price ceases to be a reliable carrier of knowledge,
- "information aggregation" becomes aggregation of cognitive biases,
- market dynamics turn not into an optimization tool but into a mechanism of mass misjudgement.

This is what empirical research began to demonstrate after the 1970s, and by the 2000s Hayek's theory became a major target of academic criticism.

3. Key lines of academic criticism

(a) Behavioural economics: irrationality as systemic, not random

- Daniel Kahneman and Amos Tversky (*Prospect Theory*, 1979) showed that deviations from rationality are not random but predictable: people systematically overweight small probabilities, underweight large ones, exhibit status quo bias, anchoring effects, etc.
- Richard Thaler (*Misbehaving*, 2015; *Nudge*, 2008) showed that even with full information, individuals do not act as "economic agents."
- **Implication:** if millions of actors systematically err, market prices aggregate errors, not knowledge.

(b) Informational failures and asymmetry

- George Akerlof (*The Market for Lemons*, 1970) demonstrated that information is distributed not only unevenly but strategically distorted. → Prices cannot transmit "true knowledge" when sellers know more than buyers.
- Joseph Stiglitz (*Information and the Change in the Paradigm in Economics*, 1987) generalized this into a theorem: markets with information asymmetry are not efficient.

(c) Social and behavioural network effects

- Stiglitz and Greenwald (1986) showed that even under partial rationality and imperfect information, markets lose optimality, and centralized coordination may yield superior outcomes.
- Herbert Simon (*A Behavioural Model of Rational Choice*, 1955) ¬ the originator of bounded rationality ¬ demonstrated earlier that cognitive limits make market decisions "satisficing" rather than "optimal."

(d) Empirical macro-critique

- Robert Shiller (*Irrational Exuberance*, 2000) showed, using data from NASDAQ and real-estate bubbles, that markets are systematically irrational and prices move according to herd-driven expectations, not knowledge.
- Joseph Tainter (1988) added a macrosystemic view: complex societies collapse not because of lack of information but because of cognitive overload ¬ which market self-organization intensifies.

Conclusion: Hayek's theorem does not survive realism

If we insert a real human being into his model ¬ with limited attention, emotions, and cognitive biases ¬ then:

The price signal becomes the sum of prejudices, not the sum of knowledge.

In other words, the market is not the "intelligence of society" but a filter of cognitive distortions that amplifies noise unless mechanisms of self-correction exist.

Table: Noocratic Interpretation ¬ Limits of Spontaneous Order

Mechanism	In Hayek	In Reality	Noocratic Interpretation
Dispersed knowledge	Local decisions sum into global efficiency	Local biases sum into global irrationality	Cognitive-ethical filtration of knowledge (CEC + ACC)
Price as signal	Transmits information	Transmits emotions and cognitive distortions; vulnerable to manipulation	Replaced by IEKV ¬ measure of rationality and ethical stability
Agent	Rational *homo economicus*	Bounded rational *homo biased*	Rational agent with embedded ethical filters (CR + CEC)
Coordination	Spontaneous order of the market	Self-amplification of noise	Self-organization with cognitive feedback
Outcome	Efficiency through chaos	Turbulence and bubble cycles	Stability through cognitive-ethical control

8. Counter-Analysis of Market Knowledge: From Hayek to the Financial Dogma

Hayek saw market prices as natural aggregators of knowledge. In financial markets this logic is taken to the extreme: price becomes not a reflection but a *source* of knowledge.

If for Hayek price carries knowledge, in modern finance price carries the expectation of central bank support.
The possibility of endlessly multiplying nominal asset values is sustained not by market efficiency but by the monetary multiplier and institutionalized belief that regulators will not allow prices to fall.

Market knowledge is replaced by knowledge that decline will be prevented.

Original postulate (what was promised)

The financial market is imagined as a "distributed computer" that via prices and arbitrage:

- efficiently aggregates information (EMH),
- rationally allocates capital and risk,
- hedges uncertainty through complex instruments,
- disciplines the real sector through the cost of capital.

Implication: deeper markets and more sophisticated instruments → better allocation.

Failure diagnostics (why it does not work in reality)

1. **Endogenous instability (Minsky / reflexivity):**
   Prices are formed inside the system by participants' positions; rising prices improve balance sheets → leverage increases → further price rises ¬ and vice versa.
   Instead of error-averaging: *herding* and bubble regimes.
2. **Information asymmetry and model risk:**
   "Derivatives on derivatives" add depth but not knowledge.
   Risk becomes unobservable (correlated tails, hidden betas), while explanatory models retro-fit the past (Goodhart: when a metric becomes a target, it ceases to measure).
3. **Agent incentives misaligned with system stability:**
   Short-term bonuses, shifting tail risks to the future, selling volatility as "yield," regulatory arbitrage ¬ all make individual irrationality rational.
4. **Liquidity loops and passive flows:**
   The dominance of passive strategies, buybacks, and indexation increases autocorrelation; liquidity disappears synchronously (flash/gap events) instead of smoothing shocks.
5. **Narrative dynamics (socio-cognitive layer):**
   Expectations are shaped by info-flows and memetic (incl. AI hype).
   Prices reflect stories competing for attention, not underlying knowledge.

Conclusion:

In the 21st century, financial markets often aggregate *biases and incentives*, not knowledge and risk.
They stop being the "brain of the economy" and become amplifiers of herd behaviour and generators of systemic risk.

Why the dogma persists and continues to exploit the rest of the economy

1. **Institutional inertia and the status of mathematics:**
   High formal complexity creates an aura of objectivity; "black boxes" legitimize decisions and rent extraction.
   (cf. Johannes Buchner, 2025: *Critical Mathematical Economics…*)
2. **The rent of financialisation:**
   Transaction fees, privileged access to issuance/liquidity, spreads, carry-trade ¬ stable sources of excess return under public socialization of losses ("too big to fail").
3. **Global power asymmetry:**
   Reserve currencies and global supply chains enable extraterritorial monetization ¬ shocks are exported to the periphery.

4. **Political-regulatory feedback:**
   Revolving doors, regulatory fragmentation, "market test" as universal excuse against structural reforms.
5. **Narrative capture:**
   "The market is always right" ¬ a simplified metaphor shifting responsibility onto the "invisible hand."
   (cf. Raju J. Das, 2023; Manfred Knoche, 2020)

Result:
The financial sector does not merely coexist ¬ it *exploits* other sectors via capital volatility, debt dependence, commodification of essentials, and appropriation of intellectual rent.

Empirical picture: finance vs. reality

By 2025, total global stock market capitalization exceeded USD 152 trillion (116.5T in developed, 35.5T in emerging markets).

- Nearly half ¬ USD 71.8T (47%) ¬ in the U.S.
- Ten companies (mostly tech and AI platforms) concentrate USD 25.3T, or 35.3% of the U.S. market.
- In comparison:
  - China's top-10 = 17.3% (3.3 of 19.1T),
  - Japan = 20%,
  - India = 21.5%.

Most concentrated markets:
Saudi Arabia (82%; 1.7T in Saudi Aramco), France (53.9%), Switzerland (54.4%), Taiwan (53%).
Most diversified: China, Japan, India.

By sectors:

- Technology ¬ 42T (29.5T USA),
- Finance ¬ 29.2T (11.1T USA),
- Industry ¬ 21.6T,
- Consumer ¬ 15.5T,
- Resources/Energy ¬ 15.3T,
- Healthcare ¬ 12T (biotech + pharma >10T).

For comparison:
Global oil & gas capitalization ¬ 6.2T; without Saudi Arabia ¬ 4.5T, less than *one* NVIDIA.

Interpretation: a radical disconnect between real and financial economies.

9. The Function of ECE (IEKV) in Transition Phases

Phase	Description	Institutional carrier
I. Hybrid	ECE used as auxiliary metric alongside money (energy cost + cognitive index)	CEC–Finance Lab
II. Cashless simulation	Financial accounting conducted in ECE; money remains nominal for legacy contracts	Data Commons Ledger

III. Full conversion	ECE becomes universal measure of exchange/balance; money loses circulation	CEC + Council of Reason

10. Ethical–economic meaning

The abolition of money does not eliminate value ¬ it transforms into a cognitive-energetic proportion, where exchange occurs not through purchase but through mutual inclusion in chains of meaning and processes.

Each act of participation is evaluated along two axes:

1. how much energy it saved (ecological contribution),
2. how much information it added (cognitive contribution).

Thus, the economy ceases to be movement of capital ¬ it becomes movement of meaning.

11. The Axiom of Cognitive Non-Convertibility (author's option)

In noocracy, cognitive indicators ¬ the Census of Reason (CR), Cognitive-Personal Rating (CPR), and the Index of Entropy-Cognitive Contribution (IEKV) ¬ are not media of exchange and cannot be sold, gifted, pledged, or otherwise alienated.

Attempts to convert these indicators into external forms of wealth (money, crypto, material goods) or use them for unlawful access to resources are treated as economic offenses against the system of evidence-based rationality.
Such actions undermine the validity of IEKV and CR, and therefore the stability of resource allocation.

Economic oversight algorithms (CEC-Economy modules) continuously monitor the alignment of consumption with declared contribution.

A mismatch between real spending and IEKV profile is recorded as a sign of "living beyond contribution" and triggers cognitive-financial audit.
If confirmed ¬ via illegal wealth, external capital injections, data forgery, collusion, etc. ¬ a set of measures applies:

- annulment of illegitimate assets,
- reduction of CR and blocking admission to governance roles,
- mandatory rehabilitation program ("Cognitive Responsibility").
- In severe cases (systematic use of external capital, corruption schemes, data falsification, collusion) → transfer to the Security Block (police, AI-justice), followed by adjudication and proportional sanctions.

This mechanism does not punish wealth per se ¬ it preserves fairness and the integrity of the contribution-weighted system.

The norm of life in noocracy is to live by contribution, not by imitation of contribution.

IV.5.6. The Modelled Economy of Reason

1. Problem statement

The classical opposition between "market" and "plan" has lost meaning in a world where AI and big data allow real-time modelling of needs and resources.
Historically, the boundary between these systems was determined by coordination costs (Coase, 1937), but with near-zero transaction costs and cognitive filters such as IEKV, this dichotomy disappears.

The *modelled economy of reason* is not a hybrid of planned and market systems, but a self-regulating loop that shifts between them depending on the state of entropy and cognitive transparency.

2. Definition

Definition.
A *modelled economy of reason* is a resource-allocation system in which every act of exchange passes through an energy-cognitive verification (ECE), and the control mode (planned $\leftrightarrow$ agent-based) is chosen dynamically based on the system's local entropy (ΔS) and forecast-model data.

- When ΔS > threshold $\rightarrow$ the coordination (planned) loop is activated, minimizing the dispersion of energy and meaning.
- When ΔS < threshold $\rightarrow$ the agent-market loop operates, ensuring diversity and adaptation.

Thus the economy becomes entropy-regulated without external coercion: the data structure itself determines the degree of freedom.

3. Example 1: food distribution

A thought experiment with food distribution clearly shows how noocracy resolves the "combinatorial explosion" of resource management while preserving human dignity and the principle of cognitive autonomy. This example demonstrates that even one of the most complex domains ¬ nutrition ¬ can be organized without coercion and without market rents when the underlying measure is the energy-cognitive equivalent (ECE) rather than profit.

1. Guaranteed minimum (low-entropy loop)

Public canteens with a fixed set of meals represent a rational form of providing the physiological minimum ¬ the first level of the Universal Basic Income (UBI).
UBI in noocracy guarantees food, housing, and medical care unconditionally, forming the basis of stability independent of market income.

Such an approach minimizes entropy: standardized recipes, planned supplies, and optimized cycles provide maximum efficiency at minimal computational cost.
This is the *"entropy-stable core"* of the survival economy, where resources are distributed not by wealth but by energy and health needs.

Depending on attendance, the number of fixed sets may vary from two ¬ for an optimal balance of choice and logistical complexity. If necessary, even a "free-choice set" can be offered.

2. Personalized distribution (high-rationality loop)

Role of ECE.
The energy component of ECE defines the boundaries of rational energy consumption for each

person. The system does not forbid preferences but keeps them in energetic equilibrium: a person may choose a dessert instead of soup, but cannot exceed their personal energy limit.

This limitation is not perceived as coercion ¬ it is a form of conscious freedom aligned with cognitive autonomy and the principle of "freedom through reason."

Role of AI and complexity.
Such scenarios reveal the necessity of artificial intelligence:
AI systems analyse and forecast the behaviour of millions of agents, adjust supplies, prevent surpluses and shortages, and ensure optimal matching between available resources and individual energy profiles.

Thus AI becomes not a tool of control, but a mediator between human desires and systemic sustainability.

Small private store and the social layer.
A private store, where the owner knows their customers and interacts directly, fits ideally into the principle of distributed agency.
Each such store is a node of collective reason, gathering and refining local preference data.

It functions as a "cognitive sensor" of the system, reducing informational entropy and converting chaotic tastes into predictable patterns.

In Hayek's terms, this is institutionalized dispersed knowledge embedded in the global IEKV data network.

Thus the private agent ceases to be a speculator and becomes a curator of rational choice.

4. Example 2: threshold adaptation and soft correction of activity

("The purpose of reason is not to replace the human being, but to help them remain themselves within a complex system.")

1. Threshold principle

The modelled economy of reason eliminates the binary opposition of "success" and "failure." Instead, it operates on the principle of dynamic efficiency thresholds, by which the system gently responds to a decline in the cognitive or production stability of a node (agent).

Each agent ¬ whether a human, cooperative, or digital service ¬ has:

- a **rationality threshold (PR)**
- a **stability threshold (PS)**

determined by CEC and ECE data.

$$PR = f(\text{decision quality, data entropy}), \qquad PS = f(\text{resource output, social engagement})$$

When approaching the threshold, the system does not apply sanctions but initiates a supportive adaptation scenario.

2. Soft forms of adaptation

1. **Cooperation offer.**
   If a private owner or agent cannot handle the load, the system offers them to merge with other participants while preserving personal autonomy and income within the BBD+ framework.
2. **Support from an advanced AI-agent.**
   If the problem is cognitive, the AI takes over managerial and analytical functions (procurement, planning, ECE logic), and the human focuses on the creative or craft side ¬ for example, baking the best pastries without being distracted by bureaucracy. This is not delegation of power but redistribution of cognitive load between the person and the system.
3. **Reorientation of activity.**
   In cases of systemic inefficiency, the system softly proposes changing the type of activity ¬ based on the cognitive profile and the needs of the community. The decision is formed as recommendations with transparent explanation (Explainable Governance), and the final choice remains with the person.
4. **Reverse learning of the system.**
   If the agent's failure revealed a structural defect in the model, the error is entered into the IEKV network as a cognitive correction ¬ the system learns together with the participant.

3. Ethical meaning

Such a mechanism eliminates the very idea of exclusion: no one "drops out" of the economy. Everyone remains a participant of the collective mind ¬ even if they have temporarily lost efficiency. This makes the system not only self-regulating but self-developing, where the weakness of an individual becomes a stimulus for the growth of the entire network.

5. Example 3: Reverse system learning and the scale effect

("In a noocratic economy, each error is learning, and each success is a model check.")

1. **Principle of cognitive feedback**
   Each deviation from rational equilibrium ($\Delta S \uparrow$) is perceived by the system not as a failure but as a new source of information.
   The IEKV network records changes in ECE indicators, behavioural patterns, and engagement metrics, and then compares them with model forecasts.
   If a human agent shows a stable result but below the efficiency threshold, the system looks for external causes: scale, access to infrastructure, local demand, cognitive overload, etc.

$$\Delta S_{\text{loc}} = f(\text{scale, time, cognitive load})$$

2. Example: a bakery as a cognitive node

Suppose the owner of a small bakery constantly operates at the limit: the products are high-quality, demand is stable, but resources (time, supply, staffing) are constrained.
From the perspective of traditional economics, such a business is "inefficient" and should be displaced by a larger competitor.

In the modelled economy of reason, the system interprets this differently:

• it recognizes a stable-demand pattern and records a high level of the agent's *"sensory contribution"* ¬ the ability to satisfy local tastes and generate social value;

• the AI module proposes scaling without loss of individuality: connecting to the shared IEKV supply algorithm, collective procurement, joint logistics and energy optimization;
• meanwhile, the baker remains in the creative layer ¬ baking, experimenting, interacting with customers ¬ while the managerial layer is handled by AI, increasing efficiency without depersonalization.

Thus emerges **scale without alienation** ¬ individual activity becomes a fragment of collective intelligence, and growth enhances meaning rather than erasing it.

3. Recurrent learning of the network

Each such case is recorded in the IEKV cognitive base as an adaptation precedent: data on the threshold, scaling parameters, and entropy change becomes material for updating the global model.
This forms **"reverse learning"** ¬ the system learns from people, and people learn through the system.

This creates a new form of symbiosis: reason not only governs the economy ¬ it *reproduces itself* within it, so the economy becomes not a survival tool but an environment for the evolution of reason.

4. Intermediate conclusion

Reverse learning is the ethical core of the modelled economy of reason.
Instead of excluding a weak link, the system strengthens the context in which it operates.

Sometimes efficiency requires not replacing a person but expanding their contour ¬ giving scale, energy, and knowledge while preserving their unique meaning.

Thus the system becomes not a hierarchy but a living organism, where each successful human experience makes the entire whole more intelligent.

5. Conclusion

The examples of food distribution, threshold adaptation, and reverse learning illustrate how Noocracy overcomes the limits of the two classical paradigms:

• centralized planning ¬ its rigidity and detachment from real preferences,
• pure markets ¬ their inequality, rents, and informational asymmetry.

Instead, a form of **rational equality** arises, where justice is measured not by price, but by the effectiveness of realizing human potential.
Order is not imposed from above ¬ it *emerges* from interconnected data flows, turning informational exchange into a governance structure.

Such an economy ensures both basic survival and the preservation of inner human freedom.

Analogy

If the traditional market is a noisy bazaar where prices shout about scarcity and surplus but distort true value,

and a planned system is a closed warehouse distributing the same goods by administrative order, then the noocratic economy is the **smart refrigerator of civilization**.

It knows how much energy each person needs (EKE), knows preferences (Big Data, tacit knowledge), and replenishes resources automatically ¬ allowing free choice of what to consume, while not allowing the system's health and sustainability to be violated.

And the seller-agent in this system becomes not a merchant, but a facilitator of conscious choice ¬ an intermediary between personal freedom and the reason of society.

4. Institutional implications

1. The type of ownership loses fundamental importance: the key factor is functional responsibility, not the ownership title.
2. Market and plan are not opposites but modes of a single system, regulated through feedback.
3. The metric of efficiency becomes not profit, but the sustained reduction of systemic entropy, verified by the CEC (Cognitive-Ethical Circuit).

5. Summary formula

$$E_{\text{macro}}(t) = f\left(\widehat{\Delta E_{\text{sys}}}, \widehat{\Delta S_{\text{C}}}, \widehat{\Delta S_{\text{A}}}\right) \quad \text{when} \quad \frac{d\Delta S}{dt} \to 0 \Rightarrow \text{plan–market equilibrium.}$$

where:

- $E_{\text{macro}}(t)$ — macroeconomic efficiency at time t;
- $\widehat{\Delta E_{\text{sys}}}$ — normalized systemic energy change;
- $\widehat{\Delta S_{\text{C}}}$ — normalized human cognitive-entropy contribution;
- $\widehat{\Delta S_{\text{A}}}$ — normalized algorithmic entropy contribution;
- the condition $\frac{d\Delta S}{dt} \to 0$ denotes a state of entropy stability, interpreted as **plan–market equilibrium**.

6. Brief Conclusion
A modelled economy of reason is the logical culmination of Noocracy:
the power of reason extends into the economy not through control,
but through the ability to foresee and stabilize the flows of life.
It turns the economy into a thinking system in which stability equals understanding.

IV.5.7. The Financial System and the Role of the Central Bank

The modern model of financial capital is abolished in Noocracy as a source of systemic instability and a generator of virtual wealth.
Mechanisms such as interest-bearing lending, fractional reserves, and the banking multiplier are recognized as institutional anomalies that distort the equivalence of exchange and create artificial monetary masses not backed by labour or real assets.

Financial markets in their current form ¬ derivatives, high-frequency trading, speculative IPOs, leverage, etc. ¬ are dismantled.
They are transformed into a system of real investment circuits directly linked to development projects: infrastructural, scientific, technological, educational, and social.

1. From a "Monetary" to an "Entropy-Based" Central Bank

In the classical system, a central bank regulates the money supply, interest rates, and inflation. In Noocracy, it becomes the **Centre for Entropy–Cognitive Balance (CECB)**, whose task is to maintain equilibrium among three-dimensional flows:

$$\text{EKE} = (\widehat{\Delta E}_{sys}, \widehat{\Delta S}_C, \widehat{\Delta S}_A)$$

The CEKB provides:
• transparent accounting of energy flows (*Energy-flow Ledger, E-ledger*);
• verification of cognitive contributions (via the *CEK–Financial Laboratory*);
• normalization of the k_{norm} coefficient, aligning human and machine labour.

The Central Bank ceases to be an "independent" institution in the old sense: it becomes part of the executive branch and is subordinated to the unified goals of national development policy, defined through SMART-targets and the Human Development Index (HDI).

At the same time, its **technical autonomy** in day-to-day operations is preserved (to prevent political interference in operational decisions), but **strategic planning** and the maintenance of the *Entropic–Cognitive Balance* become part of the unified contour of state rationality.

2. Functions of the CEKB

Classical function	Noocratic equivalent
Money issuance	Issuance of energy accounting units (*E-credits*) ¬ tied to the real energy potential of society.
Monetary policy	*Cognitive liquidity policy* ¬ regulating the rate of IEKV accumulation via k_{norm}.
Banking supervision	*Cognitive-ethical supervision*: auditing financial algorithms for speculation and bias (Zero Bias + Fairness Audit).
Inflation / interest rate	Indicators of *entropic imbalance* ¬ rising energy entropy without equivalent growth of knowledge-entropy.

3. Transitional instruments

1. **Hybrid currency basket**
   – domestically: EKE-accounting (energy + IEKV + CPR),
   – externally: *Cognitive SDR (C-SDR)* ¬ an index combining national energy intensity and HDI.
2. **Cognitive bonds (C-bonds)**
   Investments into knowledge infrastructure; returns are expressed not in %, but in *growth of IEKV per capita*.
3. **Stability reserve**
   An analogue to foreign-exchange reserves, but stored as **strategic energy stocks** and **knowledge assets** (patents, AI models, educational repositories).

4. Ethical function

The CEKB is not an instrument of power, but a guarantor of transparent exchange. Any redistribution of goods must preserve the entropic–cognitive balance of society.

If increases in IEKV and CPR are *not* accompanied by reductions in energy entropy, the CEKB introduces corrective quotas ¬ an analogue of an "ethical monetary rule."

IV.5.8. The Cognitive Financing Institute

1. General idea

In a post-monetary economy, financing is no longer capital turnover but the process of building collective cognitive potential.
The **Institute of Cognitive Financing (ICF)** unites networks of public and private structures ¬
Agents of Cognitive Financing (ACF) ¬ acting as low-level agents of the CEKB.

Their mission:
to direct resources, knowledge, and energy into domains where the expected increase in the entropic–cognitive contribution ($\Delta S_C + \Delta S_A$) per unit of energy is maximal.

2. Institutional architecture

Level	Body	Function
CEKB (Centre for Entropic–Cognitive Balance)	Upper layer	Defines EKE-accounting rules, normalization coefficients, limits of cognitive liquidity.
CEK (Cognitive–Ethical Contour)	Ethical oversight	Audits investment algorithms for *Zero Bias* and compliance with the axiom of predictive humanism.
ACF (Agents of Cognitive Financing)	Executive layer	Analyse applications, calculate project EKE-profiles, form portfolios of cognitive bonds (C-Bonds).
RCC (Regional Cognitive Circuits)	Coordination	Collect local IEKV data, launch pilot programs, maintain regional cognitive funds.

3. C-Bonds (Cognitive Bonds)

A **C-Bond** is the fundamental instrument of cognitive financing ¬ analogous to a classic bond, but with a different basis of return.

Parameter	Description
Object of investment	A project with measurable $\Delta EKE > 0$ (energy saving + knowledge growth).
Return	Non-monetary ¬ expressed as an increase in IEKV of participants or collective sustainability index.
Redemption	When a predefined level of ΔS_c or ΔS^A is reached, confirmed by CEK-audit.
Risk	Ethical risk ¬ a drop in cognitive autonomy or algorithmic bias; penalized by lowering the ACF rating.

C-Bonds circulate in the **Registry of Cognitive Investments (RCI)** ¬ an open CEKB platform where parameters, participants, and outcomes of all projects are recorded.

4. Flows and circuits

Financial flows → are replaced by flows of knowledge and energy.
Each ACF balances three parameters:

$$\Delta E_{\text{sys}} + \lambda_1 \, \Delta S_C + \lambda_2 \, \Delta S_A = 0$$

"which ensures 'zero profit' while maximizing systemic gain.
Each quarter, AKF units report to the CEKB on realized parameters:
• ΔEKE of all projects,
• the cumulative IEKV,
• the distribution of cognitive dividends among participants.

5. Cognitive funds and dividends

The Institute of Cognitive Financing (ICF) forms Cognitive Development Funds ¬ pools funded by:
• a share of the public UBI (in the form of contributions from CPR-citizens);
• surpluses of ΔEKE (energy, knowledge, models);
• C-bonds and cognitive licenses.

Each fund pays IEKV-dividends to those who have contributed a verified cognitive input to the development of a project or sector.
A dividend is *not* income in the monetary sense:
 ¬ it increases IEKV and therefore the access tier (A_i) to extended goods and educational opportunities.

6. Types of cognitive-financing agents

Type	Core profile	Examples
Corporate AKF	Refinancing R&D, increasing ΔSc of companies	R&D cooperatives, tech hubs
Public AKF	Micro-investments by citizens into local cognitive projects	Eco-communities, civic labs
Regional AKF	Balancing energy flows and IEKV-growth in a territory	Regional CEKB agencies
AI-financing agents	Automatic portfolio optimization by ΔEKE	Ethical digital managers under CEC oversight

7. Transitional role of classical banks

Classical private banks remain during the transition as AKF infrastructure,
but their balance sheets are fixed not in monetary units but in **ΔEKE and IEKV**.
They manage cognitive portfolios, conduct energy accounting, and participate in the issuance of C-bonds ¬ all under the rules of **Zero Profit** and **Zero Bias**.

8. Ethical framework and transparency

All data on projects, ΔEKE metrics, and AKF ratings are published in the open **Cognitive Registry**, enabling public verification.
AKF ratings and access to portfolios depend on **Public Efficacy Score** ¬ the index of systemic benefit.

The ethical filter is not CSR, but an embedded self-correction contour supervised by the CEC.

9. Elimination of rent seeking as a structural property of cognitive financing

In the classical financial system, rent emerges from information asymmetry, privileged access to capital, and the speed of money circulation.
When money is the bearer of value, its concentration inevitably produces power, turning finance into a self-sustaining meta-institution feeding off the rest of the economy.

In the noocratic model this mechanism dissolves automatically for three fundamental reasons:

• Abolition of the currency-intermediary.

Exchange is performed not through an abstract monetary equivalent but through the **direct accounting of the energy-cognitive balance (EKE)**.
Value loses its circulating form ¬ it cannot be "capitalized," and thus rent loses its foundation.

• Symmetry of information.

All EKE and IEKV transactions occur in **fully transparent registries** (CEKB + CEC).
No informational advantage → no possibility of arbitrage or exploiting temporal gaps in knowledge.

• Shift in the criterion of efficiency.

Instead of monetary yield, the key metric becomes
ΔEKE / Δt ¬ the rate of growth of collective knowledge and systemic sustainability.
Any project that does not increase the cumulative energy-cognitive potential *cannot* be "profitable" by definition.

As a result, the financial system loses the ability to dominate other sectors.
It becomes a **service function** of collective intelligence, not an autonomous locus of accumulation.
Rent disappears not as a regulated object but as an unnecessary variable whose meaning collapses in a transparent, post-monetary balance.

Thus, in noocracy the elimination of rent is not an administrative measure, but an organic consequence of redefining value: from profit to sustainability, from capital to cognitive contribution.

The Institute of Cognitive Financing turns the financial sector into a system of distributed intelligence:
capital is replaced by knowledge, profit ¬ by IEKV growth, and the debt economy ¬ by an economy of trust and meaning.

IV.5.9. Principle of Asymptotic Dismantling of Financial Rent

1. Essence of the principle
The transition to a post-monetary economy requires the gradual (asymptotic) removal of production's dependence on capital profitability.

The goal is to shift all financial relations into the EKE domain, where value is measured not by profit, but by gains in sustainability and cognitive contribution.

2. Phases of dismantling

Phase	Description	Regulator	Measure of value
I. Monetary	Money remains; EKE introduced in pilot programs.	Central Bank + CEC	money + EKE
II. Hybrid	Internal settlements in EKE; remuneration in IEKV-units.	CEKB	EKE + IEKV
III. Post-monetary	Money loses its exchange function; retained only for external trade.	CEKB + CEC	EKE + CPR + IEKV

(CEC = Cognitive-Ethical Contour; CEKB = Centre for Entropic-Cognitive Balance)

3. Control mechanisms
• Financial stress-testing in EKE coordinates: modelling the transition via the "rent / contribution" coefficient.
• Restricting speculative operations: introducing an **entropy tax** ¬ an extra coefficient applied to transactions without real ΔSc or ΔS^A.
• Gradual reduction of the money multiplier: private banks evolve into "cognitive financing agents" (see below).

4. The role of IEKV in the transition

$$D_t = \beta_1 \, \mathrm{EKE}_t + \beta_2 \, IEKV_t + \beta_3 \, CPR_t$$

where D_t is the level of access to financial resources.

IEKV replaces collateral value: access to funds is determined by an individual's and a team's contribution to cognitive development.

5. Ethical framework (CEC and CEKB)
• Every financial model undergoes a **Zero Bias Audit**.
• The **principle of predictive humanism** ensures priority for human contribution in all allocation processes.
• All dismantling simulations are published in an open registry (Transparency + Reflexivity).

The Central Bank becomes the CEKB ¬ the guarantor of entropic equilibrium ¬ and the financial sector transforms into a cognitive-ethical infrastructure for contribution accounting.
Profit is replaced by growth in energy-cognitive efficiency, and access to resources is defined by **IEKV and CPR**, not by monetary capital.

IV.5.10. Tax-and-Transfer System

1. Transition Period (Monetary Economy)

This system operates during the transitional phase ¬ until IEKV equivalents and energy-cognitive value measures are fully established. Its purpose is to stabilize the transition while preserving fairness and predictability.

To keep UBI sustainable and contain inequality, a progressive taxation system is introduced, where rates rise with income and status but remain predictable.

1. **Income tax** is built on a smooth progressive curve, approaching a logarithmic shape while still increasing steadily with total income.
   This eliminates the *success trap* at bracket transitions while ensuring systemic redistribution toward the lower and middle strata.

   In Noocracy, *income* includes all forms of economic gain ¬ labour, entrepreneurship, asset appreciation.
   UBI ("BBD") is *not* treated as income but as a component of the socially guaranteed infrastructure of existence.
   It compensates for physiological and cognitive needs, ensuring a minimum level of Human Development (HDI) regardless of economic activity.
   Receiving UBI is **not taxable** ¬ eliminating the "poverty trap," where taking paid work reduces actual disposable income.

   This construction turns UBI into a **constitutional right**, not a welfare mechanism ¬ a stable foundation for a rational and fair tax progression.

   Thus the progressive scale maintains incentives but eliminates upward redistribution by transforming capital income into a public developmental resource.

2. **Wealth tax** applies to static assets exceeding a threshold; funds go to the UBI pool.
3. **Inheritance tax** is phased in to counter capital concentration, with exemptions for investments in education and science.
   The long-term goal: eliminating inheritance of assets entirely ¬ except for *cognitive inheritance*.
4. **CPR (Cognitive-Personal Rating)** influences tax-benefit coefficients: high public engagement reduces fiscal burden.

This model creates a closed redistribution loop where resources return to society without suppressing initiative.

2. Advanced Noocracy (Post-Monetary Economy)

In the mature phase, monetary taxes lose meaning: costs and benefits are expressed in **EKE** (Energy-Cognitive Equivalents).
Access to public goods is governed by a **tanh-function** of individual IEKV and CPR ¬ ensuring smooth saturation of needs without incentivizing accumulation.

1. Abolition of classical taxes

Income and capital taxes are abolished entirely as redundant intermediaries.
Only **ecological and resource regulators** remain, expressed as energy coefficients (energy footprint, cognitive footprint).

2. Direct IEKV ⟷ benefit exchange

Each individual has an IEKV profile ¬ accumulated energy-cognitive contribution.
IEKV is not a currency but a *right of access* to levels of goods: higher contribution → higher access priority.

Access is **asymptotic** (tanh-curve): once reasonable sufficiency is reached, extra IEKV yields no extra access ¬ eliminating rent incentives.

3. Collective compensation

Traditional redistribution institutions are replaced by **IEKV balancing**:
Public funds (UBI, education, ecology) automatically receive cognitive and energy surplus from those whose IEKV exceeds the system's mean.
This is not taxation ¬ it is **cognitive-energetic homeostasis**.

4. Equilibrium metric

The total IEKV of society should approach a *zero-sum balance*, analogous to a balanced trade account:
Excess contributions and excess consumption are compensated through benefit allocation and cognitive obligations.

5. Role of the Central Bank and private banks

The Central Bank becomes the **Centre for IEKV Balance**, monitoring the stability of energy-cognitive flows.
Private banks transform into **cognitive financing agents (C-Funds)**, investing in projects with demonstrably positive IEKV impact.

IV.5.11. The Problem of Capital Flight and Mechanisms of Neutralization

Systemic transformation of an economic model always carries the risk of capital flight ¬ especially during a transitional phase when old rules have been abolished but new ones have not yet earned social trust.
The most mobile part of the population ¬ managers, large business owners, financial-sector specialists ¬ possesses both mobility and access to cross-border channels for moving assets.
Without compensatory mechanisms, this leads to an immediate outflow of liquidity, erosion of human capital, and a sharp contraction of the fiscal base.

In Noocracy, this challenge is addressed through a combination of economic, institutional, and cognitive-ethical instruments that avoid coercion while creating a stable, rational motivation to keep capital within the country.

1. Institutional Instruments

• **Transitional currency corridor.**
During the first years, partial convertibility of the national currency is preserved.
Capital exports above a defined threshold are allowed only through *investment channels* ¬ conditional on reciprocal investment in real domestic projects.

• **Investment-exchange regime.**
A resident who wants to move capital abroad may do so only after making equivalent investments in national projects, infrastructure, or socio-technological development funds.

• **"Mirror asset" mechanism.**
All large financial operations must create a mirrored asset on a national platform, legally linked

to the original via a digital registry.
This prevents capital erosion without imposing a blanket prohibition on transfers.

2. Economic Incentives

• **Negative arbitrage regime.**
Returns on investments in national development funds and cooperative ventures are deliberately set higher than returns on comparable foreign instruments, taking into account tax advantages and a reputational coefficient.

• **National sustainability premium.**
Capital invested long-term domestically receives *social asset* status and grants the owner additional benefits: higher CPR, preferential access to public procurement, advantages for descendants in education and science.

• **Repatriation amnesty with reverse capitalization.**
For already expatriated capital, a voluntary return mechanism is introduced: funds may be brought back in exchange for immunity from tax prosecution and the right to participate in Noocratic investment pools.

3. Cognitive-Ethical Instruments

• **Capital as public obligation.**
In the Noocratic social contract, large capital is not a private privilege but a form of *entrusted stewardship* of shared resources.

• **Ethical sustainability rating.**
Unreciprocated capital outflow lowers the CPR of the owner and the affiliated organization. Systematic outflow results in loss of certain civic privileges ¬ access to public procurement, licenses, representation in civic councils.

• **Principle of rational patriotism.**
Through education and public communication, a new norm of success is cultivated: not "extract and preserve elsewhere," but "invest and amplify within."

4. International Measures and Legal Guarantees

• **Bilateral agreements on capital responsibility.**
Noocracy establishes the principle that offshore movement of assets does not remove their legal obligations to the country of origin (ecological, tax, social).

• **Joint funds with partner countries.**
Part of capital may flow into international projects ¬ but under the jurisdiction of the national Central Bank, preventing final loss of control.

5. Extraterritorial Jurisdiction and Principles of Restorative Justice

To minimize risks of systemic sabotage or deliberate evasion of societal obligations, Noocracy introduces **extraterritorial responsibility**.
Actions of citizens and residents that cause systemic harm (financial, ecological, informational) do **not** lose legal significance when a subject changes jurisdiction.

This is not a punitive doctrine but a principle of *restorative equivalence*:
capital extracted from the social field without fulfilling reciprocal obligations remains subject to lawful claims ¬ including international search, asset freezes, and compensation orders.

Implementation relies on two layers:

• **Legal layer:**
International agreements on mutual recognition of obligations; digital provenance registry for capital.

• **Cognitive layer:**
Automatic reputational consequences recorded in the global trust network ¬ reduced CPR, blocked access to scientific, financial, and educational platforms.

Thus, extraterritorial responsibility in Noocracy serves not retribution, but the restoration of fairness and system reversibility.

A Modern Precedent: Noocracy as a Logical Extension of Existing Norms

Noocracy does not invent extraterritoriality; it *systematizes* what already exists:

• **FATF (Financial Action Task Force):**
Allows freezing/return of illicit assets regardless of location.

• **ESG compliance:**
Transnational accountability tool generating non-monetary sanctions for violating global sustainability norms.

• **KYC/AML regimes:**
Effectively abolish anonymity of capital, establishing global precedents for cross-border legal oversight.

Noocracy extends these norms into the cognitive domain.
Every subject ¬ individual or corporate ¬ has a digital identity linked to their cognitive-ethical profile (CPR, decision history, social-benefit trace).
Thus, harmful actions (illegal capital outflow, sabotage of development projects, fictitious capitalization schemes) automatically affect both reputational and legal status ¬ eliminating the incentive for unethical behaviour.

This produces a **self-correcting equilibrium**:
ethical conduct is not imposed but becomes the rational choice.

6. Transitional Phase

Control and restriction measures operate **only** during the transition period ¬ until the Noocratic financial system stabilizes and public trust is established.
Afterward, direct restrictions are gradually lifted and replaced by mechanisms of reputation, CPR, and rational motivation.

IV.5.12. Targets for the Gini Coefficient and the Governance of Equality

Postulate of systemic stability (Gini Axiom).
Long-term cognitive and social stability of a civilization (the SW-scenario) is postulated as achievable *only* under the condition of eliminating extreme inequality.
A target income Gini < **0.12** and a wealth Gini < **0.25** is treated as a *structural requirement* for transitioning toward an equilibrium economy and removing deep social stratification.

The target wealth-Gini range **< 0.25** is not ideological but statistical: historically, this interval shows the highest correlation between stable HDI growth and social stability.

Maintaining this range requires dynamic redistributive control:

• AI-models forecast real-time changes in the Gini coefficient;
• taxes, transfers, and investment programs are adjusted accordingly;
• an "automatic stabilizer" is triggered ¬ if Gini exceeds **0.3**, the system increases taxation on upper deciles and expands transfers to lower ones.

Thus, the Gini coefficient becomes not just a statistical indicator but a *feedback regulator* embedded in Noocracy's economic algorithm.

IV.5.13. Patent Law and Science–Technology Policy

One of the most controversial, yet logically necessary components of Noocracy is the restriction and eventual dismantling of patent law.
This transition is phased and adaptive:

1. **Transitional period (national layer).**
   While Noocracy is not yet a dominant global system, it formally complies with international patent agreements ¬ following the pattern of China and India: compulsory licensing, reverse engineering, and the use of "grey zones" of knowledge to achieve technological sovereignty.
2. **Phase of global consolidation.**
   Once Noocracy gains international weight, patent law is re-shaped toward *public licenses*: knowledge produced using public resources becomes part of the commons.
3. **Post-patent regime.**
   Long-term, knowledge is treated as public capital. Inventors are rewarded through *reputational and rating dividends*, rather than exclusive patents.

To ensure technological parity during the transition, the mandate of the Foreign Intelligence Service is expanded to include *scientific-technical intelligence*: strategic knowledge security, interception and analysis of innovations, reverse engineering, and mining of open knowledge databases.

This is not a violation of international law when it is paired with investment in local innovation and respect for licensing in critical-security domains.

IV.5.14. The Axiom of Compensatory Incentivization

With the abolition of private intellectual rent and patent exclusivity, Noocracy maintains incentives for scientific and creative work through **institutionalized open cognitive funds**, the **IEKV index**, and **public recognition of authorship**.

Reward is not expressed in profit or ownership, but in the accumulation of *cognitive capital* ¬ a quantity that increases an individual's access A$_i$ to resources, projects, and participation levels.

Core implementation principles

1. **Abolition of the patent barrier.**
   All discoveries and inventions become part of the public **Cognitive Registry (CR)**, governed by KEC and CECB.
   Instead of a patent: a public priority timestamp + a ΔSc (entropy-cognitive contribution) assessment.
2. **Compensation mechanism.**
   Every registered contribution automatically generates a compensatory entry in the Cognitive Fund:

$$R_i = f\left(\Delta S_C^i,\; CPR_i,\; k_{\text{norm}}\right)$$

where:

- *Ri – reward index*, reflecting the individual's contribution to collective knowledge;
- *ΔS^i_C* – the person's entropy–cognitive contribution;
- *CPR$_i$* – Cognitive–Personal Rating;
- *k$_{norm}$* – the transition-period normalization coefficient.

He is not converted into money but into an increase in **IEKV** and in the individual's level of **social access A$_i$**.

3. **Open Cognitive Funds.**
   Instead of traditional grant programs, the system relies on distributed pools of knowledge and computational resources. Researchers and developers gain access to them in proportion to their IEKV and their verified ΔS$_C$ contributions.
4. **Elevation of social status.**
   Society recognizes high IEKV and verified discoveries as markers of personal reputation, replacing economic "capital" with cognitive capital. This is reflected in access to governance and educational circuits, not in income.
5. **Cognitive dividends.**
   For collective outputs (publications, open-source solutions, AI models), contributors receive an IEKV-dividend ¬ a non-monetary form of public recognition that increases their individual cognitive–personal rating.

Philosophical–economic meaning

Classical capitalism motivated through **rent** ¬ the appropriation of the gap between knowledge and ignorance.
But in a system where knowledge instantly becomes a shared public asset, rent loses its meaning. Therefore, in Noocracy, the motive shifts from *ownership* to *contribution*.

A person does not "own an invention" economically; the unconditional right of authorship and priority is preserved, yet the invention itself is treated as part of a collective process of cognition. The author does not alienate the discovery but participates in its continuation ¬ in the accumulation of collective knowledge that expands the potential of the entire system.

Thus, Noocracy separates the **right to recognition** (inalienable) from the **right to extract rent** (abolished), shifting motivation from possession to participation.

Reward is not profit ¬ it is recognition within the architecture of reason.

Formula of cognitive priority and recognition

Let
• A_i ¬ the author,
• O ¬ a discovery or invention,
• $\Delta S_C^i(O)$ ¬ the measured entropy-cognitive contribution of the author to the creation of the discovery,
• t_0 ¬ the timestamp of priority registration (in the Cognitive Registry, CR),
• $CR(O)$ ¬ the public record of the discovery.

Then:

$$CR(O) = \{A_i,\ t_0,\ \Delta S_C^i(O),\ IEKV_i(t_0)\}.$$

The Recognition Right R_{auth} is defined as a non-transferable correspondence:

$$R_{\text{auth}}(A_i, O) = \begin{cases} 1, & \text{if } \Delta S_C^i(O) > 0 \ \wedge\ t = t_0, \\ 0, & \text{otherwise.} \end{cases}$$

No economic ownership right is formed:

$$R_{\text{own}}(A_i, O) = \varnothing.$$

Instead, a **Right of Continuation** arises:

$$R_{\text{cont}}(A_i, O) = f\big(IEKV_i(t),\ \Delta S_C^i(O),\ CPR_i\big),$$

where R_{cont} determines the author's share of IEKV-dividends and access to subsequent phases of open research.

IV.5.15. The Role of AI in Allocation and Oversight

AI platforms in the economic block perform three functions:

1. **Data collection and verification.**
   All economic operations are aggregated into a unified distributed accounting system, where anonymized data are used to build simulation models.
2. **Forecasting and simulation.**
   Before any changes to taxes, subsidies, or UBI, computational scenario simulations are run, assessing unemployment risks, inflation effects, and social responses.
3. **Control and auditing.**
   AI automatically detects corruption patterns, anomalies in declarations, and mismatches between expenditures and income.

The primary task is to minimize subjective intervention and replace it with a transparent model of *"justified redistribution."*

IV.5.16. Phased Economic Transformation

Unlike the shock reforms typical of the 20th century, noocracy adheres to the principle of evolutionary economics of reason. Every step follows the cycle:

modelling → pilot → evaluation → scaling.

1. **Modelling.**
   AI simulators test the effects of new measures on synthetic populations, evaluating HDI and Gini dynamics.
2. **Pilots.**
   Policies are introduced in limited regions or sectors; results are examined by independent experts.
3. **Evaluation.**
   Impacts on growth, inflation, employment, and perceived fairness are measured.
4. **Scaling.**
   Measures expand only after positive results.

This approach reduces the risk of economic shocks and builds institutional trust. Although it increases implementation time, it minimizes the long-term social cost.

IV.5.17. Cognitive-Personal Rating and Personal SMART Goals

The **Cognitive–Personal Rating (CPR)** connects economic incentives with societal benefit. It includes:

• participation in volunteering and scientific projects;
• philanthropic activity;
• law-abiding behaviour and income transparency;
• educational engagement;
• peer feedback and independent 360° assessments.

A high CPR increases access to the third tier of UBI and reduces tax load.
Every citizen formulates personal SMART development goals ¬ with specific, measurable, and achievable parameters.
AI systems assist in monitoring them, forming a *"human capital portfolio."*

IV.5.18. Correlation Between HDI and Gini: The Empirical Base

According to UN HDR data, there is a strong negative correlation between HDI growth and inequality:
every +0.05 in HDI corresponds, on average, to −0.03 in the Gini coefficient.

For noocracy, this is empirical justification: reducing inequality does not hinder development ¬ it *unlocks cognitive potential*.
Thus, economic policy is built not around *"equality of outcomes"*, but around **equal capability to realize reason**.

IV.5.19. Risks and Countermeasures

1. **Demotivation risk.**
   Excessively generous transfers may reduce work incentives.
   Countermeasure: *rating modulation* ¬ higher payments tied to activity and CPR.
2. **Corruption risk.**
   Strengthened AI-audit and mandatory digital trace for every operation.
3. **Public misunderstanding risk.**
   Large-scale education in financial and cognitive literacy.

IV.5.20. Social Ecology and Sustainable Cooperation

The economy of noocracy aims to minimize entropy ¬ preserve resources and prevent parasitism.

• Production must be cyclic ("zero waste" principle).
• Investments go to projects that increase HDI and ecological sustainability.
• Digital twins of the economy track long-term welfare impacts of every measure.

This forms **social ecology**, where economic and environmental factors are integrated into a unified cognitive model.

GEP 2025 estimates decarburization costs at **$5–7 trillion annually** (McKinsey, 2025, p. 30), requiring AI optimization within noocracy to achieve SMART sustainability goals.

IV.5.21. Conclusions

The socio-economic block of noocracy represents a balanced model in which:

1. The economy serves human development, not the reverse.
2. UBI guarantees baseline security but preserves growth incentives.
3. Gini and HDI become controllable indicators embedded in feedback loops.
4. Patent policy and technological intelligence ensure innovative sovereignty.
5. Reforms are introduced evolutionarily ¬ via simulations and pilots.

The result is an economy of rational equality, where fairness is measured not by wealth redistribution but by the effectiveness of realizing human potential.

IV.6. Health Block: Ensuring Physical and Mental Well-Being

IV.6.1. Health as a Function of HDI and Societal Resilience

In classical medical systems, health is defined as the absence of disease, and efficiency is assessed through the volume of services provided. Noocracy fundamentally reconfigures this paradigm: health is understood as an active component of human capital and a direct determinant of the Human Development Index (HDI).

The key target indicator becomes **Health Span** ¬ the total duration of life lived without chronic diseases or functional limitations. In this framework, medicine shifts from a *reactive* model (addressing consequences) to a *preventive–cognitive* model that anticipates causal factors.

This paradigm shift requires a novel system of incentives and accountability:

- healthcare institutions are evaluated not by the number of patients or procedures but by the increase in the average duration of healthy life within the population;
- physicians are rewarded for **prevented** illnesses rather than performed interventions;
- AI functions as an integrator of data, identifying correlations between lifestyle, psychological state, and social parameters.

IV.6.2. Principles of Healthcare Organization in Noocracy

1. **Prevention as a foundational priority.**
   National programs emphasize early diagnostics, vaccination, and genetic and cognitive screening. Every citizen is required to undergo a comprehensive health assessment every 2–3 years; the results are automatically incorporated into their personal digital profile (with optional anonymization for research purposes).
2. **Individualized medicine.**
   Genomic and metabolomics maps, together with AI-based disease-prediction models, allow the system to operate not on the "average patient", but on the individual's biological and cognitive trajectory.
3. **Integration of physical and mental health.**
   Psychological state is treated as an equivalent component of health. Rating systems include indicators of stress resilience, participation in preventive programs, and absence of harmful dependencies.
4. **Digital health accompaniment.**
   Every citizen receives a personal **Digital Health Passport**, synchronized with AI-driven monitoring. This is not a surveillance tool, but a system of adaptive recommendations and early-warning alerts.

IV.6.3. The New Role of the Physician: From Statistician to Health Engineer

Modern medical institutions typically operate on a logic of quantitative reporting ¬ numbers of visits, operations, or bed-days. In Noocracy, a qualitative assessment framework is introduced, with the central indicator being the **healthy life expectancy** of the population within a physician's district or institution.

The physician becomes a **health engineer**, rather than a mere executor of medical protocols. Their responsibilities include:

- designing long-term preventive programs for population groups;
- identifying social and cognitive determinants of illness (stress, inequality, digital overload);
- employing AI-driven analytics to assess disease probabilities and optimize patients' lifestyle trajectories.

Compensation for physicians and institutions is tied to:

1. reducing the share of chronically ill individuals within the observed group;
2. increasing the average duration of healthy life;
3. lowering treatment costs without compromising overall health indicators.

This framework establishes a system of **cognitive-medical efficiency**, wherein the intelligence and empathy of the physician become measurable economic factors.

IV.6.4. Integration of Health into the Census of Reason and the Cognitive-Personal Rating

Based on file evidence: health indicators included in Reason Census (ЦР) and CPR, behavioural incentives, preserved universal healthcare

In Noocracy, health metrics are incorporated into both the **Census of Reason (CR)** and the **Cognitive–Legitimacy Rating (CPR)** as indicators of an individual's rational attitude toward their own body and their contribution to the community.

- Compliance with medical recommendations, participation in donation programs, and abstention from harmful habits all contribute positively to the CPR.
- Systematic neglect of preventive measures, refusal to undergo mandatory health checks, or the intentional propagation of harmful behaviours lead to a reduction in the CPR.
- The system remains fundamentally humane: **basic and emergency medical care are guaranteed regardless of rating**. The rating affects not access to essential services, but the level of supplementary benefits ¬ such as extended health programs, sports subsidies, priority access to transplantation, or advanced life-extension and cyber-implant technologies.

This approach creates a positive feedback loop: society incentivizes health not through punishment, but through rewarding rational behavioural patterns.

IV.6.5. Compulsory Treatment of Addictions and the Balance of Individual Rights

Based on file evidence: multi-level intervention, cognitive–ethical council, justification requirement

Addictions ¬ alcohol, narcotics, gambling, and digital dependencies ¬ present one of the most sensitive challenges for the health block. Noocracy adopts the principle of **cognitive rehabilitation**, whereby intervention is justified only if an individual's behaviour leads to a loss of rational agency and creates societal harm.

The intervention protocol consists of several stages:

1. **Voluntary engagement** ¬ triggered by early detection through AI monitoring or medical examinations.
2. **Soft corrective measures** ¬ temporary restrictions (e.g., licenses, driving permissions, temporary reduction of BBD benefits) combined with access to rehabilitation programs.
3. **Compulsory treatment** ¬ applied strictly when there is verified risk to other persons or systemic harm (e.g., domestic violence, dangerous driving, high-responsibility occupations).

All compulsory measures adhere to the principles of **evidence-based justification** and **auditable decision-making**. The decision is issued not by a bureaucratic authority but by a **Cognitive–Ethical Council**, which includes a physician, psychotherapist, legal expert, and an AI risk-assessment module.

Thus, intervention becomes a rational and non-punitive act.

IV.6.6. Ethical Frameworks for Medical Intervention

Based on file evidence: three principles, algorithmic transparency, cognitive confidentiality

Medicine in Noocracy rests upon three core ethical principles:

1. **Rational autonomy.**
   Individuals retain the right to accept or refuse treatment unless their decision threatens the cognitive or physical integrity of themselves or others.
2. **Justification of intervention.**
   Any compulsory measure must be grounded in a verifiable causal rationale.
3. **Algorithmic transparency.**
   Medical AI systems must undergo certification and independent audits; every patient possesses the "right to interpretation" ¬ the right to receive an intelligible explanation of algorithmic decisions.

A particularly important aspect is **cognitive privacy**: the protection of data concerning mental states, neuromonitoring, and genetics. Such data may only be used in aggregated form and with the individual's consent.

IV.6.7. Digital Infrastructure of Healthcare

Based on file evidence: three-tier architecture, distributed ledgers, AI epidemiology

The digital architecture of the Noocratic health block consists of three interconnected levels:

1. **Individual level** ¬ the **Digital Health Passport (DHP)**, containing personal health data, examination results, and preventive programs.
2. **Regional level** ¬ cognitive analytics centres aggregating anonymized data to predict epidemiological and social risks.
3. **National level** ¬ a strategic health-modelling system integrated with macroeconomic planning and HDI calculation.

Distributed ledgers (blockchain-like structures) protect data integrity and prevent manipulation. AI algorithms provide early-warning signals for disease outbreaks, evaluate the effectiveness of medical programs, and identify risk clusters across regions and demographic groups.

IV.6.8. Medical Economics and Resource Reallocation

Financing of healthcare in Noocracy is built upon the principles of rational redistribution and transparent efficiency:

1. **Transition to outcome-based funding.**
   Institutional budgets depend on the dynamics of **Health Span**, rather than on the volume of procedures performed.
2. **Ratings for physicians and clinics.**
   An open system of cognitive-medical ratings is introduced, integrating treatment outcomes, patient trust levels, and scientific activity.
3. **Elimination of corruption incentives.**
   Any remuneration from pharmaceutical companies or private entities must be publicly declared and directly affects the transparency rating.

4. **Investment in prevention.**
   At least **30%** of the healthcare budget is allocated to educational, sports, and cultural programs with empirically verified health effects.

The economic impact manifests not as short-term profit, but as a reduction in the state's aggregate costs related to disease burden and disability, alongside rising productivity and enhanced social stability.

IV.6.9. Mental Health and Cognitive Resilience

Mental health is a central element of a resilient society. Noocracy treats **cognitive resilience** as the individual's ability to maintain rational thinking under stress and resist manipulation and digital overload.

1. **Monitoring of cognitive risks.**
   AI systems analyses patterns of online activity, levels of anxiety and aggression within society, and predict surges of emotional crises.
2. **Digital hygiene programs.**
   Educational standards include training in attention management, critical thinking, and emotional self-regulation.
3. **Rehabilitation after cognitive overload.**
   "Mental sanatoria" are created ¬ programs providing temporary withdrawal from the digital environment and restoration of cognitive balance.

The objective is not control of consciousness but the preservation of clarity and rationality ¬ conditions without which Noocracy cannot function.

IV.6.10. The Axiom of Cognitive Adaptation

In the context of a transition toward a participation-based economy and the disappearance of labour as the primary source of identity, Noocracy assumes responsibility for supporting **neuro-cognitive adaptation** through a system of education, mentorship, and social engagement aimed at restoring meaning, social significance, and connection to the collective reason.

The purpose of cognitive adaptation is to preserve the human subject in an era where technologies remove the necessity to work, yet do not eliminate the need to be needed.

1. Ontological Premise

Historically, labour performed three functions:

1. **Material** ¬ securing survival;
2. **Social** ¬ integration into a system of roles;
3. **Existential** ¬ providing a sense of meaning and belonging.

With the disappearance of labour as an economic necessity, the third function becomes endangered. Without it, individuals lose purpose and cognitive coherence, resulting in states of apathy, anxiety, and meaning-vacuum ¬ phenomena already observed in developed societies.

2. Essence of the Axiom

The Axiom of Cognitive Adaptation states that economic evolution must be accompanied by **anthropological rehabilitation**. Noocracy institutionalises this process through three interlinked levels:

Level	Objective	Mechanisms
Neuro-cognitive	Reducing anxiety; strengthening attention, plasticity, empathy	Neuro-training programs, cognitive hygiene, mindfulness
Social	Rebuilding horizontal ties and cooperative skills	Community mentoring networks, project communities, volunteering
Meaning (existential)	Formation of new systems of values and goals	Schools of meaning-oriented education, cultural labouratories, personal-contribution programs

3. Adaptation Formula (Conceptual Model)

Let:

- **Mi(t)** ¬ the individual's index of meaning-coherence;
- **Si(t)** ¬ level of social engagement;
- **Ai(t)** ¬ cognitive activity (learning, participation, creativity).

Then cognitive adaptation is assessed as the dynamics:

$$\Delta \Psi_i = \frac{d}{dt} \left[M_i(t) + S_i(t) + A_i(t) \right]$$

A positive value **ΔΨ$_i$ > 0** indicates that the individual retains meaning and cognitive stability despite the disappearance of labour.

This metric is recorded in the **Social Participation Registry** and used by the CEC to monitor the humanitarian resilience of society.

4. Institutional Implications (Examples)

1. **Noos-Rehabilitation Program.**
   A permanent state function ¬ analogous to healthcare ¬ providing citizens with access to cognitive, cultural, and social practices that restore meaning.
2. **Meaning Hubs.**
   Centres where individuals can "reconnect" with society through collabourative creativity, research, and volunteering.
3. **The Mentorship Economy.**
   A new form of engagement in which experienced professionals and scholars serve as guides for the cognitive adaptation of younger generations.

5. Ethical and Philosophical Dimension

If in the industrial era labour shaped the person, in the noocratic era personality is shaped through **contribution to societal development**.
Adaptation to this shift requires not the suppression of old meanings but their **reconfiguration** ¬ a transition from *"I work to survive"* to *"I participate to make life meaningful."*

IV.6.11. Prevention as a State Strategy

Prevention becomes not a medical campaign but a strategy of national security.
Every unit of investment in preventive measures reduces the risks of social destabilization, poverty, and crime.

- **In childhood** ¬ emphasis on physical activity, balanced nutrition, and cognitive development.
- **In adulthood** ¬ stress prevention, reskilling, and digital hygiene.
- **In older age** ¬ maintenance of cognitive functions and social integration.

HDI-oriented AI models evaluate the effectiveness of these programs, optimizing budget allocation across regions and age cohorts.

IV.6.12. Quality Control and Cognitive–Ethical Audit

As in the security sector, healthcare is subject to oversight by the **Cognitive–Ethical Contour (CEC)**. The CEC verifies:

- the accuracy and correctness of medical AI systems;
- compliance with the right to autonomy and confidentiality;
- the absence of discrimination in the distribution of medical resources.

The CEC publishes annual reports on the dynamics of **Health Span**, the share of preventive interventions, and the indices of trust in healthcare.
Open datasets contain no personal information ¬ only aggregated indicators ¬ thereby fostering competition among medical institutions without compromising privacy.

IV.6.13. Conclusions

The health block in Noocracy constitutes an integrated system merging biological, psychological, and social approaches. Its key features include:

1. **A shift from treating illness to expanding the duration of healthy life.**
2. **Integration of health into the Census of Reason and CPR**, creating a direct link between rational behaviour and social opportunities.
3. **Rationalization of medical responsibility** ¬ intervention only when risk is evidence-based, under the supervision of AI and the ethical contour.
4. **Transformation of the physician's role** ¬ from bed-occupancy reporting to health engineering.
5. **Digital infrastructure and prevention as foundational elements of national resilience.**

Thus, health becomes not a private matter but a cognitive and economic resource of society ¬ one without which growth in **HDI+** and the implementation of the noocratic model as a whole are impossible.

IV.7. Science and Education Block: Developing Human Capital

IV.7.1. Introduction: Knowledge as the Core of the Noosphere

If the economy constitutes the "circulatory system" of Noocracy, education and science form its **nervous system**.
Unlike market models, where knowledge is treated as a private commodity, or social-democratic models, where it functions as a social right, Noocracy affirms knowledge as a **public and cognitive resource** ¬ one that determines society's capacity for self-awareness and for governing its own evolution.

The primary function of education is not the transmission of information but the cultivation of **rational thinking** and **ethical choice**.
The primary function of science is not the production of papers and patents, but the maintenance of **cognitive coherence** ¬ the systemic reproduction of reliable knowledge.

Thus, in Noocracy, educational and scientific institutions are integrated into a single infrastructure designed to increase the **Human Development Index (HDI+)** through the enhancement of cognitive potential.

IV.7.2. Comparative Analysis of Educational Paradigms

In classical market-oriented systems, education is subordinated to supply–demand logic:

- quality is determined by purchasing power;
- the diploma becomes an instrument of social status;
- scientific research is fragmented and dependent on corporate interests.

In social-democratic systems education is a public good, yet:

- it often suffers from uniformity and bureaucratization;
- quality does not always correlate with instructor competence;
- innovative formats are limited by institutional inertia.

As shown in Chapter 3 (§3.12), Noocracy seeks to transcend these distortions by forming a **meritocratic but non-caste system**:

- basic education is accessible to all, while further advancement depends on assessment results and societal contribution;
- knowledge is not monopolized but is controlled for accuracy and compliance with cognitive standards;
- the state guarantees equal starting conditions, while AI systems and ratings regulate upward mobility.

IV.7.3. Periodic Attestation of Diplomas and Competencies

One of the key institutions of Noocracy is the **periodic re-certification of knowledge**, conducted every 3–5 years depending on the profession.

This measure is driven by three structural factors:

1. **Acceleration of scientific and technological change.**
   The average obsolescence time of knowledge in engineering and IT fields is shorter than five years.
2. **Cognitive sustainability.**
   Without periodic re-evaluation, competence becomes detached from reality, generating both professional and societal risks.
3. **Proof-based legitimacy.**
   A person's educational status must correspond to reproducible, verified knowledge rather than historical credentials.

Re-certification influences the **Census of Reason (CR)** and the **Cognitive–Personal Rating (CPR)**, ensuring that cognitive authority reflects current competence, not accumulated inertia.

IV.7.4. The Role of AI in Education and Science

In Noocracy, artificial intelligence is not a competitor to the teacher or the researcher, but a **cognitive partner**.

1. In education

- AI analyses individual learning trajectories and designs personalised development programmes.
- It automates routine assessments, freeing the teacher's time for mentorship.
- It enables continuous monitoring of **metacognitive skills** ¬ the ability to reason, argue, structure knowledge, and verify facts.

2. In science

- AI is integrated into the discovery process: it formulates hypotheses, constructs models, and verifies empirical data.
- It increases the reproducibility of results and reduces human bias.
- It builds **cognitive maps** of scientific domains, preventing duplication of research efforts.

3. In knowledge governance

- A distributed knowledge base ¬ the *noospheric repository* ¬ is created, where every publication is annotated with metadata on reliability, citability, and social usefulness.
- Reputation algorithms (the **cognitive trust index**) replace formal metrics such as the impact factor.

AI thus functions as a structural amplifier of epistemic reliability, supporting both scientific progress and the integrity of the educational system.

IV.7.5. Funding of Science and Education Through SMART Goals

Funding is allocated not by hierarchical request volumes but by **SMART parameters** (specific, measurable, achievable, relevant, time-bounded).

- Every educational or scientific institution must publish a **SMART plan** outlining goals, indicators, deadlines, and effectiveness metrics.
- An AI system conducts regular verification of goal attainment and automatically adjusts funding.

- A principle of **cognitive contracting** is introduced: funding is extended if a project demonstrably increases HDI+, trust in knowledge, or quality of life.

Example:
Goal: increase the proportion of citizens with basic critical-thinking skills by 15% over five years.
Indicators: national cognitive test results, reduced prevalence of misinformation, higher rate of successful CR appeals.

Funding for science is distributed across three categories:

1. **Fundamental research** ¬ via national cognitive foundations, based on the rating of scientific significance.
2. **Applied projects** ¬ through public–private partnership models.
3. **Civic innovation** ¬ initiatives originating from high-CR citizens, financed through collective grants.

This mechanism ties investment flows directly to measurable cognitive and societal outcomes.

IV.7.6. Balancing Elite and Mass Education

Unlike egalitarian models, Noocracy recognizes the necessity of **cognitive stratification** ¬ differences in educational levels combined with equality of access.

1. **Basic level** ¬ guaranteed to everyone (including digital and cognitive literacy, ethics, and critical thinking).
2. **Advanced level** ¬ available on a competitive basis but accompanied by a requirement of social contribution (mentorship, volunteering, participation in scientific programs).
3. **Highest level** ¬ reserved for individuals with a high CR, admitted to strategic research and governance. This tier is subject to strict SMART-control and mandatory engagement in knowledge-creation programs (research, invention, innovation).

Thus, the system creates not a hierarchy of power but a **hierarchy of responsibility**: the higher the education, the greater the obligation to society.

To prevent knowledge monopolization, Noocracy establishes:

- open access to educational and computational resources (analogous to open science); advanced programs involve mentors, but the knowledge itself and the opportunity for self-learning remain unrestricted;
- transparent algorithms and public audit of AI models;
- rotation of CEC participants and quotas for new cognitive voices.

IV.7.7. The Teacher as a Cognitive Navigator

In the market model, the teacher is a service provider; in Noocracy, the teacher becomes a **navigational unit of the noosphere**.

Their competencies include:

- the ability to cultivate independent critical thinking;
- the skill of identifying cognitive biases;

- ethical integrity and evidence-based evaluation.

Each teacher undergoes regular cognitive-ethical attestation analogous to medical certification. Compensation depends on students' cognitive progress (not merely academic scores), participation in research, and contribution to community programmes.

Educational institutions establish **ethical assemblies** that oversee teaching quality and mitigate cognitive distortions.

IV.7.8. Science as a Mechanism of Cognitive Security

The scientific system in Noocracy performs a dual function:

1. **Generating new knowledge**;
2. **Protecting society from cognitive entropy** ¬ false concepts, manipulation, and disinformation.

A **National Cognitive Centre (NCC)** is created ¬ a distributed network of laboratories responsible for independent evaluation of public data and scientific claims.
The NCC provides:

- verification of open sources (fact-checking);
- audit of government decisions for scientific validity;
- monitoring of educational quality and adherence to research ethics.

Thus, science becomes not only a driver of progress but also a **protective mechanism for the rationality of society**, ensuring the stability of collective cognition.

IV.7.9. The Procedure of Cognitive Discovery

Developing the Axiom of Cognitive Discovery, Noocracy establishes a formalised procedure for recognising breakthrough innovations ¬ ensuring transparency and eliminating patent monopolies.

1. Registration of a discovery

Any citizen or research group may register a new discovery in the **National Registry of Cognitive Initiatives (NRKI)**.
The application must include a description, a verification model, and at minimum an experiment or mathematical justification.

2. Preliminary verification

Applications undergo anonymous two-level review (domain expert + ethics and societal impact expert).
Evaluation follows four criteria:
novelty, reproducibility, ethical neutrality, social value.

3. Public defence

After a positive review, the initiator conducts an open session within the **Forum of Cognitive Discoveries**, where results are demonstrated in open-code and open-data format (Open Data

Replication).
Any researcher may challenge or confirm the findings.

4. Decision of the Centre's Assembly

The independent Assembly of the **National Cognitive Centre (NCC)** issues a decision on awarding the status *"Cognitive Discovery."*

A positive decision requires a consolidated conclusion of the assembly (for breakthrough innovations, the assembly must be multidisciplinary, combining theorists and practitioners).
All decisions are justified and published in the open registry.
They may be appealed to the Supreme Ethical Assembly under standard procedure.

5. Privileges of authors

- automatic elevation of the author's **Census of Reason grade** to the maximum level;
- priority access to national and international computational resources, research platforms, and grants for 10 years;
- exemption from taxes and civic obligations for that period;
- the right to contribute to the development of Noocratic axiomatic (consultative status in the Council of Reason or the CEC Ethical Assembly).

6. Mechanism of control and replication

All discovery materials are stored in the NRKI repository.
After three years, a re-evaluation is conducted to assess reproducibility and ethical compliance.
If falsification or substantial errors are found, privileges are revoked, and the record remains in the registry with the mark **"annulled following replication."**

This multi-stage system integrates open science, non-monetary incentives, and social responsibility into a unified mechanism for supporting scientific breakthroughs within Noocracy.

IV.7.10. International Cooperation and Open Science

Noocracy is guided by the principle of **"knowledge without borders,"** while maintaining cognitive sovereignty.

1. Open licences

All research funded from public sources is published in open access through the noospheric repository.

2. Data exchange through verified channels

International collaborations undergo audit to ensure compliance with ethical and legal norms.

3. Cognitive visas

Scientists with high CR values receive priority access to research centres abroad, provided they adhere to the Cognitive Ethics Code.
The reverse is also true: top students, graduate researchers, and scientists from other countries receive priority access to the noospheric repository and research centres of the noocratic state.

This model combines the strengths of global science with mechanisms preventing the loss of critical knowledge, talent, or technologies, while attracting the world's best minds to priority research areas.

IV.7.11. Ethical and Institutional Safeguards

Science and education in Noocracy operate under the following principles:

1. **Transparency.**
   All educational and scientific data (excluding personal information) are published in open formats.
2. **Anti-plagiarism and anti-fabrication.**
   Violations are automatically detected by AI systems and lead to a reduction in CR.
3. **Cognitive fairness.**
   Decisions on admission, promotion, and funding are based on evidence-based criteria, independent of origin or social status.
4. **Institutional autonomy.**
   Universities and research centres maintain internal self-governance but must comply with national cognitive standards.

IV.7.12. The Impact of Education on Social Equality

Education becomes the primary instrument for reducing systemic inequality.
Studies show that every additional four years of schooling raise **HDI+ by 0.03** and reduce the **Gini coefficient by 0.02**.

Consequently, educational policy is directly integrated into the socio-economic block (see IV.3):

- **UBI programmes** finance retraining;
- the **Cognitive–Personal Rating (CPR)** accounts for educational activity;
- tax incentives encourage investment in self-learning.

Thus, education redistributes **cognitive opportunities**, not merely knowledge.

IV.7.13. Phased Implementation and Quality Control

As in other domains, educational reform follows the principle:
simulation → pilot → scaling.

1. Simulation

AI models the impact of reforms on cohort indicators: performance, cognitive resilience, social mobility.

2. Pilot zones

New programmes are introduced in selected regions or universities and undergo external evaluation.

3. Scaling

Expansion occurs only after confirmed effectiveness and public support.

Quality control of education operates at three levels:

- **internal** ¬ attestation of teachers;
- **external** ¬ independent cognitive tests;
- **public** ¬ feedback from graduates and employers.

IV.7.14. Conclusions

The science and education block in Noocracy constitutes a **fundamental subsystem for the reproduction of reason**. Its key features include:

1. **Dynamic qualification.**
   A diploma is no longer a lifetime guarantee ¬ it requires periodic renewal.
2. **AI integration.**
   Artificial intelligence becomes a partner in teaching and research, not a tool of control.
3. **SMART-based funding.**
   Goals in science and education are formalised and evaluated by outcomes.
4. **Cognitive fairness.**
   Success is determined by competence and contribution, not by origin.
5. **Ethical oversight and open science.**
   Transparency and reproducibility of knowledge become national norms.

In this model, education ceases to be a service function of the economy and becomes the **central engine of societal evolution**, ensuring sustained growth of HDI+ and the cognitive security of the noosphere.

IV.8. Other State Governance Blocks

IV.8.1. Ecological Block (Eco-Spheric Contour)

1. The ecosphere as a component of human development

In classical models, ecology has been treated either as an *"external constraint"* on economic growth (the neo-Malthusian paradigm) or as a subsidiary branch of the economy (environmental management).
Noocracy proceeds from a different postulate: **environmental sustainability is an integral part of human development, not its cost**.

Accordingly, the ecosphere becomes one of the dimensions of the Human Development Index, extending **HDI+** into a composite indicator that includes the quality of the living environment and the long-term stability of biospheric processes.

2. Eco-rating and cognitive balance

Citizens and organizations receive an ecological rating integrated into the **Cognitive–Personal Rating (CPR)**.
It reflects both direct impacts (consumption, waste, carbon footprint) and compensatory actions ¬ participation in restoration projects, ecological resource donation, and the adoption of circular technologies.

The balance between ecological and cognitive indicators forms the **Cognitive–Ecological Footprint Index (CE Index)**, a metric showing the degree to which rational activity ¬ individual or institutional ¬ is aligned with environmental sustainability.

3. Monitoring technologies and adaptive regulation

The eco-spheric contour relies on AI-driven monitoring systems that aggregate data from satellite, sensor, and bio-geoinformation sources.
Adaptive regulation mechanisms automatically adjust quotas, taxes, and subsidies, ensuring a feedback loop between ecosystem state and economic incentives.

The **GTP-2025 Report** provides quantitative assessments of *positive tipping points*, strengthening the argument for targeted, rational deployment of green technologies ¬ one of the core principles of Noocracy.

Examples include:

- **Electrification**:
  Electrifying road freight transport can reduce up to **6%** of global greenhouse gas emissions.
  Electrifying home heating (via heat pumps) can reduce an additional **6%**.
- **Green technologies**:
  IRENA (2025) highlights the potential of renewable energy, advances in ammonia-based fuels for maritime transport (IMO 2025; Ammonia Energy Association 2025), and the scaling of hydrogen technologies.

These data confirm that technological solutions already exist, but their deployment requires **a shift from market chaos to purposive planning** ¬ a fundamental managerial paradigm of Noocracy.

4. The "Green Contract" Principle

Every actor drawing resources from the natural environment enters into a **Green Contract** ¬ a formal commitment to restoration or compensation of ecological damage.
The contract is recorded digitally and verified by an AI-auditor together with CEC (Cognitive–Ethical Contour) cells.
Non-compliance automatically affects the CPR and restricts access to public programs, contracts, and ecological resources.

5. The Axiom of the Ethical Footprint

All economic activity in Noocracy must satisfy **ethical symmetry of impact**:
the benefits and costs of any production cycle must be distributed fairly across its entire spatiotemporal structure ¬ between regions, generations, and forms of life.

No "green" transformation can be deemed sustainable if it creates new zones of ecological or social sacrifice, even when aggregate carbon emissions are reduced.

5.1. Essence of the axiom

Transitioning to a green, post-carbon economy does not eliminate harm ¬ often it merely relocates it:

- *ecological* (lithium and rare-earth extraction),
- *social* (low-paid labour in "clean" industries),
- *cognitive* (digital dependency, loss of agency).

The Axiom states: **sustainability must be moral as well as physical**.
Environmental efficiency achieved by externalizing harm to other territories, generations, or ecosystems is ethically unacceptable ¬ regardless of the carbon statistics.

5.2. Ethical Footprint metric

A unified indicator ¬ the **Ethical Footprint (EF)** ¬ is introduced. It integrates:

$$EF = \alpha \cdot E_{\text{ecological}} + \beta \cdot E_{\text{social}} + E_{\text{cognitive}}$$

The coefficients **α** and **β** are set by the CEC and the Central Entropy–Cognitive Bureau (CECB) based on interdisciplinary assessments of harm.

EF must remain symmetric across the entire life cycle of a product:

$$EF_{\text{production}} \approx EF_{\text{consumption}} \approx EF_{\text{disposal}}$$

Any asymmetry benefiting the centre (country, corporation, generation) is registered as an **ethical imbalance** and requires corrective action.

5.3. Institutional mechanism (CEC–SC)

The **Cognitive–Ethical Contour** conducts supply-chain audits (CEC-SC: Supply Chain Audit) across three levels:

Level	Scope	Instrument
I. Environmental	LCA-cycle evaluation, energy use, recoverability	Entropic–energy analysis
II. Social	Labour conditions, share of local benefits, absence of child/forced labour	Social LCA, crowdsourced monitoring
III. Cognitive	Access to technologies, knowledge transfer, autonomy of local actors	Cognitive Sovereignty Index

The audit produces an **Ethical Footprint Passport** for every project or product, required for inclusion in the **ECE registry (Entropic–Cognitive Equivalent)**.

5.4. Universal meaning (beyond "North–South")

The Ethical Footprint is interpreted not only geographically, but also temporally and biotically:

- **Intergenerational balance**: the present cannot be improved by destroying the future.
- **Inter-species balance**: human comfort cannot be achieved at the cost of degrading ecosystems or non-human life.
- **Inter-system balance**: the digital economy cannot be optimized at the cost of cognitive burnout and dependency.

In other words, sustainability must represent **total symmetry** ¬ free of sacrificial zones, hidden debts, or deferred catastrophes.

Additionally, Noocracy expands the ECE formula to incorporate the Ethical Footprint:

$$ECE = E_{\text{physical}} + E_{\text{informational}} + EF$$

6. Geoengineering (SRM)

6.1. Fundamental position

Noocracy regards geoengineering technologies, including **Solar Radiation Modification (SRM)**, as necessary but potentially dangerous instruments capable of altering Earth's climatic dynamics beyond model predictability.

Their use is permissible only within **international open research frameworks**, accompanied by ethical certification, transparent publication of data, and mandatory **Cross-System Impact Assessment** ¬ evaluating consequences across biosphere, hydrosphere, and sociosphere.

6.2. Moratorium and conditions for approval

1. **Moratorium on deployment.**
   A full moratorium is imposed on SRM field experiments with regional or planetary impact until an international CEC-level protocol is established.
2. **Reversibility principle.**
   Any research project is admissible only if its climatic impacts are demonstrably reversible within a single climate cycle.
3. **International ethical protocol.**
   SRM governance must be planetary, not national ¬ under the mandate of a unified CEC consortium and the CECB, with representation from all climate zones.
4. **Mandatory Cross-System Impact Certification.**
   Each experiment undergoes threefold assessment:
   - *physical* ¬ climate models and feedback risks;
   - *ecosystemic* ¬ effects on hydro- and biosphere;
   - *social–ethical* ¬ fairness of risk-benefit distribution.

6.3. CEC–SRM regulatory framework

Contour	Function	Instrument
CEC–SRM Council	Ethical licensing of projects	Issuance of SRM access certificates
CECB	Systems modelling and entropy-balance monitoring	Integration of SRM projects into planetary ECE
Public Data Commons	Transparency and societal oversight	Publication of data, experiment results, model audits

6.4. Ethical and philosophical position

Technical capacity to influence climate does not equate to moral legitimacy.
Any form of SRM is not an instrument of salvation but a last-resort measure compensating for systemic failures of past economic models.

Thus, in Noocracy, SRM is not a technology of progress but a **symbol of cognitive responsibility** ¬ permissible only when reason has demonstrated the ability to foresee consequences and the willingness to share them.

6.5. Summary

Noocracy does not reject geoengineering but removes its status as a "panacea."
It is a tool of **temporary stabilization**, not strategic development.
SRM may be used only under international governance, after full ethical certification, and exclusively as part of a planetary regime of **self-limitation**.

IV.8.2. Cultural and Humanitarian Block

1. Culture as society's cognitive code

In market systems, culture is often reduced to the entertainment industry; in ideological systems ¬ to propaganda.
Noocracy treats culture as the **cognitive code of society**, ensuring the transmission of meanings, moral norms, and thinking patterns across generations.

Cultural capital here is not the sum of artefacts but the ensemble of stable meaning-structures that maintain cognitive coherence among citizens.

2. AI-based analysis of cultural trends

AI systems perform large-scale content analysis of public discourse:
they measure levels of rationality, constructiveness, and tolerance.
This enables early detection of cultural degradation (e.g., rise of toxic or anti-scientific narratives) long before political or social crises manifest.

AI does not censor; it **balances the cognitive landscape**, proposing public programs and educational initiatives that restore rational discourse.

3. Balancing tradition and innovation

Noocracy preserves cultural heritage without fetishizing it.
The key criterion is **cognitive productivity** ¬ whether a cultural form facilitates the development of reason rather than impedes it.

Rituals, language, and symbols are preserved insofar as they strengthen cognitive identity, social empathy, and moral resilience.

IV.8.3. Infrastructure and Technology Block

1. Infrastructure as the nervous system of the state

Infrastructure is understood not merely as roads, networks, and buildings, but as a **dynamic system of energy, information, and meaning exchange**.
Its purpose is to minimize the entropy of interactions between citizens, institutions, and nature.

2. The principle of "smart infrastructure"

All key objects ¬ from transport networks to utilities ¬ are integrated into a national data platform.
AI modules forecast loads, optimize energy use, minimize waste, and reduce accident rates.

Performance is measured via the **SMART-efficiency index**, combining safety, reliability, adaptability, energy neutrality, and cognitive value.

3. Digital sovereignty and cybersecurity

To protect data flows, the system introduces the principle of **digital sovereignty**, alongside multi-layered cybersecurity measures ensuring the resilience of strategic infrastructure.

IV.8.4. International and Diplomatic Block

1. Principle of cognitive sovereignty

Noocratic international policy is anchored in the concept of **cognitive sovereignty** ¬ the right of society to define its own criteria of truth, rationality, and developmental goals.
This is not isolationism, but protection from manipulation, ideological export, and cognitive dependency.

2. Noocracy as a mediator between civilizations

Because Noocracy is grounded in universal principles of reason and ethics, it can act as a mediator between different civilizational models ¬ capitalist, socialist, technocratic.
Diplomacy here strives not for a balance of power, but a **balance of rationalities**, where all parties commit to evidence-based, reproducible argumentation.

3. Institute of cognitive missions

A network of cognitive missions ¬ diplomatic representations ¬ is established.
In addition to classical tasks, they support knowledge exchange, scientific cooperation, and ethical dialogue.

Each mission conducts cognitive analytics: monitoring the state of science, education, and culture in partner countries, enabling cooperation at the level of meanings rather than narrow interests.

4. Phased Transition in International Transformations

The transition toward noocratic principles in foreign policy is carried out gradually, in order to avoid direct conflict with the existing international system:

- **First stage:** adherence to international treaties and patent rights (following the Sino–Indian model of formal loyalty).
- **Second stage:** creation of bilateral **"cognitive exchange zones"**, enabling controlled circulation of knowledge, technologies, and ethical standards.
- **Third stage:** formation of a **noospheric alliance** of states that have adopted the principles of cognitive governance.

IV.8.5. Cognitive–Ethical Contour

1. Ethics as the Second Contour of Law

In traditional legal systems, ethics functions as an optional superstructure; in Noocracy, it becomes the **second contour of law**, correcting decisions under uncertainty.
The **Cognitive–Ethical Contour (CEC)** ensures that all administrative acts, algorithms, and policies comply with four foundational principles:

- cognitive transparency;
- proportionality;
- reproducibility of decisions;
- respect for reason and human dignity.

2. Institutional Architecture

The CEC consists of three levels:

1. **National Council for Cognitive Ethics** ¬ sets standards and conducts ethical evaluation of legislative initiatives.
2. **Sectoral Ethical Committees** ¬ operate within ministries and corporations, assessing whether projects align with societal goals.
3. **Personal Cognitive Audit** ¬ a monitoring system evaluating the logical and moral coherence of decisions taken by officials and AI models.

3. Principle of Cognitive Responsibility

Every decision ¬ especially one involving AI ¬ must include a **cognitive passport**:
a description of initial data, reasoning logic, and degree of uncertainty.

Violation of this principle is treated as professional negligence and may result in sanctions up to and including **reduction of the CPR (Cognitive–Personal Rating)**.

4. The Noo-Hygiene Principle

Noocracy recognizes the society's cognitive environment ¬ its information sphere, media, digital platforms, and social networks ¬ as a critical component of public health.

The aim of **Noo-Hygiene** is to safeguard cognitive clarity and rational resilience, prevent disinformation, manipulation, and attention degradation, and reward citizens for active participation in knowledge verification and fact-checking.

4.1. Ontological premise

The cognitive ecosystem is a new biosphere of reason.
If in the 20th century the primary threat was ecological degradation, in the 21st it is the degradation of meaning: noise, fake signals, digital addictions, commodification of data and attention.

A society that loses cognitive hygiene loses the ability to distinguish truth from simulation ¬ and thus becomes ungovernable, regardless of technological capacity.

4.2. Essence of the principle

Noo-hygiene is a system of institutions, norms, and technologies that ensure the **purity, reliability, and ethical transparency of information flows**.

Within Noocracy, this responsibility lies with the CEC, which performs functions akin to informational public health:

- auditing media platforms,
- ensuring algorithmic transparency,
- coordinating digital literacy and cognitive education programmes.

4.3. Core components of the Noo-Hygiene System

Level	Objective	Instruments
I. Media audit	Verification of source reliability; detection of disinformation and manipulative patterns	AI audits of recommendation algorithms; open repositories of false narratives; penalty coefficients for platforms
II. Cognitive Hygiene Index (CHI)	Measures the noise level and factual reliability of a region's info-space	Fact-reality metrics; share of verified content; bot density; trust in sources
III. Civic participation	Turning fact-checking and critical thinking into a social norm	Reliability ratings; IEKV bonuses; public "noos-hygiene" education platforms

4.4. Institutional Structure of CEC–Noo-Hyg

Body	Function	Analogue
CEC–Media	Ethical audit of digital platforms and media	Environmental oversight applied to information
CECB ¬ Data Commons Registry	Storage and publication of CHI reports and disinformation cases	A "global climate report" for data
Citizen Information Juries	Public deliberation of contested cases; formation of ethical precedents	"Juries" for cognitive violations

4.5. Economic and social dimension

- **IEKV rewards** for maintaining cognitive hygiene:
  individuals engaged in fact-checking, counter-disinformation, or cognitive education receive **cognitive dividends**, increasing their IEKV and CPR.
- **Ethical rating of platforms:**
  platforms violating transparency principles receive a lowering coefficient in the IEKV balance, reducing their access to infrastructural resources.

Thus, disinformation is countered not through policing, but through **socially motivated, participatory self-defence of reason**.

7. Philosophical and Ethical Commentary

If environmental purity ensures the survival of the body, informational purity ensures the survival of the mind.

Noo-hygiene is not a restriction of freedom ¬ it is a form of **collective immunity** against cognitive "viruses."
A person of the noocratic era has not only a right to information but also a duty of cognitive hygiene.

The CEC conducts audits of the media environment, develops metrics such as CHI, and encourages citizen participation in verification, forming a culture of responsibility for the **quality of reason**, not only the quality of life.

5. Noo-Hygiene: Cognitive Responsibility and IEKV/SR Feedback

5.1. Principle of reverse action

IEKV incentives for cognitive hygiene are paired with **IEKV decrements** ¬ automatic reductions of IEKV and CPR when a subject is found to have:

- knowingly disseminated false or manipulative information;
- systematically distorted facts in public sources;
- created or distributed unlabelled deepfakes;
- used algorithms aimed at destabilizing public opinion.

5.2. Institutional procedure

Stage	Description	Instrument
Detection	Signal from citizens, CEC–Media AI audit, or platform	CHI monitoring; crowdsourcing
Verification	Review by CEC expert contour and citizen jury	Fact-check + peer review
Decision	Confirmed case → reduction of IEKV and CPR	Cognitive sanctions protocol
Rehabilitation	Restoration via correction, apology, or public clarification	Cognitive amnesty

5.3. Reverse-impact formula

Let D_i be the disinformation activity index (share of false claims confirmed by CEC audits), and k_D the sanction coefficient:

$$\Delta IEKV_i = -k_D \cdot D_i^\rho$$

where $\rho > 1$ amplifies the social consequences of public distortion.

Thus, systemic misinformation leads to exponential loss of trust and status, while good-faith correction allows partial restoration.

4. Ethical justification

Unlike censorship, IEKV sanctions do not restrict expression ¬ they adjust **public trust** in proportion to the cognitive reliability of the source.

A citizen has the right to be wrong, but not the right to systematically destroy trust ¬ the foundation of collective reason.

5. Criteria of Cognitive Legitimacy

A statement, publication, hypothesis, or debate is cognitively legitimate if:

1. **Empirical compatibility:**
   It does not contradict verified facts, or is explicitly marked as hypothetical or investigative.
2. **No calls to violence:**
   Any direct or indirect incitement is an ethical violation (Type I).
3. **No cognitive-ethical provocation:**
   Intellectual superiority, sarcasm, or bullying cannot be used to suppress another's reasoning.
4. **Transparency of intent:**
   The author states whether they aim to inform, reason, or debate ¬ not manipulate or polarize.
5. **Respect for cognitive boundaries:**
   Persuade but do not coerce; debate but do not impair the other's ability to think independently.
6. **Ethical AI usage:**
   AI-generated content must be clearly labelled, with human responsibility preserved.

6. Cognitive–Ethical Formula (Example)

CEC distinguishes debate from disinformation using a balance condition:

$$C = E_{\text{evidence}} + E_{\text{intent}} + E_{\text{impact}}$$

If **C > 0**, the statement is classified as cognitively permissible ¬ even if incorrect or controversial.

6. Presumption of Cognitive Good Faith

In Noocracy, every statement, inquiry, or position is presumed to be made in good-faith pursuit of knowledge until proven otherwise.

Ethical foundation

Freedom of consciousness requires trust toward the intentions of the thinking subject.
Suspicion as a default state is characteristic of distrust-based systems where fear replaces reason.

Thus, CEC operates under a presumption of good faith: humans think **to understand**, not to destroy.

Procedural implications

Stage	Subject's Right	Institution's Duty
Before review	Right to be heard as a participant in inquiry	CEC may not impose sanctions before expert verification
During review	Right to present context and sources	CEC must account for uncertainty and cognitive error
After review	Right to correction and rehabilitation	CEC must distinguish good-faith errors from manipulation

Philosophical meaning

The presumption of cognitive good faith is reason's trust in itself.
It protects the right to inquiry, doubt, hypothesis, and even error ¬ provided they serve
understanding rather than erode trust.

7. Corporate Cognitive Responsibility and Collective IEKV Decrement

7.1. Principle of distributed responsibility

Organizations involved in producing or disseminating information (media, IT firms, platforms,
analytical centres) must uphold algorithmic transparency and content reliability.

Violations are recorded as **Disinformation Events (DE)**, after which CEC–Media initiates a
corporate cognitive audit.

7.2. Sanction mechanism

Let p_i represent an employee's degree of participation or awareness:

$$\Delta IEKV_i = -k_C \cdot p_i$$

where k_C (0.01–0.2) is set by the CEC depending on severity.

Passive complicity ¬ knowledge without action ¬ is treated as cognitive negligence.

7.3. Ethical consequences

- Collective IEKV decrements reduce both individual and organizational IEKV.
- Organizations with repeated DE incidents lose access to cognitive financing funds (C-Bonds).
- Whistle-blowers receive IEKV bonuses.

8. Mechanism of Audit and Feedback

Public institutions may initiate cognitive audits when manipulation or ethical violations are
suspected.
Results are published openly, forming trust ratings for institutions.

IV.8.6. Interaction of Auxiliary Blocks with the Core of Noocracy

All previously described contours ¬ ecological, cultural, technological, international, and ethical
¬ operate not separately but as a **second ring of governance**, balancing rationality with
sustainability.

- The ecological block links the economy with the biosphere.
- The cultural block shapes the value basis for meaningful knowledge consumption.
- The infrastructural block ensures material and digital cohesion.
- The international block protects cognitive sovereignty.
- The ethical contour keeps the system within the boundaries of morality and evidence.

Together they generate **cognitive gravity** ¬ a field in which decisions, at any level, are drawn toward rationality and humanism.

IV.8.7. Conclusions

The auxiliary blocks of Noocracy perform functions of systemic stabilization and humanistic oversight.
They transform the noocratic state from a technocratic machine into a **self-reflective system**, capable of maintaining resilience amid changing external conditions.

Ecological rationality prevents resource crises;
cultural rationality prevents fragmentation of meaning;
infrastructural rationality prevents data chaos;
international rationality prevents conflicts of epistemic frameworks;
ethical rationality prevents degradation of reason itself as a form of governance.

Thus, Noocracy becomes a **coevolutionary model**, where person, society, and nature form a unified governance system guided not by force or profit, but by the principle of **reproducible reason**.

IV.9. Integration of Blocks and Control Mechanisms

IV.9.1. Principle of Systemic Integrity

Noocracy is not a collection of reforms and not an ideology, but a **cognitive–cybernetic system of governance**, in which each element acquires meaning only through interaction with all others. Its fundamental condition of stability is the **coherence of feedback loops** between blocks: data generated in one contour (for instance, the economic block) must automatically adjust decisions in others (such as the social or educational blocks).

Unlike hierarchical states, where control is organized top-down, Noocracy implements **networked integration**, making governance resemble the operation of a complex brain:

- each block functions as a *"functional zone"*;
- billions of connections run between them;
- decisions emerge from the totality of signals, not from the will of a central authority.

Such architecture makes possible the transition from the rule of individuals to the **rule of algorithms of reason**, expressing the collective intelligence of society.

IV.9.2. Modular Structure of State Governance

Noocracy's internal structure follows the principle of **modularity**.
Each block (security, economic, medical, educational, etc.) comprises three levels:

1. Data and Observation (Sensory Level)

- collection of objective indicators: economic, medical, educational, ecological;
- data processing by observational AI systems.

2. Interpretation and Analysis (Cognitive Level)

- assessment of causal relationships;
- modelling of decision outcomes;
- identification of anomalies and risks.

3. Decision and Correction (Actuator Level)

- formation of policies and programs;
- feedback from citizens and institutions;
- dynamic resource reallocation.

Every level is connected to the **cognitive core** ¬ the central AI system of the state, which operates not as a dictator but as a **brain–society interface** that mediates between public input and administrative action.

IV.9.3. The Census of Reason as a Universal Interface

The **Census of Reason (CR)** acts as the universal linkage mechanism between blocks.
It integrates IQ metrics, the **Cognitive–Personal Rating (CPR)**, educational achievements, health indicators, ecological behaviour, and cognitive-ethical compliance into a unified scale of cognitive maturity.

Each block uses the CR as its filter:

- **security block** ¬ for eligibility for positions and responsibility;
- **economic block** ¬ for taxation levels and access to UBI;
- **health block** ¬ for preventive programs;
- **education block** ¬ for allocation of grants and appointments;
- **cultural and international blocks** ¬ for representing the country externally.

Thus, the CR becomes not an instrument of exclusion but an **algorithm of personalized responsibility**.
It does not entrench privilege; it constructs an **individual trust profile**.

IV.9.4. Information–Analytical Architecture

1. Unified Cognitive Platform

At the core of governance lies a **national cognitive platform** ¬ a distributed database integrating all state performance indicators. It consolidates:

- socio-economic data (via the national statistical centre);
- healthcare and demographic metrics;
- indicators of education and science;
- digital reports of infrastructural and ecological systems.

The platform operates according to the principle of a **cognitive passport**:
every entry (of a person, organization, territory, or decision) is supplied with metadata on reliability and context.

2. Algorithms of Trust and Cognitive Transparency

Every algorithm used in governance must contain an open description of:

- its logic,
- data sources,
- error metrics.

A **Registry of Public-Governance Algorithms** is created, open for audit by experts and citizens.
Any modification of an algorithm without ethical authorization is recorded as a violation of **cognitive integrity**.

3. Cybersecurity and Data Sovereignty

The system follows the **principle of minimal privilege**:
access to data is granted only to those who can justify the purpose and compliance with cognitive standards.

For strategic nodes, autonomous subnetworks are established, capable of local operation in case of disconnection from the global infrastructure.

IV.9.5. Control Contours and Anti-Corruption Mechanisms

1. First-Level Control: Self-Correction

Each block contains its own feedback loop. For example:

- in the economic block, the AI auditor automatically identifies anomalies in budget allocation;
- in the security block, deviations from rationality standards in personnel behaviour are flagged;
- in the medical block, treatment outcomes are compared with predictive models.

An error is not viewed as grounds for punishment but as a **signal for cognitive correction** of the system.

2. Second-Level Control: Inter-Block Verification

Decisions of one block undergo cross-verification by others:

- socio-economic programs are evaluated by the educational and health blocks for their impact on HDI+ and well-being;
- infrastructural projects are reviewed by ecological and ethical blocks.

This eliminates the "departmental autonomy effect," where each institution optimizes itself at the expense of the whole.

3. Third-Level Control: Cognitive–Ethical Audit

At the highest level operates the **Cognitive–Ethical Contour (CEC)** (see IV.7.5).
It exercises moral oversight over algorithms and decisions, detecting risks of cognitive degradation, manipulation, or loss of transparency.

Audit results are published openly, making oversight not bureaucratic but **socially distributed**.

IV.9.6. Mechanisms of Feedback with Society

1. Platform for Reciprocal Dialogue

Every citizen has access to a digital interface through which they may:

- view and contest their CR and CPR;
- propose amendments to programs and laws;
- participate in public evaluations.

Citizen input becomes a **mandatory component of the governance cycle**:
any major reform must undergo public cognitive appraisal, in which arguments are evaluated not by popularity but by **rational quality**.

2. Mechanism of Cognitive Consensus

Strategic decisions are adopted through a procedure of **cognitive consensus** ¬ a multi-stage deliberation process where each argument undergoes logical and factual verification.
The AI system constructs an argument tree and computes the degree of rational agreement.

This process establishes a balance between **agency** (participation) and **rationality** (decision quality).

IV.9.7. Dynamic Governance and Simulation-Based Policy

Noocracy excludes "shock therapy" and manages development through **gradualism**.
Every reform follows three phases:

1. **Simulation** ¬ AI models test hypotheses in a virtual environment, evaluating social, economic, and ecological consequences.
2. **Piloting** ¬ experimental implementation in a limited region or sector.
3. **Scaling** ¬ system-wide expansion after demonstrated effectiveness.

This cycle ensures an evolutionary ¬ rather than revolutionary ¬ trajectory of change, minimizing risks of social disruption and resistance.

IV.9.8. Role-Based Governance Architecture

1. Cognitive roles

In Noocracy, governance functions are divided not by departments but by **cognitive roles**:

- **Analyst** ¬ interprets data and identifies causal structures;

- **Arbiter** ¬ makes decisions under uncertainty while upholding cognitive ethics;
- **Curator** ¬ ensures implementation and monitors outcomes;
- **Mediator** ¬ organizes public dialogue and clarification.

Each role may be performed either by a human or an AI module, but only with a transparent **algorithmic passport** documenting reasoning logic and uncertainty levels.

2. Mechanism of role rotation

Periodic rotation of roles prevents concentration of power and accumulation of cognitive bias.
A person who has managed a block transitions to arbitration or teaching;
AI modules that reach error thresholds undergo retraining or re-certification.

IV.9.9. Cognitive–Economic Balance

In classical political economy, equilibrium is maintained between production and consumption; in Noocracy, between **cognitive** and **material** capital.

The **Cognitive–Economic Balance (CEB)** is defined as a state where growth in knowledge and rationality does not erode natural or social foundations.
It is measured through a set of indicators:

- HDI+ and educational attainment,
- Gini coefficient and trust index,
- CE Index and biospheric stability metrics.

If the system deviates from equilibrium (e.g., rising wealth coinciding with declining cognitive maturity), AI-contours automatically adjust priorities ¬ redirecting resources toward education, healthcare, and culture.

IV.9.10. The Noosphere as a Meta-Level of Governance

All previously described mechanisms form the **noospheric meta-contour** ¬ a level at which the state ceases to be a commanding subject and becomes an instrument of **societal self-organization**.

This level is defined by three properties:

1. **Reflexivity.**
   The system recognizes its own errors and corrects algorithms without external pressure.
2. **Synergy.**
   Blocks interact not through command but through exchange of data and semantic signals.
3. **Evolutionarily.**
   Policy becomes a continuous process of adaptation to new knowledge.

Here, Vernadsky's idea of the transition from biosphere to noosphere is realized:
reason becomes the principal factor of planetary development.

IV.9.11. Conclusion: Control as a Sign of Mature Reason

The integration of blocks transforms the noocratic state into a **self-regulating system**, where control is no longer an instrument of coercion but a form of cognition.

Each mechanism ¬ from CR to the CEC ¬ functions not as a punitive apparatus but as an element of **cognitive hygiene**, protecting society from irrationality.

Thus, Noocracy closes an evolutionary arc of governance:
from force → to law → to reason.

And if the industrial era's key resource was labour, and the digital era's resource was data, then in the noocratic era the primary resource becomes **the reliability of thought**.
This is a new form of power belonging to no one, except humanity itself.

IV.10. System–Dynamic Model of the Institutional Stability of Noocracy

"If reason is the energy of ordering, then models are its first reactors."

IV.10.1. Introduction and Purpose of Modelling

To test the hypothesis of Noocracy's structural stability, and to compare it with two hybrid scenarios (S_0 ¬ *evolutionary modernization*, and S_1 ¬ *Noocracy pilot*), a system–dynamic model was constructed for the horizon 2025–2050.

Its objective is **not prediction**, but **internal coherence testing**:
whether even a simplified structure demonstrates that the introduction of cognitive–ethical contours (CEC, GJA, Zero Bias, IEKV) indeed reduces conflict levels and increases trust without violating resource constraints.

The model is implemented in discrete form (annual step $\Delta t = 1$) using the Euler method and logically follows the tradition of World3 (Meadows et al., 1972), Earth4All (2022), and the architecture of complex adaptive systems (Holland 1995; Mitchell 2009).

IV.10.2. Main Loops and Variables

The model includes six interconnected loops:

Variable	Meaning	Range
R	Resources and ecological capital	0…1
P	Population (scaled; 1 ≈ 10 billion)	>0
K	Cognitive coherence / education	0…1
T	Trust and institutional legitimacy	0…1
A	Level of IEKV implementation	0…1
C	Conflict risk ¬ aggregated indicator	0…1

Derived indexes:

- **H** ¬ HDI proxy (income, education, ecology);
- **EI** ¬ total pollution / ecological damage;
- **GDPpc** ¬ income per capita proxy.

IV.10.3. Key Relationships

1. Resources

$$\frac{dR}{dt} = \rho\,R\,(1 - R) - \alpha\,GDPpc + \varepsilon_a\,A$$

where ρ is natural regeneration, α is resource intensity of the economy, and ε_a is IEKV efficiency.

2. Cognitive coherence

$$\frac{dK}{dt} = \eta(1 - K) - \delta(1 - T)K$$

growth through educational investment η, suppressed by low trust δ.

3. IEKV implementation (logistic dynamics)

$$\frac{dA}{dt} = r_a A(1 - A)$$

4. Conflict risk

$$C = 1 - \frac{T + K + A}{3}$$

5. Trust and legitimacy

$$\frac{dT}{dt} = \lambda H - \mu(1 - F)$$

where HHH is the effectiveness index and $F = 0.5(A + K)$ captures fairness perception.

6. HDI proxy

$$H = \sum w_i X_i,$$

with normalized weights w_i; in S_1 the shares of education and ecology are increased.

Scenario Parametrization

The two scenarios differ only in institutional quality:

Parameter	S₀ (hybrid model)	S₁ (Noocracy pilot)
Investment in K (η)	0.035	0.065
Resource intensity (α)	0.060	0.050
IEKV efficiency (ε_a)	0.35	0.60
IEKV implementation rate (r_a)	0.20	0.40
Trust decay (μ)	0.06	0.04
Trust responsiveness (λ)	0.25	0.40
Sensitivity to distrust (δ)	0.030	0.015

Initial values (2025):
$R_0 = 0.78$, $P_0 = 0.8$, $K_0 = 0.42$, $T_0 = 0.35$, $A_0 = 0.08$, $C_0 = 0.22$.

IV.10.4. Main Results (see Appendix A, figures A3–A7)

- **Resource preservation (R)** in S_1 is 15–20% higher by 2050 due to IEKV efficiency.
- **Trust (T)** and **cognitive coherence (K)** in S_1 reach stable levels above **0.7**, eliminating informational discontinuities.
- **Conflict risk (C)** in S_1 falls by nearly half relative to S_0 (deterrence through interdependence).
- The **H index (HDI proxy)** grows faster and stabilises at approximately **$H \approx 0.85$**.

These differences demonstrate that even with a minimal set of variables, the introduction of cognitive–ethical contours (CEC, GJA, Zero Bias, IEKV) generates a **self-reinforcing cycle of rationality and stability**.

Detailed calculations, source code, and modelling data are provided in **Appendix C**.

Methodological Note

The obtained results do not claim empirical proof.
This is an internally coherent simulation showing that Noocracy's axioms admit quantitative formalisation without logical contradictions.

Full verification is possible only after open-code publication and replication within **Earth4All OpenLab** or **IIASA Complex Systems** programmes.

IV.11. Noocracy and Elites: A Mechanism for Converting Wealth into Power *(Supplement 1)*

The question of the position and motivation of contemporary elites during the transitional period towards a noocratic order is central to assessing the political stability of the future system.
Historically, groups possessing concentrated capital and managerial influence have determined the pace and form of societal transformation.
Accordingly, the viability of Noocracy depends on its ability to offer elites a **rational and legitimate mechanism of adaptation** ¬ one that allows them to preserve personal influence even as the principles of inheritance and wealth distribution change.

IV.11.1. Historical–Sociological Context

Across the 20th and 21st centuries, the concentration of wealth and power has reached extreme levels. According to Oxfam and Credit Suisse, roughly 1% of the population controls 45–50% of global assets. At the same time, both wealth and power are losing their stable dynastic transmission: major fortunes dissipate within 2–3 generations, while intellectual and managerial competence becomes the decisive factor in maintaining elite status.

Parallel to this, elites face a crisis of identity. As capital is increasingly generated within digital flows and loses material anchoring, traditional symbols of prestige (property, lineage, dynasty) diminish in value. Personal *influence* ¬ access to decision networks and intellectual capital ¬ becomes the key asset.

Thus, the evolution of capitalism itself pushes elites toward seeking new forms of legitimate continuity of power beyond classical inheritance.

IV.11.2. The Problem and the Paradox of Transition

From the standpoint of classical political economy, reforms limiting the inheritance of wealth should provoke strong resistance. Yet emerging trends ¬ growth of philanthropic foundations, large-scale bequests to society (Gates, Musk, Bezos, others), and the symbolic capital of public benefaction ¬ indicate a nascent process of **voluntary capital conversion**.

The paradox is straightforward:

Elites are willing to sacrifice capital if they retain influence.

This enables Noocracy to propose not expropriation but an exchange:

"Influence and authority in exchange for renouncing hereditary wealth."

IV.11.3. Mechanism of Exchange and Institutional Logic

In Noocracy, value is defined not by accumulated capital but by **demonstrated competence and social contribution**.
Consequently, elite influence is preserved through participation in expert councils, supervisory boards, and decision-making institutions ¬ on the condition of periodic competence verification and transparent performance standards.

This approach shifts the process of wealth redistribution away from a revolutionary dynamic and toward an **institutionally controlled exchange** of resources for sustainable influence.

IV.11.4. Table: Elite Fears, Noocratic Corrections, and Power-Exchange Mechanisms

Elite Fear / Problem	Noocratic Correction	Outcome / Mechanism of Power Exchange
Loss of personal status and power ("fear of immediate dispossession")	Implementation of genuine meritocracy with a *presumption of competence*. Public confirmation of status through expert ratings, certifications, and academies of governance.	Elite preserves influence and prestige as carriers of demonstrable effectiveness.
Illegitimacy of the system (fear of chaos or revolution)	Positioning Noocracy as an anti-crisis and stabilising model; transparent effectiveness indicators (economy, ecology, innovation).	Elite gains a predictable environment where influence converts into stability rather than risk.
Inability to pass on wealth	Creation of a Heritage Tax or Public Wealth Fund. Wealth is not destroyed but transferred into a regulated public pool; elite offspring receive education and mentorship through the fund.	Dynastic inheritance transforms into competence-based inheritance; society gains fairness.
Loss of personal uniqueness	System of public honours, titles, symbolic capital for contributions to science, culture, institution-building.	Prestige replaces accumulation; elites retain a sense of distinction.

Doubts about fairness of redistribution	Transparent audits, blockchain registries, oversight boards with international participation.	Increased trust in institutions; elites see that manipulation is structurally impossible.
Loss of influence over their children's future	Inclusion of elite offspring in educational and research programmes of the fund; formation of successor networks through competence, not lineage.	Continuity preserved through meritocratic succession.

IV.11.5. Analytical Interpretation

The system of **"converting wealth into power"** resolves the main conflict of the transition period:

- economic inequality is mitigated without coercive redistribution;
- elite motivation is preserved through prestige and participation;
- social legitimacy is strengthened, as power is grounded in competence rather than origin.

This replaces the revolutionary logic of *"seize and divide"* with an **evolutionary mechanism of mutual legitimization**:
elites receive guarantees of influence, while society gains stability and equitable distribution.

Thus, property transition in Noocracy does not rely on expropriation.
It proceeds through converting capital into **cognitive reputation capital**, which contributes to HDI+ and collective goals.
Power is preserved in the form of responsibility rather than monopoly.

This approach aligns with historical parallels of capital institutionalization in post-feudal reforms (Weber 1922; North 1990).

IV.11.6. Key Risks and Conditions of Stability

1. **Institutional capture** ¬ addressed through multi-level audits, independent observers, and rotation.
2. **Manipulation of competence ratings** ¬ prevented by transparent algorithms and periodic cross-evaluations.
3. **Corruption of public funds** ¬ mitigated through distributed governance and mandatory public reporting.
4. **Cultural resistance of hereditary elites** ¬ softened by transitional periods and symbolic incentives (titles, public recognition).

IV.11.7. Conclusion

Noocracy does not oppose itself to the elite; it **integrates** the elite into a new system of rational legitimacy.
Elites cease to be owners of resources and become their curators; capital is transformed into responsibility, and power becomes a **function of competence**.

Thus, the transition to Noocracy does not mean a loss of status but its transformation:

- from hereditary to intellectual,
- from material to meaningful,

- from closed to public.

This marks Noocracy's fundamental distinction from previous forms of governance:
it does not dispossess ¬ it **reprograms motivation**, aligning personal success with public benefit within a single equation.

IV.12. Noocracy and the Majority: A Mechanism for Exchanging Voice for Survival and Usefulness (Supplement 2)

IV.12.1. The Root of the Majority's Fear

In the industrial era, labour was not merely a source of income but a form of identity: *"I work ¬ therefore I matter."*
When automation and AI displace humans from most professions, it is not only wages that disappear but also the social foundations that accompanied them ¬ status, routine, discipline, and a sense of contribution.

Within the capitalist logic, where labour = income = value, the disappearance of labour is perceived as **existential annulment**. This generates:

- fear of survival (how to make a living);
- fear of uselessness (why does society need me);
- fear of losing influence (if I do not work, do I still have a right to speak?).

IV.12.2. Classical "Stopgaps" Do Not Solve the Problem

- **Universal Basic Income (UBI)** can temporarily protect survival but does not resolve the question of meaning. It turns a person into a consumer, not a subject.
- **Reskilling and lifelong learning** are valuable, yet with AI's exponential growth they operate as postponement, not resolution.
- **Digital entertainment and the "gamification of being"** (virtual worlds, metaverses) reduce tension but create *illusory* agency.

IV.12.3. The Logic of the Noocratic Response

Noocracy proposes a different principle:

"A human being's value lies not in function but in meaning; not in labour, but in contribution to knowledge, culture, and networks."

In other words, labour-based identity is exchanged for semantic and cognitive identity.
If previously:

$$\text{labour} = \text{value} \rightarrow \text{income} \rightarrow \text{political voice},$$

then now:

$$\text{participation in cognitive, educational, and cooperative networks} = \text{value} \rightarrow \text{guaranteed provisioning} \rightarrow \text{political voice.}$$

This constitutes the mechanism of the new social contract:
labour is replaced by involvement and cognitive activity.

Table: Fears of the Democratic Majority and Noocracy's Corrections

Fear / Problem	Noocratic Correction	Outcome / Mechanism of Power Exchange
Fear of losing livelihood (automation, unemployment)	Introduction of a *Guaranteed Basic Contribution* (not passive UBI): conditional provisioning tied to participation in learning, creative work, or socially meaningful activities.	Basic security ensured; political voice linked to activity rather than income; legitimacy shifts from "employee" to "engaged citizen."
Fear of losing meaning and purpose	Program of *cognitive labour* and meaningful missions: participation in projects, research, education, culture, and ecological initiatives.	Individuals preserve a sense of significance; the norm shifts from "working for wages" to "participating for development."
Fear of losing social status	Redefinition of status: determined not by occupation but by contribution to public knowledge and development ¬ influence, ideas, mentoring, verified impact. Introduction of "contribution ratings" (privacy-by-design).	A new dynamic and merit-based stratification; individuals feel they can influence outcomes.
Fear of uselessness and isolation	Creation of *meaning cooperatives*: clubs, learning networks, cognitive communities where every person has a role.	Reduced alienation; formation of community and belonging.
Fear of losing the right to vote ("algorithms will replace us")	Principle of cognitive suffrage: a vote has weight when the person is informed, educated, and participatory. This enhances democracy, shifting it from formal to meaningful.	Political voice rooted in engagement and informed judgement; the majority retains legitimacy in a more mature form.
Fear of digital control and loss of autonomy	Transparent algorithms, distributed data storage, voluntary participation. Individuals can see how their data are used and what they influence.	Increased trust; a sense of co-ownership and control rather than subordination.

Comments on the Table

- Noocracy does not abolish *majority rule*; it **reprograms** it:
  from *"one person ¬ one vote"* to *"one mind ¬ one contribution."*
  Democracy is preserved but its quality increases.
- The economic function of labour is replaced by the **cognitive function of participation**. Engagement in learning, mentoring, projects, and research becomes the new currency of legitimacy.
- Physical labour does not disappear entirely; it becomes part of automated infrastructure, while humans concentrate on domains where value is created through meaning and knowledge.

IV.12.4. Final Conclusion

1. The majority's principal fear is not unemployment but the **loss of meaning and identity**.

2. Noocracy's central task is to offer the majority not merely subsistence, but **a place within the system of meanings**.
3. The mechanism of power exchange for the majority operates as follows:
   - they lose *labour as the source of value*,
   - but acquire *engagement as the source of influence*;
   - political voice becomes a function of meaningful participation rather than formal membership.

This constitutes the second half of Noocracy's social contract:

- **the elite** retain influence through competence,
- **the majority** retain voice through meaningful participation.

Thus a symmetry is achieved:

<div align="center">

power ↔ competence (for the elite)
survival ↔ meaning (for the majority).

</div>

IV.13. "If Not Noocracy, Then What?" (Supplement 3)

Below we systematize all realistic scenarios that follow from already observable trends: automation, concentration of capital, digitization of consciousness, and the erosion of labour as a source of meaning.
A comparative table follows, organized along two axes ¬ elite vs. masses, and fears vs. compensatory mechanisms vs. final outcome.

IV.13.1. Classification of Probable Futures (Excluding Noocracy)

№	Scenario	Brief Description	Key Driving Forces
1	**Cyberpunk Oligarchy**	A world of extreme inequality where techno-corporations become new states. The masses live at basic subsistence levels in exchange for digital loyalty.	Corporate control, technological dependence, privatisation of power.
2	**Matrix / Digital Anaesthesia**	Most of the population is immersed in managed virtual realities; elites rule the physical world through AI infrastructures.	Escape from meaning, virtualisation of consciousness, political apathy.
3	**Neo-feudalism (corporate fiefdoms)**	Fusion of capital, power, and culture into hierarchical clans; return of vertical dependency.	State fragility, elite clanisation, erosion of legal norms.
4	**Techno-communism (state UBI + AI-planning)**	Centralised redistribution, AI-driven state capitalism with guaranteed survival but no freedom.	Algorithmic planning, social control, "efficient servitude."
5	**Neo-humanism**	Voluntary transition to meaning-centred communities, reduced consumption, shared ownership of AI infrastructure.	Ethical AI, ecological turn, humanistic movements.
6	**Noocracy (contrast case)**	Rational governance via a cognitive census, balancing elite competence with mass participation.	Institutional meritocracy, cognitive democracy.

IV.13.2. Comparative Table of Scenarios

Scenario	Elite Fears	Elite Compensation Mechanisms	Mass Fears	Mass Compensation Mechanisms	Overall Outcome
Cyberpunk Oligarchy	Loss of control to AI and the state	Private armies, digital sovereignties, closed networks	Loss of livelihood and autonomy	Loyalty in exchange for basic services, micro-credit, gamified labour	Survival through subordination; social Darwinism; dehumanisation.
Matrix / Digital Anaesthesia	Loss of legitimacy; risk of revolt	Illusion of choice; full digital management of perception	Loss of meaning and reality	Compensation through virtual utopias; simulation of success and belonging	Stability through apathy; mass retreat into virtuality.
Neo-feudalism	Collapse of global control	Return to personal loyalties, private territories	Powerlessness; dependence on "lords"	Protection and a "sacred hierarchy" as moral justification	Stable but extremely unequal and static system.
Techno-communism	Loss of property	Access to algorithmic governance through state structures	Loss of freedom and privacy	Guaranteed survival and basic equality	Efficient but repressive stability; humans as bio-resources.
Neo-humanism	Loss of traditional levers of control	Moral leadership, symbolic capital, mentorship	Loss of material comfort	Compensation through meaning, community, existential resilience	Ethical but institutionally fragile and vulnerable to cynicism.
Noocracy	Loss of hereditary power	Preservation of influence through competence and status	Loss of labour-based identity and income	Preservation of meaning through participation and learning	Balance of stability and meaning; dynamic legitimacy.

IV.13.3. Critical Analysis of Scenarios

1. Cyberpunk Oligarchy

- **Elites** retain power, but only the corporate segment; political and cultural elites become dependent.
- **Masses** receive survival without subjecthood.
- **Elite fears**: partially resolved, but under constant threat of revolt or technogenic collapse.
- **Mass fears**: minimally resolved ¬ biological survival without meaning.
- **Weak point**: social entropy, collapse of legitimacy, fragmentation into "access zones."

2. Matrix

- **Elites** gain near-total control of perception.
- **Masses** are relieved from suffering but deprived of reality.
- **Elite fears**: fully resolved, but meaning of power evaporates.
- **Mass fears**: partially resolved (illusory happiness).
- **Weak point**: existential paradox ¬ a system without a real life-world.

3. Neo-feudalism

- **Elites** achieve stability through hierarchy and personal dependence.
- **Masses** obtain a "protector," but at the cost of freedom.
- **Elite fears**: strongly resolved.
- **Mass fears**: moderately resolved.
- **Weak point**: stifled innovation, collapse of horizontal cooperation.

4. Techno-communism

- **Elites** are replaced by technocrats and algorithms.
- **Masses** receive food and shelter but lose liberty.
- **Elite fears**: resolved only while they control AI.
- **Mass fears**: basic survival without meaning.
- **Weak point**: suppression of creativity → stagnation → collapse.

5. Neo-humanism

- **Elites** transform into moral–intellectual leaders; lose power but retain influence.
- **Masses** gain meaning through simple life, creativity, participation.
- **Elite fears**: resolved symbolically.
- **Mass fears**: well resolved, provided cultural maturity.
- **Weak point**: moral potential without institutional scalability; lacks cognitive and technological tools for self-reflexivity.

Noocracy develops Neo-humanism by providing its **cognitive infrastructure** ¬ a system where ethical principles become operational and responsibility becomes measurable and collective. As in Nussbaum & Sen (1993), human development is understood as the realization of capabilities rather than an economic function.

Moreover, Noocracy moves humanism **beyond anthropocentrism**:

- from humanism → to *co-humanism*, where responsibility belongs not only to human individuals but also to the collective cognitive whole and even AI;
- from moral norms → to *structural ethics*, where moral principles are embedded into rules of decision-making (see Morin, Habermas, Latour).

6. Noocracy

- **Elites** preserve influence through competence.
- **Masses** preserve meaning through participation.
- **Elite fears**: resolved as personal power without dynasty.
- **Mass fears**: resolved as survival through engagement.
- **Weak point**: requires high transparency and a mature trust culture.

IV.13.4. Analytical Conclusion

If we evaluate each alternative through the lens of **legitimacy stability**, the following pattern appears:

Criterion	Cyberpunk	Matrix	Neo-feudalism	Techno-communism	Neo-humanism	Noocracy
Mass survival	●	●●	●●	●●●	●●	●●●
Mass meaning	○	○	○●	○	●●●	●●●
Elite influence	●●●	●●●	●●●	●●	●●	●●●
Elite meaning	○	○	●	○	●●●	●●●
System stability	●	●●	●●●	●●	●	●●●
Innovation potential	●●	○	○	○●	●●●	●●●

(● – low; ●● – medium; ●●● – high)

Conclusion: all alternatives address only one category of fear while neglecting the other.

- Cyberpunk, Matrix and Techno-communism favour elites while nullifying the masses.
- Neo-humanism comforts the masses but disempowers elites.
- Only **Noocracy** offers a **balanced exchange**:
  power for competence, survival for participation.

IV.13.5. Scenario Probabilities

We provide a numerical estimate of the probability that each scenario becomes *predominant* in a given political–economic region by ~2040–2050. These are subjective heuristic estimates based on trends in technological saturation, institutional robustness, centralization of power, economic development, and cultural factors.
They should be used as a **risk/strategy matrix**, not as a strict forecast.

1) Probabilities (%) of Dominant Scenario by 2040–2050

Region / Scenario	Cyberpnk	Matrix	Neofeudal	TechComm	NeoHuman	Noosk	Σ
Global	20	10	15	15	10	30	100
EU	10	5	5	10	30	40	100
Russia	25	10	30	10	5	20	100
China	10	15	10	35	5	25	100
India	20	5	20	10	15	30	100
Africa	15	5	25	10	20	25	100
South America	15	5	20	15	15	30	100
USA	25	10	10	5	10	40	100

2) Methodology and Rationale

How the estimates were formed?

- Assessment along key axes: state capacity and centralization, technological maturity/data control, inequality levels, tradition of institutional trust / civic capital, cultural plasticity (propensity for collective projects and moral narratives).

- Probabilities refer to the **dominance of one scenario**, not to the exclusion of mixed or localized paths.
- 2040–2050 is selected as the realistic horizon for institutional shifts driven by AI and automation.

Why "Noosk = 30% globally"

Noocracy requires mature institutions, transparency, and a culture of civilizational trust; therefore it is most probable in regions with strong institutions and high GDP per capita. Hence a substantial but not overwhelming global probability.

3) Regional Commentary

EU (Noosk 40%, NeoHuman 30%)
High institutional culture and social systems favor noocratic and neo-humanist trajectories. Risks: populism and fragmentation.

Russia (Neofeudal 30%, Cyberpunk 25%, Noosk 20%)
Tradition of centralized power and elite personalization increases risks of neo-feudal or oligarchic configurations.

China (TechComm 35%, Noosk 25%, Matrix 15%)
Strong coordination and planning favor techno-communist trajectories, but competency-based governance allows noocratic possibilities.

India (Noosk 30%, Cyberpunk 20%, Neofeudal 20%)
Large population, digitalization, and strong local elites create mixed paths; institutional strengthening could favor Noocracy.

Africa (Neofeudal 25%, Noosk 25%, NeoHuman 20%)
Highly variable regional dynamics: corporate enclaves in some areas, community-based experiments in others.

South America (Noosk 30%, TechComm 15%, Neofeudal 20%)
Strong civic traditions with high inequality create both openings for noocratic experiments and risks of authoritarian drift.

USA (Noosk 40%, Cyberpunk 25%, Matrix 10%)
Powerful private tech ecosystem increases cyberpunk risk, but strong civic institutions open space for noocratic evolution of key systems.

4) Level of Confidence and Limitations

- **Confidence: medium** ¬ political decisions, geopolitical shocks, technological breakthroughs, and cultural changes may shift trajectories.
- **Limitations**: excludes unexpected innovations (e.g., ultra-cheap energy), major climate crises, sudden political collapses, or rapid cultural transformations.